Aspen Petroleum Supply Chain V11

Release Notes

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Contents

About These Release Notes

These Release Notes describe the Aspen Petroleum Supply Chain (PSC) V11 family of products which includes Aspen PIMS, Aspen Petroleum Scheduler, Aspen Refinery Multi-Blend Optimizer, Aspen Report Writer and Aspen Blend Controller Interface. This document includes:

- New features
- Known Issues

Related Documentation

In addition to these Release Notes, AspenTech provides the following documentation for the Aspen Petroleum Supply Chain V11 family of products:

- *Aspen Petroleum Supply Chain Installation Guide*
- *Aspen PIMS Integration – User Guide*
- *Aspen Petroleum Scheduler Integration – User Guide*
- *Aspen Refinery Multi-Blend Optimizer Integration – User Guide*
- *Aspen PIMS Help*
- *Aspen Unified Help*
- *Aspen Petroleum Supply Chain Planner Help*
- *Aspen Petroleum Scheduler Help*
- *Aspen Refinery Multi-Blend Optimizer Help*
- *Aspen Report Writer Help*
- *Aspen Blend Controller Interface Help*

New Features

This section describes the new features in the Aspen Petroleum Supply Chain family of products. If a specific PSC product is not mentioned, this means only minor changes have been made.

Aspen PIMS

To ensure all new features work correctly, if using Microsoft SQL Server for your output database, you will need to create a new SQL output database with the updated creation script provided in the install. The script is named **PimsTableCreationScript.sql** and can be found in your installation folder under ~**Aspen PIMS\Enterprise Configuration\Database**. You can also use the new Database Management Tool described below to create your new SQL output database.

V11 PIMS enhancements

- **Shortcut Distillation - Model Formulation Settings**
  An optimization option called **Model Formulation** has been added to the **XNLP Settings** dialog box **Shortcut Distillation** tab. This option allows you to select different model formulations for SCD. How a matrix is structured can significantly affect execution performance.

- The **Database Management Tool** has been created to assist you in managing SQL Results databases. Using a simplified interface and correct permissions, you can quickly create, delete or clear databases. You can also view other users' case solutions. Advanced filtering allows you to quickly find different case results on different SQL databases on different machines as well as specify time and user filters.

- **Update HYSYS Planning Models**
  You can now easily update HYSYS planning models from the **Run** menu or directly from the navigation tree **Submodel Tables** node. This feature allows you to directly modify the HYSYS Excel **Planning Model Update** (PMU) template straight from PIMS.

- **Create an input solution file from a specific case solution**
  The **Create Input Solution File** option has been added to the **Run** menu that creates an input solution file from a specific case solution. This file can be created from AO and DR databases. This option however, is only available when running PIMS-AO.

- **Save Copy of Assembled Tables to Spreadsheets Using Excel**
  This option has been extended to generate case-specific versions of the input tables when running AO.

- **New Parametric Analysis report setting**
  The **Write XLR File for Each Solve** option has been added to the **Parametric Analysis** dialog box. Use this setting to quickly verify that matrix changes occurred as expected by reviewing an .xlr file created for each solve.

- **Non-Linear Equations**
  You can now export non-linear equations and their variables to an Excel file. You can also Import non-linear equations directly into PIMS using a defined import format. Both functions are performed from the model tree **Non-Linear Equations** tab.

- **AO - Resolving Infeasibilities**
  Solving infeasibility problems has now gotten easier. Infeasibility breakers can be automatically added using built-in penalties. A new set of options has been added to the **Penalties** tab associated with the **XNLP Settings** dialog box. Using these options, you can automatically add specific infeasible solution penalties to limits, sales, purchases and blend specifications or automatically add penalties to the entire structure. You can specify when to add penalties from the **Model Execution** dialog boxes.

- **Delaying loading of tables for AO Models**
  The **Do Not Load Tables when Opening Model for PIMS-AO** has been added to the **Execution** tab associated with the **General Program Options** dialog box. Selecting this option delays loading Excel tables until the model is executed.

- **Create Cube** option
  The **Create Cube** option has been added to the **Output Database Options** dialog box. This option is only available if using SQL as the output database. It allows you to specify whether or not to create the information cube used for PIMS Analytics. Previously, the data cube was always created automatically.

- **Create !PGUESS_AO Excel File** option
  This option has been added to the **Outputs** tab associated with the **Reporting** dialog box. If enabled, the system creates case-specific !PGUESS_AO.xls(x) files. Quality values at bounds of zero flow streams are set to the initial value in the file.

- **LOS Calculation**
  Calculation of LOS (actual loss to shrinkage) has changed. If the SPG value for LOS is available in the model, that value will be used, otherwise the difference calculation as described in the **Rules** online help topic will be used to determine the LOS value.

- **Process Limit Row Change**
  A change has been made in this release to not use the default of SPG=1 for process limit rows. If there is a constant or recursed value for SPG for the process limit tag and all the other terms in the row have conversion factors, then the G/L (greater than/less than) control rows will be converted. If there is no SPG for the process limit tag or any of the terms in the row are missing conversion factors, **W736** will be provided for the row.

- **Improve Table Load time with large CASE tables**
  The **Suppress CASE Table Generation Warnings (AO only)** option has been added to the **Miscellaneous** tab of the **Reporting** dialog box. If selected, the system skips the processing required to generate the **W500** warnings related to the **CASE** table when the **CASE** table is loaded. Generation of these warnings can take a long time if the CASE table is unusually large. This option allows you to omit the warning processing and thus can improve the table load time. This is only applicable to AO.

- **New Warnings**

  - **W774** has been added to warn of an invalid transfer in a model.

  - **W925** has been added to detect that a material is missing a source or a destination.

  - **W926** has been added to detect that a blend is missing recursion for a specific quality. This may cause report results to be inconsistent.

XLR Viewer Enhancements

The following enhancements have been added to improve the XLR Viewer.

- **Export data to Excel**
  The '**Export to Excel**' option has been added under the XLR Viewer **File** menu. This option allows you to choose the sections of the XLR data from the XLR Viewer to export.
  The excel report will have a worksheet for each XLR data section.
- The defaults for **Filter by** fields are now **Name** and **Contains**.
- Keyboard **Enter** recognized
  Clicking **Enter** on the keyboard will execute the filter function similar to clicking **Go**.
- Filtering is now available for the **Diagnostic** tab sections
- **Number of Entries in XLR Diagnostics** option
  This option has been added to the **Outputs** tab associated with the **Reporting** dialog box. This option allows you to specify the number of

rows to display in the different sections of the **Diagnostics** tab in the **XLR Viewer**.

Aspen Assay Management

The following enhancements have been added to Aspen Assay Management (AAM).

- **Fine Tuning Always Performed for Molecular Characterization**
  In previous releases, the **Home** ribbon tab | **Molecular Characterization** group included a **Fine Tune** check box, which was available after molecular characterization was enabled. By default, the **Fine Tune** check box was unchecked. Fine tuning was used to further fine tune the regressed molecular profiles, providing the best possible match to the three key assay properties, including TBP yield curve, API density and sulfur content. Molecular compositions of micro-cuts (as determined from the regressed molecular profiles) were adjusted iteratively to match the three properties one by one and cut by cut.
  In V11, fine tuning is always performed as part of the Molecular Characterization algorithm, so this check box was removed. For instances where the **Fine Tune** check box was cleared in a previous version, fine tuning will now be applied. Your results may differ from those in previous versions.
- Often a large number of assay branches (distillation modes) are present in a model. If a crude that appears in many of these branches updates the assay, all of the branches containing that crude must be re-cut and updated. AAM now allows cutting of multiple assay branches simultaneously. Users can select any or all of the branches that they want re-cut, then simply click a button to have their selections cut simultaneously.
- You can now remove **links** between selected crudes in PIMS and AAM. This enhancement ensures that no Excel links are broken in the process. From the **Crude Map** form, you can now delink or deactivate an assay using the right-click shortcut option **Delink Assays**.
- On the **Conventional Results** or **Molecular Results** form, the new **Show Results Only** / **Show Results and Inputs** toggle button lets you choose between displaying only results and displaying the result value and the input value together in one cell. The black value on the top left is the result value. The gray value on the bottom right is the input value.
- On the **Add Assay** dialog box, the units for properties can be selected when applicable using the drop-down list next to the **Add Property/Description** column header. You can display additional assay properties and descriptions in the **Select Assay** area by clicking the column header **Add Property/Description** or right-clicking a column header and selecting **Add Property/Description** from the contextual menu.
- On the **Assays Summary** form, the units for properties can be selected when applicable using the drop-down list next to the **Add Property/Description** column header. You can display additional assay properties and descriptions by clicking the column header **Add Property/Description** or right-clicking a column header and selecting **Add Property/Description** from the contextual menu.

- You can display the distillation input points as a TBP curve for each product cut in a back-blending assay. To do so, create a Distillation plot for a back-blending assay and select the **Show back-blending input cuts** check box on the **Format** ribbon tab.

Aspen Unified

Aspen Unified PIMS is now included in the Aspen Unified suite which includes Aspen Unified PIMS and Aspen Unified Scheduling. If you are upgrading from Aspen Unified PIMS to Aspen Unified V11, select the **Upgrade** option during installation. The system will automatically make the necessary changes to upgrade your system. The URL to access AU will change to the following:

http://localhost/AspenTech/AspenUnified

Aspen Unified PIMS

Below are V11 enhancements specific to Aspen Unified PIMS (AUP).

Navigation Changes

- The aspenOne home page has been removed.
- You can now use the Browser Back and Forward buttons to return to previously visited screens. Other usual Browser functionality such as bookmarking and saving pages based on URLs are now supported. Note that tabs on a page cannot be bookmarked, but the main page can.
- The last visited page in AUP is saved and will become the opening page when you next log in. This is saved per user, per model.
- Navigation Pane look and feel has changed as well as the **Application bar** at the top of the page.
- Two options have been added that allow you to specify what appears in the **Case Context** area. The **Number of recent case in context selector** option specifies how many recent cases appears and the **Show case group selector** option is used to hide or show the Group selection area in the Application Bar.
- Actions applied to table cells are now accessible from a right click short-cut menu. These actions are still available from the **Table Tray**.

Model Execution and Job Status Changes

- Penalties applied during model execution to help diagnosis **infeasibilities**, are now applied with a scaled value based on the associated limits so that the approximate value of the penalty, if active, will be on the same order of magnitude as the original scale factor. This is applicable to the **Limits** and **Blend Specification** penalty scale values. Note that if a penalty value was specified in the input tables for the specific Capacity or Process Limit or for the Blend Specification Penalty for the property, that value will override any penalty generated by the Infeasibility Diagnostics.
- **Run** dialog has been updated to have settings appear on a separate tab. You can now set a case-specific input and output solution.
- The **Imbalances** column has been added to the **Job Details** pane on the **Job Status** page. You can quickly see the number and type of

imbalances. Clicking on the associated link navigates to **Summary** page for specific information on the material(s) or utility(ies) that are out of balance.
- **Job Type** can now be seen on the **Job Status** page.
- Ability to view multi-start run progress from **Job Status** page
  You can now view charts that display the status of a multi-start run from the Job Status page when performing multi-start global optimization.

Case Enhancements

- You can create more than one case at the same time. This can be performed from the **Create New Cases** dialog accessible from the Application Bar or from the **Case Summary** table.
- From **Case Summary**, you can copy multiple cases and link them to a parent case.
- You can quickly change the parent case for multiple cases from the **Case Summary** table.
- Inherited values are now easily viewable using the "**View parent case**" short-cut menu option accessed from any case modifiable cell. This feature allows you to see and edit inherited values directly from any cell that can be modified by case.
- **The Case Details - Modified Data** tab has been changed to include a **Modified in Case** column from where you can quickly see if the **Model Area** has been changed in the associated case. In previous releases, modifications in a specific **Model Area** were only highlighted. Now, modified changes are clearly indicated with a ✓. In addition, a **Submodels** row has been added that hyperlinks directly to the **Submodel Summary** table.
- There is now the capability to **remove the current solution** for a selected case(s) from the **Case Summary View**. Removing all data from the results database regarding case execution will reset solutions values so information on a prior case execution is no longer available.

Flowsheet Changes

- Palette has been simplified.
- Clicking a constraint or penalty  , shows those specific constraints/penalties associated with the selected unit.
- Double clicking on a constraint/penalty  , takes you to the unit constraint/penalty page where you can view details associated with the constraint/penalty.

Distillation Mode Modifications

- The **Return to Mode** button has been added to the Assay Cutting Data and Distillation Tower Configuration screens that allows you to go directly to the Distillation Mode Flowsheet Configuration page.
- You can now go directly to configuration screens from **Distillation Mode tower** screens by clicking **Tower Configuration** and **Submodel Configuration** buttons. This allows you to easily see or modify tower details.
- Complete assay data for the mode is now visible on the mode **Assay Cutting Data** page.
- The **Tower Configuration** page now displays which distillation modes uses the associated tower.

Crude Blend enhancements

- Crude blends are now supported in AUP. Crude materials can be used to create crude blends on the **Crude Blends** table.
- **Crude Blend ratios** can be imported during bulk case imports from Case spreadsheets into the Base Model. Note that you cannot change the structure of Crude Blends using case bulk imports.
- Crude blends can now be use in Distillation Modes.

AUP Simulation Configuration enhancements

- New **Auto-check for singularity** setting has been added to automatically check for structural singularity.
- You can now indicate which submodel rows to include using the check boxes on the **Submodel Squaring** tab.

General Submodel enhancements

- Can now configure **auto Base+Delta Submodel Matrix** automatically.
- Submodel Calculator has been added to AUP.
- You can now directly **modify submodel** values for an active case from the submodel configuration page after selecting the desired case. You can also modify the submodel matrix by importing a new submodel matrix or re-importing a previously exported AUP submodel.
- An indicator column (**Modified in Case**) has been added to the **Submodels Summary** page that shows if the submodel has been changed to make it different than what it was in the Base case.

Additional Aspen Unified PIMS enhancements

- An Excel Add-in is now available to enable the use of the same Excel file to transfer data to AUP thus eliminating the need to use multiply files for uploading and downloading data.
- Ability to export data has been added to all Assay input and characterization data tables.
- Material Groups can now be **created** directly from Summary tables such as Purchase/Sales, Materials, Blends, Crudes and Utilities. From these tables you can also **add** to an existing material group.
- **Total Row**s have been added to Material and Utility Purchases and Sales tables as well as Inventories table.
- You can now directly import and export PIMS non-linear equations. Equations, equation groups, variables and their associated values are imported and visible on the Nonlinear Equation page.
- CCAP rows in PIMS Table ASSAYS are now included during migration of an existing PIMS model. Capacities are automatically created based on the CCAP row values and these rows are displayed on a **Distillation Mode Assay Cutting Data** page as well as the **Capacities** table. Case variant data is also now included during migration.
- The PIMS **CRDBLEND** table is now added during **Model Migration**. This information will appear in the AUP Crude Oils page. Crude blends that are associated with Cases are also included when cases are imported.
- You can now create a site catalog. This allows you to publish information associated with distillation modes for use in scheduling and other models.

Introducing Aspen Unified Scheduling

- V11 supports creation of a Crude Scheduling Model using the Aspen Unified site catalog.

Aspen Petroleum Scheduler (APS)

Below are enhancements and changes specific to APS.

- **Multi-user synchronization enhancements**
  Notification when modifications have been made by other users has been enhanced, thereby increasing accuracy of synchronization between APS, MBO and Dock Scheduling users.
- **Handling of pipeline beginning inventory**
  If there is no pipeline beginning line fill data available when opening a model or rolling forward a model to a new day, a message appears telling you that APS will automatically generate crude so that the quantity is **closest** to filling up the pipeline. This information will not be saved to the model unless you select the **Pipeline Schedule** option when exiting APS or performing an explicit save.
- **Edit in Excel Improvement**
  You can now specify that a specific template be used as the default template for each event type by using the **Open as Default** Multi-Event **Editor Template** option.
- **EIU and Pipeline Events**
  An additional check has been added when working with pipelines using the **EIU CrudeEvents** worksheet. The referenced pipeline must exist in the **ROUTES_PLS** or **PIPLEINES_SEGMENT** table otherwise an error occurs when trying to import unless the appropriate corresponding information is entered. Information such as source and destination or route is required based on how the pipeline is being used.
- **Display Audit Inventory Data as Volume or Weight**
  You can now import volume based inventory into a weight based model. The **Crude Audit Basis** option has been added to **Model Settings** that controls whether data is shown on a weight or volume basis in the Audit Inventory dialog box. The allows you to import data using EIU as Volume or Weight irrespective of the model basis.
- Create a copy of the **Units** file while in the application
  The **Save Excel File Copy As** option has been added to the **Event View File** menu. Selecting this option allows you to save the current opened Units file with all changes to a desired location with a desired name.
- **Publishing change**
  When **EXPORT_EVENT_DATA** is set to yes in the **CONFIG** table, extra event data is exported to the published .xml file. A change has been made so that this extended data is refreshed each time. Previously extended data was appended to existing data. Now, only the current extra event description data is included in the .xml file. Also, for events that do not have movement data defined, the APS_XSEQ is attached as part of the event description. See the **EXPORT_EVENT_DATA** online help topic for more details.

- **Prep (Hours) and Post (Hours)**
  Prep and Post fields have been added to the **Pipeline Product Injection** and **Pipeline Crude Receipt** dialog boxes.
- The **Gantt** shortcut menu options **Copy**, **Copy and link**, **Create Recurring** and **Split** commands are not allowed and therefore disabled for **Pipeline Out-of-Service** and **Pipeline Fill Destination Change** events.

New CONFIG Keywords

- **SQLSERVER_DELETE_RESULT_TBL_W_TMPTBL** keyword has been added to improve publishing speed when working with SQL where a large number of records are involved. See the keyword description for specific requirements and recommendations.
- The **EVENT_DEFAULT_TEMPLATE_<eventType>** keyword stores the name of the **Edit in Excel** template to use as the default for a specific event type.

Dock Scheduling (DS) New Features/Changes

- A Dock Scheduling license is now only checked out if a user opens a DS screen. Previously a license would be checked out if voyage data is found in the model irrespective of DS usage.
- Use the **Integration | Voyages** command to add, update and delete voyages. The DSIMPORT_VOYAGES and DSIMPORT_CARGOS staging tables are used to quickly perform the new voyage integration procedures.
- Importing and updating DS cargo and events for any voyage is now supported directly from the interface from the Dock Scheduling Integration menu option.
- Access rights to Dock Scheduling can now be set using the DSS column in the **GROUPS** table. Entering a zero in that column restricts access to DS. A missing value or any other value allows access to DS screens and specific DS data. ADMIN group users will always have DS access.
  If a user does not have access rights, the Dock Scheduling node on the navigation tree will be disabled and therefore access regarding viewing and any interactions will not be allowed.
- Properties can now be associated with non-crude product receipt cargo event types. On the Event Detail dialog for a non-crude receipt event, there is a new Property area **Props** where you can add/edit/delete properties associated with the Cargo Material.
  How properties are saved when **OK** is clicked is determined by the new **Synchronize non-Crude Receipt Properties** setting found on the DS Settings dialog box. If this setting is selected, changes to the properties' list in the Event Details dialog box (ex. properties added or deleted) would be reflected to other events.
  No changes to properties' values will be copied/reflected across events in the group.
  NOTE: Any changes to API/SPG on an event in a group, will always be reflected in all other events in that group when **OK** is clicked. If DS units and APS units for the non-crude receipt event are different, API/SPG will be used to convert the UOM. This converted UOM will be used to calculate the event quantity if needed. SPG is used to convert the UOM if both API

and SPG are provided. See the table descriptions for specifics on how DS properties are handled in the CARGO_PROPS and ATORIONEventProps tables.

- **Linking voyages** together is now supported using the following options:
  - On the **Voyages** dialog, a **Start Link** and **Stop Link** options have been added where you can supply the voyage ID to establish the links.
  - Two new options, **Start Link** and **Stop Link**, have been added to the shortcut menu associated with a voyage on the Gantt chart. Right-click and select the option and then click on a vessel to establish the link.
  - The **Link - Thickness of link line** option has been added to the **Dock Scheduling Gantt Options** dialog box that lets you specify the thickness of link lines on the Gantt chart.
  - **STARTLINK** and **STOPLINK** fields have been added to the VOYAGES and _VOYAGES tables.
  - Demurrage calculations are not affected by the Start/Stop links during optimization. Information has been enhanced to include calculation of demurrage excluding links using the **Demurrage without Links** display field in the **Optimize Demurrage** dialog box. Additional columns have been added to the dialog to display start and stop link information. If links are broken after optimization, a message will appear after **OK** is clicked.
  - The **Auto Adjusting** feature does not take start and stop links into account. If links are broken during dock adjustment, a message will appear.
- For a common model between APS and MBO that has Dock Scheduling voyage data, MBO now allows loading and simulating **Product Receipts** and **Product Shipment** event types. This allows calculation of tank inventories and properties within MBO. You are also allowed to now change tanks and Prep and Post values times on **Product Receipt** and **Product Shipment** events from within MBO. Note that MBO will not optimize these Dock Scheduling events. They will be considered fixed.
- Copy a voyage to create a new voyage
  You can now use the **Copy** and **Paste** shortcut commands associated with the **Voyage Gantt** chart to create a new voyage. Select the desired voyage to copy by clicking and dragging to cover a specific area on the Gantt that contains the desired voyage(s) and then pasting your selection on the Gantt to create a copy. ETA and Lay window times will be adjusted. Docking time, departure time and event time will be calculated. The other time variable remains the same as well as the Dock of the original voyage.

  Note: Copy/Paste can be done only on horizontal scale, meaning that a copied Voyage(s) on a DOCK1 can only be pasted on DOCK1 at separate times. For vertical movements, use the existing drag and drop feature.
- **Prep** and **Post** Hours
  The **Prep (Hours)** and **Post (Hours)** fields have been added to the DS Cargo Details and Event Details dialog boxes to allow you to add preparation and recovery times associated with the event. The APSFLOWEVENTS, _APSFLOWEVENTS, CARGO and _CARGO tables have been updated to include the PREP and POST fields.
  Note the following as related to the **Prep/Post** fields:

- Hours entered in the Prep/Post fields on the DS Cargo Details dialog box affect the Voyage schedule.
- Entries made in the **DS Crude Receipt** and **DS Product Shipment** event dialog boxes do not affect the Voyage schedule. These values affect the availability of the tanks in APS, but not voyages.

- The DS Cargo Details dialog box now allows empty or blank values such as for the **Cargo ID**.

Changes

- **Trend Tolerance Calculation**
  A change was made in regard to how the **Trend Tolerance %** setting found under the **Model Settings** is applied. Previously, the calculation was applied to the MIN and MAX values directly. Doing so caused trend violations to appear unreasonable when the **MIN** value was zero. A change was made so that the entered percent is applied to the difference or range between the MIN and MAX values. Regardless what the MIN and MAX numbers are, the violation tolerance can now be reflected reasonably.
- **Publishing Change - _EVENTS** and **EV_DAILY_DEST_TANKS** for Pipeline Product Shipment events
  For **event type 36** in the _EVENTS table, the calculation used to determine the **WEIGHT** value has changed:
  - For Beginning Line-fill events, the SPG of the **batch** is used
  - For Product shipment receipt events, the SPG of the **source tank** is used

  Previously, in the _EVENTS table, the SPG of the destination tank was used to determine the WEIGHT value.
  The change to the WEIGHT value seen in the _EVENTS table also causes a change in the WEIGHT value in EV_DAILY_DEST_TANK table for type 36 events.

Engine Modifications/Calculation changes

Below are additional changes in V11 that may cause value to appear differently in V11.

Most of the differences (on the order of 1.0e-5) are mainly due to round off small differences on the order of 1.0e-6 or 1.0e-7 in the upstream(s). However, there are differences, mainly caused due to valid changes to logic for the existing features in APS.

1. **Reference**: Wrong baseline pipeline fill is set when pipeline is rolled forward v11

   Type of differences: In V11, some of the tanks does not have composition or properties as compared to results in V10.1.
   Issue: Due to an issue with Roll forwarding logic, the Simulation logic made delivery of very tiny pipeline batches into wrong tanks.
   Fix: Resolved the issue of delivering tiny PL batches to wrong tanks, resulting to differences when compared to results in V10.1.

2. **Reference**: APS fails to publish crude tank weight for the first day of publishing

   Type of differences: In V11, for crude tanks, data for WGT/SPG at the model start(midnight) has been published and the same was missing in V10.1.
   Issue: Data for WGT/SPG and compositions are not published at start of the models, publish was only publishing starting from 10 seconds period.
   Fix: Resolved the issue and hence one can see more records in V11 compared to V10.1.

3. **Reference**: Crude unit feed compositions are wrong if crude tank goes negative

   Type of differences: Active Crude charging tanks (negative) caused differences in _CRDRUNS, resulting into all sorts of differences in downstream/tanks/parameters etc.
   Issue: Existing logic for mixing streams into a tank, has an issue where it mixes one stream at a time resulting into invalid results when the tank is negative.
   Fix: The mixing logic was changed to do pre-mixing when a tank is negative at the beginning of a transfer event and when the transfer has multiple sources

4. **References associated with Weight Based pipeline movements**:
   a. Slow performance in opening model, creating event, click save, switching event screen, publish results etc.
   b. Not able to reload simulator - APS crashes or Excel giving error "Waiting for another OLE application".

   Type of differences: Many of the process tanks has very big differences in properties and WGT
   Issue: Issue with the SPG calculation
   Fix: In V10.1, the incorrect specific gravity (spg) was used to calculate the volume of material placed in the pipeline for weight based pipeline shipments. With the resolution for these defects, weight and properties are calculated properly with the weighted average (across two periods) of SPG and hence caused differences but results in V11 are accurate than in v10.1.
5. Change in Excel Equation to resolve instability in calculations: **APS logic has not changed**

   Type of differences: Pump parameters are calculated in a user unit where a decision is made to pull from one tank or another depending on sulfur calculations. Tanks were swapped in V11 compared to V10.1.

   Issue: An instability in the calculation equations is probably the cause. The main decision point for which tank to use is the following equation (in cell E135)

   (G134*J134 + F134*H135)/(G134 + F134) < D11

The left-hand side is the calculated sulfur value and the right-hand side is the sulfur limit. Very small differences (less than 1.0e-8) between the left-hand side and the right-hand side will determine which tank is used

Fix in excel equation: Equation is modified to include a tolerance to reduce erroneous tank selection.

$$(G134*J134 + F134*H135)/(G134 + F134) < (D118 - epsilon)$$

Where, epsilon is set to 1.e-5.

Aspen Refinery Multi-Blend Optimizer (MBO)

The following enhancements are specific to MBO for V11.

- For a common model between APS and MBO that has Dock Scheduling voyage data, MBO now allows loading and simulating **Product Receipts** and **Product Shipment** event types. This allows calculation of tank inventories and properties within MBO. You are also allowed to now change tanks and Prep and Post values on **Product Receipt** and **Product Shipment** events from within MBO. Note that MBO will not optimize these Dock Scheduling events. They will be considered fixed.
- The capability to create **Shipment Groups** has been added. You can now apply limits to a group of product and pipeline shipment events for analysis.

Aspen Petroleum Scheduler and Aspen Refinery Multi-Blend Optimizer

The following applies to both APS and MBO.

- The **Movement** field has been added to all event dialogs. You can now see the MOVEMENT_ID in event and Pipeline Scheduling dialog boxes. Setting the MOVEMENT_ID_EDIT CONFIG keyword allows you to edit movement IDS directly from the dialog boxes. You can also use Edit in Excel to add movement IDs.
- New **SetRequiredProps** automation method
  Use this method to set a list of properties used in the model when the number of properties is greater than 500, It can be used instead of **InitPropList** when the number of properties is large.
- Both APS and MBO have upgraded the EXPESS Solver to Version 33.

New CONFIG Settings

- SYNC_CARGO_PROPERTIES keyword has been added that determines how changes to non-crude receipt event properties will be handled. The setting determines if properties added/deleted on this event type would

also be added/deleted on other associated events. This setting is the same as the **Synchronize non-Crude Receipt Properties** setting found on the DS Settings dialog box.

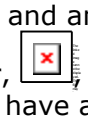
- GRANT_EVENT_MEM_CHANGE keyword has been added. If Y, allows user without editing rights, to make changes/edits to any event and to view the consequences of those changes. When closing the model, you will not be able to save any of the event changes since you do not have appropriate rights.
  If setting is N or if the value is missing in the CONFIG table, edits/changes to events will not be allowed. You will see a message informing you that you do not have the appropriate permissions to modify events.
- The USE_SIMPLE_CACHE_MEM_CHECK and USE_SIMPLE_CACHE_MEM_CHECK_VAL **CONFIG** keywords can be used to compare available memory to required memory to determine if the memory cache feature should be disabled to prevent system warnings when memory is insufficient.
- The MOVEMENT_ID_EDIT keyword has been added. The keyword setting of 'Y' enables the Movement field in all event dialogs, allowing you to manually edit the movement ID.

Aspen Petroleum Supply Chain Planner

The following enhancements have been added to PSCP.

- Infeasible problems are automatically re-solved by PSCP using the required solver settings to help discover the cause of infeasibility. The cause of infeasibility will be reported in the **Optimizer Log** providing informative diagnostic information for critical analysis.
- The **Description** and **Commentary** fields' text length associated with all data tables, increased from 50 to 120. To accommodate this change, you will need to delete all existing Access and SQL Results databases. PSCP will create a new **Access** results database as needed. For **SQL** databases, please run the **SQL server scripts** generated by PSCP to create a new results output database. Using an old results database causes errors when writing to applicable tables when the referenced entries are greater than 50 characters. Contact AspenTech Support for assistance if needed.
- Numerous enhancements have been made to **Aspen MapBuilder**. Please see the **MapBuilder** description for specific information.
- PSCP has upgraded the **XPRESS Solver** to version 33.

PSCP menu and toolbar enhancements:

- To further help with analysis, an option has been added to the **Results View** menu, **Show Nonzero Dj/Pi**, and an additional option has been added to the Results Window toolbar,  that allow you to only selectively view only activities which have a non-zero marginal value.

Aspen Map Builder

Starting with V11, you are now able to create and view maps without having to license Microsoft MapPoint. If you wish to use Aspen Technology MapBuilder with MapPoint, you can still do so but will need to launch the MapBuilder.exe from the Aspen Petroleum Supply Chain Planner installation folder.

The new version of map generation, using ArcGIS Ersi technology, is launched directly from PSCP. It has the same features as the original MapBuilder with the following exceptions and enhancements:

- You must have an Internet connection and ability to access the ArcGIS Online map service (https://services.arcgisonline.com/arcgis/rest/services) to see maps. If you do not have an internet connection, you can still use Map Builder but will not see routes overlaid on top of maps.
- Map loading will be quicker.
- The map view is automatically saved from its previous state.
- Directional arrowheads associated with segment lines appear in the center of the line instead of at an end.
- If a segment has a free form point, an arrow head is shown in the middle of each straight line in the segment.
- Free form points can be removed from a map by right-clicking on the point to be removed and selecting **Remove point**.
- Distance information is now visible in the information pane.
- The new map supports smooth (i.e. continuous update of graphics) zooming and panning of base maps as well as smooth dragging of node markers.

Additional enhancements:

- The **Feature Layer** field has been added to the toolbar. This option allows you to select a user defined layer to overlay onto the map. You can define what layer(s) to make available as well as define whether to display properties, if available, using an external .JSON file.
- **Map Pane** enhancements
  - You can now use a **Search** field to quickly find any node using the type ahead feature.
  - Allow any marker to be moved on the map using the **Set all markers draggable** option. By default, only the active marker can be dragged.
  - Multiple nodes can be selected and added to the map by dragging them from the node area.

Aspen Report Writer

- Aspen Report Writer can now be launched from 64-bit versions of Microsoft Office. The new V11 version of Report Writer requires migration of existing templates to new template versions. This can be

performed using the **Template Migration Tool** found under the AspenRpt8 add-in option.

- The **Show processing status** option has been added to the **Report Template Selectio**n dialog box. Clearing this option may significantly decrease processing time when generating reports using automation.

Software Fixes

Major software fixes to the Aspen Petroleum Supply Chain suite of products are listed in this section, separated by product names.

Aspen PIMS

ID	Title
21065	Global economic summary different than OBJFN when using LOCTAGS
21094	Recursion rows are removed incorrectly when constant property data differs by period
21131	Add option to create !PGUESS_AO xls file for PIMS AO
21132	PRIORITY column in SELL table not working for PIMS AO
21223	ABML ND86 correlation creating invalid matrix entries for PIMS AO with improper input data
21272	PIMS AO handling of PCALC and recursion of transferred streams in the receiving model
21280	Full Solution showing incorrect results for CURVE/NONLIN structures for PIMS AO
21292	PROCLIMS not working with table DISPLAY for use in parametric analysis reporting
21295	All multistart staring points are identical if "Use Input/output mapping" is used with an external model
21303	Html report shows incorrect numbers for capacity utilization caused by row being freed
21304	Downstream Case doesn't apply Modifies correctly with cascaded MODEL keyword
21361	PIMS Assay Manager replacing cuts description when adding a new crude to the PIMS ASSAY table
21396	Case Comparison giving error when product streams missing from the first case in the report
21459	Reporting of blend specifications incorrect when using BLDSLACK option
21468	Backward search for non-existent tag in text files opened in PIMS UI causes crash
21474	Opening data assistants in PIMS takes a long time in V8.x and V10

ID	Title
21484	PIMS DR does not update !PGUESS files correctly when there are a large number of columns and when using xls format
21493	Exception casting data with case comparison when there is an empty row in table SELL
21547	Incorrect marginal value for variable not at bound in fullsolution report
21573	Rename Table function not working for global models
21579	Issue creating !PGUESS_AO file with more than 250 columns
21582	Multistart option becomes unchecked after switching to DR, run, and then switch back to AO
21602	Global economic summary analysis incorrect due to purchases and sales missing in the local models
21632	Invalid PIMS settings in encrypted model file generate error message at the start of every PIMS AO run
21633	PIMS AO crashes when trying to change from standard model to PPIMS model due to bad data in table PERIODS
21640	Minimum blending specification missing from report when using the convert property specs to index specs option
21652	PROCLIM in parametric analysis not updated when the base run has MIN=MAX=0
21672	PIMS not handling special characters in folder name with case comparison
21704	Report Writer queries missing from Access when writing to both SQL Server & Access
21714	Incorrect weight value for blends in reports when blend components are transferred from another model
21800	PIMS AO not cascading local model changes (via MODIFIES in local cases) correctly
21807	Fixes to support clustering with PIMS AO in the cloud
23874	Price of spot crude is zero in the case comparison report
23884	Across report contains incorrect blend spec component opening inventory with RECINVSP=2 in weight model
23888	Across reports showing wrong values for utility consumption due to periodic submodel columns
23996	Run repeatability issues for PIMS AO when the LP is unbounded or infeasible in the linear initialization solve
24019	Values in full solution report are wrong when PROCLIM contains an entry missing from the model
24050	PIMS AO does not suppress warnings listed in table MSGSUP
24052	Worksheet opened with Excel automation for PIMS AO due to Flexcel reading error
24061	Improve diagnostics for LP infeasibility when using the dual algorithm
24086	PIMS AO issue with modifying ASSAYS through table CASE caused by table loading errors
24093	Table RATIO in MPIMS AO doesn`t work properly with table SELL
24094	PIMS AO does not handle single component blending for a transferred stream in the destination model

ID	Title
24105	Unable to import the solution in the submodel calculator
24137	Volume/Weight quality balancing in PIMS AO not working with PROCLIM rows
24206	PIMS AO not giving proper bounds to CURVE/NONLIN variables
24207	Incorrect warning W912 for nonlinear equations starting with "E"
24289	Issue unarchiving when zip file folder structure has no home directory
24295	Inconsistent matrix generation errors using REPLACE keyword with submodels
24386	Submodel products volume % calculation incorrect in report for stream from table GASES
27589	PIMS crashes when option "Number of Cases to Solve Before Restarting Excel" is set to zero
28666	Case Comparison not working for global model when there is no TRANSFER table
48403	Spot crude evaluation breakeven price is not correct for periodic model
48675	The spec values are calculated incorrectly when running parametric analysis and changing group blend specification
49532	The volume flow rate UOM is not correct for gas streams in the Blend report section
49883	The Inventory Min and Max values are incorrect in the across report for a weight-based periodic model
67841	Running parametric analysis for inventory variables is not working correctly for materials which need weight/volume conversion
67891	The VPRICE values in the full solution report are not correct for parametric runs
68768	Report is not correctly generated for LOCTAGS tags using ZEROPS setting
69223	Submodel calculator is not working with crude units
105231	Submodel Calculator unable to import solution in XPIMS model with extended tags
105390	PIMS AO table grid redrawn at the end of a run even if previously closed
106850	Performance issues with Multistart for MIP problems
119359	PPIMS AO doesn`t take MIN in table CASE into account, works only with MIN1 for CAPS and PROCLIM
121230	Nonlinear equation calculation not working in MPIMS when nonlinear variables have similar names
121381	XLR Viewer is missing the last solver iteration
121912	Inconsistent database maintenance option used when writing results to SQL Server database
157982	Missing blend specification descriptions in reports when using option to convert property specs to index specs
159665	Invalid warnings for missing structures when using auto quality balancing option
162324	VPOOL structures incorrect for PIMS AO when text entry is erroneously a crude tag

ID	Title
162415	The values reported for N/X rows in parametric analysis display variables are incorrect
162877	Crash from ABML ND86 correlation when number of temperature points exceeds number of percent off points
188796	Database does not populate stream property origin correctly for transferred streams
194624	PIMS AO not handling specification blend fed into a formula blend that is sold in volume in a weight-based model
220046	Bad Inventory Structure with RECINVSP>0 for global model
221324	!PGUESS_AO file creation for PIMS AO fails when column name not written as text in Excel
225149	Case comparison report for periodic model missing period name for cases from previous runs
225928	Case comparison dialog text field not updating when checking cases in list view
225931	Out of memory issue in case comparison with running with a large number of cases
228869	Report files missing submodel information when FIXBAL setting is changed via table CASE
230245	Case running in PIMS AO requires GENERATE keyword with group tags in table GSUPPLY
231585	PIMS DR license validation is very slow with a cloud-based license server
231834	Shortcut distillation flow equations not working as expected with particular configuration
231983	Incorrect matrix structure with 888 placeholder in PIMS AO
233754	Unable to add Shortcut Distillation crude units to table SUBMODS to control reporting
237754	Unable to modify VPRICE through Table PARAOBJ for Parametric Analysis
238830	Wrong data in Case Comparison report for product sales when a material is added after the first case
239039	Problem with MIP SOSTYPE in PPIMS for XNLP
239698	PIMS DR is running slowly in V10 compared to V8.8
240523	!PGUESS_AO created by PIMS AO is missing columns when the original PGUESS file contained columns that were not recursed
241328	Issues with GAIN, BIAS, SCALE, OFFSET in ABML in PIMS AO
252885	REPLACE keyword not working correctly in regard to PROCLIM rows of a submodel
254002	Case Comparison has duplicated (shifted) rows
254079	ABML OFFSET has incorrect sign in matrix in PIMS AO
254319	Invalid W050 about non-999 in pool collector column in PIMS AO
255691	Error for invalid ABML correlation name due to name longer than 20 characters
258248	Global model issue with REPLACE keyword for submodels in table CASE
258997	Input image spreadsheets are being written in the wrong Excel format

ID	Title
259625	Erroneous warning messages at end of run for invalid period in a variable name
260738	Removing Nonlinear Equation Group with child group underneath causes model to crash
260739	ERRMSG workbook is not output when the output spreadsheet extension is set to XLSX
265436	Submodel utility reporting incorrect when periodic coefficients updated in table ROWS
266852	Performance issues with Report Writer transfer views when writing to SQL server
268800	Incorrect economic summary in global model with active ICOST or IPRICE
269242	Error for missing PVTW.dat while trying to run PIMS model in V10
273560	When using option "leave PIMS-SI server workbooks open", PIMS SI models don't work with Excel 2013 or later
279139	Incorrect inventory structures when using Automatic Volume/Weight Quality Balancing in a weight-based model
281923	PIMS AO not picking up changes to global groups in table SUPPLY via table CASE
283015	Case comparison does not work when run using automation
284319	PIMS is closed automatically when selecting to run case comparison report after cleaning up the model
284958	PIMS SET run results are different for subsequent runs of PPIMS volume sample model
287737	Misleading warning W057 when using PIMS AO solver setting for hybrid quality initialization
289384	Recursion validation shows incorrect results when periods are defined in CASE file
290411	Duplicate economic values in the transfer items when publish the plan from PIMS
292796	ABMLMAP is not working correctly with EVAPORATIVE correlation with both D86 and ND86
295404	Blend specification with penalty is duplicated in local model report
302075	Crude descriptions not clear in submodel report when using table CRDTANKS
306392	Discrepancy of OBJFN versus fullsolution report when using VPRICE for a stream that does not recurse SPG
306997	The penalties on group blending specifications are not reported
307204	Auto quality balancing causes infeasibility in PIMS V10CP2
313249	Issue when missing 7th character in row name in table PSPAN
316172	Infeasibility breakers "Auto" solver setting not resolving correctly in serial versus parallel
344511	Technip Spyro connection broken in PIMS V10
345780	Invalid report data when changing a periodic submodel coefficient via table ROWS in table CASE

ID	Title
346446	Model comparison crashes and fails to read tables when TableLoadLog is closed
350272	Provide a warning when infeasible solution penalty on sales or purchases is not strictly required
350561	PIMS case comparison reporting issue when using REPLACE keyword that changes table row order
352310	Do not stop PIMS AO execution if any of the cases were generated successfully
352361	Error in case comparison report caused by Fixed Costs in the economic summary section
354329	PIMS should support the enhanced security for SQL Server associated with TLS 1.2
355060	PIMS automation call savemodel does not work
358208	PIMS AO table loading takes a long time with large third normal CASE table
358662	PIMS AO error reading invalid entries in table ABMLOPT
358814	Issues for global model overrides for BLNSPEC, CAPS, PROCLIM for PIMS AO
359352	'Select Sections' box at the bottom of case comparison dialog box gets unchecked when no cases are selected
363194	Crash during database writing with recursed transfers referenced in submodel P-rows
383095	Quality for pool not being converged properly when pool component transferred from another model with max transfer equal to zero
383725	PIMS AO MODIFIES does not work for global table overrides in table CASE
385761	Case comparison not handling 6-digit case numbers created from results of parametric analysis
387849	Issues with Temperature Control Reporting Rows for Shortcut Distillation in PIMS AO
390914	Arrow keys stop working after selecting some of the buttons on the submodel calculator screen
396311	On page 1 of the Down report a "|" is out of line
399551	Empty row in submodel table selected for submodel calculator causes non-square system and PIMS will crash

Aspen Petroleum Supply Chain Planner

ID	Title
21568	Increase max digits in COMMENT column in SUPPLY, TRANSPORT, and DEMAND input tables
67821	PSCP will crash if the optimization log was read-only
103227	Always switch to primal LP algorithm to get diagnostics for infeasible problems

ID	Title
224494	PSCP missed column STATUS in SQL server database table DPO_CUSTOM_ROWS_BREAKOUT
227115	Missing Journey MIP control rows in matrix
228883	Case Deactivation doesn't work for LibraryUsage table
249145	Exchange report is wrong, Min and Max should be displayed as ratable
251674	PSCP reports distressed sales of zero
252866	Collector cost is reported wrong and built wrong in matrix
282090	Output SQL Schemas' missing five breakout tables
287842	The breakout tables for a large model are taking a long time to write
288078	Timing messages miss a message for Breakout table
291461	The program setting of zero tolerance for active constraint is not persisted
297919	The operation view is not updated correctly by the active constraints filter
305660	Active constraint zero tolerance does not work correctly for ratable model data
375658	PSCP should support the enhanced security for SQL Server associated with TLS 1.2

Aspen Assay Manager

ID	Title
21136	Duplicate sets of cuts in the characterization results
21298	RVP of I51 cut is blank for Saxi-Batuque 2014 (SAX) crude in V8.8 CP4
21389	Viscosity values very high for VR1 of some crudes from library
23928	Qualities of cuts when using SI are not correct for V9
24153	AAM does not accept zero for temperature of a cut when using the distillation based scheme
24187	Whole crude properties *xxxCRD are not populated in updated ASSAY table for new crudes
45377	Distillation-based calculations have serious errors in multi-tower configurations
49671	The results for spot crude evaluation aren't correct after run with distillation-based type
49681	The Plot gallery is lost when going back to PIMS tables environment from Library environment
67414	Inconsistency between cut values for Basic Nitrogen and Total Nitrogen
68054	Poor light end distillation curve for US DOE West Hackberry Sour with conventional characterization
69517	The cutting results cannot be generated correctly for newly mapped property and crude
162733	SCD-The error message "The Input value can't be null" pops up repeatedly when changing the cut category in a tower
164523	Unexpected error occurred when adding an assay without PIMS tag to Cut

ID	Title
	Crude Form
165279	The LOS value is incorrect when the unit for cut yields is not fraction
171898	Input/characterization results deviation view
230060	V10 AAM SCD calculation give different results between English setting and Italian setting
232368	CRD properties not populated depending on order of rows
241607	RVP value for crude is equal to zero for all the cuts except cut1
245374	Crude characterization is not consistent
247790	AAM fails to complete the recutting of crudes
274531	V10 Pour point matching is worse compared to V8.8
274533	Incorrect default assay options
283214	When save assay file and reopen, the characterization option is changed
347037	PIMS crashes on opening Assay Manager
349047	No cut information is available after importing Assay Template
349946	Model assay crude filter not working
350366	Cannot download assays from US DOE

Aspen Petroleum Scheduler

ID	Title
21163	Two EIU issues - crude inventory and crude event loading. **Old behavior**: If API is not defined in CRDPROPS table, then APS cannot convert WGT to VOL and it will use WGT directly as VOL. This had been implemented in CQ00562523. **New behavior**: When SPG exists in CRDPROPS table, we use that directly; When SPG does not exist in CRDPROPS table but API exists, we convert API to SPG; When none of them exist, we prompt warning message and set VOL the same as WGT.
21172	DSN file read only
21174	Duplicate entries when "clear results with publishing" OFF
21182	DBUpdate tool does not check for correct format
21187	Automation functions FindMatchedEvents and FindNGetMatchedEvents support using RouteId property as filter
21221	Comments of unit operation events, blend events are not visible in xml file **Comment**: Exported comment field "Cmnt" for Unit Operation events and Blend events from Adapter.

ID	Title
21245	Pipeline Crude shipment event giving different tank trends for simulate and publish **Comment**: Issue fixed when we have both weight based and volume based Pipeline Crude Shipment Events tank trends values
21269	Crude run events missing X_SEQ number from process units activities in the xml file **Comment**: Set EXPORT_EVENT_DATA=Y in CONFIG table, and then publish schedule new. For crude run event, when the movement ID is not specified, it will append the APS X_SEQ in the desc field
21314	Question on Audit Inventories and Qualities **Comment**: When "Select All Plant values" is clicked on in the Audit Inventories dialog, APS uses Plant values PLUS simulated values where the properties don't exist.
21403	Give error message like TNKINV and CRDINV for pipeline when no baseline
21528	Performance issue when zoom in/out **Comment**: The consumption of display resources (GDI objects) has been significantly reduced. The user can now open many event/flowsheet views with large number of trend thumbnails.
21576	Unit of measurement changes when copying events from one case to another using Edit in Excel
21620	Cannot trend quality of a CRUDE_UNIT type material pool **Comment**: Sulfur (SUL) is now supported for FEED_TANK and CRUDE_UNIT types of material pool.
21816	Customer would like to have warning messages if required fields have not been populated for Pipeline Out Of Service Event
21877	GetCrdTankComposition Automation call in 8.7 is not working properly
21917	17110F: Tank filer for product shipment events in Dock model
21931	Cannot see Event Type 30 but can see Event Type 41 in V8.7 **Old behavior**: Oracle Publishing to _EVENTS table has event type 40. **New behavior**: Oracle publishing to _EVENTS table has event type 30 instead

ID	Title
23795	ATRenameTags failing to rename stream tags when above 24 Characters **Old behavior**: Misleading error message that database connection is lost is shown when the new tag exceeds DB length limit. **New behavior:** Meaningful message with the real exception message as well as the sql script will be displayed when the error happens.
23796	APS Dock Scheduling - Events not generated for Cargo
24026	EIU require TRAN_MODES entries be UPPERCASE to find a match for the receive via column
92224	Crude unit feed compositions are wrong if crude tank goes negative **Comment**: This fix affects crude transfer events where multiple crudes go into a tank with negative volume. In previous versions each crude was mixed one at a time into the negative tank. The new behavior is that all crudes are premixed and then mixed with the tank heel.
107033	Audit Inventories and Qualities (Tank Services) **Comment**: When "Populate Sim Values" is clicked on in the Audit Inventories dialog for Services, APS now retrieves tank data from the current case, instead of the first case, in the _SERVICE table.
153607	Regular Crude Receipt (non pipeline) does not fill destination tanks as expected when limiting receipts on some -but not all- destination tanks to below maximum volume
162726	SuperTankPooling Tool not working in V9.2 **Comment**: Automation function GetConfigValue will return the absolute path for SMC folder (see 263131 above)
163537	Event Imports -> Audit Event Dialog showing only finished products in the "product field" **Comment**: Renamed "Product" to "Prod Code" in Events Import dialog.
219964	When splitting a PL event with multiple destination tanks, APS does not remove the tanks that are already filled from the "new" split event (unlike the regular non PL crude receipt) **Comment**: When splitting pipeline events, the list of destination tanks after the split excludes those tanks whose deliveries were complete before the time of the split. These behavior is now consistent with non-pipeline events.

ID	Title
239521	Get error message when reload simulator **Comment**: If APS Units file contains more than 256 columns, then users should save the file as .xlsm for APS to be able to read it successfully.
255185	CMPMIPGRPDEF and CMPMIPCNSTRNT no longer user-editable in APS/MBO v9 and v10. **Old behavior:** CMPMIPGRPDEF and CMPMIPCNSTRNT was not editable. **New behavior:** CMPMIPGRPDEF and CMPMIPCNSTRNT will be editable in MBO.
263131	The GetConfigValue("XLS") automation function behaves differently in V10.1 compared to the earlier versions of APS. **Comment**: Function GetConfigValue will return the absolute path of Excel unit file or UBML file.
263183	APS fails to publish crude tank weight for the first day of publishing
264378	APS Publishing fails to write records to _PL_PIPELINE and its child tables
283722	Incorrect volume to weight conversion for product pipeline receipt **Comment**: The original design was to use the destination tank's spg in the calculation of the weight for product shipment events and beginning line fill events. For beginning line fill events the batch spg is used in the calculation of the weight, and for product shipment events weight is calculated using the average (across two periods) of the SPG.
289157	Wrong baseline pipeline fill set when pipeline is rolled forward **Comment**: This fix improves the behavior of roll forward when batches in the pipeline inventory had multiple destination tanks. In previous versions, the list of tanks and/or volumes to be delivered to each tank would change unexpectedly after rollforward. After the fix the list of tanks and volumes to be delivered is conserved during the roll forward process.
297594	Previously imported events from other applications are deleted in the staging table **Comment**: Now only events related to the applicationID of the current import are first deleted and then imported from the other application.

ID	Title
297596	MovementID is missing in the staging table when imported via adapters, MovementID is missing in the staging table when imported via adapters. **Comment**: MovementId is filtered correctly from the xml file and imported into the staging table
298043	Publish Schedule Item ID
350122	Autolink not working properly if there is a prep or post time on an event (all event types)
355973	APS v8.8 ATRenameTag.exe will not update stream tags in model DB table BLEND_SPLITTER
355974	APS and MBO will not update rundown splitter trends **Comment**: Whenever a unit (mixer) is defined as a splitter with MBO, it will be a continuous mixer in APS.
360351	APS does not display green dots to indicate value is below min if the value is exactly 0.0 **Comment**: The definition of Trend Tolerance % has been changed. Its value is applied to the range between the MIN and MAX values. For example, given that a MIN is 4000 and the MAX is 5000, a 1% Trend Tolerance will cause violations to appear if values are below 3990 or above 5010, since 1% of the difference between the MIN and the MAX is 10.

Aspen Refinery Multi-blend Optimizer

ID	Title
352499	Improved version of the demo Visual Studio UBML C++ project / UBML C++ source code, standard-installed with MBO **Comment**: The demo UBML project has been updated to latest visual studio and better starting point for customization

Known Issues

This section covers known issues associated with the Petroleum Supply Chain V11 release. Please contact AspenTech Support if you have any questions or need assistance.

Aspen Petroleum Supply Chain Planner (PSCP)

Error when writing to results databases

Writing to a results database created prior to V11 will cause errors when writing to data tables if any of the description or comment fields are longer than 50 characters. In V11, **Description** and **Commentary** fields' text length increased from 50 to 120. Existing database definitions in older databases are therefore incorrect. To avoid errors when writing results, all existing Access and SQL results databases prior to V11 must be deleted. PSCP will automatically create a new Access results database with the proper field sizes. For SQL databases, please run the SQL server scripts generated by PSCP, using the **Tools | Output SQL schemata** option, to create a new results output database.

Aspen Unified

Installation on a Non-Domain Environment

If the system on which Aspen Unified is installed is a workgroup environment (non-domain), you will not be able to browse for domain users to assign roles associated with the site, models and assay libraries to others.

Submodel Unit Simulations

Issue: When a submodel starts with a large number of degrees of freedom (the difference between number of variables and number of equations) the algorithm used to square the submodel may fail to complete before the system times out. As a result, the simulation may fail to open.

Resolution: Reduce the number of degrees of freedom by decreasing the number of variables.

Running Large Number of Cases (>1000) Fails

Issue: Running a large number of cases may fail to execute properly.

Resolution: The ability to run a large number of cases is highly dependent on hardware limitations as well as customizing AUP software settings. Please contact **AspenTech Support** and reference Knowledge Base Article Number 44619 "*How to Resolve Case Execution Issues at Various Concurrency Settings*" for best practices when running a large number of cases.

AUP Assay Management – Use of Custom Tags for Pure Components

Issue: If you create pure components with custom tags, the system may not be able to associate those tags with known pure components. In this case, the system will assign default IBP to FBP values. Erroneous or unanticipated results may consequently appear due to invalid calculations.

Resolution: AUP assay management can distinguish several pure components tags such as NC1, NC3, NC4 and IC4 and assign appropriate IBP to FBP values. Use these known tags to ensure IBP and FBP values are correctly used.

Custom Splitter Towers Display Incorrectly

Issue: Custom splitter towers with multiple feeds do not display correctly in a distillation mode.

Resolution: Custom Splitter towers can only have a single feed per mode. If multiple feeds are present, they will not be displayed correctly. Redefine the splitter tower so there is only a single feed.