

Clearing Permit Decision Report

1. Application details						
1.1. Permit application	on details					
Permit application No.:	4696/1	4696/1				
Permit type:	Purpose	Purpose Permit				
1.2. Proponent detail	ls					
Proponent's name:	St Ives	Gold Mining Company Pty	/ Ltd			
1.3 Property details						
Property:	General	Purpose Lease 15/22				
	Mining L	Mining Lease 15/22				
	Mining L	ease 15/570				
	Mining L	ease 15/1542				
	Mining L	ease 15/1543				
	Mining L	ease 15/1578				
	Mining L	Mining Lease 15/1579				
	Mining L	ease 15/1580				
	Mining L	ease 15/1582				
	Mining L	ease 15/1630				
	Mining L	ease 15/1631				
	Mining L	ease 15/1633				
	Mining L	ease 15/1634				
Local Government Area:	Shire of	Coolgardie				
Colloquial name:	Beleropl	non Project				
1.4 Application						
Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:			
151		Mechanical Removal	Mineral Production			
1.5. Decision on app	lication					
Decision on Permit Applicat	ion: Grant					
Decision Date:	12 Janu	ary 2012				
2 Site Information						
2.1. Existing environ	ment and inf	ormation				
2.1.1. Description of the	native vegeta	ation under application				
Vegetation Description	Beard vegetation	on associations have been i	napped for the whole of Western Australia. One Beard			
	2009):	cialion has been mapped t	within the application area (Cho Database, Shepherd,			
	,					
9	936: Medium woodland; salmon gum.					
	A flora and vegetation survey of the application area was conducted by Botanica Consulting (2010) in					
:	September 201	0. This survey identified the	following six vegetation communities within the			
i	application area (Botanica Consulting, 2010):					
	- Dunal shrubla	nd:				
	- Chenopod shr	ubland;				
	- Eremophila scoparia over Chenopod shrubland;					
	- Mixed <i>Eucalyptus</i> woodland;					
	 Eucalyptus pla Eucalyptus oc 	atycorys over Triodia irritan	s; and			
	- Eucaryptus sa	iubris over Ereniophila SCO	Jana.			
Clearing Description	St Ives Gold Mi within a broade	ning Company Pty Ltd has r area of approximately 851	applied to clear up to 151 hectares of native vegetation, hectares for the purpose of constructing a mine and			

Vegetation Condition Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994);

associated infrastructure.

То

Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).

Comment

The application is located within the Coolgardie region of Western Australia and is situated approximately 15 kilometres south east of Kambalda.

3. Assessment of application against clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Comments Proposal is not likely to be at variance to this Principle

The application area is located within the Eastern Goldfields subregion of the Coolgardie Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). This subregion is characterised of gently undulating plains interrupted in the west with low hills and ridges of Archaean greenstones and in the east by a horst of Proterozoic basic granulite. A series of large playa lakes in the western half are the remnants of an ancient major drainage line (CALM, 2002). The vegetation is of Mallees, Acacia thickets and shrubheaths on sandplains. Diverse Eucalyptus woodlands occur around salt lakes, on ranges, and in valleys. Salt lakes support dwarf shrublands of samphire (CALM, 2002).

A flora and vegetation survey of the application area and its surrounds (survey area) was conducted by Botanica Consulting (2010) in September 2009. This survey identified 138 flora taxa from 28 families and 60 genera within the survey area (Botanica Consulting, 2010). According to Botanica Consulting (2010) this is considered to be diverse, however the species present within the survey area are common locally and regionally.

There are no known records of Declared Rare Flora (DRF) or Priority Flora within the application area (GIS Database). No DRF or Priority Flora species were recorded during a flora and vegetation survey within the application area conducted by Botanica Consulting (2010).

There are no known records of Threatened Ecological Communities (TEC's) or Priority Ecological Communities (PEC's) within the application area (GIS Database). The nearest known PEC buffer is located approximately 22 kilometres south east of the application area. At this distance there is little likelihood that the proposed clearing will impact on this PEC.

Three introduced flora species, *Lysimachia arvensis, Solanum nigrum* and *Oncosiphon suffruticosum*, were recorded within the survey area during the flora and vegetation survey conducted by Botanica Consulting (2010) in September 2009. Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. This can in turn lead to greater rates of infestation and further loss of biodiversity if the area is subject to repeated fires. None of these species are listed as a 'Declared Plant' species under the *Agriculture and Related Resources Protection Act 1976* by the Department of Agriculture and Food. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

Two vertebrate fauna assessments have been conducted over the application area with Harewood (2010) covering the majority of the application area and identified 63 fauna species comprised of seven reptile, 52 bird and 4 non-volant mammal species. One conservation significant fauna species, Shy Heathwren (*Hylacola cauta whitlocki*) (Priority 4), was recorded during this survey (Harewood, 2010).

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology Botanica Consulting (2010) CALM (2002) Harewood (2010) GIS Database: - IBRA WA (regions – subregions)

- Threatened and Priority Flora
- Threatened Ecological Sites Buffered

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

Comments Proposal is not likely to be at variance to this Principle

Two vertebrate fauna surveys have been conducted over the application area. Harewood (2010) covered the majority of the application area, while a small section was covered by Harewood (2011). From these two surveys, the following seven fauna habitat types were identified (Harewood, 2010; Harewood, 2011):

- Open woodland over open shrubland over grasslands (Triodia);
- Low open woodland over shrubland over low shrubland;

 Chenopod Shrubland;

- Dunal Shrubland;
- Low woodland over shrubland over low shrubland;
- Salt Lakes/Claypans; and
- Rehabilitated Eucalyptus salicola low woodland over dwarf scrub Atriplex bunburyana.

Two vertebrate fauna assessments have been conducted over the application area with Harewood (2010) covering the majority of the application area. This fauna survey identified 63 fauna species comprised of seven reptile, 52 bird and 4 non-volant mammal species. One conservation significant fauna species, Shy Heathwren (*Hylacola cauta whitlocki*) (Priority 4) was recorded during this survey (Harewood, 2010). A further eight conservation significant fauna species have been assessed as potentially occurring within the application area (Harewood, 2010):

- Southern Carpet Python (Morelia spilota imbricata) (Schedule 4, Priority 4);
- Hooded Plover(Charadrius rubricollis) (Priority 4);
- Slender-billed Thornbill (Acanthiza iredalei) (Vulnerable);
- Australian Bustard (Ardeotis australis) (Priority 4);
- Rainbow Bee-eater (*Merops ornatus*) (Migratory);
- Fork-tailed Swift (Apus pacificus) (Migratory);
- Peregrine Falcon (Falco peregrinus) (Schedule 4);
- Central Long-eared Bat (Nyctophilus timoriensis timoriensis) (Priority 4).

The fauna habitats within the application area have been identified as common and widespread (Harewood, 2011). It is considered unlikely that the proposed clearing will impact on any conservation significant species (Harewood, 2011).

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology Harewood (2010) Harewood (2011)

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Comments Proposal is not likely to be at variance to this Principle

There are no known records of Declared Rare Flora within the application area (GIS Database). A flora and vegetation survey conducted over the application area by Botanica Consulting (2010) did not identify any DRF species within the application area.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

- Methodology Botanica Consulting (2010) GIS Database: - Threatened and Priority Flora
- (d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

Comments Proposal is not likely to be at variance to this Principle

There are no known records of Threatened Ecological Communities (TEC's) within the application area (GIS Database). The nearest known TEC is approximately 274 kilometres south east of the application area (GIS Database). At this distance there is little likelihood of any impact to the TEC as a result of the proposed clearing.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology GIS Database:

- Threatened Ecological Sites Buuffered

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Comments Proposal is not at variance to this Principle

The application area is located within the Coolgardie Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). Shepherd (2009) reports that approximately 100% of the pre-European remains in the Coolgardie bioregion.

The vegetation in the application area has been broadly mapped as Beard vegetation association:

936: Medium woodland; salmon gum.

According to Shepherd (2009) approximately 100% of Beard vegetation association 936 remains within the

Coolgardie bioregion (see table below).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion - Coolgardie	12,912,204	12,707,873	~100	Least Concern	~10.87
Beard vegetation associations - State					
936	698,752	678,066	~97.04	Least Concern	~2.25
Beard vegetation associations - Bioregion					
936	586,792	586,791	~100	Least Concern	~1.2

* Shepherd (2009)

** Department of Natural Resources and Environment (2002)

The vegetation within the application area is not considered to be a remnant of native vegetation in an area that has been extensively cleared.

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology Department of Natural Resources and Environment (2002)

Shepherd (2009)

GIS Database:

- IBRA WA (regions – subregions)

- Pre-European Vegetation

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Comments Proposal is at variance to this Principle

There are no permanent wetlands or watercourses within the application area, however there are several nonperennial salt lakes (GIS Database). The application area is approximately 300 metres from Lake Lefroy, a large salt lake, at its closest point (GIS Database). There are numerous small salt lakes surrounding Lake Lefroy and the Chenopods/Samphire vegetation is common throughout these lakes (Botanica Consulting, 2010). It is therefore considered unlikely that the proposed clearing will have a significant impact upon vegetation growing in association with salt lakes locally or regionally.

Based on the above, the proposed clearing is at variance to this Principle.

Methodology Botanica Consulting (2010)

GIS Database:

- Hydrography, linear

- Lake Lefroy 50cm Orthomosaic - Landgate 2005

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Comments Proposal may be at variance to this Principle

The application area is located within the Kambalda Soil-Landscape Zone (Tille, 2006). This zone is characterised by flat to undulating plains (with hills, ranges and some salt lakes and stony plains) on greenstone and granitic rocks of the Yilgarn Craton (Tille, 2006).

The surface topography and geomorphology around the project area has been identified as consisting of the Lakeside land system and the Lefroy land system (Gold Fields Limited, 2011). The majority of the soil types within this land system have been assessed as having low erosion susceptibility, however, two of the soil types (Red Deep Sands and Red Sandy Earths) have been assessed as low to moderate erosion risk (Gold Fields Limited, 2011). Potential erosion as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

Based on the above, the proposed clearing may be at variance to this Principle.

Methodology Gold Fields Limited (2011) Tille (2006)

(h) Native the env	vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on ironmental values of any adjacent or nearby conservation area.
Comments	Proposal is not likely to be at variance to this Principle The proposed application area is not located within any conservation areas (GIS Database). The nearest conservation areas are the Kambalda Nature Reserve and Kambalda Timber Reserve, both adjacent to each other and located approximately 18 kilometres north-west of the application area (GIS Database).
	Given the distance and water body separating the application area from the Kambalda Nature Reserve and Kambalda Timber Reserve, the proposed clearing is not likely to provide a significant ecological linkage or fauna movement corridor and is not likely to impact the environmental values of the conservation area.
	Based on the above, the proposed clearing is not likely to be at variance to this Principle.
Methodology	GIS Database: - DEC Tenure
(i) Native in the q	vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration uality of surface or underground water.
Comments	Proposal is not likely to be at variance to this Principle According to available databases, the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The nearest PDWSA is the Broad Arrow Dam Catchment Area which is located approximately 102 kilometres north northwest of the application area (GIS Database). Given the distance separating the application area and the nearest water supply, it is considered unlikely that the proposed clearing will impact on the quality of the Broad Arrow Dam Catchment Area.
	The groundwater salinity within the application area is approximately 14,000 to 35,000 milligrams per litre Total Dissolved Solids (TDS) (GIS Database). The proposed clearing of 151 hectares within the Yilgarn-Goldfields Groundwater Province (29,644,595 hectares) is considered unlikely to impact on groundwater salinity.
	There are a number of non perennial lakes within the application area (GIS Database). The application area experiences a semi-arid Mediterranean climate with mainly winter rainfall, with an annual average of approximately 249.1 millimetres recorded at Woolibar weather station (BoM, 2011; CALM, 2002). The average annual evaporation rate for this area is approximately 2,400 – 2,600 millimetres (GIS Database), therefore any surface water resulting from rainfall events is likely to be relatively short lived. It is therefore considered unlikely that the proposed clearing will impact on the quality of any surface water.
	Based on the above, the proposed clearing is not likely to be at variance to this Principle.
Methodology	BoM (2011) CALM (2002) GIS Database: - Evaporation Isopleths - Groundwater Salinity, Statewide - Groundwater Provinces - Hydrographic Catchments - Catchments - Hydrography, linear - Public Drinking Water Source Area (PDWSA)
(j) Native inciden	vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the ce or intensity of flooding.
Comments	Proposal is not likely to be at variance to this Principle The application area experiences a semi-arid Mediterranean climate with mainly winter rainfall, with an annual average of approximately 249.1 millimetres recorded at Woolibar weather station (BoM, 2011; CALM, 2002). The average annual evaporation rate for this area is approximately 2,400 – 2,600 millimetres (GIS Database), therefore any surface water resulting from rainfall events is likely to be relatively short lived.
	Based on the above, the proposed clearing is not likely to be at variance to this Principle.
Methodology	BoM (2011) CALM (2002) GIS Database: - Evaporation Isopleths
Planning in:	strument, Native Title, Previous EPA decision or other matter.

Comments

There are three Native Title Claims (WC99/2, WC98/27 and WC97/100) over the area under application (GIS Database). These claims have been registered with the Native Title Tribunal on behalf of the claimant group. However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act*

1993 and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no registered Aboriginal Sites of Significance within the application area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Environment and Conservation and the Department of Water, to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

The clearing permit application was advertised on 21 November 2011 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to the proposed clearing.

Methodology GIS Database:

- Aboriginal Sites of Significance

- Native Title Claims Filed at the Federal Court
- Native Title Claims Registered with the NNTT

4. References

BoM (2011) BoM Website - Climate Averages by Number, Averages for WOOLIBAR WEATHER STATION. www.bom.gov.au/climate/averages/tables.shtml (Accessed 12 December 2011)

- Botanica Consulting (2010) Level 2 Flora Survey of Diana, West Idough and Bellerophon Projects. Unpublished report prepared for St Ives Gold Mine dated November 2010.
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Department of Conservation and Land Management.

Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.

Gold Fields Limited (2011) Supporting Documentation for Clearing Permit Application Bellerophon Project. Unpublished report prepared for St Ives Gold Mine dated October 2011.

Harewood, G. (2010) Terrestrial Fauna Survey (Level 1) of the proposed Bellerophon Mine Area St Ives - Kambalda. Unpublished report prepared for Botanica Consulting dated November 2010.

Harewood, G. (2011) Terrestrial Fauna Survey (Level 1) of Thunderer Mine Area St Ives - Kambalda. Unpublished report prepared for Botanica Consulting dated October 2011.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Shepherd, D.P. (2009) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.

Tille, P. (2006) Soil-landscapes of Western Australia's Rangelands and Arid Interior. Technical Report 313. Department of Agriculture and Food, Western Australia. ISSN 1039-7205.

5. Glossary

Acronyms:

ВоМ	Bureau of Meteorology, Australian Government
CALM	Department of Conservation and Land Management (now DEC), Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DEC), Western Australia
DIA	Department of Indigenous Affairs
DLI	Department of Land Information, Western Australia
DMP	Department of Mines and Petroleum, Western Australia
DoE	Department of Environment (now DEC), Western Australia
DolR	Department of Industry and Resources (now DMP), Western Australia
DOLA	Department of Land Administration, Western Australia
DoW	Department of Water
EP Act	Environmental Protection Act 1986, Western Australia
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World
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Conservation UnionRIWI ActRights in Water and Irrigation Act 1914, Western Australias.17Section 17 of the Environment Protection Act 1986, Western AustraliaTECThreatened Ecological Community

Definitions:

{Atkins, K (2005). Declared rare and priority flora list for Western Australia, 22 February 2005. Department of Conservation and Land Management, Como, Western Australia} :-

- P1 Priority One Poorly Known taxa: taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P2 Priority Two Poorly Known taxa: taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- **P3 Priority Three Poorly Known taxa**: taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.
- P4 Priority Four Rare taxa: taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.
- **R Declared Rare Flora Extant taxa** (*= Threatened Flora = Endangered + Vulnerable*): taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.
- X Declared Rare Flora Presumed Extinct taxa: taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

{Wildlife Conservation (Specially Protected Fauna) Notice 2005} [Wildlife Conservation Act 1950] :-

- Schedule 1 Fauna that is rare or likely to become extinct: being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.
- Schedule 2 Fauna that is presumed to be extinct: being fauna that is presumed to be extinct, are declared to be fauna that is need of special protection.
- Schedule 3 Birds protected under an international agreement: being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.
- Schedule 4 Other specially protected fauna: being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

{CALM (2005). Priority Codes for Fauna. Department of Conservation and Land Management, Como, Western Australia} :-

- P1 Priority One: Taxa with few, poorly known populations on threatened lands: Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P2 Priority Two: Taxa with few, poorly known populations on conservation lands: Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P3 Priority Three: Taxa with several, poorly known populations, some on conservation lands: Taxa which are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P4 Priority Four: Taxa in need of monitoring: Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.
- **P5 Priority Five: Taxa in need of monitoring**: Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

Categories of threatened species (Environment Protection and Biodiversity Conservation Act 1999)		
EX	Extinct: A native species for which there is no reasonable doubt that the last member of the species has died.	
EX(W)	 Extinct in the wild: A native species which: (a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or (b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form. 	
CR	Critically Endangered: A native species which is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.	
EN	 Endangered: A native species which: (a) is not critically endangered; and (b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria. 	
VU	 Vulnerable: A native species which: (a) is not critically endangered or endangered; and (b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria. 	
CD	Conservation Dependent: A native species which is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.	