



A Rockwell Automation Company

IMC Kalium Esterhazy Miner Production and Reporting

The Client:

International Minerals and Chemical Corp. (Canada) Ltd. is a wholly owned subsidiary of IMC Fertilizers Group Inc. IMC operates two potash mines (K1 & K2) in southern Saskatchewan, Canada. IMC K2 was the

second of the two mines built in the mid 1960's. The combined output of K1 and K2 is 4.2 million tons per year. The mineable ore body has a remaining life of over 50 years.

The Requirement:

There was a desire by IMC to have a software program developed that would replace an existing application which was developed a number of years ago using FoxBASE.

This software program would be required to monitor equipment downtime and issue reports for these events.

The Design Solution:

Hinz developed a software application to address the miner production and reporting requirements.

The Mine Production and Reporting Application software package was written by Hinz to run on Windows NT 4®.

The application was developed with Microsoft Visual Basic® and data is stored in Microsoft Access® database files.

RSLinx communicates with several PLCs using software drivers, retrieves the miner production data, and then uses DDE to communicate with and send the data to the Miner Production and Reporting software program.

The equipment running status is supplied to the application. Information is logged to database files every time the equipment shuts down or restarts.

Whenever a piece of equipment such as a miner or conveyor belt stops, a popup is displayed to the operator. The operator is required to fill in appropriate information such as number of miners affected, reason for down time, and comments.

This information is then logged to a database file.

The logged information is archived for a period of one

year. The reporting functions include the configuration and printing of shift reports. These reports can be printed for any period of time from the last shift to any shift within the last year. The reports consist of textual and graph reports.

Every morning reports are automatically printed to several printers. The auto print time and printer locations are configurable. The software automatically generates shift reports for the previous days events. If desired these reports can also be manually selected and printed.

- These reports consists of the following:
- 24-Hour Report
- Job Code Report
- Delay Problem Report
- Top 10 Breakdown Report
- Miner Shift/Start Stop Report
- Delay Summary Report
- Miner Tonnage Report



A Rockwell Automation Company

IMC Kalium Esterhazy Miner Production and Reporting

The screenshot displays the 'IMC Mine Production Management and Reporting Application V1.0.4' interface. On the left, there are buttons for 'Employee Database', 'Drew Configuration', 'Program Configuration', 'Report Data Entry', and 'Report Options'. The main area shows an 'Event Summary' table with columns for 'Event Date / Time', 'Equip. No.', 'Problem', and '# Min'. A 'Production Delay Event' dialog box is open, titled '1001 Miner Down', with a dropdown for 'Reason for Down Time' set to 'P - Production (default)', a 'Miners Affected' field set to '1', and a 'Comments' text area. Buttons for 'Snooze', 'OK', and 'Cancel' are visible in the dialog.

Event Date / Time	Equip. No.	Problem	# Min
03/31/1999 9:15:43	60030	MC - Shuttle Car	1
03/31/1999 9:15:43	60040		1
03/31/1999 9:15:44	1023		1
03/31/1999 9:15:44	1026		1
03/31/1999 9:15:44	60050		1
03/31/1999 9:15:44	60060		1
03/31/1999 9:15:44	60070		1
03/31/1999 9:15:44	60080		1
03/31/1999 9:15:44	60110	MH2 - Bridge Hydraul	1
03/31/1999 9:15:44	60120		1
03/31/1999 9:15:44	60130		1
03/31/1999 9:15:44	60140		1
03/31/1999 9:15:44	60150		1
03/31/1999 9:15:44	60160	MBS - Make Bell Solin	1
03/31/1999 9:15:44	60170		1
03/31/1999 9:15:44	60180		1

Sample Miner Production and Reporting Application Screens

System Specifications:

The software application requires the following minimum hardware configurations:

- A Pentium II 200 computer capable of running Windows NT4 with a minimum of 128 megabytes of RAM.
- Minimum of 100 megabytes of available hard drive space.

- A 3 1/2 inch 1.44 megabyte floppy drive.
- Mouse.

The following software is also required

- Rockwell RSLinx

For further information or to contact a Hinz office near you, please check our website at:

www.hinz.com