



Department of
**Environment and
Heritage Protection**

06-JAN-2015

To: Mourilyan Silica Resources Pty Ltd
PO Box 204
INNISFAIL QLD 4860

Email: dillco@bigpond.com

Our reference: 266543

Application details

I refer to the application that was received by the administering authority on 06-JAN-2015.

Land description: ML20378.

Decision

Your application has been approved and your environmental authority (reference EPVL00591713) is attached.

Should you have any further enquiries, please contact Veronica Lightfoot on telephone 1300 130 372.

Yours sincerely

A handwritten signature in black ink, appearing to read "J Brackenbury", enclosed in a rectangular box.

Signature

06-JAN-2015

Date

Jodie Brackenbury
Department of Environment and Heritage Protection
Delegate of the administering authority
Environmental Protection Act 1994

Veronica Lightfoot
Permit and Licence Management
Department of Environment and
Heritage Protection
GPO Box 2454
BRISBANE QLD 4001
Phone: 1300 130 372
Fax: (07) 3330 5875
Email: palm@ehp.qld.gov.au
Website www.ehp.qld.gov.au
ABN 46 640 294 485

Enclosed

Permit - environmental authority (reference EPVL00591713)

Permit¹

Environmental Protection Act 1994

Environmental authority

This environmental authority is issued by the administering authority under Chapter 5 of the Environmental Protection Act 1994.

Permit¹ number: EPVL00591713

Environmental authority takes effect when the relevant tenure is granted.

The first annual fee is payable within 20 business days of the effective date.

The anniversary date of this environmental authority is the same day each year as the effective date. An annual return and the payment of the annual fee will be due each year on this day.

Environmental authority holder(s)

Name	Registered address
Mourilyan Silica Resources Pty Ltd	2 Cregan Road DARADGEE QLD 4860

Environmentally relevant activity and location details

Environmentally relevant activity(ies)	Location(s)
Mining Lease	ML20378

Additional information for applicants

Environmentally relevant activities

The description of any environmentally relevant activity (ERA) for which an environmental authority is issued is a restatement of the ERA as defined by legislation at the time the approval is issued. Where there is any inconsistency between that description of an ERA and the conditions stated by an environmental authority as to the scale, intensity or manner of carrying out an ERA, then the conditions prevail to the extent of the inconsistency.

An environmental authority authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the authority specifically authorises environmental harm.

A person carrying out an ERA must also be a registered suitable operator under the *Environmental Protection Act 1994* (EP Act).

Contaminated land

¹ Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation



It is a requirement of the EP Act that if an owner or occupier of land becomes aware a notifiable activity (as defined in Schedule 3 and Schedule 4) is being carried out on the land, or that the land has been, or is being, contaminated by a hazardous contaminant, the owner or occupier must, within 22 business days after becoming so aware, give written notice to the chief executive.



Signature

Jodie Brackenbury
Department of Environment and Heritage Protection
Delegate of the administering authority
Environmental Protection Act 1994

06-JAN-2015

Date

Enquiries:
Veronica Lightfoot
Permit and Licence Management
Department of Environment and Heritage
Protection
GPO Box 2454
BRISBANE QLD 4001
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Obligations under the *Environmental Protection Act 1994*

In addition to the requirements found in the conditions of this environmental authority, the holder must also meet their obligations under the EP Act, and the regulations made under the EP Act. For example, the holder must comply with the following provisions of the Act:

- general environmental duty (section 319)
- duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443)

Conditions of environmental authority

The conditions of approval for this environmental authority include conditions contained within the attached document entitled:

- Conditions of environmental authority.

CONDITIONS OF ENVIRONMENTAL AUTHORITY

General Permit Condition

Agency Interest: General

- PG1 The environmental authority does not take effect until the grant of the tenure to the environmental authority holder, or until each environmental authority holder has become a holder, under the Mineral Resources Act 1989, of each of relevant mining tenements.
- PG2 The conditions of this environmental authority are in force until a surrender of the authority is accepted pursuant to the Environmental Protection Act 1994. The conditions apply unless an amendment is approved pursuant to the Environmental Protection Act 1994.
- PG3 Financial assurance
- The environmental authority holder is to give the administering authority a financial assurance in the amount and form and at a time required by the administering authority.
- PG4 The environmental authority holder must comply with each of the Standard Environmental Conditions contained in the Code of Environmental Compliance for Mining Lease Projects, January 2001 with the exception of condition 11, 12, 14, 30 and 32.
- PG5 The holder of the environmental authority must comply with all conditions outlined in Attachment 1- Additional conditions.

Attachment 1 - Additional conditions

Water

- 1) Mining activities undertaken onsite must not result in depression or mounding of the groundwater table that extends beyond the boundary of ML20378.
- 2) The pumping rate from any groundwater abstraction point on ML20378 must not exceed 2 litres per second.
- 3) The holder of the environmental authority must ensure that any groundwater abstraction point has a meter installed prior to the commencement of pumping.
- 4) The holder of the environmental authority must record the volume of water pumped from any abstraction point at least once every month.
- 5) The holder of the environmental authority must advise the administering authority of the following information prior to installation of any groundwater pump:
 - a. model, type and make
 - b. offtake diameter
- 6) The holder of the environmental authority must produce a map of the piezometric surface on ML20378 at least once every month, as reproduced in figures 22-26 of the Mourilyan Silica Sand Project, Environmental Management Plan. This information must be submitted to the administering authority in March, June, September and December.
- 7) The holder of the environmental authority is authorised to construct the base of water supply dams within the lowest coffee rock horizon.
- 8) When constructing water supply dams on site the holder of the environmental authority must not excavate more than 50% of the total thickness of the lowest coffee rock horizon as identified in Figure15 (a-h) of the Mourilyan Silica Sand Project, Environmental Management Plan.
- 9) The holder of the environmental authority must not conduct mining activities within the lowest coffee rock horizon on ML20378, with the exception of condition 7 and 8 of this environmental authority.
- 10) Mining is not permitted within 50m of Wanda Creek.
- 11) Record, compile and keep for a minimum of five years all monitoring results required by this environmental authority and make available for inspection any or all of these records upon request by the administering authority.
- 12) Monitoring must be undertaken in accordance with methods prescribed in the latest edition of the Environmental Protection Agency's "Water Quality Sampling Manual".
- 13) All monitoring required by this environmental authority must be conducted by a competent person(s).

- 14) Surface waters must be monitored at the locations and frequencies listed in Table 1 for all parameters listed in Table 2.

Schedule C - Table 1 (Surface water monitoring locations and frequency)

Monitoring point	Easting (GPS datum TBA)	Northing (GPS datum TBA)	Monitoring frequency
W 1 (Reference Site ¹)	401610	8039090	Monthly when flowing and daily for seven days and weekly thereafter, when waters from the mine are discharging to the creek
W2	401890	8040200	Monthly when flowing and daily for seven days and weekly thereafter, when waters from the mine are discharging to the creek
W3	401950	8041200	Monthly when flowing and daily for seven days and weekly thereafter, when waters from the mine are discharging to the creek

¹ Reference sites must:

- (a) be from the same biogeographic and climatic region; and
- (b) have similar geology, soil types and topography; and
- (c) contain a range of habitats similar to those at the test sites; and
- (d) not be so close to the test sites that any disturbance at the test site also results in a change at the reference site

Table 2 (Surface water trigger levels)

Parameter	Units	Trigger Level	Level Type
pH	Units	6 ⁴ or 20 th percentile ¹ of reference site ² whichever is lower	Mean ⁵
		8 ⁴ or 80 th percentile ¹ of reference site ² whichever is higher	Mean ⁵
EC	µScm	20 ³ or 80 th percentile ¹ of reference ² whichever is higher	Mean ⁵
Dissolved Oxygen	%	85% ⁴ or 20 th percentile ¹ of reference site ² whichever is lower	Mean ⁵
Turbidity	NTU	15 ⁴ or 80 th percentile ¹ of reference site ² whichever is higher	Mean ⁵
Chlorophyll α	µg/L	1.5 ⁴ or 80 th percentile ¹ of reference site ² whichever is higher	Mean ⁵
Total Nitrogen	µg/L	240 ⁴ or 80 th percentile ¹ of reference site ² whichever is higher	Mean ⁵
Total Phosphorus	µg/L	10 ⁴ or 80 th percentile ¹ of reference site ² whichever is higher	Mean ⁵
Total Petroleum Hydrocarbons	µg/L	Oil and petrochemicals should not be seen as a visible film nor should they be detectable by odour ⁶	N/A
Sulphate	µg/L	80 th percentile ¹ of reference site ² whichever is higher	Mean ⁵
Aluminium (total)	µg/L	55 ³ or 80 th percentile ¹ of reference site ² whichever is higher	95 th percentile ⁵

¹Trigger value based on the 80th or 20th percentile are derived using ANZECC (2000) methodology.

² Reference sites as defined in Table 1

³ ANZECC (2000) trigger levels for aquatic ecosystems slightly – moderately disturbed systems – Table 3.4.1 95% level of protection or Table 3.3.4 / 3.3.5 - tropical Australian low rivers and fresh water lakes & wetlands.

⁴ Draft Queensland Water Quality Guidelines, May 2005, Table A.1

⁵ The mean and the 95th percentile must be determined based on no more than ten (10) consecutive samples.

⁶ Value based on Recreational waters ANZECC (2000) Guidelines for Recreational Water Quality and Aesthetics.

15) If surface water at any site defined in Table 1, exceed any of the trigger levels listed in Table 2, the environmental authority holder must:

- (a) complete an investigation in accordance with the ANZECC (2000) methodology, into the potential for environmental harm.
- (b) provide a written report to the administering authority within 3 months of the date of the original exceedence, outlining:
 - (i) details of the investigations carried out; and
 - (ii) actions taken to prevent environmental harm

- 16) Subject to Condition 13 surface waters must not exceed the limits defined in Table 3.

Table 3 (Surface water limits)

Parameter	Units	Limit	Limit Type
pH	Units	5.0 ¹	Minimum
		9.0 ¹	Maximum
Aluminium (total)	µg/L	200 ¹	Maximum

¹ Value based on Recreational waters ANZECC (2000) Guidelines for Recreational Water Quality and Aesthetics.

Groundwater

- 17) Groundwater must be monitored at the locations and frequencies listed in Table 4 for all parameters listed in Table 5.

Table 4 (Groundwater monitoring locations and frequency)

Monitoring point	Easting (AGD-66, Z55)	Northing (AGD-66, Z55)	Monitoring frequency
MB 74	401850.00	8039039.93	Water level: Monthly Water quality: quarterly
MB 75	401771.40	8039500.00	Water level: Monthly Water quality: quarterly
MB 76	402028.45	8040091.17	Water level: Monthly Water quality: quarterly
MB 77	402150.00	8041213.83	Water level: Monthly Water quality: Bi-annually

Table 4. Groundwater monitoring locations and frequency (Continued).

Monitoring point	Easting (AGD-66, Z55)	Northing (AGD-66, Z55)	Monitoring frequency
MB 78	402275.00	8040700.00	Water level: Monthly Water quality: quarterly
MB 79 (Reference Site ¹)	402853.65	8040606.04	Water level: Monthly Water quality: quarterly
MB 80	402556.68	8040638.36	Water level: Monthly Water quality: quarterly
1	402000.00	8041100.00	Water level: Monthly
3	402100.00	8041100.00	Water level: Monthly
5	402200.00	8041100.00	Water level: Monthly
7	402200.00	8040900.00	Water level: Monthly
9	402100.00	8040900.00	Water level: Monthly
11	402000.00	8040900.00	Water level: Monthly
15	402000.00	8040700.00	Water level: Monthly
17	402100.00	8040700.00	Water level: Monthly
19	402200.00	8040700.00	Water level: Monthly
20	402200.00	8040500.00	Water level: Monthly
22	402100.00	8040500.00	Water level: Monthly
24	402000.00	8040500.00	Water level: Monthly
26	401900.00	8040300.00	Water level: Monthly
28	402000.00	8040300.00	Water level: Monthly
30	402100.00	8040300.00	Water level: Monthly
32	402100.00	8040100.00	Water level: Monthly
34	402000.00	8040100.00	Water level: Monthly
36	402100.00	8039900.00	Water level: Monthly
38	402000.00	8039900.00	Water level: Monthly
40	401900.00	8039900.00	Water level: Monthly

Table 4. Groundwater monitoring locations and frequency (Continued).

Monitoring point	Easting (AGD-66, Z55)	Northing (AGD-66, Z55)	Monitoring frequency
41	401900.00	8039700.00	Water level: Monthly
43	402000.00	8039700.00	Water level: Monthly
44	402100.00	8039500.00	Water level: Monthly
46	402100.00	8039700.00	Water level: Monthly
48	402000.00	8039500.00	Water level: Monthly
50	401900.00	8039500.00	Water level: Monthly
52	401800.00	8039500.00	Water level: Monthly
54	401700.00	8039300.00	Water level: Monthly
56	401800.00	8039300.00	Water level: Monthly
58	401900.00	8039300.00	Water level: Monthly
60	402000.00	8039300.00	Water level: Monthly
62	402000.00	8039100.00	Water level: Monthly
64	401900.00	8039100.00	Water level: Monthly
66	401800.00	8039100.00	Water level: Monthly
68	401700.00	8039100.00	Water level: Monthly
72	402200.00	8040300.00	Water level: Monthly

¹ Reference sites must:

- (a) be from the same biogeographic and climatic region; and
- (b) have similar geology, soil types and topography; and
- (c) contain a range of habitats similar to those at the test sites; and
- (d) not be so close to the test sites that any disturbance at the test site also results in a change at the reference site

- 18) If groundwater at any site defined in Table 4, exceed any of the trigger levels stated in Table 5, the environmental authority holder must:
- (a) complete an investigation in accordance with the ANZECC (2000) methodology, into the potential for environmental harm.
 - (b) provide a written report to the administering authority within 3 months of the date of the original exceedence, outlining:
 - i. details of the investigations carried out; and
 - ii. actions taken to prevent environmental harm

Table 5 (Groundwater trigger levels)

Parameter	Units	Trigger Level	Level Type
pH	Units	6 ⁴ or 20 th percentile ¹ of reference site ² whichever is lower	Mean ⁵
		8 ⁴ or 80 th percentile ¹ of reference site ² whichever is higher	Mean ⁵
EC	µS/cm	20 ³ or 80 th percentile ¹ of reference ² whichever is higher	Mean ⁵
Total Nitrogen	µg/L	240 ⁴ or 80 th percentile ¹ of reference site ² whichever is higher	Mean ⁵
Total Phosphorus	µg/L	10 ⁴ or 80 th percentile ¹ of reference site ² whichever is higher	Mean ⁵
Total Petroleum Hydrocarbons	µg/L	Oil and petrochemicals should not be seen as a visible film nor should they be detectable by odour ⁶	N/A
Sulphate	µg/L	80 th percentile ¹ of reference site ² whichever is higher	Mean ⁵
Aluminium (total)	µg/L	55 ³ or 80 th percentile ¹ of reference site ² whichever is higher	95 th percentile ⁵

¹Trigger value based on the 80th or 20th percentile are derived using ANZECC (2000) methodology.

² Reference sites as defined in Table 1

³ ANZECC (2000) trigger levels for aquatic ecosystems slightly – moderately disturbed systems – Table 3.4.1 95% level of protection or Table 3.3.4 / 3.3.5 - tropical Australian low rivers and fresh water lakes & wetlands.

⁴ Draft Queensland Water Quality Guidelines, May 2005, Table A.1

⁵ The mean and the 95th percentile must be determined based on no more than ten (10) consecutive samples.

⁶ Value based on Recreational waters ANZECC (2000) Guidelines for Recreational Water Quality and Aesthetics.

- 19) Subject to Condition 17, groundwater must not exceed the limits defined in Table 6.

Table 6 (Groundwater limits)

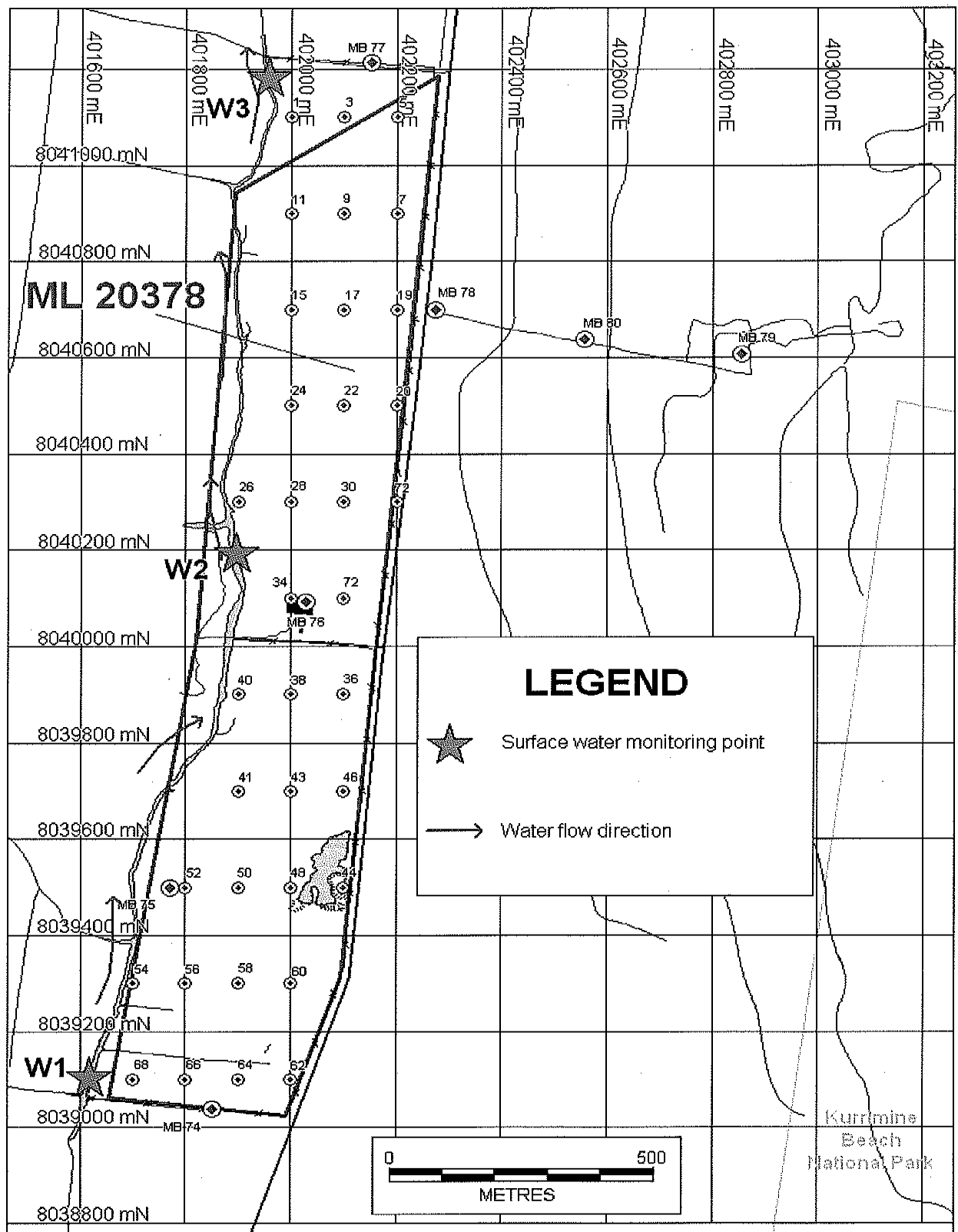
Parameter	Units	Limit	Limit Type
pH	Units	5.0 ¹	Minimum
		9.0 ¹	Maximum
Aluminium (total)	µg/L	200 ¹	Maximum

¹ Value based on Recreational waters ANZECC (2000) Guidelines for Recreational Water Quality and Aesthetics.

Land

- 20) The holder of the environmental authority must submit to the administering authority a Potential Acid Sulphate Soils Monitoring Plan, at least 2 months prior to undertaking any mining activities on ML20378.
- 21) If Potential Acid Sulphate Soils are identified on ML20378, you must submit a Potential Acid Sulphate Soils Management Plan prior to undertaking any mining activities.
- 22) Sampling of Potential Acid Sulphate Soils must be undertaken in accordance with the most recent version of the Acid Sulphate Soils Laboratory Methods Guidelines.
- 23) A suitably qualified person must prepare the Acid Sulphate Soils Investigation Report and Potential Acid Sulphate Soils Management Plan if required.
- 24) You must comply with the latest edition of the Queensland Environmental Protection Agency's INSTRUCTIONS FOR THE TREATMENT AND MANAGEMENT OF ACID SULPHATE SOILS, 2001, produced by the Queensland Environmental Protection Agency in consultation with the Department of Natural Resources and Mines and the Department of Primary Industries.
- 25) The holder of the environmental authority must complete the rehabilitation processes on areas disturbed by mining activities, apart from those areas being utilised for mining activities, as soon as practical and within twelve months of the completion of works in those areas.
- 26) All areas significantly disturbed by mining activities must be rehabilitated to a final landform that is stable. FSL (Finished Surface Level) must be no more than 7 metres below ESL (Existing Surface Level).
- 27) Mining activities are not permitted within 700m of any category A or B Environmentally Sensitive Area.

MAP 1 – Surface water and groundwater monitoring locations



END OF PERMIT