

Licence Variation

Licence - 2504



ENDEAVOUR COAL PTY LIMITED

ABN 38 099 830 476

PO BOX 514

UNANDERRA NSW 2526

Attention: Ms Joanne Page

Notice Number 1508855
File Number LIC06/433
Date 24-Apr-2013

NOTICE OF VARIATION OF LICENCE NO. 2504

BACKGROUND

- A. ENDEAVOUR COAL PTY LIMITED ("the licensee") is the holder of Environment Protection Licence No. 2504 ("the licence") issued under the *Protection of the Environment Operations Act 1997* ("the Act"). The licence authorises, among other things, the carrying out of coal works and mining for coal at WEDDERBURN ROAD, APPIN, NSW, 2560 ("the premises").
- B. On 14 September 2012, the Environment Protection Authority (EPA) received an application from the licensee for the variation of the licence. The application sought to attach concentration limits, as well as new monitoring and investigation conditions, to regulate the discharge of pollutants from licence discharge point (LDP) 10 into Brennans Creek, a tributary of the Georges River.
- C. The EPA publicly exhibited the licensee's application and supporting documentation for a five week period in September and October 2012. The EPA received fourteen (14) submissions.
- D. On 3 December 2012, the EPA provided the licensee with a draft notice to vary the licence.
- E. The licensee provided a written response to the EPA on the draft notice on 24 December 2012.
- F. The EPA modified the draft notice taking account of the comments received from the licensee. On 2 February 2013, a second draft notice was provided to the licensee for review.
- G. The licensee provided a second response to the EPA on the second draft notice on 5 March 2013.
- H. The EPA has considered the licensee's application, supporting documentation, public submissions, written responses from the licensee and matters prescribed in section 45 of the Act in its determination of the licensee's application.
- I. A copy of the EPA's written statement of reasons can be found on the EPA's website <http://www.environment.nsw.gov.au/licensing/> or available on request from the EPA's Illawarra Office on telephone (02) 4224 4100.

Licence Variation



VARIATION OF LICENCE NO. 2504

1. By this notice the EPA varies licence No. 2504. The attached licence document contains all variations that are made to the licence by this notice.
2. The following variations have been made to the licence.
 - Concentration limits for various pollutants have been attached to LDP 10 in licence condition L2.4. The limits reflect the type and concentrations of pollutants currently found in mine water and storm water discharged from LDP 10. These concentration limits will be in place until the completion of "Pollution Reduction Program (PRP) 19 - Water Quality Discharge Improvements to Upper Georges River via discharge point 10."
 - Additional monitoring (sampling and laboratory analysis) requirements for the pollutants in licence condition L2.4 have been included in monitoring condition M2.3. These include dissolved metals, nutrients, conductivity and alkalinity. The frequency of monitoring has been changed from monthly to weekly.
 - New monitoring requirements for the acute and chronic toxicity testing of the discharge from LDP 10 have been added in monitoring condition M2.5. A range of five plant and animal species are required to be tested four times per year using the test methods specified by monitoring condition M2.5.
 - "PRP 18 - Modification to Brennans Creek Dam (BCD) off-take" has been attached as a licence condition. PRP 18 requires the licensee to change the configuration of LDP 10 from a pipe discharging from the bottom of BCD to a floating off-take by 30 June 2013. This will improve the overall quality of, and reduce the ecological risks due to, discharges from (BCD).
 - "PRP 19 - Water Quality Discharge Improvements to Upper Georges River via discharge point 10" has been attached as a two-stage licence condition. Stage 1 "Water Efficiency Project" is expected to reduce the amount of chemicals used in water treatment and to reduce the concentration of salinity and aluminium in the discharge from LDP 10 by 30 June 2013. Stage 2 "Program of Works" requires works to be undertaken to meet specified concentration limits and toxicity limits at LDP 10. The specified concentration limits and toxicity limits are based on 95% species protection in Brennans Creek and the Georges River. The "Program of Works" may include minimisation or avoidance of a discharge, the installation of a water treatment plant, or a combination of a water treatment plant and other discharge improvement options to achieve the specified concentration limits and toxicity limits by 30 December 2016.
 - "PRP 20 - Aquatic Health Monitoring Program" has been attached as a licence condition. PRP 20 requires the licensee to assess the improvements in aquatic health in Brennans Creek and the Upper Georges River prior to, during and after completion of "PRP 19 - Water Quality Discharge Improvements to Upper Georges River via discharge point 10." Monitoring must include chemical analysis and in-stream biota assessment, such as representative macroinvertebrate, algal and vertebrate species. The licensee must monitor between 1 September and 30 November (monitoring period) in the years 2013, 2015, 2017 and 2019.

.....
Greg Newman
A/Head Regional Operations Unit
Metropolitan - Illawarra

Licence Variation



(by Delegation)

INFORMATION ABOUT THIS NOTICE

- This notice is issued under section 58(5) of the Act.
- Details provided in this notice, along with an updated version of the licence, will be available on the EPA's Public Register (<http://www.environment.nsw.gov.au/prpoeo/index.htm>) in accordance with section 308 of the Act.

Appeals against this decision

- You can appeal to the Land and Environment Court against this decision. The deadline for lodging the appeal is 21 days after you were given notice of this decision.

When this notice begins to operate

- The variations to the licence specified in this notice begin to operate immediately from the date of this notice, unless another date is specified in this notice.
- If an appeal is made against this decision to vary the licence and the Land and Environment Court directs that the decision is stayed the decision does not operate until the stay ceases to have effect or the Land and Environment Court confirms the decision or the appeal is withdrawn (whichever occurs first).

Environment Protection Licence



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Licence Details	
Number:	2504
Anniversary Date:	01-February

Licensee
ENDEAVOUR COAL PTY LIMITED
PO BOX 514
UNANDERRA NSW 2526

Premises
3. WEST CLIFF AND NORTH CLIFF COLLIERIES
WEDDERBURN ROAD
APPIN NSW 2560
1. APPIN COLLIERY
OFF APPIN ROAD
APPIN NSW 2560
2. APPIN WEST COLLIERY
DOUGLAS PARK DRIVE
DOUGLAS PARK NSW 2569

Scheduled Activity
Coal Works
Mining for Coal
Waste Disposal (application to land)

Fee Based Activity	Scale
Coal works	> 5000000 T handled
Mining for coal	> 5000000 T produced
Waste disposal by application to land	Any annual capacity

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<u>Region</u>
Metropolitan - Illawarra
Level 3, NSW Govt Offices, 84 Crown Street
WOLLONGONG NSW 2500
Phone: (02) 4224 4100
Fax: (02) 4224 4110
PO Box 513 WOLLONGONG EAST
NSW 2520

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Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 (“the Act”) and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act); and
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

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The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

ENDEAVOUR COAL PTY LIMITED
PO BOX 514
UNANDERRA NSW 2526

subject to the conditions which follow.

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1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Coal Works	Coal works	> 5000000 T handled
Mining for Coal	Mining for coal	> 5000000 T produced
Waste Disposal (application to land)	Waste disposal by application to land	Any annual capacity

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
3. WEST CLIFF AND NORTH CLIFF COLLIERIES
WEDDERBURN ROAD
APPIN
NSW 2560
THE AREAS BORDERED IN ORANGE ON MAP TITLED "WEST CLIFF AND NORTH CLIFF MINE", DATED MAY 2010 AND HELD ON EPA FILE LIC06/433-06. THIS AREA INCLUDES BOTH THE ABOVE GROUND AND APPROVED BELOW GROUND AREAS.
1. APPIN COLLIERY
OFF APPIN ROAD
APPIN
NSW 2560
THE AREAS BORDERED IN ORANGE ON MAP TITLED "APPIN EAST PIT TOP", DATED MAY 2010 AND HELD ON EPA FILE LIC06/433-06. THIS AREA INCLUDES BOTH THE ABOVE GROUND AND APPROVED BELOW GROUND AREAS.
2. APPIN WEST COLLIERY
DOUGLAS PARK DRIVE
DOUGLAS PARK
NSW 2569

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THE AREAS BORDERED IN ORANGE ON MAP TITLED "APPIN WEST PIT TOP", DATED MAY 2010 AND HELD ON EPA FILE LIC06/433-06. THIS AREA INCLUDES BOTH THE ABOVE GROUND AND APPROVED BELOW GROUND AREAS. THE RED HATCHED AREA ON THE MAP TITLED "ENERGY DEVELOPMENTS LIMITED EPL PREMISES" IS NOT PART OF THE PREMISES.

Note: In addition to the land set out in the Premises Details table above, this licence also applies to underground coal mining areas:

(a) that are the subject of any of the following leases:

- Consolidated Coal Lease 724 as set out in Plan A referred to in that Lease and a copy of which is held by the EPA; or
- Consolidated Coal Lease 767 as set out in Plan A referred to in that Lease and a copy of which is held by the EPA;
- Coal Lease 381 as set out in that Lease and a copy of which is held by the EPA;
- Coal Lease 388 as set out in that Lease and a copy of which is held by the EPA;
- Mining lease 1473 as set out in that Lease and a copy of which is held by the EPA;
- Mining lease 1574 as set out in that Lease and a copy of which is held by the EPA;

and

(b) for which all necessary consents or approvals for mining for coal have been obtained (including any consent or approval required under the Environmental Planning and Assessment Act 1979).

A3 Other activities

A3.1 This licence applies to all other activities carried on at the premises, including:

Ancillary Activity
Electricity generation

Note: Electricity Generating as listed in A3.1 above may be undertaken only at the West Cliff site.

A4 Information supplied to the EPA

A4.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:

- a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998;
- and
- b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

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2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

P1.1 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

<i>Air</i>			
EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
5	Discharge to air; Air emissions Monitoring - West Cliff and North Cliff Collieries.	Discharge to air; Air emissions Monitoring - West Cliff and North Cliff Collieries.	Exhaust stack labelled "LDP5" on map titled "West Cliff and North Cliff Mine" dated May 2010.
6	Discharge to air; Air emission monitoring - West Cliff Colliery,	Discharge to air; Air emission monitoring - West Cliff Colliery,	Exhaust stack labelled "LDP6" on map titled "West Cliff and North Cliff Mine" dated May 2010.
7	Discharge to air; Air emission monitoring - West Cliff Colliery.	Discharge to air; Air emission monitoring - West Cliff Colliery.	Exhaust stack labelled "LDP7" on map titled "West Cliff and North Cliff Mine" dated May 2010.
8	Discharge to air; air emission monitoring - West Cliff colliery.	Discharge to air; air emission monitoring - West Cliff colliery.	Exhaust stack labelled "LDP8" on map titled "West Cliff and North Cliff Mine" dated May 2010.
14	Dust Monitoring - Appin Colliery.		Dust gauge located 50m to the SE of the coal stockpile near the diesel tanklabelled "LDP14" on map titled "Appin East Pit Top" dated May 2010.
15	Dust Monitoring - Appin Colliery.		Dust gauge located 100m east of the coal stockpile near the sediment pond, labelled "LDP15" on map titled "Appin East Pit Top" dated May 2010.
16	Dust Monitoring - Appin Colliery.		Dust gauge located 350m north west of the coal stockpile near the Sydney Water tank, labelled "LDP16" on map titled "Appin East Pit Top" dated May 2010.
17	Dust Monitoring - Appin Colliery.		Dust gauge located 100m north west of the coal stockpile next to the truck exit, labelled "LDP17" on map titled "Appin East Pit Top" dated May 2010.

P1.2 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

P1.3 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
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1	Discharge to waters Discharge quality monitoring Volume monitoring. - West Cliff and North Cliff Collieries.	Discharge to waters Discharge quality monitoring Volume monitoring. - West Cliff and North Cliff Collieries.	Overflow from West Cliff Colliery dam labelled as 001 'Discharge from Brennan's Creek Dam' on map titled "West Cliff EPA Licence Authorised Discharge Points, DP-2672A" forwarded to the EPA with the Licence Information Form.
3		Discharge to utilisation area - West Cliff and North Cliff Collieries.	Spray irrigation on grassed utilisation area shaded as '002 Spray Irrigation' on the Map titled "West Cliff - EPA Licence Authorised Discharge Points, DP-2672A" forwarded to the EPA with the Licence Information Form.
4	Discharge Quality Monitoring. Volume Monitoring. - West Cliff and North Cliff Collieries.		Effluent irrigation pump discharging to POINT 3
10	Discharge to waters Discharge quality monitoring Volume monitoring - West Cliff and North Cliff Collieries.	Discharge to waters Discharge quality monitoring Volume monitoring - West Cliff and North Cliff Collieries.	Piped discharge from the Brennans Creek Reclaim Dam labelled "LDP10" on map titled "West Cliff and North Cliff Mine" dated May 2010.
11	Water quality monitoring- West Cliff and North Cliff Collieries.		Georges River located approximately 50 metres upstream of the confluence with Brennans Creek labelled "LDP11" on map titled "West Cliff and North Cliff Mine" dated May 2010.
12	Water quality monitoring - West Cliff and North Cliff Collieries.		Georges River located approximately 50 metres downstream of the confluence with Brennans Creek labelled "LDP12" on map titled "West Cliff and North Cliff Mine" dated May 2010.
13	Volume monitoring - West Cliff and North Cliff Collieries.		Discharge from Brennans Creek Dam labelled "LDP13" on map titled "West Cliff and North Cliff Mine" dated May 2010.
18	Discharge to waters. Discharge quality and volume monitoring (Stormwater Discharge) - Appin	Discharge to waters. Discharge quality and volume monitoring (Stormwater Discharge) - Appin	Underflow from the filter lagoon discharging through a v-notch weir labelled "LDP18" on map titled "Appin East Pit Top" dated May 2010.
19	Discharge to waters. Discharge quality and volume monitoring. (Surface Water Discharge) - Appin	Discharge to waters. Discharge quality and volume monitoring. (Surface Water Discharge) - Appin	Dyna Sand Filter outlet at location labelled "LDP19" on map titled "Appin East Pit Top" dated May 2010.

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20	Discharge to land. Discharge quality and volume monitoring. (Spray Irrigation Discharge) - Appin.	Discharge to land. Discharge quality and volume monitoring. (Spray Irrigation Discharge) - Appin.	Envirocycle Irrigation Area as indicated by highlighted area labelled "LDP20" on map titled "Appin East Pit Top" dated May 2010.
21		Discharge to Waters (Spillway overflow) - Appin.	Overflow spillway from main dam labelled "LDP15" on map titled "Appin East Pit Top" dated May 2010.
22	Discharge to utilisation area. Water quality monitoring Volume Monitoring. - Appin West	Discharge to utilisation area. Water quality monitoring Volume Monitoring. - Appin West	The 100mm poly pipe from the secondary stabilisation lagoon of the sewage treatment plant labelled "LDP22 Sample Location" on Plan A07-1240 "Appin West Effluent Irrigation Area" dated 30.08.11. The application area is labelled LDP22 "Irrigation Area"
23	Discharge to waters. Water quality monitoring. Discharge volume monitoring. - Appin West	Discharge to waters. Water quality monitoring. Discharge volume monitoring. - Appin West	Piped discharge outlet for stormwater labelled "LDP23" on map titled "Appin West Pit Top" dated May 2010.
24	Discharge to waters. Water quality monitoring. Discharge volume monitoring. - Appin West	Discharge to waters. Water quality monitoring. Discharge volume monitoring. - Appin West	Piped discharge outlet for minewater labelled "LDP24" on map titled "Appin West Pit Top" dated May 2010.
25		Discharge to waters. - Appin West	Overflow spillway on sand filtration dam wall labelled "LDP25" on map titled "Appin West Pit Top" dated May 2010.

3 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Concentration limits

L2.1 For each monitoring/discharge point or utilisation area specified in the table\ below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L2.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L2.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\.

L2.4 Water and/or Land Concentration Limits

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POINT 3

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Biochemical oxygen demand	milligrams per litre				30
Oil and Grease	milligrams per litre				10
pH	pH				6.5 - 8.5
Total suspended solids	milligrams per litre				100

POINT 10

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Aluminium (dissolved)	micrograms per litre		1000		
Arsenic (dissolved)	micrograms per litre		19		
Chemical oxygen demand	milligrams per litre		50		
Copper (dissolved)	micrograms per litre		8		
Electrical conductivity	microsiemens per centimetre		3570 Low; 2500 High		
Lead (dissolved)	micrograms per litre		6		
Manganese (dissolved)	micrograms per litre		102		
Nickel (dissolved)	micrograms per litre		200		
Oil and Grease	milligrams per litre				10
pH	pH				6.5 - 9.3

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Total dissolved solids	milligrams per litre	2500
Total suspended solids	milligrams per litre	50
Zinc (dissolved)	micrograms per litre	84

POINT 18

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Oil and Grease	milligrams per litre				10
pH	pH				6.5 - 8.5
Total suspended solids	milligrams per litre				50

POINT 19

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Oil and Grease	milligrams per litre				10
pH	pH				6.5-8.5
Total suspended solids	milligrams per litre				50

POINT 20

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Biochemical oxygen demand	milligrams per litre				30
Oil and Grease	milligrams per litre				10
pH	pH				6.5-8.5

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Total suspended solids	milligrams per litre	100
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POINT 22

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Biochemical oxygen demand	milligrams per litre				30
Oil and Grease	milligrams per litre				10
pH	pH				6.5-8.5
Total suspended solids	milligrams per litre				100

POINT 23

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Oil and Grease	milligrams per litre				10
Total suspended solids	milligrams per litre				50

POINT 24

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Oil and Grease	milligrams per litre				10
pH	pH				6.5-8.5
Total suspended solids	milligrams per litre				30

Note: For Point 10:

The electrical conductivity 90 percentile concentration limit for low flow is 3570 microsiemens per centimetre. 'Low,' when used in relation to the discharge limit for a pollutant to water, means the

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discharge limit for that pollutant that is applicable when the rate of discharge is less than 2 megalitres per day.

The electrical conductivity 90 percentile concentration limit for high flow is 2500 microsiemens per centimetre. 'High,' when used in relation to the discharge limit for a pollutant to water, means the discharge limit for that pollutant that is applicable when the rate of discharge is greater than or equal to 2 megalitres per day.

L3 Volume and mass limits

- L3.1 For each discharge point or utilisation area specified below (by a point number), the volume/mass of:
- liquids discharged to water; or;
 - solids or liquids applied to the area;
- must not exceed the volume/mass limit specified for that discharge point or area.

Point	Unit of Measure	Volume/Mass Limit
18	kilolitres per day	1000
19	kilolitres per day	2000
20	kilolitres per day	13
22	kilolitres per day	80
24	kilolitres per day	3000

L4 Waste

- L4.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled "Waste" and meeting the definition, if any, in the column titled "Description" in the table below.

Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled "Activity" in the table below.

Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled "Other Limits" in the table below.

This condition does not limit any other conditions in this licence.

Code	Waste	Description	Activity	Other Limits
NA	Coal washery rejects	As defined in the Protection of the Environment Operations (Waste) Regulation 2005	Waste disposal (application to land)	NA

4 Operating Conditions

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O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.

This includes:

- a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
- b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:

- a) must be maintained in a proper and efficient condition; and
- b) must be operated in a proper and efficient manner.

O3 Dust

O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

O4 Effluent application to land

O4.1 Effluent application must not occur in a manner that causes surface runoff.

O4.2 Spray from effluent application must not drift beyond the boundary of the premises.

O4.3 The quantity of effluent/solids applied to the utilisation area must not exceed the capacity of the area to effectively utilise the effluent/solids.

For the purpose of this condition, 'effectively utilise' include the use of the effluent/solids for pasture or crop production, as well as the ability of the soil to absorb the nutrient, salt, hydraulic load and organic material.

5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:

- a) in a legible form, or in a form that can readily be reduced to a legible form;
- b) kept for at least 4 years after the monitoring or event to which they relate took place; and
- c) produced in a legible form to any authorised officer of the EPA who asks to see them.

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M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:

- a) the date(s) on which the sample was taken;
- b) the time(s) at which the sample was collected;
- c) the point at which the sample was taken; and
- d) the name of the person who collected the sample.

M2 Requirement to monitor concentration of pollutants discharged

M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

M2.2 Air Monitoring Requirements

POINT 14,15,16,17

Pollutant	Units of measure	Frequency	Sampling Method
Ash	grams per square metre per month	Monthly	Australian Standard 3580.10.1-2003
Combustible solids	grams per square metre per month	Monthly	Australian Standard 3580.10.1-2003
Insoluble solids	grams per square metre per month	Monthly	Australian Standard 3580.10.1-2003

M2.3 Water and/ or Land Monitoring Requirements

POINT 4

Pollutant	Units of measure	Frequency	Sampling Method
Biochemical oxygen demand	milligrams per litre	Monthly during discharge	Grab sample
Oil and Grease	milligrams per litre	Monthly during discharge	Grab sample
pH	pH	Monthly during discharge	Grab sample
Total suspended solids	milligrams per litre	Monthly during discharge	Grab sample

POINT 10

Pollutant	Units of measure	Frequency	Sampling Method
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Alkalinity (as calcium carbonate)	milligrams per litre	Weekly during any discharge	Grab sample
Aluminium (dissolved)	micrograms per litre	Weekly during any discharge	Grab sample
Arsenic (dissolved)	micrograms per litre	Weekly during any discharge	Grab sample
Bicarbonate	milligrams per litre	Weekly during any discharge	Grab sample
Cadmium (dissolved)	micrograms per litre	Weekly during any discharge	Grab sample
Chemical oxygen demand	milligrams per litre	Weekly during any discharge	Grab sample
Cobalt (dissolved)	micrograms per litre	Weekly during any discharge	Grab sample
Conductivity	microsiemens per centimetre	Continuous during discharge	In line instrumentation
Copper (dissolved)	micrograms per litre	Weekly during any discharge	Grab sample
Lead (dissolved)	micrograms per litre	Weekly during any discharge	Grab sample
Manganese (dissolved)	micrograms per litre	Weekly during any discharge	Grab sample
Nickel (dissolved)	micrograms per litre	Weekly during any discharge	Grab sample
Nitrogen (ammonia)	micrograms per litre	Weekly during any discharge	Grab sample
Nitrogen (total)	micrograms per litre	Weekly during any discharge	Grab sample
Oil and Grease	milligrams per litre	Weekly during any discharge	Grab sample
Oxidised nitrogen	micrograms per litre	Weekly during any discharge	Grab sample
pH	pH	Continuous during discharge	In line instrumentation
Total dissolved solids	milligrams per litre	Weekly during any discharge	Grab sample
Total suspended solids	milligrams per litre	Weekly during any discharge	Grab sample
Turbidity	nephelometric turbidity units	Continuous during discharge	In line instrumentation
Zinc (dissolved)	micrograms per litre	Weekly during any discharge	Grab sample

POINT 11

Pollutant	Units of measure	Frequency	Sampling Method
Conductivity	microsiemens per centimetre	Weekly during any discharge	Grab sample
pH	pH	Weekly during any discharge	Grab sample
Total suspended solids	milligrams per litre	Weekly during any discharge	Grab sample

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POINT 12

Pollutant	Units of measure	Frequency	Sampling Method
Conductivity	microsiemens per centimetre	Weekly during any discharge	Grab sample
pH	pH	Weekly during any discharge	Grab sample
Total suspended solids	milligrams per litre	Weekly during any discharge	Grab sample

POINT 18

Pollutant	Units of measure	Frequency	Sampling Method
Oil and Grease	milligrams per litre	Monthly during discharge	Grab sample
pH	pH	Monthly during discharge	Grab sample
Total suspended solids	milligrams per litre	Monthly during discharge	Grab sample

POINT 19

Pollutant	Units of measure	Frequency	Sampling Method
Oil and Grease	milligrams per litre	Monthly during discharge	Grab sample
pH	pH	Monthly during discharge	Grab sample
Total suspended solids	milligrams per litre	Monthly during discharge	Grab sample

POINT 20

Pollutant	Units of measure	Frequency	Sampling Method
Biochemical oxygen demand	milligrams per litre	Monthly during discharge	Grab sample
Oil and Grease	milligrams per litre	Monthly during discharge	Grab sample
pH	pH	Monthly during discharge	Grab sample
Total suspended solids	milligrams per litre	Monthly during discharge	Grab sample

POINT 22

Pollutant	Units of measure	Frequency	Sampling Method
Biochemical oxygen demand	milligrams per litre	Monthly during discharge	Grab sample

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Oil and Grease	milligrams per litre	Monthly during discharge	Grab sample
pH	pH	Monthly during discharge	Grab sample
Total suspended solids	milligrams per litre	Monthly during discharge	Grab sample

POINT 23

Pollutant	Units of measure	Frequency	Sampling Method
Oil and Grease	milligrams per litre	Monthly during discharge	Grab sample
Total suspended solids	milligrams per litre	Monthly during discharge	Grab sample

POINT 24

Pollutant	Units of measure	Frequency	Sampling Method
Conductivity	microsiemens per centimetre	Monthly during discharge	Grab sample
Oil and Grease	milligrams per litre	Monthly during discharge	Grab sample
pH	pH	Monthly during discharge	Grab sample
Total suspended solids	milligrams per litre	Monthly during discharge	Grab sample

Note: The monitoring results collected at Point 4 in compliance with Condition M2.1 can be used to determine compliance with the concentration limit specified in Condition L3.3 for discharge from Point 3.

Note: For discharge point 10, discharge point 11 and discharge point 12, the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1 on the same day during a 4 hour period. The licensee must use the sampling method, units of measure and sample at the frequency specified opposite in the other columns. All samples must be representative.

Note: The frequency of sampling at discharge points 10, 11 and 12 will be reviewed after 1 year.

M2.4 The licensee must submit a written protocol for continuous monitoring of pH, turbidity and conductivity to the EPA by 30 April 2013. The continuous monitoring protocol must address calibration of field water-quality monitors, monitor operation and maintenance, as well as data verification and reporting. The continuous monitoring system must be implemented by 30 May 2013.

M2.5 The licensee must carry out acute and chronic (sub-lethal) toxicity testing of the discharges from discharge point 10 on the following species using the test or tests indicated for each species.

Requirement to carry out acute and chronic toxicity testing

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Species	Units of Measure	Frequency	Sampling Method
Ceriodaphnia dubia	EC10 (immobilisation), EC25, EC50 (immobilisation), NOEC, LOEC	4 times a year	Acute test (USEPA 2002 - EPA/821/R/02/012)
Ceriodaphnia dubia	LC50 (parental mortality). IC10, IC25 and IC50 (reproduction). NOEC, LOEC for adult mortality and reproduction	4 times a year	7-day reproductive impairment test (USEPA 2002 - EPA/821/R/02/013)
Paratya australiensis	LC10, LC25, LC50, LOEC, NOEC	4 times a year	10-day acute test (USEPA 2002 - EPA/821/R/02/012) Adaptation of Test Method 2007.0 in that mature Paratya australiensis are used, with feeding 3 hours prior to 48-hour renewal of test solutions
Larval Melanotaenia sp. Rainbowfish	EC10 & EC25, EC50 (imbalance). LOEC, NOEC	4 times a year	4-day acute test (USEPA 2002 - EPA/821/R/02/012) Adaptation of Test Method 2000.0 in that Larval Melanotaenia sp. Rainbowfish are used, with species cultured and bred in the laboratory
Lemna disperma (macrophyte)	IC10 & IC25, IC50 (specific growth rate -based on Frond number & dry weight). LOEC, NOEC	4 times a year	7-day growth inhibition test (OECD (2006) Test 221, or Environment Canada (2007) EPS 1/RM/37) Adaptation of OECD or Environment Canada Test Method in that Lemna disperma (macrophyte) are used
Pseudokirchneriella subcapitata (Selenastrum)	IC10, IC25 and IC50 (growth).LOEC, NOEC	4 times a year	3-day growth inhibition test (USEPA 2002 - EPA/821/R/02/013)

Note: Where a monitoring frequency is specified as 4 times per year, monitoring must be undertaken at a minimum of 80 day intervals. All samples must be representative.

The frequency of acute and chronic (sub-lethal) toxicity testing of the discharges from discharge point 10 will be reviewed after 2 years.

M3 Testing methods - concentration limits

M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:

- a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or

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- b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
- c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

M3.2 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2010* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M4 Recording of pollution complaints

M4.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M4.2 The record must include details of the following:

- a) the date and time of the complaint;
- b) the method by which the complaint was made;
- c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
- d) the nature of the complaint;
- e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
- f) if no action was taken by the licensee, the reasons why no action was taken.

M4.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M4.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M5 Telephone complaints line

M5.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M5.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M5.3 The preceding two conditions do not apply until 3 months after:

- a) the date of the issue of this licence or
- b) if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was

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served on the licensee under clause 10 of that regulation.

M6 Requirement to monitor volume or mass

M6.1 For each discharge point or utilisation area specified below, the licensee must monitor:

- a) the volume of liquids discharged to water or applied to the area;
- b) the mass of solids applied to the area;
- c) the mass of pollutants emitted to the air;

at the frequency and using the method and units of measure, specified below.

POINT 4

Frequency	Unit of Measure	Sampling Method
Continuous	kilolitres per day	In line instrumentation

POINT 10

Frequency	Unit of Measure	Sampling Method
Continuous	kilolitres per day	In line instrumentation

POINT 13

Frequency	Unit of Measure	Sampling Method
Continuous	kilolitres per day	In line instrumentation

POINT 18

Frequency	Unit of Measure	Sampling Method
Continuous during discharge	kilolitres per day	In line instrumentation

POINT 19

Frequency	Unit of Measure	Sampling Method
Continuous during discharge	kilolitres per day	In line instrumentation

POINT 20

Frequency	Unit of Measure	Sampling Method
Continuous during discharge	kilolitres per day	In line instrumentation

POINT 22

Frequency	Unit of Measure	Sampling Method
Continuous	kilolitres per day	Flow meter and continuous logger

POINT 24

Frequency	Unit of Measure	Sampling Method
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Continuous	kilolitres per day	Flow meter and continuous logger
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M6.2 The monitoring results collected at Point 4 in compliance with Condition M6.1 can be used to determine compliance with the volume limit specified in Condition L4.1 for discharge from Point 3.

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:

- a Statement of Compliance; and
- a Monitoring and Complaints Summary.

At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

R1.3 Where this licence is transferred from the licensee to a new licensee:

- the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
- the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:

- in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
- in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:

- the licence holder; or
- by a person approved in writing by the EPA to sign on behalf of the licence holder.

R1.8 A person who has been given written approval to certify a certificate of compliance under a licence issued under the Pollution Control Act 1970 is taken to be approved for the purpose of this condition until the date of first review of this licence.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

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Note: An application to transfer a licence must be made in the approved form for this purpose.

R2 Notification of environmental harm

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:

- a) where this licence applies to premises, an event has occurred at the premises; or
- b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:

- a) the cause, time and duration of the event;
- b) the type, volume and concentration of every pollutant discharged as a result of the event;
- c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
- d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
- e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
- f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
- g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

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7 General Conditions

G1 Copy of licence kept at the premises or plant

- G1.1 A copy of this licence must be kept at the premises to which the licence applies.
- G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.
- G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

G2 Signage

- G2.1 Each monitoring and discharge point must be clearly marked by a sign that indicates the EPA point identification number.

G3 Other general conditions

G3.1 Pollution Reduction Programs (PRPs) – Completed (West Cliff and North Cliff Collieries)

PRP No	PRP	Description	Completed Date
1	Discharge Water Quality	To chemically characterise the quality of the water discharges from Brennans Creek Dam and the chemical impacts on the ambient water quality of the Georges River	6 Mar 2003
2	Appin Colliery Mine water Trial	To determine the impact on the water quality of the Brennans Creek water system from the use of imported saline Appin Colliery mine water in the Westcliff Coal Preparation Plant.	Removed from licence June 2004 – PRP no longer required
3	Effluent Utilisation Area	To provide a detailed report on the operation of the effluent treatment plant and the irrigation utilisation area	20 Feb 2004
4	Georges River Ecological Assessment Report	The aim of this PRP is to provide a report to investigate if there is an ecologically significant impact on the surface waters receiving the treated mine waters discharged from point 2 is occurring, including Brennans Creek and the Georges River.	5 June 2004

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5	Coal Tracking from Truck Wash	The aim of this study is to recognise and address the issue of coal fine tracking from the premises given the potential for this to cause pollution of waters.	1 Sept 2005
6	Georges River Ecological Assessment	The aim of this PRP is to investigate and report on the surface waters receiving the mine waters discharged from Westcliff Colliery premises, including Brennans Creek and the Georges River, to determine if any ecologically significant impact is occurring.	3 Jan 2005
7	Brennans Creek Discharge Trial	The aim of this PRP is to trial controlled discharges of water from Brennans Creek Dam (bottom waters) and the Reclaim Pond (the "Trial") in an endeavour to minimize the frequency of rain induced uncontrolled releases over the dam spillway. The releases will be undertaken in an effort to optimize the salinity and control the pH of discharges.	31 March 2006
8	Materials Storage	The aim of this PRP is to ensure materials are stored at the premises in a way which contains leaks and spills and minimizes odour and dust generation.	30 April 2005
9	Georges River Ecological Assessment (Continuation)	The aim of this PRP is to further investigate and report on the surface waters receiving the mine waters discharged from Westcliff Colliery premises, including Brennans Creek and the Georges River to determine if any ecologically significant impact is occurring.	31 March 2006

G3.2 Pollution Reduction Programs (PRPs) - Completed (Appin Colliery)

PRP No	PRP	Description	Completion Date
1	Discharge Water Quality	To chemically characterise the quality of the water discharges from Appin Colliery premises and the chemical impacts on the ambient water quality of the Georges River	23 Jan 2003

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2	Discharge Volume Monitoring	To provide advice detailing the methodology used for measuring discharge volume at licensed discharge points.	1 Oct 2002
3	Point 2 Discharge Volume Monitoring	To install and commission a discharge volume metering device at Point 2	1 Oct 2001
4	Aquifer Mine Water Discharge Trial	To provide a report evaluating the monitoring data relating to the Stage 2 of the 'Bulgo Sandstone Strata Injection Trial'	22 Feb 2002
5	Effluent Treatment Management	To provide a report outlining the operation and management of the effluent treatment system	1 May 2004
6	Coal and Coal Fines Tracking	The aim of this study was to recognise and address the issue of coal fine tracking from the premises given the potential for this to cause pollution of waters. The PRP was designed to investigate ways to reduce tracking coal fines onto public roads and was not limited to truck washing	1 Sept 2004
7	Bulgo Sandstone Strata Discharge Trial	To allow the trial discharge of minewater underground to test the potential for the Bulgo sandstone strata to accept saline minewater in place of its discharge to the Georges River.	29 June 2006
8	Georges River Ecological Assessment Report	The aim of this PRP was to develop a monitoring protocol to investigate if there is an ecologically significant impact on the surface waters receiving the treated mine waters discharged from point 2, including Brennans Creek and the Georges River.	5 June 2004
9	Borefield Discharge Minewater treatment	To provide a written report on the outcomes into an investigation of treatment options for the filtering of mine water discharged through Point 6 to the Bulgo Sandstone Strata Injection Trial.	28 June 2004

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10	Undertake Georges River Ecological Assessment	To investigate and report on any ecologically significant impact on the surface waters receiving the mine waters discharged from Appin Colliery, including Brennans Creek and the Georges River.	3 Jan 2005
11	Materials Storage	To detail a program of works to ensure materials are correctly stored and banded at the premises.	30 April 2005
12	Review of Dust Monitoring Network	To carry out an investigation into the location of the existing dust monitoring network against the appropriate Australian Standard and provide a report to the EPA.	30 June 2005
13	Georges River Ecological Assessment (Continuation)	To determine if there is any significant impact on the ecology of the Georges River as a consequence of receiving discharges from Appin Colliery.	31 March 2006
14	Materials Storage Implementation	To implement works to ensure that materials are stored at the premises in a way that contains leaks and spills and minimises odour and dust generation.	23 October 2007

G3.3 Pollution Reduction Programs (PRPs) - Completed (Appin West Colliery)

PRP No	PRP	Description	Completed Date
1	Discharge Water Quality	To chemically characterise the quality of the water discharges from Point 1 and the chemical impacts on the ambient water quality of Allens Creek and the Nepean River.	1 Sep 2003
2	Effluent Utilisation Area	To provide a written assessment and review of the utilisation of treated effluent in accordance with draft EPA environmental guidelines	6 Aug 2002
3	Mine Water Irrigation	To provide a written assessment and review of the utilisation of waste mine water in accordance with draft EPA environmental guidelines	8 Oct 2002

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4	Stormwater management	To provide a written assessment and review of the current stormwater management practices on the premises.	Completed
5	Discharge Point 3 Location Diagram	To provide a surveyed diagram to detail the perimeter boundary of the St Mary's Towers mine water irrigation area	15 May 2003
6	Allens Creek and Nepean River Ecological Assessment Report	The aim of this PRP is to provide a report to investigate if there is an ecologically significant impact on the surface waters receiving the treated mine waters discharged from the premises is occurring, including Allens Creek and the Nepean River.	5 June 2004
7	Allens Creek and Nepean Ecological Assessment	The aim of this PRP is to investigate and report on any ecologically significant impact the mine waters discharged from Tower Colliery (now called Douglas Colliery) are having on their receiving waters.	22 Nov 2004
8	Investigations into Desalination of Point 2 Mine Water Discharges	To investigate significantly improved quality of water discharged to the Nepean catchment, increase the reuse of the mine water and minimise use of potable water in mine operations.	15 Dec 2004
9	Materials Storage	To provide a report that details a program of works to be undertaken to ensure materials are correctly stored and bunded, that is, compliant with the Australian Standards and legislation, and in a way that contains leaks and spills and minimises odour and dust generation.	31 May 2005
10	Water Management	To provide a report reviewing surface water, mine water and sewage management on site with an aim to reducing impacts on receiving waterways by improved capture, treatment and disposal.	29 June 2005

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11	Allens Creek and Nepean River Ecological Assessment Report (Continuation)	To provide a report containing the results of further sampling to determine potential ecological impacts on surface waters receiving treated mine water discharged from the premises. (Xref PRP7)	31 March 2006
12	Materials Storage (Implementation)	To implement a program of works to improve material storage at the premises that were described in the report required by PRP9.	30 June 2006
13	Implementation of Improved Surface Water Management – Stage 1	To implement the stage one improvements to surface water management, resulting from the investigation required by PRP 10 “Water Management”	30 Dec 2006
14	Operation of Pilot Plants and Investigation of Desalination Technology	To investigate and test of preferred treatment technologies to reduce the pH and conductivity (salinity) of discharges via Discharge Point 3.	28 Jan 2007
15	Installation of Desalination Equipment to Treat Mine water Discharged from Point 3	The installation of water treatment equipment to reduce the electrical conductivity (salinity) and pH of water discharged from licensed discharge point 3.	28 Jan 2007
16	Brine Disposal & Reuse	To examine alternative options for management of brine generated by the desalination plant at Appin West colliery.	5 Feb 2010

8 Pollution Studies and Reduction Programs

U1 PRP18 - Modification to Brennans Creek Dam off-take

U1.1 The aim of this PRP is to improve the overall quality of, and reduce the ecological risks due to, discharges from Brennans Creek Dam (BCD) via discharge point 10 by changing the configuration of discharge point 10 to a floating off take.

Prior to 2004 discharges from BCD were taken from the surface waters of BCD via a spillway. The discharge waters using this configuration did not always comply with licence pH limits of 6.5-9.0.

'PRP 7 Brennans Creek Discharge Trial' was completed in March 2006 and trialled discharging 'bottom' waters from BCD. This trial was aimed at reducing the number of uncontrolled releases from BCD via the spillway, and optimizing the pH and salinity in controlled discharges via discharge point 10.

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An outcome of this PRP was to alter the BCD discharge configuration from the spillway, to a pipe discharging from the bottom of BCD via discharge point 10.

The pH licence compliance achieved by changing the BCD off take configuration are temporary, as pH in the discharge waters increases downstream of discharge point 10 due to carbon dioxide out gassing.

On balance, and considering the science and investigations undertaken into BCD, the EPA agrees with the licensee that there will be an overall reduction in ecological risks by changing the configuration of the BCD off take to a floating off take. In particular, ammonia and salinity in the discharge waters will be reduced.

Coupled with this change, the EPA will temporarily change the pH limit for discharge point 10 to 6.5-9.3. In making this change the EPA notes:

- This change is temporary until completion of '*PRP 19 Water Quality Discharge Improvement to Upper Georges River via discharge point 10,*' and
- The change to pH limits will not in effect represent any increase in environmental impact, due to carbon dioxide out gassing in the discharge waters that causes the pH to increase downstream of discharge point 10, compared to the pH measured at discharge point 10.

The licensee must change the configuration of discharge point 10 from a pipe discharging from the bottom of BCD to a floating off take, so that water discharged from that discharge point is taken from the surface water of BCD and not the 'bottom' waters.

DUE DATE: 30 JUNE 2013

U2 PRP19 - Water Quality Discharge Improvements to Upper Georges River via discharge point 10

- U2.1 The aim of this PRP is to ensure that measures are taken to protect the environment from harm and to protect or restore the environmental values of the receiving waters affected by the discharge of waters from BCD to the Georges River via discharge point 10.

The licensee must carry out a program of works to reduce the level of contaminants being released to the Georges River via discharge point 10. This program may include any practical measures such as avoiding the discharge, the installation of a water treatment plant, or a combination of a water treatment plant and other discharge improvement options. Any inter-basin transfers must be subject to environmental assessment and approvals.

Background

A number of field and laboratory based assessments have been carried out to investigate the ecological health of receiving waters in Brennans Creek and the Upper Georges River. These have included '*PRP 6 – Georges River Ecological Assessment*', '*PRP 9 - Georges River Ecological Assessment (Continuation)*', '*PRP 10 – Reduction in Salinity from Brennans Creek Dam*', and '*PRP 11 – Brennans Creek Discharge Toxicity Study (West Cliff Mine)*'

Studies by BHP demonstrate that the Georges River downstream of the BCD confluence has impaired macroinvertebrate fauna relative to control sites. Between 20%-60% loss of macroinvertebrate biodiversity were recorded. The Georges River Combined Councils' Committee's '*Community River*

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Health Monitoring Program has identified deteriorated water quality and macroinvertebrate biodiversity downstream of BCD. EPA and ACARP ecotoxicity testing to a range of species and plants has demonstrated:

- Acute (lethal) toxic effects above 900 $\mu\text{S}/\text{cm}$, and
- Sublethal effects (growth, reproduction etc) above 550 $\mu\text{S}/\text{cm}$.

The Community has identified the Georges River as being of high value, environmentally, culturally and recreationally. The Community expressed significant concerns about the pollution impacts on the Georges River due to the continued discharges from BCD.

Stage 1: Water Efficiency Project

The licensee must transfer minewater from underground directly to the West Cliff Washery to be used as process water.

This project is expected to reduce the concentration of salinity and Aluminium in BCD and reduce the use of chemical flocculants for water treatment.

DUE DATE: 30 JUNE 2013

Stage 2: Carry out a Program of Works

The licensee must commission and carry out a program of works which may include minimisation or avoidance of a discharge, the installation of a water treatment plant, or a combination of a water treatment plant and other discharge improvement options to achieve the specified discharge quality by **30 December 2016**. Any proposed discharge to a different waterway will be subject to environmental assessment and approvals.

The program of works must reduce the concentration of pollutants discharging from discharge point 10 to meet the concentration limits specified in the table below. The specified limits are based on 95% species protection (*slightly to moderately disturbed ecosystems*):

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	100 percentile concentration limit
Oil and Grease	milligrams per litre			10
pH	pH			6.5 - 8.0
Total suspended solids	milligrams per litre			50
Conductivity	microsiemens per centimetre			495
Bicarbonate	milligrams per litre			225
Aluminium (dissolved)	micrograms per litre			55
Arsenic (dissolved)	micrograms per litre			24
Cadmium (dissolved)	micrograms per litre			0.2

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Cobalt (dissolved)	micrograms per litre	30
Copper (dissolved)	micrograms per litre	1.4
Lead (dissolved)	micrograms per litre	3.4
Manganese (dissolved)	micrograms per litre	1900
Nickel (dissolved)	micrograms per litre	11
Zinc (dissolved)	micrograms per litre	8
Chemical Oxygen Demand	milligrams per litre	50
Total dissolved solids	milligrams per litre	340
Total nitrogen	micrograms per litre	250
Nitrogen (ammonia)	micrograms per litre	13
Oxides of nitrogen	micrograms per litre	15

The program of works must reduce the concentration of pollutants discharging from discharge point 10 such that the specified toxic effect of the effluent released from discharge point 10 on the specified test organism must not exceed the corresponding percentile limit listed for that organism in the table below.

Species	Frequency	Sampling Method	90 percentile concentration limit
Ceriodaphnia dubia	Monthly	7-day reproductive impairment test (USEPA 2002 - EPA/821/R/02/013)	No reduction in reproduction (EC10 reproduction) > 100% effluent)
Paratya australiensis	Monthly	10-day acute test (USEPA 2002 - EPA/821/R/02/012) Adaptation of Test Method 2007.0 in that mature Paratya australiensis are used, with feeding 3 hours prior to 48-hour renewal of test solutions	No lethal acute effects (L10 > 100% effluent)

Progress Reports

The licensee must provide 6 monthly progress reports at 30 June and 30 December each year, commencing 30 June 2013 until 30 December 2016.

DUE DATE: 30 DECEMBER 2016

U3 PRP 20 - Aquatic Health Monitoring Program

U3.1 The aim of this PRP is to assess the aquatic health of Brennans Creek and the Upper Georges River,

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from the confluence of Brennans Creek to the confluence with O'Hares Creek.

The licensee must conduct an aquatic health monitoring program in Brennans Creek and the Upper Georges River to assess aquatic health and to assess improvements to aquatic health following '*PRP 19 Water Quality Discharge Improvement to Upper Georges River via discharge point 10.*'

The program must examine the effects of the discharge on river health quantitatively, in terms of changes to in-stream biota in the Georges River. Reference should be made to 'Effects on Mine Water Salinity on Freshwater Biota Investigations of Coal Mine Water Discharge in NSW,' ACARP project C15016, published 1 January 2010.

1) Prepare Aquatic Health Monitoring Program Plan

The licensee must provide an aquatic health monitoring program plan to the EPA for review and approval. The program must require the monitoring and assessment of the aquatic health of Brennans Creek and the Upper Georges River between 1 September and 30 November (monitoring period) in the years 2013, 2015, 2017 and 2019.

The monitoring program must include, but is not limited to, chemical analysis and in-stream biota assessment, including representative macroinvertebrate, algal and vertebrate species. The monitoring program must be carried out at five or more locations including discharge point 10, discharge point 11, discharge point 12 and the Upper Georges River to the confluence with O'Hares Creek.

DUE DATE: 31 MAY 2013

2) Conduct Aquatic Health Monitoring Program

If and when the EPA approves the monitoring program plan, the licensee must carry out the monitoring program in accordance with the plan. For each monitoring period, the licensee must provide a report detailing the results of the monitoring and assessment in that period to the EPA by **1 December 2013, 1 December 2015, 1 December 2017 and 1 December 2019** respectively.

DUE DATE: 1 DECEMBER 2019

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Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

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flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .

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TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non - putrescible), special waste or hazardous waste

Ms Debbie Maddison

Environment Protection Authority

(By Delegation)

Date of this edition: 14-February-2001

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End Notes

- 1 Licence varied by notice 1008874, issued on 09-Jan-2002, which came into effect on 09-Jan-2002.
- 2 Licence transferred through application 141377, approved on 08-Aug-2002, which came into effect on 01-Jul-2002.
- 3 Licence varied by correction to EPA Sub Region data record, issued on 17-Sep-2002, which came into effect on 17-Sep-2002.
- 4 Licence varied by notice 1025524, issued on 10-Jul-2003, which came into effect on 04-Aug-2003.
- 5 Licence varied by notice 1029826, issued on 15-Oct-2003, which came into effect on 22-Oct-2003.
- 6 Licence varied by notice 1034664, issued on 11-May-2004, which came into effect on 05-Jun-2004.
- 7 Licence varied by notice 1037771, issued on 18-Jun-2004, which came into effect on 13-Jul-2004.
- 8 Licence varied by notice 1040023, issued on 20-Sep-2004, which came into effect on 15-Oct-2004.
- 9 Licence varied by notice 1041777, issued on 25-Oct-2004, which came into effect on 19-Nov-2004.
- 10 Licence varied by correction to EPA Region, issued on 22-Nov-2004, which came into effect on 22-Nov-2004.
- 11 Licence varied by notice 1043281, issued on 06-Jan-2005, which came into effect on 31-Jan-2005.
- 12 Licence varied by change to EPA file number, issued on 02-Feb-2005, which came into effect on 02-Feb-2005.
- 13 Licence varied by notice 1046029, issued on 05-Apr-2005, which came into effect on 30-Apr-2005.
- 14 Licence varied by change to DEC Region allocation, issued on 16-Mar-2006, which came into effect on 16-Mar-2006.
- 15 Licence varied by notice 1073110, issued on 30-May-2007, which came into effect on 30-May-2007.
- 16 Licence varied by notice 1085199, issued on 01-May-2008, which came into effect on 01-May-2008.
- 17 Licence varied by notice 1085626, issued on 02-Jul-2008, which came into effect on 02-Jul-2008.
- 18 Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>

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| 19 | Licence varied by notice 1096767, issued on 14-Jan-2009, which came into effect on 14-Jan-2009. |
| 20 | Licence varied by notice 1104170, issued on 06-Nov-2009, which came into effect on 06-Nov-2009. |
| 21 | Licence varied by notice 1110208, issued on 24-Dec-2009, which came into effect on 24-Dec-2009. |
| 22 | Licence varied by notice 1114258, issued on 29-Jun-2010, which came into effect on 29-Jun-2010. |
| 23 | Licence varied by notice 1129625, issued on 28-Jun-2011, which came into effect on 28-Jun-2011. |
| 24 | Licence varied by notice 1501766 issued on 19-Oct-2011 |
| 25 | Licence varied by notice 1502947 issued on 19-Dec-2011 |
| 26 | Licence varied by notice 1504090 issued on 22-Mar-2012 |