

## **Antarctic Inspection Checklists**

These checklists, which are not intended to be exhaustive, are designed to provide a guideline to observers conducting inspections in Antarctica in accordance with the provisions of Article VII of the Antarctic Treaty.

Not all items in the checklists are necessarily applicable to the activity being inspected or directly related to Article VII of the Antarctic Treaty or the requirements of the Protocol on Environmental Protection to the Antarctic Treaty. It is recognized that some of the items could be addressed through the Antarctic Treaty Exchange of Information. It is also recognized that the purpose of an inspection is to verify through observation. Therefore, any inspection report should clearly identify which information was observed and which was taken from documents.

It is recommended that observers seek out and examine all relevant documents prior to undertaking inspections, including the Antarctic Treaty Exchange of Information, the relevant national Annual Reports to SCAR and the COMNAP/SCALOP Advance Exchange of Information.

## **CHECKLIST A**

### **Permanent Antarctic Stations and Associated Installations**

#### **1. GENERAL INFORMATION**

- 1.1 Name of station visited
- 1.2 Operating nation
- 1.3 Location
- 1.4 Date established
- 1.5 Primary aim of the station (scientific, logistic, etc.)
- 1.6 Plans for future use of the station
- 1.7 International logistic cooperation
- 1.8 Availability of the Antarctic Treaty Exchange of Information

#### **2. INSPECTION DETAILS**

- 2.1 Date
- 2.2 Time of visit
- 2.3 Duration of visit
- 2.4 Last inspection (nation(s), date)

#### **3. PERSONNEL**

- 3.1 Name of person in charge
- 3.2 Total number of personnel on station
- 3.3 Number of scientists on station
- 3.4 Number of over-wintering personnel
- 3.5 Maximum capacity of station
- 3.6 Responsible agencies or ministries
- 3.7 Training (survival, first-aid, environmental protection, etc.)

#### **4. SCIENTIFIC RESEARCH**

- 4.1 Major scientific programmes supported by the station
- 4.2 Dedicated permanent scientific facilities on the station
- 4.3 Number and nationality of exchange scientists from other Antarctic programmes
- 4.4 Advance notice, use and control of radio-isotopes

#### **5. PHYSICAL DESCRIPTION OF STATION**

- 5.1 Area covered by station
- 5.2 Approximate number and type of buildings
- 5.3 Age and state of buildings
- 5.4 New or recent construction
- 5.5 Sketch or map of buildings
- 5.6 Major aerial systems
- 5.7 Landing or dock facilities
- 5.8 Roads
- 5.9 Airstrips
- 5.10 Helipads
- 5.11 Nearby facilities (refuges, field huts, etc)

#### **6. COMMUNICATIONS**

- 6.1 Communication facilities

#### **7. TRANSPORT**

- 7.1 Number and type of ground vehicles
- 7.2 Number and type of small boats
- 7.3 Number and type of fixed and rotary wing aircraft
- 7.4 Number of aircraft movements per year
- 7.5 Cargo handling and earth moving equipment

- 7.6 Frequency and method of resupply
- 8. STATION FACILITIES – FUEL STORAGE/USAGE
  - 8.1 Types, amount and use of fuel (diesel, petrol, aviation fuel, etc.)
  - 8.2 Types and capacity of station storage containers
  - 8.3 Monitoring of fuel pumping systems and storage tanks (method)
  - 8.4 Background information on fuel pipe-work (material, above ground, gravity feed, valves, etc.)
  - 8.5 Transfer of bulk fuel (include transfer method)
  - 8.6 Methods of emptying fuel lines (gravity, compressed air, etc.)
  - 8.7 Field fuel depots (quantity and type)
  - 8.8 Responsibility for fuel management
  - 8.9 Protection against leaks and spills
- 9. STATION FACILITIES – WATER SYSTEM
  - 9.1 Type of water supply and storage facility (RO, distillation, snow melt, chemical treatment, etc.)
  - 9.2 Availability and quality of water supply
  - 9.3 Consumption of water per person/day
- 10. STATION FACILITIES – POWER GENERATION
  - 10.1 Number, type and capacity of generators
  - 10.2 Annual fuel consumption for power generation (tones)
  - 10.3 Alternative energy sources
  - 10.4 Filtering and monitoring of emissions
- 11. STATION FACILITIES – MEDICAL
  - 11.1 Medical facilities and personnel
  - 11.2 Number of patient beds
- 12. STATION FACILITIES – HAZARDOUS CHEMICALS
  - 12.1 Types and quantities of chemicals
  - 12.2 Storage and monitoring arrangements
  - 12.3 Protection against leaks and spills
- 13. FIREARMS/EXPLOSIVES
  - 13.1 Number, type and purpose of firearms and ammunition
  - 13.2 Amount, type and use of explosives
  - 13.3 Storage of explosives and method of disposal
- 14. MILITARY SUPPORT ACTIVITIES
  - 14.1 Describe any military support to the station
  - 14.2 Details of military equipment held at station
- 15. ANTARCTIC TREATY LEGISLATION
  - 15.1 Understanding of the provisions of the Antarctic Treaty and related agreements
  - 15.2 Availability of Antarctic Treaty documentation on station
- 16. EMERGENCY RESPONSE CAPABILITY
  - 16.1 General
    - a) Search and rescue capability
    - b) Incidents in the last year resulting in significant damage to station facilities or the environment
    - c) Method of reporting incidents
  - 16.2 Medical
    - a) Mobile medical emergency response capability
    - b) Evacuation plan for medical emergencies
  - 16.3 Fire

- a) Fire emergency plan
  - b) Fire fighting equipment
  - c) Training of personnel for fire fighting
  - d) Fire fighting exercises (frequency)
- 16.4 Pollution (oil and chemical spills)
- a) Risk assessment for spills
  - b) Spill response plan
  - c) Training of personnel to deal with spills
  - d) Spill response exercises (frequency)
  - e) Mobile spill response capability

#### 17. ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

- 17.1 Awareness of station management personnel of the requirement to conduct an EIA for all new activities
- 17.2 EIAs prepared for activities currently being undertaken
- 17.3 Environmental monitoring of indicators of possible environmental impacts of the station or associated activities

#### 18. CONSERVATION OF FLORA AND FAUNA

- 18.1 Methods of making station personnel aware of the rules relating to the conservation of Antarctic flora and fauna
- 18.2 Details of any native mammals, birds or invertebrates that have been killed, injured, captured, handled, molested or disturbed during the past year; Methods used to kill, capture and or handle animals; Issue of permits and reasons for their issue
- 18.3 Harmful interference with animals and plants in the vicinity of the base; Issue of permits and reasons for their issue
- 18.4 Non-indigenous animals or plant species present; Issue of permits and reasons for their issue
- 18.5 Actions taken to avoid accidental introduction of non-indigenous species
- 18.6 Nearby, important wildlife or plant sites
- 18.7 Local guidelines controlling the use of aircraft and vehicles close to concentrations of wildlife

#### 19. WASTE MANAGEMENT

- 19.1 Waste management plan for the separation, reduction, collection, storage and disposal of wastes
- 19.2 Responsibility for waste management on the station
- 19.3 Production of an annual waste management report
- 19.4 Training of personnel in waste management and the need to minimize the impact of wastes on the environment
- 19.5 Publicly displayed notices concerning waste management
- 19.6 Current waste disposal methods:
  - a) Radioactive materials
  - b) Electrical batteries
  - c) Fuel (both liquid and solid) and lubricants
  - d) Wastes containing harmful levels of heavy metals or acutely toxic or harmful persistent compounds
  - e) Poly-vinyl chloride (PVC), polyurethane foam, polystyrene foam, rubber
  - f) Other plastics
  - g) Treated wood
  - h) Fuel drums
  - i) Other solid, non-combustible wastes
  - j) Organic wastes
    - Residues of carcasses of imported animals
    - Laboratory cultures of micro-organisms and plant pathogens
    - Introduced avian products
    - Other organic wastes (food waste, etc)
  - k) Sewage and domestic liquid wastes

- l) Waste produced by field parties
- 19.7 Production of waste per person/day
- 19.8 Use of open burning; Disposal of ash; Alternatives planned for by 1998/99
- 19.9 Use of incineration; Disposal of ash; Control and monitoring of emissions
- 19.10 Treatment of sewage and domestic liquid wastes; Monitoring of effluent
- 19.11 Use of landfill or ice pit
- 19.12 Recycling of wastes
- 19.13 Measures taken to prevent wastes which are to be removed from the Treaty area being dispersed by wind or accessed by scavengers
- 19.14 Inventory of the locations of past activities (abandoned bases, old fuel depots, etc.)
- 19.15 Clean-up of past activities and future plans

## 20. MANAGEMENT OF PROTECTED AREAS

- 20.1 Protected area(s) in the vicinity of, or containing, the station (type, name, site number)
- 20.2 Relevant management plans and maps of protected areas held on the station
- 20.3 Entry by station personnel to protected areas within the past year; Issue of permits and reasons for their issue
- 20.4 Problems with station personnel or visitors not observing the restrictions of protected areas
- 20.5 Marking of the protected area(s) in the vicinity of, or containing, the station
- 20.6 Monitoring or management of protected areas
- 20.7 Information as to whether the protected areas continue to serve the purpose for which they were designated
- 20.8 Additional steps that should be taken to protect the areas

## 21. TOURIST AND NON-GOVERNMENTAL ACTIVITIES

- 21.1 Visits to the station by tourists or non-governmental expeditions during the past year
  - Total number of people
  - Numbers ashore at any one time
  - Number of cruise ships
  - Number of yachts
  - Number of aircraft
- 21.2 Procedures developed to facilitate or control tourist and non-governmental activities
- 21.3 Advance permission required for visits to the station
- 21.4 Operational problems for the station caused by visitors (unannounced visits, etc.)
- 21.5 Environmental impact of visitors at the station or nearby

## **CHECKLIST B**

### **Vessels Within the Antarctic Treaty Area**

Observers undertaking an inspection of a vessel in the Antarctic Treaty Area should bear in mind that:

- i) only a vessel flying the flag of a Treaty Party can be inspected;
- ii) an inspection can only be undertaken under the terms of Article VII (3) of the Antarctic Treaty which states that inspections can only be carried out at points of discharging or embarking cargoes or personnel in Antarctica, and;
- iii) Article VI of the Antarctic Treaty safeguards High Sea rights under international law within the Antarctic Treaty Area.

Inspections which are not in accord with (i) and (ii) above, including inspections of vessels chartered by Treaty Parties, can only be carried out with the explicit consent of the master of the vessel.

#### **1. GENERAL INFORMATION**

- 1.1 Name of ship visited
- 1.2 Radio call sign
- 1.3 State and/or Port of Registration
- 1.4 Owner, manager and/or charterer of vessel
- 1.5 Ship type (general cargo, scientific research, etc.)
- 1.6 Date launched, if known
- 1.7 Primary activity of vessel at time of inspection (scientific research, logistic support, tourism, etc.)
- 1.8 Planned itinerary
- 1.9 Expected length of annual operating period in the Antarctic
- 1.10 Area of operation in the Antarctic in past year
- 1.11 International logistic cooperation
- 1.12 Presence of mandatory documentation (e.g., IMO inspection reports),

#### **2. INSPECTION DETAILS**

- 2.1 Date
- 2.2 Time of visit
- 2.3 Location of visit
- 2.4 Duration of visit
- 2.5 Last inspection (nation(s), date)
- 2.6 Persons conducting inspection

#### **3. PERSONNEL**

- 3.1 Name of captain
- 3.2 Name of expedition leader or person in charge
- 3.3 Total number of personnel on board
  - crew (e.g., captain, officers, crew and catering staff)
  - staff (e.g., scientists, expedition or tour staff, helicopter pilots)
  - passengers (e.g., members of the expedition that are not crew or staff)
- 3.4 Maximum accommodation capacity of vessel
- 3.5 Previous Antarctic experience of captain and deck officers
- 3.6 Previous Antarctic experience of other crew and staff
- 3.7 Training of crew, staff and passengers (safety, life-boat drills, emergency response, etc.)

#### **4. SCIENTIFIC RESEARCH**

- 4.1 Principal scientific programmes undertaken by the vessel
- 4.2 Dedicated scientific facilities on the vessel
- 4.3 Number of research cruises planned during the season
- 4.4 Number and nationality of scientists
- 4.5 Advance notice, use and control of radio-isotopes

## 5. PHYSICAL DESCRIPTION OF VESSEL

- 5.1 Basic dimensions (gross tonnage, length, beam, draught, etc.)
- 5.2 Marine classification, including ice strengthening classification

## 6. NAVIGATION AIDS

- 6.1 Navigation aids and equipment (radar, sonar, depth sounding equipment, weather facsimile receiver, weather/ice satellite picture facilities, Global Positioning System (GPS) or similar)
- 6.2 Back-up or emergency equipment carried
- 6.3 Availability and currency of hydrographic charts
- 6.4 Availability and currency of Antarctic pilot reference material

## 7. COMMUNICATIONS

- 7.1 Communication facilities
- 7.2 Presence of emergency beacons (EPIRBS, etc.)

## 8. TRANSPORT

- 8.1 Type and number of small craft (landing craft, inflatables, survey launches, etc.)
- 8.2 Total capacity of lifeboats and liferafts; whether lifeboats are motorised, open or enclosed, and covered by a relevant survey certificate
- 8.3 Type and number of helicopters
- 8.4 Number of helicopter movements per Antarctic season

## 9. VESSEL FACILITIES - GENERAL CARGO

- 9.1 General cargo - types, amount
- 9.2 Presence and use of Cargo Record Book
- 9.3 Cargo handling equipment
- 9.4 Frequency and method of resupply to shore stations

## 10. VESSEL FACILITIES - FUEL BUNKERS AND CARGO

- 10.1 Fuel bunkers - types, amount and use of fuel (marine gas oil, petrol, etc.)
- 10.2 Fuel cargo - types, amount (aviation fuel, etc.)
- 10.3 Types and capacity of fuel tanks, Use of double-bottomed tanks
- 10.4 Deck storage of fuel
- 10.5 Prevention and protection against leaks and spills
- 10.6 Monitoring of fuel pumping systems and storage tanks (method)
- 10.7 Transfer of bulk fuel (include transfer method)
- 10.8 Responsibility for fuel management
- 10.9 Processing of oily water (oily water separator, direct to storage tanks, etc.)
- 10.10 Capacity to retain on board all oily waste whilst in the Antarctic Treaty Area
- 10.11 Presence and use of Oil Record Book

## 11. VESSEL FACILITIES - ENGINES AND POWER GENERATION

- 11.1 Number, type and capacity of engines and generators
- 11.2 Subsidiary propulsion (bow and/or stern thrusters, etc.)
- 11.3 Daily fuel consumption of engines and power generation (tones)
- 11.4 Filtering and monitoring of engine emissions (method)

## 12. VESSEL FACILITIES - MEDICAL

- 12.1 Medical facilities (e.g., numbers of patient beds)
- 12.2 Medical personnel

## 13. VESSEL FACILITIES - HAZARDOUS SUBSTANCES

- 13.1 Responsibility for management of hazardous substances
- 13.2 Types and quantities of hazardous substances being transported or used on board ship
- 13.3 Storage and monitoring arrangements
- 13.4 Protection against leaks and spills

#### 14. FIREARMS / EXPLOSIVES

- 14.1 Number, type and purpose of firearms and ammunition
- 14.2 Amount, type and purpose of explosives
- 14.3 Storage of explosives and method of disposal

#### 15. MILITARY SUPPORT ACTIVITIES

- 15.1 Describe any military support to the vessel (e.g., personnel)
- 15.2 Details of military equipment held on the vessel

#### 16. ANTARCTIC TREATY SYSTEM LEGISLATION

- 16.1 Availability of Antarctic Treaty System documentation on the vessel
- 16.2 Understanding and application of the provisions of the Antarctic Treaty and related agreements

#### 17. EMERGENCY RESPONSE CAPABILITY

##### 17.1 General

- a) Search and rescue capability
- b) Incidents in the current Antarctic season resulting in damage to the vessel or impact on the Antarctic environment
- c) Method of reporting incidents

##### 17.2 Medical

- a) Evacuation plan for medical emergencies
- b) Ship's capacity to mobilise in support of medical emergencies elsewhere

##### 17.3 Fire

- a) Fire emergency plan
- b) Fire fighting equipment
- c) Training of personnel for fire fighting
- d) Fire fighting exercises (frequency)

##### 17.4 Pollution (oil and chemical spills)

- a) Shipboard oil pollution contingency plan
- b) Spill response materials and equipment available on board
- c) Training of personnel to deal with spills
- d) Spill response exercises (frequency)
- e) Ship's capacity to mobilise in support of spill response elsewhere

#### 18. ENVIRONMENTAL IMPACT ASSESSMENT

- 18.1 Awareness of captain (and deck officers), and chief scientist and/or expedition leader of EIA
- 18.2 EIAs prepared for activities currently being undertaken (e.g., research cruise)
- 18.3 Environmental monitoring of activities undertaken by the vessel (e.g., monitoring of seismic surveys)

#### 19. CONSERVATION OF FLORA AND FAUNA

- 19.1 Methods of making crew, staff and passengers aware of prohibited activities and guidelines relating to the conservation of Antarctic flora and fauna
- 19.2 Vessel guidelines regarding the use of aircraft, small boats and ship's personnel close to concentrations of wildlife
- 19.3 Details of any native mammals, birds or invertebrates that have been killed, injured, captured, handled or disturbed during the past year; Methods used to kill, capture and or handle animals; Issue of permits and reasons for their issue
- 19.4 Harmful interference with animals and plants due to vessel activities; Issue or permits and reasons for their issue
- 19.5 Whether non-indigenous animals or plants carried on board the vessel (dogs, birds, ornamental plants, etc.)
- 19.6 Actions taken to avoid accidental introduction of non-indigenous species (animals, plants, micro-organisms)

## 20. WASTE MANAGEMENT

- 20.1 Waste management plan for the separation, reduction, collection, storage and disposal of wastes
- 20.2 Responsibility for waste management on the vessel
- 20.3 Availability of an up-to-date waste management report
- 20.4 Training of crew, staff and passengers in waste minimisation and management and the need to minimise the impact of shipboard wastes on the environment
- 20.5 Publicly displayed notices concerning waste management practices on board
- 20.6 Current waste disposal methods:
  - a) Radioactive materials
  - b) Electrical batteries
  - c) Fuel (both liquid and solid) and lubricants
  - d) Wastes containing harmful levels of heavy metals or acutely toxic or harmful persistent compounds
  - e) Poly-vinyl chloride (PVC), polyurethane foam, polystyrene foam, rubber
  - f) Other plastics
  - g) Treated wood
  - h) Fuel drums
  - i) Other solid, non-combustible wastes
  - j) Organic wastes
    - Residues of carcasses of imported animals
    - Laboratory cultures of micro-organisms and plant pathogens
    - Introduced avian products
    - Other organic wastes (food wastes, etc.)
  - k) Sewage and domestic liquid wastes
  - l) Waste produced by field parties
- 20.7 Adequate storage space on board to retain all wastes on board whilst in the Treaty Area
- 20.8 Equipment for waste management (compactors, shredders, comminutors, etc.)
- 20.9 Type of incineration; Disposal of ash; Control and monitoring of emissions
- 20.10 Type of sewage treatment; Disposal of sludge; Presence and currency of sewage record book
- 20.11 Recycling of wastes
- 20.12 Whether contractual arrangements have been made for the use of Port Reception facilities

## 21. MANAGEMENT OF PROTECTED AREAS

- 21.1 Responsibility for ensuring compliance with management plans for protected areas
- 21.2 Current management plans and maps of relevant protected areas held on the vessel
- 21.3 Entry by crew, staff or passengers to protected areas during the current Antarctic season; Issue of permits and reasons for their issue
- 21.4 Problems with crew, staff or passengers not observing the restrictions of protected areas (e.g., lack of supervision)
- 21.5 Monitoring or management of protected areas

## 22. TOURIST AND NON-GOVERNMENTAL ACTIVITIES

- 22.1 Advance notification provided as required under the Antarctic Treaty
- 22.2 Number of tourist or non-governmental expedition cruises already undertaken or planned by the vessel in the current Antarctic season
- 22.3 Location, date, number and nationality of research stations visited
- 22.4 Location, date and number of wildlife or other sites visited
- 22.5 Total number of tourists or expedition personnel carried
- 22.6 Number of tourists ashore at any one time
- 22.7 Normal ratio of staff to tourists during visits ashore
- 22.8 Procedures used to facilitate and control tourist and non-governmental activities, in implementation of Recommendation XVIII-1
- 22.9 Indications of environmental impact of crew, staff and passengers during visits ashore
- 22.10 Affiliation of tour organiser, ship owner or operator to any tourism association (e.g., International Association of Antarctica Tour Operators)

## **CHECKLIST C**

### **Abandoned Antarctic Stations and Associated Installations**

This checklist is designed for abandoned Antarctic stations and associated installations which are considered to be stations which have been given up altogether and are now unused. The checklist does not cover stations which are operated each summer or infrequently used over a number of years.

#### **1. GENERAL INFORMATION**

- 1.1 Name of station visited
- 1.2 Location
- 1.3 Nation responsible, if known
- 1.4 Date established, if known
- 1.5 Date abandoned, if known
- 1.6 Reason for abandonment, if known
- 1.7 Plans for future use of the station, if known
- 1.8 Plans to clean up the station, if known

#### **2. INSPECTION DETAILS**

- 2.1 Date
- 2.2 Time of visit
- 2.3 Duration of visit
- 2.4 Last inspection (nation(s), date),
- 2.5 Persons conducting inspection if known

#### **3. PHYSICAL DESCRIPTION OF STATION**

- 3.1 Area covered by station
- 3.2 Number and type of buildings
- 3.3 Sketch or map of buildings
- 3.4 Age and state of buildings (structural damage, state of roofing, state of fittings and fixtures, condition of internal walls and floors, internal accumulation of snow, ice, etc.)
- 3.5 Hazards to visitors (dangerous buildings, materials or wastes)
- 3.6 Notable historic buildings, facilities or artifacts
- 3.7 Evidence of measures to conserve notable historic buildings, facilities or artifacts
- 3.8 Signs of theft or vandalism, including graffiti
- 3.9 Use of information signs (interpretation, unsafe buildings, toxic waste, etc.)
- 3.10 Major aerial/antennae systems (structural damage, etc.)
- 3.11 Landing or dock facilities
- 3.12 Roads
- 3.13 Airstrips and associated facilities (markers, windsocks, hangars, tie-downs, etc.)
- 3.14 Helipads and associated facilities (markers, windsocks, hangars, tie-downs, etc.)
- 3.15 Nearby facilities (refuges, field huts, etc.)

#### **4. STATION FACILITIES - FUEL**

- 4.1 Types, quantity and location of fuel (diesel, petrol, aviation fuel, etc.)
- 4.2 Type and condition of storage containers (drums, tanks, etc.)
- 4.3 Existence and condition of bunding and other spill containment facilities
- 4.4 Evidence of leaks and spills and their environmental impact

#### **5. STATION FACILITIES - HAZARDOUS SUBSTANCES**

- 5.1 Types, quantities and location of hazardous substances (e.g., chemicals)
- 5.2 Type and condition of storage facilities buildings (drums, tanks, etc.)
- 5.3 Evidence of leaks and spills and their environmental impact

**6. STATION FACILITIES - EMERGENCY SUPPLIES (DO NOT BREAK OPEN SUPPLIES; IF SEALED CONTACT NATIONAL PROGRAMME)**

- 6.1 List and location of emergency supplies
- 6.2 Capacity and condition of emergency accommodation
- 6.3 Types, quantities and condition of food supplies
- 6.4 Cooking equipment
- 6.5 Availability and quality of water supply
- 6.6 Heating and generating plant (heaters, stoves, etc.)
- 6.7 Sleeping bags and blankets
- 6.8 Communications (emergency radio, etc.)
- 6.9 Medical supplies
- 6.10 Clothing

**7. ENVIRONMENTAL IMPACT ASSESSMENT (EIA)**

- 7.1 EIAs prepared for station (clean-up activity, removal of redundant structures, etc.)
- 7.2 Environmental monitoring of remedial activities undertaken at the station (e.g., hydrocarbon contamination of soils)

**8. CONSERVATION OF FLORA AND FAUNA**

- 8.1 Areas of water (lakes, streams) which could be affected by the station (fuel spill, dispersion of waste, etc.)
- 8.2 Description of flora near the station (moss banks, etc.)
- 8.3 Description of fauna near the station (seabird colonies, seal haul out sites, etc.)
- 8.4 Scientific research carried out nearby which could be affected by the station (fuel spill, dispersion of waste, etc.)
- 8.5 Potential hazards to wildlife (loose wire, aerials/antennae, broken glass, leaking fuel drums, etc.)
- 8.6 Indications of impact of the station on local wildlife (animals entangled, etc.) and any remedial action taken
- 8.7 Colonisation of station site by wildlife (species, numbers, etc.)
- 8.8 Entry by wildlife into buildings

**9. WASTE**

- 9.1 Types, quantities, condition and location of wastes (empty fuel drums, etc); If a waste disposal site is found then use the Waste Disposal Site Inspection Checklist.
- 9.2 Type and quantities of scattered debris
- 9.3 Evidence of measures to maintain the site and prevent dispersal of wastes
- 9.4 Evidence of clean-up activities or the removal of structures

**10. PROTECTED AREAS**

- 10.1 Protected areas including or near the station (type, name, site number)
- 10.2 Marking of protected area(s) in the vicinity of, or containing, the station
- 10.3 Evidence of monitoring or management of protected areas
- 10.4 Impact of station on protected areas

**11. TOURIST AND NON-GOVERNMENTAL ACTIVITIES**

- 11.1 Evidence of visits to the station during the past year, and possible origin of those visits
- 11.2 Indications of environmental impact of visitors at the station or nearby

## **CHECKLIST D**

### **Waste Disposal Sites**

#### **1. GENERAL INFORMATION**

- 1.1 Name of site (if any)
- 1.2 Location (geographical coordinates)
- 1.3 Map or sketch of site in relation to nearby landmarks
- 1.4 Description of waste disposal site (include general topography and area covered)
- 1.5 Estimate of total area and volume of the waste disposal site
- 1.6 Description of substrate of the waste disposal site
- 1.7 Nation responsible for site, if known

#### **2. INSPECTION DETAILS**

- 2.1 Date
- 2.2 Time of visit
- 2.3 Duration of visit
- 2.4 Persons conducting inspection
- 2.5 Last inspection (nation(s), date)

#### **3. PHYSICAL DESCRIPTION OF WASTE DISPOSAL SITE**

- 3.1 Is the site marked? How?
- 3.2 Has the waste been covered by soil or rock?
- 3.3 Are there any unused or unusable buildings at the site?
- 3.4 Areas of water around waste disposal site, including distance of the site from sea and freshwater bodies and possible drainage into these
- 3.5 Distribution and description of flora near waste disposal site
- 3.6 Distribution and description of fauna near the waste disposal site (seabird colonies, skua and other scavengers' nests, seal haul-out sites)
- 3.7 Scientific research carried out near the waste disposal site
- 3.8 Means of containment, including means of avoiding scattering by wind and run off

#### **4. CONTENTS OF WASTE DISPOSAL SITE**

- 4.1 Estimate of contents
- 4.2 Age and state of contents
- 4.3 Types and quantities of:
  - a) radioactive materials
  - b) electrical batteries
  - c) fuel (both liquid and solid) and lubricants
  - d) fuel drums
  - e) gas cylinders
  - f) wastes containing heavy metals or toxic substances
  - g) polyvinyl chloride (PVC), foam, polystyrene, rubber, plastics
  - h) treated wood
  - i) other hazardous materials (medical wastes, broken glass, wire, etc.)
  - j) other solid non-combustible wastes
  - k) organic wastes (bones, non-native plant material, etc.)
  - l) sewage and domestic liquid wastes
  - m) indications of soil from outside Antarctica

#### **5. ANY EVIDENCE OF ENVIRONMENTAL IMPACTS OF WASTE DISPOSAL SITE**

- 5.1 Current impacts, e.g.:
  - a) birds scavenging
  - b) contamination of soil
  - c) wind scattered debris
  - d) run-off, seepage, oils slicks
  - e) smell

- f) dead vegetation
  - g) dead, injured, sick or contaminated native birds or other animals
  - h) Potential for microbial contamination
- 5.2 Possible future impacts, e.g. oil seeping into the ground
- 5.3 Are there any sensitive sites nearby, that may be vulnerable to impacts? e.g. wildlife habitat

#### 6. EVIDENCE OF ENVIRONMENTAL ASSESSMENT AND/OR CORRECTIVE AND PREVENTIVE MEASURES

- 6.1 Is the site included in a Waste Management Plan?
- 6.2 What measures have been taken to rehabilitate the site or prevent dispersal of wastes? Written or physical evidence of these measures.
- 6.3 Has a contaminated site assessment been done on the waste disposal site; Is the report available?
- 6.4 Has an EIA or EIAs been prepared on removal of the waste disposal site (clean-up, removal of toxic materials, etc.)?
- 6.5 Is the waste disposal site and nearby areas being monitored to verify that no hazardous substances are being dispersed and its contents do not pose a hazard to human health or the environment (e.g. monitoring hydrocarbon, heavy metal or microbial contamination of soil, ground water or melt water)?

#### 7. FUTURE PLANS

- 7.1 Future plans for the site, for cleaning up, analysing environmental effects and minimising environmental effects
- 7.2 Heritage/historic considerations which might need to be taken into account before removal
- 7.3 Priority of action, that is, urgency of clean-up action
- 7.4 Recommendations for additional steps that should be taken to manage the impacts of the waste disposal site and protect adjacent areas