

# York Potash

*Assessing water impacts for a  
major mine development*

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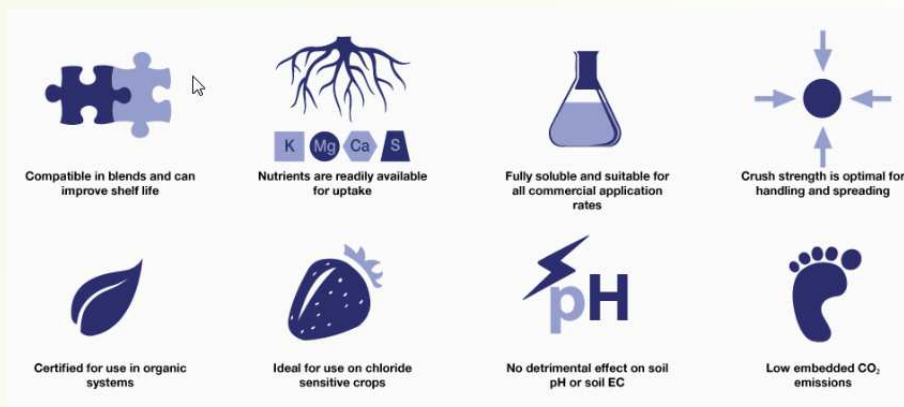
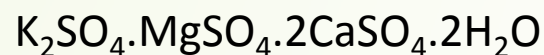
# Presentation structure

- The York Potash development
- Key challenges for the water environment
  - Groundwater
  - Surface watercourses
  - Transitional and coastal waters
- Approach
  - Integrated IA, FRA & WFD
  - Monitoring and data collection
  - Assessing impacts
- Climate change considerations
- Project outcomes

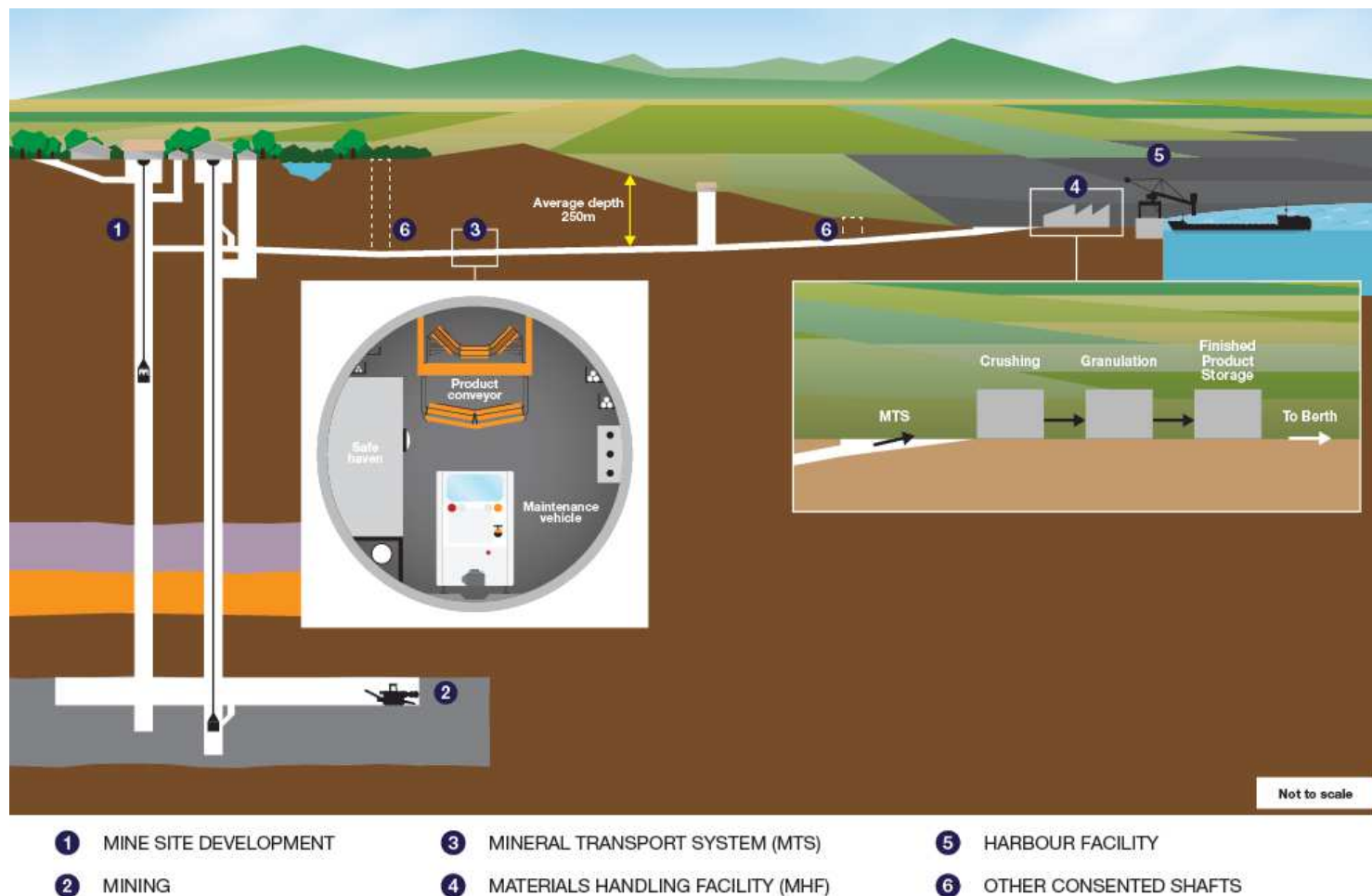


# The York Potash development

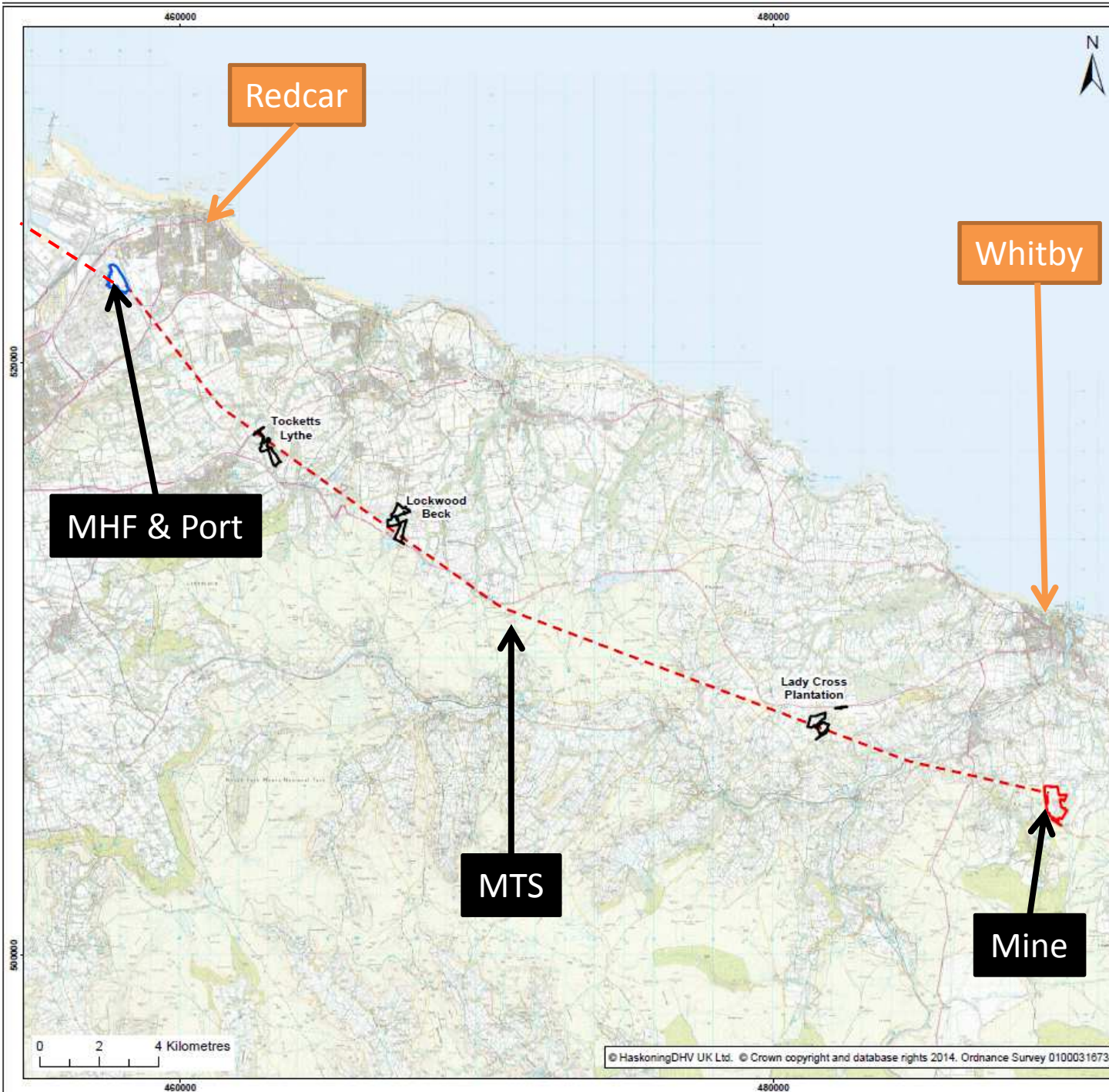
- Proposed polyhalite mine in North Yorkshire
  - Natural, organic multi-nutrient fertiliser (K, Mg, Ca, S)
  - Requires minimal processing
- Development will consist of four components:
  - Mine
  - Mineral Transport System
  - Materials Handling Facility
  - Port facilities (including conveyor)



# The York Potash development







- Legend:
- Minehead – Extent of Works
  - Intermediate Shaft and Spoil Site – Extent of Works
  - MHF and MTS Portal – Extent of Works
  - MTS Tunnel Alignment

Client: York Potash Limited

Project: York Potash Project Mine, MTS and MHF Environmental Statement

Title: York Potash Project Mine, MTS and MHF Overview

Part: 1 Figure: 1.2 Drawing No: PB1110-P1-1-002

Rev:	Date:	Drawn:	Checked:	Size:	Scale:
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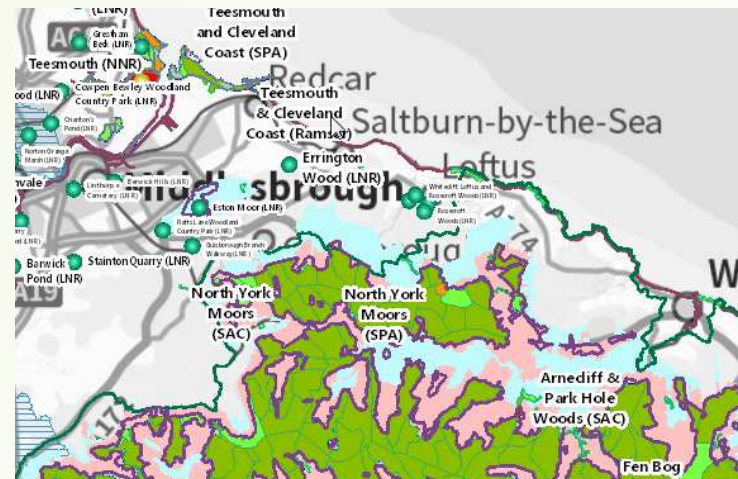
Co-ordinate system: British National Grid

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# Complex route to consent

- Port & conveyor
  - Nationally Significant Infrastructure Project
  - Subject to Development Consent Order
- Mine, MTS & MHF
  - Planning applications with several planning authorities
  - North York Moors National Park Authority
  - Redcar & Cleveland
- Designated sites:
  - North York Moors National Park, SSSI, SAC & SPA
  - Teesmouth & Cleveland Coast SPA
  - Littlebeck Wood SSSI
- Major development with potential to impact upon the water environment:
  - Groundwater
  - Surface watercourses
  - Transitional and coastal waters
  - Water dependent SSSI/SPA/SAC habitats





# Key challenges for the water environment

- Mine and MTS shafts located in area with sensitive upland watercourses
  - Hydrology sensitive to changes in surface and groundwater flows
  - Geomorphology sensitive to changes in flows and sediment supply
  - Riverine ecology sensitive to changes in hydrology, geomorphology and pollutants
  - Terrestrial ecology and water supplies sensitive to changes in groundwater level and quality



# Key challenges for the water environment

- MHF located in heavily developed area
  - Disturbance of contamination
  - Further modify HMWBs
  - Important to avoid further environmental degradation
- Harbour facility located on banks of Tees estuary
  - Sensitive to changes in water quality as a result of dredging for berth/approach
  - Sensitive to hydromorphology changes associated with deepening and presence of new structures
  - Direct loss of intertidal habitat associated with new structure
  - Fish sensitive to noise associated with construction





# Approach: Integrated IA, FRA & WFD

- Suite of potential impacts on a wide range of receptors
- Approach needs to encompass all disciplines to assess interactions between different types of water body
- Need to assess impacts and demonstrate compliance with a range of legislation
  - EIA requirements
  - Flood risk requirements
  - WFD requirements
  - Special qualities of the North York Moors National Park
- Used common evidence to produce an integrated assessment
- Engage with regulators at outset



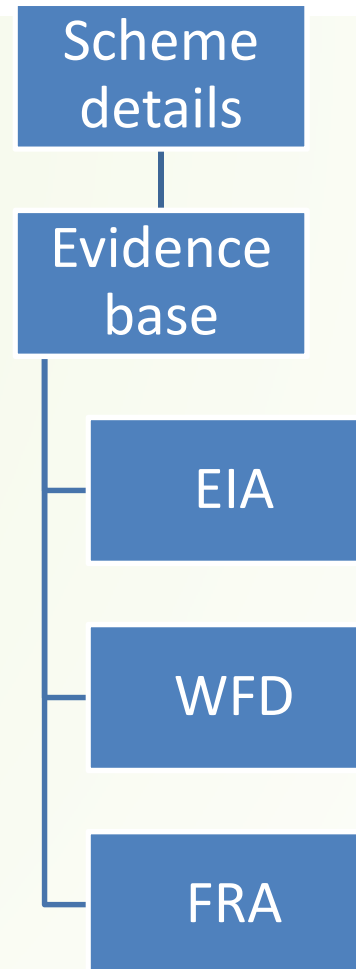
# Approach: Monitoring and data collection

- Design monitoring strategy to cover all assessment requirements
- Hydrological and hydrogeological monitoring
  - Water levels and discharges
  - Water quality
- Geomorphological monitoring
  - Walkover surveys
  - Fluvial audit
  - Identification of active reaches, sediment sources, etc.
- Determine likely response to future changes
  - Natural (climate change)
  - As a result of development



# Approach: Assessing impacts

- Divide scheme into different components
  - Construction, operation and decommissioning phases
  - Individual activities and/or scheme components
- Identify potential mechanisms for each component to affect water receptors
  - Physical processes
  - Chemical changes
  - Biological responses
- Identify impacts resulting from mechanisms for each assessment
  - Environmental Impact Assessment
  - WFD compliance assessment
  - Flood Risk Assessment












# Climate change considerations

- Consider whether potential effects of the development could be exacerbated by climate change
- Qualitative assessment using UKCP09 (medium emissions in 2050)
- Potential for increased rainfall, groundwater levels and surface water flows
- Potential for sea level rise to effect coastal processes and coastal flooding
- Ensure likely long term trends included in assessment
- Separate natural responses to predicted climate change from responses to development
- Assess whether climate change will make responses “worse” or less of an issue



# Project outcomes

PROJECT ELEMENT	DETERMINING AUTHORITY	STATUS	
Mine and MTS	NYMNPA		Approved
Mine and MTS	Redcar and Cleveland Borough Council		Approved
MHF	Redcar and Cleveland Borough Council		Approved
Harbour facilities	Secretary of State for Transport		Approved
Construction village and construction worker park-and-ride facility	Scarborough Borough Council		Approved
Operational park-and-ride facility	National Park Authority		Approved
Offshore mining	Marine Management Organisation		Approved

# Project outcomes

- Combined approach ensured that:
  - All regulatory requirements were addressed in an integrated, effective way
  - All impacts on different types of water body were considered in a consistent way
  - Interactions between different types of water body were considered in the same assessment, e.g.  
  
Groundwater → surface water  
  
River → estuary
- Draw upon common evidence to inform assessments, rather than interweaving assessments into the EIA
- Assessment results were able to pre-empt planning conditions
- Consent granted for all parts of the development



# Any questions?

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