GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 5402/1
Permit Holder:	Cooperative Bulk Handling Ltd
Duration of Permit:	12 October 2013 to 12 October 2019

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I –CLEARING AUTHORISED

1. **Purpose for which clearing may be done**
   Clearing for the purpose of constructing slip lanes.

2. **Land on which clearing is to be done**
   South Coast Highway road reserve (PIN 11386422)

3. **Area of Clearing**
   The Permit Holder must not clear more than 2.15 hectares of native vegetation within the area hatched yellow on attached Plan 5402/1a.

4. **Application**
   This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

5. **Compliance with Assessment Sequence and Management Procedures**
   Prior to clearing any native vegetation under conditions 1, 2 and 3 of this Permit, the Permit Holder must comply with the Assessment Sequence and the Management Procedures set out in Part II of this Permit.

PART II –MANAGEMENT CONDITIONS

6. **Offset - Rehabilitation**
   In relation to the areas hatched red on attached Plan 5402/1b the Permit Holder must implement and adhere to the CBH Gairdner Rehabilitation Plan, attached as Appendix A to this permit.

PART III - RECORD KEEPING AND REPORTING

7. **Records must be kept**
   The Permit Holder must maintain the following records for activities done pursuant to this Permit:
   (a) In relation to the clearing of native vegetation authorised under this Permit:
      (i) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
      (ii) the date that the area was cleared; and
      (iii) the size of the area cleared (in hectares).

(b) In relation to the *revegetation* and *rehabilitation* of areas pursuant to condition 6:
   (i) the location of any areas *revegetated* and *rehabilitated*, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
   (ii) a description of the *revegetation* and *rehabilitation* activities undertaken; and
   (iii) the size of the area *revegetated* and *rehabilitated* (in hectares).

8. Reporting

(a) The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:
   (i) of records required under condition 7 of this Permit; and
   (ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.

(b) If no clearing authorised under this Permit was undertaken between 1 January to 31 December of the preceding calendar year, a written report confirming that no clearing under this permit has been carried out, must be provided to the CEO on or before 30 June of each year.

(c) Prior to 12 July 2019, the Permit Holder must provide to the CEO a written report of records required under condition 7 of this Permit where these records have not already been provided under condition 8(a) of this Permit.

DEFINITIONS

The following meanings are given to terms used in this Permit:

rehabilitate/ed/ion means actively managing an area containing native vegetation in order to improve the ecological function of that area;

revegetate/ed/ion means the re-establishment of a cover of *local provenance* native vegetation in an area using methods such as natural *regeneration*, *direct seeding* and/or *planting*, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area; and

M Warnock
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

Officer delegated under Section 20
of the Environmental Protection Act 1986

12 September 2013

Plan 5402/1a

LEGEND

- Road Centrelines Clearing Instruments
- Areas Approved to Clear
- Cadastre
- Local Government Authorities

Pallinup 50cm Orthomosaic - Landgate 2008

N

0 250 m

Scale 1:9737
(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

Date 12/9/13

M Warnock

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986

Information derived from this map should be confirmed with the data custodian acknowleged by the agency acronym in the legend.

Government of Western Australia
Department of Environment Regulation

** Project Data is denoted by asterisk. This data has not been quality assured. Please contact map author for details.*

Plan 5402/1b

LEGEND

Clearing Instruments

Areas Subject to Conditions

Pallinup 50cm Orthomosaic - Landgate 2008

N

0 ~150 m

Scale 1:5412
(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

M Warnock Date 12/9/13

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986

Information derived from this map should be confirmed with the data custodian acknowleged by the agency acronym in the legend.

Government of Western Australia
Department of Environment Regulation

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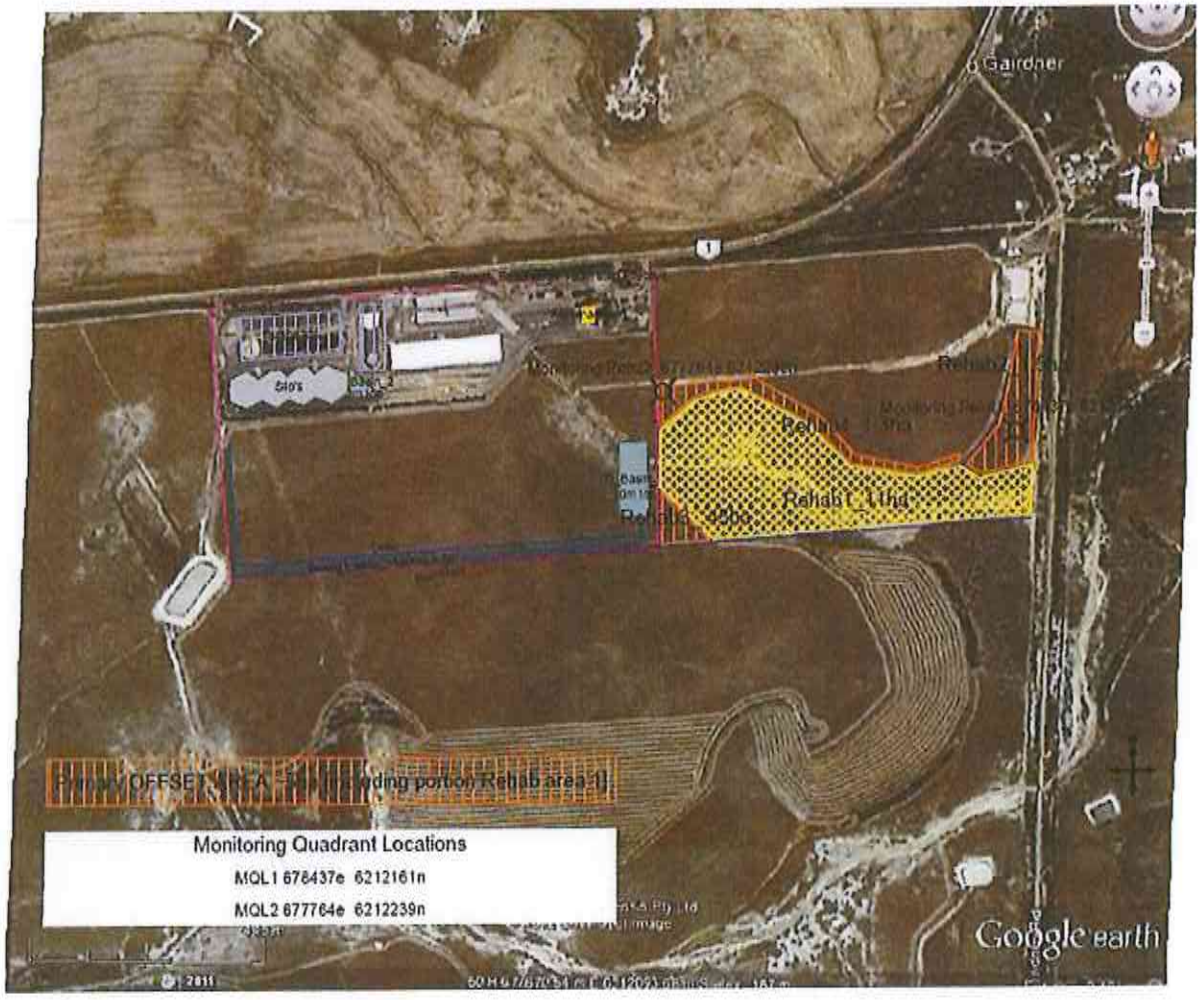
CBH Gairdner Rehabilitation Plan



Client: CBH Group
Consultant: David McFall (Temple Farm Trading Company 26 Jersey St Narrogin WA 6312)

Date: July 30th 2013

Background:

CBH is undertaking expansion works at the Gairdner Receival Point.

Engineering works have commenced and community consultation has been ongoing between CBH and The Shire of Jerramungup.

General landscaping works have been requested by the Shire to improve the amenity of the receival infrastructure and provide site screening and windbreak values to adjacent landholders.

CBH are also undertaking to establish an Offset planting Program of a minimum 4.35ha to satisfy obligations under the *Environmental Protection ACT 1986.*

Temple Farm Trading Company (TFTC) is based at Narrogin and consults on general revegetation matters relating to farmscape environmental services (Agribusiness) and other specific client needs such as roadside revegetation (Shire/ Mainroads) and clearing offsets (Industry/ CBH). David McFall is principle of TFTC and has prepared this report on behalf of CBH.

Scope of works

The following scope of works will be addressed in the Rehabilitation Plan:

- Locality of revegetation works
- Use of local plants
- Weed management
- Associated works

Site Environment_Natural and Built

The areas built environment is a grain receival facility located approximately 1km south west of Gairdner Township. Access is via South Coast Highway.

The areas natural environment contains remnant roadside vegetation to the north and East of the receival facility and cleared agricultural land [purchased to future receival point expansion and target Offset planting area].

An appraisal of the vegetation on site and adjoining areas was first undertaken during an onsite visit 29th August 2012, accompanied by CBH representative John Ivers. While a formal flora survey was not undertaken during this visit reference to a more extensive flora base and planting list was guided by the formal Flora Survey conducted by Ellen J. Hickman [November 2012], The attached species list was guided by this Flora Survey.

The on-site appraisal visit was conducted by Wayne O'Sullivan of Environmental Services on behalf of TFTC. Site notes are attached and contain a brief commentary on the roadside verge condition. Further development of the rehabilitation plan has since occurred as the Offset area is now targeted to rehabilitation of the wetland to the south east of the recieval complex.

Soils of the site are varied and typical of the locality. Noted soils include gravelly loams [western boundary] to heavy clay [southern boundary] and shallow duplex shallow duplex/ clay [north western boundary]. The road side vegetation complex is an open mallee low scrub over dwarf scrub with open low sedges and herbs, dominated by *Eucalyptus pluracaulis* and *Allocasuarina huegellii* over *Acacia acuminata*, and *Allocasuarina humilis*. This is indicative of deep sand over gravel profile.

Soils associated with the wetlands to the south east of the site are typically duplex loam to shallow loam over clay. Salinity and waterlogging is evident with prior plantings of mixed species buffering the natural drainage lines.

Additional species such as *Eucalyptus occidentalis* and Melaleuca sub species such as *Mel uncinata* are common in the area and can suit the target landscape for the offset project.

Vegetation Rehabilitation structure and logistics:

Seven potential zones of revegetation have been identified in the plan [see Plan pg6].

It was noted that the prospects of successful revegetation around the existing accommodation hut are low due to the pre-existing competition of the current trees so this area does not feature in the plan.

Limited revegetation of the smaller internal detention basin has been eliminated as an offset area due to the low footprint and habitat value.

Securing and hand planting of containerised seedling stock is desirable to ensure seedling density though there is also scope to include a direct seeded component within the project. Direct seeding can provide additional vegetation cover and site establishment insurance.

Preference is for the reintroduction of local species however min order nursery logistics may limit species in the number and split as suggested in the species list. Therefore 'bulking' of species may occur though the nursery procurement process. This is a practical step in providing supply.

It is suggested that a mix of under and over story selections be provided to maximise the biodiversity habitat and visual aspect values desired from the planting project. Specifically final species selection will contain the approximate understory/ over story population density values:

- Understory [including groundcovers] 85%
- Overstory 15%

Preference is for all seedlings to be grown by local or regional nursery providers. It is calculated that up to **17,520 native seedlings** of mixed form will be required to meet the planting density of all the proposed sites [Note: this site list is subject to nursery supply verification and may be trimmed as required]

A suggested seedling list is attached to this report [Pg7].

Operations Matrix
An operations/planting matrix is provided with this report and sets out major works functions and recommended aftercare requirements. The works matrix suggests best practice monitoring and weeds control activities to year 5 post planting, however this timeframe can be amended to suit client requirements. It is suggested a minimum 5 year project is adopted to account for contingency works such as a 2nd year infill and ongoing maintenance such as weed control.

Site works

RIPPING: Rehabilitation areas [excluding internal swale sections of drains and basins] will require a rip to minimum 300mm at 1000mm centres. Grader implement or tractor with single tyne ripper will be suitable to achieve this outcome.

TOP SOIL: Removed topsoil may be spread over the rehabilitation areas though can introduce long term weed management issues and is therefore not a critical requirement within this project.

MULCH: It is assumed that there is no mulch available to spread on the project areas though ,if available, it is best applied on the northern boundary areas. Mulch needs to be even spread to a maximum thickness of 100mm.

AMENDED SOIL_ BASIN FLOOR: No amended soil is required within the scope of works.

Fire control
Ongoing fire control measures are the responsibility of the landholder with support from the local Fire Service. Access is available to all sites though any management of a fire event is best undertaken in areas of open access such as from the neighbour paddocks.

Water points and site fire management protocols will be managed within CBH existing fire risk and management policy.

Maintaining weed free/ low fuel conditions on the planted site will assist such endeavours and lower potential seedling scorch and possible death risks.

Weed control
Weed control measures are required to ensure effective control of winter and summer weeds. Chemical usage and handling shall be in accordance with label recommendations, appropriate to the environment, and contained onsite.

Weed control will be required over the two year implementation/ management period and is scheduled for further application as outlined in the Site establishment and associated works matrix.

Rabbit control
Rabbits are a threat to seedling establishment and growth and need to be monitored and dealt with as required i.e. regular baiting.

Ongoing Monitoring , Management/ Maintenance and Criteria for Success

The rehabilitation area is required to be monitored and maintained for a minimum 5 year period post planting as per the attached matrix [pg8-9].

2 Monitoring Quadrants Locations (MQL) comprising dimensions 10m x10m are suggested for the OFFSET AREA and are depicted on the Project map as follows:

- MQL1 GPS 678437e 6212161n
- MQL2 GPS 677764e 6212239n

No field photo's of the MQL's are available at the time of the report though can be supplied at a later date if required. Post and pre plant photo documentation will be kept on file to assist reporting.

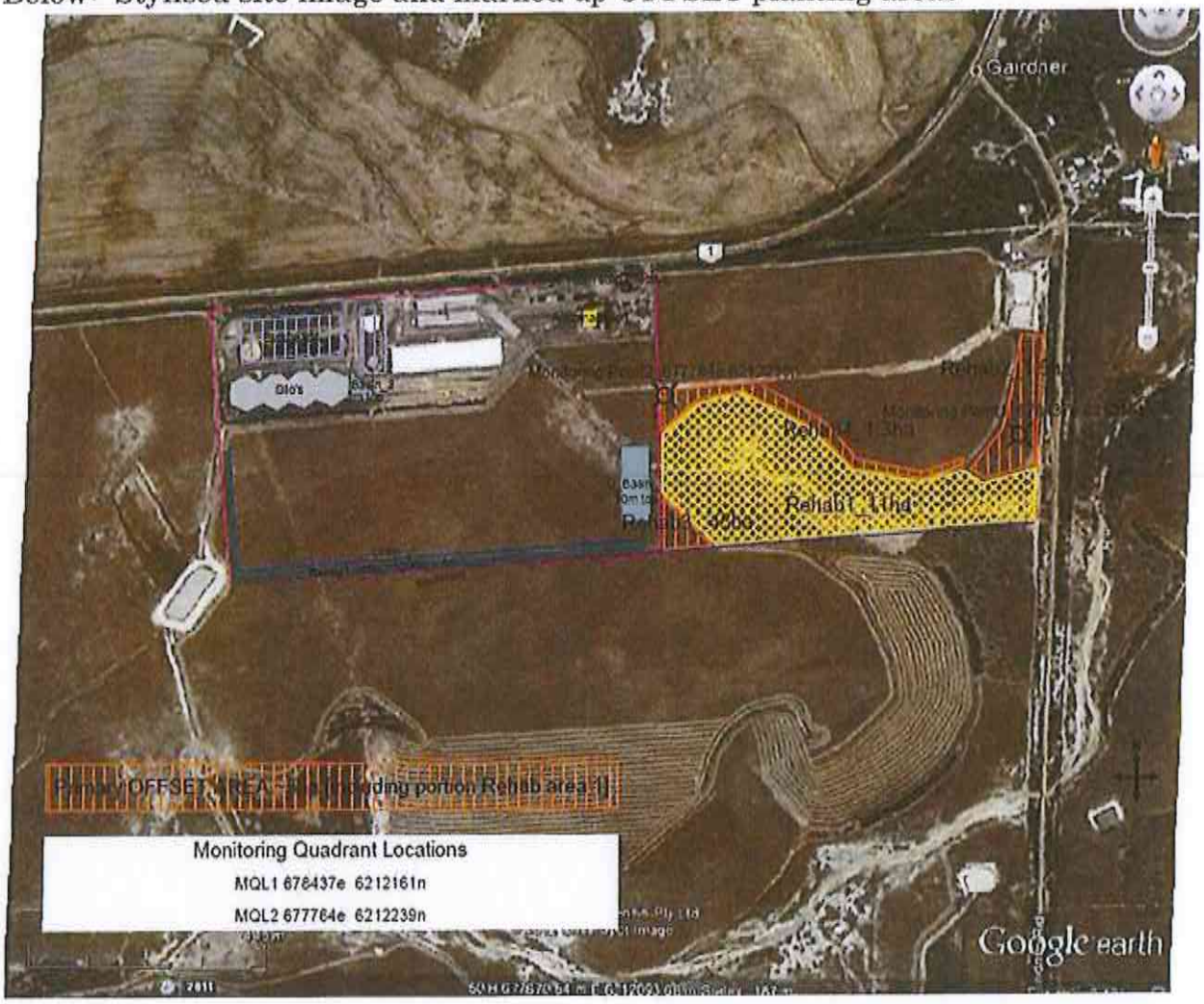
Primary criteria for success is Seedling survival exceeding 85% planting. Infill to occur in areas as required in consultation with CBH if these values are lower.

Secondary criteria for success is effective weed control and weed seed population reduction comprising less than 25% groundcover after year 3 control practice. It is noted that the main risk period for weed suppression of seedling growth is in the establishment year though ongoing control is considered best practice and supports external objectives such as fire risk management at the recieval site and good neighbour policy.

Post planting monitoring of seedling establishment and weed threat to commence 1st spring period year 1 [post planting 2014]. Photo monitoring will occur at the designated MQL's and shall be supported with survival counts.

Designated Contractor to report to CBH Group results of monitoring and any planned future works/ site issues.

Below: Stylised site image and marked up OFFSET planting areas



NOTE: Target Offset area has been segmented into rehab areas including portion of Rehab area1 [wetlands] and comprises a minimum 4.62ha

Gairdner CBH Reveg Plan_Site specs and suggested species list- July 2013

Site ref	Soil type	Length(m)	Width (m)	Area(ha)	Rip spacing	Tree spacing	Rip lines	Amount required[~]	Notes
Reveg1-Landscape	Clay/gravel sand	1000	4	0.4	2	2	3	960	South and west boundary strip
Reveg2_landscape	Gravel	200	5	0.1	2	2	3	240	North west Inside corner_soil spoil
Reveg3_Landscape	Sandy gravel	300	5	0.15	2	2	3	360	North road verge_Total length 850m_effective plant area ~150m open plus infill various
Reveg4_Landscape	Gravel	240	40	1	2	2	15	2520	Inside_Proposed large block site plan_to be verified
DBasin1_Landscape	Clay	400	10	0.4	2	2	6	960	Detention basin south east corner. Plant east side to connect to offset plantings
Reveg5_Offset	Clay/loam	various	various	5	2	2	2	12480	Rehab 1-4_Offset area -Wetland/ Roadverge buffer plus wetland rehab
TOTAL				7.05				17520	

					Reveg1	Reveg2	Reveg3	Reveg4	DBasin1	Reveg5 OFFSET	total
Genus	species	subspecies	height(m)	soil	960	240	360	2520	960	12480	17520
Acacia	accuminata		6	sand, loam	180	60	60	180		1200	1680
Acacia	consobrina		1.2	clay, red loam						480	480
Acacia	cupularis		1.2	Loam, sandy clay						360	360
Acacia	glaucoptera		1.5	clay, gravel		60		60	60	520	700
Acacia	gonophylla		1	clay, gravel						520	520
Acacia	harveyii		3	clay, loam, sand					60	520	580
Acacia	heteroclita		3	gravel, clay					60	520	580
Acacia	myrtifolia		3	sand, gravel				60			60
Acacia	patagiata		2	clay					60	300	360
Acacia	saligna	lindleyi	6	sand, loam				120			120
Allocasuarina	huegelliii			sand, gravel, loam	120		60	180			360
Baeckea	preissiana		2	sand, loam, gravels				60			60
Beaufortia	empetrifolia		2	sand			60	60			120
Beaufortia	micrantha		1	sand, gravel			60	60			120
Beaufortia	schaueri		1	sand, gravel			60	60			120
Callistemon	phoeniceus		4	sand, gravel, loam, clay	120			120	60	1200	1500
Calothamnus	gracilis		1.2	sand, sandy clay				60	60		120
Calothamnus	sanguineus		1.5	sand, gravel	120			60		520	700
Calothamnus	villosus		1.2	sand gravel, clay				60			60
Eucalyptus	falcata		6	sand , gravel				120			120
Eucalyptus	occidentalis		20	sand, clay				180	60	480	720
Eucalyptus	phaenophylla	phaenophylla	5	sand, gravel						300	300
Eucalyptus	suggrandis	suggrandis	3	sand, gravel				60			60
Eucalyptus	thamnoides	megista	3	gravel, loam				60			60
Eucalyptus	vegrandis	recondita	3	sand, loam, sandy clay	120				60	480	660
Hakea	corymbosa		2	sand, gravel, sandy clay						240	240
Hakea	ferruginea		2	sand, loam, clays						240	240
Hakea	florida		1.5	sand, loam, clays						240	240
Hakea	laurina		5	sand, gravel,clay				180	60	240	480
Hakea	lissocarpha		1.5	sand, gravel						480	480
Hakea	prostrata		3	sand, loam, gravel, clay	60					520	580
Hakea	varia			sand, loam, gravel, clay		60		120	60		240
Hovea	pungens		1.5	sand, loam, gravel, clay					60		60
Kunzea	recurva		2	sand, loam, gravel, clay loam	60						60
leptospermum	erubescens		3	sand, gravel			60				60
Melaleuca	acuminata	acuminata	3	sand, clay	120			120	120	480	840
Melaleuca	hamata		2	sand, loam, gravel, clay loam				120		480	600
Melaleuca	hamulosa		5	sand, loam, gravel, clay loam				120		480	600
Melaleuca	lateralis		1.2	sand, loam, gravel		60				480	540
Melaleuca	lateriflora		6	sand, clay					60	480	540
Melaleuca	suberosa		0.5	sand, loam, gravel, clay loam				60			60
Melaleuca	subfalcata		2	sand, loam, gravel, clay				60			60
Melaleuca	viminea		4	sand, clay	60			60	60	480	660
Pultenaea	verruculosa		0.5	sand, gravel				60			60
Viminaria	juncea		4	sand, clay				60	60	240	360
Total					960	240	360	2520	960	12480	17520

Note: Suggested species spread to indicate site diversity. Supply subject to Seed/ Nursery availability.
Numbers rounded to 60 seedlings/tray

Gairdner CBH Site establishment and associated works matrix_August 2013								
Period	**ref**	**Calendar period**	**Seedling supply**	**Site works**	**Planting**	**Weed control**	**Monitoring/ reporting**	**Misc**
Quarter	1-yr0	Oct-Dec 2013	Place nursery order					
Quarter	2-yr0	Jan -Mar 2014		Rip tree lines				
Quarter	3-yr0	April - June 2014			Plant after adequate rain	Pre plant winter weed control		Planting to involve Gairdner Primary School students
Quarter	4-yr0	July - Sept 2014				Post plant spring weed control	Monitoring visit/ set up photo points	
Quarter	5-yr1	Oct-Dec 2014	Order year 2 infill as required					
Quarter	6-yr1	Jan -Mar 2015						Vermin control as required
Quarter	7-yr1	April - June 2015					Monitoring visit post summer/ report	
Quarter	8-yr1	July - Sept 2015				Post winter weed control	Monitoring visit/ spring weed risk	
Quarter	9-yr 2	Oct-Dec 2015						
Quarter	10 - yr2	Jan -Mar 2016						Vermin control as required
Quarter	11-yr2	April - June 2016					Monitoring visit post summer/ report	
Quarter	12-yr2	July - Sept 2016				Post winter weed control	Monitoring visit/ spring weed risk	

Quarter	13-yr 3	Oct-Dec 2016						
Quarter	14-yr3	Jan -Mar 2017						Vermin control as required
Quarter	15-yr3	April - June 2017					Monitoring visit post summer	
Quarter	16-yr3	July - Sept 2017				Post winter weed control	Monitoring visit/ spring weed risk	
Quarter	17-yr4	Oct-Dec 2017						
Quarter	18-yr4	Jan -Mar 2018						Vermin control as required
Quarter	19-yr4	April - June 2018					Monitoring visit post summer	
Quarter	20-yr4	July - Sept 2018				Post winter weed control	Monitoring visit/ spring weed risk	
Quarter	21-yr5	Oct-Dec 2018						
Quarter	22-yr5	Jan -Mar 2019						Vermin control as required
Quarter	23-yr5	April - June 2019					Monitoring visit post summer	
Quarter	24-yr5	July - Sept 2019				Post winter weed control	Monitoring visit/ spring weed risk	
Notes:	Use appropriate herbicides with low risk off site impact i.e. Roundup bioactive and other approved herbicideds if near wet areas/ waterways etc.							
	Weed control threat: High [impact on seedling performance and survival likely] Low [seedlings will 'grow through' weed threat]							
	Monitoring to include photo documentation and report on seedling survival and any additional site management issues							
	Monitoring to commence 1st spring period post planting and continues for 5 years							
	Project timeline divided into calendar quarters and scheduled to commence October 2013 with nursery order placed							

Site Visit Notes_Wayne O'Sullivan [Environmental Services]
CBH Gairdner Bin 29 August 2012

Met with Works Supervisor John Ivers at 11.00 on site, inspected site with John.

Areas inspected

1. Main Detention Basin
    - Basin is shallow, as the contractors have stopped at the saline white clay (pallid zone) layer
    - Spoil is piled up alongside the basin and rolled. It is very heavy 'puggy' clay, which will be shaped into a flat topped bank about 10 m wide. The inside batter of the spoil bank will be a continuation of the detention basin batter.
    - Topsoil in the area is very thin. Between topsoil and pallid zone clay is a layer of yellow clay.
    - Circumference of the basin is 385m, which accords with the scale shown on the CBH plan.
    - John Ivers queried if topsoil should be spread across spoil bank. I suggested it would be beneficial, although insufficient to impact on soil structure, the micorrhizae will beneficial.
    - The area has low weed burden and no problem weeds were noted in this area. Dominated by Erodium sp and grasses.
2. Small Detention basin
    - In the middle of the site, shown as small triangular area on plan, to the east of silos.
    - John unsure if any vegetation required.
    - Any planting will be restricted to slope of the basin.
3. Southern and Western Boundary planting
    - Screening and windbreak planting
    - Only a narrow strip of land available between drain and fence. This is variable width, between 5 and 8 m.
    - Can plant up to edge of drain, and leave minimal vehicle access along fence for weed control and maintenance during plant establishment
    - Soils vary across the site, getting increasingly heavy down slope. Northern most part of W boundary is ideal planting soil, good gravelly sandy loam, but the southern boundary is heavy clay with skeletal topsoil layer. Species mix will need to change accordingly.
    - The area has low weed burden and no problem weeds were noted in this area. Dominated by Erodium sp, grasses, with some thistle noted.
4. Eastern Boundary
    - John Ivers advises that the land to the east of the site is owned by CBH, mooted for possible expansion in future. He is unsure if this area is to be planted. This will need to be checked with CBH.
    - Any planting will need to be on the outside (east) of the existing fence line. As the paddock is grazed, this will require an addition stock proof fence.
    - Good access for site works, ideal opportunity to establish a good windbreak for the site.
    - Soils as for western boundary.

5. Internal belt of trees (shown on CBH plan as boomerang shaped belt, centre of N part of site)
    - Area currently has a bin (bulkhead) on hardstand. Shed will need demolishing, and site ripping. Need to confirm that this is happening with CBH, and ensure timing is suitable.
    - Assume 500mm of compacted gravel over clay as substrate.

- With deep ripping site will be a weed free, well drained planting.
- Area shown is a wide belt, allows for multi-row structured windbreak planting, tall trees in the centre with mallee and shrub on outer rows.

6. Northwest corner of site
    - Inside the fence in the NW corner of the site is a gravel bank 200m long and 5m wide.
    - John Ivers advises that this was most likely left over spoil from time of construction, piled and rolled.
    - Assume up to 500mm of gravel over a gravelly sand soil.
    - Very good well drained, weed free planting conditions, will be a valuable windbreak/screen
    - Remainder of the area inside the N boundary cannot be planted, has drainage and roads against fence.
7. South Coast Hwy

    The road verge is in fair condition, there are still good numbers and diversity of low understory species but it is compromised by patchy *Eragrostis* (love grass), some small seedling Eucalyptus cladocalyx (sugar gum), seeding from amenity plantings around the accommodation buildings, and an almost absent over story (fire damage?).

    Current structure is a very poor windbreak/screen, needs infilling, but will be slow.

    The worst areas, where there is almost no intact vegetation (approx 150 m in total, in several small patches) can be sprayed out and replanted as blocks. The remainder of the verge can be spot sprayed and infill planted with mid story plants, such as *Allocasuarina*, *Acacia* and mallee spp.

Picture Gallery:

Shallow topsoil and loam over pallid zone clays in main detention basin

Shallow clays and spoil bank in SE corner of site

Looking SW from center of site, shallow duplex soil

GOVERNMENT OF WESTERN AUSTRALIA

Clearing Permit Decision Report

Government of Western Australia
Department of Environment Regulation

1. Application details

1.1. Permit application details

Permit application No.:	5402/1
Permit type:	Purpose Permit

1.2. Proponent details

Proponent's name:	**Cooperative Bulk Handling Ltd**

1.3. Property details

Property:	ROAD RESERVE (GAIRDNER 6337)
Local Government Area:	Shire of Jerramungup
Colloquial name:	South Coast Highway

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
2.15		Mechanical Removal	Road construction or maintenance

1.5. Decision on application

Decision on Permit Application:	Grant
Decision Date:	12 September 2013

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
Mapped Beard vegetation association 47: Shrublands; tallerack mallee-heath (Shepherd et al, 2001)	The application is to clear 2.15 hectares of native vegetation within the South Coast Highway road reserve for the purpose of construction of slip lanes.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	The vegetation under application consists of a mallee-heath on sand over laterite with Melaleuca sp. in the drainage depressions and tall woodland of Sheoak on heavier soils (Hickman, 2012). A number of weed species where significantly apparent within the application area, with the vegetation considered to be in a degraded (Keighery, 1994) condition (Hickman, 2012). The condition of the vegetation under application was obtained from a Flora Survey (Hickman, 2012) and photos within the application.

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 may be at variance to this Principle

The application is to clear 2.15 hectares of native vegetation within the South Coast Highway road reserve within six different areas. The application is approximately 30 kilometres from the town site of Jerramungup.

The vegetation within the applied area consists of a mallee-heath on sand over laterite with Melaleuca sp. in the drainage depressions and tall woodland of Sheoak on heavier soils with a weedy ground cover (Hickman, 2012). Majority of the area surrounding the application consist of bare paddocks that are used for farming practices.

Three priority flora species have been recorded within the 10 kilometres of the area under application. The indentified priority flora is Sphaerolobium sp (P3), Acacia sp. (P3) and Gastrolobium sp (P3). All three species have been recorded within the same vegetation association and soil type as the application area however, all three species have been recorded at a distance of 4.5 kilometres and greater away from the application area and given that the application area is surrounded by bare paddocks and comprises a weedy groundcover it is not likely to contain habitat for priority flora. Additionally, the vegetation under application is in a degraded (Keighery, 1994) condition and the flora survey undertaken by Hickman (2012) did not record any priority flora within the application area.

The application occurs within an extensively cleared landscape with approximately 15 percent of its pre-European vegetation remaining. The vegetation under application is considered to be significant as a remnant as it provides a corridor linkage for fauna movement between other remnants of vegetation in the local area.

Given that the vegetation under application provides a corridor linkage for fauna movement between areas of remnant vegetation, the application may be at variance to this principle.

Methodology

References
- Hickman (2012)
- Keighery (1994)

GIS Databases:
- NLWRA, Current Extent of Native Vegetation
- SAC Bio Datasets Decemeber 2012

(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 at variance to this Principle

Several fauna species of conservation significance indigenous to Western Australia have been recorded within 10 kilometres of the application area. Including Carnaby's cockatoo (Calyptorhynchus latirostris), Malleefowl (Leipoa ocellata) and the Dibbler (Parantechinus apicalis).

The application area is within an extensively cleared landscape, surrounded by bare paddocks with approximately 15 percent of its pre-European vegetation remaining within a 10 kilometres radius of the applied area.

The vegetation under application comprises of heath on sand over laterite with Melaleuca sp. in the drainage depressions and tall woodland of Sheoak on heavier soils with a weedy ground cover (Hickman, 2012) in a degraded (Keighery, 1994) condition.

The vegetation under application provides a linkage for fauna movement across an extensively cleared landscape. The linkage on the south side of the road reserve will be fragmented by the proposed clearing and a corridor approximately 10 metres wide will be retained on the north side. The reduction in the width of the fauna corridor will further degrade this linkage through edge effects therefore reduce the integrity of this link.

Given that the application occurs within an extensively cleared landscape and the clearing as proposed will impact on fauna movement through fragmentation and edge effects thus reduce the integrity and value of the link, the application is at variance to this principle.

To offset the above impacts the applicant has committed to rehabilitating 4.30 hectares within Lot 1493 on Deposited Plan 71683, Gairdner, in accordance with the 'CBH Gairdner Rehabilitation Plan, 30 July 2013'.

Methodology

References
- Hickman (2012)
- Keighery (1994)

GIS Databases:
- NLWRA, Current Extent of Native Vegetation

(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

One rare flora species has been recorded within 10 kilometres of the applied area.

This rare flora species is a twiggy shrub that has widely spreading branches and can grow up to one metre high. It grows in loamy clays which support open eucalypt woodlands over tall scrubs (Brown et al, 1998). The application area comprises of a heath on sand over laterite with Melaleuca sp. in the drainage depressions and tall woodland of Sheoak on heavier soils and is not considered suitable for Myoporum sp. The flora survey undertaken by Hickman (2012) did not record any rare flora within the applied area.

Considering the above and the degraded (Keighery, 1994) condition of the vegetation under application, it is not likely the application will impact on rare flora. The application is not likely to be at variance to this principle.

Methodology

References
- Brown et al, (1998)
- Hickman (2012)
- Keighery (1994)

GIS Databases:
- SAC Bio Datasets Decemeber 2012

GIS Databases:
- SAC Bio Datasets Decemeber 2012

(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 has been no Threatened Ecological Communities recorded within 10 kilometres of the area under application.

Considering the above, the application is not likely to be at variance to this principle.

Methodology

GIS Databases:
- SAC Bio Datasets Decemeber 2012

(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 at variance to this Principle

The vegetation type impacted by the proposed clearing is Beard vegetation association 47 which has 35 percent remaining within the Esperance Plains bioregion (Government of Western Australia, 2011). There is approximately 15 percent of native vegetation remaining within a 10 kilometre radius if the area under application.

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia 2001).

The Beard vegetation association 47 is above the national objectives and target level of 30 percent, however the application occurs in an extensively cleared landscape, with the vegetation under application acting as ecological corridor for fauna between areas of remnant vegetation. Considering this, the vegetation under application is significant as a remnant in an extensively cleared landscape.

The application is at variance to this principle.

To offset the above impacts the applicant has committed to rehabilitating 4.30 hectares within Lot 1493 on Deposited Plan 71683, Gairdner, in accordance with the 'CBH Gairdner Rehabilitation Plan, 30 July 2013'.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in DEC Managed Lands (%)
IBRA Bioregion*				
Esperance Plains	2,899,950	1,489,289	51.36	54.04
Shire*				
Shire of Jerramungup	648,596	285,770	44.06	48.14
Beard Vegetation Association in Bioregion*				
47	959,937	338,256	35.24	51.46

* Ref (Government of Western Australia, 2011)

Methodology

References
- Commonwealth of Australia (2001)
- Government of Western Australia (2011)

GIS Databases:
- Interim Biogeographic Regionalisation of Australia
- NLWRA, Current Extent of Native 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 not likely to be at variance to this Principle

The closest known watercourse to the applied area in a minor drain which is located approximately 50 metres away from the clearing area. It is considered that the vegetation under application is not growing within a watercourse.

The application is not likely to be at variance to this principle.

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

Comments

Proposal is not likely to be at variance to this Principle

The application consists of soil type Wd7, which is described as flat to gently undulating plain or plateau at low elevation with a few flats, depressions, swamps, lakes, and dunes: chief soils on the plains are sandy acidic yellow mottled soils containing ironstone gravel and containing laterite, with leached sands developed in the A horizons of some areas of the soils, and some gravels on indurated layers (Northcote et al 1960 - 1968).

Given the linear nature of the proposed clearing and the proposal to construct slip lanes which will comprise of a sealed surface, it is not likely the clearing as proposed will cause appreciable land degradation.

The application is not likely to be at variance to this principle.

Methodology

References
- Northcote (1960 - 1968)

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Comments

Proposal is not likely to be at variance to this Principle

There has been no conservation areas recorded within 10 kilometres of the area under application.

Considering the above, the application is not likely to be at variance to this principle.

Methodology

GIS Databases:
- DEC Tenure

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Comments

Proposal is not likely to be at variance to this Principle

The closest known watercourse to the applied area in a minor drain which is located approximately 50 metres away from the clearing area. The groundwater salinity has been measured at TDS 7000-14000 MG/L, which is considered to be high.

Given the high recording of groundwater salinity, it is not likely that clearing 2.15 hectares will significantly impact further on the groundwater in the area.

The application is not likely to be at variance to this principle.

Methodology

GIS Databases:
- Groundwater Salinity, Statewide
- Hydrology, linear

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Comments

Proposal is not likely to be at variance to this Principle

No wetlands or significant watercourses have been identified within close proximity to the applied area. Considering this, along with the linear nature of the proposed clearing, the application is not likely to cause, or exacerbate the incidence or intensity of flooding in the local area.

The application is not likely to be at variance to this principle.

Methodology

GIS Databases:
- Hydrology, linear

Planning instrument, Native Title, Previous EPA decision or other matter.

Comments

The applicant has received authority from Main Roads WA to undertake required works within the road reserve.

The Shire of Jerramungup (2011) has no objection to the proposed clearing in the South Coast Highway road reserve.

Methodology

References
- Shire of Jerramungup (2012)

4. References

Brown A., Thomson-Dans C. and Marchant N.(1998). Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia.

Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.

Government of Western Australia. (2013). 2012 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2012. WA Department of Environment and Conservation, Perth.

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

Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.

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.

Shire of Jerramungup (2012). Submission received in relation to Clearing Permit Application CPS 5402/1 - Cooperative Bulk Handling Ltd (DEC Ref:A583369)

5. Glossary

Term	Meaning
BCS	Biodiversity Coordination Section of DEC
CALM	Department of Conservation and Land Management (now BCS)
DAFWA	Department of Agriculture and Food
DEC	Department of Environment and Conservation
DEP	Department of Environmental Protection (now DEC)
DoE	Department of Environment
DoIR	Department of Industry and Resources
DRF	Declared Rare Flora
EPP	Environmental Protection Policy
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
TEC	Threatened Ecological Community
WRC	Water and Rivers Commission (now DEC)