

# Progress of Landside Impermeable Wall freezing: Phase 1 of the first stage



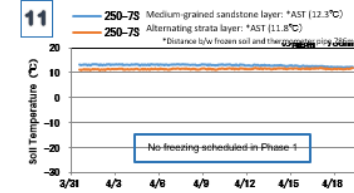
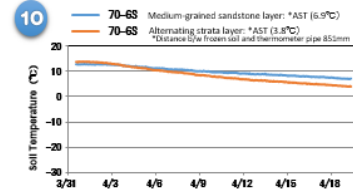
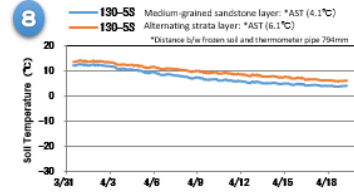
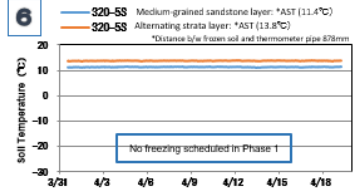
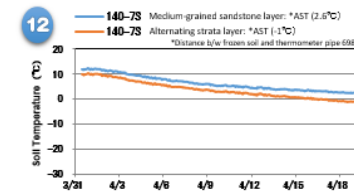
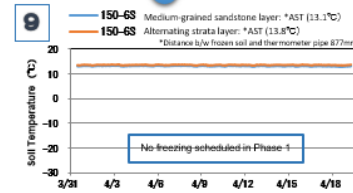
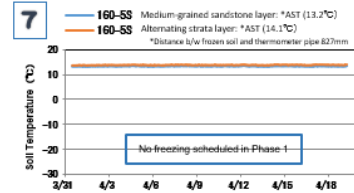
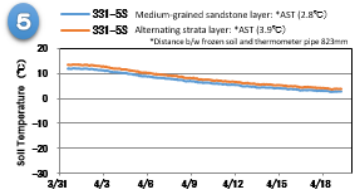
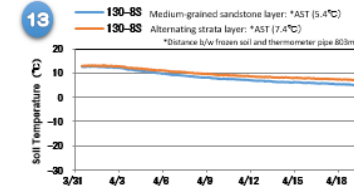
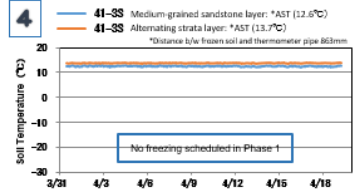
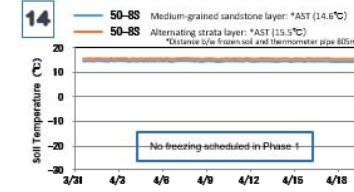
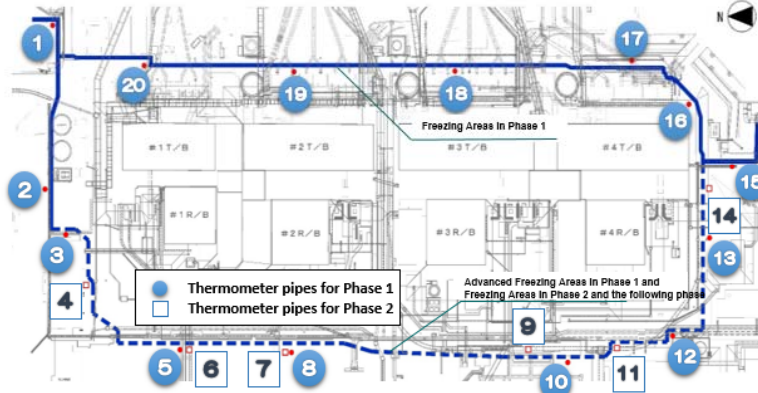
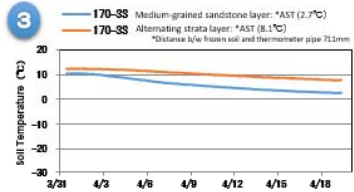
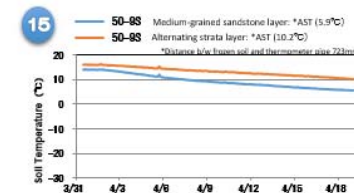
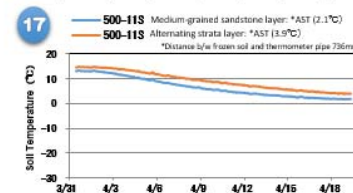
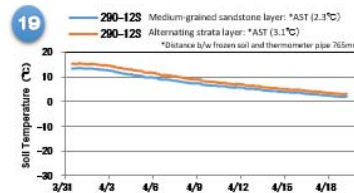
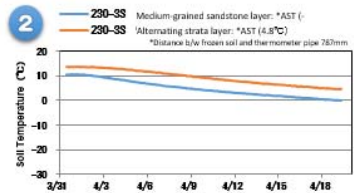
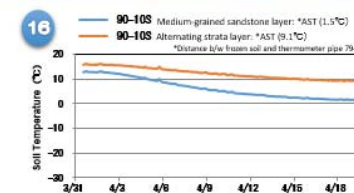
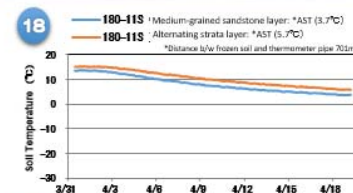
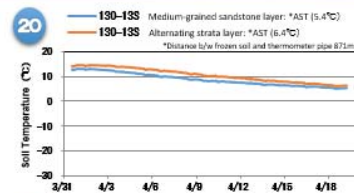
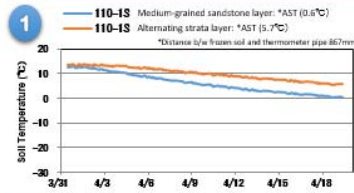
- The purpose of the Landside Impermeable Wall construction lies not in freezing soil to form a underground wall but in keeping groundwater from flowing into the reactor/turbine buildings, which leads the prevention of new contaminated water being generated.
- By closing the entire seaside line in Phase 1 of the first stage, it is expected that the flow of groundwater into the bank protection area will be prevented. As a result, the groundwater levels around the buildings will rise and the risks will be reduced of contaminated water leaking from the buildings if the set groundwater levels inside and outside of the buildings are reversed.
- How freezing of the Landside Impermeable Wall on the seaside line has progressed will be evaluated by checking the difference in groundwater levels inside and outside of the wall.

# Changes in soil temperatures over time



Note  
 · Average Soil Temperature (AST) of medium-grained sandstone layer (blue line): average value of thermometer temperatures measured at 1m intervals except for the areas between ground surface and Ground Level 2m and the areas around the first muddy layer boarder.  
 · Average Soil Temperature (AST) of alternating strata layer (red line): Average value of thermometer temperatures measured at 1m intervals except for the areas around the upper and lower parts of the alternating layer boarder.

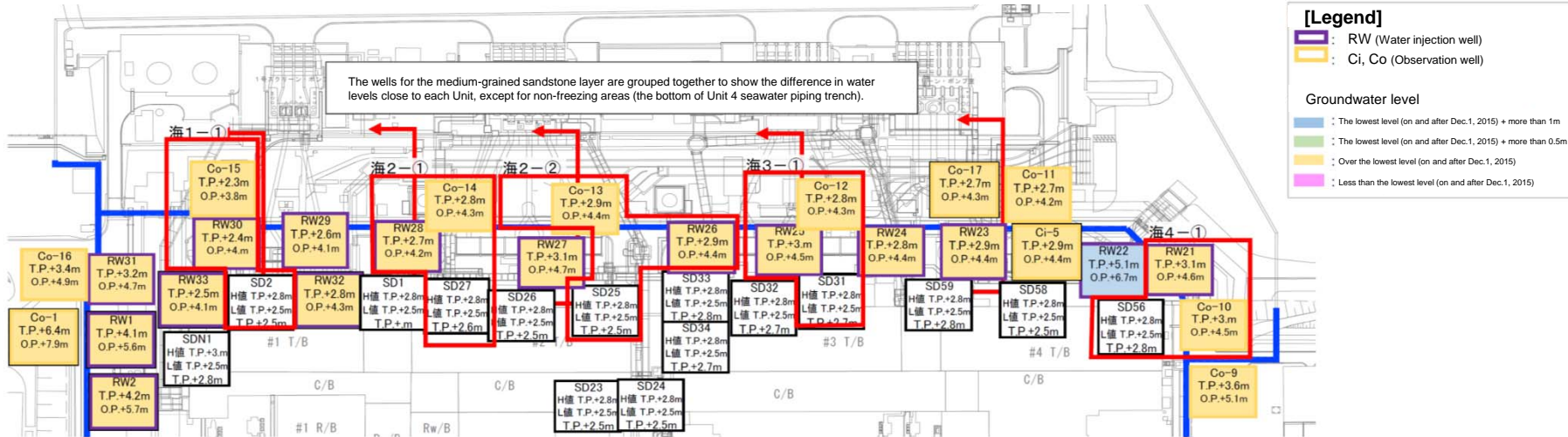
## Landside Impermeable Wall Freezing Progress Report: Soil Temperatures (Temperatures in Thermometer Pipes) (as of 7 a.m. on April 19) Phase 1



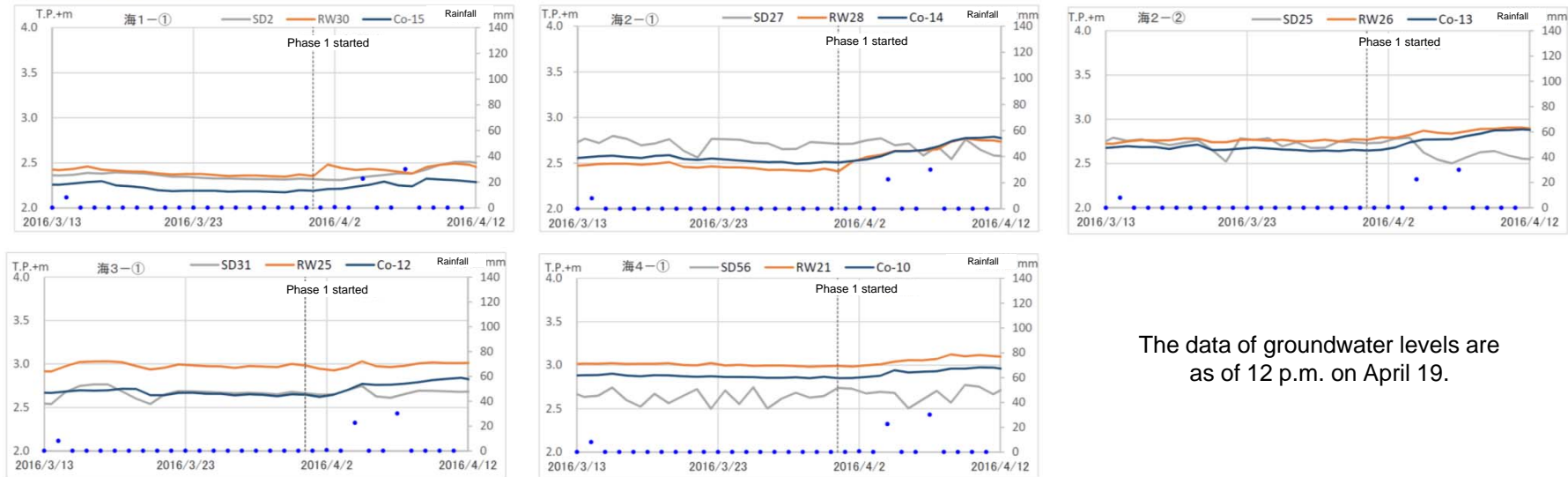
# Groundwater levels and hydraulic heads (in the medium-grained sandstone layer 1 on the seaside)



## 1. Landside Impermeable Wall (groundwater levels around the seaside and the operations of Subdrain pumping system)



## 2. Groundwater levels inside and outside of the Landside Impermeable Wall

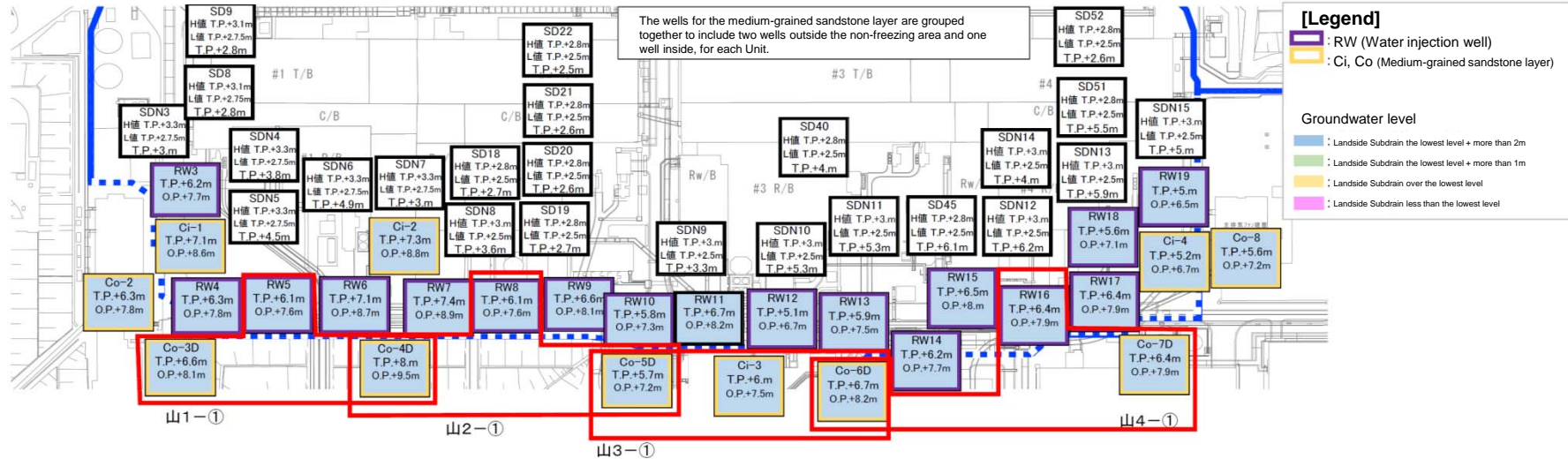


The data of groundwater levels are as of 12 p.m. on April 19.

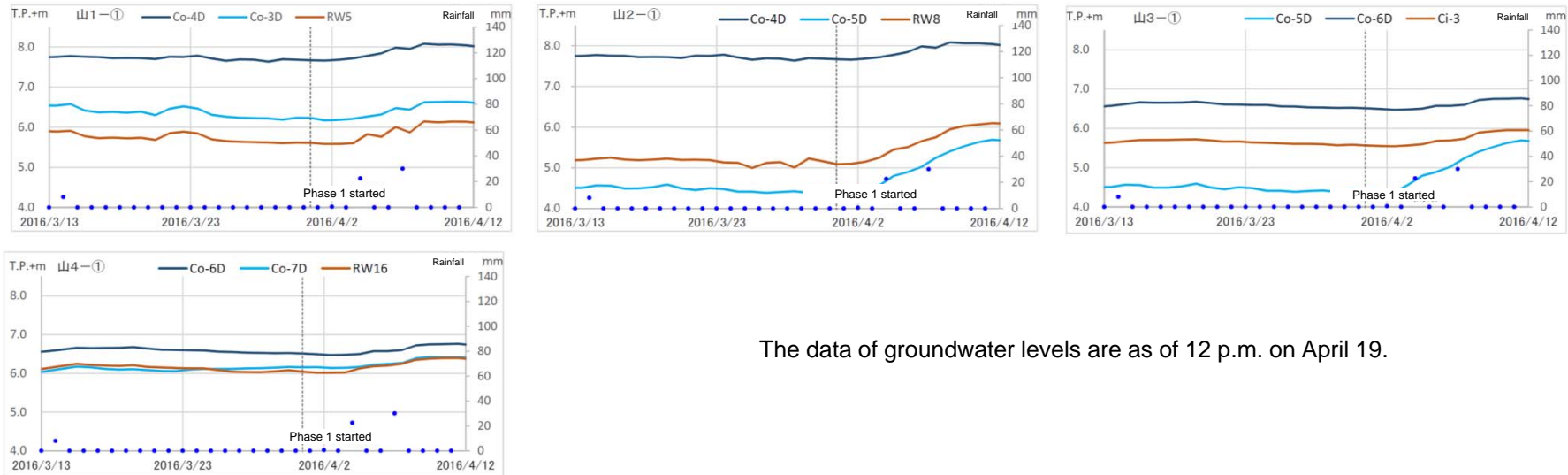
# Groundwater levels and hydraulic heads (in the medium-grained sandstone layer 2 on the landside)



## 3. Landside Impermeable Wall (groundwater levels around the seaside and the operations of Subdrain pumping system)



## 4. Groundwater levels inside and outside of the Landside Impermeable Wall

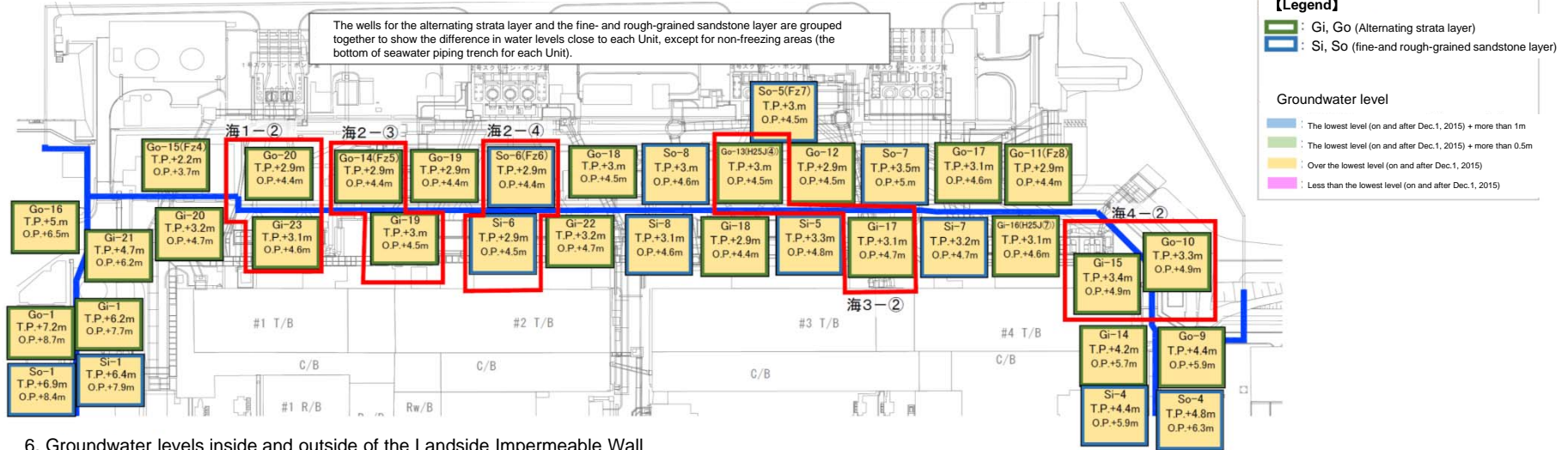


The data of groundwater levels are as of 12 p.m. on April 19.

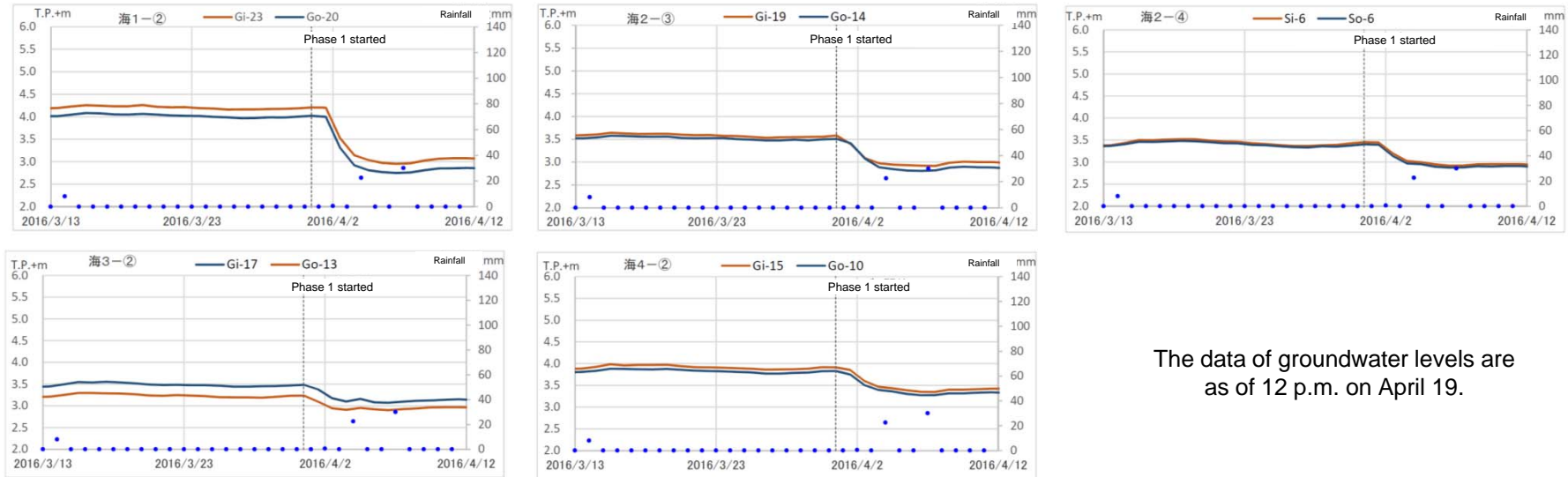
# Groundwater levels and hydraulic heads

(in the alternating strata layer and the fine- and rough-grained sandstone layer 1 on the seaside) **TEPCO**

## 5. Landside Impermeable Wall (groundwater levels around the seaside and the operations of Subdrain pumping system)



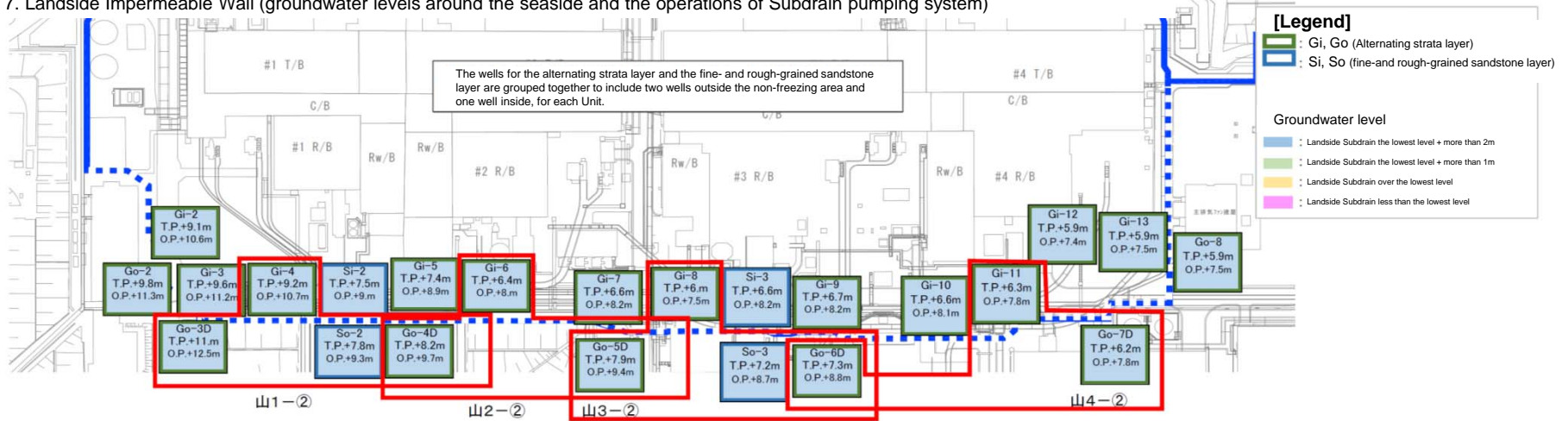
## 6. Groundwater levels inside and outside of the Landside Impermeable Wall



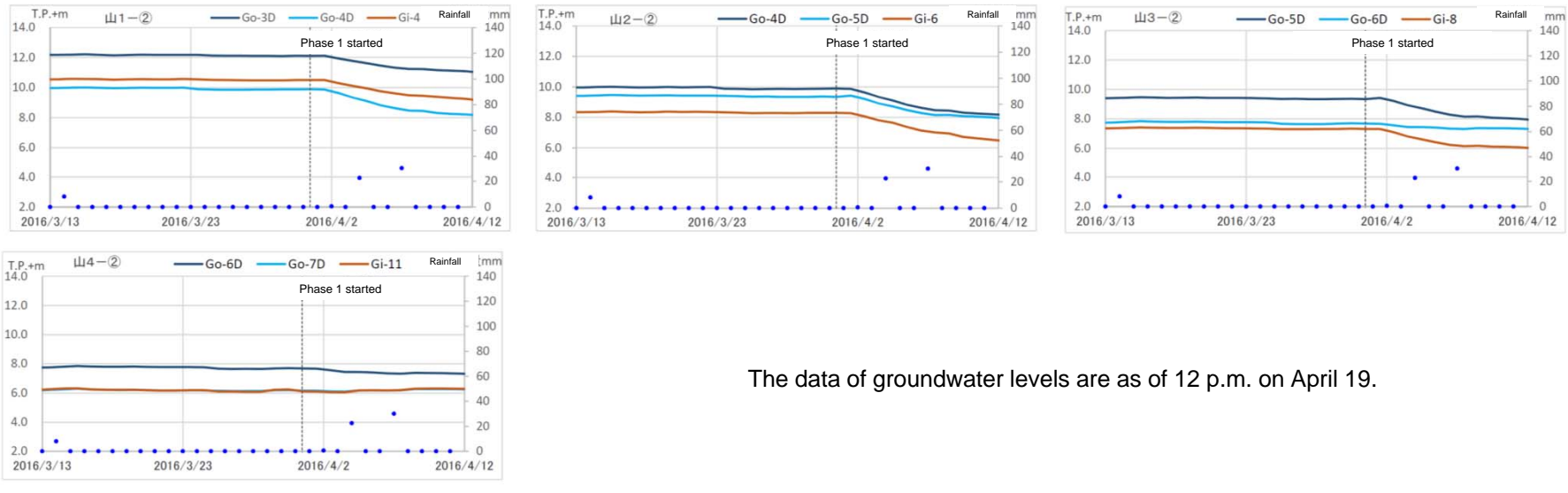
The data of groundwater levels are as of 12 p.m. on April 19.

# Groundwater levels and hydraulic heads (in the alternating strata layer and the fine- and rough-grained sandstone layer 1 on the seaside) **TEPCO**

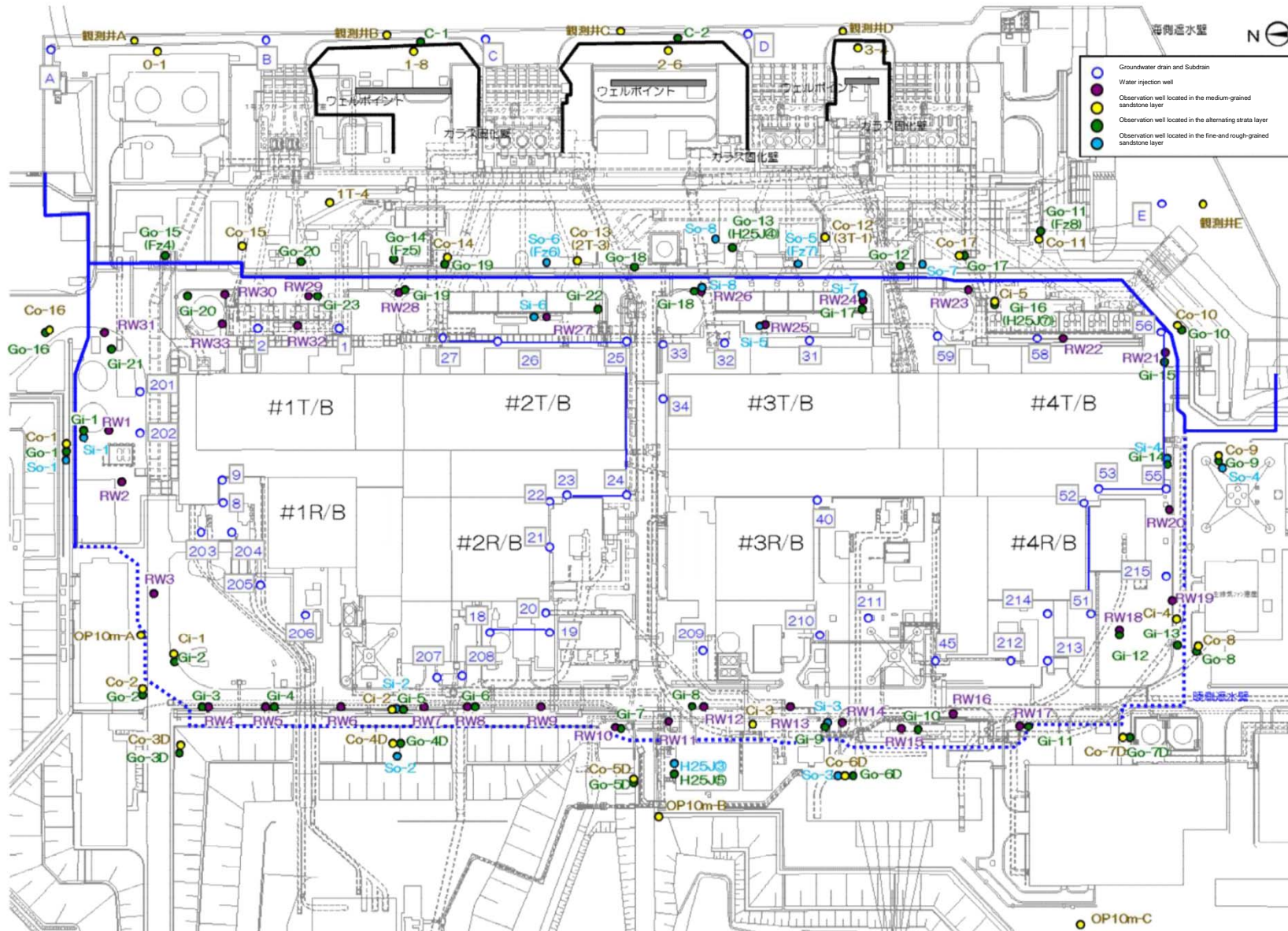
## 7. Landside Impermeable Wall (groundwater levels around the seaside and the operations of Subdrain pumping system)



## 8. Groundwater levels inside and outside of the Landside Impermeable Wall



[Reference] Location map of groundwater level observation wells  
(as of April 2016)



# [Reference] Distribution map of soil temperatures\* (north side of Unit 1)



■ Distribution map of soil temperatures as of April 19, at 7 a.m.

(1) North side of Unit 1

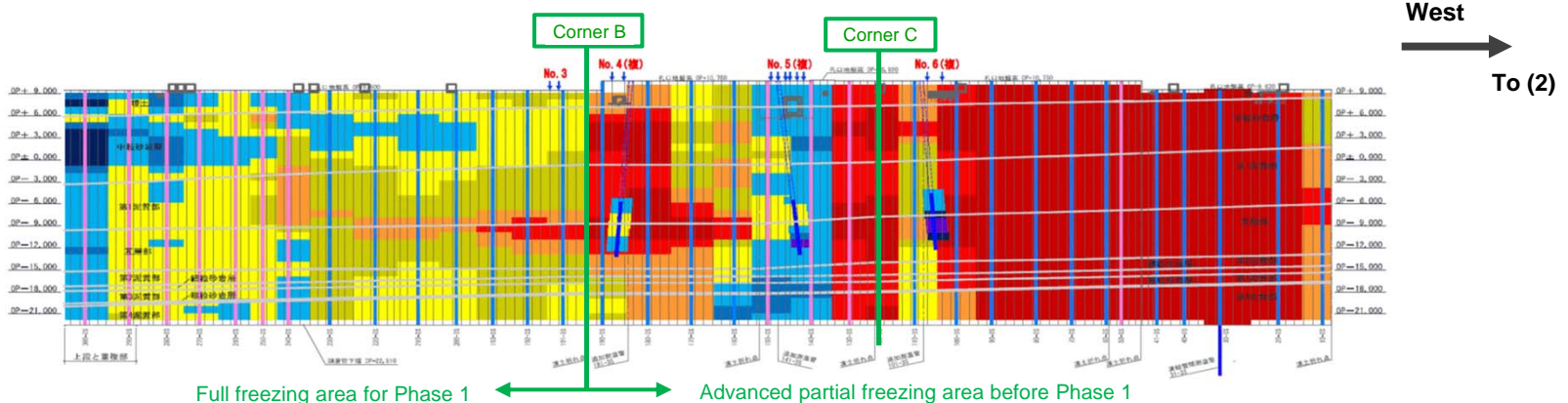
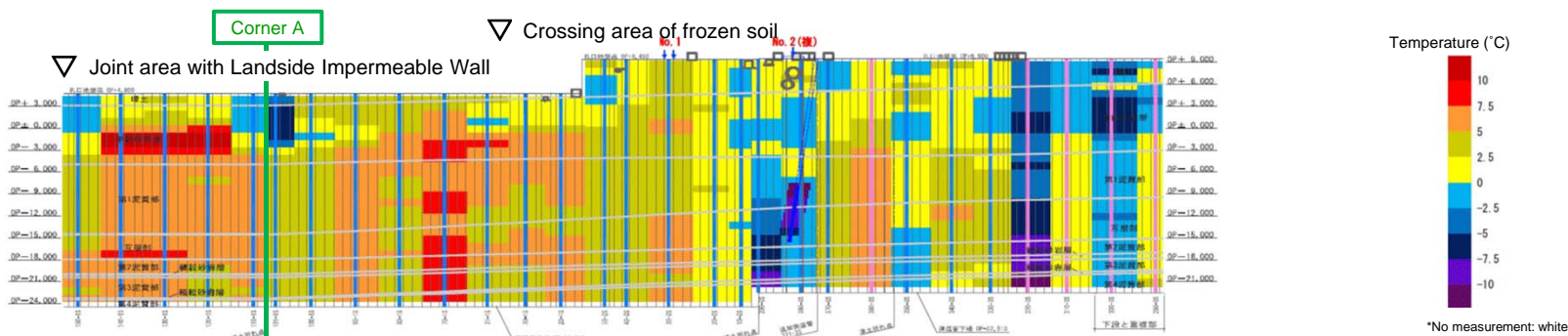
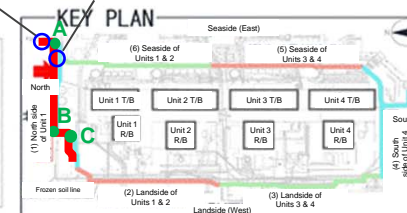
← East

Joint area with Landside Impermeable Walls

Crossing area of frozen soil

**[Legend]**

- █ Thermometer pipe for the outer line of frozen soil
- █ Thermometer pipe for the inner line of frozen soil
- ↓ Test freezing area



\*The distribution maps on pages 7-13 are for reference to check soil temperature fluctuations to the depth direction measured by the thermometer pipes installed around the Landside Impermeable Wall.



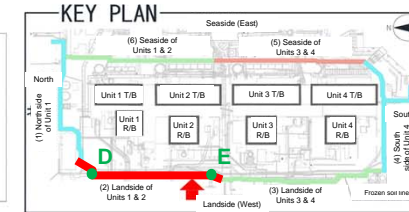
# [Reference] Distribution map of soil temperatures (west side of Units 1-2)



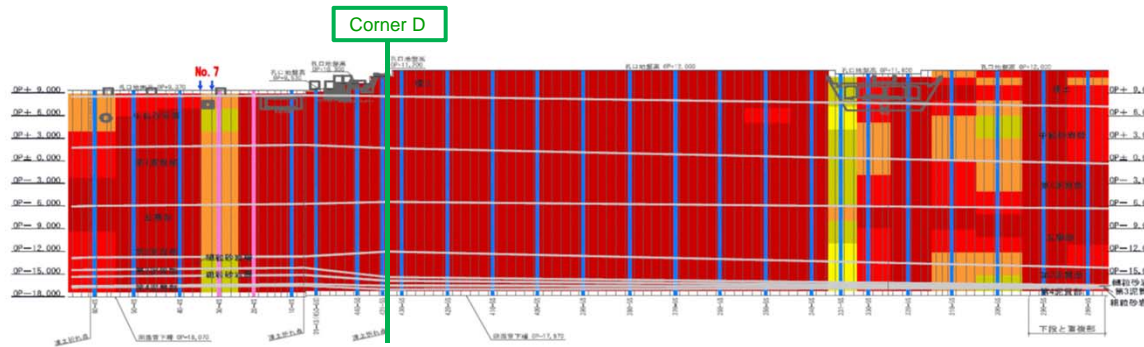
- Distribution map of soil temperatures as of April 19, at 7 a.m.
- (2) Landside of Units 1-2

### [Legend]

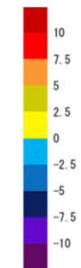
- Thermometer pipe for the outer line of frozen soil
- Thermometer pipe for the inner line of frozen soil
- Test freezing area



North  
 ←  
 To (1)

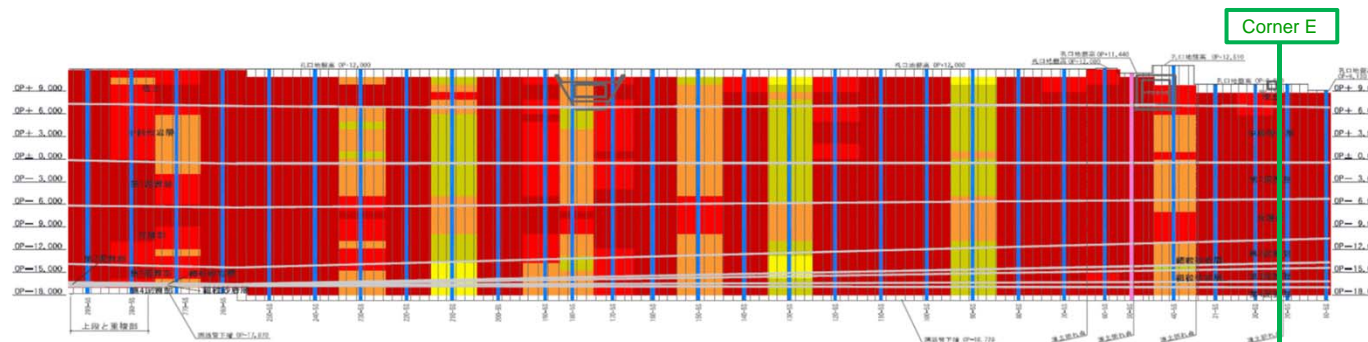


Temperature (°C)



\*No measurement: white

South  
 →  
 To (3)



# [Reference] Distribution map of soil temperatures (west side of Units 3-4)

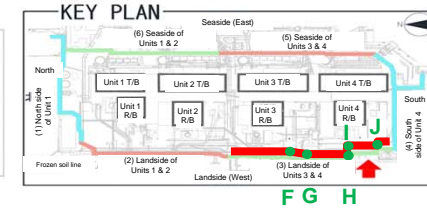


■ Distribution map of soil temperatures as of April 19, at 7 a.m.

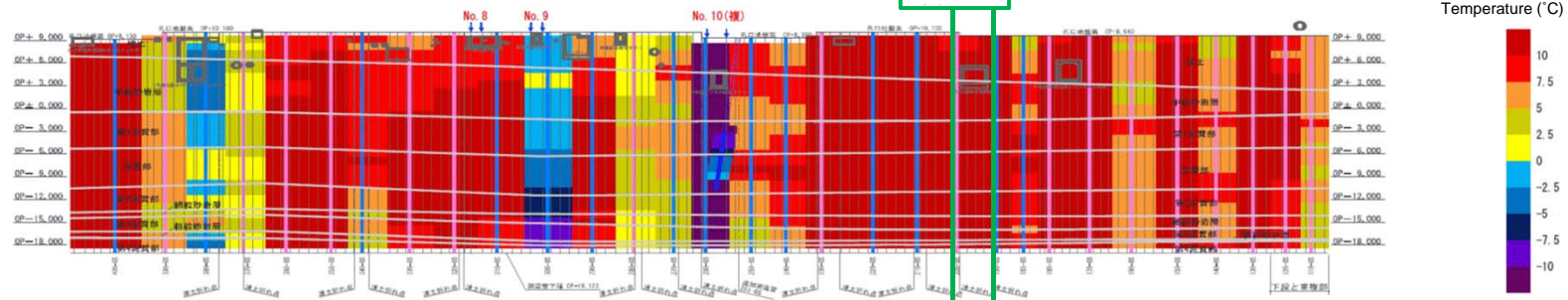
(3) Landside of Units 3-4

**[Legend]**

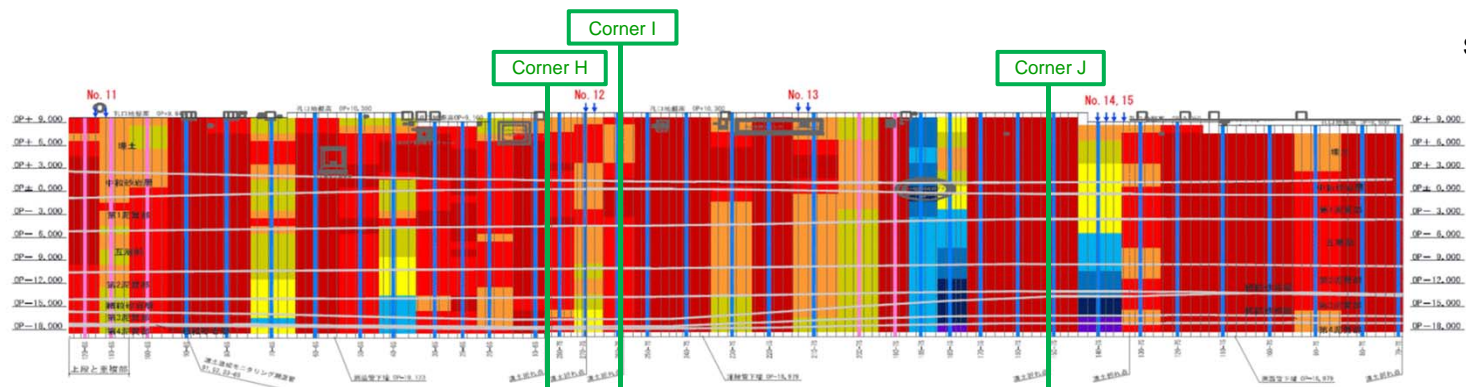
- : Thermometer pipe for the outer line of frozen soil
- : Thermometer pipe for the inner line of frozen soil
- ▼ : Test freezing area



North  
 ←  
 To (2)



\*No measurement: white



South  
 →  
 To (4)

# [Reference] Distribution map of soil temperatures (south side of Unit 4 (1))

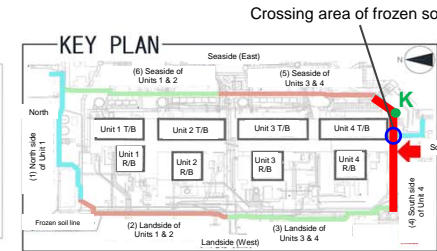


■ Distribution map of soil temperatures as of April 19, at 7 a.m.

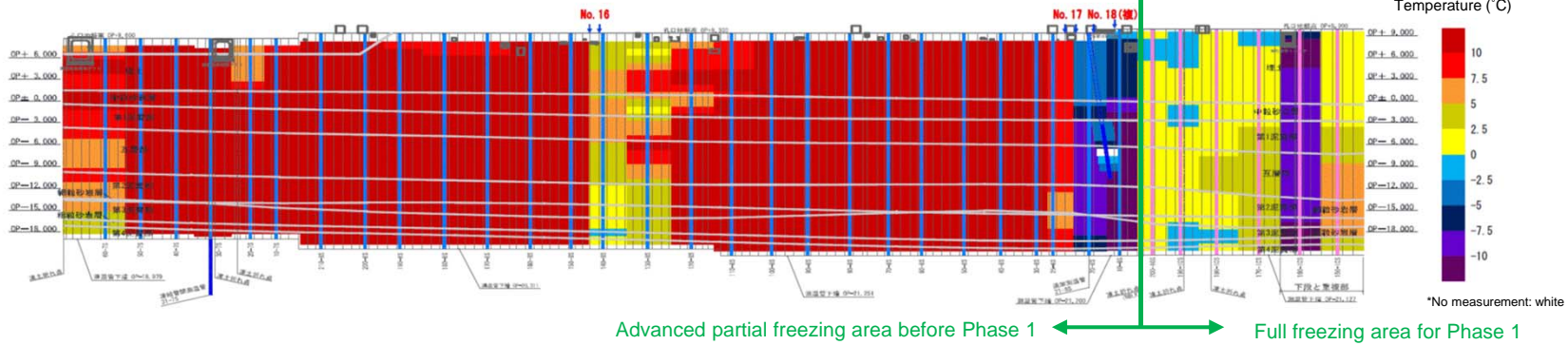
(4) South side of Unit 4

**[Legend]**

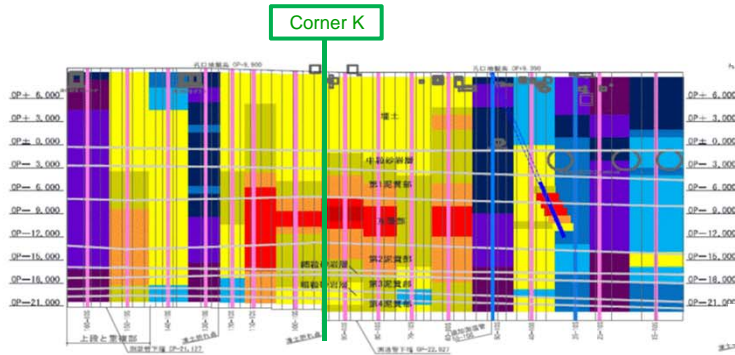
- █ : Thermometer pipe for the outer line of frozen soil
- █ : Thermometer pipe for the inner line of frozen soil
- ↓ : Test freezing area



West  
←  
To (3)



East  
→ To (5)





# [Reference] Distribution map of soil temperatures (east side of Units 3-4)

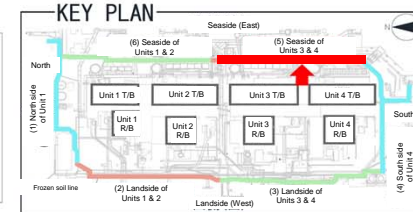


■ Distribution map of soil temperatures as of April 19, at 7 a.m.

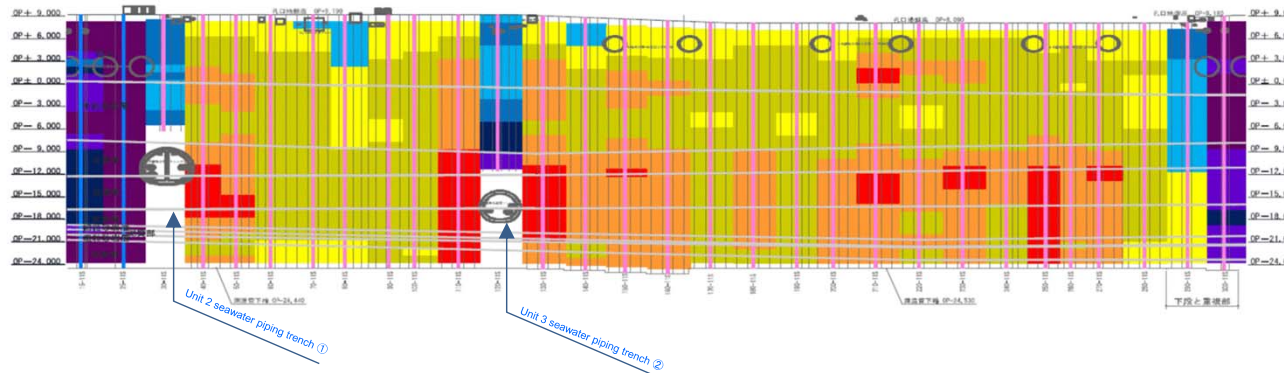
(5) South side of Unit 4

**[Legend]**

- █ : Thermometer pipe for the outer line of frozen soil
- █ : Thermometer pipe for the inner line of frozen soil
- ↓ : Test freezing area



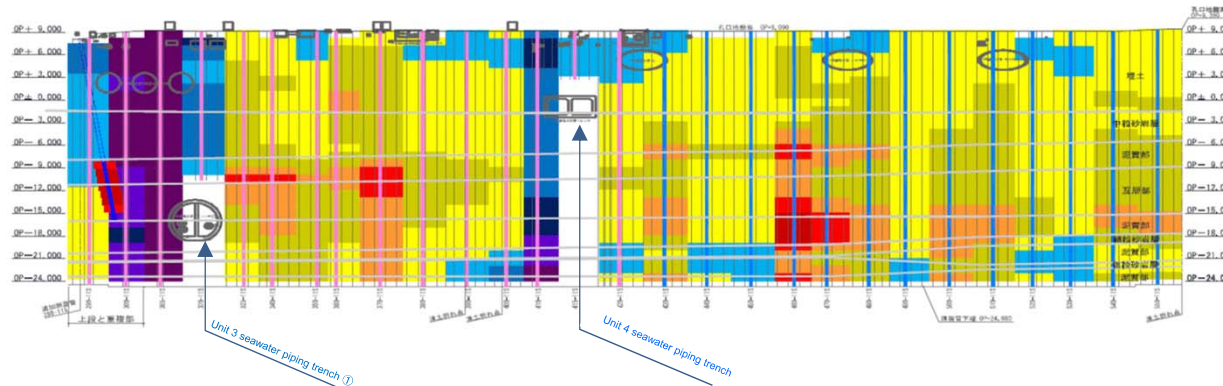
North  
← To (6)



Temperature (°C)



\*No measurement: white



South  
→ To (4)

# [Reference] Distribution map of soil temperatures (east side of Units 1-2)

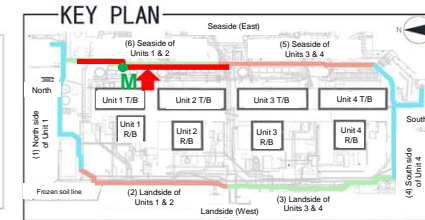


■ Distribution map of soil temperatures as of April 19, at 7 a.m.

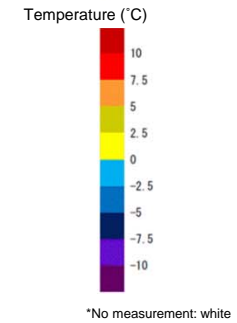
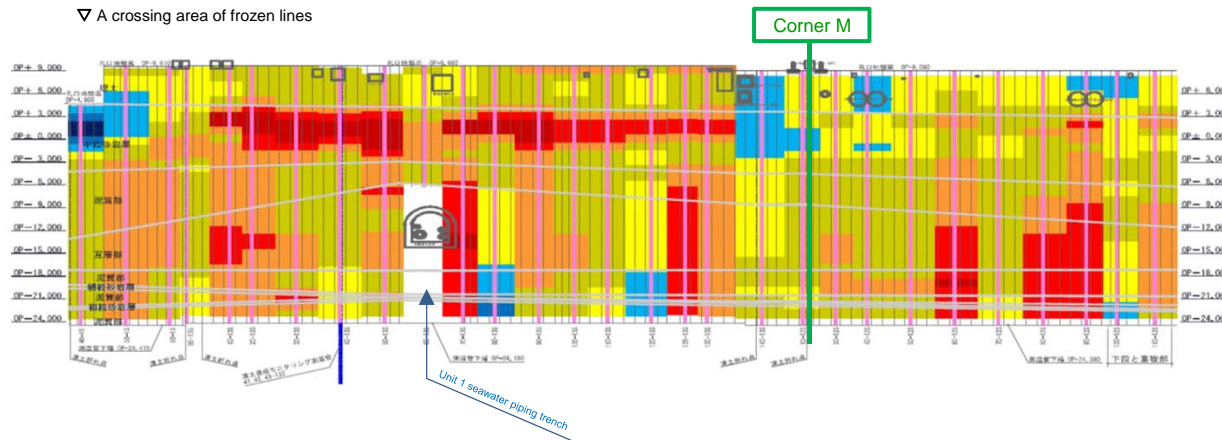
(6) 1 South side of Unit 4

**[Legend]**

- █ : Thermometer pipe for the outer line of frozen soil
- █ : Thermometer pipe for the inner line of frozen soil
- ↓ : Test freezing area



North  
←  
To (1)



South  
→  
To (5)

