



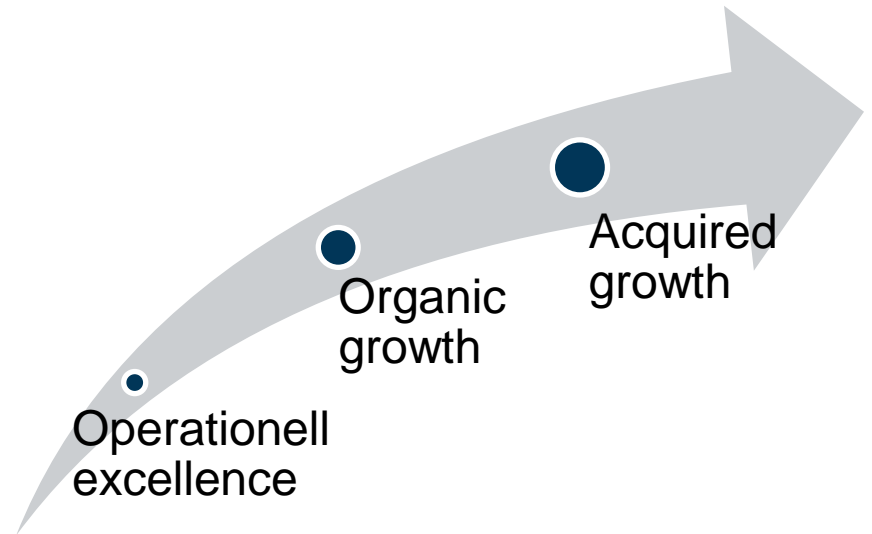
Business Area Mines

Capital Markets Day 6 September 2011

Jan Moström
President BA Mines

Strategic direction

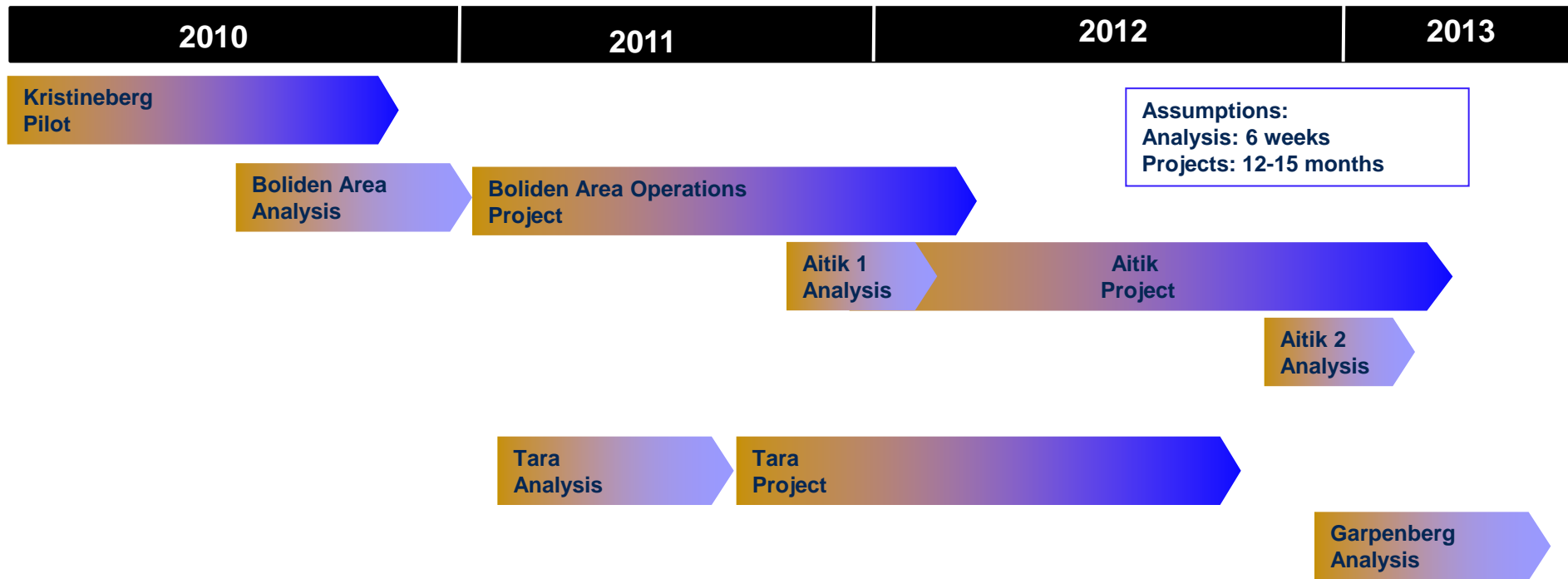
- Operational excellence
- Organic growth
- Acquired growth



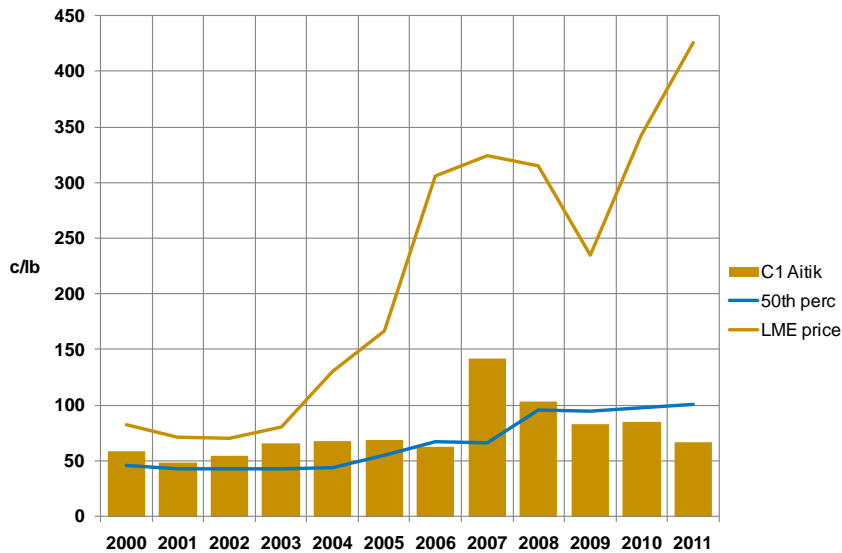
R&D Program

- Exploration
 - Geometallurgy
 - Improving geological and drill core data for production design (rock mechanics, comminution and processing, optimization of production plans)
- Mining
 - Mine automation
 - Communication systems, remote control, autonomous units
- Processing
 - Flotation design
 - Circuit design for higher recoveries
 - Treatment of penalty elements
 - Reduce penalty costs, better marketability, new resources
 - Process control
 - Improving recoveries/quality by real time adjustments according to ore properties
- Environmental
 - Water treatment
 - Control of emissions and minimized operating costs (metals, nitrogen, thiosulfates)

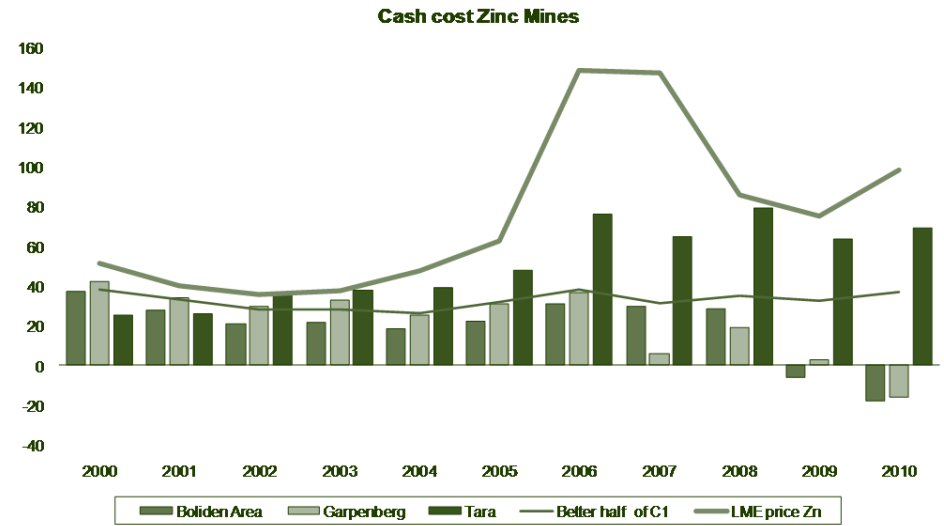
New Boliden Way Roll out



Operational excellence, Cash Cost C1, BA Mines

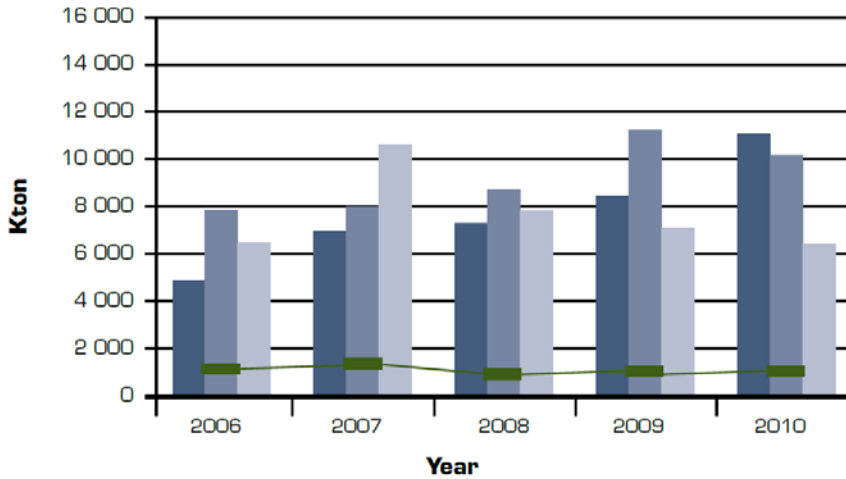


Source: Brook Hunt - A WoodMcKenzie company, Reuters

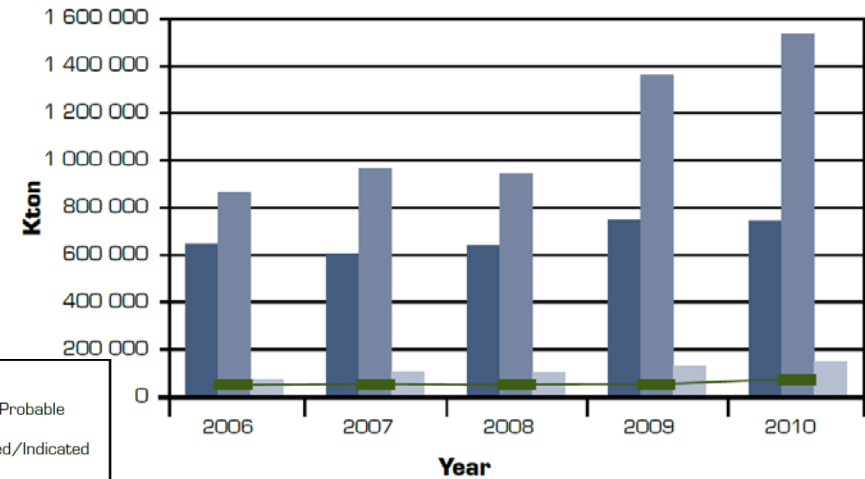


Growth, Mineral Resources and Ore Reserves 2006-2010

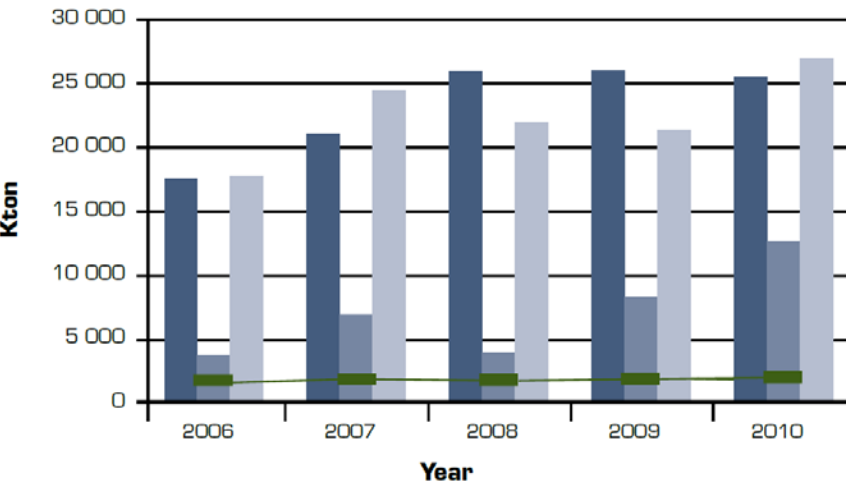
Boliden Area



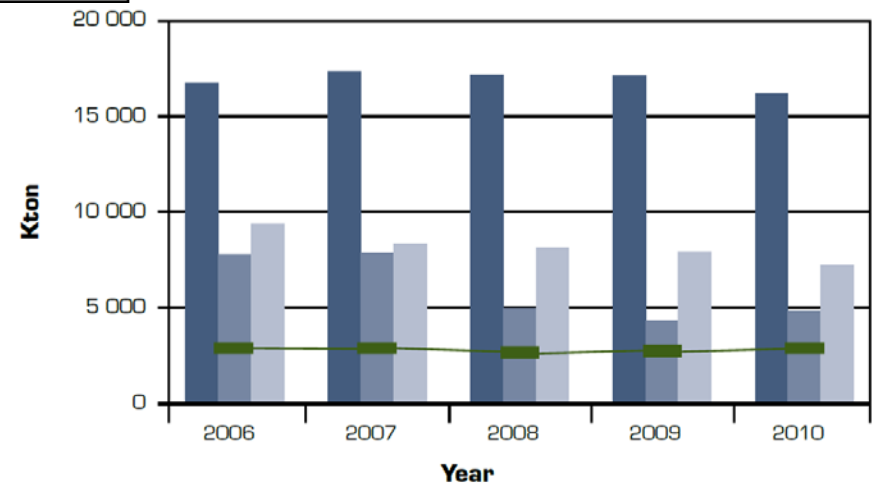
Aitik



Garpenberg Area



Tara





Aitik

Aitik Expansion - update

- Ramp-up period
 - 32 mtonnes annualized ore production in Q2
 - Peak capacity convincing
 - 36 mtonnes 2014

- Actions implemented
 - Truck engine exchange program
 - Crusher 165 (old) connected
 - New crushers not satisfactory
 - More robust ore supply

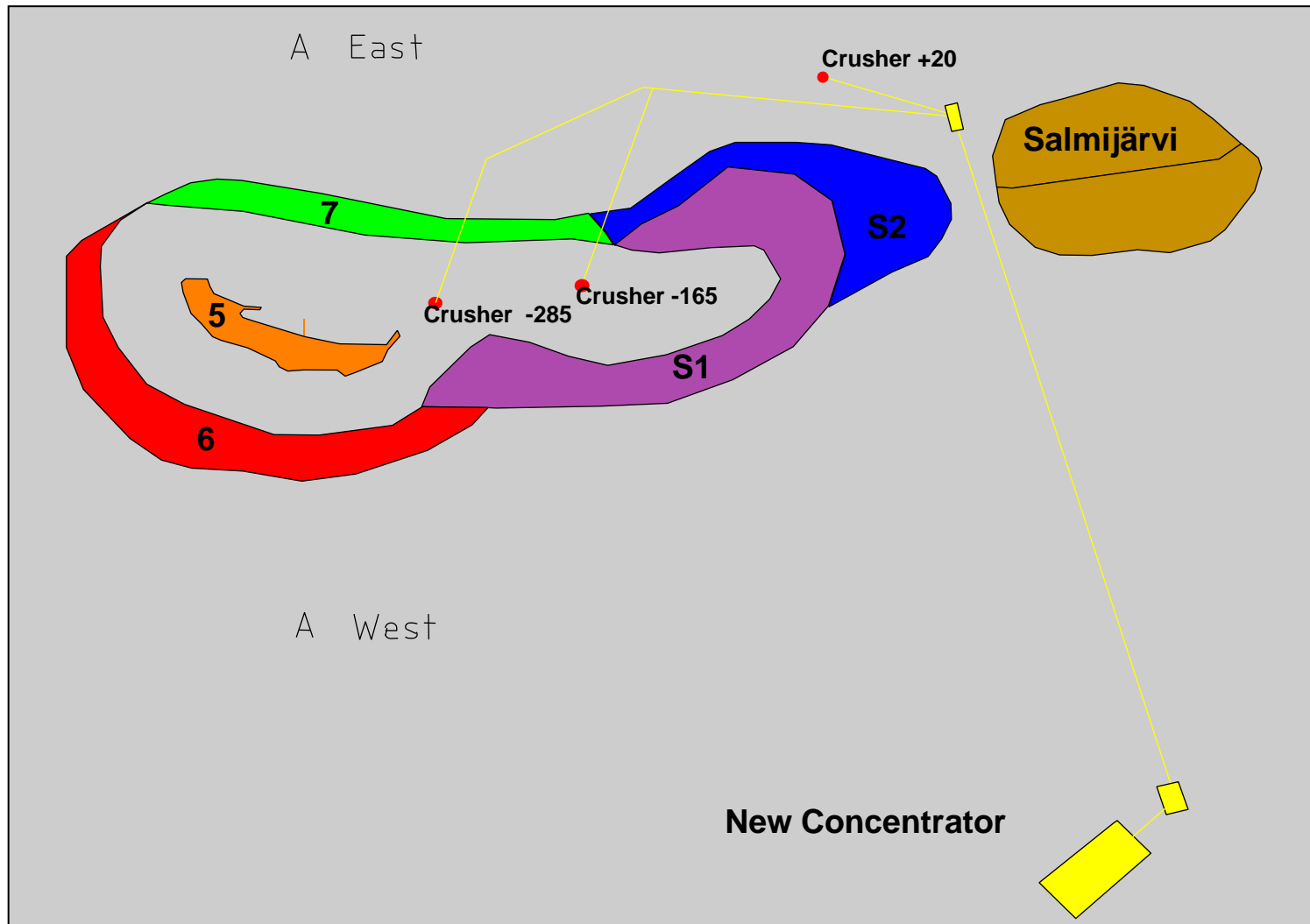
| | Capacity | Reliability |
|--------------------|----------|-------------|
| Mine and logistics | √ | √ |
| Crushers | √ | |
| Conveyors | √ | √ |
| Mills | √ | √ |
| Flotation | √ | √ |

The Aitik Expansion

- Double ore production
 - High productivity
 - Profitable mining of lower grades
 - Average reserve grade 0,25%
 - Cu annual production approx +50%
 - Life of mine - 2030
- Lower grades
 - Current production plan has lower than average grades 2011-17
- Capex
 - 6,1 bSEK
- Time
 - In production 1 July 2010
 - Full production – 36 Mtonnes ore - 2014

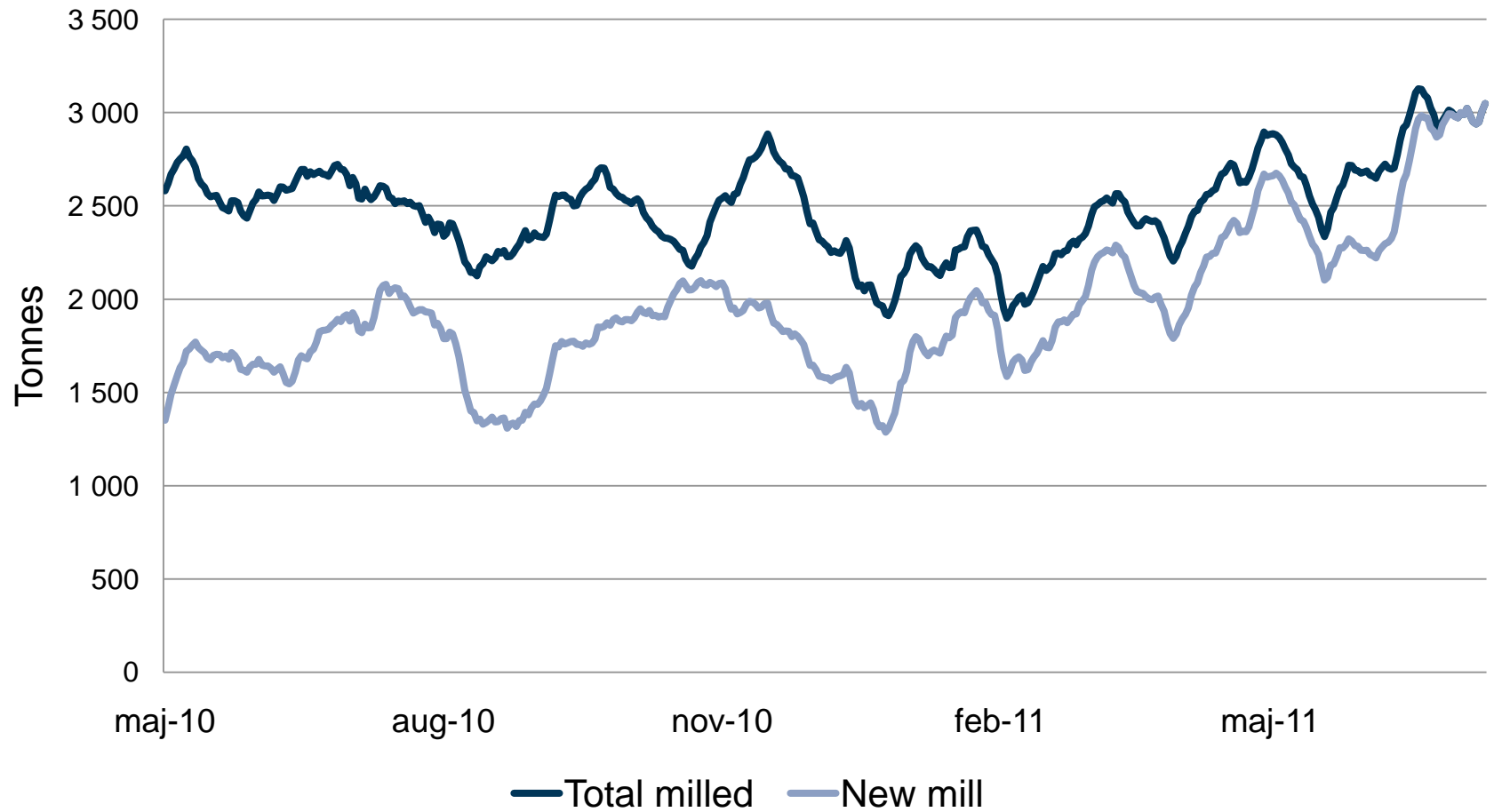


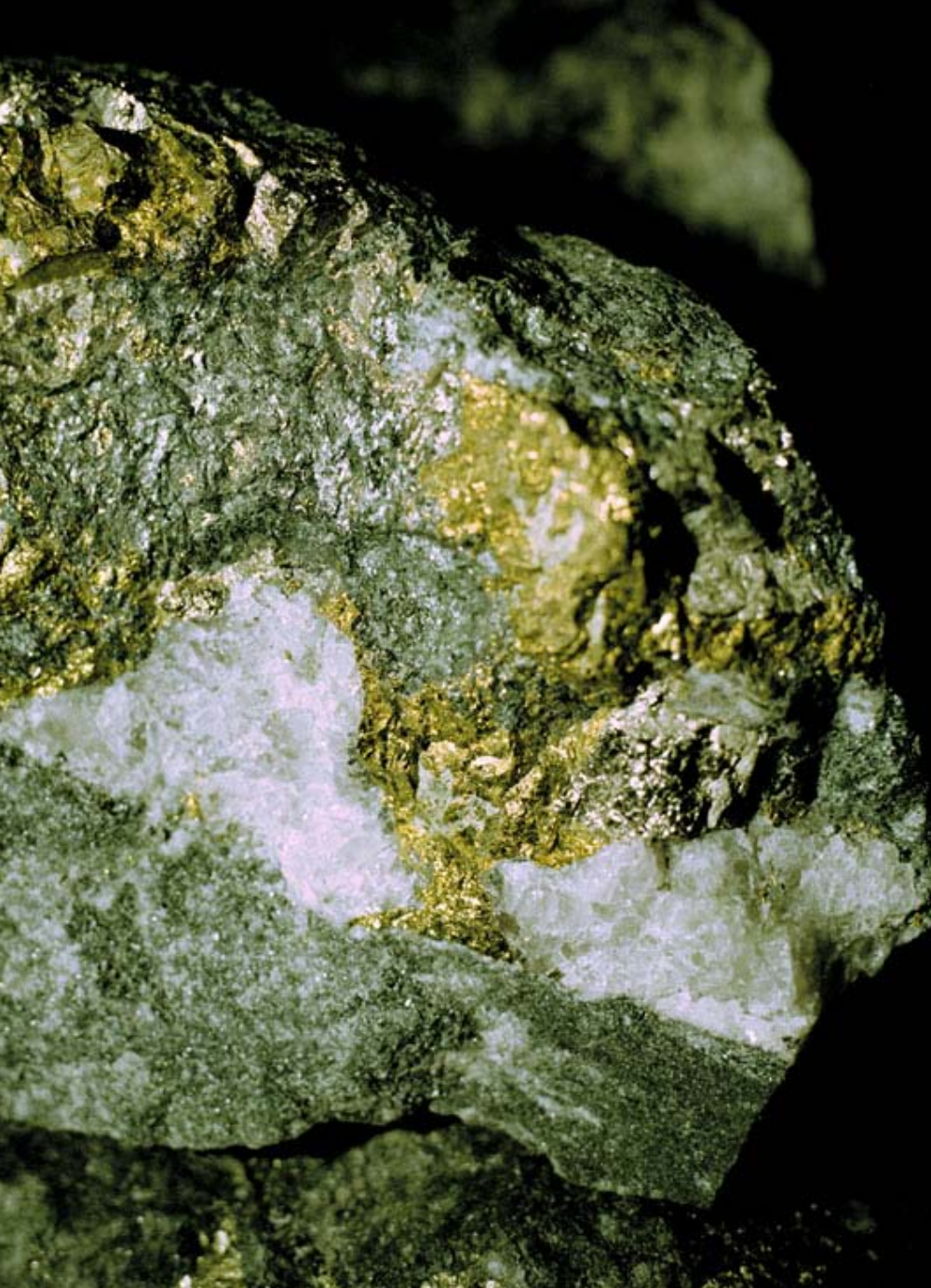
Production areas with Hauling Cycles



Production Aitik, Total milled vs new mill

Half year 2011





Boliden Area



NEW BOLIDEN

Inauguration of Maurliden Östra



BOLIDEN

Kankberg - update

■ Project

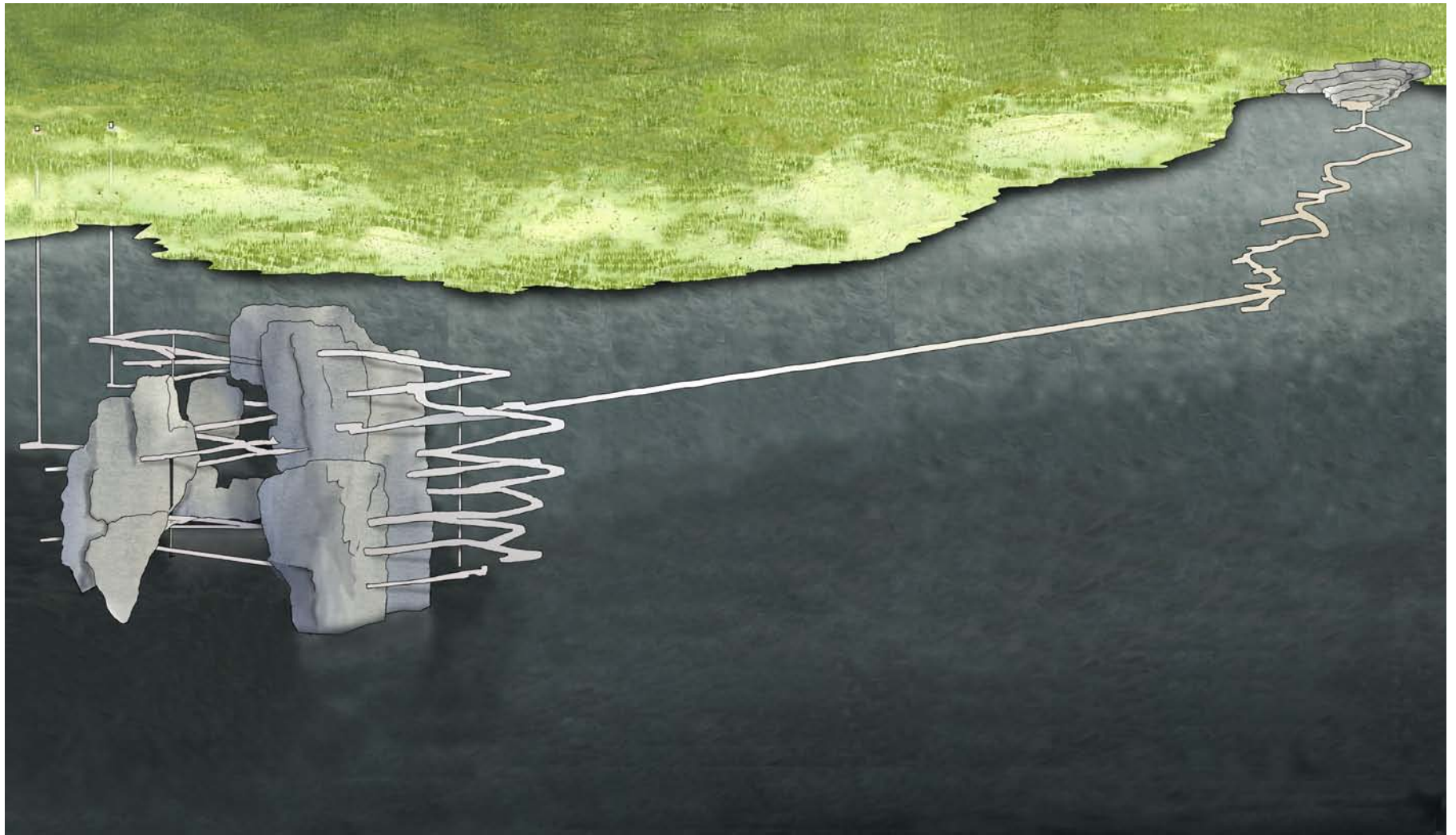
- Capex: MSEK 475
- High rate of return
- Life of mine - 2020
- Start mid 2012
- Production (yearly average):
 - Ore 320 ktonnes
 - Gold 1,150 kg¹⁾ (high yearly variations)
 - Tellurium 41 tonnes¹⁾

■ Hedges and contracts

- Gold production hedged, 80% at 1,460 USD/tr oz
- Tellurium sales, long term contract at 280 USD/kg



Kankberg Expansion



Progress report – Kankberg Mine

- Ventilation shaft – raise boring 30 m (401)
- Drifting – On schedule
- Core drilling on plan, two units in operation
- Basic and detail engineering – shaft levels, mine water pumping, crushers etc
- Procurement of mobile equipment

Project report – Concentrator, leaching plant

- Detail engineering of process and plant upgrade
- Basic engineering mechanical and piping
- Procurement of process equipment

Ore and waste dumps



Ventilation shaft



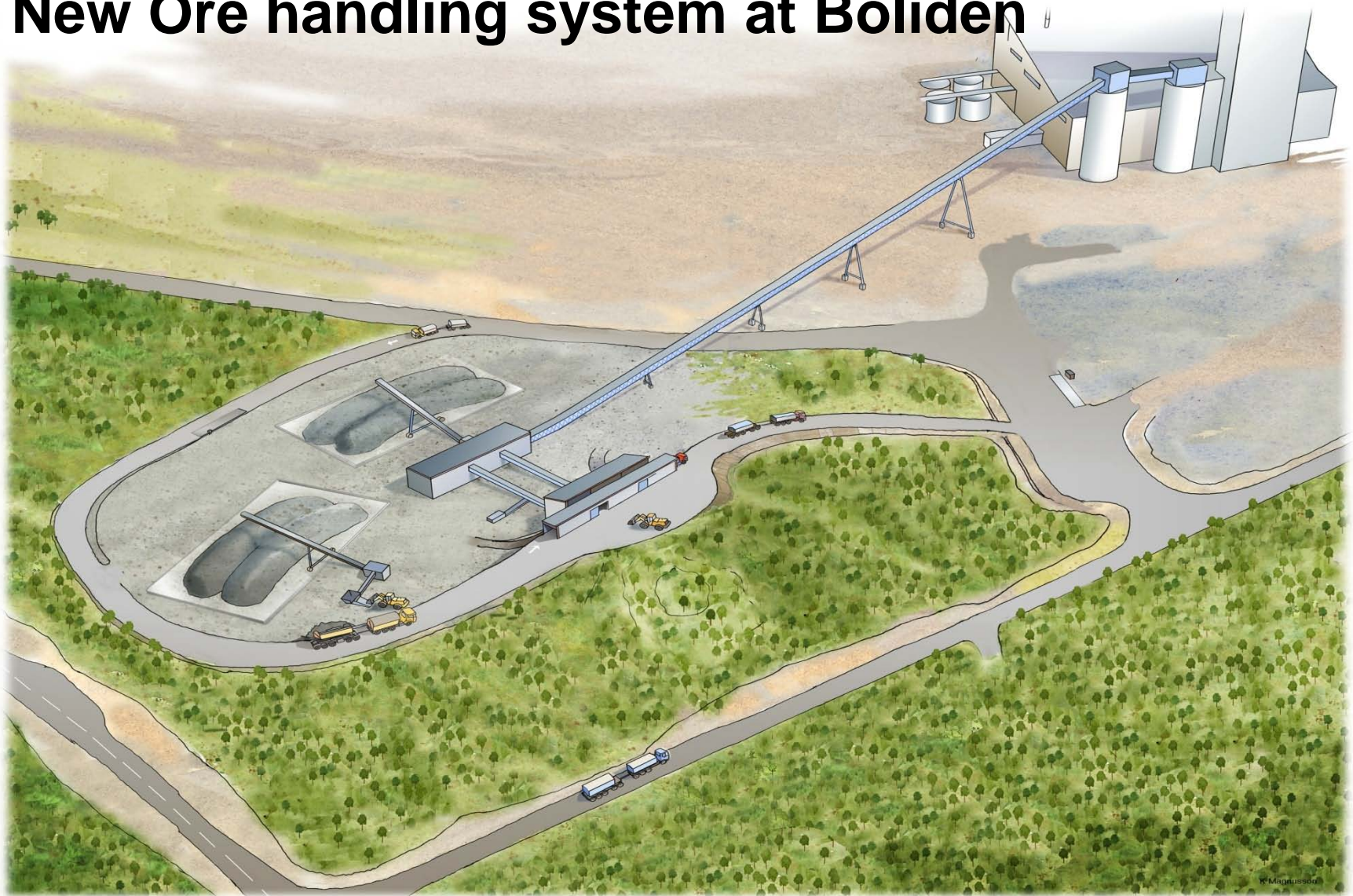
Ventilation shaft



Summary Kankberg project

- ✓ **TIME SCHEDULE** **On track**
- ✓ **CAPEX** **No deviations**
- ✓ **FUNCTION** **No deviations**

New Ore handling system at Boliden

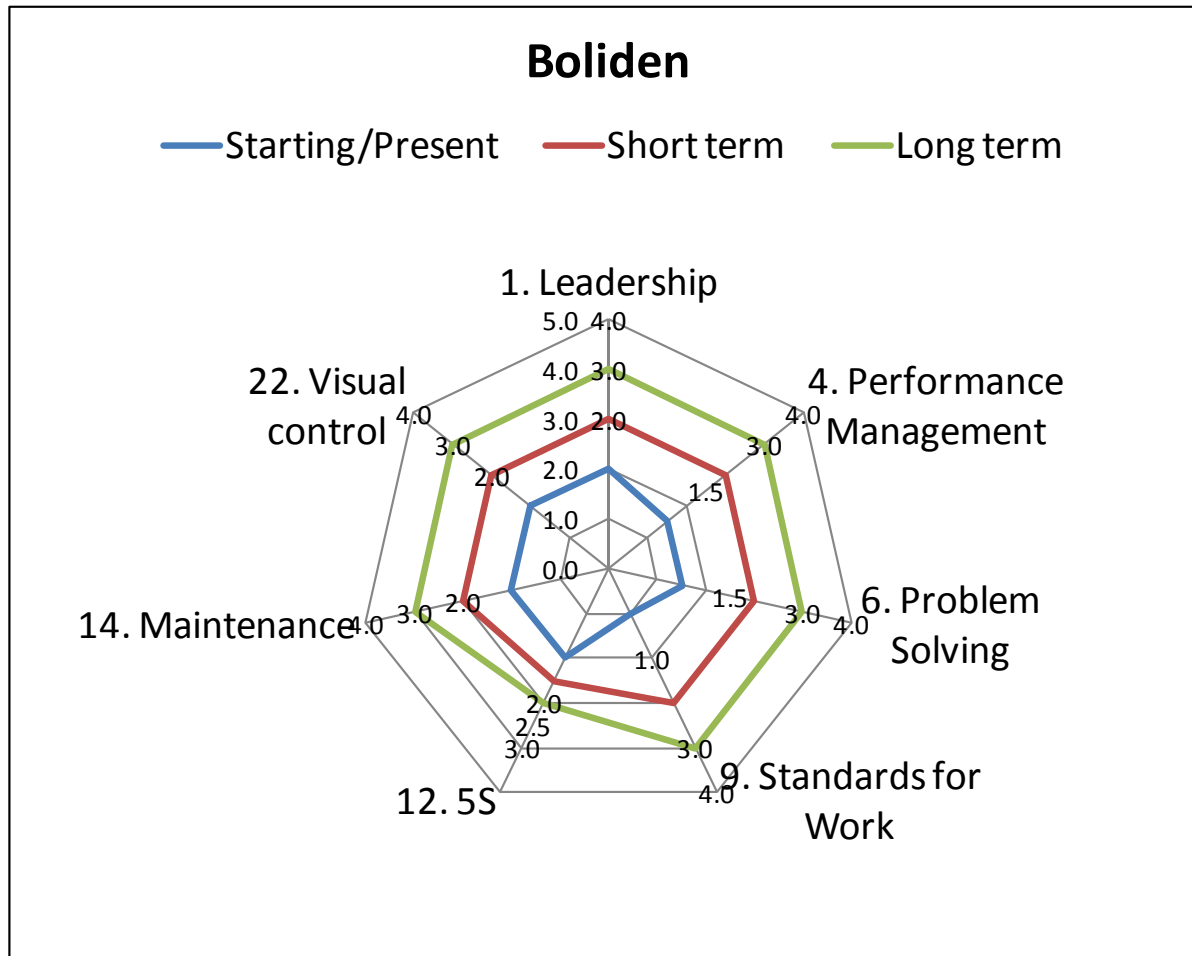


New Ore handling system at Boliden



BOLIDEN

Spider web Boliden Area





Garpenberg

BOLIDEN

Garpenberg Expansion - update

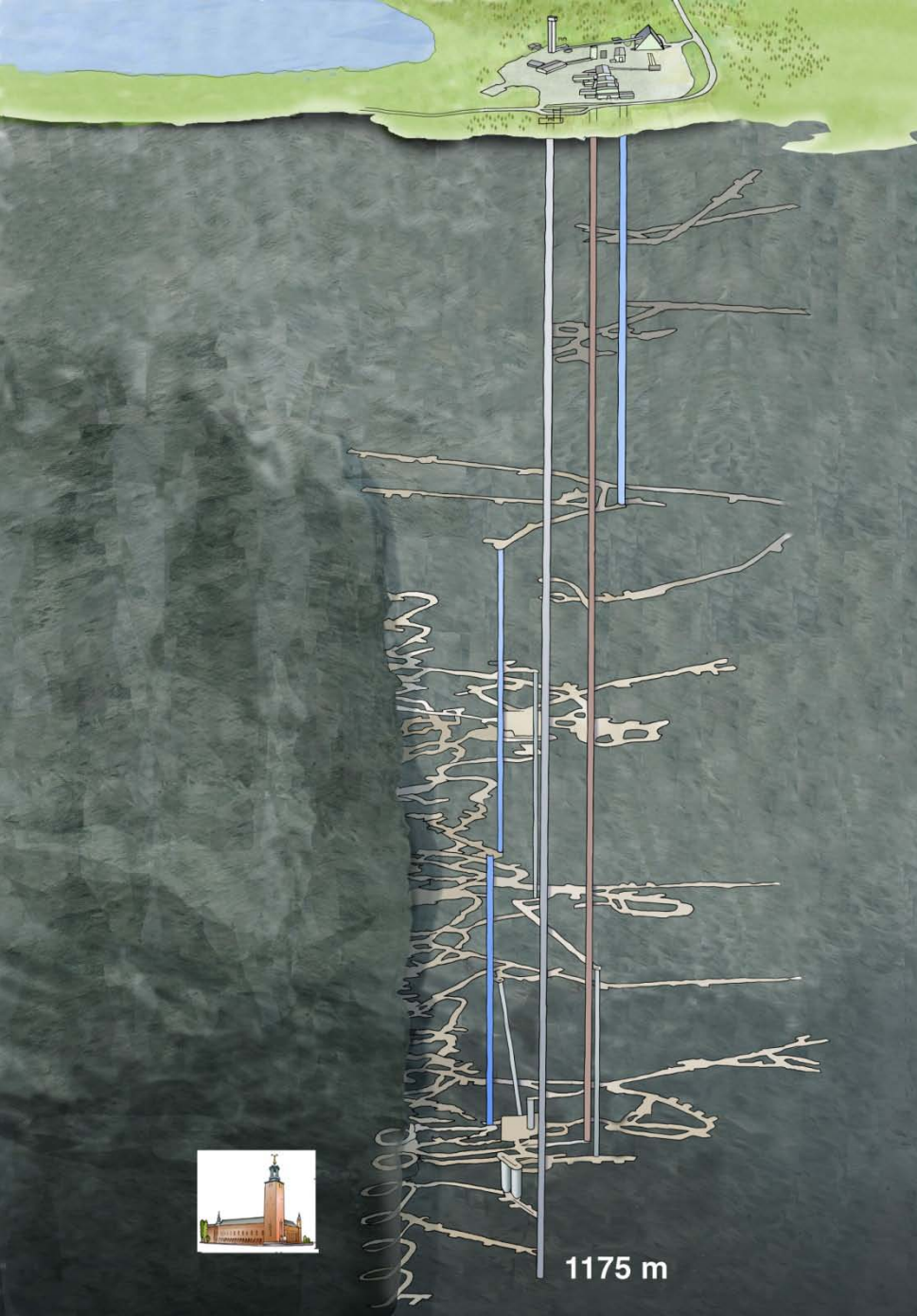
- Project

- Capex: SEK 3.9 billion
- Ore production from 1.4 to 2.5 million tonnes
- Production starts 2014 , full production end 2015
- New concentrator and underground infrastructure
- Production through 2030

- Hedging

- Zinc, copper, lead, gold and silver
- Approx 1/3 of Group's metal price risk
- Corresponding exchange rate risk
- Refers to 2011, 2012 and 1H 2013





Garpenberg Expansion

Progress report – General

- Project team in place
- Permission granted for shaft and underground activities
- Application for a new environmental permit for new industrial site submitted, negotiations late fall. According to time schedule
- Application for building permit submitted

Progress report - Mine

- Production shaft – raise boring section 1 (60 %)
- Personnel shaft– section 1 raised (300 m), raise boring section 2 commenced
- Drifting – several levels in the mine
- Ventilation canals – rock work ongoing
- Ventilations shafts – 2 section ongoing
- Crushers – 2 used ones to be refurbished
- Basic and detail engineering – shaft levels, mine water pumping, crushers etc
- Procurement of process equipment

Project report - Concentrator

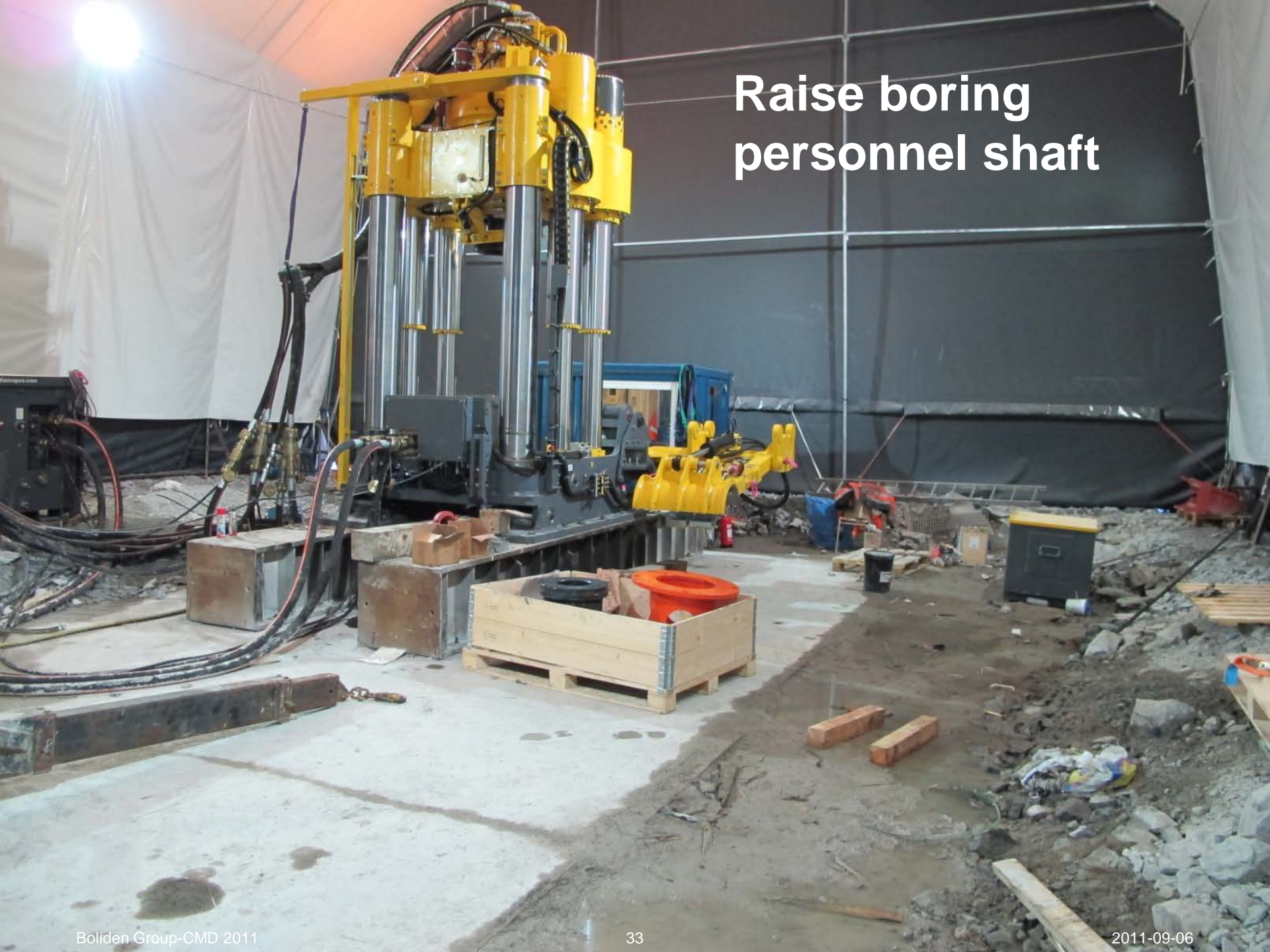
- Detail engineering of paste plant upgrade
- Basic engineering mechanical and piping
- Procurement of process equipment

Break through section 1 personnel shaft



14/03/2011

Raise boring personnel shaft



Raise boring reamer personnel shaft 4.5 m





Break through at surface for personnel shaft

New 558 meter level (rope change level)



Rope change level production shaft (15*26*7,5 m)



Electrical substation 700 meter level





On going rock work for ventilation canals



Diamond drilling

for cement
stabilisation
of ventilation shaft

Summary Garpenberg expansion

- ✓ **TIME SCHEDULE** **On track**
- ✓ **CAPEX** **No deviations**
- ✓ **FUNCTION** **No deviations**

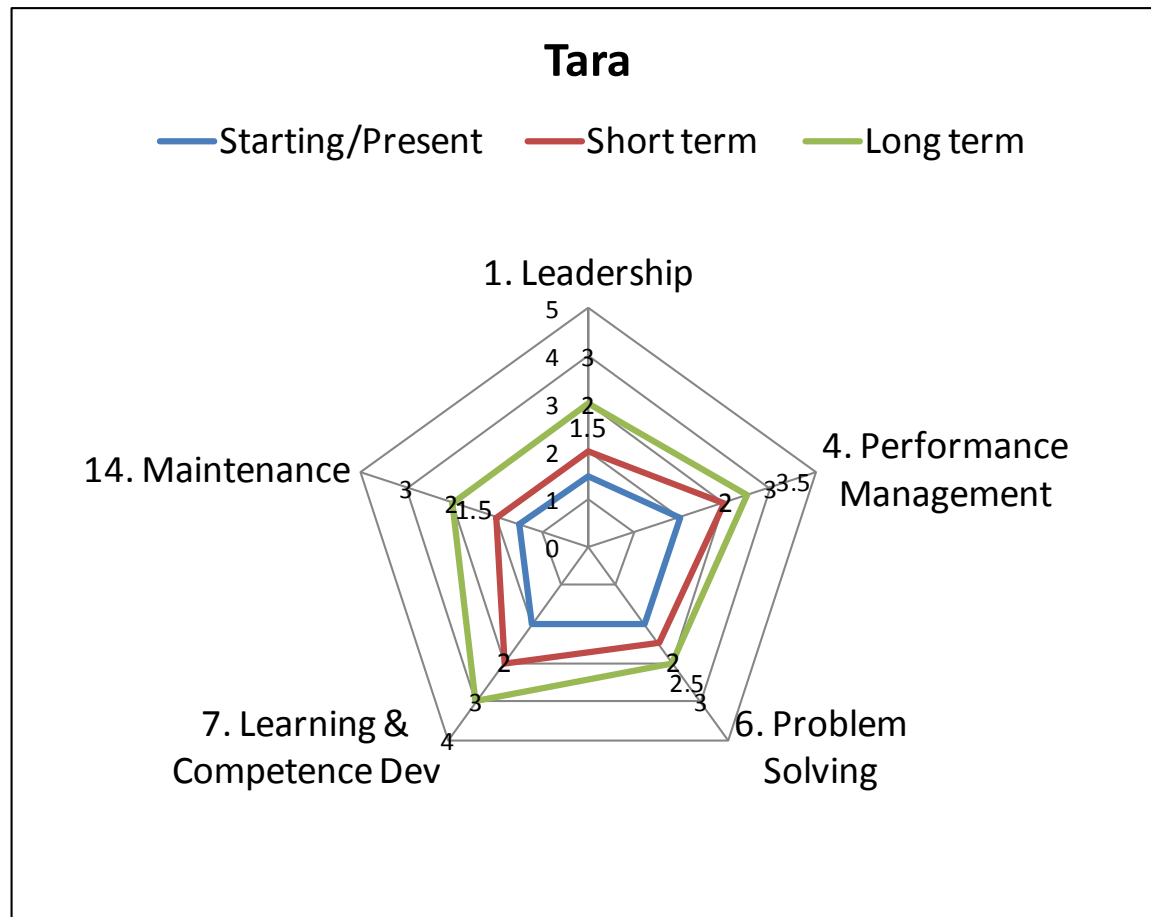


Tara

AG grinding mill Tara



Spider web Tara



ETZ **BOLIDEN**