

Information submitted by Japan upon the request from the Minamata Convention secretariat on the management of the contaminated sites

Pursuant to the Decision MC-2/8 of the COP2 of the Minamata Convention, parties and other stakeholders are invited to submit additional comments and information to complement and further improve the draft Guidance. Hereunder, Japan submits comments and information in line with the letter from Executive Secretary dated on 3 December 2018 (Reference: COP2/MC/FOLLOW-UP/DEC2018).

Comments on the draft guidance on managing contaminated sites

Ministry of the Environment, Japan

- (i) Situations that are site-specific to mercury that parties may face, such as the decommissioning of chlor-alkali plants and addressing contamination due to artisanal and small-scale gold-mining activities, etc.;

It is highly probable that the ASGM sites are highly contaminated, thus they should be regarded as the sites which needs to be addressed.

The sites where chlor-alkali plants or other facilities that produce, use or process mercury are located may also be contaminated with mercury due to the leakages.

The extent and the level of contamination depend on the site-specific conditions including historical accidents.

Risks may arise when decommissioning plants or facilities where mercury was used or reusing such lands, thus it is necessary to assess the site contamination before such actions.

In addition, as described in paragraph 17 of the 2nd draft, such sites as properly managed waste disposal sites would present no risk of spreading contamination unless they change the land terrain, thus they do not need to be regarded as the sites to be addressed.

- (ii) The role played by inventories of contaminated sites in strategies and policies relating to contaminated sites

Inventory is for assessing all possible contaminated sites in each country. And it provides the basic information for prioritizing and taking countermeasures. It should be noted that inventory may include the sites where the primary survey will indicate no further actions to be addressed.

In addition, as described in paragraph 17 of the 2nd draft, an exhaustive approach that a party compiles a countrywide inventory may be effective when developing a comprehensive national plan for countermeasures against mercury-contaminated sites. On the other hand, the individual approach which do not necessarily require compiling a countrywide inventory is particularly effective and efficient if a country

has already identified some degree of contaminated sites where environmentally appropriate management measures are implemented.

(iii) Prioritization for further action on contaminated sites based on risk assessment;

There are two steps in prioritization.

The 1st step is the prioritization based on the type of land use history. Specifically, the ASGM sites are given the highest priority as the sites are highly probable in their high contamination. In addition, high priority can also be given to such sites as the chlor-alkali plants where large amount of mercury have been used.

The 2nd step is the prioritization based on the individual contamination condition in each site. Specifically, high priority will be given to the sites where high concentration is detected in result of sampling and analysis and the sites considered to be with high risk according to land use situation or groundwater use situation.

(iv) The interface between contaminated site policies and land use planning policies;

When justifying the implementation of countermeasures, the likelihood level of health risk affected from soil contamination is a key factor.

The health risk depends on not only mercury concentration but also land use plan, actual land use, groundwater use, etc.

If health effects is likely, countermeasures should be taken. It should be noted that the countermeasures are not limited to decontamination operations but can include site management methodologies such as on site pollution containment or fencing (physical barrier). Moreover, modifying land use plan is also one of the possible approaches.

If no health effects is expected, no immediate actions is necessary, however, modifying land terrain or carrying out the soil have the risks to diffuse the contaminant, thus proper management is necessary for such sites.

(v) Existing procedures for the characterization of contaminated sites, including approaches and techniques for sampling and analysis;

In Japan, the surveyor firstly covers the evaluating site with 10 meter grid and collects soil samples from each grid. For the area where the soil contamination is less likely given the land use history indicates, the samples will be collected from

30 meter grid.

The soil up to 50 cm in depth from surface of the top soil or bottom of pipes is collected. This sampling protocol comes from the characteristic of mercury which does not permeate deep into soil very much.

For analytical method, Japan adopts both leaching test and content test (leaching test with hydrochloric acid assuming absorption from stomach) and sets standards for each test.

Japan does not apply the Conceptual Site Model (CSM) shown in 2nd draft. CSM may be useful for some parties, however, it would not necessarily be useful for parties that have already established scheme other than CSM. Moreover, it should be noted that CSM requires certain expertise for officials in competent authority in each party who should judge the validity of the result of CSM evaluation. Therefore, it should be clearly described in the guidance that CSM is one of the evaluation methods.

(vi) The existing range of proven and emerging remediation techniques, including situations in which certain techniques may or may not be appropriate, environmental advantages and drawbacks and costs;

Japan stipulates legitimate countermeasures as follows:

- in-situ containment by sheet piles
- soil excavation and reburial in on-site seepage control work
- soil excavation and reburial in on-site concrete box
- groundwater pumping
- groundwater treatment with purifying screen
- soil excavation and removal
- on-site treatment including biological decomposition, chemical decomposition, soil washing, etc.
- insolubilization (on-site or off-site)
- pavement
- fencing
- soil inversion
- earth filling/embankment

Insolubilization cannot be applied for high level contamination.

Pavement, fencing, soil inversion or earth filling cannot be applied for the sites where the soil contamination may affect groundwater.

Soil excavation and reburial in on-site seepage control work, soil excavation and reburial in on-site concrete box and soil excavation and removal are very expensive and they have risks of diffusing pollution when excavating soil.

Soil excavation and reburial in on-site concrete box, groundwater pumping and biological decomposition need long time for completion.

For soil excavation and removal, removed soil should be transported and processed at treatment facilities by washing, extraction, heat treatment, stabilization and so on.

Regarding emerging techniques, only well proven technologies should be provided in the guidance. If emerging techniques such as electrokinetic are listed in the guidance, it may mislead readers as if such emerging techniques are well proven. Instead, it should be noted in the guidance that the emerging techniques should be examined its possibility of application before applying

(vii) Socioeconomic and cultural considerations during the remediation of contaminated sites;

Risk communication between landowners, land users and neighbouring residents is important.

In risk communication, following contents, for example, are desirable to be communicated.

- Result of investigation (sample collection date, collection points, concentration)
- Assumed impact on human health and surrounding environment, possibility of spreading pollution
- Short- and long-term actions in future
- Detail of countermeasures (if taken) and reasons for selecting the countermeasures

And the timing of risk communication would be, for example, as follows.

- when contamination was detected but countermeasure has not started (to explain the investigation result and countermeasure plan)
- when the countermeasures are implementing (to explain the work progress)
- when the countermeasures are completed (to explain the result of the countermeasure)

(viii) Information on approaches to financing work on and building capacity for the identification, assessment, remediation and risk management of contaminated sites,

including frameworks for domestic financing;

Polluter-pays principle is the basic concept for costing.

However, there are cases where polluter are unknown or nonexistent. Therefore, it is important to stipulate in the national legislation about the person who should bear the costs. In such cases, establishing a foundation by each country could be effective.

As for capacity building, Japan has established a legal system that only approved companies with state-qualified engineers are supposed to investigate the site. With this system, quality and reliability of the investigation results are ensured.