

LONDON PROTOCOL

Components of the Waste Assessment Guidance Part I - Generic Guidelines: Introduction and Steps 1 through 3

LONDON PROTOCOL KEY ELEMENTS

Reverse List

- Only eight items on the Annex 1 list are candidates for dumping.
- Emergency exceptions

Alternatives to dumping

- Must be considered to reduce or avoid dumping

Management of dumping

- Must have permitting regime to minimize potential impacts

LP Annex 2

- Follow Waste Assessment Guidance (WAG) process

Monitoring and Reporting

- Compliance monitoring and field monitoring
- Report on permits and monitoring annually

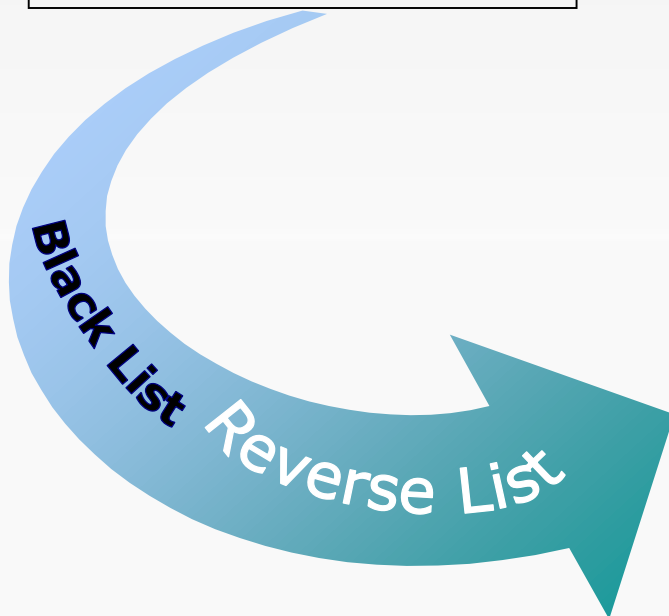
LONDON PROTOCOL

ARTICLE 3 - OBLIGATIONS

- Precautionary approach to environmental protection from dumping
- Polluter should, in principle, bear the cost of pollution
- No transfer of damage
- Party may take more stringent measures to prevent, reduce or eliminate pollution

WASTES OR OTHER MATTER THAT MAY BE CONSIDERED FOR DUMPING

**London Convention
Annex I**



**London Protocol
Annex 1**



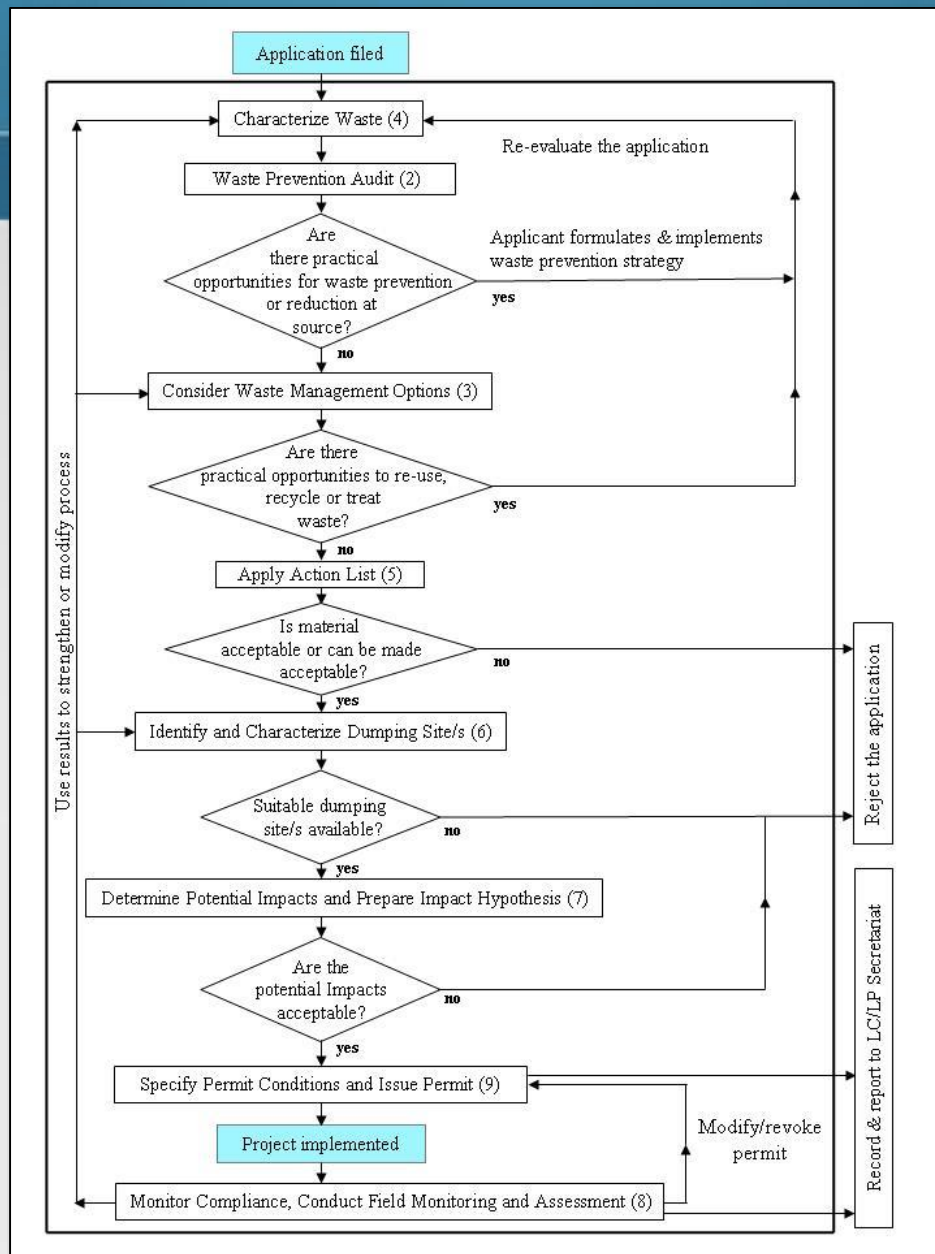
GENERIC GUIDELINES

- Guides implementation of Annex 2 of the London Protocol.
- Provides a framework useful in many areas of waste prevention and management.
- Provides a process for assessing wastes, issuance of permits, and monitoring.
- Consists of eight steps with several decision points that are not necessarily taken in sequential order.
 - Not a linear process – many feedback loops
 - Applications may be withdrawn or re-formulated early in the process.
 - Applicants may be asked for additional information before proceeding.
 - Options other than ocean disposal may be identified.
 - Applications may be rejected at several stages.

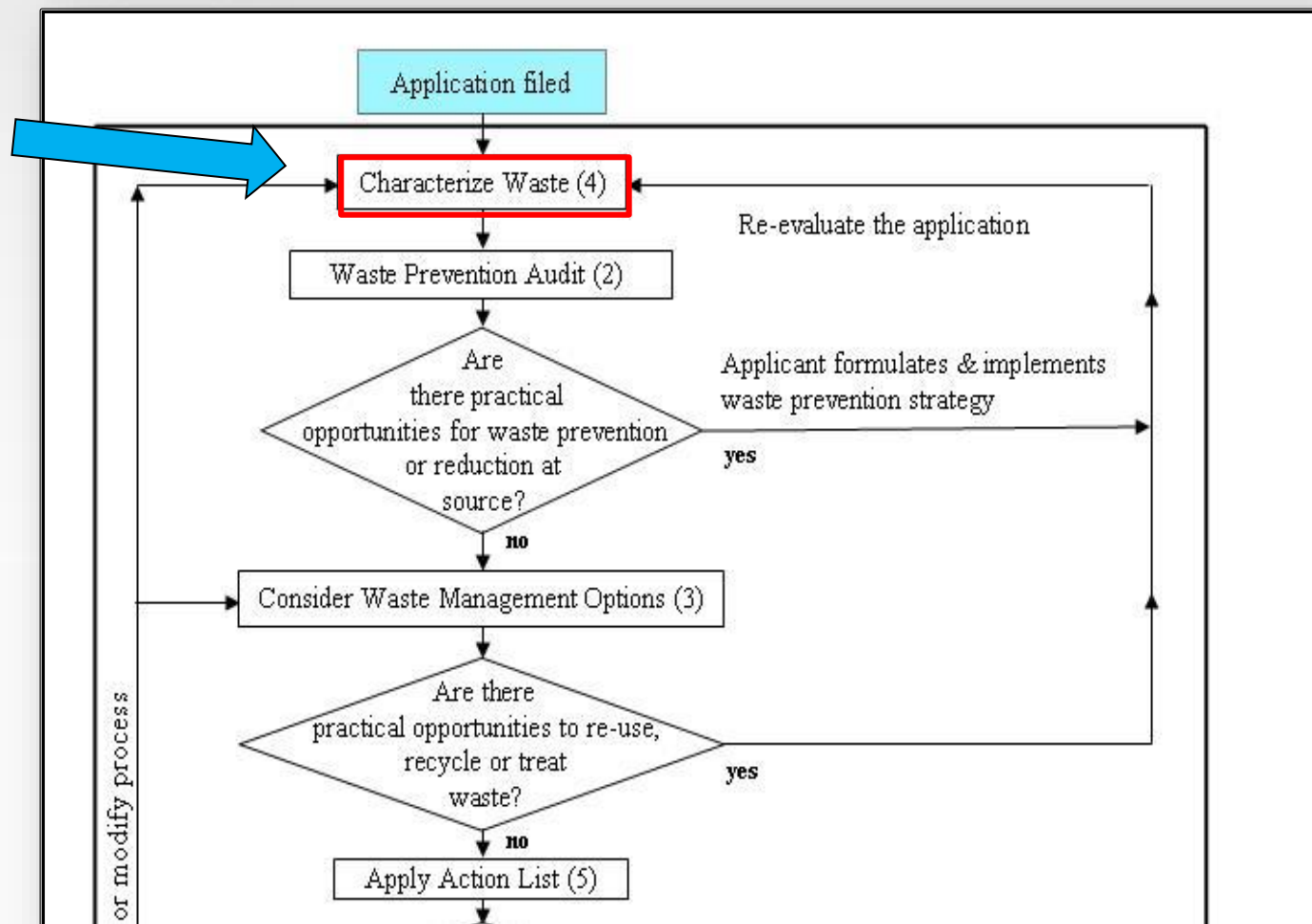
GENERIC WAG STEPS

- Step 1 - Characterize Waste
- Step 2 - Waste Prevention Audit
- Step 3 - Waste Management Options
- Step 4 – Apply Action List
- Step 5 – Identify and Characterize Dump Site(s)
- Step 6 - Determine Potential Impacts and Develop Impact Hypothesis
- Step 7 – Specify Permit Conditions and Issue Permit
- Step 8 - Monitor Compliance, Conduct Field Monitoring and Assessment

SCHEMATIC DIAGRAM OF THE WASTE ASSESSMENT GUIDANCE (WAG) PROCESS

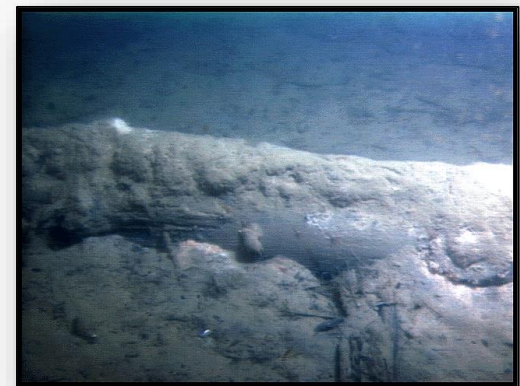


WAG Step 1



CHARACTERIZE THE WASTE

- Assess any potential impacts of ocean disposal of a waste on the environment or human health.
- Is the waste or other matter suitable for disposal at sea?
- Can the waste or other matter be made acceptable for disposal at sea?



CHARACTERIZATION FACTORS

- Origin, total amount, form and composition
- Properties - physical, chemical, biochemical and biological
- Persistence
- Toxicity
- Accumulation and biotransformation



WASTE CHARACTERIZATION

Waste type	Physical	Chemical	Biological	Exemptions	Notes
Dredged material	Grain size	Metals, PCBs, PAHs	Bioassays, community studies	No historical pollution No disturbance, Sand only	Large volumes Extraction issues
Organic/Sewage	Specific gravity	Additives, preservatives, BOD	Pathogens, viruses, parasites	NA	
Fish Waste	NA	Additives, Pharmaceuticals BOD Tainting	Pathogens, viruses, parasites Species origins	NA	

WASTE CHARACTERIZATION

Waste type	Physical	Chemical	Biological	Exemptions	Notes
Platforms and vessels	Specific Gravity	NA	NA	Testing not needed if cleaning is done to remove floatables, fuels, lubricants, chemicals, dielectrics, etc	Remove materials to maximum extent practicable
Inert geological	Specific Gravity	Mineralogy	NA	NA	No detailed assessment
Bulky Items	Spec Grav > 1.2 g/cc	Heavy metals, persistent organics, chemicals, or floatables	NA	NA	Only physical impacts
CO2	NA	Impurities Additives	NA	NA	

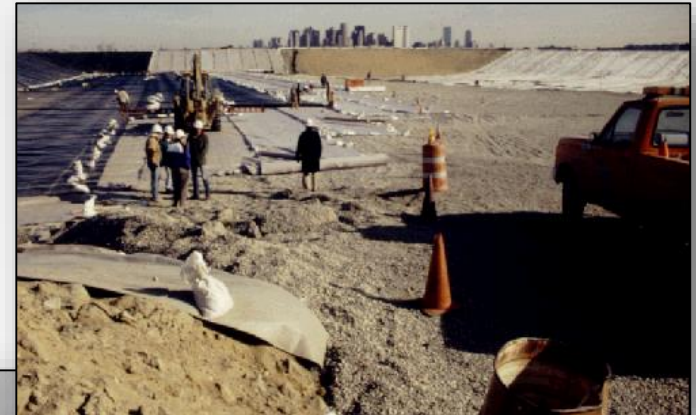
WASTE PREVENTION AUDIT AND WASTE MANAGEMENT OPTIONS

Waste Prevention Audit

- WAG Step 2
- LP Annex 2, paragraphs 2-4

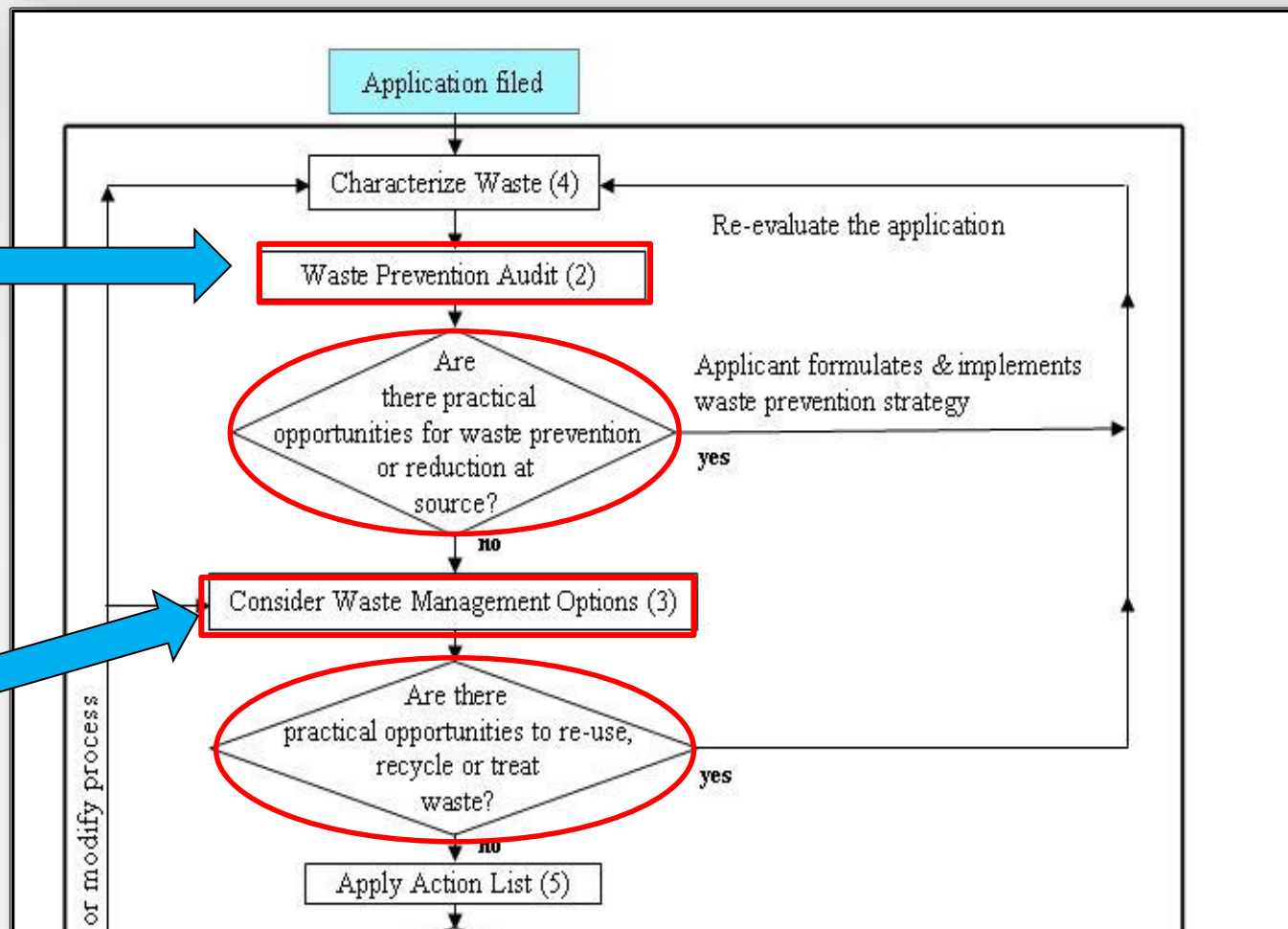
Consideration of Waste Management Options

- WAG Step 3
- LP Annex 2, paragraphs 5-8



**WAG
Step 2**

**WAG
Step 3**



WASTE PREVENTION AUDIT

The Waste Prevention Audit should include an evaluation of:

- Types, amounts and relative hazards of wastes;
- Details of the production process and the sources of wastes within that process; and
- Feasibility of the following waste reduction/prevention techniques:
 - ✓Product reformulation;
 - ✓Clean production technologies;
 - ✓Process modification;
 - ✓Input substitution; and/or
 - ✓On-site, closed loop recycling.

WASTE PREVENTION AUDIT

- If the audit reveals opportunities for waste prevention, the applicant is expected to implement a waste prevention strategy, including:
 - ✓Waste reduction targets, and
 - ✓Provision for further audits to ensure targets are met.
- Permit decisions shall assure compliance with waste reduction/prevention requirements.

WASTE PREVENTION AUDIT

- For dredged material and sewage sludge, the goal should be to identify and control sources of contamination.
- Do not just “take it as you find it”
- Quality can be improved over time by control and reduction of sources of contamination.
 - ✓ Dredged material: control of point and nonpoint sources of pollution
 - ✓ Sewage sludge: pretreatment



ALTERNATIVES TO DUMPING

Protocol – Art 4.1.2

“Particular attention shall be paid to opportunities to avoid dumping in favour of environmentally preferable alternatives.”

Protocol – Annex 2, paragraph 1

“The acceptance of dumping under certain circumstances shall not remove the obligations to make further attempts to reduce the necessity for dumping.”



CONSIDERATION OF ALTERNATIVES

Protocol – Art. 3.3

“Parties shall act so as not to transfer, directly or indirectly, damage or likelihood of damage from one part of the environment to another or transform one type of pollution into another.”



WASTE MANAGEMENT OPTIONS

Applications to dump shall demonstrate appropriate consideration of following hierarchy of waste management options:

- Re-use;
- Off-site recycling;
- Destruction of hazardous constituents;
- Treatment to reduce or remove hazardous constituents; and
- Disposal on land, into air and into water.

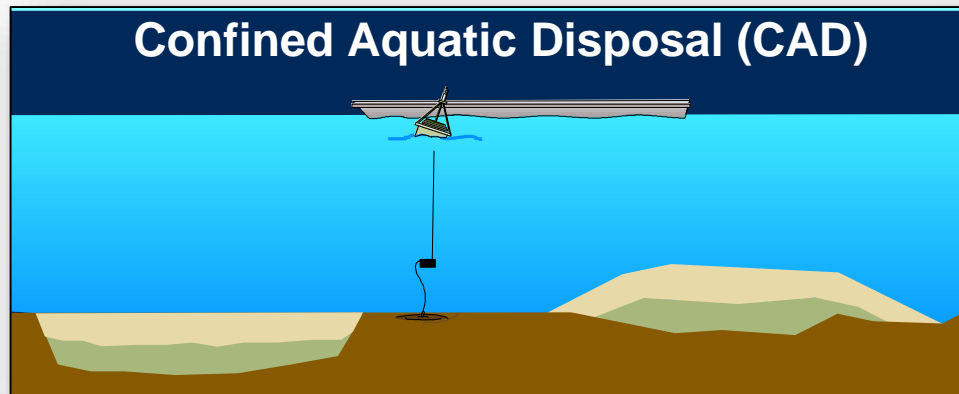
WASTE MANAGEMENT OPTIONS

- Can the waste or other matter be made acceptable for disposal at sea?
- A permit to dump shall be refused if appropriate opportunities exist to re-use, recycle or treat the waste without undue risks to human health or the environment or disproportionate costs.
- The practical availability of other means of disposal (land, air) should be considered in the light of a comparative risk assessment involving both the dumping and the alternatives.

MANAGEMENT OPTIONS

Dredged Material

- Level Bottom Capping
- Confined Aquatic Disposal (CAD) Cell
- Treatment/Stabilization



RE-USE & RECYCLE OPTIONS

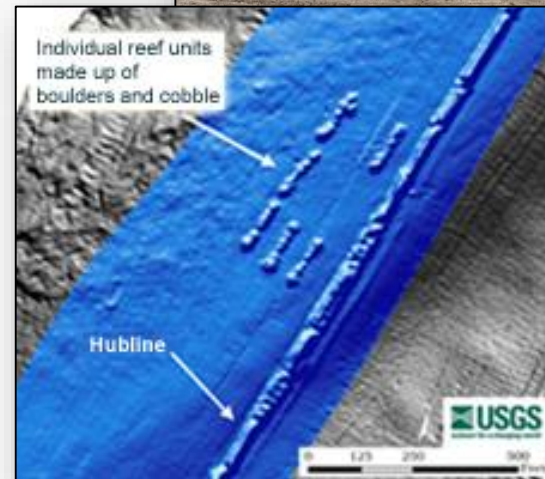
Dredged Material

- Beach nourishment
- Habitat creation (e.g., wetlands, marshes)
- Upland use (e.g. soil, construction)
- Mine reclamation



RE-USE & RECYCLE OPTIONS

- Sewage sludge, fish processing wastes, and organic wastes
 - Fertilizer
 - Land reclamation
 - Fuel
- Inert, inorganic geological material
 - Fill material
 - Construction use



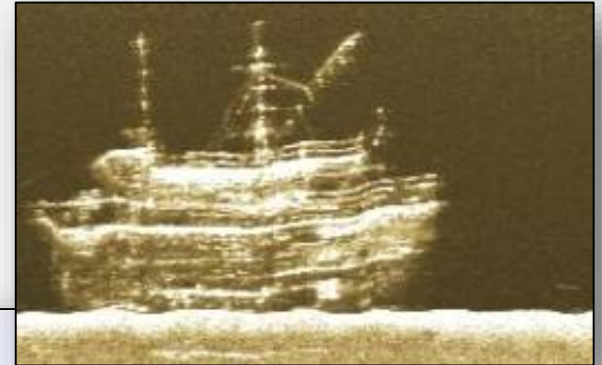
RE-USE & RECYCLE OPTIONS

Platforms and Vessels

- Refurbish and re-use
- Recycle scrap metal
- Artificial reef creation

Bulky Items

- Re-use of containers
- Recycling of scrap metal



SUMMARY

Look for and consider using environmentally sound alternatives to dumping at sea

- Reduce or eliminate waste generation at source
- Re-use or recycle into something else
- Treat if necessary to allow re-use or recycling
- Consider other disposal alternatives in light of comparative risk assessment

Where alternatives do not exist now, plan for future and look for ways to phase-in over time

QUIZ TIME

The best description of a Waste Prevention Audit is:

- a. A process to make sure we know the contaminants in a waste.
- b. A process to find the best disposal alternative for the waste.
- c. A process to identify the source of contaminants in the waste and identify ways to reduce them in the future.

QUIZ TIME

**Which of the following are NOT
waste management options?**

- | | |
|--------------------------|---------------------|
| a. Recycling | e. Capping |
| b. Coral reef smothering | f. Upland placement |
| c. Treatment | g. Sea grass burial |

After a brief stretch break, we will discuss WAG Step 4

WAG Step 4

