Da Vinci Smart Manufacturing

BRD S06.04_Reports_Spout Analysis

Version	Created/Modified by	Description	Date
1.0	Leopoldo Rivera Sahana Badal	S06.04 First draft	6/06/2025

1. Overview 3

2. Report Configuration Interface (Setup View) 3

2.1 Variant Name Selection 3

2.2 Report Filters (Mandatory fields marked with *) 4

2.3 KPI Selection 4

2.4 Action Buttons 5

3. Report Output View 5

3.1 Filters Summary Section 5

3.2 KPI Visualization Section 6

3.3 Report Data (Tabular Format) 6

3.4 Notes Section 7

3.5 Navigation – Back to Configuration 7

4. Report Actions 8

4.1 Print 8

4.2 Save Variant 8

4.3 Clone Variant 8

4.4 Delete Variant 9

5. Edge Cases & Validations 10

This document outlines the detailed specifications for the Spout Analysis Report module. The module enables users to configure, generate, manage, and share reports that analyze spout analysis records across furnaces. This supports decision-making, efficiency tracking, and auditing through dynamic filters, KPI selection, and export capabilities.

1. Overview

The module consists of:

- Report Configuration Interface (Setup View)
- Report Output View (Generated Report)
- Variant Management System (for saved configurations)
- Export and Print functionalities

2. Report Configuration Interface (Setup View)

2.1 Variant Name Selection

- A dropdown labeled **“Variant Name”** is provided at the top.
    - User selects the Variant ID from a single select dropdown
    - Mandatory - No
    - Default value - No
    - Field Type - Single Select Dropdown Values: All Variants saved (Public and Private). **Dropdown Structure:**
        - **My Variants**

        - Private
        - Public (shared icon)
    - **Public Variants** (created by others)
  - Validation - No
  - **Permissions:**
    - Only the creator can edit, delete, or update their variant.
    - Other users can view or clone public variants.
- Upon selecting a variant, previously saved filters and KPI selections are auto-populated.

*2.2 Report Filters (Mandatory fields marked with *)*

Filter	Type	Description
Furnace ID*	Multi-select dropdown	Lists all active furnaces assigned to user or organization.
Date Range*	Calendar picker	From and To date selectors.
Element ID*	Multi-select dropdown	Lists the materials for which Analysis records are present

Filter Behavior:

- Default values are empty; required fields must be selected to proceed.
- All Filter drop downs should be sorted alphabetically / numerically

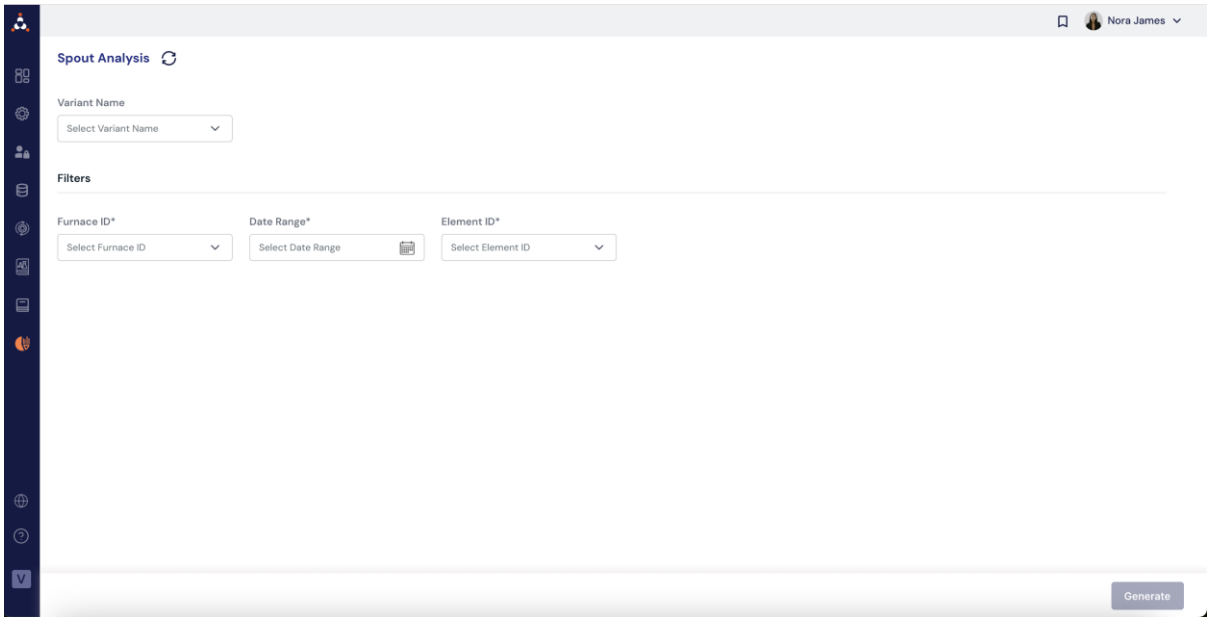
2.3 KPI Selection

- KPI checkboxes/toggles are listed for selection.
- Backend provides the available KPIs per report.
- KPIs are not mandatory and report can be generated without selecting any.
- KPI Permissions Logic
  - **Selectable KPIs**: A user can only **select** KPIs for which their role has explicit **permission**.
  - **Visible but Disabled**: KPIs outside the user's permission scope will still be **visible** in the interface but will appear **disabled** (e.g., grayed out) and **cannot be selected**.

- **Max 3 KPIs can be selected.**
    - If a user selects more than 3, an inline validation appears: *"You can select up to 3 KPIs only."*
- Each KPI has a **default chart type** (bar, line, pie, etc.) configured by backend.
- In the **generated report screen**, users can change the chart type per KPI using a dropdown.

2.4 Action Buttons

Button	Function
Generate Report	Validates inputs and transitions to Report Output View.
Reset	Clears all filters and KPI selections to default state.



3. Report Output View

Upon clicking **Generate Report**, the system transitions to a new screen with the following sections:

3.1 Filters Summary Section

- Displays all selected filters and metadata

Fields include:

1. Variant Name (default: *Untitled* until saved)
    a. Min - 1 and Max - 30 characters, alphanumeric, Only '-' and '_' is allowed, Single space is allowed in between the words, No leading spaces allowed
    b. **Edit Icon (✎):** Appears for saved variants created by the user.
    c. Enables inline editing of Variant Name and Access Modifier (Private/Public).
    d. A **Save** button confirms updates.
2. Furnace ID - view only
3. Date Range (From - To) - view only
4. Element ID - view only
5. **Executed On** – *Displayed only in print view; not saved in variant.* view only
6. **Executed By** – *Displayed only in print view; not saved in variant.* view only

3.2 KPI Visualization Section

- KPIs selected are shown in graphical format.

Features:

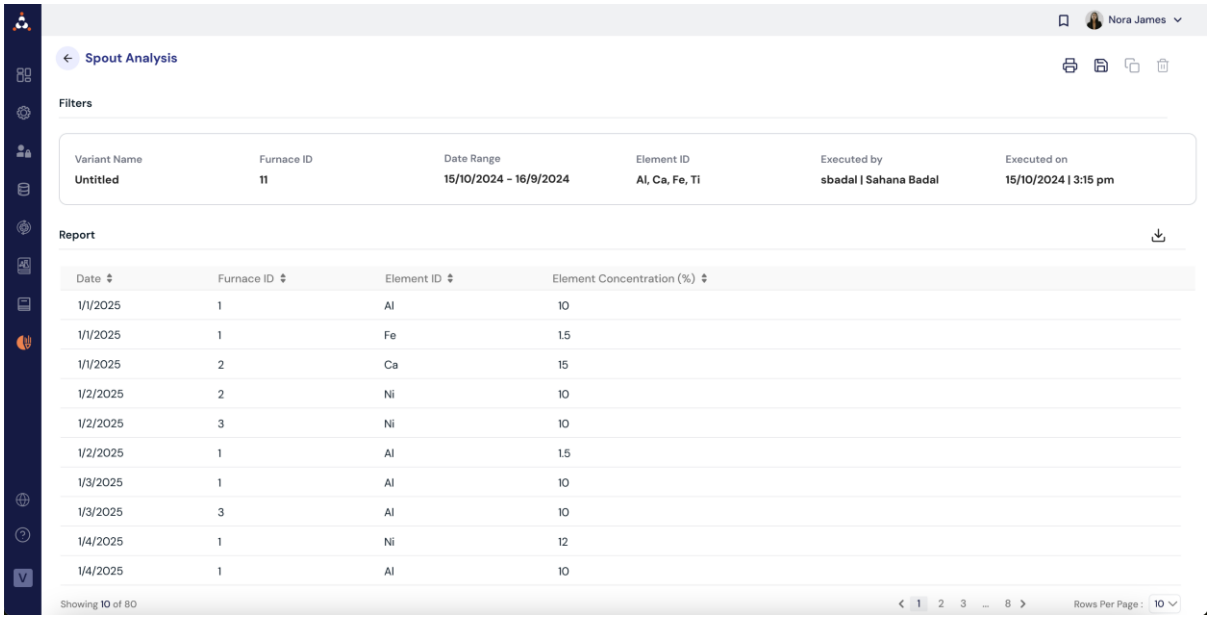
- KPIs can be **removed** via a close (×) button on hover.
- KPIs can be **reordered** via drag-and-drop.
- KPI metadata and units are displayed.
- Users can **change the chart type per KPI** via dropdown (Gauge, Bar Chart, Line Chart and Pie Chart).

3.3 Report Data (Tabular Format)

- Data displayed based on filters and granularity.
- It will have the following columns
    - Date
    - Furnace ID
    - Element ID
    - Element Concentration (%)

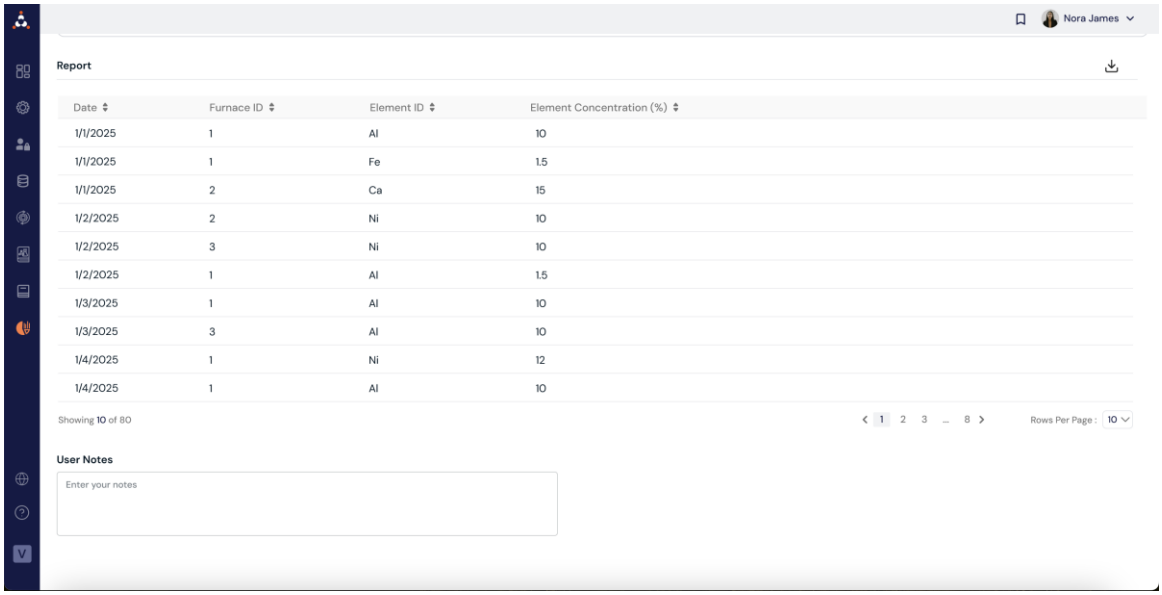
Table Features:

- Configurable columns via “Add Columns” menu
- Sorting and rearranging columns via drag-and-drop
- Pagination for large datasets
- Export to Excel (XLSX). File Name “MMDDYY_SpoutAnalysisReport”



3.4 Notes Section

- Free-text input area for user insights. All (Including special characters), 100 characters
- Not saved with variant — intended for print inclusion only.



3.5 Navigation – Back to Configuration

- A **Back** button appears in the report view.

- Clicking it returns the user to the **Setup View**, retaining all previous filter and KPI selections.
- Ensures seamless editing without re-entering data.

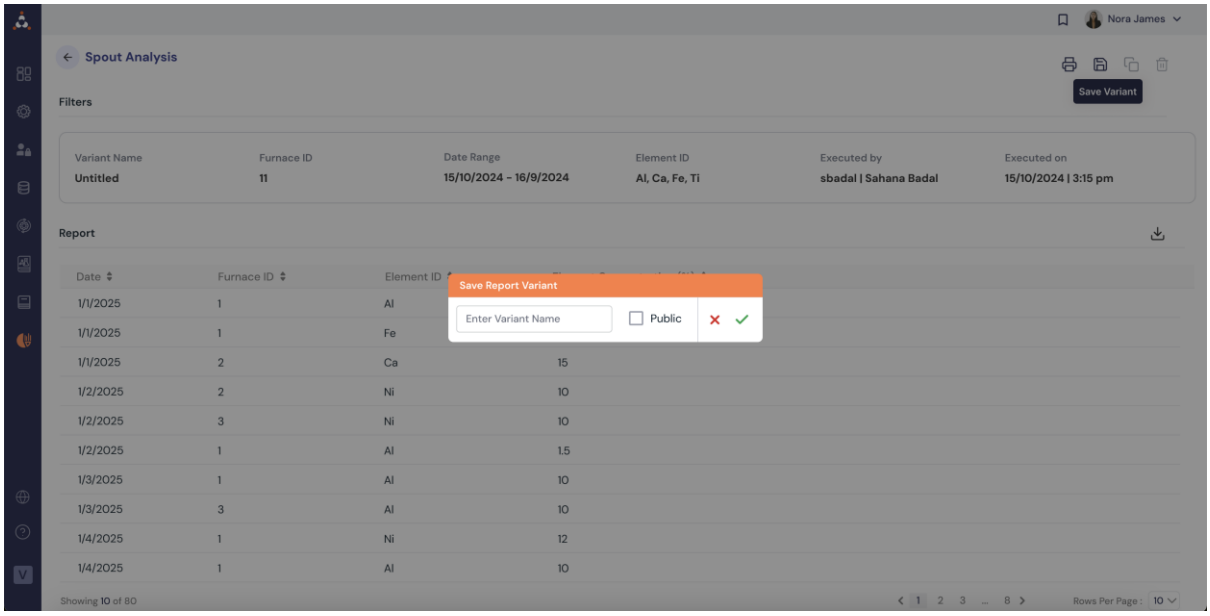
4. Report Actions

4.1 Print

- Exports the entire report as PDF.
- User selects sections to include:
    - Filter section
    - Notes section
    - Specific pages of data

4.2 Save Variant

- Saves current report configuration.
- Required fields:
    - Report Name
    - Access Modifier (Private/Public)
- Only the creator can edit or delete saved variants.

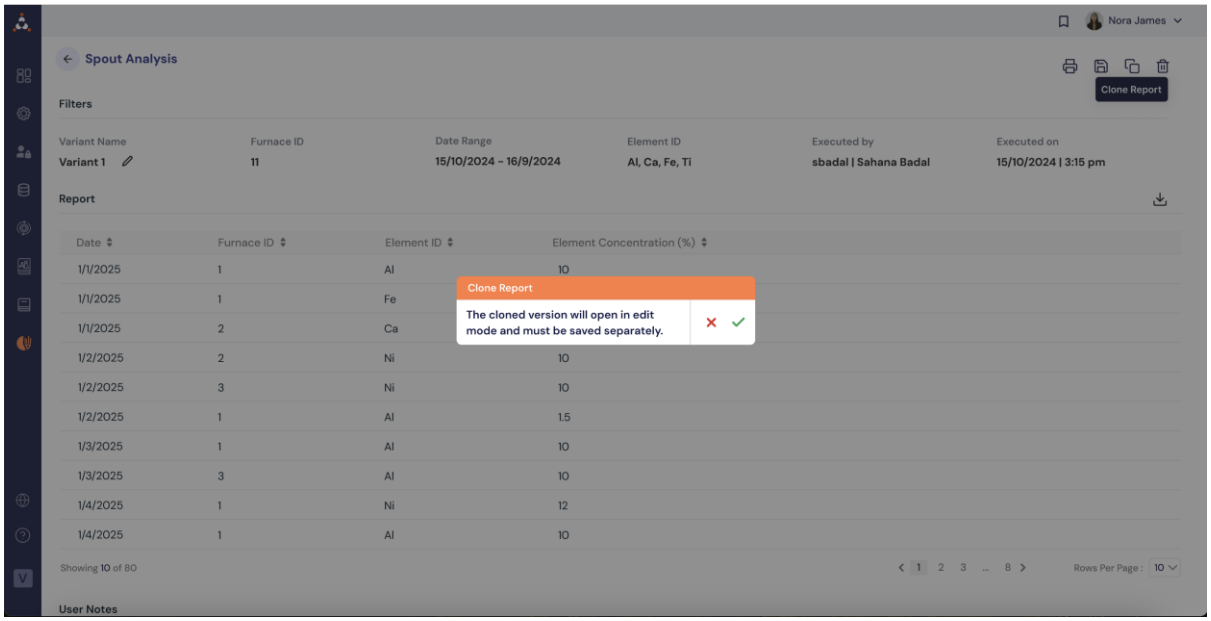


4.3 Clone Variant

- Clones any saved variant (private or public).
- **Confirmation message appears:**

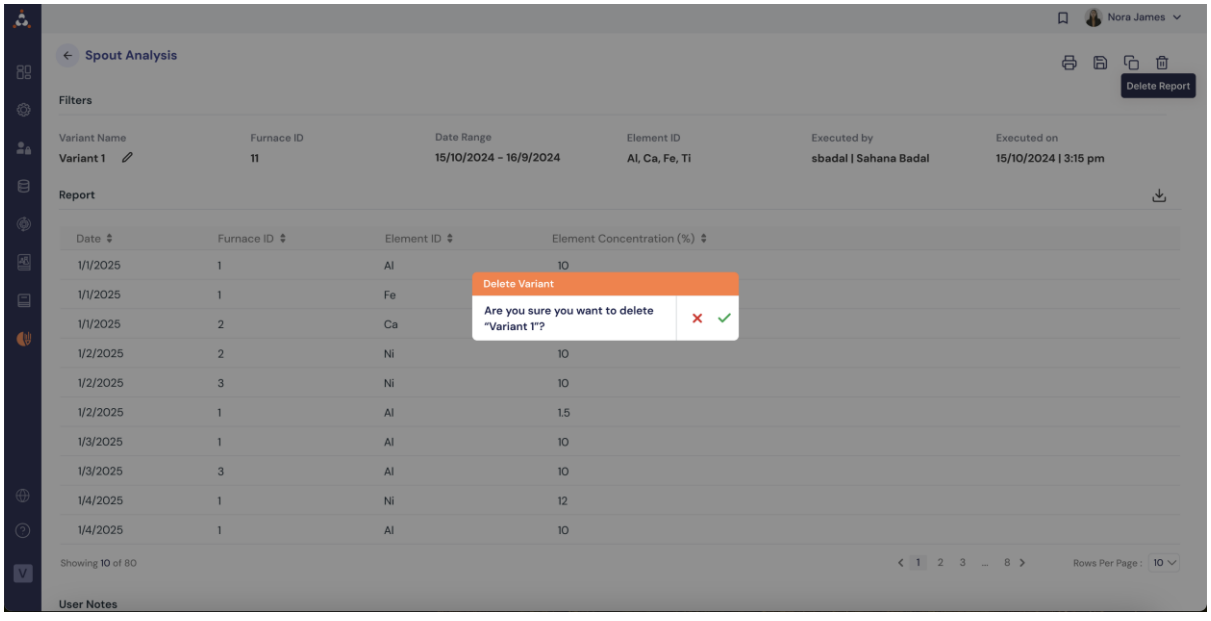
“Are you sure you want to clone this variant? The cloned version will open in edit mode and must be saved separately.”

- Opens the cloned configuration in edit mode with name defaulted to *Untitled*.



4.4 Delete Variant

- Available for user-created variants.
- Delete via dropdown or trash icon with confirmation prompt.
    - “Are you sure you want to delete this variant “Variant Name”?



5. Edge Cases & Validations

Scenario	Expected Behaviour
Required filter missing	Prompt user to complete all mandatory fields
Deleting a variant in use	Show confirmation and warn about unsaved changes when traversing to another module
Selecting public variant	Load values in read-only mode unless cloned
No KPIs selected	Section remains empty; no validation error
Selecting > 3 KPIs	Show inline warning and prevent further selections