

COMPREHENSIVE INVOICE ANALYSIS REPORT

Invoice Number:	IMR/25/AEL/003
Supplier:	INPRAVIA MINING RESOURCES PRIVATE LIMITED
Total Amount:	■154,614.00
Processing Date:	2025-11-08 03:30:21
Document Type:	B2B_INVOICE
AI Confidence:	49.7%

Validation Status:	■ INVALID
Duplication Status:	■ DUPLICATE
Tests Performed:	17 validation tests
Processing Status:	■ COMPLETED

EXECUTIVE SUMMARY

Invoice Assessment: REQUIRES REVIEW
Processing Confidence: 49.7%
Recommendation: MARK_AS_DUPLICATE

Key Findings:

- ■ 3 validation test(s) failed
- ■ Potential duplicate detected (95.0% confidence)
- ■ 5 AI recommendations provided

Business Impact:

The validation and duplication analysis has successfully identified a critical issue: Invoice ID 12 ("IMR/25/AEL/003") is a highly confident duplicate, with an overall confidence score of 95%. This finding has significant implications across financial, operational, and compliance domains.

Business Impact Assessment

1.

Financial Risk Level

The financial risk associated with this duplicate invoice is high, primarily due to the potential for overpayment and the cumulative impac... [See AI Reasoning section for full analysis]

INVOICE DETAILS

Field	Value
Invoice Number	IMR/25/AEL/003
Invoice Date	2025-08-31
Supplier Name	INPRAVIA MINING RESOURCES PRIVATE LIMITED
Supplier GSTIN	20AAHCI0488C121
Buyer Name	CONFIDENTIAL
Taxable Value	■131,029.00
Total Tax	■23,585.24
Total Amount	■154,614.00
Payment Terms	

Line Items Details:

Item	HSN Code	Qty	Unit Price	Taxable Value	GST Rate	GST Amount
Item 1: Ambulance (24/7)...	999315	26.00	■1,493.35	■38,827.00	18.0%	■6,988.86
Item 2: Operator 1...	998519	26.00	■877.96	■22,827.00	18.0%	■4,108.86
Item 3: Operator 2...	998519	26.00	■877.96	■22,827.00	18.0%	■4,108.86
Item 4: Technician 1...	998519	15.00	■958.73	■14,381.00	18.0%	■2,588.58
Item 5: Technician 2...	998519	19.00	■958.74	■18,216.00	18.0%	■3,278.88
Item 6: Technician 3...	998519	10.00	■958.70	■9,587.00	18.0%	■1,725.66
Item 7: Fuel @8KM Per Litre...	998519	1.00	■4,364.00	■4,364.00	18.0%	■785.52

ARITHMETIC VALIDATION ANALYSIS

Validation Metric	Result
Total Tests Performed	17
Tests Passed	14
Tests Failed	3
Tax-related Failures (Ignored)	1
Critical Non-tax Failures	2
Suggestions Provided	5
Overall Status	■ INVALID
Note	Tax-related validation failures are ignored

■ Valid Checks Log:

Test Name	Expected	Actual	Tolerance	Description
Line Item 2 Total	22826.96	22827.00	±0.05	quantity × unit_price should equal taxab...
Line Item 3 Total	22826.96	22827.00	±0.05	quantity × unit_price should equal taxab...
Line Item 4 Total	14380.95	14381.00	±0.05	quantity × unit_price should equal taxab...
Line Item 6 Total	9587.00	9587.00	±0.05	quantity × unit_price should equal taxab...
Line Item 7 Total	4364.00	4364.00	±0.05	quantity × unit_price should equal taxab...
Line Item 1 GST Calculation	6988.86	6988.86	±0.05	taxable_value × gst_rate/100 should equa...
Line Item 2 GST Calculation	4108.86	4108.86	±0.05	taxable_value × gst_rate/100 should equa...
Line Item 3 GST Calculation	4108.86	4108.86	±0.05	taxable_value × gst_rate/100 should equa...
... and 6 more valid checks				

Detailed Validation Results:

Test Name	Status	Expected	Actual	Error Message
Line Item 1 Total	■ FAIL	38827.10	38827.00	Quantity(26) × Unit Price(1493.35) ≠ Taxable Valu
Line Item 2 Total	■ PASS	22826.96	22827.00	
Line Item 3 Total	■ PASS	22826.96	22827.00	
Line Item 4 Total	■ PASS	14380.95	14381.00	
Line Item 5 Total	■ FAIL	18216.06	18216.00	Quantity(19) × Unit Price(958.74) ≠ Taxable Value
Line Item 6 Total	■ PASS	9587.00	9587.00	
Line Item 7 Total	■ PASS	4364.00	4364.00	
Line Item 1 GST Calculation	■ PASS	6988.86	6988.86	
Line Item 2 GST Calculation	■ PASS	4108.86	4108.86	
Line Item 3 GST Calculation	■ PASS	4108.86	4108.86	

... and 12 more test results

AI Validation Analysis:

DUPLICATION DETECTION ANALYSIS

Analysis Metric	Result
Duplication Status	■ DUPLICATE DETECTED
Confidence Score	95.0%
Recommended Action	MARK_AS_DUPLICATE
Potential Matches Found	6
Analysis Method	Enhanced AI-Powered Detection

Potential Duplicate Matches:

Original Invoice	Match Type	Confidence	Matching Fields	Recommendation
IMR/25/AEL/003	EXACT_INVOICE_NUMBER_SAME_COMPANY	95.0%	Invoice Number: IMR/25/AEL/003, Company: INPRAVIA MINING RESOURCES PRIVATE LIMITED	DUPLICATE
IMR/25/AEL/003	EXACT_INVOICE_NUMBER_SAME_COMPANY	95.0%	Invoice Number: IMR/25/AEL/003, Company: INPRAVIA MINING RESOURCES PRIVATE LIMITED	DUPLICATE
IMR/25/AEL/003	EXACT_INVOICE_NUMBER_SAME_COMPANY	95.0%	Invoice Number: IMR/25/AEL/003, Company: INPRAVIA MINING RESOURCES PRIVATE LIMITED	DUPLICATE
IMR/25/AEL/003	EXACT_INVOICE_NUMBER_SAME_COMPANY	95.0%	Invoice Number: IMR/25/AEL/003, Company: INPRAVIA MINING RESOURCES PRIVATE LIMITED	DUPLICATE
IMR/25/AEL/003	PRODUCT_LINE_DUPLICATION	84.3%	line_item_similarity: 0.8571428571, Matching Product: 123456789	REVIEW REQUIRED

Analysis Summary:

Invoice Analysis: IMR/25/AEL/003 Supplier: INPRAVIA MINING RESOURCES PRIVATE LIMITED
Amount: ■154,614.00 Found 6 potential duplicate(s): 1. IMR/25/AEL/003 (Confidence: 95.0%, Type: EXACT_INVOICE_NUMBER_SAME_COMPANY) 2. IMR/25/AEL/003 (Confidence: 95.0%, Type: EXACT_INVOICE_NUMBER_SAME_COMPANY) 3. IMR/25/AEL/003 (Confidence: 95.0%, Type: EXACT_INVOICE_NUMBER_SAME_COMPANY) 4. IMR/25/AEL/003 (Confidence: 95.0%, Type: EXACT_INVOICE_NUMBER_SAME_COMPANY) 5. IMR/25/AEL/003 (Confidence: 84.3%, Type: PRODUCT_LINE_DUPLICATION) 6. IMR/25/AEL/003 (Confidence: 75.0%, Type: HSN_PATTERN_MATCH) ■ CONCLUSION: This invoice appears to be a DUPLICATE.

AI Duplication Analysis:

This invoice duplication analysis provides compelling evidence that Invoice ID 12 ("IMR/25/AEL/003") is a duplicate.
The system has identified multiple strong matching patterns, leading to a high confidence score and a clear recommendation.

1. Patterns Indicating Potential Duplicates and Logic Behind Detection
The duplication detection logic employed here is robust, utilizing a multi-faceted approach to identify potential duplicates.
The system has found six potential matches for Invoice ID 12, each based on different criteria:

- EXACTINVOICENUMBERSAMECOMPANY (4 instances):
* Logic: This is the strongest and most direct indicator of a duplicate.
An invoice number is designed to be unique for a given supplier.
If the same invoice number ("IMR/25/AEL/003") is found multiple times originating from the exact same supplier ("INPRAVIA MINING RESOURCES PRIVATE LIMITED"), it is highly indicative that the same invoice has been submitted or processed multiple times.

Th... [Analysis truncated for space]

AI REASONING & RECOMMENDATIONS

AI Analysis Metric	Result
Overall Confidence	49.7%
Analysis Type	Comprehensive Validation & Duplication
Processing Status	Completed Successfully
Recommendations Generated	5

AI-Generated Recommendations:

1. Review invoice calculations for mathematical accuracy
2. Verify data extraction quality from source documents
3. Check for manual entry errors in invoice processing
4. Investigate potential duplicate submission
5. Cross-reference with payment records

Business Impact Assessment:

The validation and duplication analysis has successfully identified a critical issue: Invoice ID 12 ("IMR/25/AEL/003") is a highly confident duplicate, with an overall confidence score of 95%. This finding has significant implications across financial, operational, and compliance domains.

Business Impact Assessment

1.

Financial Risk Level

The financial risk associated with this duplicate invoice is high, primarily due to the potential for overpayment and the cumulative impact of such errors.

- **Direct Overpayment Risk:** The most immediate risk is paying the invoice amount of 154,614.0 multiple times.

The analysis explicitly states four instances of an exact invoice number match from the same supplier already exist (Invoice IDs 11, 10, 9, 8).

If these previous instances were also processed and paid, the company faces a potential overpayment of at least $154,614.0 \times 4 = 618,456.0$ (assuming the current Invoice ID 12 is the fifth instance of the same invoice).

- **Cost of Recovery:** If an overpayment occurs, the process of recovering funds from the supplier is resource-intensive, involving AP staff time, communication, reconciliation, and potential legal costs. There's also a risk that funds may not be fully recoverable, especially if the supplier's financial health is precarious.

- **Opportunity Cost:** Funds tied up in erroneous payments are unavailable for productive use, impacting working capital and liquidity.

- **Fraud Risk:** While it could be an innocent error by the supplier, repeated submission of the same invoice number from the same supplier raises a red flag for potential vendor fraud, which carries severe financial and reputational consequences.

- **Distorted Financials:** Duplicate payments lead to inflated expenses and inaccurate financial statements, impacting budgeting, forecasting, and investor confidence.

2.

Process Efficiency Impact

The detection of this duplicate highlights both the value of the current system and potential areas for process improvement.

- **Positive Impact of Detection System:** The system's robust multi-faceted detection logic (exact invoice number, product line, HSN pattern) has successfully identified a high-risk duplicate, preventing a significant financial loss.

This demonstrates the system's effectiveness and value.

- **Manual Rework and Investigation:** If the system hadn't caught this, significant manual effort would be required for reconciliation, investigation, and correction.

Even with detection, AP staff will need to investigate the root cause, communicate with the supplier, and ensure no previous payments were duplicated.

- **Resource Drain:** AP staff time will be diverted from processing legitimate invoices and other value-added tasks to address this duplicate, potentially leading to delays in other payment cycles.

- **Supplier Relationship Strain:** Repeated issues with duplicate invoices can strain supplier relationships, leading to disputes, payment delays, and increased administrative overhead for both parties.

- **Inefficiency in Upstream Processes:** The existence of multiple duplicate submissions suggests potential inefficiencies or lack of clarity in the supplier's invoicing process or the company's invoice submission intake

AI Final Analysis:

Analysis confirms with 95% confidence that Invoice ID 12 ("IMR/25/AEL/003") is a duplicate, primarily due to multiple exact invoice number matches from the same supplier.

This presents a high financial risk of overpayment, potentially exceeding 600,000.0, and highlights process inefficiencies.

Action is required to immediately investigate the duplicate submissions and cross-reference with payment records to prevent financial loss and address the root cause.

TECHNICAL DETAILS & DATABASE INFORMATION

Document Classification:

Classification Attribute	Value
Document Type	B2B_INVOICE
Classification Confidence	81.6%
Keywords Detected	invoice, bill, gstin, gst, invoice no, igst, private limited, total, amount
Processing Method	AI-Powered Classification

Database Records Created:

Record Type	Database ID
Document Record	12
Invoice Record	12
Supplier Company	12
Buyer Company	16

Processing Metadata:

- Processing Timestamp: 2025-11-08 03:30:21
- Source Filename: 17.pdf
- Processing Time: Not recorded
- Errors Encountered: 0

This report was generated by the Intelligent Invoice Processing System. All analysis results are based on AI-powered validation and duplication detection algorithms.