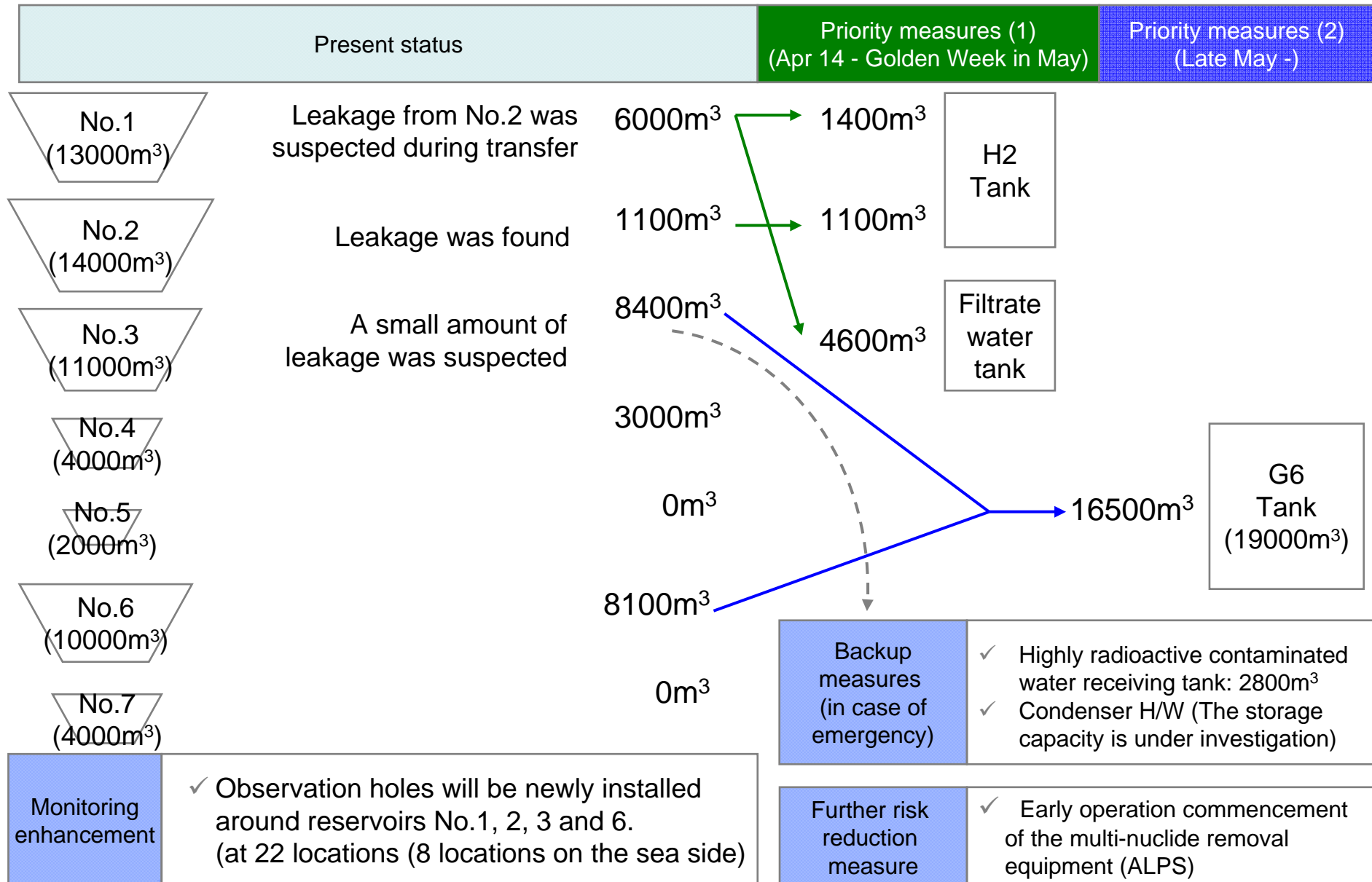
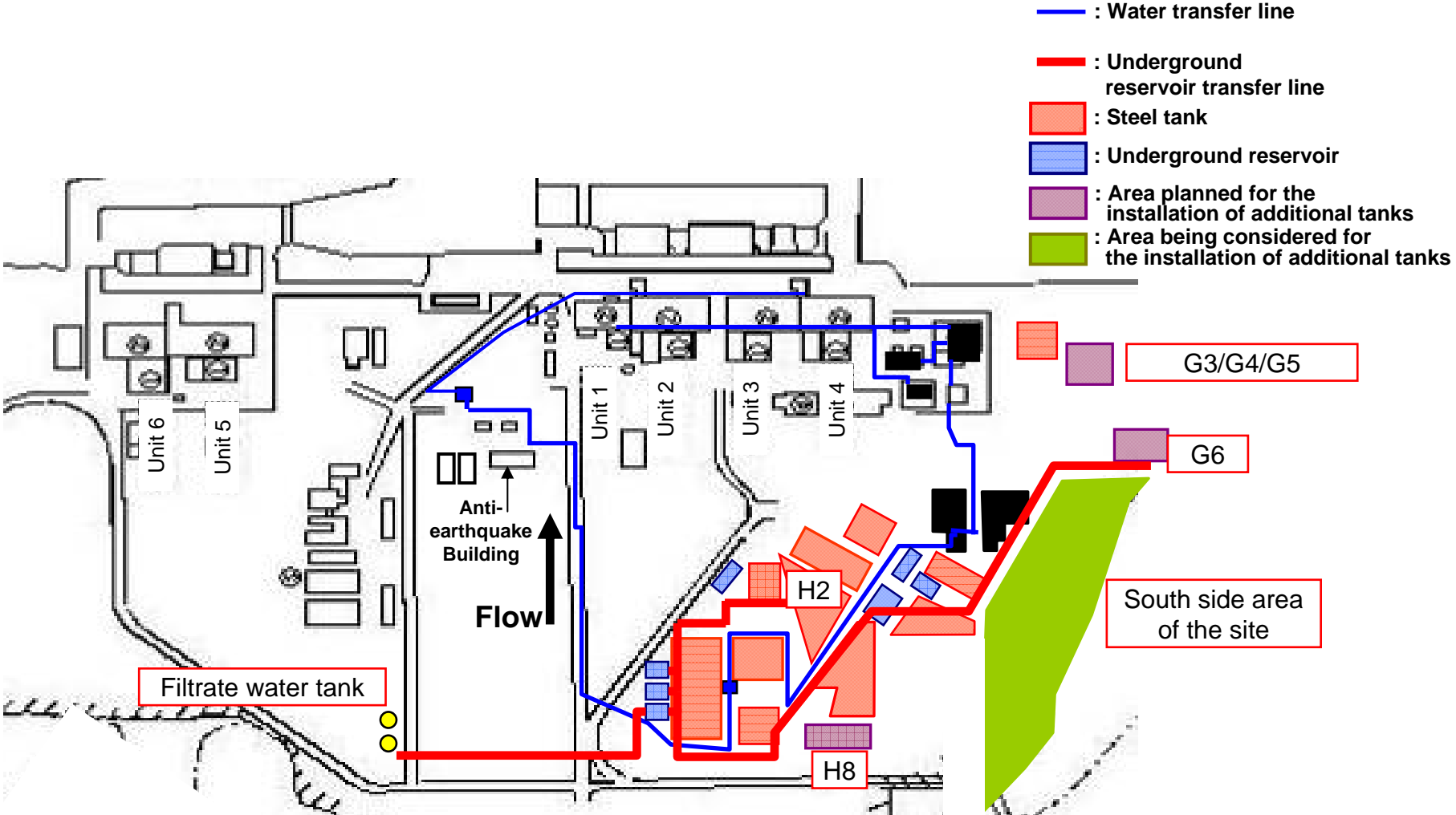


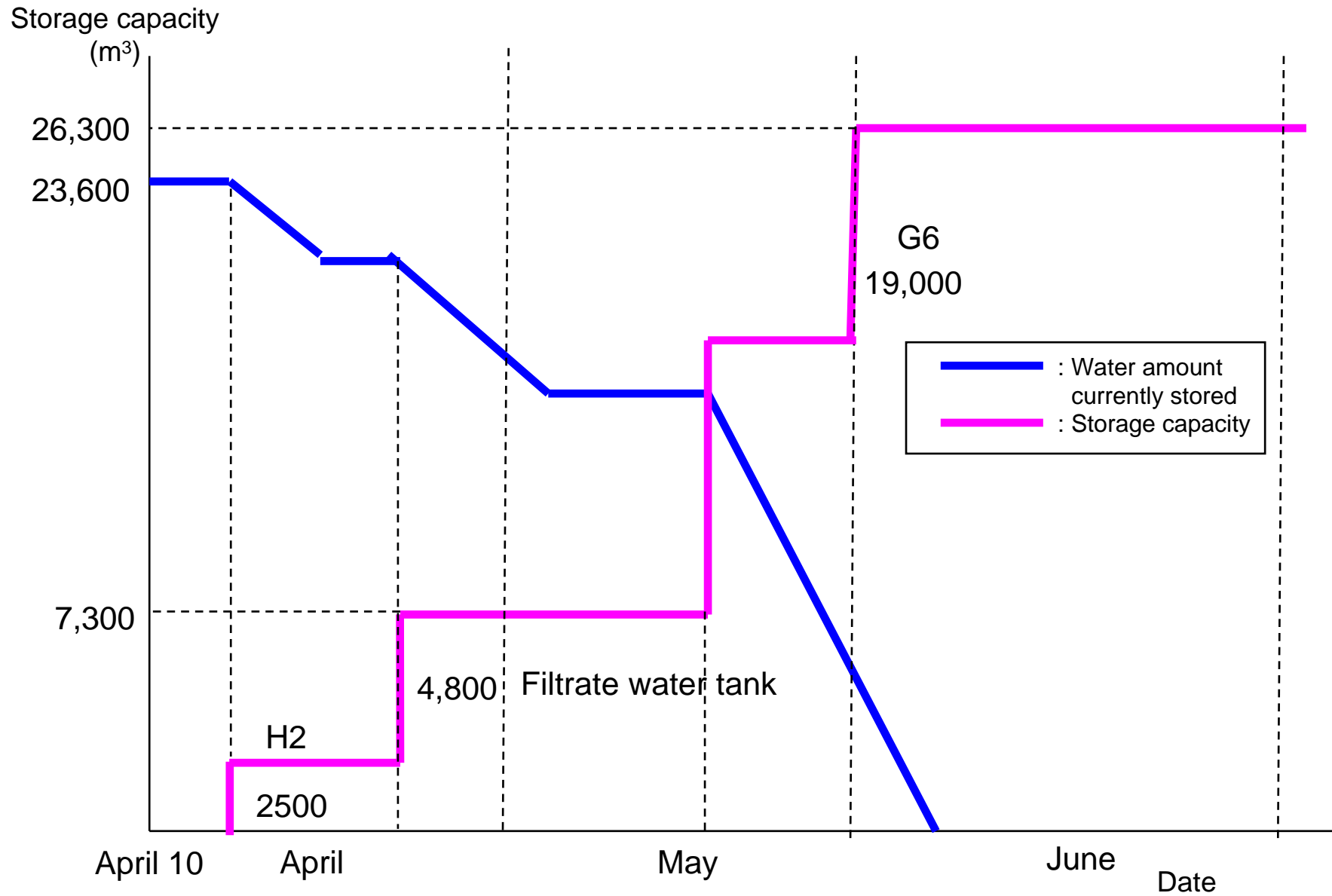
# Future Plan for the Water Transfer from the Underground Reservoirs Tokyo Electric Power Company



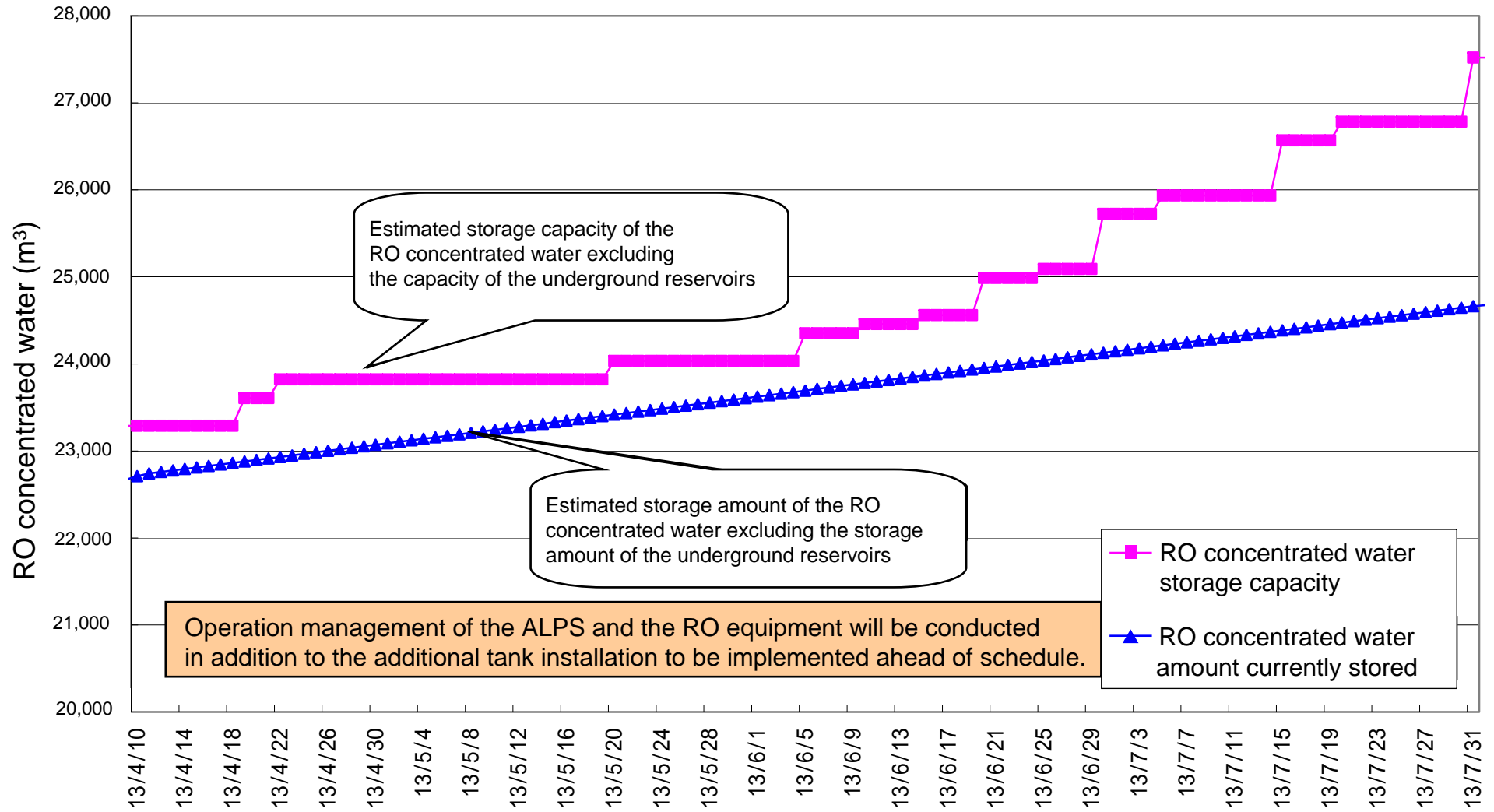
# Destinations of the Water to be Transferred from the Underground Reservoirs



# Water Balance Simulation (Underground Reservoirs)



# Water Balance Simulation (RO Concentrated Water)



# Measures to Prevent the Expansion of Contaminated Water Leakage from the Underground Reservoirs

April 10, 2013

Tokyo Electric Power Company

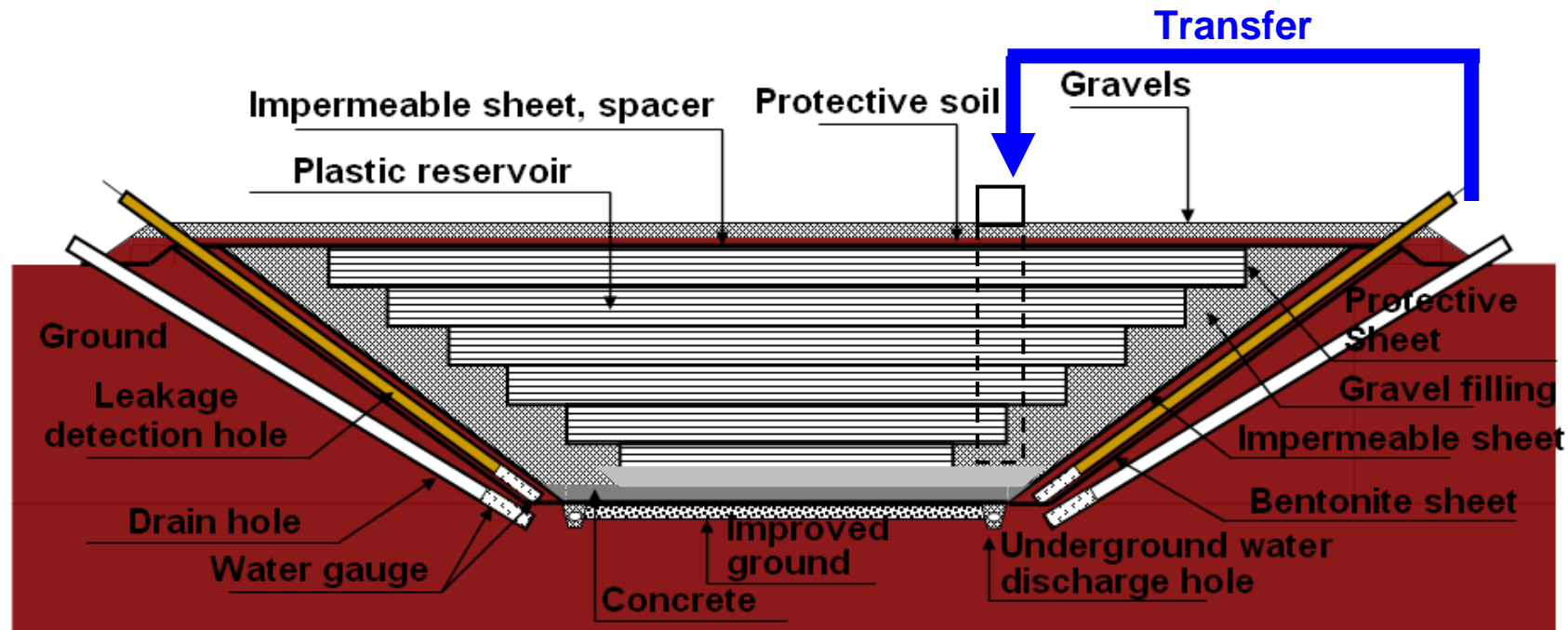
## Purpose and Outline of the Measures to Prevent the Expansion of Contaminated Water Leakage from the Underground Reservoirs

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- As a measure to be implemented for the time being (until the water in the underground reservoirs is emptied out), small pumps will be installed in the leakage detection holes to return the contaminated water to the underground reservoirs for the purpose of preventing the expansion of contaminated water leakage (The work to be started on April 10).

## Measures to Prevent the Expansion of Contaminated Water Leakage

- Measures to prevent the expansion of contaminated water leakage
  - Currently, the contaminated water leaked from the underground reservoirs No.1 and No.2 is accumulated in the leakage detection holes.
  - In order to prevent the leaked water in the leakage detection holes from leaking into the ground in the surrounding area, the water in the leakage detection holes will be returned to the underground reservoirs.



# Schedule

## ■ Outline of the schedule

Measures to be implemented	April				
	10	11	12	13	-
Measures to prevent the expansion of contaminated water leakage from the underground reservoir No.1					
Measures to prevent the expansion of contaminated water leakage from the underground reservoir No.2					

Note) The measure implementation will be continued until the water transfer from each underground reservoir is completed.



**Impact Evaluation of the Contaminated  
Water Leakage from the Underground  
Reservoirs on the Surrounding Environment  
(Monitoring Plan for the Surrounding Area)**

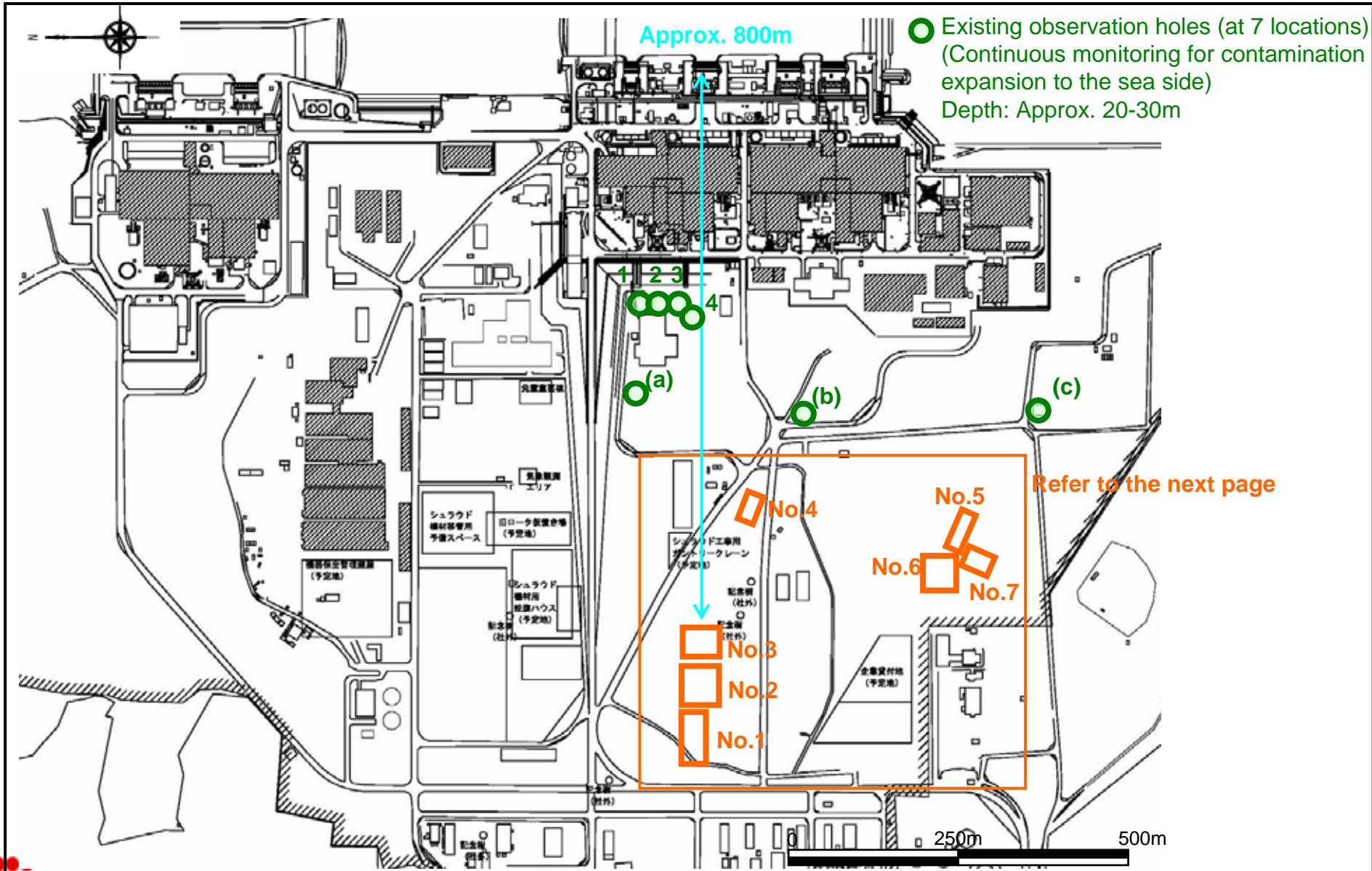
April 10, 2013  
Tokyo Electric Power Company

# Purpose of Investigation

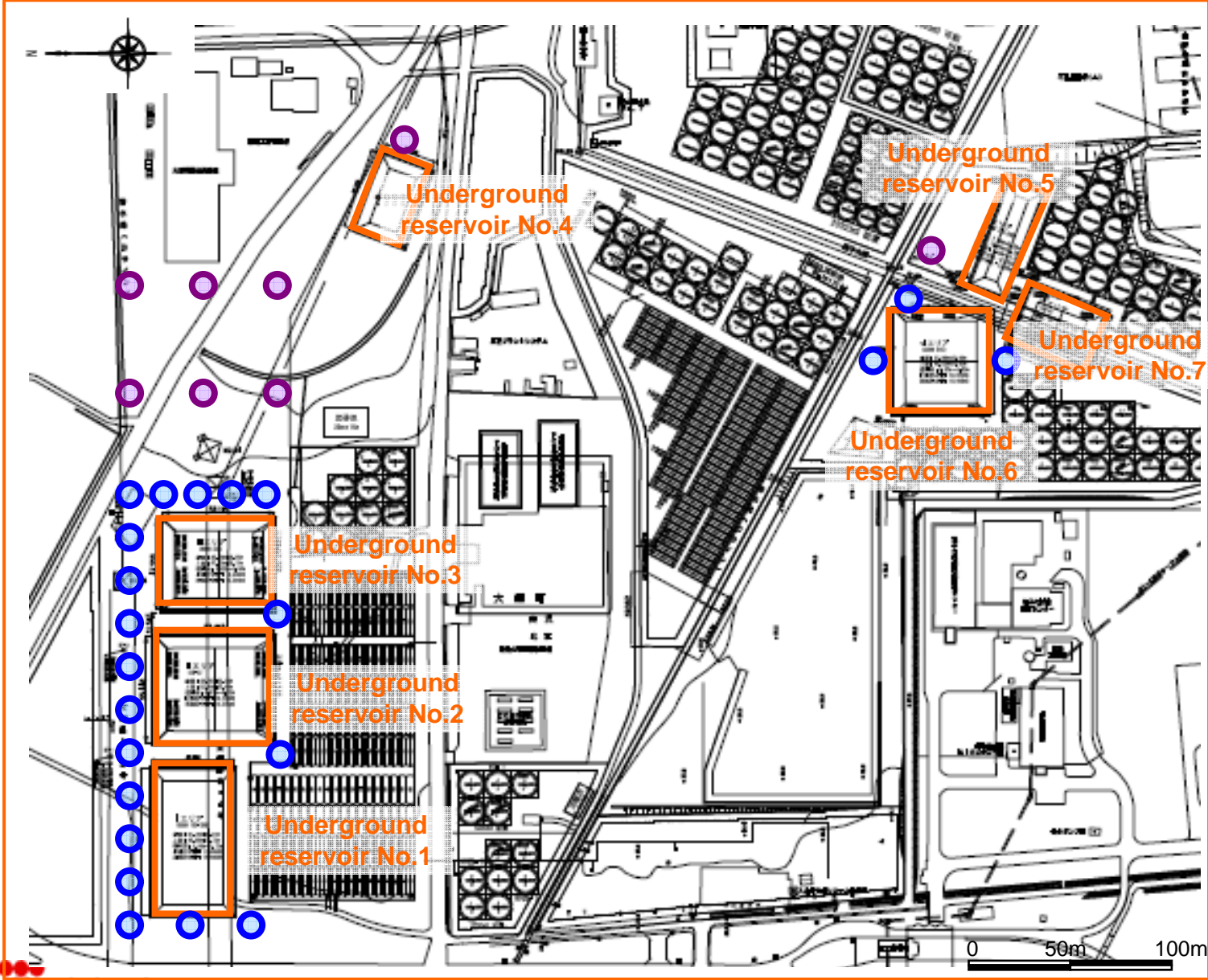
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- Understand the contamination condition of the surrounding area of the underground reservoirs and continuously monitor for contamination expansion into the sea side.

# Investigation Locations (Plan View of the Entire Site)



# Investigation Locations (Details)



- New observation holes (at 22 locations)  
(Understanding the contamination condition in the surrounding area of the underground reservoirs)  
Depth: Approx. 5-15m
- New observation holes (at 8 locations)  
(Continuous monitoring for contamination expansion to the sea side)  
Depth: Approx. 20-30m

\*The location, number, etc. of the new observation holes are subject to change depending on the site condition and the objects buried underground.

# Monitoring Items

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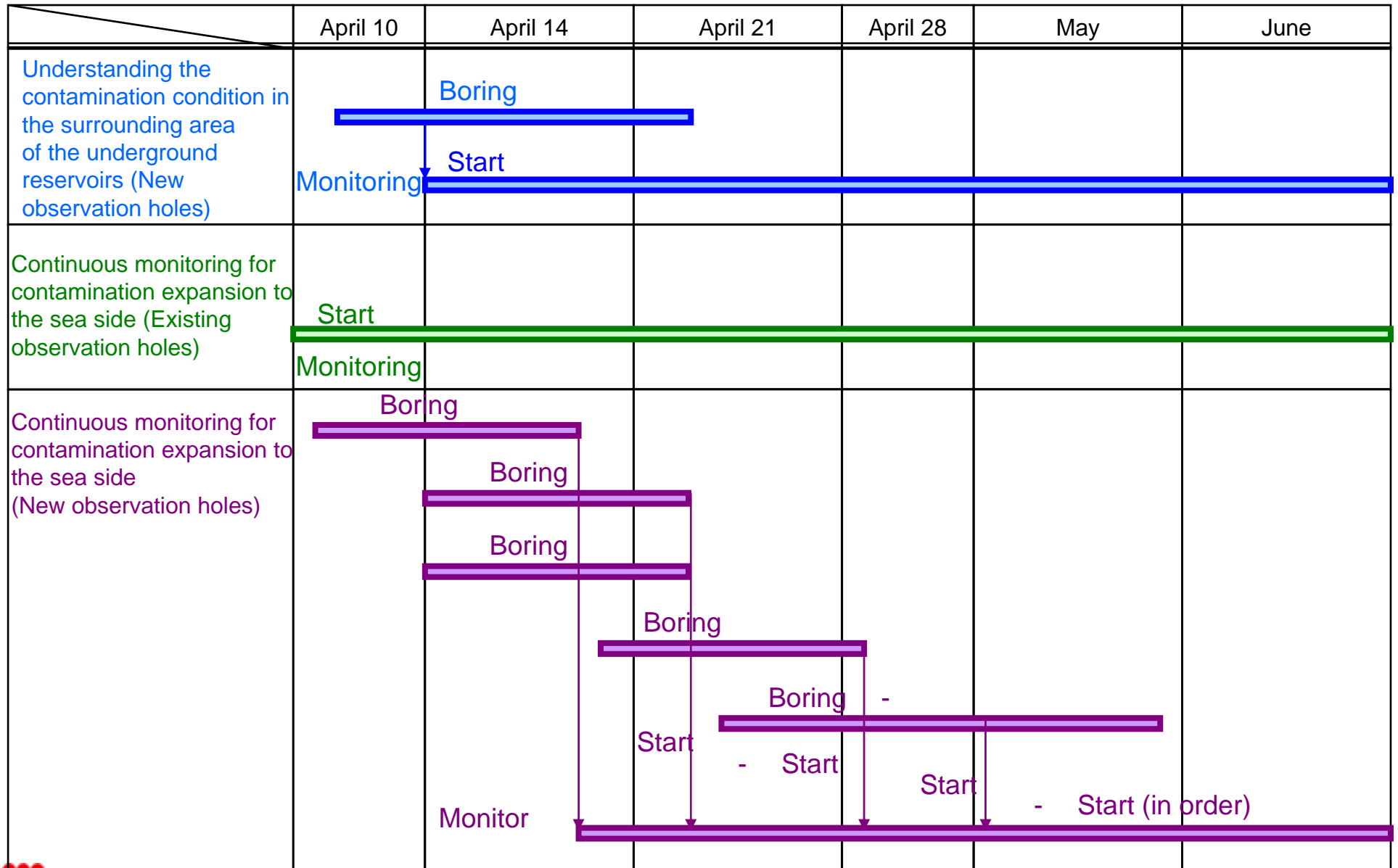
Understanding the contamination condition in the surrounding area of the underground reservoirs (**New observation holes**)

- Analysis items  
Chloride concentration and all
- Frequency of analysis  
Once a day for the time being

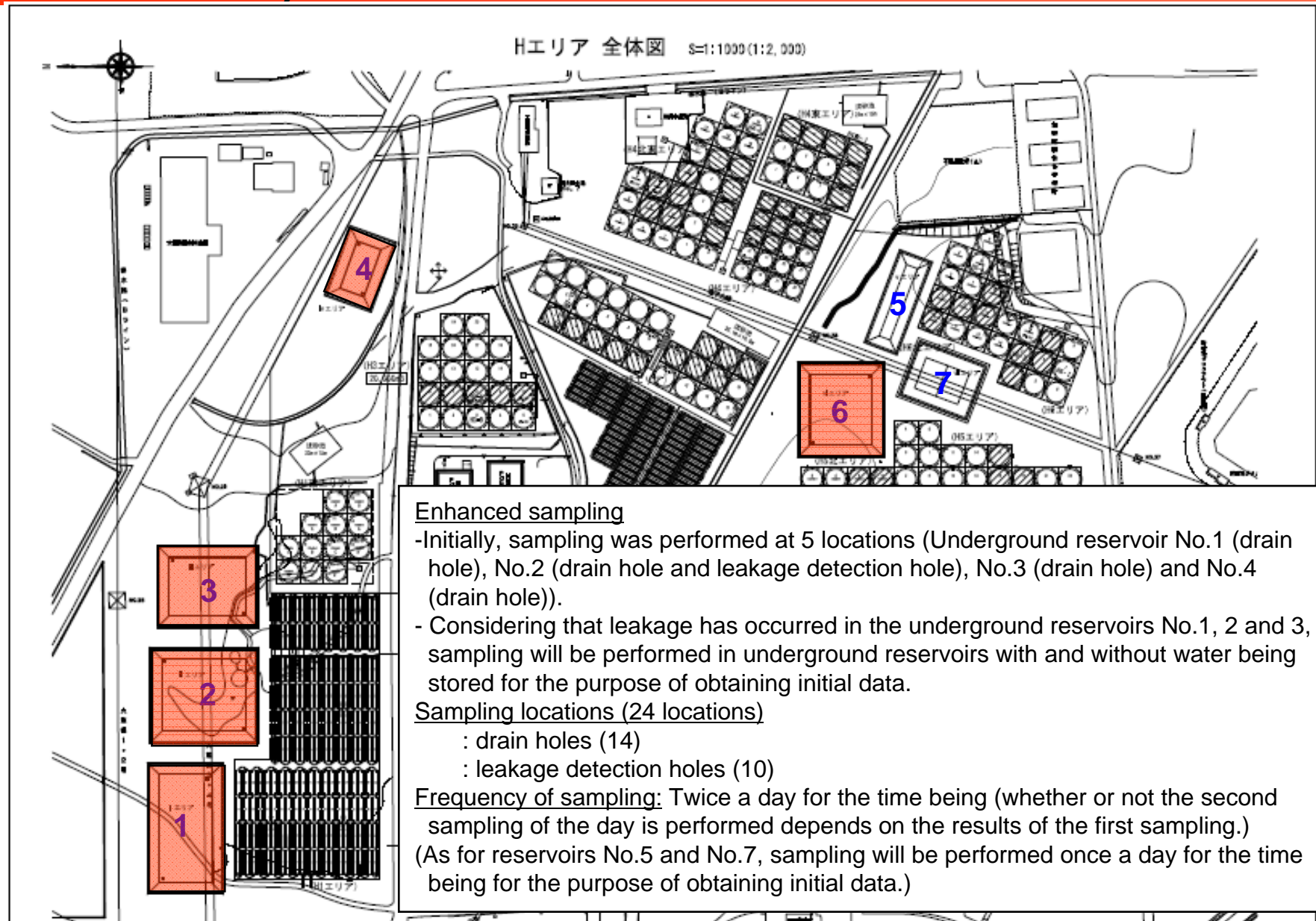
Continuous monitoring for contamination expansion to the sea side (**Existing** and **new observation holes**)

- Analysis items  
Chloride concentration, all and tritium
- Frequency of analysis  
Once a week

# Schedule



# (Reference) Sampling Performed in the Underground Reservoirs (Current Status)



# (Reference) Water Quality Analysis of the Water Leaked from the Underground Reservoirs

[Basic stance]

As for the reservoirs with water being stored, sampling will be performed twice a day for the time being.

(Whether or not the second sampling of the day is performed depends on the results of the first sampling.)

(As for reservoirs without water being stored, sampling will be performed once a day for the time being for the purpose of obtaining initial data.)

No.	Purpose of analysis	Sampling location		1. Chloride concentration	2. $\gamma$ nuclides	3. All $\beta$
2	[During transfer] Check the condition of leakage to evaluate the amount of leakage. [After transfer is completed] Confirm that leakage has stopped after water transfer and that the leaked water is diluted by groundwater. *For a detailed analysis of leaked water, the analysis of all $\alpha$ , H-3 and Sr-90 will be performed during transfer and after the completion of transfer (once each). H-3 analysis will be continued once a week.	Drain hole	Northeast	Twice a day for the time being	Twice a day for the time being	Twice a day for the time being
			Southwest	Same as the above	Same as the above	Same as the above
		Leakage detection hole*	Northeast	Twice a day for the time being	Twice a day for the time being	Twice a day for the time being
			Southwest	Same as the above	Same as the above	Same as the above
1, 3	The escalation of leakage will be checked twice a day. In the case that water transfer is determined, the analysis will be performed for the same purpose as the underground reservoir No.2 *For a detailed analysis of leaked water, the analysis of all $\alpha$ , H-3 and Sr-90 will be performed during water storage and after the completion of transfer (once each). H-3 analysis will be continued once a week.	Drain hole	Northeast	Twice a day for the time being	Twice a day for the time being	Twice a day for the time being
			Southwest	Same as the above	Same as the above	Same as the above
		Leakage detection hole*	Northeast	Twice a day for the time being	Twice a day for the time being	Twice a day for the time being
			Southwest	Same as the above	Same as the above	Same as the above
4, 6	Check for leakage from the reservoirs of concern. *H-3 analysis will be performed once a week.	Drain hole	Northeast	Twice a day for the time being	Twice a day for the time being	Twice a day for the time being
			Southwest	Same as the above	Same as the above	Same as the above
		Leakage detection hole*	Northeast	Twice a day for the time being	Twice a day for the time being	Twice a day for the time being
			Southwest	Same as the above	Same as the above	Same as the above
5, 7	Since the reservoirs do not have water currently being stored, monitoring will be performed for the purpose of obtaining initial data. *H-3 analysis will be performed once.	Drain hole	Northeast	Once a day for the time being	Once a day for the time being	Once a day for the time being
			Southwest	Same as the above	Same as the above	Same as the above

\*Analysis will be performed if the amount of sample necessary for analysis is obtained.



**Cause Investigation of the Leakage from the  
Underground Reservoirs (Site Investigation  
of the Underground Reservoir No.2)**

April 10, 2013  
Tokyo Electric Power Company

# Cause Investigation Policy

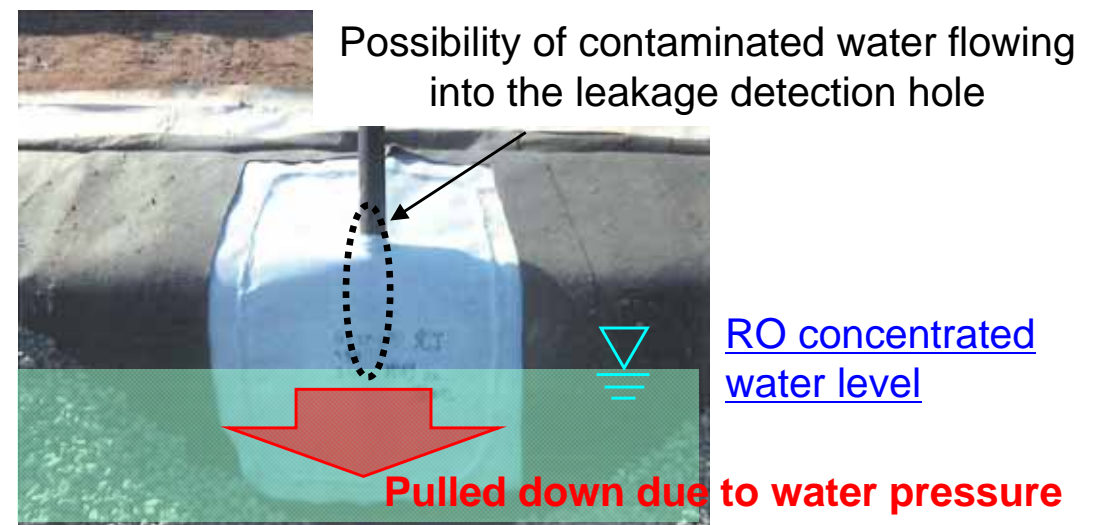
## ■ Assumed cause

- The problem with the leakage detection hole penetration is considered to be one of the possible causes.
- There is a high possibility that the leakage occurred in the northeast side of the leakage detection hole where a high density of ray is detected.

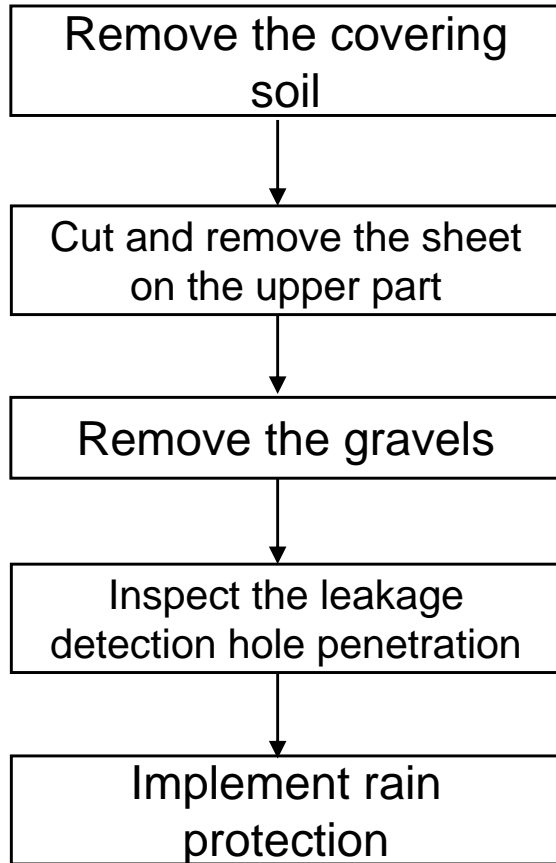
## ■ Investigation Policy

- Visually inspect the conditions of the impermeable sheet and the leakage detection hole in the leakage detection hole penetration in the northeast side where the leakage is suspected.

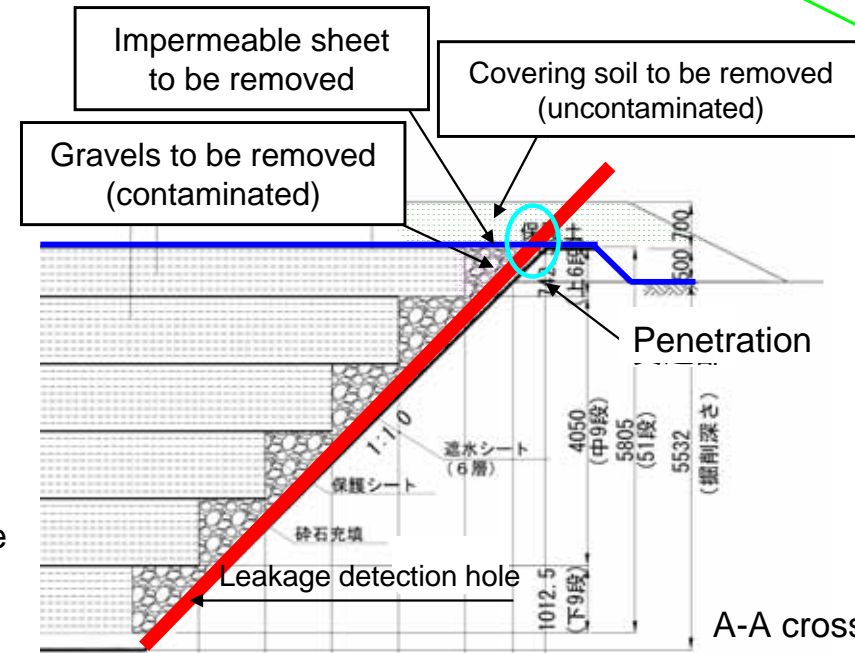
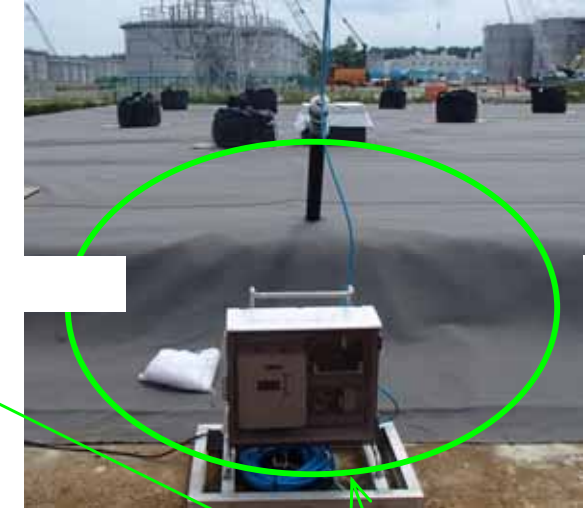
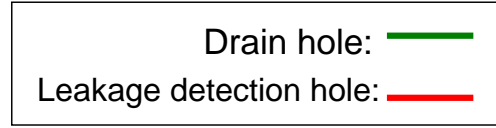
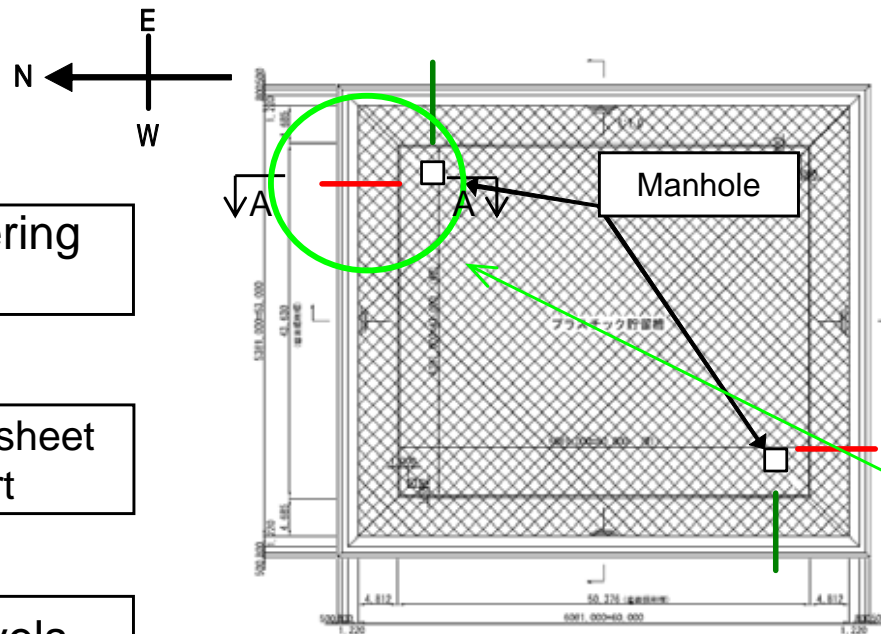
Damaged due to the welding area being stretched



# Investigation Method



Note: The removed objects which are contaminated will be stored in notch tanks, etc.



A-A cross section

# Schedule

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Item	April											
	8	9	10	11	12	13	14	15	16	17	18	19
Investigation of the underground reservoir No.2			[Redacted]									