<Reference>
May 19, 2016
Tokyo Electric Power Company Holdings, Inc.

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

TEPCO

○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 and preventing the water from being newly contaminated.
○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.

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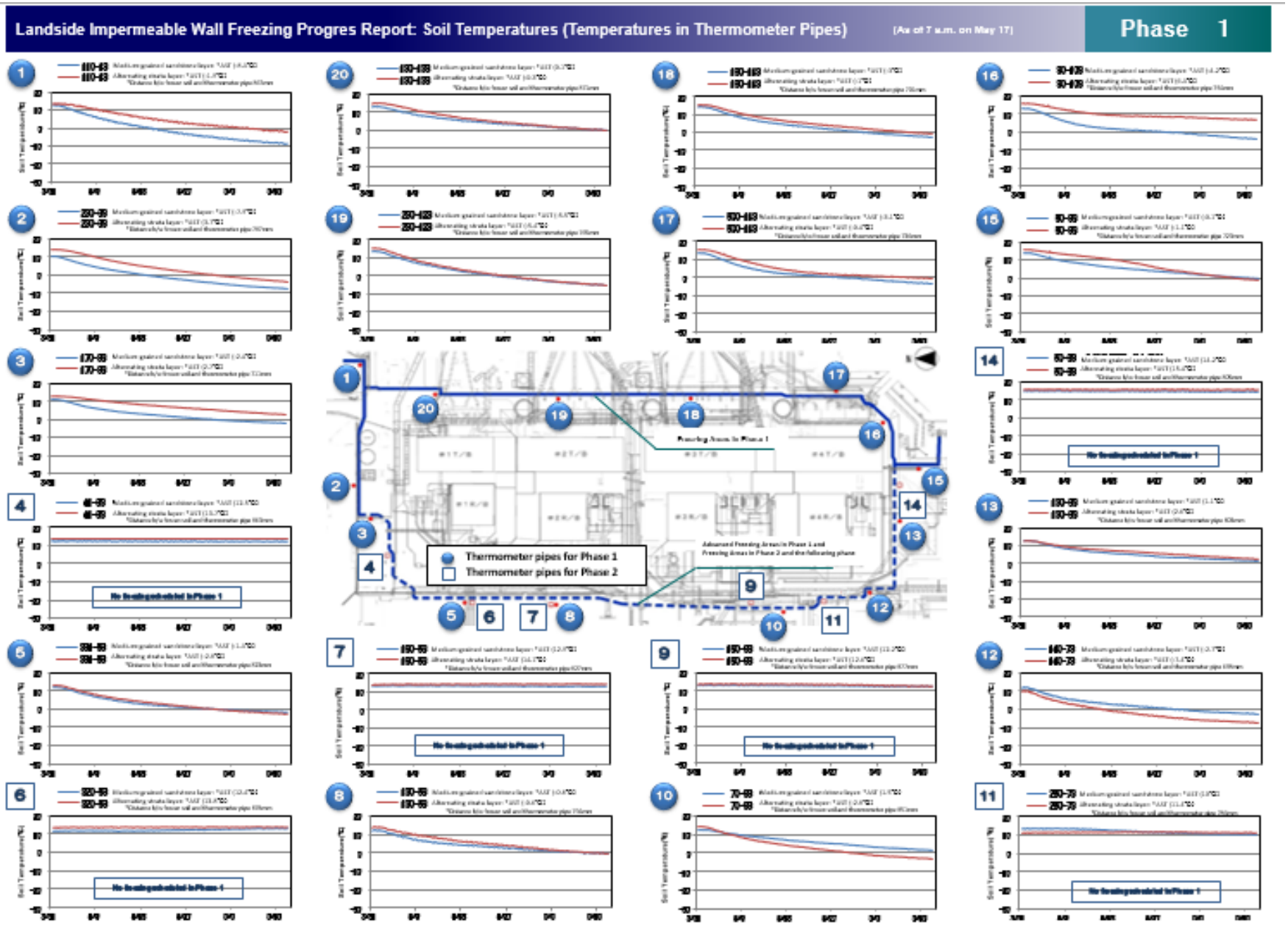
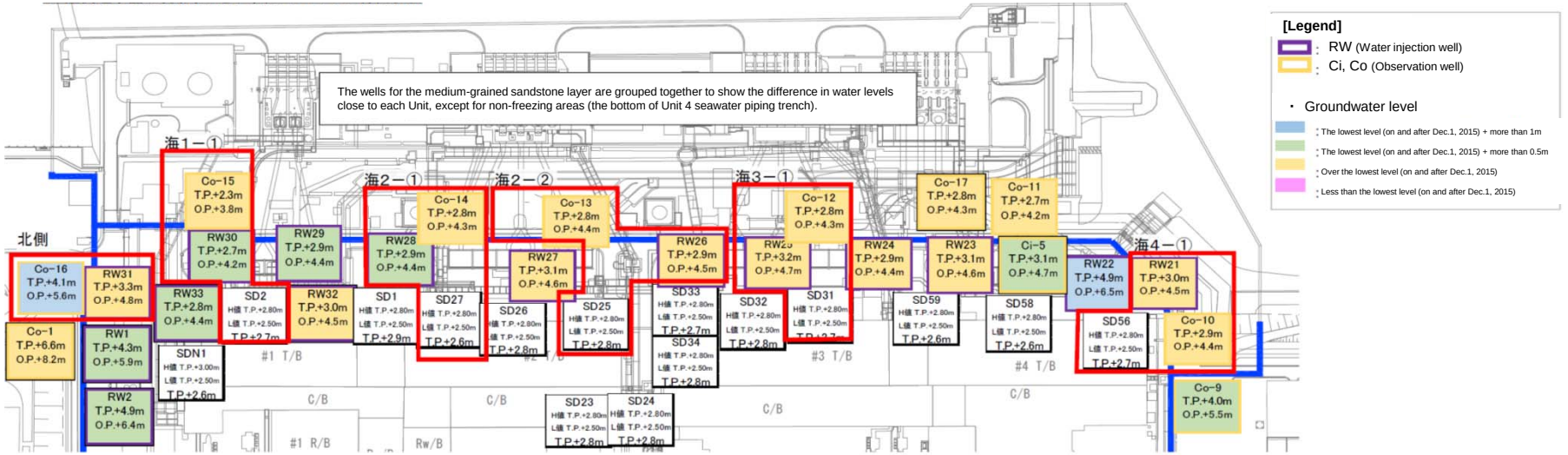
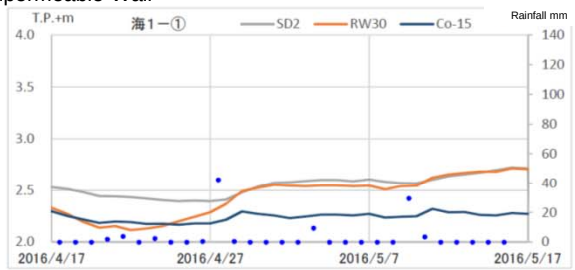


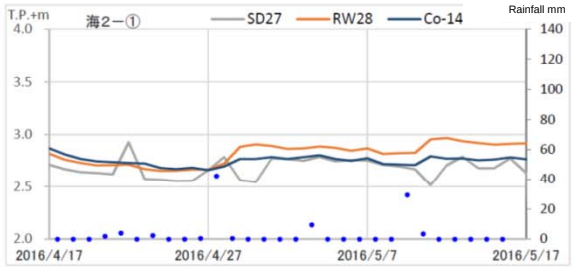
Groundwater levels and hydraulic heads
(in the medium-grained sandstone layer 1 on the seaside)

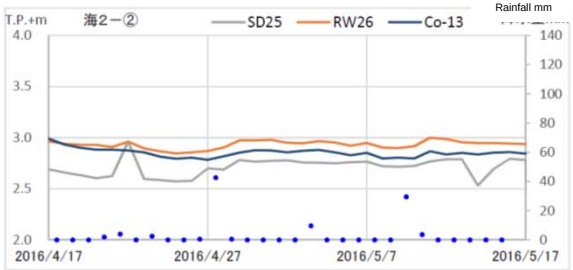
1. Landside Impermeable Wall (groundwater levels around the seaside and the operations of Subdrain pumping system)

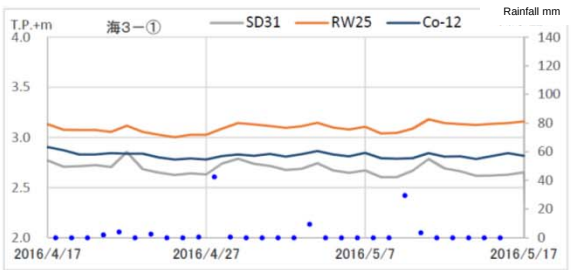


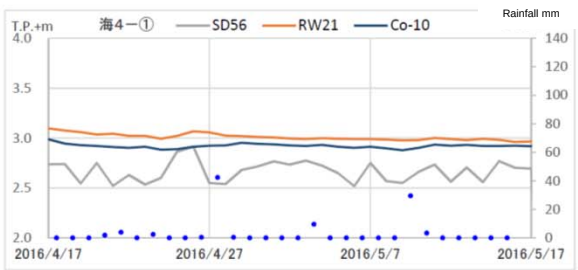
2. Groundwater **levels** inside and outside of the Landside Impermeable Wall











The data of groundwater levels as of 12 p.m. on May 17.

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

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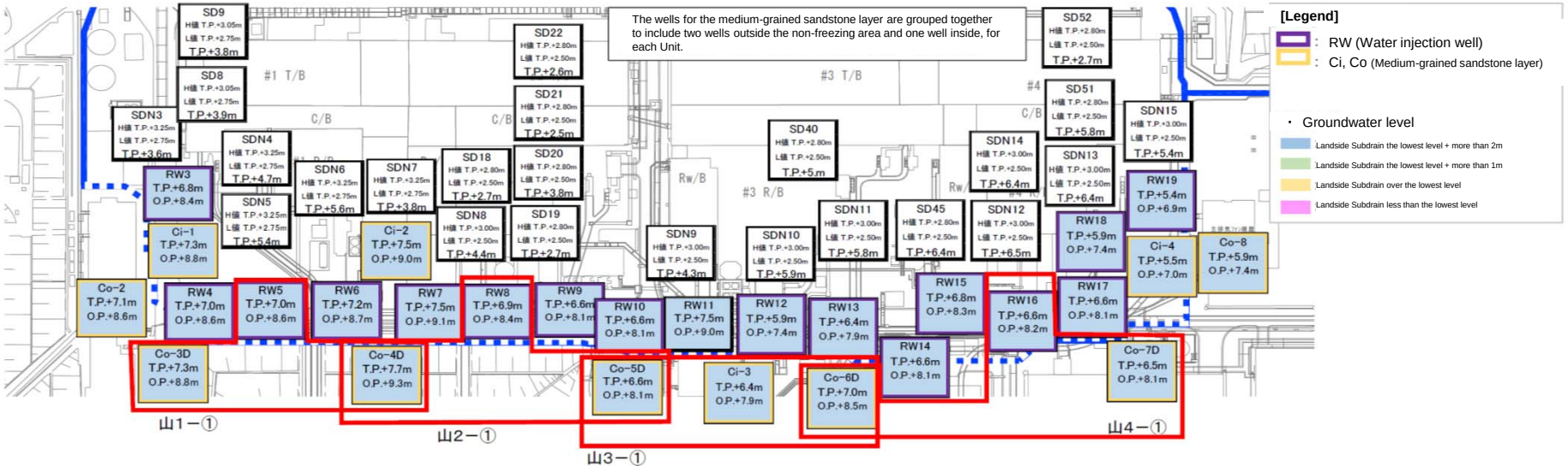
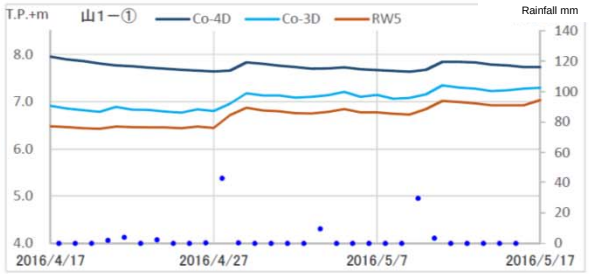
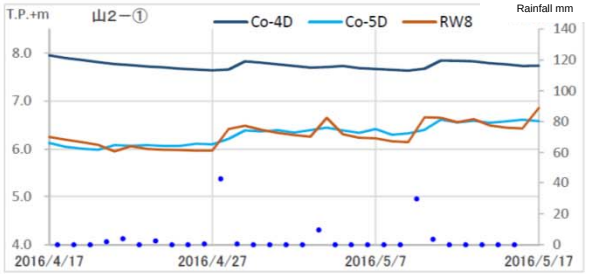
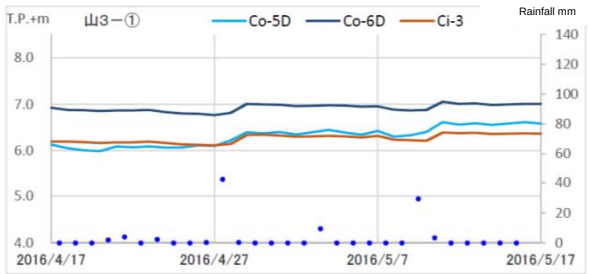
3. Landside Impermeable Wall (groundwater levels around the seaside and the operations of Subdrain pumping system)

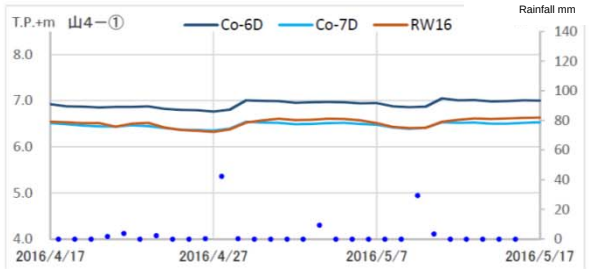


4. Groundwater levels inside and outside of the Landside Impermeable Wall





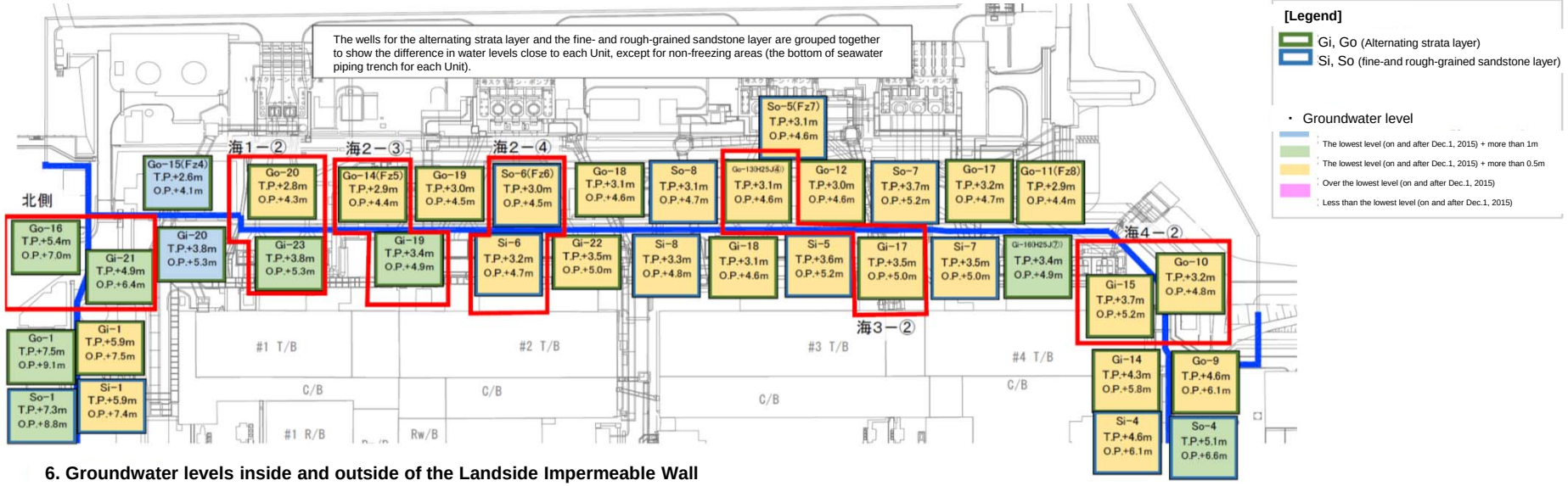




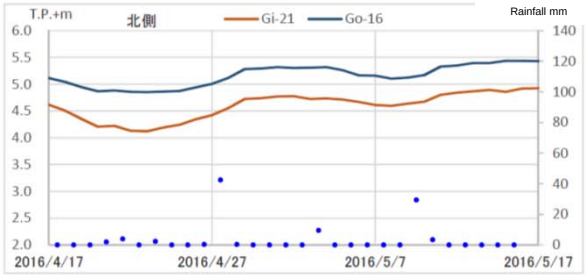
The data of groundwater levels as of 12 p.m. on May 17.

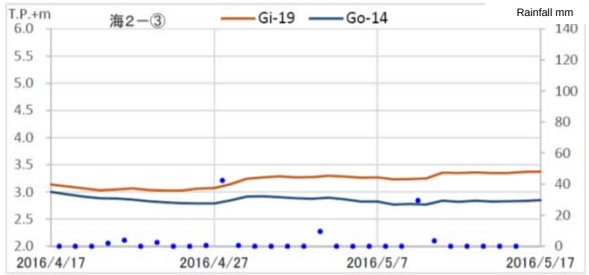
Groundwater levels and hydraulic heads
(in the alternating strata layer and the fine- and rough-grained sandstone layer 1 on the seaside)

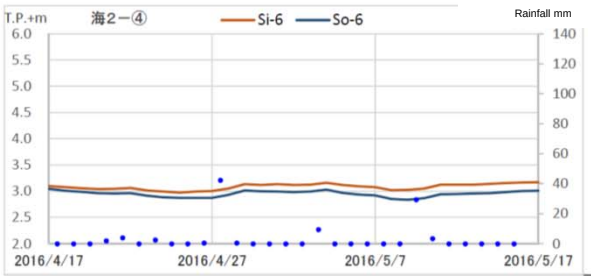
5. Landside Impermeable Wall (groundwater levels around the seaside and the operations of Subdrain pumping system)

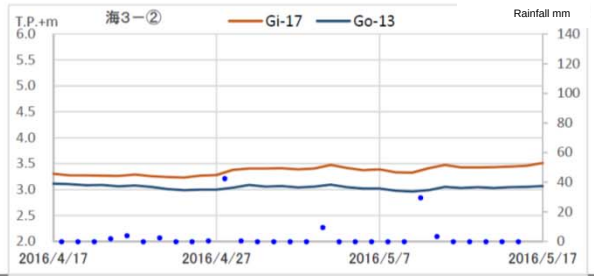


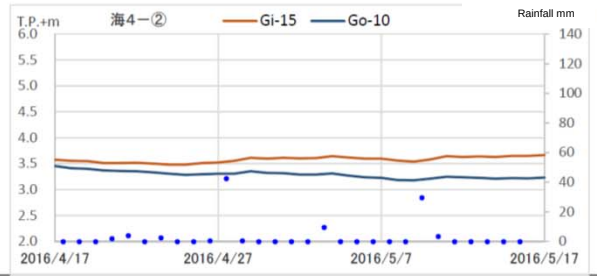
6. Groundwater levels inside and outside of the Landside Impermeable Wall







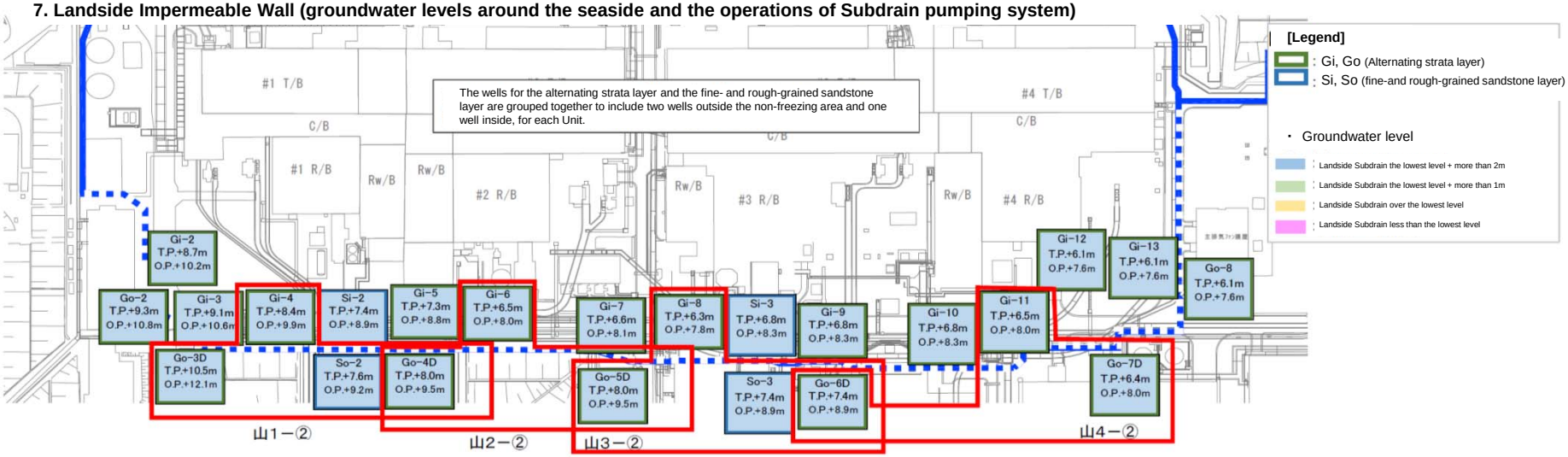




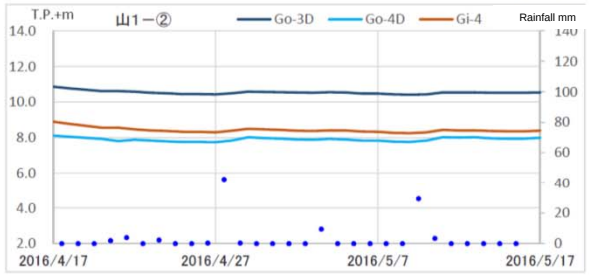
The data of groundwater levels as of 12 p.m. on May 17.

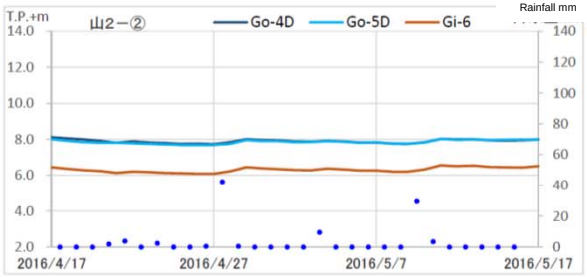
Groundwater levels and hydraulic heads
(in the alternating strata layer and the fine- and rough-grained sandstone layer 2 on the seaside)

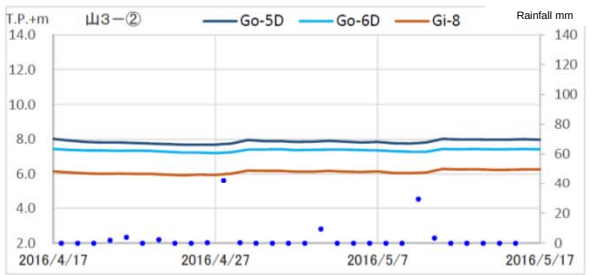
7. Landside Impermeable Wall (groundwater levels around the seaside and the operations of Subdrain pumping system)

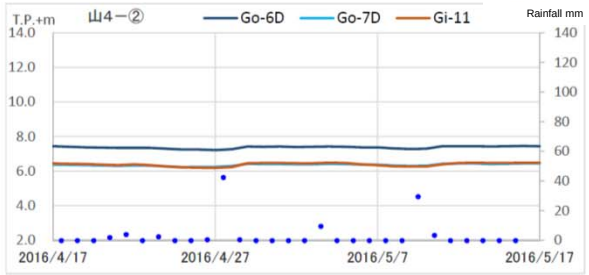


8. Groundwater levels inside and outside of the Landside Impermeable Wall



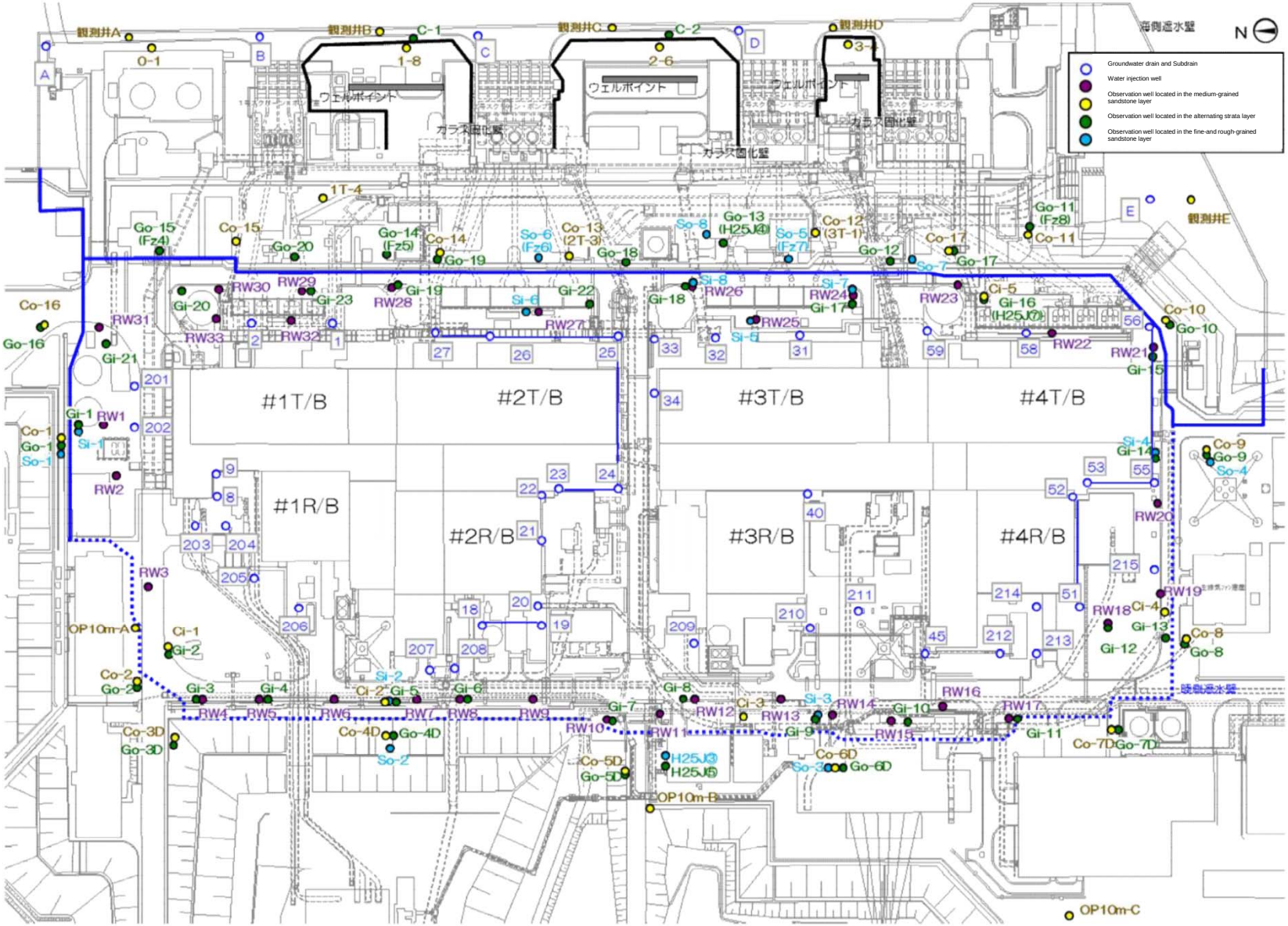






The data of groundwater levels as of 12 p.m. on May 17.

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

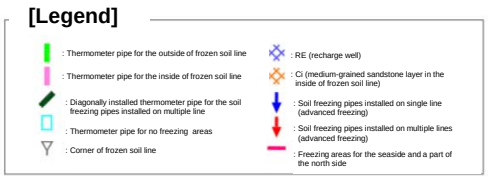


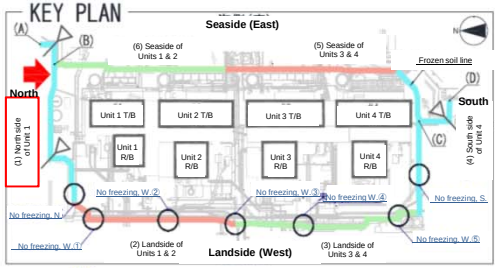
[Reference] Distribution map of soil temperatures (north side of Unit 1)

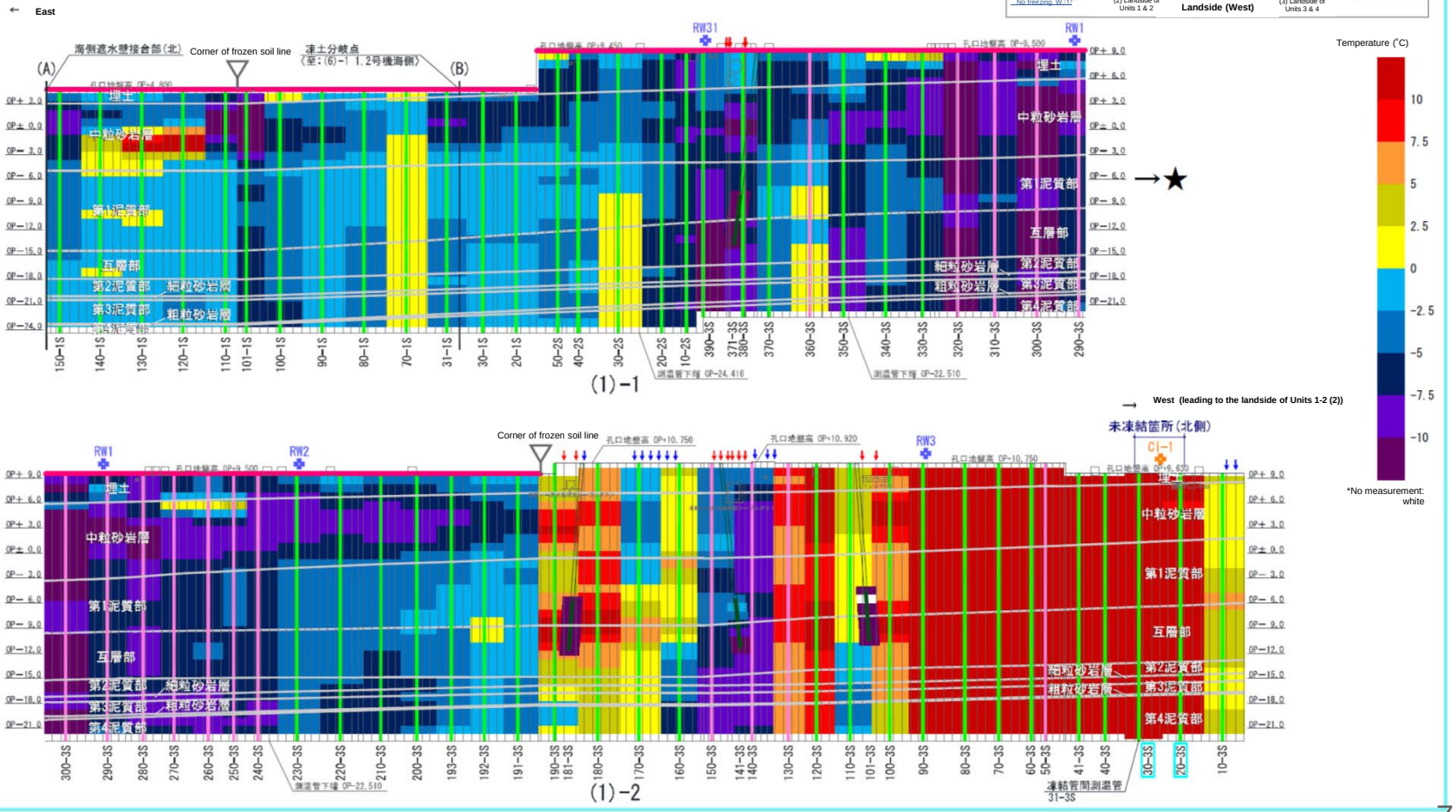
■ Distribution map of soil temperatures

(1) North side of Unit 1 (a view from the north side)

(The temperature data as of 7 a.m. on May 17)







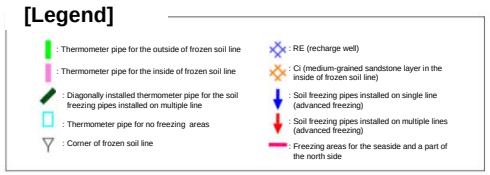
The distribution maps on pages 7-12 are for reference to check soil temperature fluctuations of the depth direction which are measured by the thermometer pipes installed around the Landside Impermeable Wall.

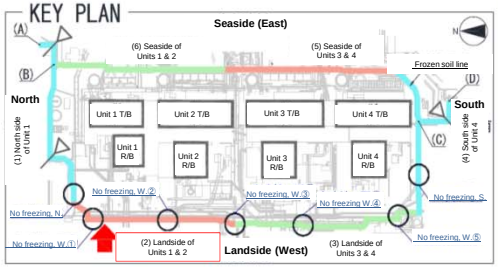
[Reference] Distribution map of soil temperatures (west side of Units 1-2)

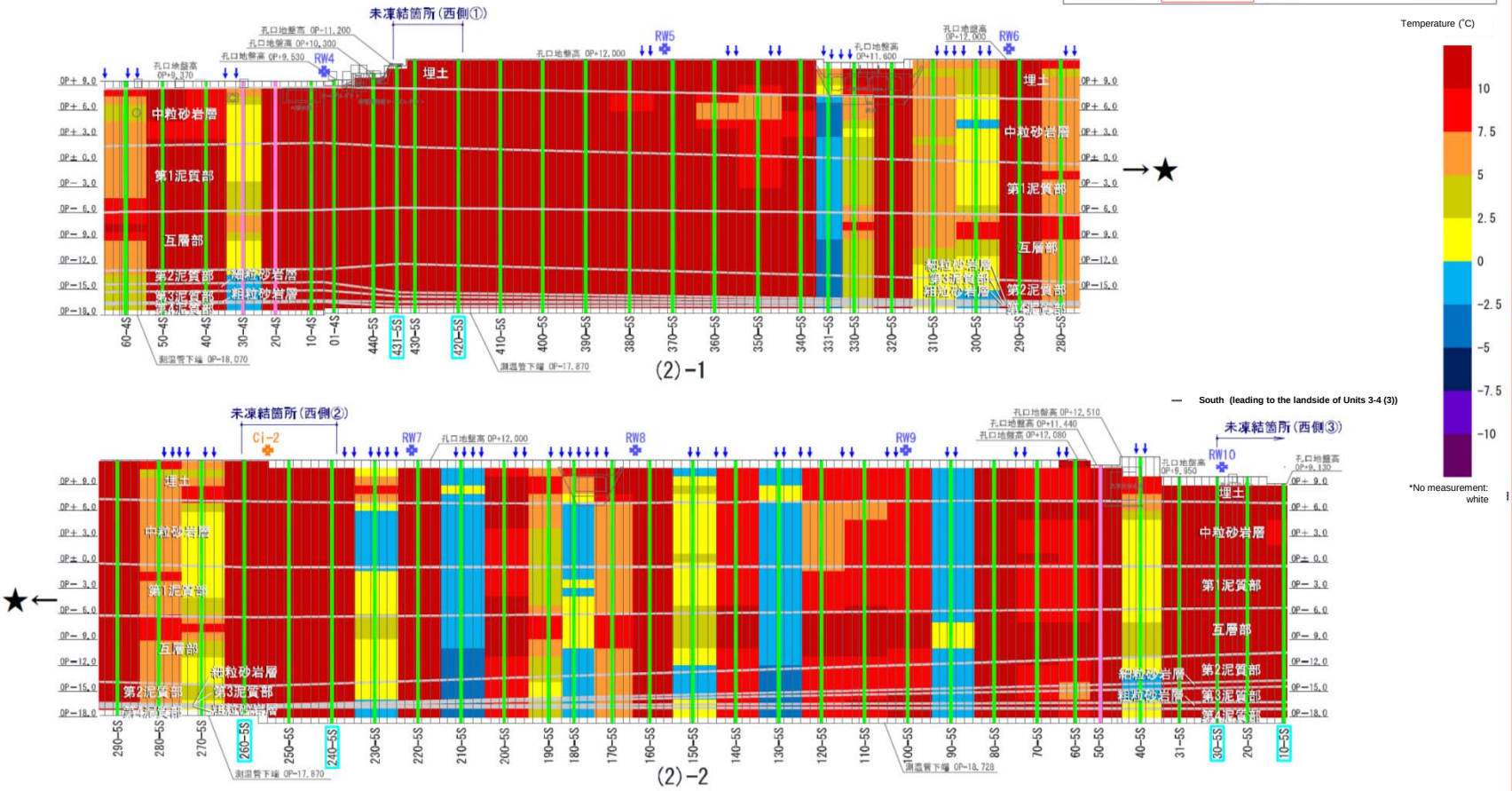
■ Distribution map of soil temperatures

(2) Landside of Units 1-2 (a view from the west side)

(The temperature data as of 7 a.m. on May 17)





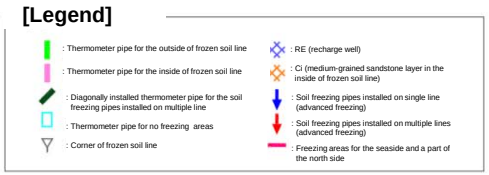


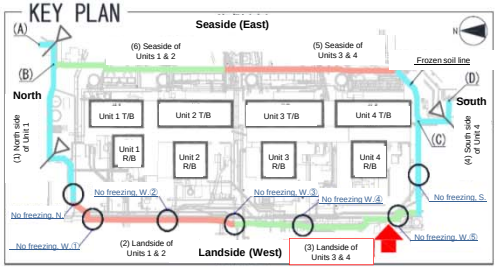
[Reference] Distribution map of soil temperatures (west side of Units 3-4)

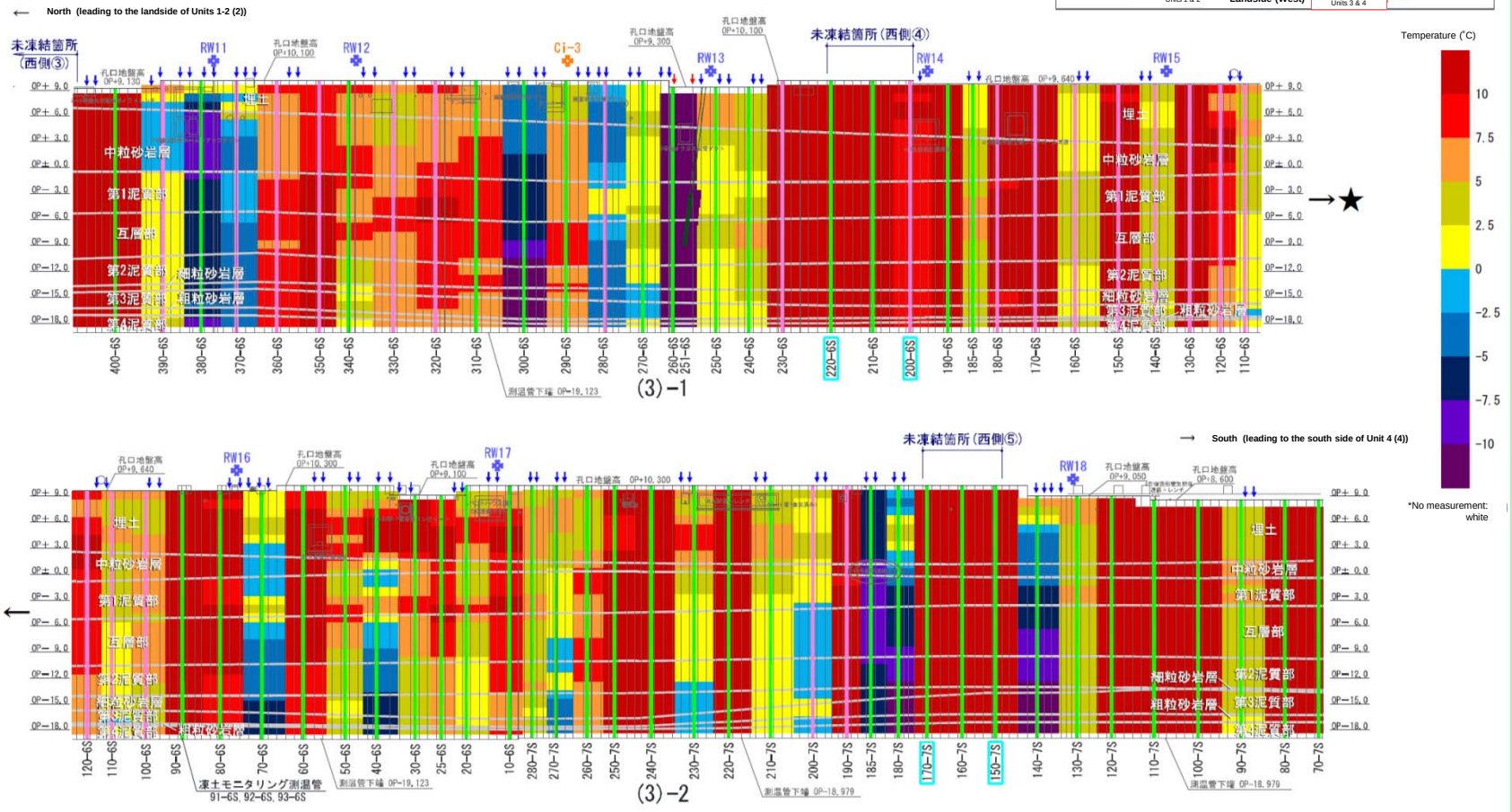
■ Distribution map of soil temperatures

(3) Landside of Units 3-4 (a view from the west side)

(The temperature data as of 7 a.m. on May 17)





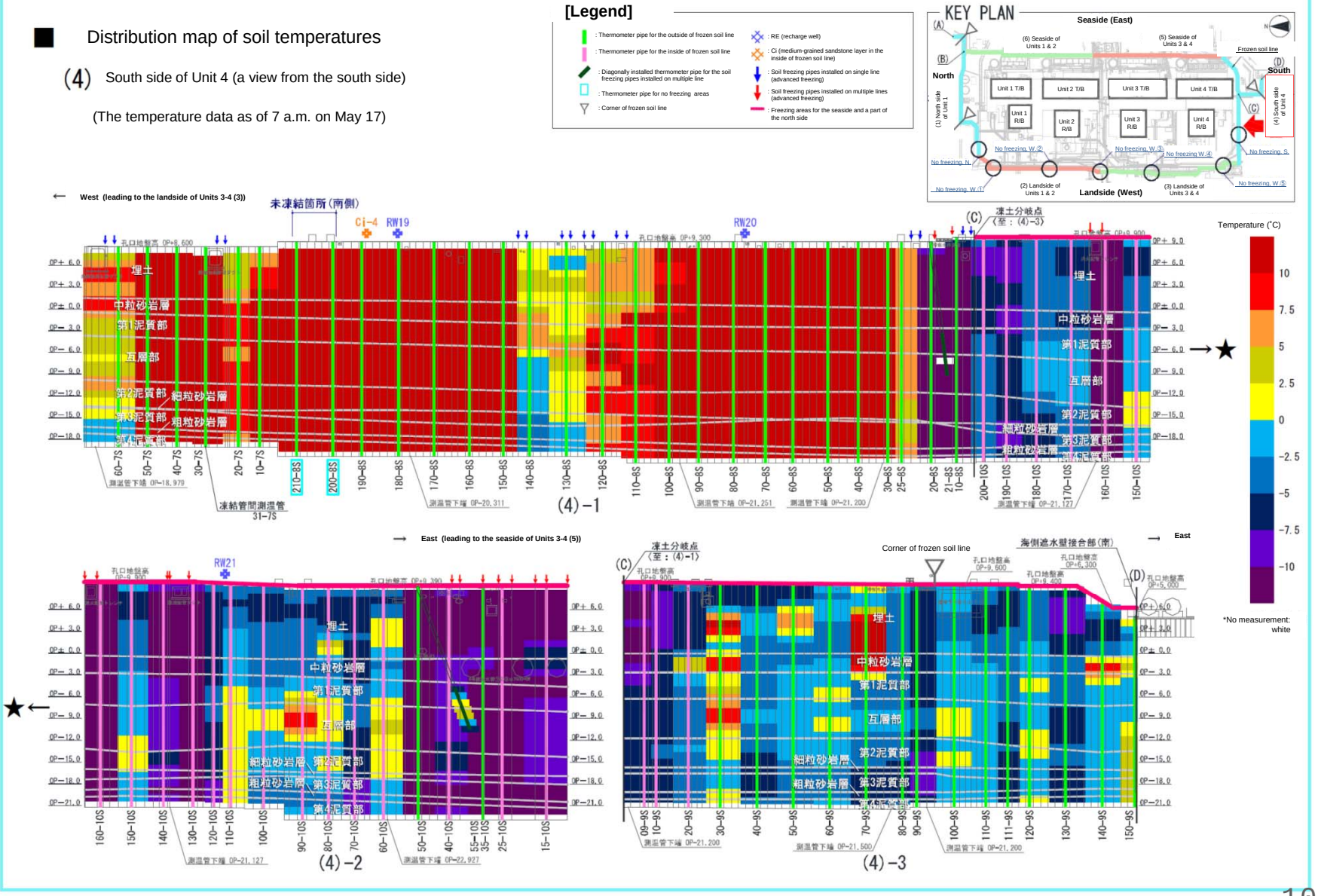


[Reference] Distribution map of soil temperatures (south side of Unit 4)

■ Distribution map of soil temperatures

(4) South side of Unit 4 (a view from the south side)

(The temperature data as of 7 a.m. on May 17)

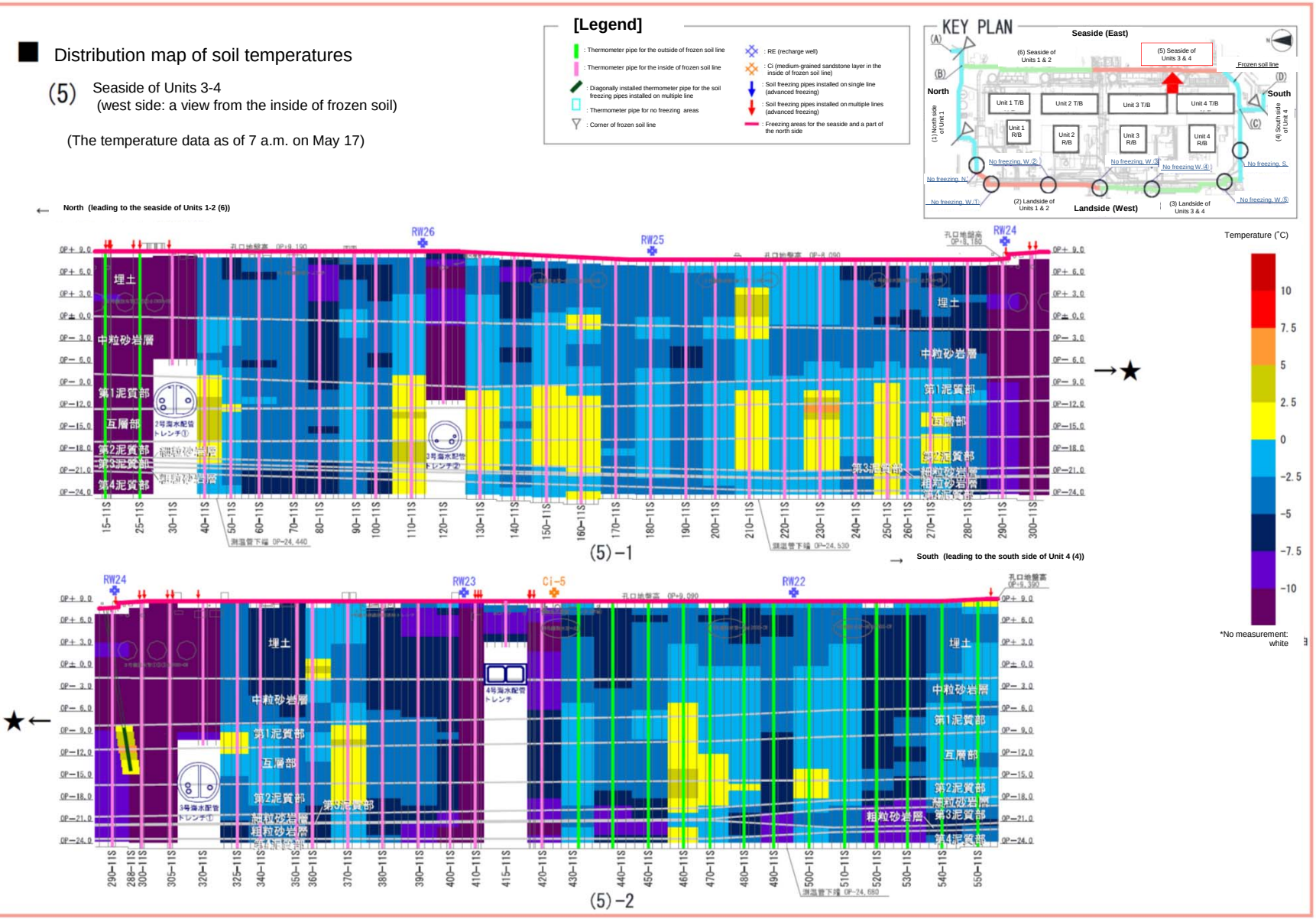


[Reference] Distribution map of soil temperatures (east side of Units 3-4)

■ Distribution map of soil temperatures

(5) Seaside of Units 3-4
(west side: a view from the inside of frozen soil)

(The temperature data as of 7 a.m. on May 17)



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

■ Distribution map of soil temperatures

(6) Seaside of Units 1-2
(west side: a view from the inside of frozen soil)

(The temperature data as of 7 a.m. on May 17)