Council of Managers
of National Antarctic Programs

ATCM XXV
Warsaw Poland
10-20 September 2002

Information Paper on Best Practice To Avoid Waste Water Disposal Onto Ice-free Ground at Inland Stations

BACKGROUND

1. This report responds to a request from ATCM to "*provide advice on how best practice might meet the requirements of the Waste Management Annex with regard to avoiding the discharge of wastewater onto ice-free ground at inland stations.*" COMNAP's Standing Committee on Antarctic Logistics and Operations (SCALOP) conducted a survey to obtain information on present practices, techniques and future plans, and to seek advice on research that might help improve waste management practices. The survey considered all stations and field sites, those on the coast as well as inland sites. It covered grey water, sewage (faeces and urine) and the effluent and sludge discharged from sewage treatment plants.

2. Eighteen members provided detailed responses to the survey, sharing information on current practice and possible future developments. The survey indicated that nations generally are working diligently to meet the requirements of Annex III with respect to the disposal of waste. Additional information on best practices for waste disposal derives from the discussions at the annual COMNAP meetings. Waste disposal was a featured topic of discussion at the SCALOP Symposia held in conjunction with the 2000 SCAR/COMNAP meeting in Tokyo and again with the 2002 meeting in Shanghai. Seven nations presented poster topics at the latter Symposium on work being conducted to develop or introduce new waste technologies for their Antarctic facilities.

3. Current practices range from use of sewage treatment plants at larger stations and bases, storage in containers for disposal at home countries or at coastal stations, and incineration. Containment, storage, and retrograde of grey and black water is the method used by the majority of programs for field and small stations.

4. The discussion of future developments included:

- membrane filtration;
- standard grey and black waste water treatment technologies including biological treatment;
- new systems that use biological treatment, aeration and UV sterilisation of the effluent. The effluent discharged from these systems is made up of clean water and sludge and work to develop ideas on the management of this type of effluent also is under consideration; eg.

- volume and reduction via evaporative techniques;
- water recycling technology; and
- black water incineration.

5. These new developments have the potential to complement incineration and retrograde. The survey shows that a number of nations have or are developing systems producing effluent of drinking water quality but such systems have not been constructed for use at inland stations on ice-free areas: Compliance with the Protocol requires that that waste not be discharged onto ice-free ground.

6. COMNAP considers that one or more of these developments offer considerable potential to improve contemporary practices, with development. COMNAP will continue to maintain its focus on waste treatment technologies, so that the capability of emerging technologies can be considered as and when CEP conducts its rolling review of the Waste Management Annex of the Environmental Protocol.