

Notice

Water Act 2000

Amendment of underground water impact report

This statutory notice is issued by the chief executive¹ pursuant to section 391 of the Water Act 2000, to advise you of an amendment to your approved underground water impact report

Ravenswood Gold Pty Ltd
Macrossan Street
Ravenswood QLD 4816

Your reference: Ravenswood Gold UWIR

Our reference: 101/0008140

Attention: Eloise Setch,

Dear Sir/Madam

Re: Minor or agreed amendment of underground water impact report

In accordance with section 391 of the *Water Act 2000* (Water Act), the chief executive has amended your approved underground water impact report as follows:

- The amendment is only to update a resource tenure holders' details.
- The amendment is only to make another change that is not a change of substance.

The following amendments have been made to the report:

- The responsible entity has been amended to Ravenswood Gold Pty Ltd, the resource tenure holder;
and
- Condition 1 of the underground water impact report has been amended.

The amended report takes effect on 24 February 2022.

Please be advised that the chief executive has published the amended report on the department's website.

¹ The Department of Environment and Science is the chief executive for Chapter 3 of the *Water Act 2000*.

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Human rights

A human rights assessment was carried out in relation to this decision/action and it was determined that no human rights are reasonably expected to be impacted.

If you have any questions regarding this notice, please contact Rhiannon Stewart on the telephone number listed below.

Yours sincerely,



24 February 2022

Signature

Date

Clancy Mackaway
Manager
Delegate of the chief executive
Chapter 3 of the *Water Act 2000*
Department of Environment and Science

Enquiries:
Rhiannon Stewart
Energy and Extractive Resources
Telephone: (07) 3330 5605

Attachments

Attachment A - Conditions of approval

Attachment A- Conditions of approval

Annual Review

- (1) The **responsible entity** must submit to the **chief executive** a summary of the annual review required under section 376(e)(ii) of the Water Act 2000 for the **annual review period**, by the 28 February each year, or another date agreed to in writing by the chief executive. The annual review must provide an analysis and a statement of whether there has been a material change in the information or predictions used to determine the IAA.

Monitoring

- (2) All monitoring required of the responsible entity under the **UWIR** must be undertaken by a **suitably qualified person**.
- (3) All laboratory analyses and tests of monitoring undertaken under the UWIR must be carried out by a laboratory that has **NATA** accreditation for such analyses and tests.
- (4) Notwithstanding condition (3), where there are no laboratories that have NATA accreditation for a specific analyte or substance, then duplicate samples must be sent to at least two separate laboratories for independent testing or evaluation.
- (5) The methods of groundwater sampling required by the UWIR must comply with the latest edition of the *Queensland Monitoring and Sampling Manual, AS/NZS 5667:11 1998 Water Sampling Guidelines – Part 11 Guidance on sampling groundwater*, and the Australian Government's *Groundwater Sampling and Analysis – A Field Guide* (2009:27 GeoCat #6890.1) as relevant as may change from time to time.
- (6) Groundwater quality must be monitored at the locations and frequencies stated in Table 1 – Groundwater monitoring locations and frequency.

Table 1 – Groundwater monitoring locations and frequency

Monitoring Point	Location (GDA94 – Zone55)		Top of Casing RL (m) ^[6]	Screened interval RL (m)	Monitoring Frequency
	Easting	Northing			
Aquifer description: Ravenswood Granites and Volcanics					
Compliance bores					
MTW_OB012	481813	7784245	327.15	4 – 37	Every 3 months
MTW_OB014	482805	7784864	302.50	25 - 37	
NOL_OB129	490178	7772986	241.90	18 - 30	
NOL_OB131	488104	7771438	227.95	14 - 23	
NOL_OB132	487967	7771978	228.15	14 - 31	
NOL_OB133	488215	7773403	242.95	15 - 37	
SAR_OB089	487624	7776813	241.55	5 – 8.3	
SAR_OB090	487627	7776817	241.55	20 – 23.2	
SAR_OB100	487969	7775688	256.15	18 - 30	
SAR_OB109	491081	7774720	247.60	9 - 30	
SAR_OB108	491852	7775399	256.95	9 - 37	
Operational bores					
MTW_OB002	482841	7784309	373.90	2 - 25	Every 3 months

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Monitoring Point	Location (GDA94 – Zone55)		Top of Casing RL (m) ^[6]	Screened interval RL (m)	Monitoring Frequency
	Easting	Northing			
Aquifer description: Ravenswood Granites and Volcanics					
MTW_OB005	482036	7784061	331.40	15.6–30.5	
MTW_OB015	482665	7783833	319.70	18-30	
SAR_OB099	490965	7775110	247.50	35 - 50	
SC_OB012	492102	7777001	265.10	1.8-21.1	
SC_OB025	491874	7777772	283.05	16 - 43	
SAR_OB088	487883	7776554	245.10	15-18.4	
Interpretation bores					
NOL_OB100	489533	7774004	249.25	19 - 25	Every 3 months
NOL_OB096	488670	7772630	230.90	12-18	
NOL_OB099	488964	7774014	248.35	10 - 16	
NOL_OB046A	488333	7774374	250.90	14 - 25	
NOL_OB082A	490197	7774885	247.57	44 - 50	
NOL_OB124	488672	7772628	230.95	29 - 50	
SAR_OB069	490879	7774908	244.65	6 - 14	
NOL_OB086	491392	7775896	253.40	4 - 6	
NOL_OB126	490605	7775198	258.40	9 - 30	
NOL_OB107	489641	7775451	256.30	5 - 13	
NOL_OB092	489169	7775716	266.30	2 - 9	
NOL_OB093	489169	7775710	266.35	12 - 50	
SAR_OB113	488286	7775581	262.70	19 - 25	
NOL_OB108	489008	7776006	277.90	19 - 22	
SAR_OB119	489005	7776478	268.20	20 - 26	
SAR_OB092	487767	7777005	247.20	22 - 25	
SAR_OB093	488132	7777268	251.05	6.3-9.3	
SAR_OB094	488131	7777273	250.75	22.3-25.3	
SAR_OB080	488531	7777499	248.60	2 - 4	
SAR_OB048	488363	7777973	263.85	TBA	
SAR_OB057A	489302	7777624	259.00	10 - 27	
SAR_OB066	489475	7778287	258.00	4 - 12	
SAR_OB067	489472	7778285	257.95	18 - 43	
SAR_OB075	490579	7778146	263.80	3.3-16	
SC_OB014A	491755	7777496	292.85	25-30.4	
SC_OB004A	491957	7777174	267.70	7.3-25.8	
SC_OB037	492654	7777252	263.35	7 - 37	
SC_OB031	492650	7776500	260.30	10 - 18	

- (7) Groundwater quality must be monitored for all quality characteristics stated in Table 2 – Groundwater quality monitoring characteristics.

Table 2 – Groundwater quality monitoring characteristics

Characteristics (mg/L)	
pH (pH units)	Free Cyanide
Electrical Conductivity ($\mu\text{S}/\text{cm}$)	Manganese (Total and Dissolved)
Aluminium (Dissolved)	Molybdenum (Total and Dissolved)
Arsenic (Total and Dissolved)	Nitrate as N (NO_3)
Cadmium (Total and Dissolved)	Sulfate as SO_4
Cobalt (Total and Dissolved)	Uranium (Total and Dissolved)
Copper (Total and Dissolved)	Zinc (Total and Dissolved)

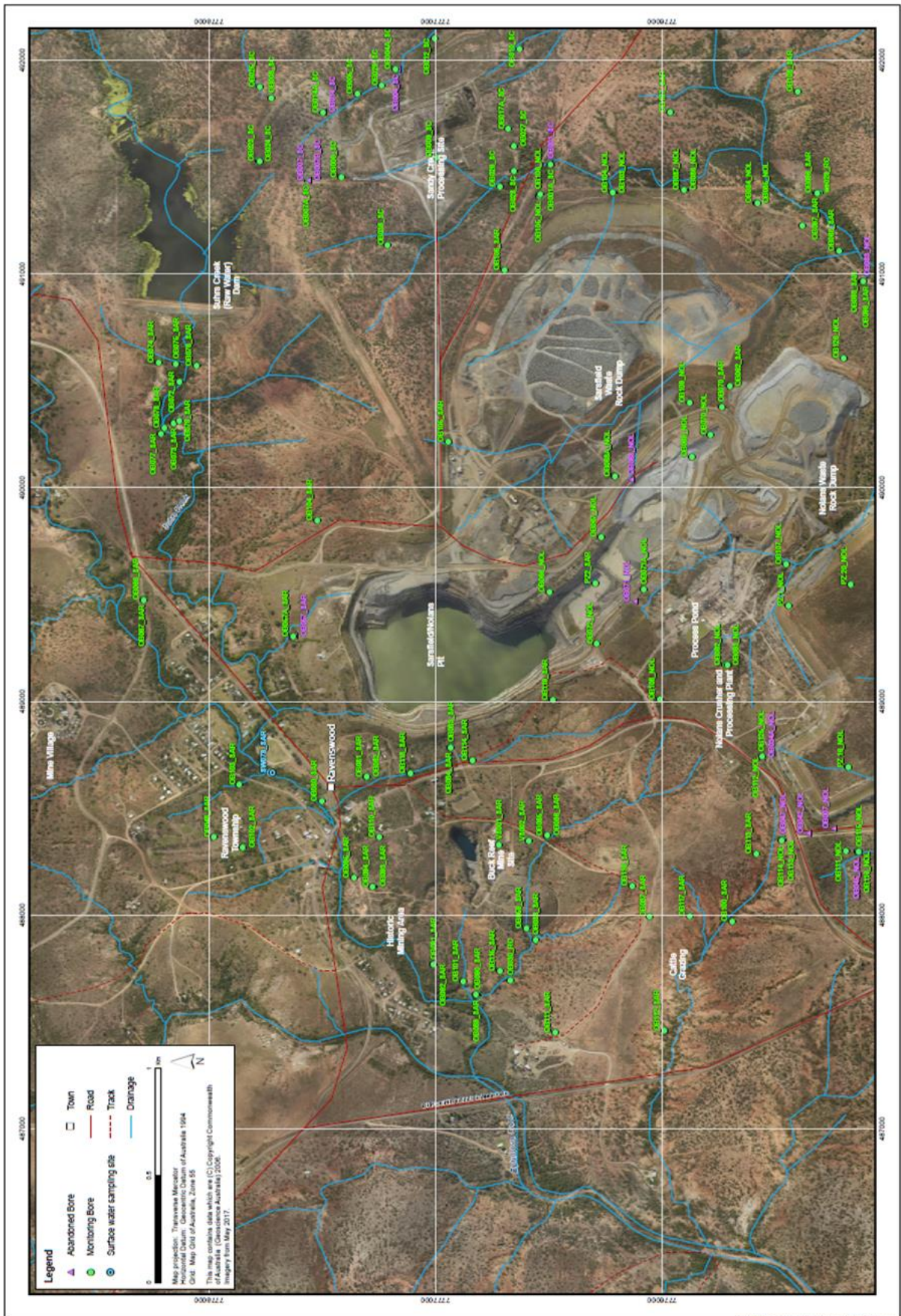
- (8) Groundwater levels must be monitored at a frequency of every three (3) months at the locations listed in Table 3 – Groundwater depth monitoring bores. These bores are also shown in Figure 1 – Buck Reef Mine Location.

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Table 3 – Groundwater depth monitoring bores

Bore	Easting	Northing	Casing Elevation mAHD	Top of Screen mBGL	Base of Screen mBGL	Logged Top of Fresh Rock mBGL	Interpreted Screened Formation	Distance from BRW pt m	Tenure	Location and Rationale
OB100_SAR	487960.7	7775689	256.153	18	30	11	TOFR aquifer	1202	ML10170	Outside IAA to south
OB117_SAR	487993.7	7775877	259.167	21	27	7	TOFR aquifer	1015	ML 100172	Outside IAA to south
OB087_SAR	487992.8	7776051	261.511	32	35	8.5	TOFR aquifer	852	ML100172	Outside IAA to south
OB116_SAR	488135.7	7776130	262.758	18	24	13	TOFR aquifer	733	ML 100172	Outside IAA to south
OB112_SAR	487458	7775990	247.213	18	25	15	TOFR aquifer	1204	EPM 15099	Outside IAA to west
OB111_SAR	487450	7776468	254.003	19	25	11	TOFR aquifer	937	EPM 15099	Outside IAA to west
OB088_SAR	487883.7	7776554	245.102	15	18.4	3	TOFR aquifer	513	EPM 15099	Outside IAA to west
OB059_SAR	487937.8	7776605	248.622	0.01	18	NA	TOFR aquifer	446	ML 100172	Outside IAA to west
OB030_RC	487694.1	7776668	243.533	NA	NA	NA	TOFR aquifer	639	EPM 15099	Outside IAA to west
OB115_SAR	487737	7776711	244.23	9	17	10	TOFR aquifer	587	EPM 15099	Outside IAA to west
OB089_SAR	487624.4	7776814	241.537	5	8.3	8.3	TOFR aquifer	665	EPM 15099	Outside IAA to west
OB090_SAR	487628	7776817	241.53	20	23.2	8.3	TOFR aquifer	682	EPM 15099	Outside IAA to west
OB101_SAR	487689	7776877	243.465	10	37	10	TOFR aquifer	621	EPM 15099	Outside IAA to west
OB091_SAR	487760.6	7777008	247.193	5	8	8	TOFR aquifer	565	EPM 15099	Outside IAA to west
OB092_SAR	487767.6	7777005	247.218	22	25	8	TOFR aquifer	565	EPM 15099	Outside IAA to east
OB119_SAR	489005	7776478	268.213	20	26	12	TOFR aquifer	785	ML 1574	Outside IAA to east
OB114_SAR	488723.7	7776833	257.98	12	24	10	TOFR aquifer	415	ML 1380	Inside IAA
OB083_SAR	488786.4	7776933	260.016	3.5	4.5	4.5	TOFR aquifer	486	ML 1380	Inside IAA
OB084_SAR	488782.7	7776932	259.861	17	20	4.5	TOFR aquifer	482	ML 1380	Inside IAA
OB118_SAR	488661.9	7777107	253.785	10	25	16	TOFR aquifer	441	ML 1380	Inside IAA
OB081_SAR	488644.7	7777303	252.119	6	9	9	TOFR aquifer	571	EPM 15099	Outside IAA to north
OB082_SAR	488646.7	7777299	252.193	21.5	24.5	9	TOFR aquifer	568	EPM 15099	Outside IAA to north
OB110_SAR	488365	7777248	257.307	19	25	12	TOFR aquifer	410	ML 1380	Inside IAA
OB093_SAR	488132.4	7777269	251.096	6.3	9.3	9.3	TOFR aquifer	482	EPM 15099	Inside IAA
OB094_SAR	488131.5	7777274	250.725	22.3	25.3	9.3	TOFR aquifer	467	EPM 15099	Inside IAA
OB095_SAR	488173.4	7777356	248.113	4	6	NA	TOFR aquifer	532	EPM 15099	Outside IAA to north
OB080_SAR	488531.7	7777499	248.583	2	4	4	TOFR aquifer	694	EPM 15099	Outside IAA to north
VS001_SAR	488338	7776717	263.787	NA	NA	NA	Deep tonalite	128	ML 1380	Inside IAA
VS002_SAR	488340	7776667	255.387	NA	NA	NA	Deep tonalite	277	ML 100172	Inside IAA
OB085_SAR	488370.7	7776506	255.888	5.5	8.5	8.5	TOFR aquifer	341	ML100172	Inside IAA
OB086_SAR	488372.9	7776504	255.626	21.3	24.3	8.5	TOFR aquifer	344	ML 100172	Inside IAA
55_MONTAGNE_01	486962	7776820	NA	NA	NA	NA	TOFR aquifer	1365	EPM 15099	Outside IAA to west
GRIFFIN_01	489042	7777780	NA	NA	NA	NA	TOFR aquifer	1190	EPM 15099	Outside IAA to northeast
SHOWGRD_01	488711	7777698	NA	NA	NA	NA	TOFR aquifer	946	EPM 15099	Outside IAA to northeast
IMP_HOT_01	488523	7777455	NA	NA	NA	NA	TOFR aquifer	649	EPM 15099	Outside IAA to north
POOL_01	488874	7777839	NA	NA	NA	NA	TOFR aquifer	1146	EPM 15099	Outside IAA to northeast
PARK_01	488419	7777402	NA	NA	NA	NA	TOFR aquifer	571	EPM 15099	Outside IAA to north
IMP_HOT_02	488499	7777447	NA	NA	NA	NA	TOFR aquifer	634	EPM 15099	Outside IAA to north
69_RAVEN_01	488805	7778064	NA	NA	NA	NA	TOFR aquifer	1337	EPM 15099	Outside IAA to northeast
AINSWORTH_01	489097	7777674	NA	NA	NA	NA	TOFR aquifer	1146	EPM 15099	Outside IAA to northeast
RAIL_HOT_01	488220	7777520	NA	NA	NA	NA	TOFR aquifer	664	EPM 15099	Outside IAA to north
72_RAVEN_01	488911	7778060	NA	NA	NA	NA	TOFR aquifer	1369	EPM 15099	Outside IAA to northeast
66_RAVEN_01	488866	7778029	NA	NA	NA	NA	TOFR aquifer	1311	EPM 15099	Outside IAA to northeast
68_RAVEN_01	488866	7778033	NA	NA	NA	NA	TOFR aquifer	1323	EPM 15099	Outside IAA to northeast
PRATCHET_01	486680	7775960	NA	NA	NA	NA	TOFR aquifer	1852	EPM 15099	Outside IAA to west
67_RAVEN_01	488802	7778050	NA	NA	NA	NA	TOFR aquifer	1305	EPM 15099	Outside IAA to northeast
16_ELLIOT	488637	7777297	NA	NA	NA	NA	TOFR aquifer	561	EPM 15099	Outside IAA to northeast
109_DEIGHTON_01	489012	7777868	NA	NA	NA	NA	TOFR aquifer	1244	EPM 15099	Outside IAA to northeast
SCHOOL_01	488647	7776985	NA	NA	NA	NA	TOFR aquifer	367	ML 100147	Inside IAA
LOOP_01	488650	7776918	NA	NA	NA	NA	TOFR aquifer	349	ML 1380	Inside IAA
23_JOHN_01	488790	7777286	NA	NA	NA	NA	TOFR aquifer	655	EPM 15099	Outside IAA to northeast
92_DEIGHTON_01	488903	7777681	NA	NA	NA	NA	TOFR aquifer	1028	EPM 15099	Outside IAA to northeast

Figure 1 – Buck Reef Mine Location



DEFINITIONS

Anniversary day means each anniversary of the day the first UWIR took effect – 24 November 2020.

Annual review period means the 12-month period from 24 November of each calendar year through to the 23 November the following calendar year.

Chief executive means the Director-General of the department responsible for administering Chapter 3 of the *Water Act 2000* or the persons delegated the powers of the chief executive as stated in the *Water Act* (EHP-Chief Executive) Delegation (No. 1) 2017 or subsequent versions.

NATA accreditation means accreditation by the National Association of Testing Authorities Australia.

Responsible entity means Ravenswood Gold Pty Ltd in accordance with section 368 of the *Water Act 2000*.

Suitably qualified person means a person who has professional qualifications, training, skills or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis to performance relative to the subject matter using the relevant protocols, standards, methods or literature.

UWIR means the underground water impact report prepared by Carpentaria Gold Pty for Buck Reef West Pit dated June 2020.