

FINDING TO MINING

Rockwatch – Rockstar Awards 2013



CONTENTS

- Why do we find and mine
- Finding to Mining Process
- Finding (Exploration)
- Connecting the dots
- Drilling what's that?
- Geological model
- Mining (Extraction)



WHY DO WE FIND AND MINE?

COPPER (Cu)



Money



Supplying power to
connect



Electricity for
our homes

THERMAL COAL



Electricity for our
homes and hospitals



Steam powered transport

PLATINUM



Spinal implants



Hard disks -
memory



Catalytic
converters

WHY DO WE FIND AND MINE?

**MET. COAL
IRON (Fe)
NICKEL (Ni)**

**STAINLESS
STEEL**



Transport



Medical
implements

DIAMOND



Drills for
construction



Dentist drills
Surgical
equipment

PHOSPHATE



Agricultural fertiliser
to grow crops

NIOBIUM

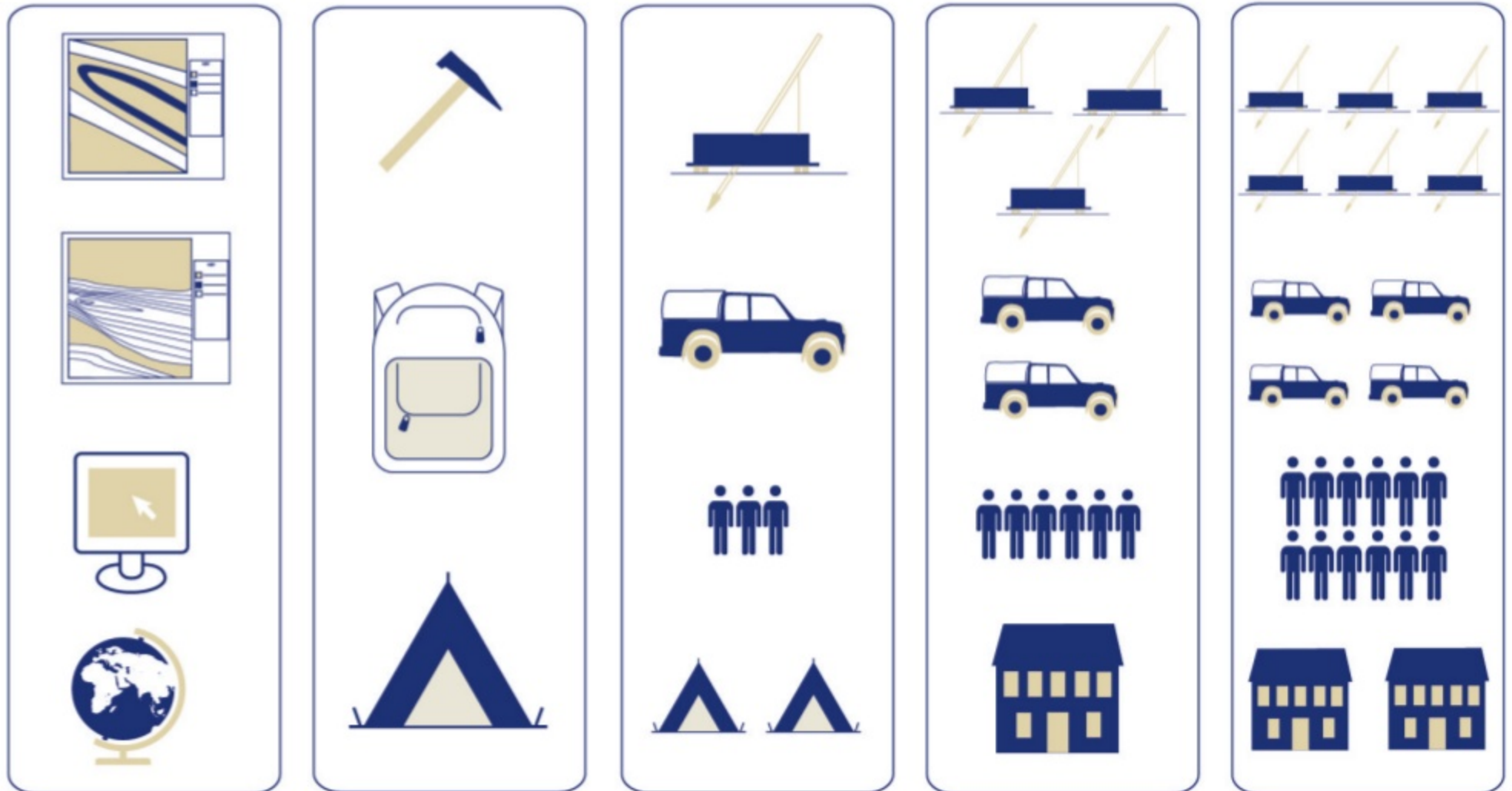


Pacemakers as
hypoallergenic

FINDING TO MINING PROCESS



STAGES OF FINDING - EXPLORATION



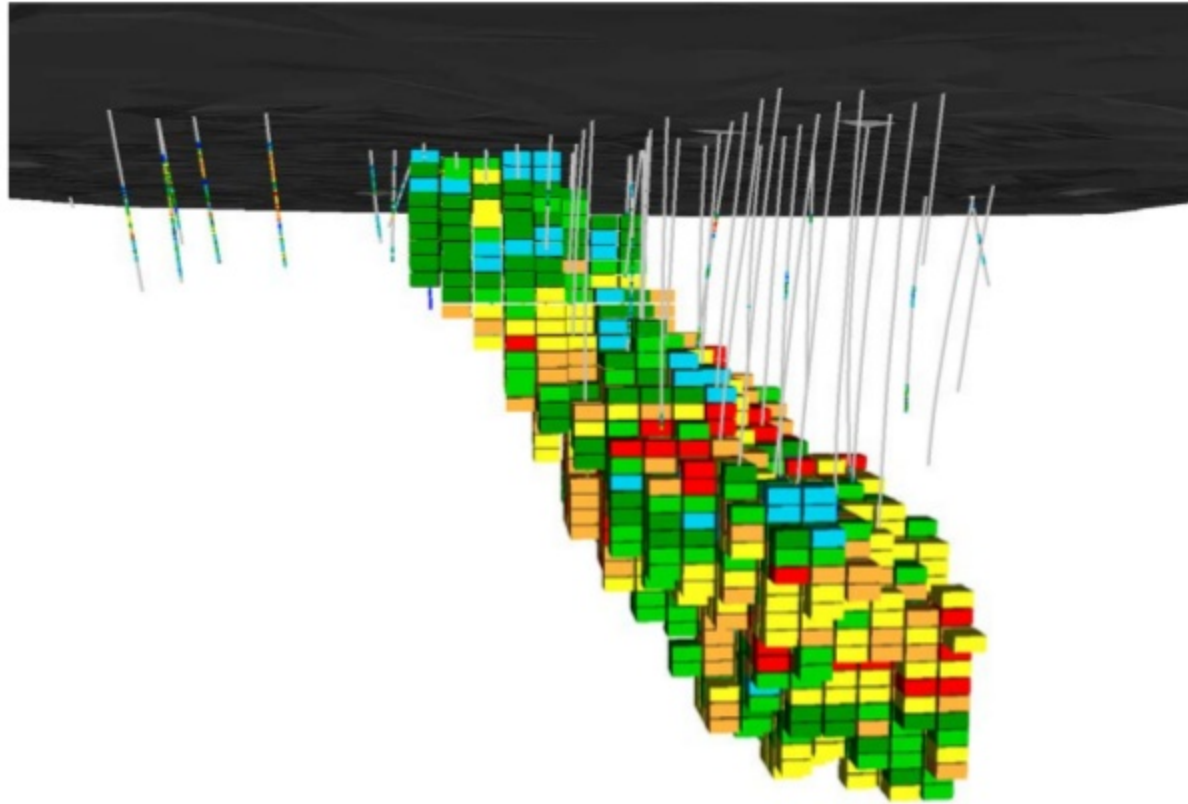
WHAT ARE WE FINDING?

- Ore:- ‘a mineral or rock which can be worked economically’

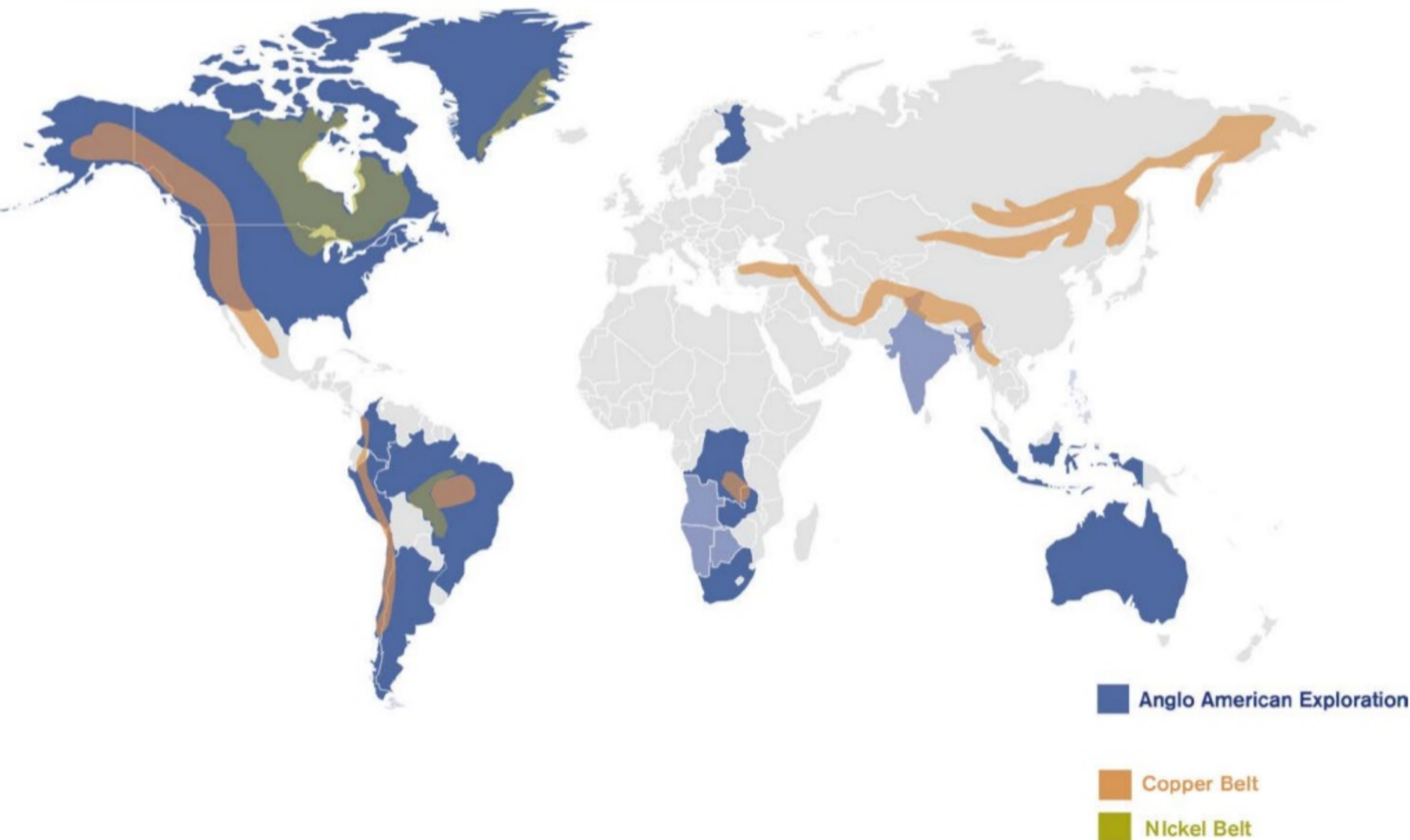


WE ARE FINDING MORE THAN ORE

- Orebody:- ‘accumulation of minerals different from the host rock and rich enough in metal to be worth extracting and selling’



WHERE WE START – DECIDING A TARGET



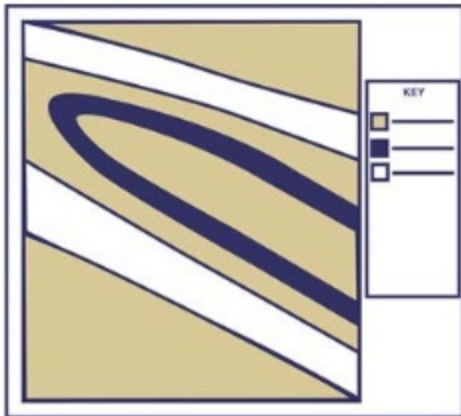
HOW MANY TARGETS TESTED TO FIND A DISCOVERY?

1000

FINDING - CONNECTING THE DOTS



Geology

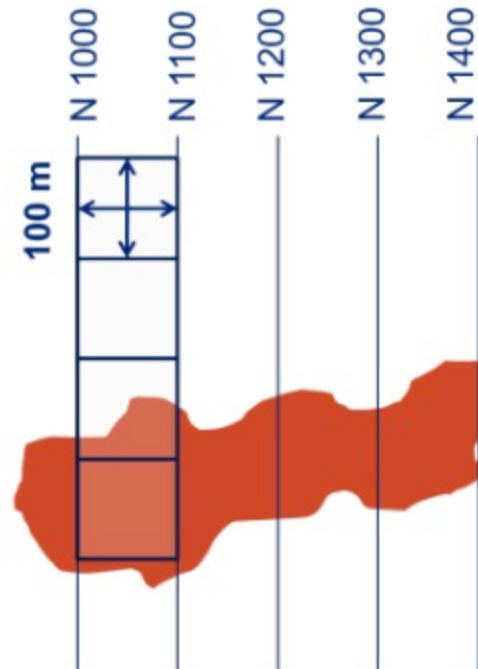
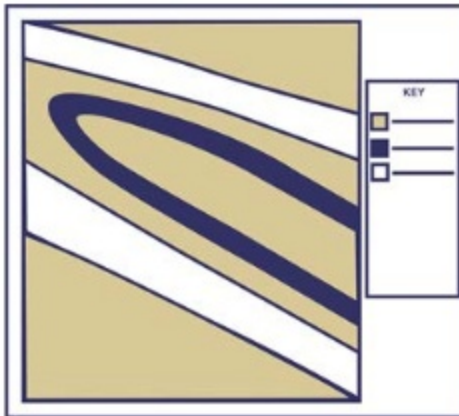


FINDING - CONNECTING THE DOTS



Geology

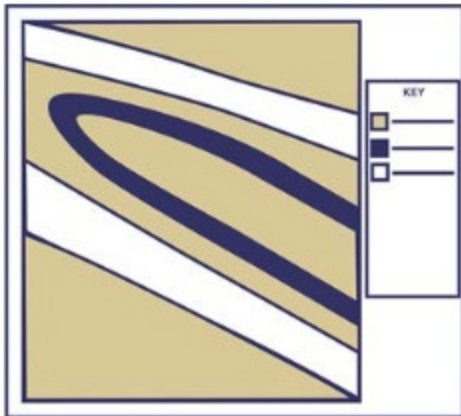
+ Geophysics



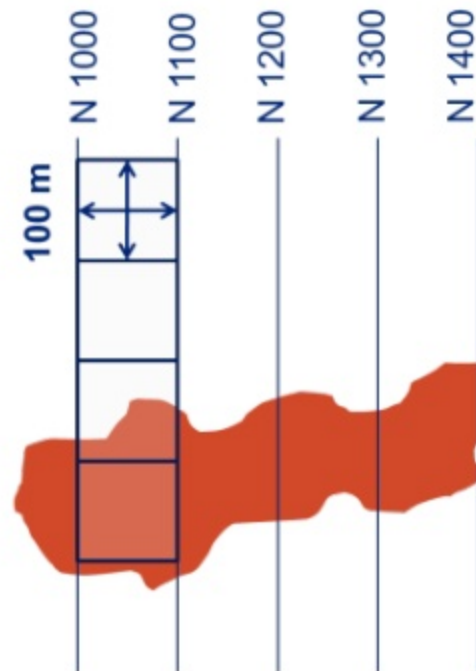
FINDING - CONNECTING THE DOTS



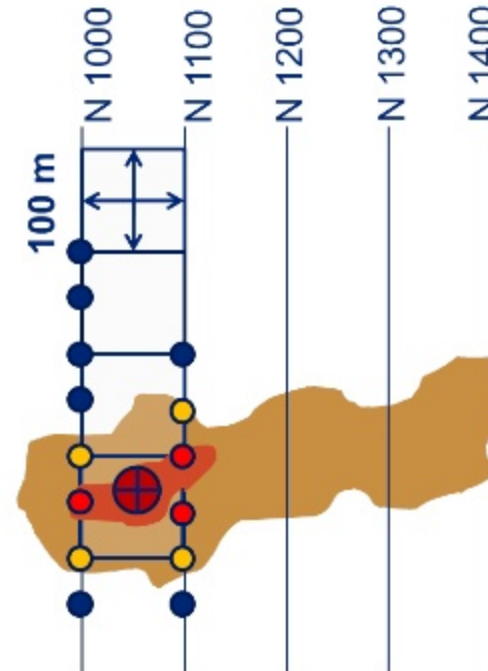
Geology



+ Geophysics



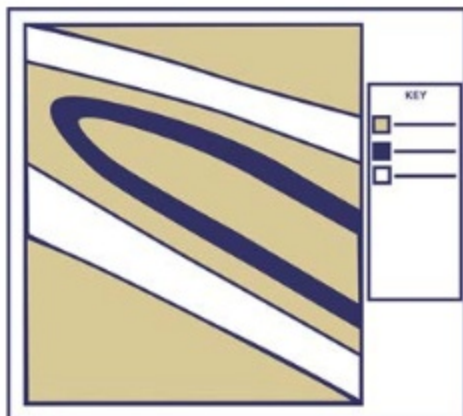
+ Geochem



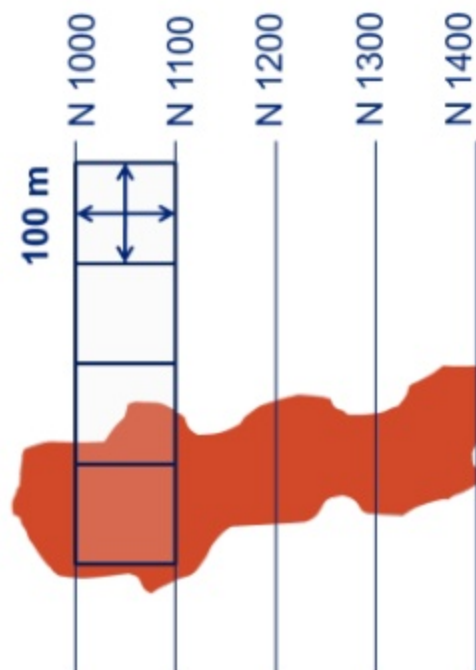
FINDING - CONNECTING THE DOTS



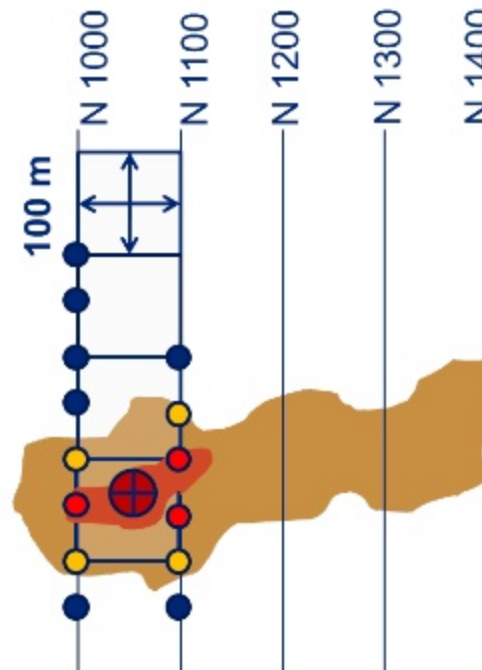
Geology



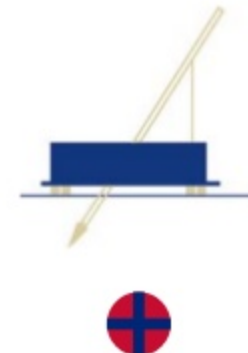
+ Geophysics



+ Geochem



= Drill Target



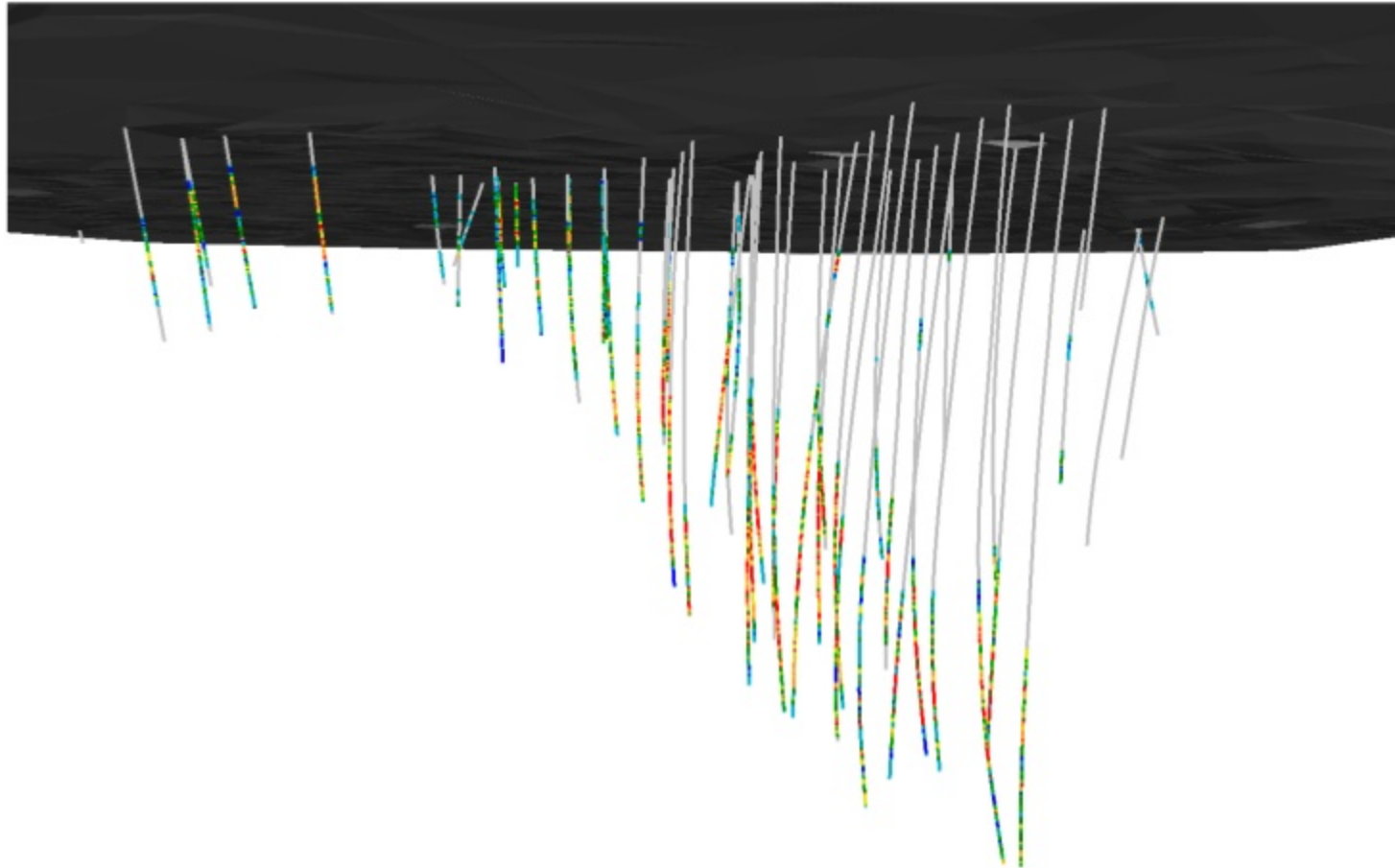
DRILLING – WHAT’S THAT?



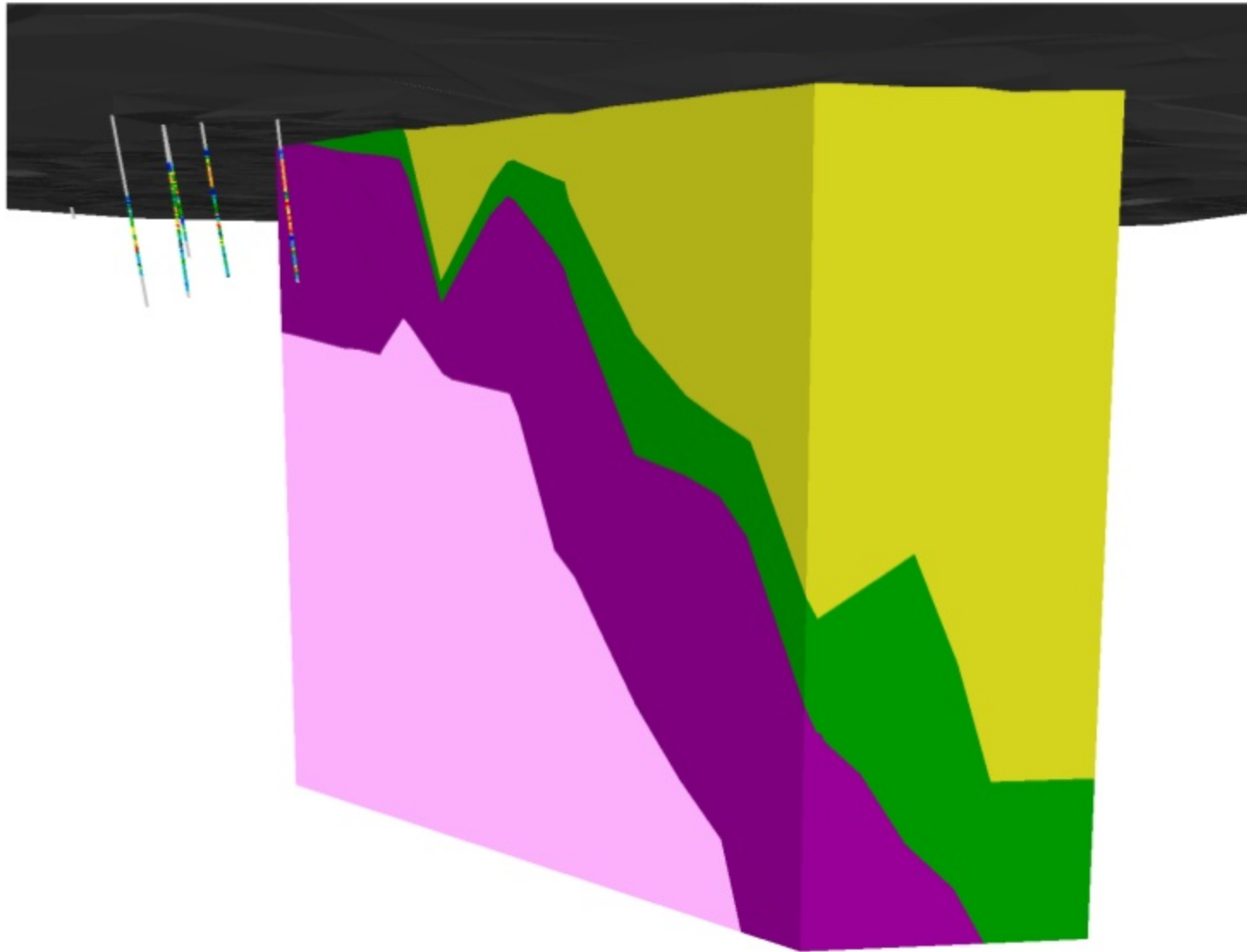
DRILLING CONTINUED



GEOLOGICAL MODEL

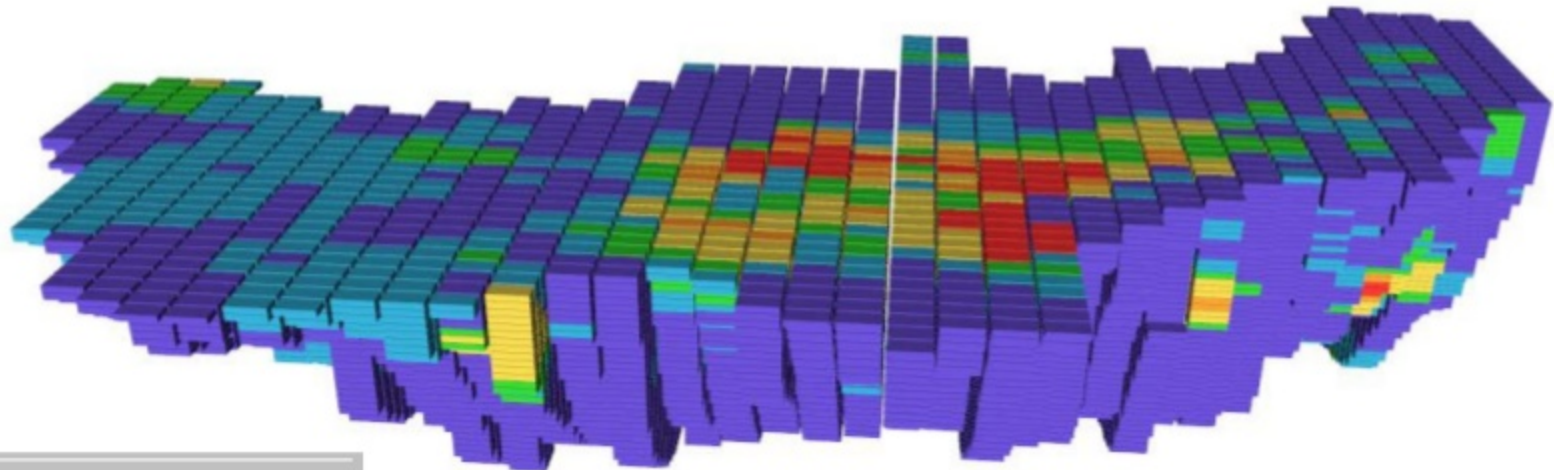


GEOLOGICAL MODEL



GRADE MODEL - DEPOSIT

N ←



NI	FROM	TO	
	0.0001	0.1	
	0.1	0.15	
	0.15	0.2	
	0.2	0.3	
	0.3	0.4	
	0.4	+	

BUILDING AN UNDERGROUND MINE

