

Environmental Protection Act 1994

Environmental Protection Order

This environmental protection order is issued by the administering authority pursuant to section 358 of the Environmental Protection Act 1994.

DGR Global Limited
Level 27, 111 Eagle Street
BRISBANE CITY QLD 4000

Attn. Mr John Bierling, Group Operations Manager

Cc via email: jbierling@dgrglobal.com.au

Your reference: EPML00928813

Our reference: C-CPLRC-100267427 (101/0008732) STAT-E-100336413

18 April 2023

To whom it may concern,

Take notice: that under the *Environmental Protection Act 1994* (the Act) this Environmental Protection Order (EPO) is issued to DGR Global Limited (ACN 052 354 837) (you) by the administering authority. The administering authority is the Chief Executive of the Department of Environment and Science (the department).

The EPO is issued with respect to your activities carried out at the Shamrock mine site located on mining lease (ML) ML50291, ML3749, ML3741, ML3678, ML3752 and ML3753, situated at Webb Road, BLACK SNAKE, QLD 4600 (the premises).

A. Grounds

This EPO is issued on the following grounds:

1. Pursuant to section 358(d)(i) of the Act, the department requires you to take reasonable measures to secure compliance with the general environmental duty. The general environmental duty is detailed in s319 of the Act which states the following: *'A person must not carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm (the general environmental duty).'*
2. Pursuant to section 358(d)(iii) of the Act, the department requires you to take reasonable measures to secure compliance with condition C1-1 of environmental authority EPML00928813 (the EA) dated 21 September 2018 which states *'contaminants must not be release (sic) from the site to any waters of (sic) the bed and banks of any waters.'*

The facts and circumstances forming the basis for these grounds are:

1. You are:
 - a. the holder of mining lease ML50291, ML3749, ML3741, ML3678, ML3752 and ML3753;
 - b. the holder of EA EPML00928813 (the EA); and
 - c. the person with legal ownership, possession and control over the premises.
2. The EA authorises the environmentally relevant activity of resource activity, Schedule 3, 16: Mining gold ore at the premises, subject to conditions of the authority.
3. A tailings storage facility (TSF) is located on the premises.
4. In a report titled '*Shamrock Mine 2022 Annual Inspection of Regulated Structures – TSF 113337.13 November 2022*' (ATC Williams Pty Ltd, 2022) (the 2022 RPEQ report) prepared for you as a requirement of the EA condition F2-7, it was reported that the TSF is a dam:
 - a. storing hazardous material (tailings solids and process liquor);
 - b. containing approximately 770,000 tonnes of tailings material; and
 - c. having a seepage collection system that forms part of the facility. This includes sand toe drains, a chimney drain against the existing dam and drains connected to a manifold which pipe seepage through a culvert to a seepage dam.
5. The seepage dam is lined and seepage collected within the seepage dam is returned to the TSF via pumps and pipes. The seepage dam forms part of the TSF and is intended to be operated as a no release structure.
6. Condition C3-1 of the EA prescribes that '*receiving waters potentially affected by mining activities; and waters used to establish background levels, must be monitored at the location and frequencies defined in Table 1 and Figure 1 Shamrock Mine Water sampling points, for parameters listed in Table 2.*'
7. Selected compliance monitoring points in Table 2 of the EA are identified in Table 2 of this notice (refer Attachment A).
8. 'Seepage Top Dam – South' and 'Seepage Top Dam – North' are unlined earthen dams located on the premises on either side of the Seepage Pond and designed to collect uncontaminated rainwater from the TSF embankment wall via surface drains positioned at the toe. You have advised that water from these dams is monitored voluntarily by you during the biannual compliance monitoring program.
9. Section 14 of the Act provides a definition of environmental harm:

'(1) Environmental harm is any adverse effect, or potential adverse effect (whether temporary or permanent and of whatever magnitude, duration or frequency) on an environmental value, and includes environmental nuisance.

(2) Environmental harm may be caused by an activity— (a) whether the harm is a direct or indirect result of the activity; or (b) whether the harm results from the activity alone or from the combined effects of the activity and other activities or factors.'
10. Section 9 of the Act provides a definition of environmental value. '*Environmental value is— (a) a quality or physical characteristic of the environment that is conducive to ecological health or public amenity or safety; or (b) another quality of the environment identified and declared to be an environmental value under an environmental protection policy or regulation.*
11. The EA provides the following definition: '*waters* - includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water in natural or artificial watercourses, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater runoff, and groundwater or any part-thereof.'
12. Monitoring point S4 is a non-perennial second order tributary of Black Snake Creek. Monitoring point S6 is located downstream of S4. Monitoring points S4 and S6 are considered 'waters', as defined in the EA. Black Snake Creek flows to Collins Creek, a tributary for the upper catchment Wide Bay Creek, part of the Mary River basin. The environmental values and water quality objectives for the receiving waters are listed in Schedule 1 of the *Environmental Protection (Water) Policy 2009* see: Schedule 1 - Plan: WQ1381 Mary River environmental values and water quality objectives Basin No. 138, including

all tributaries of the Mary River. Environmental values include aquatic ecosystems; irrigation; farm supply/use; stock water; aquaculture; human consumer; primary recreation; secondary recreation; visual recreation; drinking water; industrial use; cultural and spiritual values.

13. Monitoring point GM1 is a groundwater monitoring borehole located on the premises. The EA definition of waters includes groundwater. Monitoring point GM1 is considered 'waters', as defined in the EA.
14. On 1 June 2022, AusRocks Limited (AusRocks), your third-party consultant, provided an email notification to the department reporting that it had '*become aware of a release of contaminated water from the D'Aguilar Mining Project (the premises) to waters at sampling point S4*'. You became aware of this release when AusRocks was reviewing water quality analysis results from biannual monitoring undertaken on 4 May 2022 (refer Attachment B, Table 3) and informed you.
15. The notification was provided as the EA does not authorise the release of contaminants to waters. Condition C1-1 of the EA prescribes '*contaminants must not be release (sic) from the site to any waters of (sic) the bed and banks of any waters.*'
16. 'Contaminant' is defined in section 11 of the Act. '*A contaminant can be — (a) a gas, liquid or solid; or (b) an odour; or (c) an organism (whether alive or dead), including a virus; or (d) energy, including noise, heat, radioactivity and electromagnetic radiation; or (e) a combination of contaminants.*'
17. You implemented measures to divert contaminated surface water in Seepage Top Dam – North and Seepage Top Dam – South to the SeepagePond and you commenced an investigation into the surface water contamination.
18. On 4 June, 14 June and 4 July 2022, you completed surface water monitoring as part of the investigation. You have provided these analysis results to the department.
19. On 4 July 2022, you provided a daily report to the department in accordance with a Tailings Dam Operating Plan stating the TSF was 25 mm below the spillway or 504.675 mRL. On 4 July 2022 authorised persons of the department inspected the premises. The TSF levels were viewed, and surface water monitoring was undertaken. Authorised persons observed water percolating through grass at and around the base of the TSF embankment and entering the drainage lines which report to Seepage Top Dam – North and Seepage Top Dam – South. This water was sampled by the department (refer paragraph 21 and 22 for results discussion). The seepage top dams were almost at capacity with water being passively piped into the Seepage Pond.
20. The department holds surface water and groundwater quality monitoring data for the premises. The data demonstrates the TSF (S16) and seepage dam (S3) typically contains a range of water contaminants including total dissolved solids (TDS), dissolved salts expressed as electrical conductivity (EC), sulphate and metals.
21. The department has undertaken a review of historic (post 2013) and recent (May to July 2022) water quality monitoring data obtained by DGR and the department, related to the investigation (i.e. monitoring points listed in Attachment A, Table 2, the seepage top dams and select parameters characteristic of mining activities undertaken at the premises; TDS, EC, sulphate, selenium, arsenic and cyanide). This review indicates that contaminants have been released from the premises to surface water and groundwater, with relevant contaminants above background levels (S1) in the receiving environment of Black Snake Creek (sites S4 and S6). The department consider that non-compliance with EA condition C1-1 has occurred.
22. A review of selected parameters TDS, EC, sulphate, selenium, arsenic and cyanide indicate the following:
 - a) At S1, comparatively low surface water contaminant levels of TDS, EC, sulphate, selenium and arsenic below the applicable guideline values (refer Attachment B, Table 3). No historic sampling of cyanide (no known upstream sources present).

Surface water piper plots prepared by the department indicate recent ionic composition at background site S1 differs from on-site water storages (TSF (S16), Seepage Pond (S3), Seepage Top Dam – North, Seepage Top Dam – South and water entering Seepage Top Dam – South).
 - b) At S4, recent elevated surface water contaminant levels compared to S1 background include TDS, EC, sulfate, dissolved selenium, dissolved arsenic and total cyanide. S4 recent elevated contaminant levels exceeding guideline values include EC, dissolved selenium, dissolved arsenic

(speciation required) and total cyanide. Elevated historical TDS, EC, sulphate and total cyanide present 2014 to 2019. Dissolved selenium (20 µg/L on 04/05/2022 and 04/06/2022) and dissolved arsenic (18 µg/L on 04/06/2022) are historic maximums for S4.

Piper plots derived from recent surface water sampling indicate a similar ionic composition at S4 and on-site water storage (TSF (S16), Seepage Pond (S3), Seepage Top Dam – North, Seepage Top Dam – South and water entering Seepage Top Dam – South). Piper plots derived from recent surface water sampling indicate similar ionic compositions in the water at the onsite water storages.

- c) At S6, recent elevated surface water contaminant levels compared to S1 background levels include TDS, EC, sulphate, dissolved selenium and dissolved arsenic. S6 recent elevated contaminant levels exceeding guideline values include EC. Elevated historical TDS, EC, sulphate and dissolved arsenic present 2013. No historic sampling of cyanide. Sulphate (406 mg/L on 04/05/2022) is a historic maximum for S6.
 - d) At groundwater bore GM1, historically variable levels of TDS, EC and sulphate, trending down on 26/10/2021 and 04/05/2022. Elevated historical levels of arsenic present in 2013 (19 µg/L) and 2014 (8 µg/L) and selenium (250 µg/L) in 2013. Variable levels of total cyanide present on all sampling points between 2013 and 2022 (maximum 330 µg/L on 20/04/2021) with 15 µg/L present on 04/05/2022. Weak acid dissociable (WAD) cyanide present in 2017 and 2019.
 - e) The department is not aware of any historic (pre-2022) notification to the department or associated investigation into contamination levels at S4, S6 or GM1.
 - f) A summary of results obtained on 4 May 2022 and a comparison with relevant water quality guideline values are provided in Table 3 (refer Attachment B).
23. The department acknowledges that the biannual water quality monitoring results sampled at S4 and S6 on 18 October 2022 indicate reduced contaminant levels within guideline limits for the parameters in Table 3, excluding EC (1540 µS/cm at S4; 1550 µS/cm at S6).
24. The department considers the TSF is at or near storage capacity, and this is likely driving increased and uncontrolled seepage on the premises. It is apparent some of this uncontrolled seepage water has been draining to the seepage top dams (Seepage Top Dam – South) and some of this seepage water has been released (historically and recently) to monitoring point S4 and GM1. The department further considers that failure of the TSF and/or the Seepage Pond to collect and contain seepage water has and may continue to result in the unauthorised release of contaminants to surface water and/or groundwater. This has potential to cause impacts on environmental values (refer paragraph 10) associated with any impacted waters.
25. The department considers the circumstances the subject of the notification on 1 June 2022 to be unusual or otherwise unsatisfactory conditions potentially associated with the TSF and that DGR breached condition F2-5 in not undertaking an inspection of the TSF at the time the seepage was observed.
26. On 29 November 2022, you provided the annual 2022 RPEQ report (refer paragraph 4), prepared for you as a requirement of condition F2-7 of the EA. This report did not investigate the source or sources of the seepage that resulted in the earlier offsite release. You have not provided the department with the results of any RPEQ inspection of the TSF that demonstrates that seepage or release of contaminants is not related to the integrity of the TSF and associated Seepage Pond, or the current storage capacity of the TSF.
27. On 6 July 2022, you provided the department with a report letter titled *Geochemical Assessment – TSF Pollution Investigation, Shamrock Mine* (ATC Williams, 1 July 2022). The report concluded that “there is a high probability that S4 (Black Snake Creek below seepage dam) water quality is related to SeepS (seepage top dam - south) and S16 (TSF) due to the Piper diagram. However, the concentration values reported for the contaminants are at (Se) or below the reporting limit at S4. It should be noted that EA Table 3 values are not exceeded at S4 for the sample set provided for analysis. In addition, trace element analysis indicates values more akin to background (S6) and SeepN (seepage top dam - north) concentration values. Based on this analysis, mixing of different water quality parameters are possible and could indicate a secondary source from the environment in addition to S16 or SeepS.
28. On 27 January 2023, you provided the department with a report letter titled *Re: Geochemical Assessment – TSF Pollution Investigation, Shamrock Mine* (ATC Williams, 5 January 2022 (sic 2023)).

Section 3 (page 17) of the report states *'Based on these results, there is a high probability for two water transfer pathways to exist around the TSF; the first being a steady seepage pathway through the embankment or footprint of the TSF and the second being linked to an interstitial water level (essentially associated with groundwater) in the general area, which then expresses at GWE1 (ATCW surface water sample location west of TSF embankment) during recharge events at which elevated water levels exist.'*

29. The department considers that, to date, the source/s, cause/s and extent of recent (2022) contamination at monitoring points S4, S6, Seepage Top Dam – North, Seepage Top Dam – South and GM1 have not been satisfactorily investigated and consider this to be a failure of DGR to meet its General Environmental Duty as per section 319 of the Act.
30. The department considers that seepage conditions within the onsite catchments at the foot of the TSF embankment are variable and that visual inspections are required to identify when seepage is occurring within these catchments. It is reasonable and practicable for DGR to undertake visual inspections and initiate a comprehensive assessment of the sources of seepage when these circumstances are next present.
31. The department considers, based on the 2022 release and the varying level of contaminants in the water in the TSF embankment catchments, that it is reasonable and practicable for DGR to undertake certain actions in the event of a release of water from these catchments. These actions include notifying the department, undertaking event-based water quality monitoring and pumping out seepage dams to limit the extent of the release.
32. The department considers, based on the 2022 release and the varying level of contaminants in the water in the TSF embankment catchments, that it is reasonable and practicable for DGR to monitor water quality in these catchments and at offsite locations on a monthly basis and across dry and wet seasons for one year to determine the quality of water on and offsite and to identify possible contaminant pathways and the circumstances that give rise to contaminated seepage.
33. The department considers the required actions will provide DGR with information about seepage presence, source and quality that will enable DGR to initiate further actions that will prevent future releases of contaminants and secure compliance with condition C1-1 of the EA.
34. The department reasonably believes that the actions required under this EPO are necessary to secure compliance with the general environmental duty and condition C1-1 of the EA; identifying the source, cause and extent of contamination; preventing further release of contaminants to surface water and groundwater; ensuring early detection of risks through increased monitoring and reporting to the department; and further assessing the integrity and condition of the TSF in its entirety, which is at or near storage capacity.

B. Requirements

In accordance with this EPO, you are required to do the following (definitions in **bold** are provided in section 4 - definitions):

Section 1 - General

1. By 2 May 2023, you must engage a **suitably qualified and experienced person** (SQEP) to undertake the requirements in this EPO that are specified below to be undertaken by an SQEP. Where any EPO requirement falls outside of the SQEP's expertise, the SQEP is required to nominate and work with an **appropriately qualified person** (AQP). You are required to ensure the SQEP nominates and works with an AQP to meet EPO requirements when necessary. You must notify the department within 24 hours after engaging the SQEP and any AQP, including their qualifications and experience relevant to the requirements of this EPO.
2. Any written notification or submission to the department, as required by this EPO, must be provided in writing via email to sunshinecoast.esr@des.qld.gov.au.
3. From 18 April 202³~~2~~ until 7 April 2024, you must undertake daily visual inspections of the Seepage Top Dam North and Seepage Top Dam South catchments and the **tailings storage facility** (TSF) embankment toe and make and keep records of the date and findings of these inspections as it relates to the presence or otherwise of seepage and water flows. The records are to be provided to the department upon request.

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4. For the duration of this EPO, you must reduce and control the vegetation in the above catchments to enable the visual inspection required by Requirement 3 and, potentially, Requirement 6.
5. In the event of a release of water from the Seepage Top Dam North or Seepage Top Dam South or any other part of the TSF embankment catchments to '**waters**' (refer Attachment C and Section 4), you must complete the following:
 - a. notify the department in writing with the details of the release event (e.g. location, volume, duration, control measures) within 24 hours of becoming aware of the release and daily thereafter; and
 - b. undertake additional event-based water quality monitoring as per Table 1, within 24 hours of becoming aware of the release; and
 - c. as soon as possible but at least within 12 hours of becoming aware of the release, commence the pump out of collected water from Seepage Top Dam North and Seepage Top Dam South to the Seepage Pond and continue to do so to prevent any further release until such time as inflows to these dams cease or the monitoring required by Requirement 5.b. above demonstrates that the water does not contain contaminants in concentrations that could cause harm; and
 - d. initiate the investigation as detailed in Requirement 6 below, unless already commenced.

Section 2 - SQEP investigation and report

6. In the event of a release outlined in Requirement 5 above OR in the event of visible seepage and flow of water from the TSF embankment or within the catchments that report to Seepage Top Dam North and Seepage Top Dam South, you must commission the SQEP engaged in Requirement 1 above to undertake an inspection and notify the department in advance of the inspection date. The inspection must:
 - a. be undertaken within three (3) business days of you becoming aware of the release or seepage flows; and
 - b. assess the integrity and the condition of the TSF in its entirety (including but not limited to the TSF embankment, foundations, footprint area and the associated Seepage Pond and water transfer pathway; and
 - c. Assess the potential for, and identify any actual and/or potential on site seepage discharges and their sources, including the TSF embankment and the catchments below and adjacent to the TSF embankment; and
 - d. identify any matters of concern associated with the integrity and condition of the TSF, including the ability of the TSF to prevent discharges that are not in accordance with the design of the seepage collection system.
7. You must undertake Requirements 5 and/or 6 in the event of the triggers specified in Requirements 5 and 6 occurring during the period 18 April 2023 (date of issue) to 7 April 2024.
8. Within three (3) months of date of the SQEP inspection required by Requirement 6 being undertaken, you must submit to the department a written report prepared by the SQEP, and where relevant, the AQP(s), detailing the results of the inspection and subsequent assessment.
9. The report required by Requirement 8 above must include the following:
 - a. Details of any further investigations or works undertaken to identify the source(s) of seepage flows from the TSF embankment or within the catchments that report to Seepage Top Dam North and Seepage Top Dam South.
 - b. Details of all actual and potential contaminant migration / transfer pathways, for each contaminant source on the premises (including but not limited to the TSF, Seepage Top Dam North, Seepage Top Dam South and Seepage Pond) which has potential to impact water quality at monitoring points S4, S6, seepage top dam (N), seepage top dam (S), GM1 and GWE1.
 - c. Details of current control measures in place to monitor, intercept and manage contaminant migration from the sources identified (refer Requirement 9.b.). Assess the effectiveness of all current control measures and identify any matters of concern and associated recommendations.

- d. For the inspection conducted under Requirement 6, detail the investigation methodology and provide the complete results and all associated findings including but not limited to; assessment of the integrity and condition of the TSF in its entirety (including potential for and identification of seepage discharges), and clear identification of any matters of concern and associated recommendations.
- e. Details of all identified remedial options available to monitor and remedy all identified matters of concern (identified in Requirements 9.c. and 9.d.) which, to the extent practicable, prevents the future release of contaminants to surface water and groundwater from identified contaminant sources.
- f. An assessment of each of the remedial options identified in Requirement 9.e., including:
 - i) the expected performance of each remedial option in preventing further releases of contaminants to surface water and groundwater; and
 - ii) an estimated option implementation timeframe, which considers project staging (where appropriate) to minimise the release of contaminants over time; and
 - iii) the likely cost of implementing the remedial option(s); and
 - iv) detail any assumptions applied and any site-specific limitations and/or considerations that would prevent or materially impact the implementation of any particular remedial option.
- g. The selection of a recommended sustainable, long-term remedial option/s which if implemented will, to the extent practicable, prevent the release of contaminants to surface water and groundwater from identified contaminant sources.
- h. Where completion of the recommended remedial option is not reasonably achievable within 6 months of the report submission, the SQEP report must also assess and, where appropriate, recommend interim controls to limit the release of contaminants to surface water and groundwater.

Section 3 - Water Monitoring Program

- 10. From 2 May 2023 to 7 April 2024, you must undertake a monthly surface water and ground water monitoring program. Monthly surface water and ground water sampling must be undertaken in the first week of each month (i.e. on any date between the 1st and 7th day of each month). The program must include the following:
 - a. monthly surface water and ground water sampling at the monitoring points prescribed in Table 1;
 - b. analysis of surface water and ground water samples for the parameters prescribed in Table 1;
 - c. measurement of flow rate (L/sec) at monitoring points S1, S4 and S6;
 - d. use of the latest version of the department's guideline '*Using Monitoring Data to Assess Groundwater Quality and Potential Environmental Impacts*' (State of Queensland, 2021) to derive the trigger and limit concentrations;
 - e. for quality control purposes each monthly surface water monitoring event must include one (1) complete set of blind field duplicate samples, labelled 'X'; and one (1) complete set of blind field blank samples using water supplied by the testing laboratory, labelled 'XX'; and
 - f. the laboratory COC for each sampling event is to include a copy of email reports to be provided to the department to sunshinecoast.esr@des.qld.gov.au

Table 1 – Surface water and ground water monitoring points and parameters

Parameter	Units	Monitoring Points
pH	pH units	S1 – location as per EA monitoring
Electrical Conductivity	µS/cm	S4 – location as per EA monitoring
Total Dissolved Solids	mg/L	S6 – location as per EA monitoring
Major cations (Ca, Mg, Na, K)	mg/L	tailings storage facility (S16) – location as per EA monitoring
Major anions (Cl, SO ₄ , Alkalinity) and Fluoride	mg/L	seepage dam (S3) – location as per EA monitoring
Cyanide (Total and Weak Acid Dissociable)	mg/L	seepage top dam (N)
Ultra-trace ORC Metals Suite (Sb, As, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Mo, Ni, Se, Ag, Sn, Zn) – dissolved metals (field filtered)	µg/L	seepage top dam (S)
Aluminium – dissolved (field filtered)	µg/L	GM1 – groundwater - location as per EA monitoring
Arsenic – dissolved (field filtered)	µg/L	'X' (blind field duplicate)
Selenium – dissolved (field filtered)	µg/L	'XX' (blind field blank)
Ultra-trace ORC Metals Suite (Sb, As, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Mo, Ni, Se, Ag, Sn, Zn) – total metals	µg/L	
Aluminium – total metals	µg/L	

11. All surface water samples, groundwater samples and other samples required by Requirement 10 must be:
 - a. collected by an SQEP (or an AQP nominated by the SQEP under Requirement 1); and
 - b. analysed by a laboratory which holds National Association of Testing Authorities (NATA) accreditation for the analysis performed. All sample container(s), sample preservation and holding times are to be in accordance with laboratory requirements for the analysis performed, as demonstrated on the associated laboratory sample receipt notification (SRN).
12. Within 28 calendar days of receipt of sampling results of each sampling event undertaken in accordance with Requirement 10, you must provide a written monitoring report prepared by the SQEP or AQP to the department. Reporting must include:
 - a. a review of the surface water results against relevant guideline values (including *Australian and New Zealand Guidelines for Fresh and Marine Water Quality – Volume 2 Aquatic Ecosystems* and *Volume 3 Primary Industries* (ANZECC & ARMCANZ, 2000) and *Queensland Water Quality Guidelines 2009* (State of Queensland, 2013)) and background monitoring point S1;
 - b. a review of the ground water results against relevant trigger and limit contaminant concentrations for groundwater (refer Requirement 10.d.);
 - c. tabular or graphical representation and analysis of trends in available monitoring data; and
 - d. field records and measurements, including the groundwater standing water level (SWL) and Black Snake Creek flow rates.
13. All determinations of the quality of contaminants in waters, including quality control sampling, must be made in accordance with methods prescribed in the latest edition of the 'Monitoring and Sampling Manual *Environmental Protection (Water) Policy 2009*' (Department of Environment and Science, 2018) and carried out on samples that are representative.

Section 4- Definitions

'Appropriately qualified person' (AQP) is defined as a person who has professional qualifications, training, skills and experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis on performance relating to the subject matter using the relevant protocols, standards, methods or literature.

'Contaminant' is defined in section 11 of the *Environmental Protection Act 1994*. A contaminant can be — (a) a gas, liquid or solid; or (b) an odour; or (c) an organism (whether alive or dead), including a virus; or (d) energy, including noise, heat, radioactivity and electromagnetic radiation; or (e) a combination of contaminants

'Suitably qualified and experienced person' (SQEP) is defined in the guideline '*Structures which are dams or levees constructed as part of environmentally relevant activities ESR/2016/1934*' (des.qld.gov.au) as 'in relation to regulated structures means a person who is a RPEQ under the provisions of the *Professional Engineers Act 2002*, and has demonstrated competency and relevant experience:

- for regulated dams, an RPEQ who is a civil engineer with the required qualifications in dam safety and dam design.
- for regulated levees, an RPEQ who is a civil engineer with the required qualifications in the design of flood protection embankments.

Note: It is permissible that a suitably qualified and experienced person obtain subsidiary certification from an RPEQ who has demonstrated competence and relevant experience in either geomechanics, hydraulic design or engineering hydrology.'

'Tailings storage facility' (TSF) is defined as the DGR Global Ltd Shamrock mine site tailing storage facility and associated seepage dam; a dam containing hazardous waste in environmental authority EPML00928813.

'Waters' includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water in natural or artificial watercourses, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater runoff, and groundwater or any part thereof.

C. Obligations

If you propose to dispose of the place or business to which the EPO relates, you **must** advise the buyer of the existence of this EPO.

If you cease to carry out the activity to which this EPO relates, you **must** give written notice of ceasing to carry out the activity to the department within 10 days of ceasing the activity.

Take notice:

- the requirements of this order take effect immediately upon service of the order;
- failure to comply with this order is an offence under the Act;
- this order remains in force until further notice from the administering authority.

D. Penalty

It is important that you know the impact to you personally as an individual or as a corporation for not meeting your obligations.

Failure to comply with an EPO is an offence.

- The maximum penalty for a corporation for wilfully contravening an EPO is \$ 4,492,187.50.
- The maximum penalty for a corporation for contravening an EPO is \$3,234,375.

Failure to provide written notice to the buyer of the existence of the order is an offence.

- The maximum penalty for a corporation is \$35,937.50.

Notice Environmental Protection Order

Failure to provide written notice to the department within 10 business days of ceasing the activity to which an environmental protection order relates is an offence.

- The maximum penalty for a corporation is \$35,937.50.

Section 3 of the *Penalties and Sentences Regulation 2015* prescribes the monetary value of a penalty unit.

E. Reviews and appeals

The provisions regarding reviews of decisions and appeals are found in sections 519 to 539 of the Act.

Information about initiating an appeal in relation to this notice is contained within the attached Internal Reviews and Appeals Information Sheet (also available at www.qld.gov.au using the publication number ESR /2015/1742 as a search term)

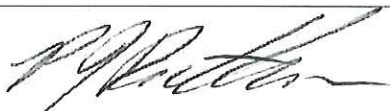
Once the original decision has been reviewed, a person who is dissatisfied with the review decision may be able to appeal against that decision to the relevant court within 22 business days after receiving notice of the review decision.

A person whose interests are or would be adversely affected by a decision of the department may be able to request a statement of reasons for a decision or a statutory order review under the *Judicial Review Act 1991*.

You may have other legal rights or obligations and should seek your own legal advice.

Pursuant to section 540 of the Act, the department is required to maintain a register of certain documents and information authorised under the Act. A copy of this document will be kept on the public register. The register is available for inspection by members of the public who are able take extracts, or copies of the documents from the register. Documents that are required to be kept on the register are published in their entirety, unless alteration is required by the Act. There is no general discretion allowing the department to withhold documents or information required to be kept on the public register. For more information on the department's public register, search 'public register' at www.qld.gov.au. For queries about privacy matters please email privacy@des.qld.gov.au or telephone 13 74 68.

Should you have any queries in relation to the notice, please contact Jacinta Thrower on 5459 6141 .



Signature

Paul Butcher
Manager (Compliance)
Delegate of the Chief Executive
Department of Environment and Science
Environmental Protection Act 1994

18 April 2023

Date

Enquiries: Jacinta Thrower

COMPLIANCE CENTRE: Sunshine Coast

Ph: (07) 5459 6132

Email: sunshinecoast.esr@des.qld.gov.au

Attachment A - Table 2 - Selected EA compliance monitoring points

Water	Monitoring Point	Site Description	Location (GDA94)	Comment
surface water	S1	Interception of Black Snake Creek and Webb Road, BLACK SNAKE. North of the TSF.	latitude -26.21452; longitude 152.27915	Off the premises - upstream background monitoring location.
surface water	S4	Non-perennial second order tributary of Black Snake Creek below the seepage dam on the western side of Webb Road, BLACK SNAKE.	latitude -26.21896; longitude 152.27424	On the premises - potentially impacted monitoring location.
surface water	S6	Black Snake Creek causeway on the northern side of Black Snake Road, BLACK SNAKE.	latitude -26.22258; longitude 152.26642	Off the premises - potentially impacted monitoring location.
surface water	S16	TSF. Immediately east of the seepage dam.	latitude -26.22061; longitude 152.27592	On the premises - potentially impacted monitoring location.
surface water	S3	Seepage dam. Immediately west of the TSF.	latitude -26.21841; longitude 152.2746	On the premises - potentially impacted monitoring location.
groundwater	GM1	Borehole located south of the seepage dam.	latitude -26.21853; longitude 152.27453	On the premises - potentially impacted monitoring location.

Attachment B - Table 3 - Surface water quality sampling results and comparison, AusRocks 4 May 2022.

Parameter	Guideline - Aquatic ecosystems ¹ (Freshwater) 95% species protection	Guideline - Primary Industries ²	Queensland Water Quality Guideline ³	S1	S4	S6
TDS (mg/L)	-	2000 ⁴	-	475	1260	1010
EC (µS/cm)	1500 ⁵		1200 (80 th percentile)	184	1680	1440
sulphate (mg/L)	-	1000 ⁶	-	<1	626	406 (historic maximum)
selenium - dissolved (µg/L)	11 (Se (IV)) ⁸	-	-	<10 ⁸	20 (historic maximum) ⁷	<10 ⁸
selenium - total (µg/L)	5 ⁸	20 ⁹	-	NS	NS	NS
arsenic - dissolved (µg/L)	13 (AsV) and 24 (AsIII) ¹⁰	-	<50 ¹¹	3 (equivalent historic maximum) ⁸	17 ⁸	3 ⁸
arsenic - total (µg/L)	-	500 ¹²		NS	NS	NS
total cyanide (µg/L)	7 ¹³	5 ¹⁴		NS	<4	NS

* NS – Not sampled

¹ Australian and New Zealand Guidelines for Fresh and Marine Water Quality – Volume 2 Aquatic Ecosystems – Rationale and Background Information (ANZECC & ARMCANZ, 2000).

² Australian and New Zealand Guidelines for Fresh and Marine Water Quality – Volume 3 Primary Industries – Rationale and Background Information (ANZECC & ARMCANZ, 2000).

³ Queensland Water Quality Guidelines 2009 (State of Queensland, 2013).

⁴ ANZECC & ARMCANZ, 2000. Volume 3, section 9.3.4.5 The conservative value has been applied.

⁵ ANZECC & ARMCANZ, 2000 Volume 3, section 8.2.3.3 Hart et al. (1990, 1991).

⁶ ANZECC & ARMCANZ, 2000 Volume 3, section 9.3.4.4.

⁷ speciation required

⁸ ANZECC & ARMCANZ, 2000. Volume 2, section 8.3.7.1

⁹ ANZECC & ARMCANZ, 2000. Volume 3, section 9.3.5.16.

¹⁰ ANZECC & ARMCANZ, 2000. Volume 2, section 8.3.7.1 The conservative value has been applied.

¹¹ State of Queensland, 2013. Table 7.1.1

¹² ANZECC & ARMCANZ, 2000. Volume 3, section 9.3.5.2 The conservative value has been applied.

¹³ ANZECC & ARMCANZ, 2000. Volume 2, section 8.3.7.2.

¹⁴ ANZECC & ARMCANZ, 2000. Volume 3, section 9.4.2.2

Attachment C - Aerial image showing the location of the TSF embankment, Seepage Top Dam North, Seepage Top Dam South, Seepage Pond (S3) and monitoring points (AusRocks, 17 June 2022).

