SOCIETATEA COMERCIALA
ROSIA MONTANA
GOLD CORPORATION S.A.

ENVIRONMENTAL MANAGEMENT

Introduction

John Aston

- BE:

Civil & Environmental Engineering:

Ireland & France

- MSc:

Environmental Management:

Imperial College

- Experience:

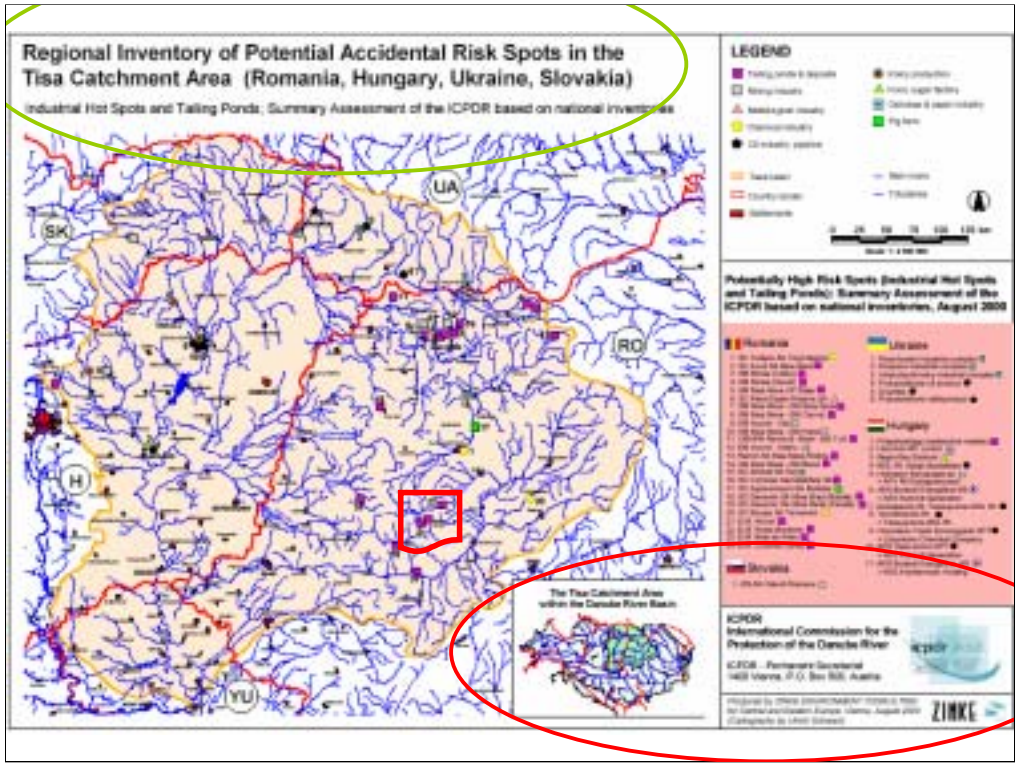
Certified European Engineer

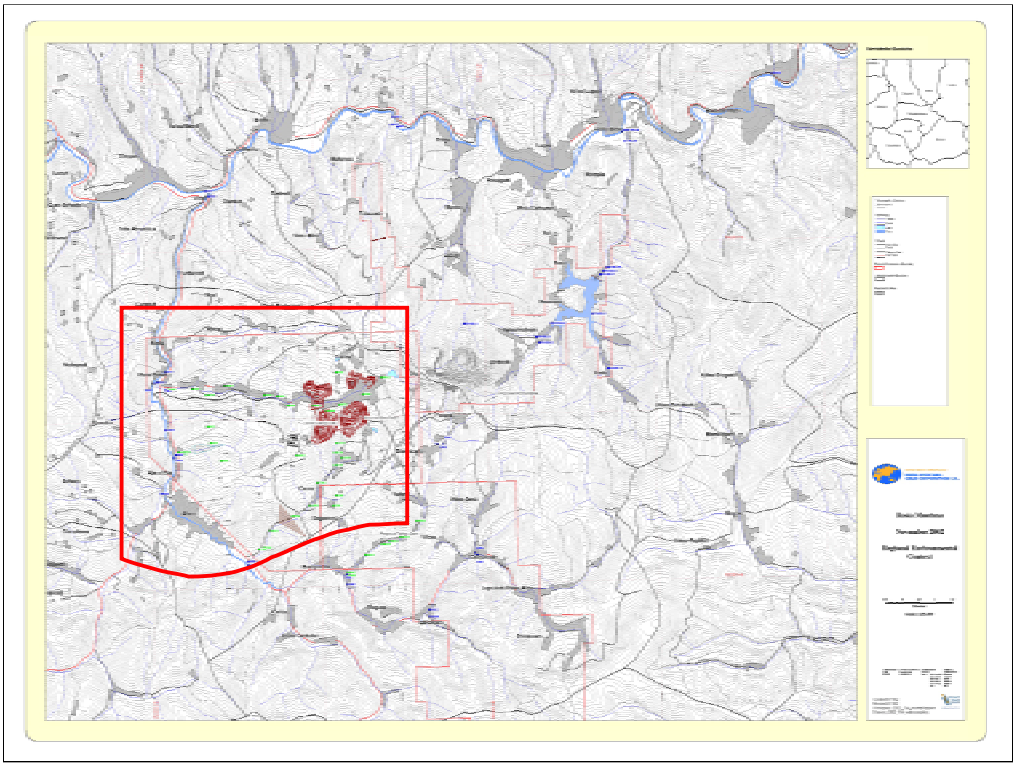
Environmental and Water Management projects in:

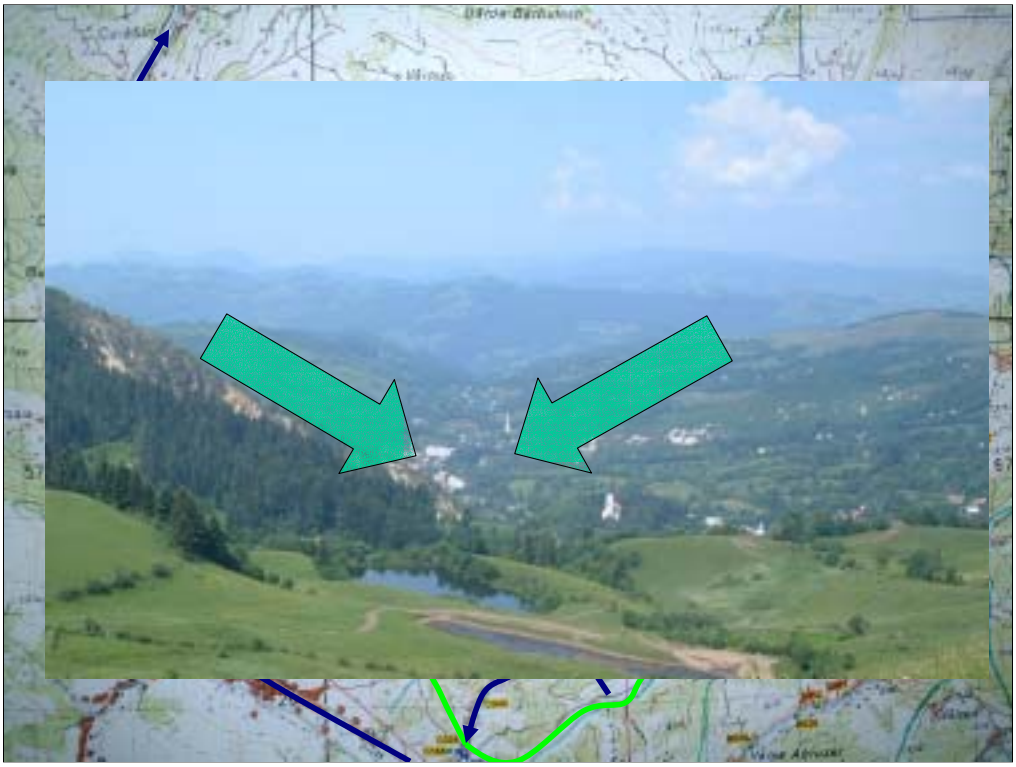
- Europe
- Near Asia
- Africa

This Presentation Presents:

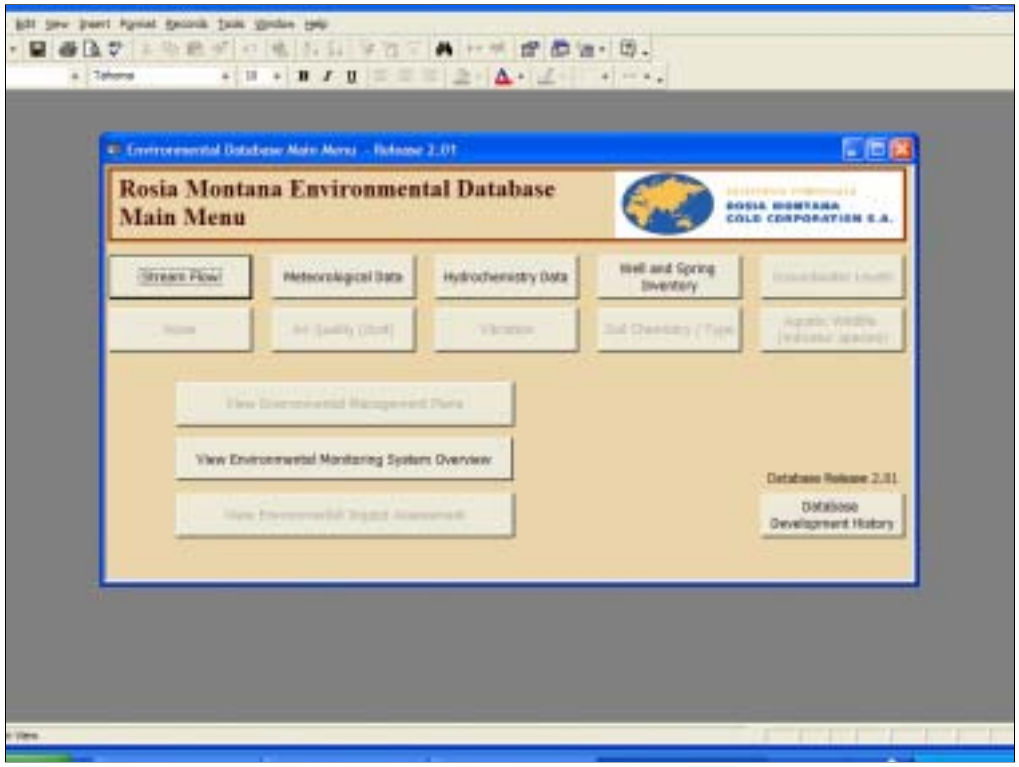
1. Current Environmental Situation
2. Environmental Management
3. Environmental Impact Assessment
4. Existing Examples

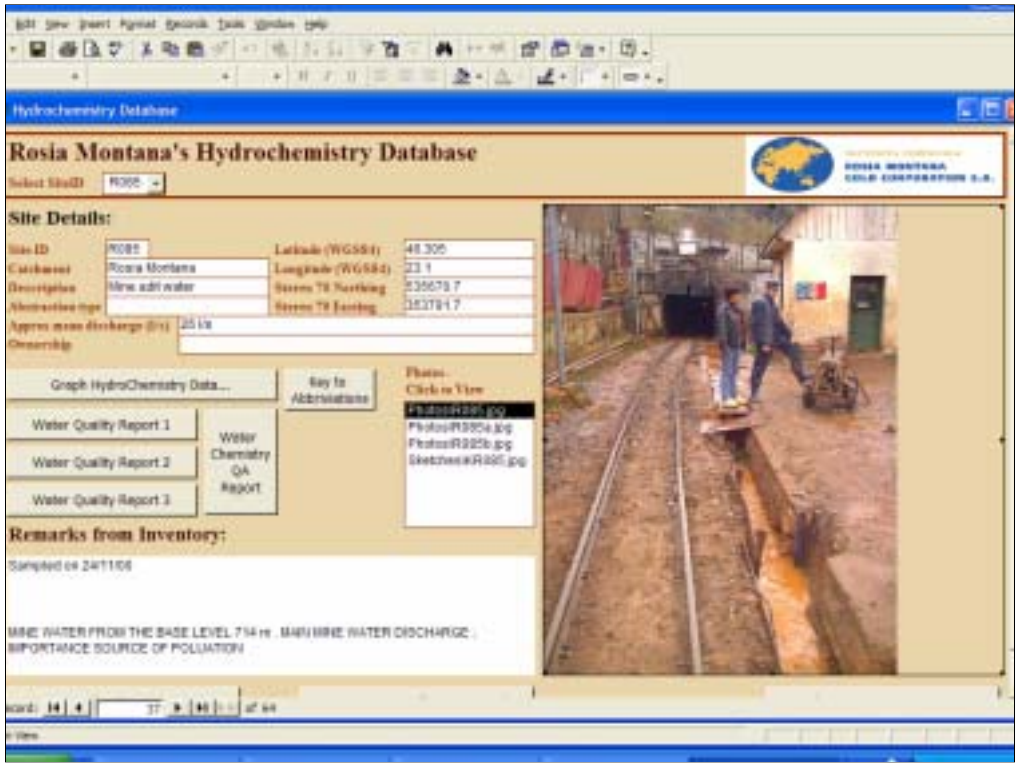

Regional Inventory of Potential Accidental Risk Spots in the Tisa Catchment Area (Romania, Hungary, Ukraine, Slovakia)
Industrial Hot Spots and Tailing Ponds: Summary Assessment of the ICPDR based on national inventories
UA
SK
RO
H
YU
LEGEND
Potentially High Risk Spots (Industrial Hot Spots and Tailing Ponds): Summary Assessment of the ICPDR based on national inventories, August 2000
Romania
Ukraine
Hungary
Slovakia
ICPDR
International Commission for the Protection of the Danube River
ZINKE

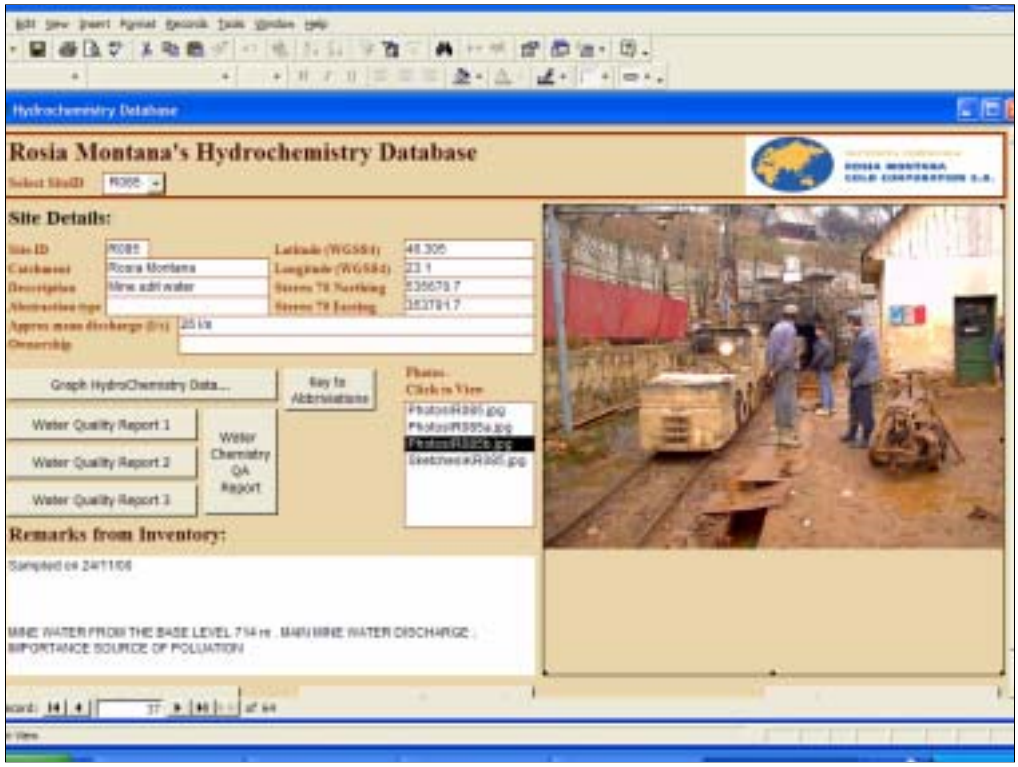


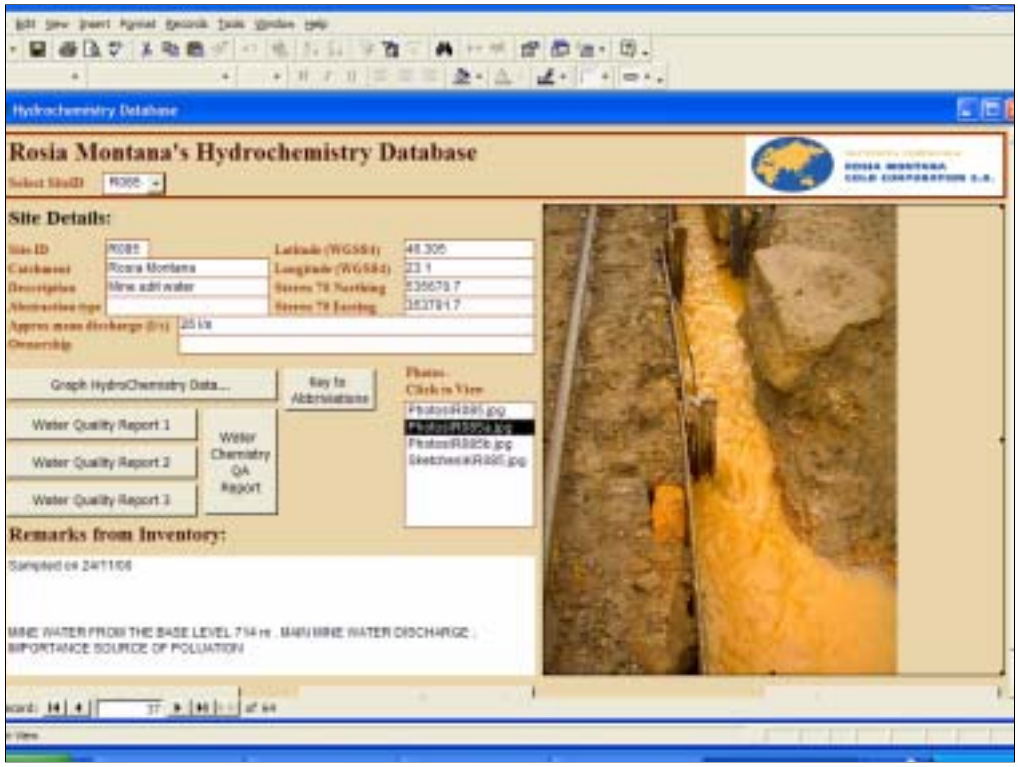


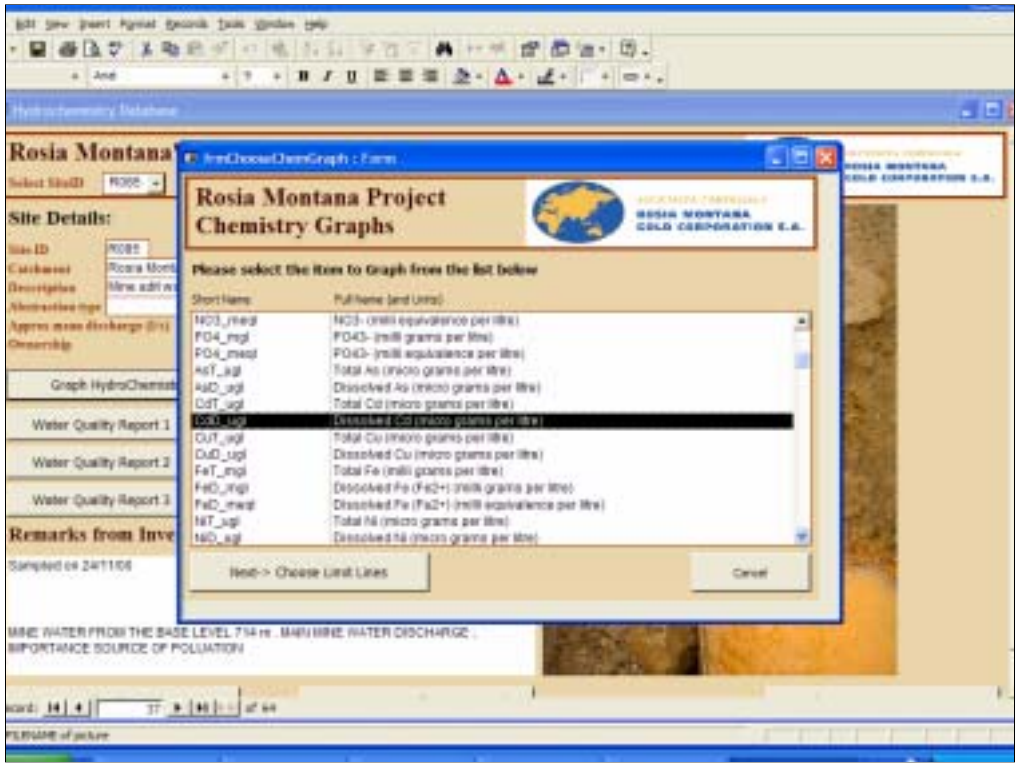
ROSIA MONTANA ENVIRONMENTAL DATABASE


Rosia Montana Environmental Database
Main Menu
ROSIA MONTANA
GOLD CORPORATION S.A.
Stream Flow
Meteorological Data
Hydrochemistry Data
Well and Spring
Inventory
View Environmental Monitoring System Overview
Database Release 2.01
Database
Development History

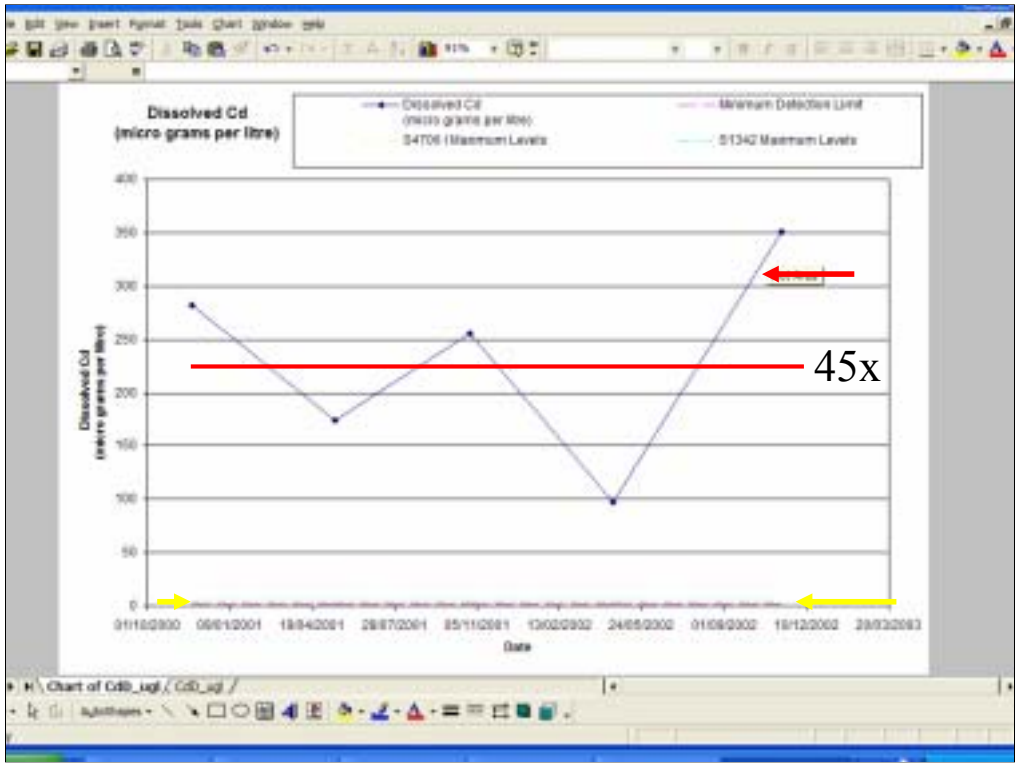

Hydrochemistry Database
Rosia Montana's Hydrochemistry Database
Site Details:
Graph HydroChemistry Data...
Key to Abbreviations
Water Quality Report 1
Water Quality Report 2
Water Quality Report 3
Water Chemistry QA Report
Remarks from Inventory:

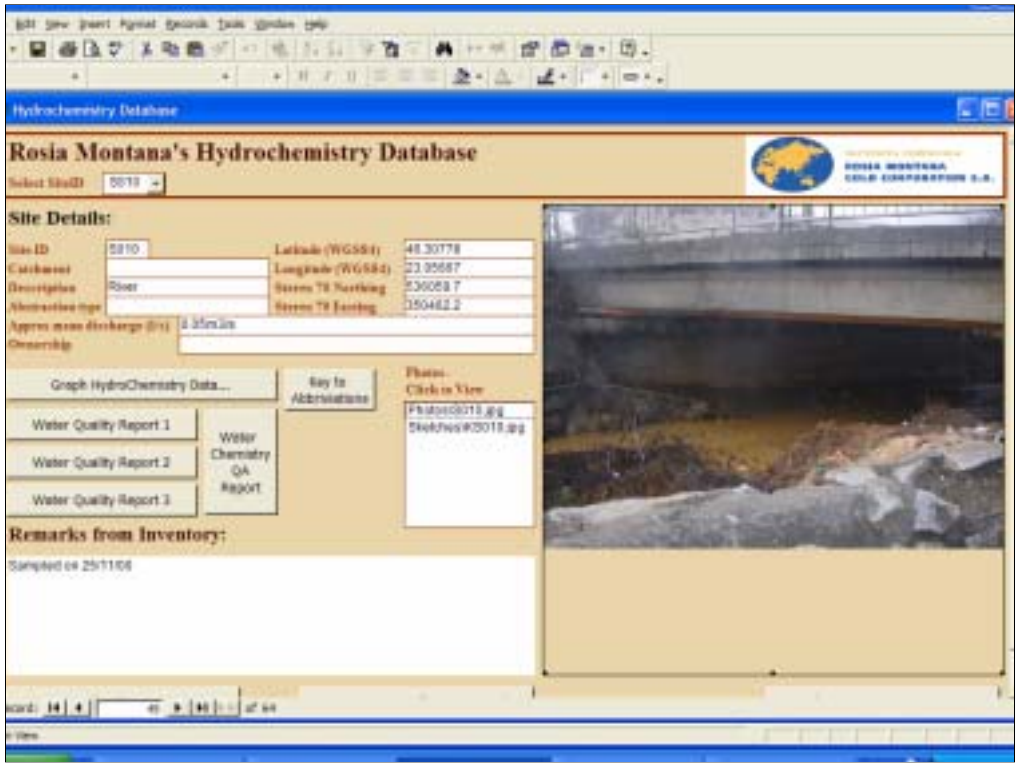

Hydrochemistry Database
Rosia Montana's Hydrochemistry Database
Site Details:
Graph HydroChemistry Data...
Key to Abbreviations
Water Quality Report 1
Water Quality Report 2
Water Quality Report 3
Water Chemistry QA Report
Remarks from Inventory:

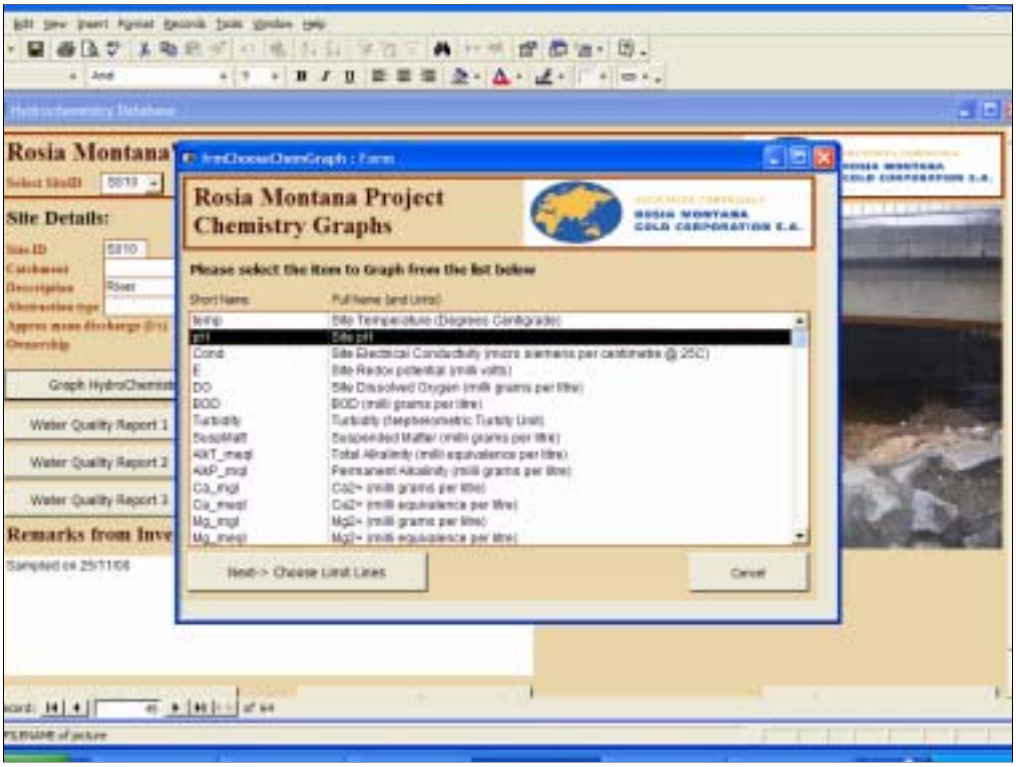

Hydrochemistry Database
Rosia Montana's Hydrochemistry Database
Site Details:
Graph HydroChemistry Data...
Key to Abbreviations
Water Quality Report 1
Water Quality Report 2
Water Quality Report 3
Water Chemistry QA Report
Remarks from Inventory:

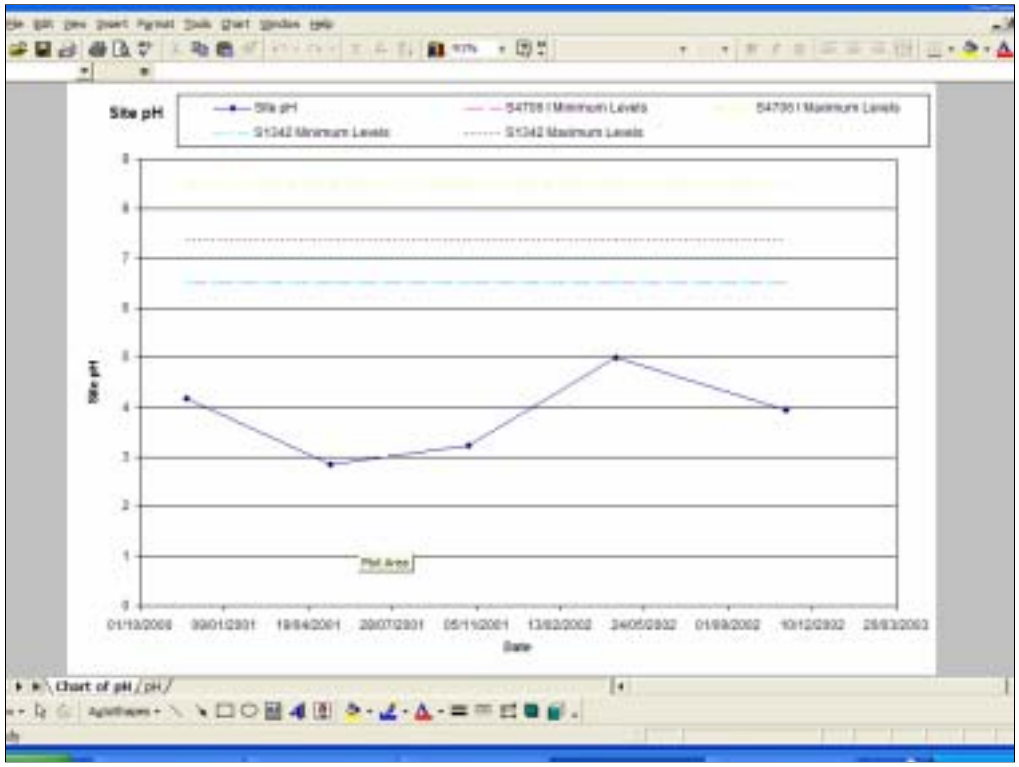

Rosia Montana
Site Details:
Graph HydroChemistr
Water Quality Report 1
Water Quality Report 2
Water Quality Report 3
Remarks from Inve
frmChooseChemGraph : Form
Rosia Montana Project
Chemistry Graphs
ROSIA MONTANA
GOLD CORPORATION S.A.
Please select the item to Graph from the list below
Short Name
Full Name (and Units)
NO3_meql
NO3- (milli equivalence per litre)
PO4_mgl
PO43- (milli grams per litre)
PO4_meql
PO43- (milli equivalence per litre)
AsT_ugl
Total As (micro grams per litre)
AsD_ugl
Dissolved As (micro grams per litre)
CdT_ugl
Total Cd (micro grams per litre)
CdD_ugl
Dissolved Cd (micro grams per litre)
CuT_ugl
Total Cu (micro grams per litre)
CuD_ugl
Dissolved Cu (micro grams per litre)
FeT_mgl
Total Fe (milli grams per litre)
FeD_mgl
Dissolved Fe (Fe2+) (milli grams per litre)
FeD_meql
Dissolved Fe (Fe2+) (milli equivalence per litre)
NiT_ugl
Total Ni (micro grams per litre)
NiD_ugl
Dissolved Ni (micro grams per litre)
Next-> Choose Limit Lines
Cancel
MINE WATER FROM THE BASE LEVEL 714 m . MAIN MINE WATER DISCHARGE .
IMPORTANCE SOURCE OF POLLUTION

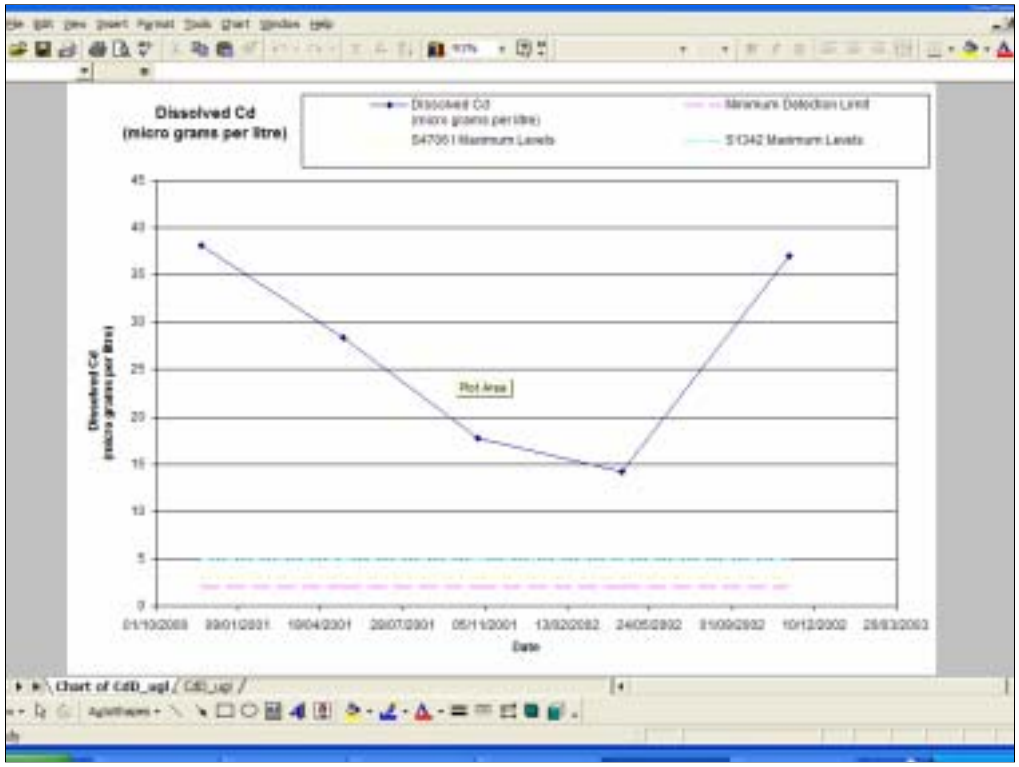

Rosia Montana's Hydrochemistry Database
Site Details:
Rosia Montana Project
Graph Limit Lines
Please select the Limit(s) to include on the Graph from the list below
Minimum Detection Limit
Create Graph
Cancel
Water Quality Report 1
Water Quality Report 2
Water Quality Report 3
Remarks from Invento

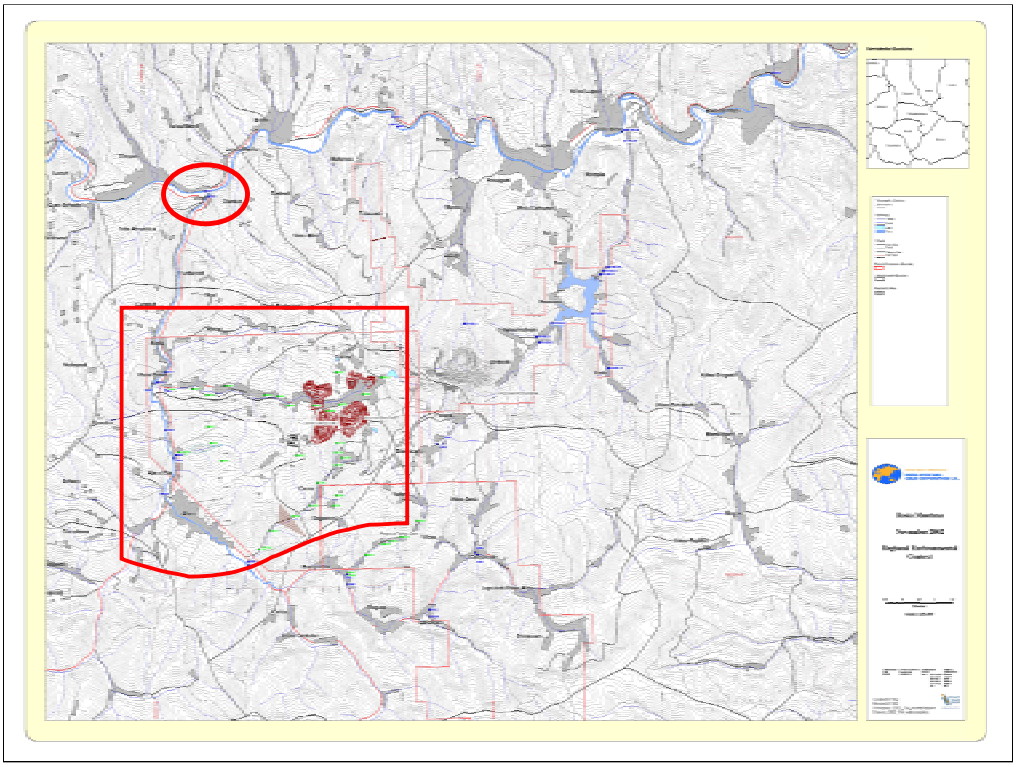

Dissolved Cd
(micro grams per litre)
Dissolved Cd
(micro grams per litre)
Minimum Detection Limit
S4706 Maximum Levels
S1342 Maximum Levels
400
350
300
250
200
150
100
50
0
Dissolved Cd
(micro grams per litre)
45x
01/10/2000
09/01/2001
19/04/2001
28/07/2001
05/11/2001
13/02/2002
24/05/2002
01/09/2002
10/12/2002
20/03/2003
Date
Chart of Cd0_ugl / Cd0_ugl /


Hydrochemistry Database
Rosia Montana's Hydrochemistry Database
Site Details:
Graph HydroChemistry Data...
Key to Abbreviations
Water Quality Report 1
Water Quality Report 2
Water Quality Report 3
Water Chemistry QA Report
Remarks from Inventory:

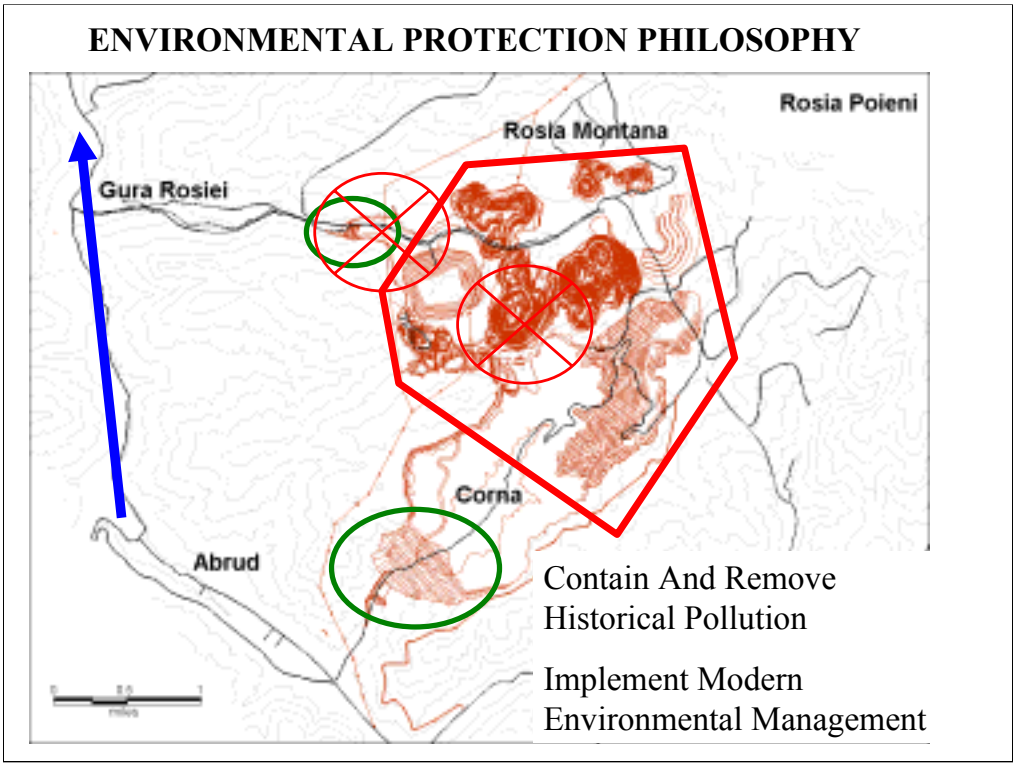

Rosia Montana
Site Details:
Graph HydroChemist
Water Quality Report 1
Water Quality Report 2
Water Quality Report 3
Remarks from Inve
frmChooseChemGraph : Form
Rosia Montana Project
Chemistry Graphs
ROSIA MONTANA
GOLD CORPORATION S.A.
Please select the item to Graph from the list below
Short Name
Full Name (and Units)
temp
Site Temperature (Degrees Centigrade)
pH
Site pH
Cond
Site Electrical Conductivity (micro siemens per centimetre @ 25C)
E
Site Redox potential (mili volts)
DO
Site Dissolved Oxygen (milli grams per litre)
BOD
BOD (milli grams per litre)
Turbidity
Turbidity (Nephelometric Turbity Unit)
SuspMatt
Suspended Matter (milli grams per litre)
Next-> Choose Limit Lines
Cancel


Site pH
Site pH
S4708 I Minimum Levels
S4708 I Maximum Levels
S1342 Minimum Levels
S1342 Maximum Levels
Site pH
Plot Area
Date
Chart of pH / pH /


Dissolved Cd
(micro grams per litre)
Dissolved Cd
(micro grams per litre)
Minimum Detection Limit
S1342 Maximum Levels
Plot Area
Dissolved Cd
(micro grams per litre)
45
40
35
30
25
20
15
10
5
0
01/10/2000
09/01/2001
19/04/2001
28/07/2001
05/11/2001
13/02/2002
24/05/2002
01/09/2002
10/12/2002
28/03/2003
Date
Chart of CdD_ugl
CdD_ugl




ARIES
ABRUDEL



Contour plan with proposed mine infrastructure (red outline), existing roads and tracks black outline

RMGC Project's Objectives

Ensure Project Conforms to:

- Romanian Laws and Regulations
- European Directives
- International Policies and Guidelines

Environmental Team

The Environmental Impact Assessment is being conducted by:

- Leading Romanian Consultancies and Experts
- Leading International Environmental Engineering and Mine Management Experts

Key Environmental Issues

1. Historical Impacts
2. Project Alternatives
3. Public Involvement
4. Tailings Management
5. Cyanide Management
6. Waste Rock & Water Management
7. Mine Reclamation & Closure

1. Mitigation of Historic Impacts

- The Project will provide financing to Minvest for the closure and cleanup of existing facilities and environmental damage
- New project will capture a large portion of the Acid Rock Drainage ("ARD")
- New project will remove a large portion of the source of the ARD

2. Alternatives

- Current mining operations not economic nor environmentally sustainable
- Mountainous terrain not suitable for intensive agriculture
- Over-long term mining compatible with tourism – a new museum is part of project (e.g. Waihi Mine, New Zealand: 12,000 tourists per year)


Tailings being deposited
Reclaimed land – for grazing

3. Public Involvement

- Extensive consultations include:
  - Public Information Centre
  - Web site
  - Public and stakeholder meetings
  - Technical seminars
- Continued opportunities for involvement as project proceeds
- Such involvement new to Romania

4. Tailings Management

- Tailings will be detoxified and managed to be environmentally benign
- Cyanide level in tailings leaving plant will be within all guidelines (World Bank, Canadian & EU: guideline 50 ppm)
- Tailings dam designed to Romanian and international standards for safe operation
- Secondary containment dam, spillway and monitoring system

5. Cyanide Management

- Follow UNEP facilitated International Cyanide Management Code
- Special procedures and equipment for transportation, handling and storage
- Tailings will be treated using proven technology

6. ARD & Water Management

- Non-contact water will be diverted
- Overburden and non-economical ore to be placed in engineered waste rock piles
- ARD from waste rock piles and existing operation will be captured and treated

7. Reclamation and Closure

- Restore disturbed land
- Tailings capped & vegetated
- Waste piles graded & vegetated
- Rehabilitated tailings suitable for recreation and agriculture

1995

2001

Thank you