



DEEPENING KOKKOLA FAIRWAY AND HARBOUR

PRESS CONFERENCE

MARCH 8TH, 2018

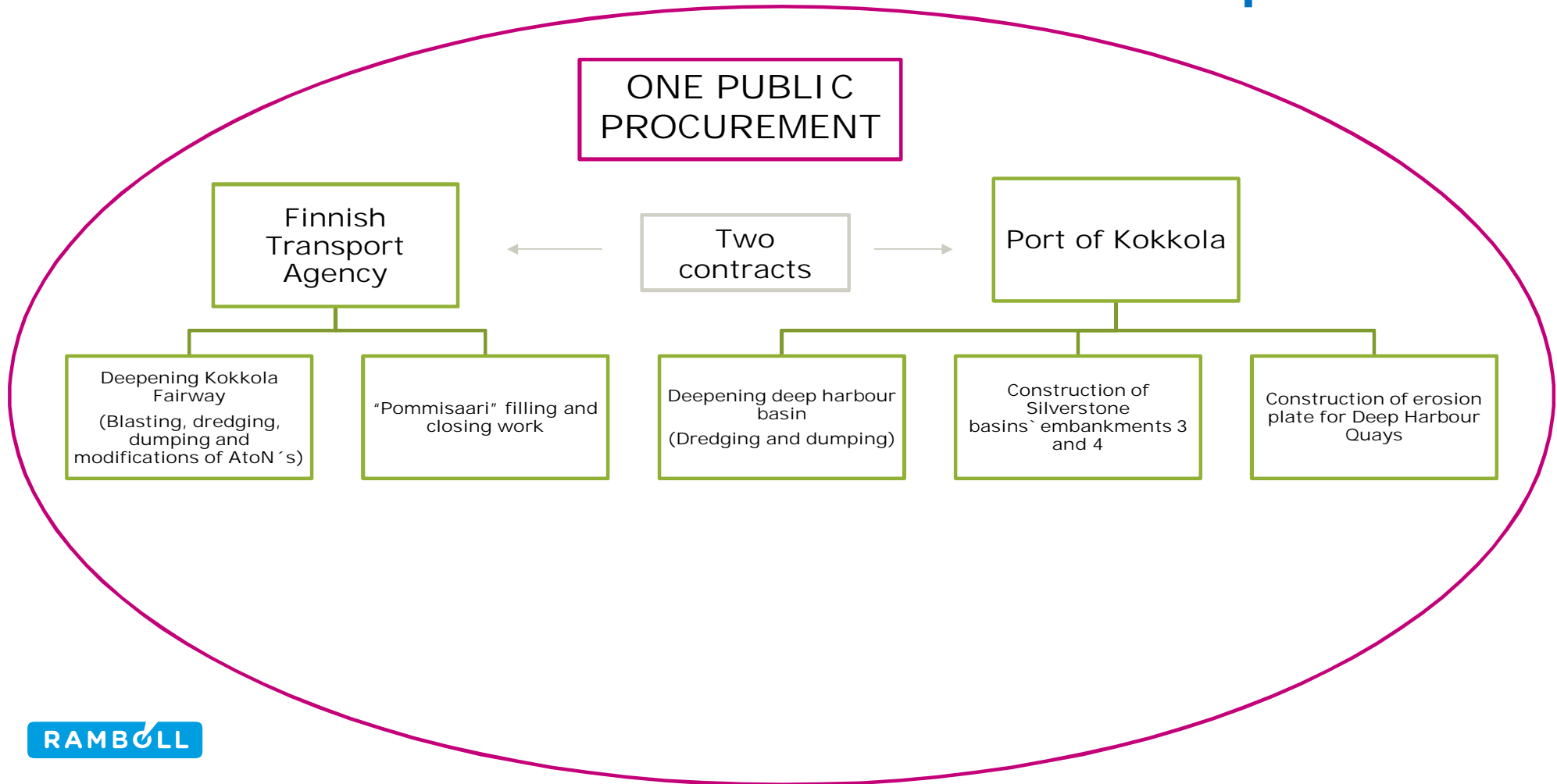


KOKKOLAN SATAMA OY
PORT OF KOKKOLA LTD





Procurement setup





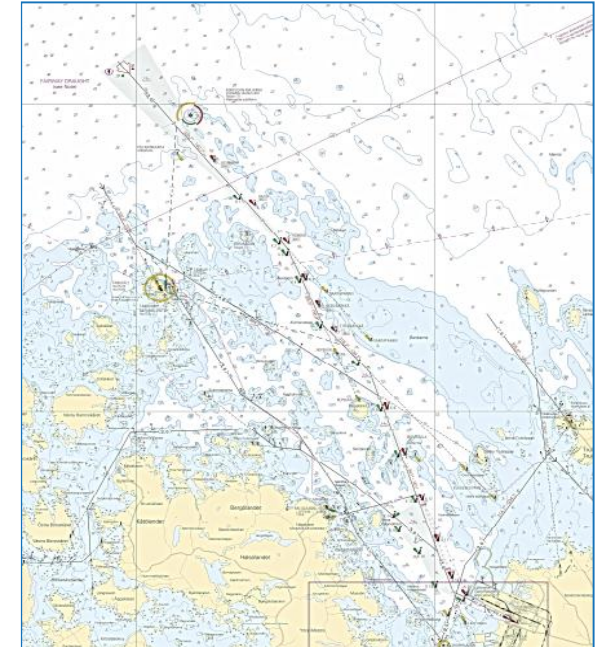
KOKKOLAN SATAMA OY
PORT OF KOKKOLA LTD

Liikennevirasto

KOKKOLA FAIRWAY AND HARBOUR BASIN

- Fairway leading to port of Kokkola is app. 19km long, with minimum width of 178 m
- Fairway classification is VL1 (merchant shipping), design vessel:
 - 65 000 dwt bulk vessel, $l = 245$ m, $b = 35$ m, $d = 13$ m.
- Marked with 41 Aids to Navigation.
- Begins with two lanes about 2,5 km North-West from Kokkola lighthouse and continues one-laned from lighthouse to harbour.
- Secured depth level at outer parts is -15,4 m, and in from Repskär -14,8 m.
- Authorised draught in harbour basin 13,0m/10,5m/9,5m, with secured depth levels -14,8m /-12,1m; -11,5m/-10,5m

RAMBOLL





KOKKOLAN SATAMA OY
PORT OF KOKKOLA LTD

Liikennevirasto

DEEPENING OF FAIRWAY AND HARBOUR BASIN

- Fairway is planned to be deepened to authorized draught of 14,0 m with secured depth levels N2000 -16,2m / -15,7m
- Harbour basin will be deepened with 3 different secured depth levels N2000 -15,7m / -12,4m / -10,4m
- Closing "Pommisaari" (embankments, removal of connection road and filling min + 1,0m level)
- Modification of floating AtoN's
- Construction of new embankments (~1700m) for disposals
- Construction of erosion plate (app. 15m*600m)

RAMBOLL





ESTIMATED DREDGING QUANTITIES



KOKKOLAN SATAMA OY
PORT OF KOKKOLA LTD

Liik
enne
vira
sto



SUMMARY OF QUANTITIES

NOTE! ALL FOLLOWING FIGURES ARE BASED ON GENERAL DESIGN THEORETICAL CALCULATION RESULTS

Dredging material	Fairway		Harbour	
	m3	m2	m3	m2
Cohesive soils	382000	778000	143000	32000
Frictional soils	368000	1052000	0	0
Rock blasting		167000		0
Risk areas	151000	320000	84600	141000
Contaminated soils	6000	28000	57000	190000
Threshold sediments	97000	147000	224000	181000

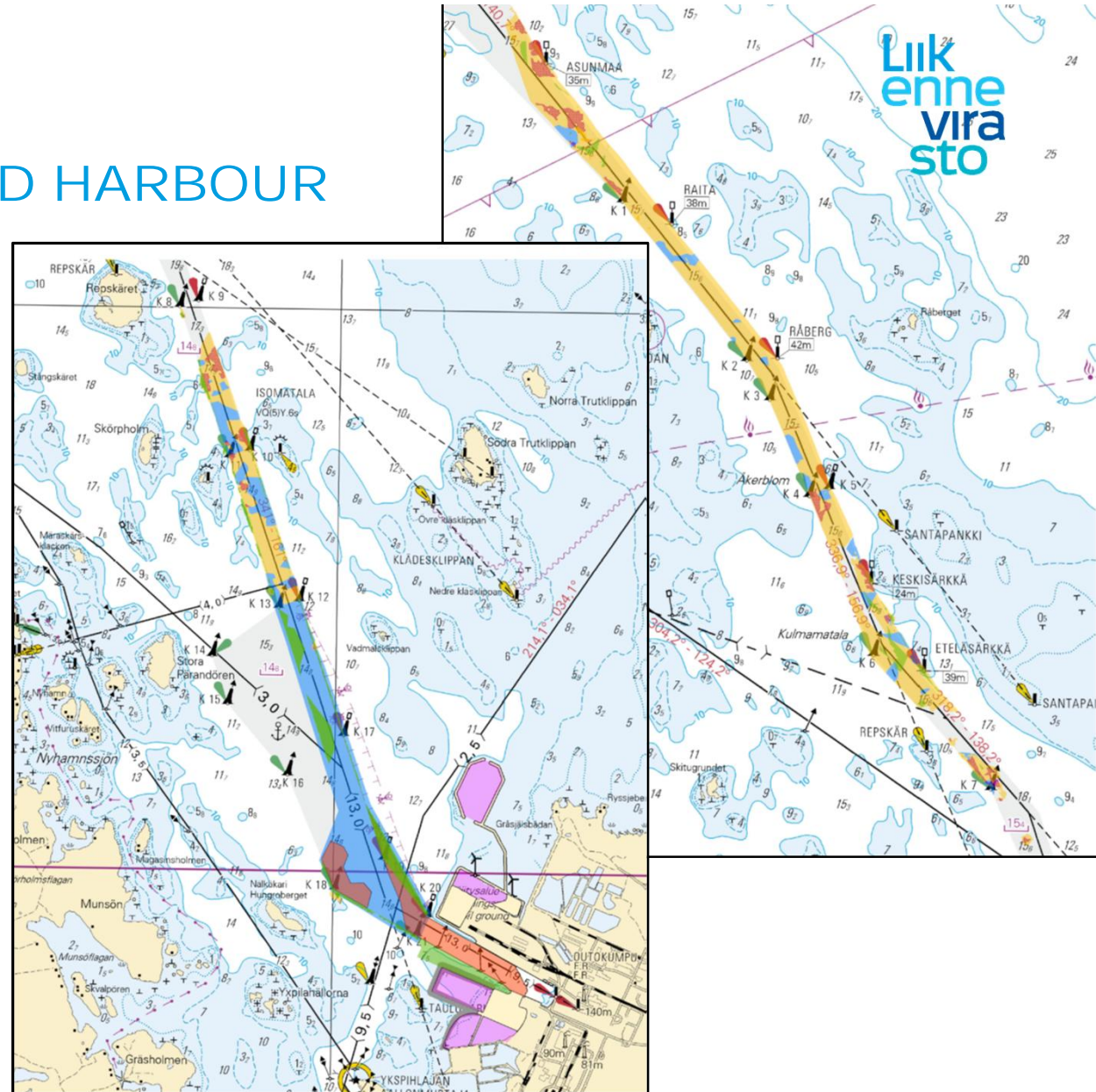


KOKKOLAN SATAMA OY
PORT OF KOKKOLA LTD

RISK AREAS, FAIRWAY AND HARBOUR

- Risk areas will be dredged during the first season
 - *Areas will be search and cleaned by Finnish Navy beforehand*
 - Risk areas are based on magnetometric investigations
 - Area approximately 460 000m²
- (Green area)

RAMBOLL



Liikennevirasto



DREDGING AMOUNTS AND AREAS

SOFT/COHESIVE SOILS, THRESHOLDS AND CONTAMINATED SEDIMENTS

- Total soft soil (clean) amount app.
 - Object 3: $A \approx 276\,000\text{ m}^2$, $V \approx 130\,000\text{ m}^3$
 - Object 4: $A \approx 502\,000\text{ m}^2$, $V \approx 252\,000\text{ m}^3$

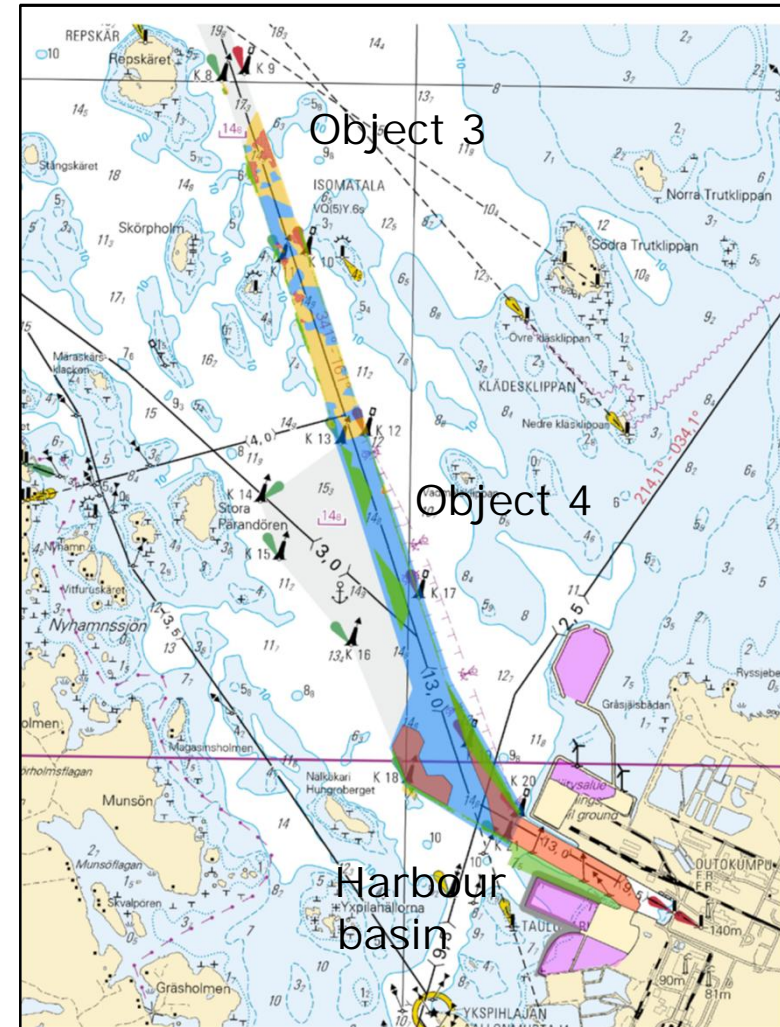
Blue

- Threshold sediments (above level 2 criteria)
Object 4: $A \approx 150\,000\text{ m}^2$, $V \approx 97\,000\text{ m}^3$
 - Harbour basin and under embankments: $V \approx 213\,000\text{ m}^3$

Red

- Contaminated sediments A $\approx 218\,000\text{ m}^2$, V $\approx 72\,000\text{ m}^3$

Orange



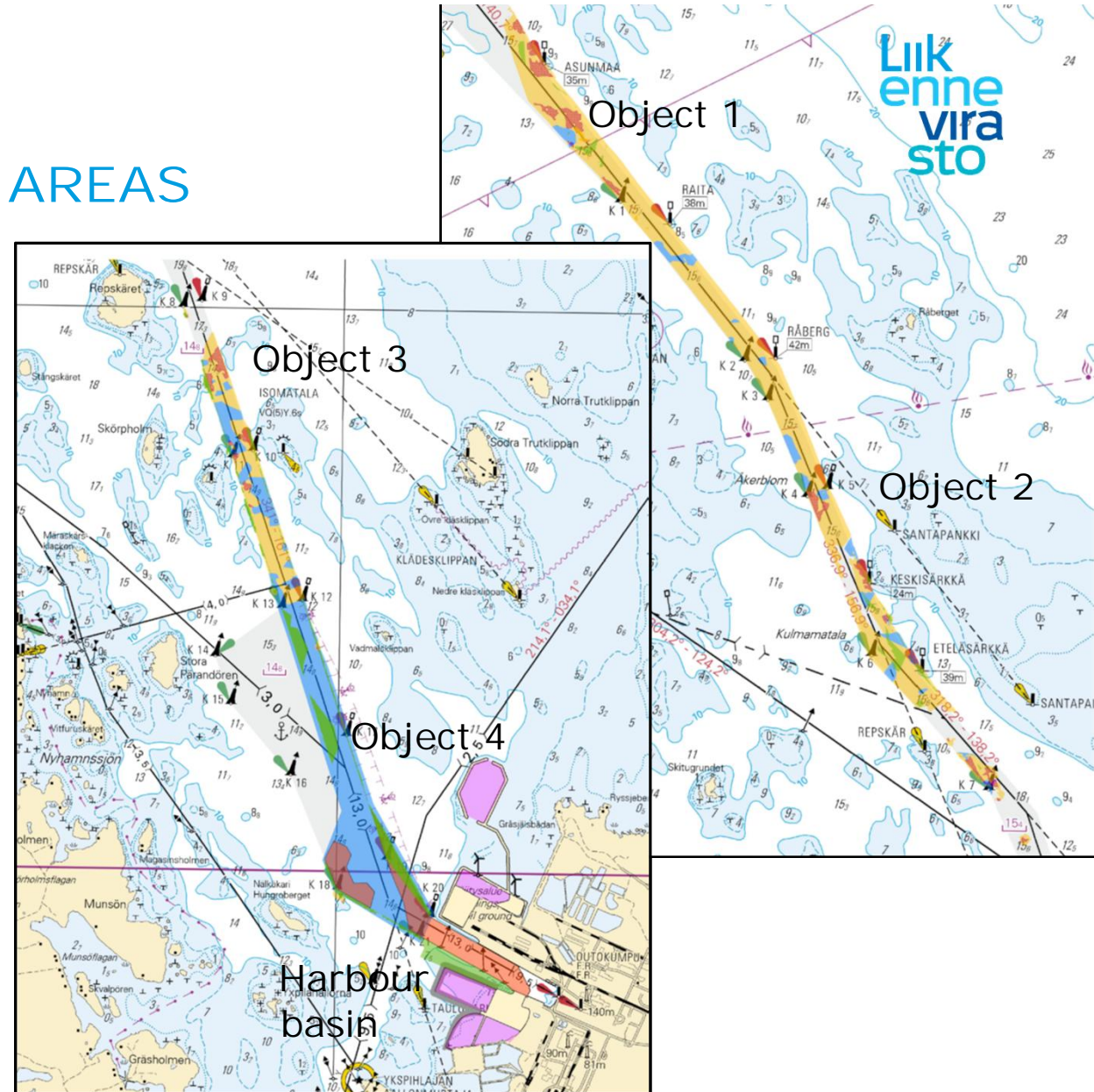


KOKKOLAN SATAMA OY
PORT OF KOKKOLA LTD

DREDGING AMOUNTS AND AREAS FRICTIONAL SOIL

- Total frictional soil amounts app.
 - Object 1: $A \approx 455\,300\text{ m}^2$, $V \approx 151\,400\text{ m}^3$
 - Object 2: $A \approx 416\,800\text{ m}^2$, $V \approx 127\,500\text{ m}^3$
 - Object 3: $A \approx 179\,500\text{ m}^2$, $V \approx 89\,300\text{ m}^3$

RAMBOLL





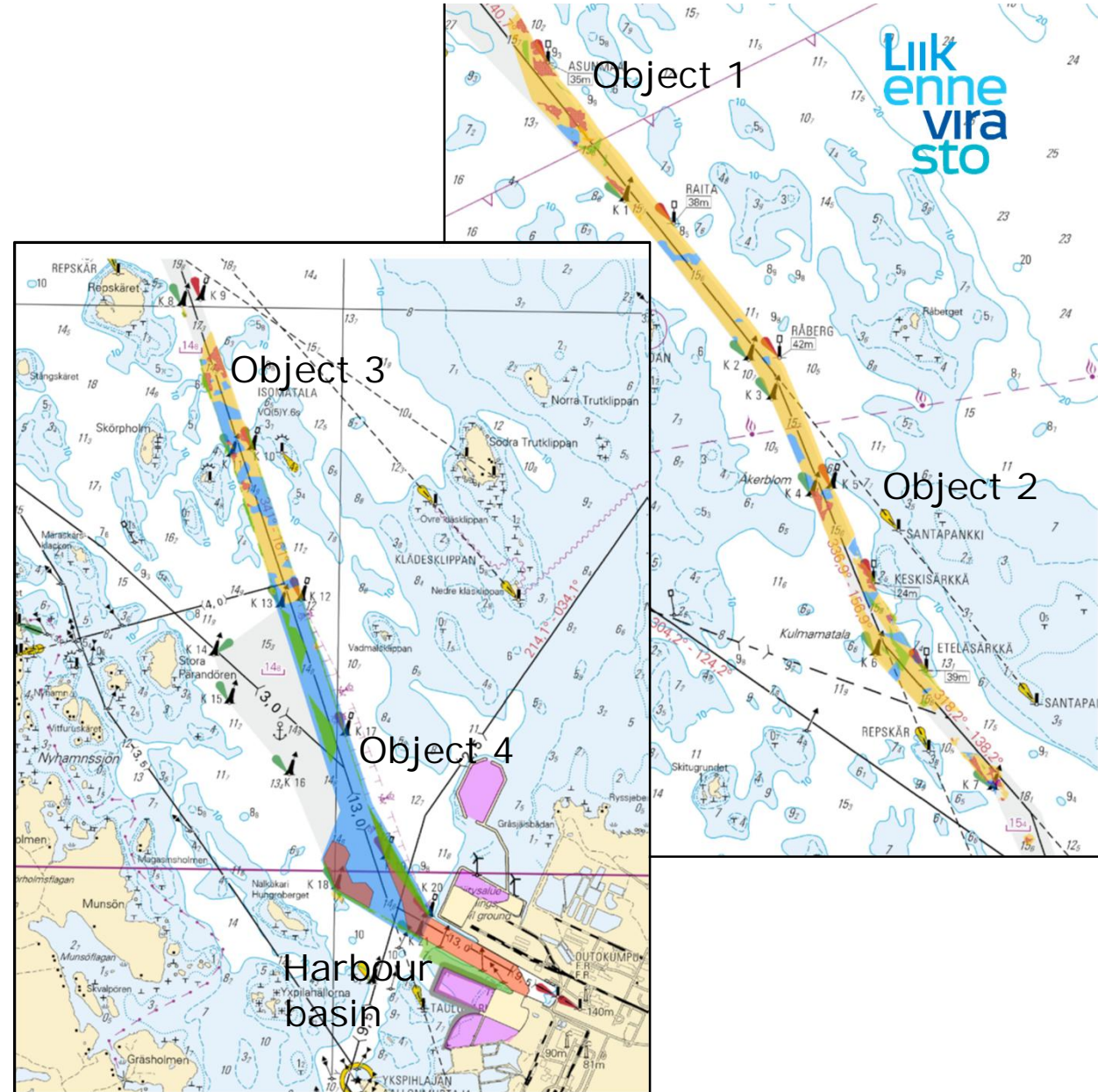
KOKKOLAN SATAMA OY
PORT OF KOKKOLA LTD

UNDERWATER BLASTING

- Total amounts app.
 - Object 1: $A \approx 76\,700\text{ m}^2$
 - Object 2: $A \approx 44\,200\text{ m}^2$
 - Object 3: $A \approx 45\,500\text{ m}^2$
 - Object 4: $A \approx 455\text{ m}^2$
- In total: $\sim 167\,000\text{ m}^2$

Purple

RAMBOLL

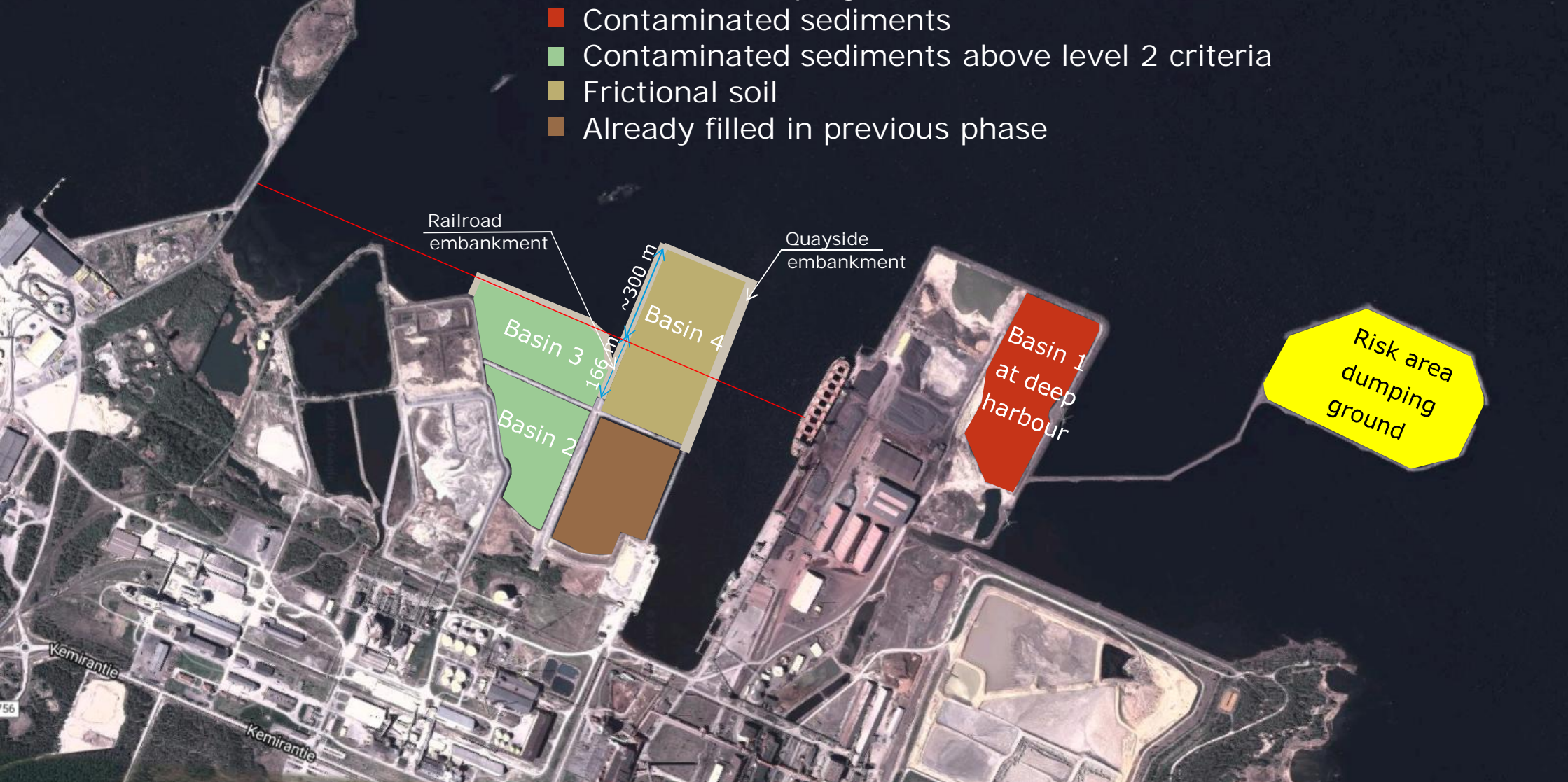


DUMPING SITES



DUMPING AREAS

- Risk area dumping and soft soils
- Contaminated sediments
- Contaminated sediments above level 2 criteria
- Frictional soil
- Already filled in previous phase

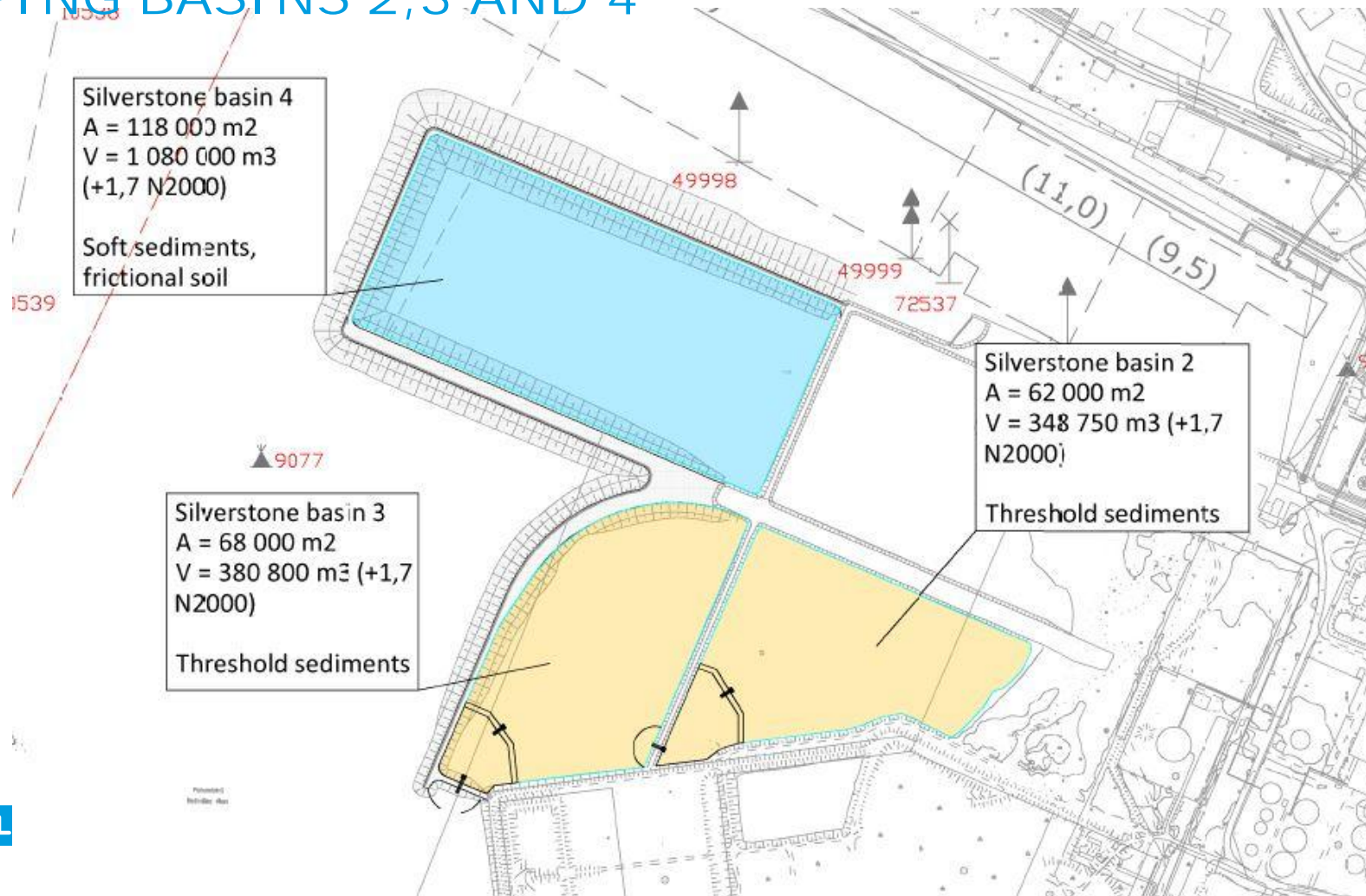




KOKKOLAN SATAMA OY
PORT OF KOKKOLA LTD

Liikennevirasto

DUMPING BASINS 2,3 AND 4

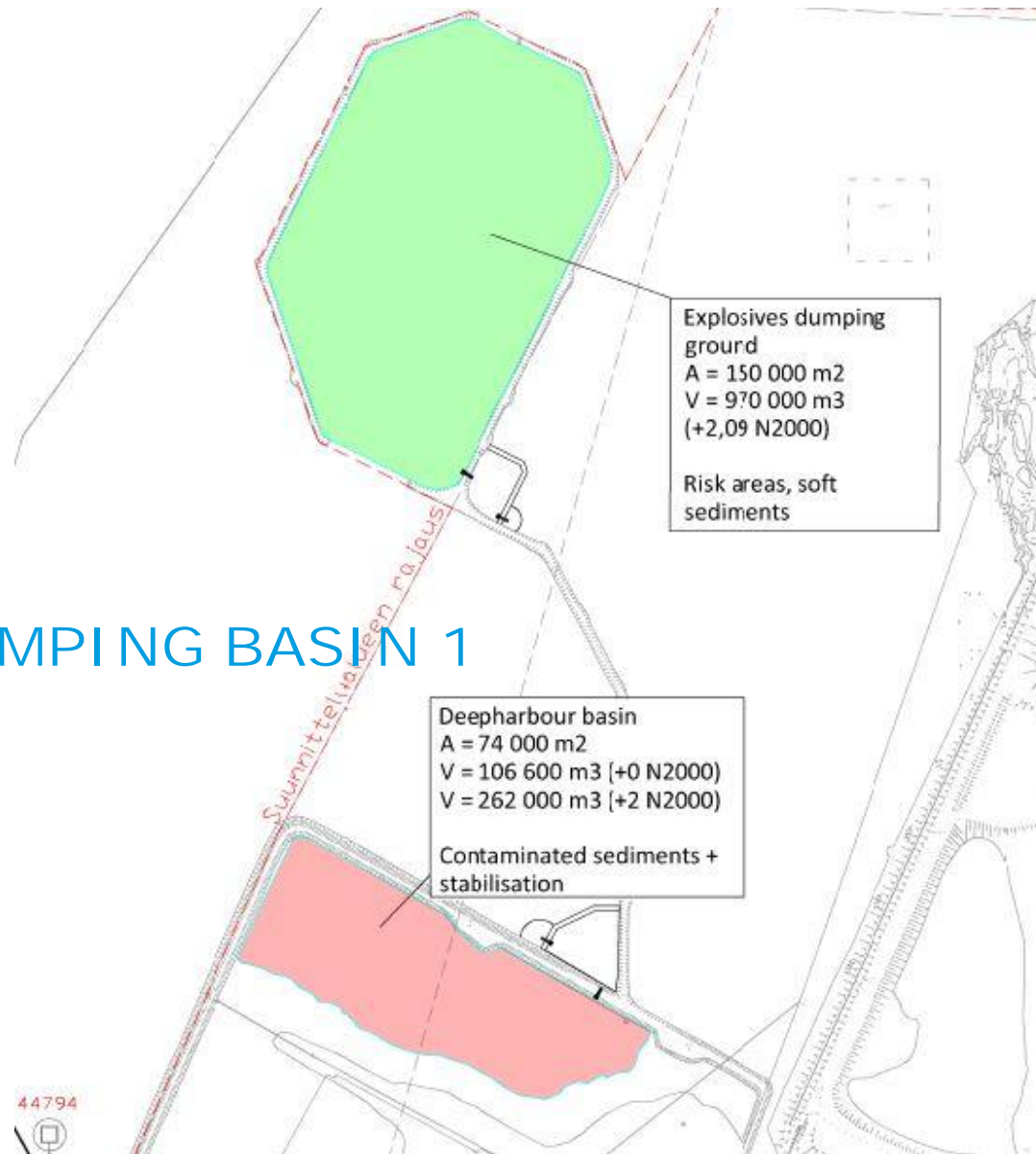




KOKKOLAN SATAMA OY
PORT OF KOKKOLA LTD

Liikennevirasto

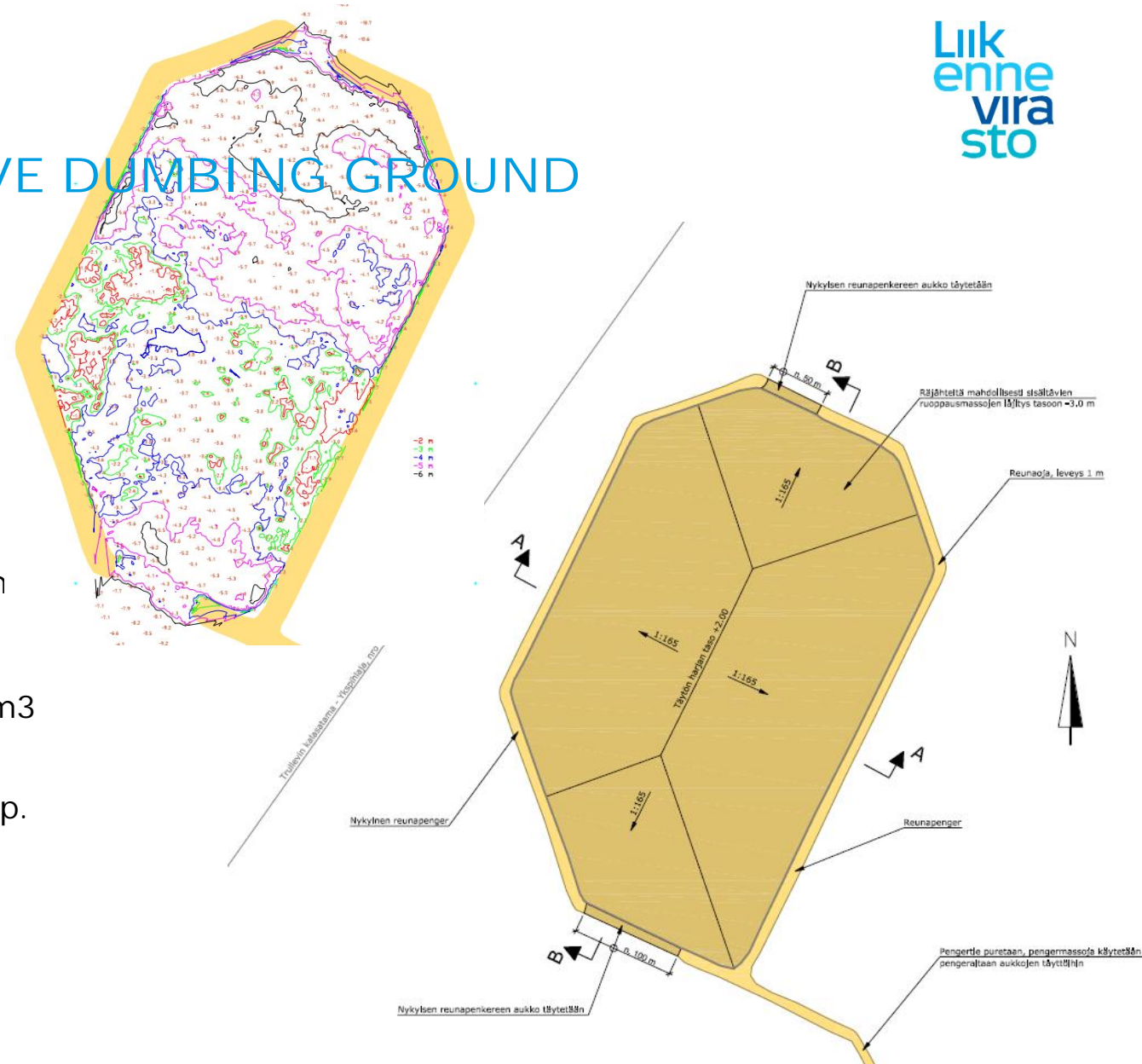
POMMI SAARI AND DUMPING BASIN 1



RAMBOLL

CLOSING THE EXPLOSIVE DUMPING GROUND

- Risk sediments dumping with barge to explosive dumping ground underneath (N2000 -1,828 m).
- The island will be covered with clean sediments min. N2000 +0,9 m
- Capacity of the basin:
 - under +2,17 m (N2000), 1 014 000 m
- Area 15 hectares
- Barge way closing requires app. 52 000 m³ mixed quarry
- Explosive dumping ground bund road app. 50 000 m³ mixed quarry



SCHEDULE



1. Deep harbour basin
2. Basin 2
3. Basin 3
4. Basin 4
5. Deep harbour basin
6. Explosive dumping ground
7. Silverstone harbour extension
8. General Port
9. Kokkola fairway

Task	2018	2019	2020	2021	2022
Dredging					
Contaminated sed					
Threshold sed					
Risk areas					
Frictional soils					
Clean soft soils					
Blasting and remov.					
Blasting works					
Removal of connection road					
Dumping					
Pommisaari					
Filling by barge					
Filling					
Finish coating					
Deep Harbour Basin					
Filling					
Dumping basin 2					
Filling					
Dumping basin 3					
Construction					
Filling					
Dumping basin 4					
Construction					
Filling					
Closing embankment					
Other works					
Erosion plate construction					



KOKKOLAN SATAMA OY
PORT OF KOKKOLA LTD

Liik
enne
vira
sto

THANK YOU!