Permit

Environmental Protection Act 1994

Environmental authority EA0001593

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

Environmental authority number: EA0001593

Environmental authority takes effect on 04 December 2018

Environmental authority holder(s)

Name(s)	Registered address
MAROON GOLD PTY LTD	Level 43 Central Park, 152-158 St George Tce PERTH WA 6000 Australia

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Resource Activity, Ancillary 31 - Mineral processing, 2: Processing, in a year, the following quantities of mineral products, other than coke, (b) more than 100,000t	ML1408
Resource Activity, Ancillary 31 - Mineral processing, 2: Processing, in a year, the following quantities of mineral products, other than coke, (b) more than 100,000t	ML1548
Resource Activity, Ancillary 31 - Mineral processing, 2: Processing, in a year, the following quantities of mineral products, other than coke, (b) more than 100,000t	ML1735
Resource Activity, Ancillary 31 - Mineral processing, 2: Processing, in a year, the following quantities of mineral products, other than coke, (b) more than 100,000t	ML1407
Resource Activity, Ancillary 31 - Mineral processing, 2: Processing, in a year, the following quantities of mineral products, other than coke, (b) more than 100,000t	ML1433

ABN 46 640 294 485

Queensland Government

Environmentally relevant activity/activities	Location(s)
Resource Activity, Ancillary 31 - Mineral processing, 2: Processing, in a year, the following quantities of mineral products, other than coke, (b) more than 100,000t	ML1409
Resource Activity, Ancillary 31 - Mineral processing, 2: Processing, in a year, the following quantities of mineral products, other than coke, (b) more than 100,000t	ML1432
Resource Activity, Ancillary 31 - Mineral processing, 2: Processing, in a year, the following quantities of mineral products, other than coke, (b) more than 100,000t	ML1431
Resource Activity, Ancillary 60 - Waste disposal, 1: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1) (a), (d) more than 200,000t	ML1548
Resource Activity, Ancillary 60 - Waste disposal, 1: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1) (a), (d) more than 200,000t	ML1735
Resource Activity, Ancillary 60 - Waste disposal, 1: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1) (a), (d) more than 200,000t	ML1407
Resource Activity, Ancillary 60 - Waste disposal, 1: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1) (a), (d) more than 200,000t	ML1432
Resource Activity, Schedule 2A, 16: Mining gold ore	ML1408
Resource Activity, Schedule 2A, 16: Mining gold ore	ML1548
Resource Activity, Schedule 2A, 16: Mining gold ore	ML1428
Resource Activity, Schedule 2A, 16: Mining gold ore	ML1735
Resource Activity, Schedule 2A, 16: Mining gold ore	ML1407
Resource Activity, Schedule 2A, 16: Mining gold ore	ML1433
Resource Activity, Schedule 2A, 16: Mining gold ore	ML1409
Resource Activity, Schedule 2A, 16: Mining gold ore	ML1432

Environmentally relevant activity/activities	Location(s)
Resource Activity, Schedule 2A, 16: Mining gold ore	ML1429
Resource Activity, Schedule 2A, 16: Mining gold ore	ML1387
Resource Activity, Schedule 2A, 16: Mining gold ore	ML10285
Resource Activity, Schedule 2A, 16: Mining gold ore	ML1431
Resource Activity, Ancillary 60 - Waste disposal, 1: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1) (a), (a) less than 50,000t	ML1548
Resource Activity, Ancillary 60 - Waste disposal, 1: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1) (a), (a) less than 50,000t	ML1735
Resource Activity, Ancillary 60 - Waste disposal, 1: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1) (a), (a) less than 50,000t	ML1407
Resource Activity, Ancillary 60 - Waste disposal, 1: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1) (a), (a) less than 50,000t	ML1432

Additional information for applicants

Environmentally relevant activities

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

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

It is a requirement of the EP Act that an owner or occupier of contaminated land give written notice to the administering authority if they become aware of the following:

- the happening of an event involving a hazardous contaminant on the contaminated land (notice must be given within 24 hours); or
- a change in the condition of the contaminated land (notice must be given within 24 hours); or
- a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the contaminated land (notice must be given within 20 business days);

that is causing, or is reasonably likely to cause, serious or material environmental harm.

For further information, including the form for giving written notice, refer to the Queensland Government website www.qld.gov.au, using the search term 'duty to notify'.

Take effect

Please note that, in accordance with section 200 of the EP Act, an EA has effect:

a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority-on the nominated day; or
b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or
c) otherwise-on the day the authority is issued.

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the Sustainable Planning Act 2009 or an SDA Approval under the State Development and Public Works Organisation Act 1971), this EA will not take effect until the additional authorisation has taken effect.

If this EA takes effect when the additional authorisation takes effect, you must provide the administering authority written notice within 5 business days of receiving notification of the related additional authorisation taking effect.

If you have incorrectly claimed that an additional authorisation is not required, carrying out the ERA without the additional authorisation is not legal and could result in your prosecution for providing false or misleading information or operating without a valid environmental authority.

Filiz Tansley
Department of Environment and Science
Delegate of the administering authority
Environmental Protection Act 1994

Date issued: 04 December 2018

Enquiries:
Minerals Business Centre
Department of Environment and Science
Phone: 07 4222 5352
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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)

Legislative Requirements and Conditions of Environmental Authority

This **environmental authority** incorporates the following schedules:

- Schedule A - General
- Schedule B - Air
- Schedule C - Water
- Schedule D - Noise and Vibration
- Schedule E - Waste
- Schedule F - Land
- Schedule G - Community
- Schedule H - Definitions
- Schedule I - Maps/Plans

Schedule A – General

Financial Assurance

(A1-1) Provide a financial assurance in the amount and form required by the administering authority prior to the commencement of activities proposed under this environmental authority.

NOTE: The calculation of financial assurance for condition (A1-1) must be in accordance with Guideline 17 and may include a performance discount. The amount is defined as the maximum total rehabilitation cost for complete rehabilitation of all disturbed areas, which may vary on an annual basis due to progressive rehabilitation. The amount required for the financial assurance must be the highest Total Rehabilitation Cost calculated for any year of the Plan of Operations and calculated using the formula: (Financial Assurance = Highest Total Annual Rehabilitation Cost x Percentage Required)

(A1-2) The financial assurance is to remain in force until the administering authority is satisfied that no claim on the assurance is likely.

NOTE: Where progressive rehabilitation is completed and acceptable to the administering authority, progressive reductions to the amount of financial assurance will be applicable where rehabilitation has been completed in accordance with the acceptance criteria defined within this environmental authority.

Maintenance of Measures, Plant and Equipment

(A2-1) The holder must:

a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority; and

b) maintain such measures, plant and equipment in a proper condition; and

c) operate such measures, plant and equipment in a proper manner.

Monitoring

(A3-1) Record, compile and keep for a minimum of five years all monitoring results required by this environmental authority and make available for inspection all or any of these records upon request by the administering authority.

(A3-2) Where monitoring is a requirement of this environmental authority, ensure that a competent person(s) conducts all monitoring.

Storage and Handling of Flammable and Combustible Liquids

(A4-1) Spillage of all flammable and combustible liquids must be contained within an on-site containment system and controlled in a manner that prevents environmental harm (other than trivial harm) and maintained in accordance with Section 5.9 of AS 1940 - Storage and Handling of Flammable and Combustible Liquids of 1993.

Exception Reporting

(A5-1) The administering authority must be notified by telephone or facsimile as soon as practicable after becoming aware of:

a) any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this environmental authority; or;

b) any monitoring result that indicates an exceedance of any limit specified in this environmental authority.

Exploration

(A6-1) All exploration activities carried out on the mining leases must comply with each of the Standard Environmental Conditions contained in the most recent version of the Code of Environmental Compliance for exploration and mineral development projects.

Definitions

(A7-1) Words and phrases used throughout this EA are defined in Schedule H — Definitions. Where a definition for a term used in this EA is sought and the term is not defined within this EA, the definitions in the Environmental Protection Act 1994, its Regulations and Environmental Protection Policies must be used.

END OF CONDITIONS FOR SCHEDULE A

Schedule B – Air

Dust nuisance

(B1-1) Subject to Conditions (B1-2) and (B1-3) the release of dust or particulate matter or both resulting from the mining activity must not cause an environmental nuisance, at any sensitive place.

(B1-2) When requested by the administering authority, dust and particulate monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of

the authorised officer) of environmental nuisance at any sensitive place, and the results must be notified within 14 days to the administering authority following completion of monitoring.

(B1-3) If the environmental authority holder can provide evidence through monitoring that the following limits are not being exceeded then the holder is not in breach of (B1-1):

a) dust deposition of 120 milligrams per square metre per day, averaged over one month, when monitored in accordance with AS 3580.10.1 Methods for sampling and analysis of ambient air - Determination of particulates - Deposited matter - Gravimetric method of 1991; and

b) a concentration of particulate matter with an aerodynamic diameter of less than 10 micrometre (pm) (PM_{10}) suspended in the atmosphere of 150 micrograms per cubic metre over a 24 hour averaging time, at a sensitive place downwind of the operational land, when monitored in accordance with:

- particulate matter - Determination of suspended particulate PM10 high-volume sampler with size-selective inlet - Gravimetric method, when monitored in accordance with AS 3580.9.6 Methods for sampling and analysis of ambient air - Determination of suspended particulate matter - PM (sub) 10 high volume sampler with size-selective inlet - Gravimetric method of 1990; or
- any alternative method of sampling PM_{10}, which may be permitted by the 'Air Quality Sampling Manual' as published from time to time by the administering authority.

NOTE: You must propose which monitoring method is appropriate in accordance with condition (B1-3) (a) or (b) or both.

(B1-4) If monitoring indicates exceedence of the relevant limits in Condition (B1-3), then the environmental authority holder must:

a) address the complaint including the use of appropriate dispute resolution if required; or

b) immediately implement dust abatement measures so that emissions of dust from the activity do not result in further environmental nuisance.

Odour nuisance

(B2-1) Subject to condition (B2-2), the release of noxious or offensive odour(s) or any other noxious or offensive airborne contaminant(s) resulting from the mining activity must not cause an environmental nuisance at any sensitive place.

(B2-2) When requested by the administering authority, odour monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive place, and the results must be notified within 14 days to the administering authority following completion of monitoring.

(B2-3) If monitoring indicates Condition (B2-1) is not being met then the environmental authority holder must:

a) address the complaint including the use of appropriate dispute resolution if required; or

b) immediately implement odour abatement measures so that emissions of odour from the activity do not result in further environmental nuisance.

END OF CONDITIONS FOR SCHEDULE B

Schedule C – Water

Release to waters

(C1-1) Receiving waters affected by the release of process water or storm water contaminated by the mining activities or both must be monitored at the locations and frequencies defined in Schedule C – Schedule C: Table *1* and Schedule I – Maps 1 & 3 and comply with the contaminant limits defined in Schedule C –Schedule C: Table *2*.

Schedule C: Table 1 – Receiving water monitoring locations and frequency

Monitoring Point	Easting (AMG)	Northing (AMG)	Monitoring Frequency
RE1 (Blackjack)	0418401	7770816	Annually[1]
RE2 (Blackjack)	0418281	7771083	Annually[1]
RE3 (Blackjack)	0418111	7771505	Annually[1]
RE4 (Blackjack)	0417934	7772094	Annually[1]
RE5 (Warrior)	0425247	7775708	Annually[1]

NOTE: This does not apply to tailing dams.
[1]At least one sampling event per sampling location must be undertaken that represents the first rainfall of the wet season and equates to the 'first flush' of the licensed sites.

Schedule C: Table 2 – Receiving water contaminant limits

Parameter	Units	Limit Type	Contaminant Limits
Total Dissolved Solids	mg/L	Maximum	4000[1]
pH	pH units	Acceptable range	6.5 – 9.0
Sulphate	mg/L	Maximum	1000[1]
Fluoride	mg/L	Maximum	2[1]
Cadmium	mg/L	Maximum	0.01[1]
Mercury	mg/L	Maximum	0.002[1]
Arsenic	mg/L	Maximum	0.5[1]
Cyanide	mg/L	Maximum	1
Copper	mg/L	Maximum	1[1]

NOTE: This does not apply to tailing dams.
[1] These limits are derived from ANZECC 2000 water quality guidelines for stock.

(C1-2) End of pipe release limits for process water and storm water contaminated by mining activities must be monitored at the locations and frequencies defined in Schedule C - Schedule C: Table *3* and Schedule I - Maps 1, 2 & 4 and comply with the contaminant limits defined in Schedule C - Schedule C: Table *4*.

Schedule C: Table 3 – End of pipe monitoring locations and frequency

Monitoring Point	Easting (AMG)	Northing (AMG)	Monitoring Frequency
EP1 (Blackjack)	0418345	7771730	Before discharge to any surface waters
EP2 (Blackjack)	0418765	7773356	Before discharge to any surface waters
EP3 (Blackjack)	0418428	7774919	Before discharge to any surface waters
EP4 (Ch. Towers)	0424218	7778624	Before discharge to any surface waters
EP5 (Ch. Towers)	0424213	7779003	Before discharge to any surface waters

NOTE: This does not apply to tailing dams.

Schedule C: Table 4 – End of pipe contaminant release limits

Monitoring Point	Parameter	Units	Limit Type	Contaminant Limits
Blackjack EP1, EP2, EP3 Charters Towers EP4, EP5	pH	pH units	Acceptable range	6.5 – 9.0
	Total Dissolved Solids	mg/L	Maximum	4000
	Sulphate	mg/L	Maximum	1000
	Fluoride	mg/L	Maximum	2
	Copper	mg/L	Maximum	1
	Arsenic	mg/L	Maximum	0.5
	Cadimium	mg/L	Maximum	0.01

NOTE: This does not apply to tailing dams.

Dams containing hazardous waste

(C2-1) In the event that the water quality within any dam containing hazardous waste is likely to cause harm to fauna accessing the dam, measures must be implemented to minimise access by fauna to the dam.

(C2-2) The authority holder must mark the mandatory reporting level on the inside of the spillway of all dams containing hazardous waste in accordance with the "Site Water Management Technical Guideline for the Environmental Management of Exploration and Mining in Queensland 1995".

(C2-3) The environmental authority holder must notify the administering authority when the level in the dam containing hazardous waste reaches the mandatory reporting level required in accordance with the "Site Water Management Technical Guideline for the Environmental Management of Exploration and Mining in Queensland 1995".

Stream sediment contaminant levels

(C3-1) All reasonable and practicable erosion protection measures and sediment control measures must be implemented and maintained to minimise erosion and the release of sediment.

(C3-2) The bed of the receiving waters, affected by the release of process water and storm water contaminated by the mining activities must be monitored at the locations and frequencies defined in Schedule C – Table 6 and Schedule I — Maps 1 & 3.

Schedule C: Table 6 – Receiving stream sediment monitoring locations and frequency

Monitoring Point	Easting (AMG)	Northing (AMG)	Monitoring Frequency
SS1 (Blackjack)	0418401	7770816	Annually[1]
SS2 (Blackjack)	0418111	7771505	Annually[1]
SS3 (Blackjack)	0417934	7772094	Annually[1]
SS4 (Warrior)	0425247	7775708	Annually[1]

[1] Monitoring must be undertaken after the wet season.

(C3-3) Complete an investigation to determine existing stream sediment contaminant levels at monitoring points located in Schedule C — Table 6 in order to establish a representative dataset from which appropriate trigger values and limits can be derived.

(C3-4) All stream sediment sampling must be undertaken in accordance with AS 5667.12 Guidance on Sampling of Bottom Sediments of 1998.

Groundwater

(C4-1) Groundwater, affected by the mining activities must be monitored at the locations and frequencies defined in Schedule C – Schedule C: Table 7 and Schedule I — Maps 1 & 3.

Schedule C: Table 7 – Groundwater monitoring locations and frequency

Monitoring Point	Easting (AMG)	Northing (AMG)	Surface RL (m)	Monitoring Frequency
GW1 (Blackjack)	0418115	7771501	359	Biannually[1]
GW2 (Blackjack)	0418255	7771062	364	Biannually[1]
GW3 (Blackjack)	0418240	7771050	365	Biannually[1]
GW4 (Blackjack)	0418396	7770833	356	Biannually[1]
GW5 (Blackjack)	0418634	7771412	341	Biannually[1]
GW6 (Warrior)	0425395	7775568	946	Biannually[1]

[1] Sampling events must be at least 5 months apart, and no more than 7 months apart, so as to reflect wet and dry season conditions.

Schedule C: Table 8 – Groundwater contaminant trigger levels

Parameter	Units	Limit Type	Contaminant Trigger Levels
pH	pH units	Acceptable range	6.5 – 9.0
Total Dissolved Solids	mg/L	Maximum	4000
Sulphate	mg/L	Maximum	1000
Fluoride	mg/L	Maximum	4
Lead	mg/L	Maximum	0.1
Mercury	mg/L	Maximum	0.002
Arsenic	mg/L	Maximum	0.5
Cyanide	mg/L	Maximum	1
Molybdenum	mg/L	Maximum	0.15
Copper	mg/L	Maximum	1
Cadmium	mg/L	Maximum	0.01

(C4-2) Subject to Condition (C4-1), if the groundwater contaminant trigger levels defined in Schedule C – Table 8 are exceeded then the environmental authority holder must complete an investigation into the potential for environmental harm and notify the administering authority within 3 months of receiving the analysis results.

(C4-3) The method of sampling of groundwater must comply with that set out in the latest edition of the Environmental Protection Agency's Water Quality Sampling Manual.

Acid rock drainage and leachate management

(C5-1) Subject to the release limits defined in Schedule - C, all reasonable and practicable measures must be implemented to prevent hazardous leachate being directly or indirectly released or likely to be released as a result of the activity to any groundwater or water course.

END OF CONDITIONS FOR SCHEDULE C

Schedule D – Noise and Vibration

Noise nuisance

(D1-1) Subject to Conditions (D1-2) and (D1-3) noise from the mining activity must not cause an environmental nuisance, at any sensitive or commercial place.

(D1-2) When requested by the administering authority, noise monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within 14 days to the administering authority following completion of monitoring.

(D1-3) If the environmental authority holder can provide evidence through monitoring that the limits defined in Schedule D - Table 1 and 2 inclusive, are not being exceeded then the holder is not in breach of Condition (D1-1). Monitoring must include:

a) $L_{A,max,\ adj,T}$

b) the level and frequency of occurrence of impulsive or tonal noise;

c) atmospheric conditions including wind speed and direction; and

d) location, date and time of recording.

(D1-4) If monitoring indicates exceedance of the limits in Schedule D - Table 1 and 2, then the environmental authority holder must:

a) address the complaint including the use of appropriate dispute resolution if required; or

b) immediately implement noise abatement measures so that emissions of noise from the activity do not result in further environmental nuisance.

(D1-5) The method of measurement and reporting of noise levels must comply with the latest edition of the Environmental Protection Agency's Noise Measurement Manual.

Schedule D: Table 1 – Noise limits

Noise dB(A) measured as	**Monday to Saturday**			**Sundays & Public Holidays**		
	7am – 6pm	**6pm – 10pm**	**10pm – 7am**	**9am – 6pm**	**6pm – 10pm**	**10pm – 9am**
Noise measured at a Noise sensitive place						
$L_{A10,\ adj,\ 10\ mins}$	60	50	40	55	50	40
$L_{A1,\ adj,\ 10\ mins}$	65	55	45	60	55	40
Noise measured at a Commercial place						
$L_{A10,\ adj,\ 10\ mins}$	60	55	45	60	55	45
$L_{A1,\ adj,\ 10\ mins}$	65	60	50	65	60	50

NOTE: The method of measurement and reporting of noise levels must comply with the latest editions of the Environmental Protection Agency's Noise Manuals.

Schedule D: Table 2 – Air blast overpressure level

Location	**Monday to Friday 7am – 6pm** **Saturdays, Sundays & Public Holidays 9am – 6pm**
Sensitive place	Air blast overpressure level is no more than 115dB (linear peak) for 4 out of any 5 consecutive blasts.
Commercial place	Air blast overpressure level is no more than 115dB (linear peak) for 4 out of any 5 consecutive blasts.

Vibration nuisance

(D2-1) Subject to Conditions (D2-2) and (D2-3) vibration from the mining activity must not cause an environmental nuisance, at any sensitive place.

(D2-2) When requested by the administering authority, vibration monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive place, and the results must be notified within 14 days to the administering authority following completion of monitoring.

(D2-3) If the environmental authority holder can provide evidence through monitoring that the limits defined in Schedule D - Table 3 are not being exceeded then the holder is not in breach of (D2-1). Monitoring must include:

a) location of the blast(s) within the mining area (including which bench level); and

b) atmospheric conditions including temperature, relative humidity and wind speed and direction; and

c) location, date and time of recording.

(D2-4) If monitoring indicates exceedance of the relevant limits in Schedule D - Table 3, then the environmental authority holder must:

a) address the complaint including the use of appropriate dispute resolution if required; or

b) immediately implement vibration abatement measures so that vibration from the activity does not result in further environmental nuisance.

Schedule D: Table 3 – Vibration limits

Location	**Vibration measured** **Monday to Friday 7am – 6pm** **Saturdays, Sundays & Public Holidays 9am – 6pm**
Sensitive place	25mm/s peak particle velocity for vibrations of more than 35Hz 10 mm/s peak particle velocity for vibrations equal to or less than 35Hz
Commercial place	25mm/s peak particle velocity for vibrations of more than 35Hz 10mm/s peak particle velocity for vibrations equal to or less than 35Hz

END OF CONDITIONS FOR SCHEDULE D

Schedule E – Waste

Storage of tyres

(E1-1) Tyres stored awaiting disposal or transport for take-back and, recycling, or waste-to-energy options - should be stockpiled in volumes less than 3m in height and 200 sq.m in area and at least 10m from any other tyre storage area.

(E1-2) All reasonable and practicable fire prevention measures must be implemented, including removal of grass and other materials within a 10m radius of the scrap tyre storage area.

Disposal of tyres

(E2-1) Where practicable, scrap tyres resulting from the mining activities can be disposed of in underground stopes provided this practice does not cause an unacceptable fire risk.

(E2-2) Disposing of scrap tyres resulting from the mining activities in spoil emplacements is acceptable, provided tyres are placed as deep in the spoil as reasonably practicable.

(E2-3) Scrap tyres resulting from the mining activities disposed within the operational land must not impede saturated aquifers or compromise the stability of the consolidated landform.

END OF CONDITIONS FOR SCHEDULE E

Schedule F – Land

Rehabilitation landform criteria

(F1-1) All areas significantly disturbed by mining activities must be rehabilitated to the final land description as defined in Schedule F — Table 1.

Schedule F: Table 1 – Final Land Use and Rehabilitation Approval Schedule

Tenure ID	Disturbance type	Projective surface area (ha)	Post-mine land description	Post-mine land capability classification	Analogue site identification
CHARTERS TOWERS PROJECT					
ML1499, ML10093, ML10005, ML10193	Brilliant East Compound & Infrastructure	4.2	Rural	Rural	
	Victoria Main Underlie	1.0	Future Residential	Future Residential	
	Core Yard	0.06	Rural	Rural	
	Roads	0.5	Roads	Roads	
ML10208	Brilliant Block Shaft	0.5	Open Space	Open Space	
	Pump Compounds 1 & 2	0.04	Open space	Open Space	
	Discharge Valve	0.05	Rural	Rural	
	Park Street Drill Site & Waste dump	0.7	Future Residential	Future Residential	
ML1347, ML1472, ML1491, ML10196	Historic Disturbance	Nil	Historical Disturbance/Low intensity grazing	Category VII (low intensity grazing)	CTG2, CTG3
ML1385, ML1398 ML1488, ML1545	Nil	Nil	Industrial	Industrial	
BLACKJACK PROJECT					
ML1407, ML1408, ML1409, ML1428, ML1429, ML1431, ML1432, ML1433, ML1548, ML1735, ML1585	Tailings Dam	17.5	Rehabilitated Tailings Dam	Category VII (low intensity grazing)	CTG2, CTG3
	East Diversion Drain	3.6	Diversion Drain	Category VII (low intensity grazing)	CTG2, CTG3
	North Diversion Drain	0.1	Diversion Drain	Category VII (low intensity grazing)	CTG2, CTG3
	Drainage Retention Pond	0.5	Dam	Water Storage	
	Seepage Reclaim Darn	0.05	Low intensity grazing	Category VII (low intensity grazing)	CTG2, CTG3
ML1424, ML1430, ML10042, ML10032.	Blackjack South Pit	0.6	Open void	Water storage	
	Blackjack PC Pit	0.8	Open void	Water storage	
	Newton Butler Pit	0.9	Open void	Water storage	
	Plant Area/Workshops/Offices	4.0	Low intensity grazing	Category VII (low intensity grazing)	CTG2, CTG3

Tenure ID	Disturbance type	Projective surface area (ha)	Post-mine land description	Post-mine land capability classification	Analogue site identification
	Waste Rock Dumps	2.2	Revegetated waste dump	Category VII (low intensity grazing)	CTG1
	ROM Pad	1.0	Low intensity grazing	Category VII (low intensity grazing)	CTG2, CTG3
	Topsoil Stockpiles	3.0	Low intensity grazing	Category VII (low intensity grazing)	CTG2, CTG3
	Overburden Stockpiles	7.0	Low intensity grazing	Category VII (low intensity grazing)	CTG1, CTG2
	Sediment Dams	1.5	Dam	Water storage	
	Site Roads & Haul Roads	0.8	Road	Road	
	Leach Pad & Associate Ponds	2.0	Low intensity grazing	Category VII (low intensity grazing)	CTG2, CTG3
	Stockholm Pit	8.0	Open void	Water storage	
ML1387	Historic Disturbance	Nil	Historic disturbance/Low intensity grazing	Category VII (low intensity grazing)	CTG2, CTG3
ML10282, 10284, ML10285	Nil	Nil	Low intensity grazing	Category VII (low intensity grazing)	CTG2, CTG3
WARRIOR PROJECT					
ML1490 ML1348	Washington Pit	2.0	Open Void	Water storage	
	Washington North Pit Area	0.4	Low intensity grazing	Category VII (low intensity grazing)	CTG2, CTG3
	Washington ROM Pad Area	2.7	Low intensity grazing	Category VII (low intensity grazing)	CTG2, CTG3
	Washington NE Bund Area	0.2	Low intensity grazing	Category VII (low intensity grazing)	CTG2, CTG3
	Diversion Drains	0.7	Low intensity grazing	Category VII (low intensity grazing)	CTG2, CTG3

Tenure ID	Disturbance type	Projective surface area (ha)	Post-mine land description	Post-mine land capability classification	Analogue site identification
	Overburden Stockpile	9.0	Low intensity grazing	Category VII (low intensity grazing)	CTG2
	Washington Haul Road/Access Road	1.05	Roads	Roads	
	Washington North Haul Road	0.22	Low intensity grazing	Category VII (low intensity grazing)	CTG3
	Sediment Dams/Silt traps	0.21	Dam	Water storage	
ML10222	Historic Disturbance	Nil	Historic disturbance/ Low intensity grazing	Category VII (low intensity grazing)	CTG2, CTG3
ML1348	Historic Disturbance	Nil	Historic disturbance/Low intensity grazing	Category VII (low intensity grazing)	CTG2, CTG3
ML1521	Historic Disturbance	Nil	Historic disturbance/ Low intensity grazing	Category VII (low intensity grazing)	CTG2, CTG3

(F1-2) Progressive rehabilitation must commence when areas become available within the operational land.

Grazing pasture outcome

(F2-1) Areas which are to be progressively rehabilitated to grazing pasture must comply with the following outcomes:

a) generate a self sustaining vegetation with projective cover, species composition and species distribution similar to CTG1, CTG2 & CTG3; and

b) all areas disturbed by mining activities must be rehabilitated to a stable landform; and

c) a measure of productivity (e.g. sustainable dry matter production, stock live weight gain) are similar to CTG1, CTG2 & CTG3; and

(F2-2) Complete an investigation into rehabilitation of disturbed areas and submit a report to the administering authority proposing acceptance criteria to meet the outcomes in (F2-1) by 30 August 2006.

Dams containing hazardous waste

(F3-1) The construction and operation of any dam containing hazardous waste within the licensed place must comply with Schedule F - Table 2.

Schedule F: Table 2 – Size and purpose of dams containing hazardous waste

Name of dam containing hazardous waste[(1)]	Maximum surface area dam (ha)	Maximum volume dam (m^3)	Maximum depth of dam (m)[(2)]	Purpose of dam[(3)]
Charters Towers Gold Mine Tailings Dam	22	1,600,000	15	Permanent containment of tailings resulting from the extraction of Gold from the Charters Towers Gold Mine Processing Plant

[(1)]Note: The name of the dam containing hazardous waste should refer to the name of the dam e.g. process residue facility and decant dam.
[(2)]Note: For dams, which do not require a dam wall, input the maximum void depth e.g. where dams are formed by excavating below the land surface or backfilling a residual void.
[(3)]Note: Purpose of the dam should outline the designed function, e.g. 'the permanent containment of tailings resulting from the extraction of nickel, cobalt and other metals at the XYZ Refinery".

(F3-2) Any dam containing hazardous waste constructed or operated must be located within the control points defined in Schedule C - Table 3.

Schedule F: Table 3 – Location of dams containing hazardous waste

Name of dam containing hazardous waste[(1)]	Easting (AMG)[(4)]	Northing (AGM)[(4)]
Charters Towers Gold Mine Tailings Dam	0418286 0418629 0418094 0418716	7770771 7770854 7771580 7771748

[(4)]Note: A minimum of 3 control points is required to constrain the location of all activities associated with the dam containing hazardous waste. Additional infrastructure which forms part of any dam containing hazardous waste may include appurtenant works consisting of tailings discharge pipelines, seepage collection systems, runoff diversion bunds, containment systems, pressure relief wells, decant and recycle water systems.

Standards and Criteria

(F4-1) The holder of the environmental authority must design, construct and operate all high-hazard dams containing hazardous waste in accordance with the Code of Environmental Compliance for Environmental Authorities for High Hazard Dams Containing Hazardous Waste.

(F4-2) The holder of the environmental authority must design, construct and operate all low-hazard dams containing hazardous waste and non-hazardous dams in accordance with the criteria outlined in Appendix B of the Code of Environmental Compliance for Mining Lease Projects.

Inspection of Dams

(F5-1) High hazard dams containing waste shall be inspected by a Registered Professional Engineer (RPEQ) on or about 1st October but definitely before 1st November each year or at any time if alarming, unusual or otherwise unsatisfactory conditions are observed.

(F5-2) For each inspection, the engineer shall assess the condition of the dam and its foundations, determine the hydraulic adequacy of the dam and assess the adequacy of the works with respect to dam safety.

(F5-3) For each inspection, two copies of the engineer's report and any recommendations as to measures to be taken to ensure the integrity of the dam shall be furnished to the administering authority within 28 days of the inspection.

Decommissioning of Dam - Objective

(F6-1) Dams containing hazardous waste must not be abandoned, must be decommissioned to a situation where water can no longer be stored in the dams and the dams and their contained waste(s) are stable, whereafter the dams are no longer dams and they become landforms on the operational land and must comply with the rehabilitation requirements of this Environmental Authority.

Decommissioning of Dam — Documentation and Compliance

(F7-1) Decommissioning activities for dams must be documented in detail in the plan of operations under which the activities are to occur. Where the detailed documentation is not already contained in the Design Plan for the dam, the detailed documentation is considered to be an amendment to the design plan and must be submitted as an amendment to the design plan required by the Code of Environmental Compliance for Environmental Authorities for High Hazard Dams Containing Hazardous Waste.

Residual void outcome

(F8-1) Residual voids must comply with the following outcomes:

a) residual voids must not cause any serious environmental harm to land, surface waters or any recognised groundwater aquifer, other than the environmental harm constituted by the existence of the residual void itself, and subject to any other condition within this environmental authority.

Infrastructure

(F9-1) All infrastructure, constructed by or for the environmental authority holder during the mining activities including water storage structures, must be removed from the site prior to mining lease surrender, except where agreed in writing by the post mining land owner / holder.

END OF CONDITIONS FOR SCHEDULE F

Schedule G – Community

Complaint response

(G1-1) All complaints received must be recorded including details of complainant, reasons for the complaint, investigations undertaken, conclusions formed and actions taken. This information must be made available for inspection by the administering authority on request.

END OF CONDITIONS FOR SCHEDULE G

Schedule H – Definitions

acceptance criteria means the measures by which actions implemented are deemed to be complete. The acceptance criteria indicate the success of the decommissioning and rehabilitation outcomes or remediation of areas which have been significantly been disturbed by the mining activities. Acceptance criteria may include information regarding:

- stability of final land forms in terms of settlement, erosion, weathering, pondage and drainage;
- control of geochemical and contaminant transport processes;
- quality of runoff waters and potential impact on receiving environment;
- vegetation establishment, survival and succession;
- vegetation productivity, sustained growth and structure development;
- fauna colonisation and habitat development;
- ecosystem processes such as soil development and nutrient cycling, and the recolonisation of specific fauna groups such as collembola, mites and termites which are involved in these processes;
- microbiological studies including recolonisation by mycorrhizal fungi, microbial biomass and respiration;
- effects of various establishment treatments such as deep ripping, topsoil handling, seeding and fertiliser application on vegetation growth and development;
- resilience of vegetation to disease, insect attack, drought and fire;
- vegetation water use and effects on ground water levels and catchment yields.

airblast overpressure means energy transmitted from the blast site within the atmosphere in the form of pressure waves. The maximum excess pressure in this wave, above ambient pressure is the peak airblast overpressure measured in decibels linear (dB).

ambient (or total) noise at a place, means the level of noise at the place from all sources (near and far), measured as the Leq for an appropriate time interval.

analogue sites means:

- **CTG 1:** E 441268.7 N 7771259.3

  10m x 50m steep sloping rocky ground, partially covered with grass and sparse woody vegetation, located within the township of Charters Towers.

- **CTG 2:** E 430520.9 N 7715661.8

  10m x 50m undulating ground with full grass cover, shrubs and sparse tree cover located on the northern side of ML1490.

- **CTG 3:** E 448069.9 N 7768514.3

  10m x 50m slightly undulating rocky grazing land, located on the southern side of ML1490.

authority means environmental authority (mining activities) under the Environmental Protection Act 1994.

blasting means the use of explosive materials to fracture:

- rock, coal and other minerals for later recovery; or
- structural components or other items to facilitate removal from a site or for reuse.

commercial place means a place used as an office or for business or commercial purposes, other than a place within the boundaries of the operational land.

competent person means a person with the demonstrated skill and knowledge required to carry out the task to a standard necessary for the reliance upon collected data or protection of the environment.

dam means a containment or proposed containment whether permanent or temporary, which is designed to contain, divert or control flowable substances. However this does not include a fabricated or manufactured tank or container designed to a recognised standard.

design plan in the context of a dam design is the documentation required under the "Code of Environmental Compliance for High Hazard Dams Containing Hazardous Waste" to describe the physical dimensions of the dam, the materials and standards to be used for construction of the dam, the procedures and criteria to be used for operating the dam and the decommissioning and rehabilitation objectives in terms procedures, works and outcomes at the end of dam life. The documents can include design and investigation reports, drawings, specifications and certifications.

environmental authority holder means the holder of this environmental authority.

foreseeable future is the period used for assessing the total risk of an event occurring. Permanent structures and ecological sustainability should be expected to still exist at the end of a 150 year foreseeable future with an acceptable risk of failure before that time.

flowable substance means matter or mixture of materials which can be forced to or otherwise flow under any conditions possible in a situation. It includes water, other liquids or a mixture that includes water or any other liquid or suspended solids.

hazardous waste means any substance, whether liquid, solid or gaseous, derived by or resulting from, the processing of minerals that tends to destroy life or impair or endanger health.

Infrastructure means water storage dams, roads and tracks, buildings and other structures built for the purpose of mining activities but does not include other facilities required for the long term management of mining impacts or the protection of potential resources. Such other facilities include dams containing hazardous waste, waste rock dumps, voids, or ore stockpiles and buildings as well as other structures whose ownership can be transferred and which have a residual beneficial use for the next owner of the operational land or the background land owner.

$L_{A\ 10,\ adj,\ 10\ mins}$ means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 10% of any 10-minute measurement period, using Fast response.

$L_{A\ 1,\ adj,\ 10\ mins}$ means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 1% of any 10-minute measurement period, using Fast response.

$L_{A, Max, adj, T}$ means the average maximum A-weighted sound pressure level, adjusted for noise character and measured over any 10 minute period, using Fast response.

land in the "land schedule" of this document means land excluding waters and the atmosphere.

land capability as defined in the DME 1995 Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland.

land suitability as defined in the DME 1995 Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland.

land use term to describe the selected post mining use of the land, which is planned to occur after the cessation of mining operations.

leachate means a liquid that has passed through or emerged from, or is likely to have passed through or emerged from, a material stored, processed or disposed of at the operational land which contains soluble, suspended or miscible contaminants likely to have been derived from the said material.

mandatory reporting level means the level below the spillway crest, equivalent to the lower of the 72 hour ARI storm or the ARI wave allowance whichever level is lower.

monitoring sites means:

- RE1 & SS1 (Blackjack) — Located in shallow creek at end of eastern diversion drain
- RE2 (Blackjack) — Located in tailings seepage pond
- RE3 & SS2 (Blackjack)- Located at end of northern diversion drain near fence at ML1433 boundary
- RE4 & SS3 (Blackjack)- Located in headwater of six mile creek downstream of Blackjack PC pit
- RE5 & SS4 (Warrior)- Located downstream of Washington Pit and sediment dam in unnamed creek
- EP1 (Blackjack)- Located inside process dam outlet which runs into northern diversion drain
- EP2 (Blackjack)- Release point for dewatering of Stockholm Pit on ML1585
- EP3 (Blackjack)- Overflow point for large sediment dam on ML1430
- EP4 (Ch. Towers) - Located in Buchannnan Creek opposite Nagle Street compound.
- EP5 (Ch. Towers)- located with central decline bund wall release to Buchannan Creek
- GW1 (Blackjack)- Located behind Blackjack Tailings Dam on southern side of ML1735
- GW2 (Blackjack)- Located on western boundary of Tailings dam near fence
- GW3 (Blackjack)- located directly inwards of GW2 towards tailings dam wall
- GW4 (Blackjack)- Located on western side of tailings dam at ML1433 lease boundary
- GW5 (Blackjack)- Located on the eastern side of tailings dam on ML1432
- GW6 (Warrior)- located on eastern side of Washington pit in fenced compound.

noxious means harmful or injurious to health or physical well being, other than trivial harm.

non-standard means a mining operation that if in the opinion of the administering authority does not have a low risk of serious environmental harm and the activities can not comply with the criteria for standard mining activities

prescribed in schedule 1A of the Environmental Protection Regulation 1998. The standard mining activity trigger criteria are as follows:

- the mining activities do not or will not cause more than 10 ha of land to be significantly disturbed at any one time;
- the mining activities do not or will not cause more than 5 ha of land to be significantly disturbed at any one time;
    (a) in a riverine area;
    (b) because of mine workings;
- the mining activities are not or will not be carried out in, or within 2 km of a category A environmentally sensitive area;
- the mining activities are not or will not be carried out in, or within 1 km of a category B environmentally sensitive area;
- the mining activities do not include a level 1 environmentally relevant activity
- no more than 20 persons are carrying out or will, at any one time, carry out the mining activities.

offensive means causing reasonable offence or displeasure; is disagreeable to the sense; disgusting, nauseous or repulsive, other than trivial harm.

peak particle velocity (ppv) means a measure of ground vibration magnitude which is the maximum rate of change of ground displacement with time, usually measured in millimetres/second (mms-1).

protected area means:

- a protected area under the Nature Conservation Act 1992; or
- a marine park under the Marine Parks Act 1992; or
- a World Heritage Area.

progressive rehabilitation means rehabilitation (defined below) undertaken progressively or a staged approach to rehabilitation as mining operations are ongoing.

rehabilitation the process of reshaping and revegetating land to restore it to a stable landform and in accordance with the acceptance criteria set out in this environmental authority and, where relevant, includes remediation of contaminated land.

representative means a sample set which covers the variance in monitoring or other data either due to natural changes or operational phases of the mining activities.

residual void means an open pit resulting from the removal of ore and/or waste rock which will remain following the cessation of all mining activities and completion of rehabilitation processes.

self sustaining means an area of land which has been rehabilitated and has maintained the required acceptance criteria without human intervention for a period nominated by the administering authority.

significant disturbance includes land

a) if it is contaminated land; or
b) it has been disturbed and human intervention is needed to rehabilitate it.
    i. to a state required under the relevant environmental authority; or

ii. if the environmental authority does not require the land to be rehabilitated to a particular state — to its state immediately before the disturbance.

Some examples of disturbed land include:

- areas where soil has been compacted, removed, covered, exposed or stockpiled;
- areas where vegetation has been removed or destroyed to an extent where the land has been made susceptible to erosion; (vegetation & topsoil);
- areas where land use suitability or capability has been diminished;
- areas within a watercourse, waterway, wetland or lake where mining activities occur;
- areas submerged by tailings or hazardous contaminant storage and dam walls in all cases;
- areas under temporary infrastructure. Temporary infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dams, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be removed after mining activities have ceased; or
- areas where land has been contaminated and a suitability statement has not been issued.

However, the following areas are not included:

- areas off lease (e.g. roads or tracks which provide access to the mining lease);
- areas previously significantly disturbed which have achieved the rehabilitation outcomes;
- by agreement with the EPA, areas previously significantly disturbed which have not achieved the rehabilitation objective(s) due to circumstances beyond the control of the mine operator (such as climatic conditions);
- areas under permanent infrastructure. Permanent infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dams, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be left by agreement with the landowner. The agreement to leave permanent infrastructure must be recorded in the Landowner Agreement and lodged with the EPA;
- disturbances that pre-existed the grant of the tenure unless those areas are disturbed during the term of the tenure.

sensitive place means:

- a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or
- a motel, hotel or hostel; or
- an educational institution; or
- a medical centre or hospital; or
- a protected area under the Nature Conservation Act 1992, the Marine Parks Act 1992 or a World Heritage Area; or
- a public park or gardens; or
- a place used as a workplace, an office or for business or commercial purposes which is not part of the mining activity and does not include employees accommodation or public roads.

spillway means passage or outlet from the dam through which surplus water flows.

stable means land form dimensions are or will be stable within tolerable limits now and in the foreseeable future. Stability includes consideration of geotechnical stability, settlement and consolidation allowances, bearing capacity (traffic ability), erosion resistance and geochemical stability with respect to seepage and contaminant generation.

tolerable limits means that a range of values could be accepted to achieve an overall environmental management objective (eg a range of settlement of a tailing capping could still meet the objective of draining the cap quickly, preventing pondage and limiting infiltration and percolation).

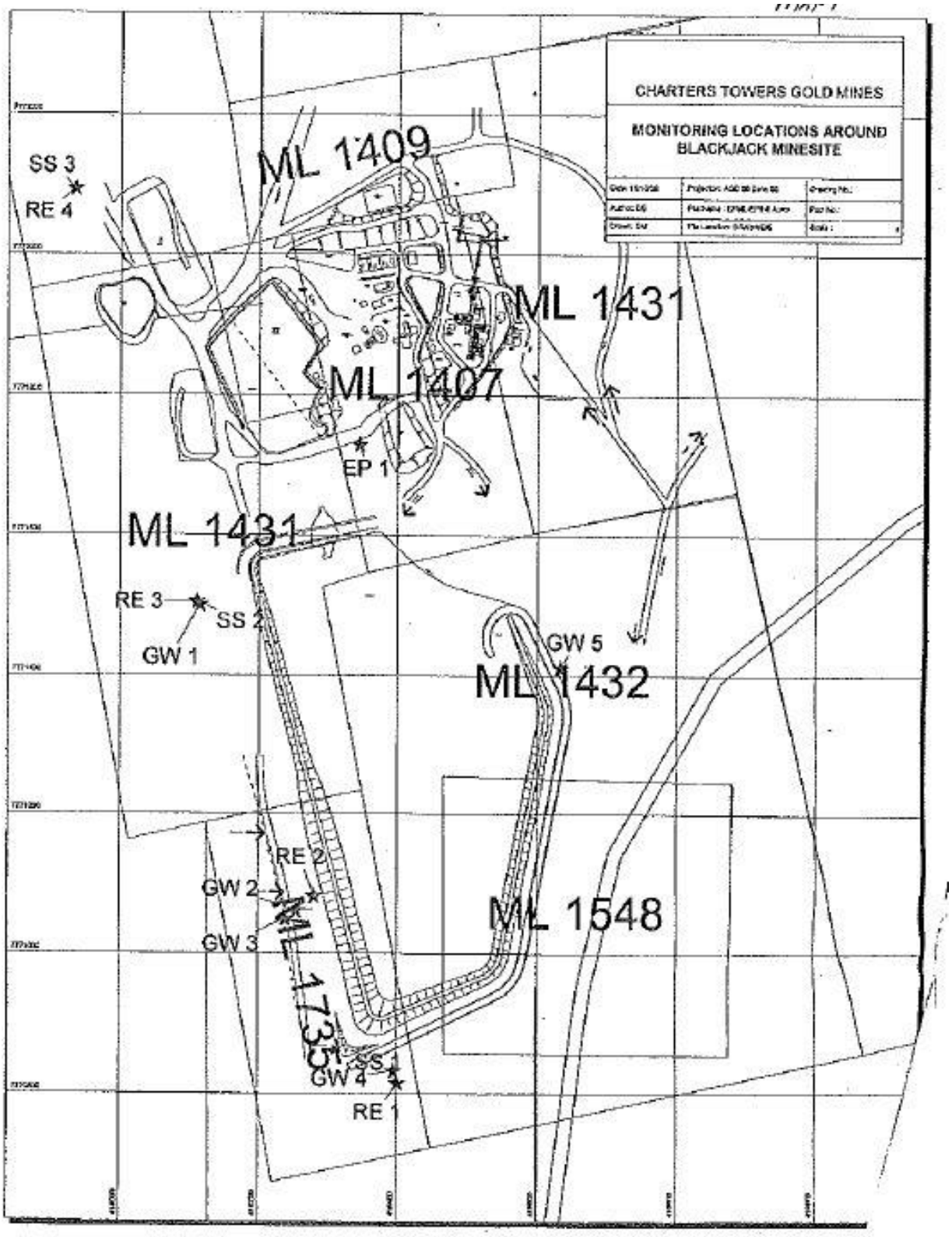
trivial harm means environmental harm which is not material or serious environmental harm and will not cause actual or potential loss or damage to property of an amount of, or amounts totalling more than $5,000.

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 run-off, and groundwater or any part-thereof.

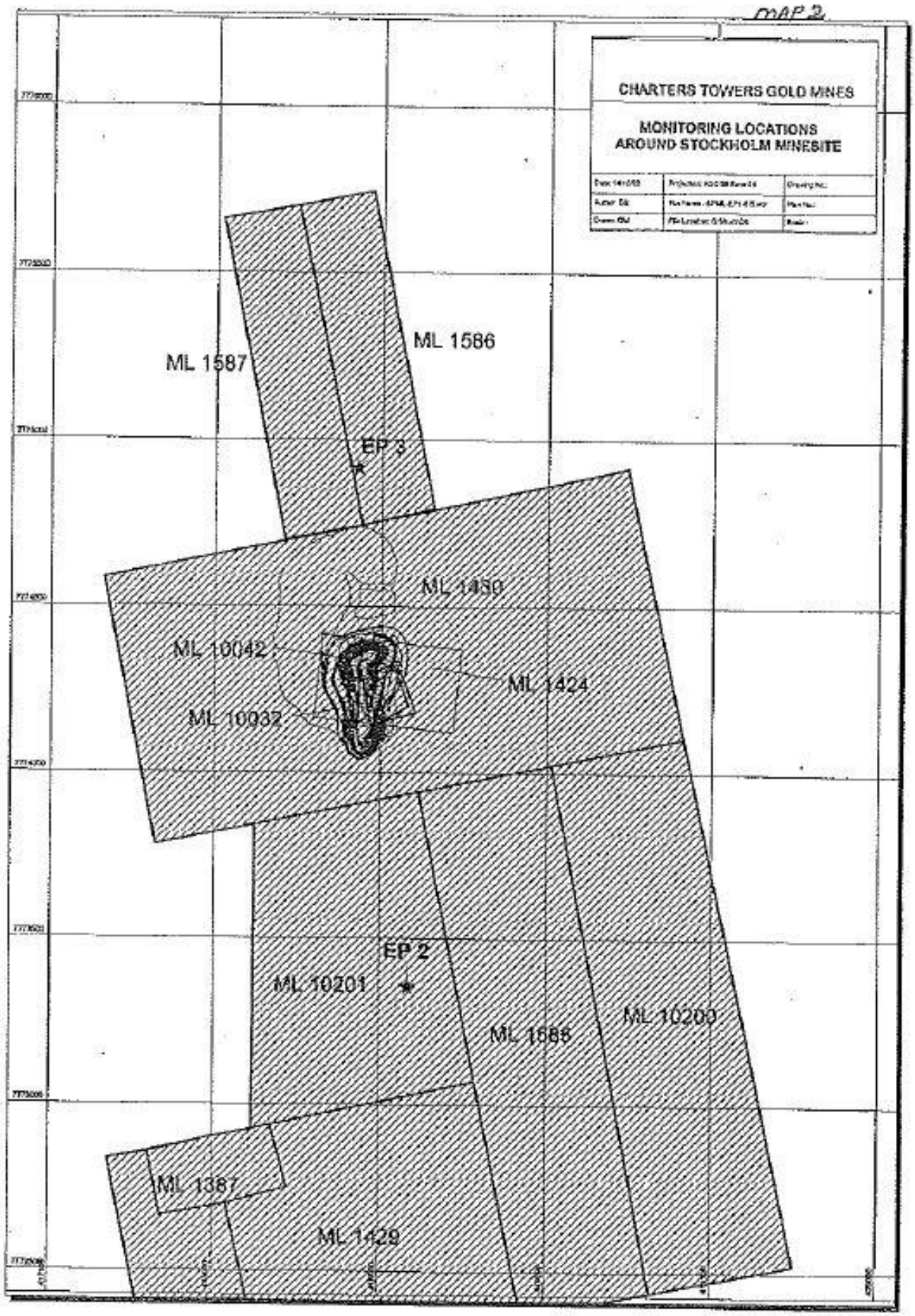
END OF CONDITIONS FOR SCHEDULE H

Schedule I – Maps

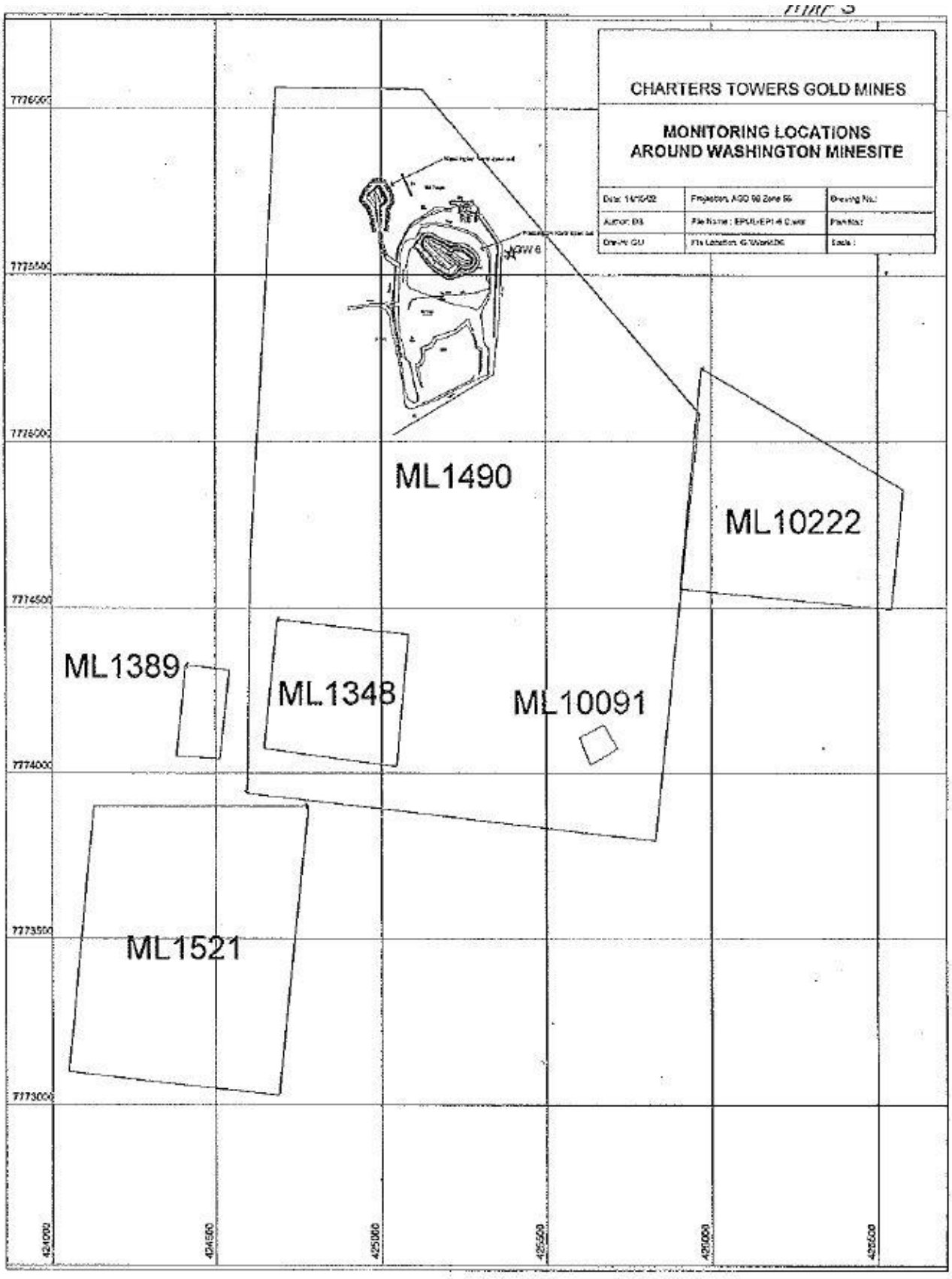
Map 1 – Monitoring Locations around Blackjack mine site



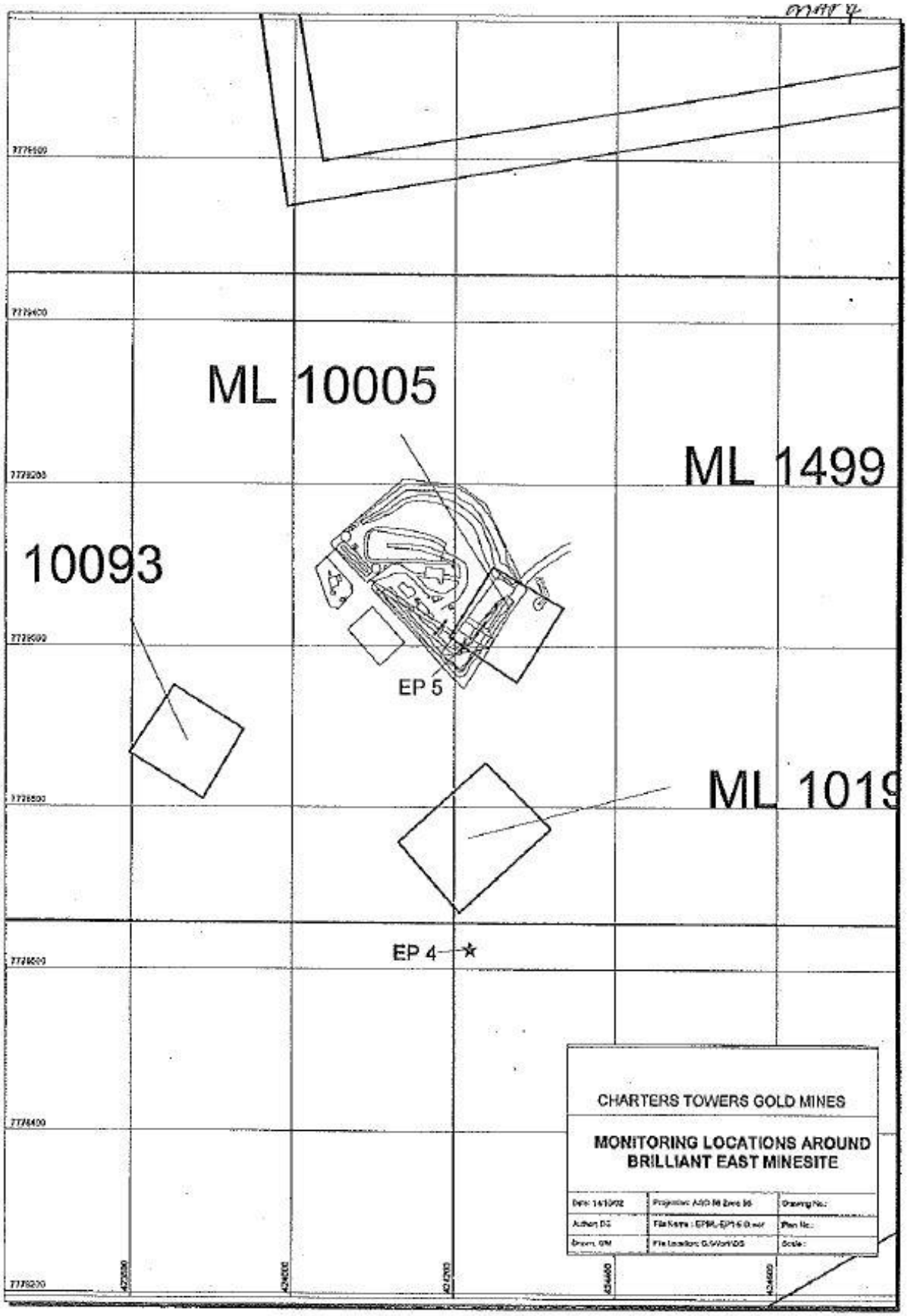
Map 2 - Monitoring location around Stockholm mine site



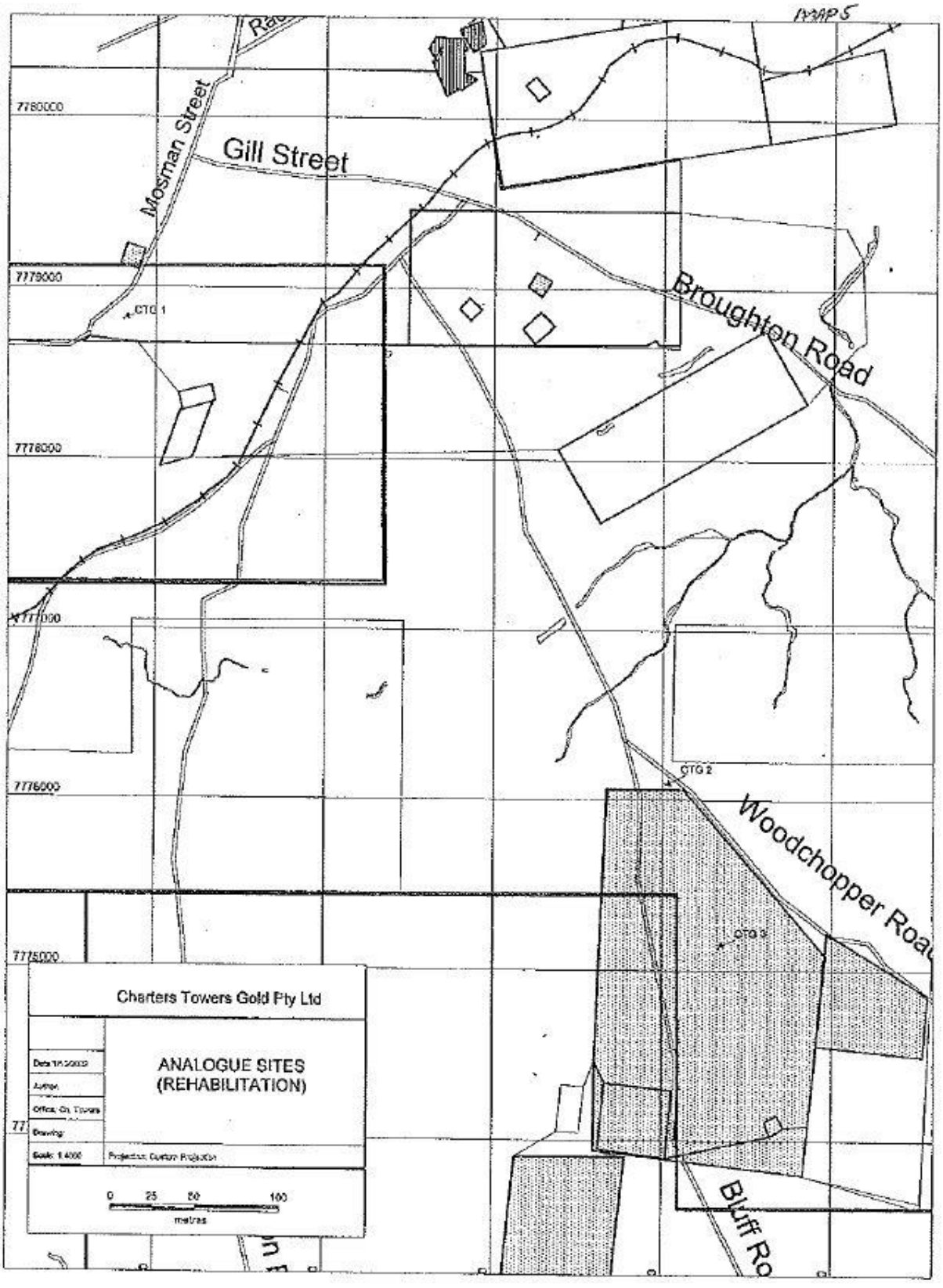
Map 3 - Monitoring locations around Washington mine site



Map 4 - Monitoring locations around Brilliant East mine site



Map 5 - Analogue site location



END OF CONDITIONS FOR SCHEDULE I

END OF ENVIRONMENTAL AUTHORITY