

GIS Application for Effective and Efficient Reporting and Information Media in Freeport Underground Mine

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Underground Survey - PT Freeport Indonesia

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PT FREEPORT INDONESIA

CURRENT & FUTURE OREBODIES

Developed & Undeveloped Reserves	
	Ore (M metric tons)
Final Pit	638
Grasberg Open Pit	1,63
Deep Ore Zone Mine	801
Subtotal	2,872
Undeveloped Underground	1,998
Dom Open Pit	22
Total Reserves	2,822

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Grasberg Aerial Photo
April 6, 2006

DOZ PRODUCTION PLAN

DOZ Production Plan

80,000 tpd 4Q 2009
Future Production Forecast

35,000 tpd Expansion
25,000 tpd Accelerated
Late Start For Undercutting
50,000 tpd 1Q 2007

Y-axis: Tonnes Per Day (0 to 90,000)
X-axis: Months (Jun 07 to Dec 11)

UNDERGROUND GIS DATA FLOW

Survey Database

- Geology
- Geotech
- Engineering
- Operation
- Survey



UNDERGROUND GIS

- Development Report
- Underground Utility
- GIS Analysis



DEVELOPMENT REPORT

- Showing of all UG developing heading map
- Advance heading report (Area /Time)
- Crew performance



UNDERGROUND UTILITY

- Showing water and air pipe network
- Showing electric cable network
- Showing heavy equipment map location



GIS ANALYSIS

- Summary of lack advance heading
- Estimate the material moved volume
- Routing shortest distance for heavy equipment movement
- Routing shortest distance for emergency exit



CONCLUSION

- Faster reporting and easier to create thematic map
- UG management can monitor the development status and decide which areas need to be improved to catch up the goal
- With the complexity of UG tunnels and fix facilities installed, GIS will help the engineer in guiding design new tunnel or new facilities.



THE END