

APPENDIX A.2

SOURCE CLASSIFICATION AT WMA/CATCHMENT LEVEL

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1 PROCESS DIAGRAM

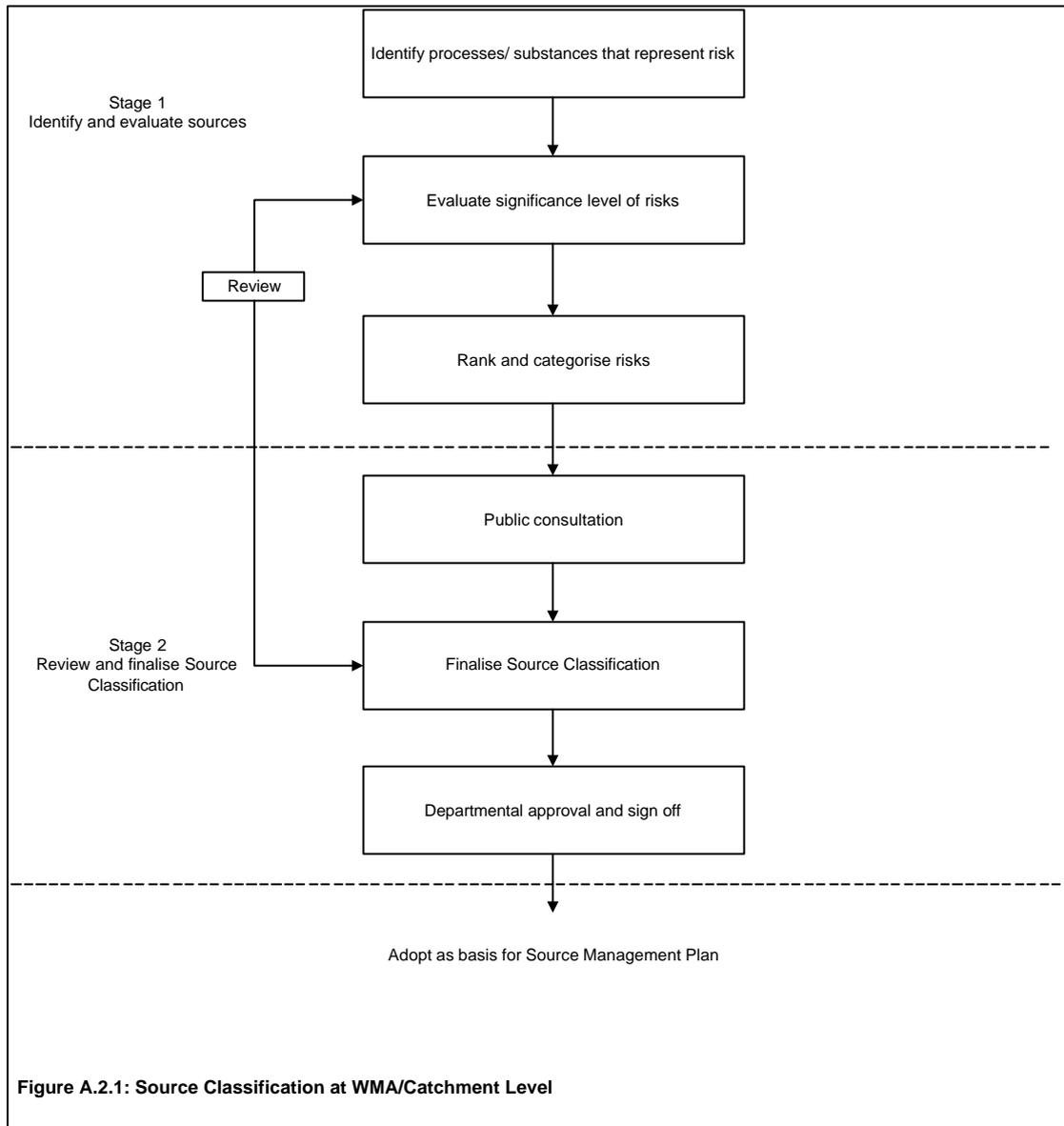


Figure A.2.1: Source Classification at WMA/Catchment Level

2 PROCEDURAL GUIDELINE

2.1 Roles and responsibilities of various role-players

2.1.1 The Department of Water Affairs and Forestry (the Department)

The Department will be responsible for developing source classification at a WMA/catchment level. The responsibility of source classification at WMA/catchment level will be delegated to the Deputy-Director: Water Quality Management in the Regional Office, who will appoint an Assistant Director: Planning to undertake the required tasks.

The Assistant Director: Planning should be appointed from within the regional staff structure. The use of external consultants to undertake the role and tasks of the Assistant Director: Planning is however also permitted should suitable resources and expertise not be available within the Department's regional organisational structure.

2.1.2 Interested and affected parties

The interested parties are responsible to:

- provide input and comments on the proposed source classification at the WMA/catchment level, prior to the finalisation of the classification,
- provide their inputs and comments within the context of the process and within the timeframes as specified by the Assistant Director: Planning.

2.2 Stage 1: Identify and evaluate sources

The first steps within the source classification process are to develop an inventory of sources within the WMA/catchment and to evaluate the level of risk of the sources. This will involve the tasks set out below.

2.2.1 Identify processes, substances and activities that represent risk

The Assistant Director: Planning will identify all processes, substances and activities within the WMA/catchment that represent a risk to the water resource. The list of sectors, sub-sector and activities provided in **Appendix A.1** can be used as a proforma to identify all processes, substances and activities. These will be collated into an inventory of sources within the WMA/catchment, which will include the following details:

- a description of the process, substance or activity, at a level of detail that is sufficient to enable the significance level of the risk to the water resource to be assessed,
- the sector and sub-sector group, and
- the location of the discharge to the water resource.

2.2.2 Evaluate the significance level of risks

The Assistant Director: Planning will evaluate the significance level of risk of each of the identified processes, substances and activities to the water resource. The level of risk can be determined through one of, or a combination of, the following methods:

- expert opinion: hold workshops and discussions with water quality experts to provide a qualitative assessment of the significance level of risk of each of the processes, substances and activities to the water resource,
- risk-based approach: a semi-quantitative approach to determine the risks to the water resource inherent in each process, substance and activity; the significance level of risk is evaluated through an assessment of:
 - the probability of the process, substance or activity resulting in a discharge to the water resource, and
 - the consequence of the occurrence of this discharge to the water resource.

Figure A.2.2 shows an example of an evaluation matrix that can be used to determine the risk of a process, substance and activity to the water resource. The evaluation matrix is used as follows:

- the probability of occurrence is read off the bottom of the matrix; the probability of occurrence can vary from very low (not expected to happen) to very high (expected to occur),
- the consequence of the occurrence is read off the right side of the matrix; the consequence can be either catastrophic, very severe, severe, moderate, low or very low for each of the evaluation criteria (safety, health, environmental acceptance, legal and social acceptance),
- the probability and consequence of occurrence are combined in the matrix to obtain a number between 1 and 20 for each evaluation criteria, which represents level of risk of the source; the individual Assistant Director: Planning for each evaluation criteria are then weighted and averaged.

							Consequence Class	Aspects				
								Safety	Health	Environmental Acceptability	Legal	
	1	2	3	4	5	6						
1	6	14	16	18	19	20	A	Catastrophic	Loss of life	Acute illness	Acute or Chronic effects at regional scale	Cessation of use & criminal prosecution
2	5	9	13	15	18	19	B	Very Severe	Disability	Chronic illness	Acute or Chronic effects at local scale	Prosecution and threat to continued land use
3	4	5	9	12	14	18	C	Severe	Severe injury to multiple parties requiring hospitalisation	Serious illness	Long term impairment of fitness for use	Prosecution and fine
4	3	4	6	8	10	12	D	Moderate	Isolated injury requiring hospitalisation	Recoverable illness	Recoverable impacts to fitness for use	Threat of prosecution for continued non compliance
5	2	3	4	5	8	10	E	Low	Self treatable injuries	Self treatable illness	Low intensity, temporary	Non compliance to legal / regulatory standard without regulatory response
6	1	2	3	4	5	6	F	Very Low	No impact	No impact	No impact	No impact
	1	2	3	4	5	6						
Frequency Class	Highly Unlikely	Rare	Low Likelihood	Possible/ Probable	Can Occur	Frequent						
Probability	Not Expected to Happen	Not During Life	Could Happen	Possibly Will Happen	Could Happen Regularly	Expected to Occur						
Frequency (Lifetime)	1:1 000 000	1:100 000	1:10 000	1:1 000	1:100	1:10						
Probability of Failure of Solution												

RISK RANKING MATRIX

KEY	
	High Risk
	Medium to High Risk
	Low to Medium Risk
	Low to No Risk

2.3 Rank and categorise risks

The Assistant Director: Planning will categorise the processes, substances and activities in the WMA/catchment as high, medium or low risk, based on the significance level of risk to the water environment. The processes, substances and activities with similar risk categories will then be grouped together.

The Assistant Director: Planning will prepare a list of all processes, substances and activities that exist within the WMA/catchment of high, medium and low risk.

2.4 Stage 2: Review and finalise Source Classification

2.4.1 Public consultation

The interested and affected parties within the WMA/catchment will be allowed the opportunity to review and comment on the source classification developed. This will involve the following process:

- the Assistant Director: Planning will publish the source classification in the local press and make copies available in public institutions, such as libraries, schools and community halls,
- standard comment forms will be included with the source classification, together with details on how to comment,
- a period of 60 days will be allowed for comments from interested and affected parties,
- after the expiry of the review period, the Assistant Director: Planning will collate all comments into an overall issues report.

2.4.2 Finalise Source Classification

The Assistant Director: Planning will address all comments that were made by interested and affected parties during the public consultation process. In some instances, this may result in the review and re-evaluation of the significance level of risk of the sources.

The Assistant Director: Planning will amend and finalise the list of processes, substances and activities of high, medium and low risk that exist within the WMA/catchment risk, based on the work undertaken and the comments received.

2.4.3 Departmental approval and sign-off

The Assistant Director: Planning will include the final source classification for the WMA/catchment into the Source Management Plan (see Appendix D) so as to focus the efforts of the regional water quality personnel on those areas that represent a high level of risk to the water resource. The Source Management Plan forms part of the Catchment Management Plan, which will be submitted to the Minister for approval and signature.