

Transitional Environmental Program: MAN 17560

Periodic Report (1 December 2018)



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1 INTRODUCTION

This report addresses the conditions of Transitional Environmental Program (TEP), Certificate of Approval TEP MAN 17560 issued 7 March 2014 and amendment TEP MAN 17560 issued 24 July 2017.

The initial TEP has eight (8) conditions, information is largely focused on quality of waters and a requirement for 6-monthly reporting on the progress of the TEP. The subsequent amendment TEP included three (3) additional conditions and is more focused on quantity data and requires quarterly reporting of site-water management (**Quarterly Water Management Report**).

This Quarterly Water Management Report represents the quantity data for the period August to October 2018 inclusive (3 months).

2 PROJECT DESCRIPTION

2.1 Location

The Capricorn Copper Mine (CCM) is located approximately 120 kilometres northwest of Mt Isa in Northwest Queensland, in the Shire of Mt Isa near the former township of Gunpowder. The mining operations are located entirely on the Calton Hills pastoral lease, which is owned by the Kalkadoon Aboriginal Council. The residential facilities provided for employees and contractors, along with Lake Waggaboonya are located on a special use lease.

2.2 Environmental Authority

The CCM operates under Environmental Authority (EA) number EPML00911413 issued by the Department of Environment and Science (DES) on 1 November 2017 that authorises the carrying out of Environmentally Relevant Activities as defined in the Environmental Protection Act 1994.

2.3 Title and Tenements

Capricorn Copper Pty Limited holds 28 mining leases for CCM under the Minerals Resources Act 1989. The total land area covered by the leases is 912 hectares.

In addition, three Mining Leases have been applied for south of, and directly adjoining, the current lease area. Application was made to accommodate the Esperanza Diversion, Upper Esperanza TSF and Esperanza South ancillary services. The construction of the Upper Esperanza Creek Diversion Dam has been allowed to proceed under a Land Use Agreement with the Calton Hills Board.

3 TEP MAN 17560 – CONDITIONS OF APPROVAL

This Water Management Quarterly Report provides the Department with the quantity data required by condition 2 of the decision to approve an amendment to a transitional environmental program issued 24 July 2017 (**Amended TEP**). The TEP remains in force until 1 March 2019.

We provide a summary of the conditions of approval the Amended TEP below:

Table 1: Compliance Status of Conditions of Approval for Amended TEP

NO.	CONDITION	CAPRICORN COPPER STATUS
1	The preferred rehabilitation strategies for the Old TSF and HELP #2 landforms must be consistent with best practice management in accordance with s21 of the Environmental Protection Act 1994. Reports on the preferred rehabilitation strategies must be provided to the administering authority by close of business on 1 March 2018. The reports must include, but not necessarily be limited to: - Technical feasibility, engineered designs and project implementation plans; - A description of the methodology and principles used to evaluate the preferred strategy; and - A description of how the preferred strategy is determined to be superior to alternative strategies and consistent with best practice management in accordance with s21 of the Environmental Protection Act 1994.	NB –HLEP #2 (Heap Leach Evaporation Pan #2) has been referred to as HELP #2 in previous documentation – HLEP is the correct abbreviation. Report was submitted to DES in accordance with an extension by 31 March 2018. To date there has been no feedback from DES.
2	Reports on site water management must be provided to the administering authority detailing water management activities at the site. The reports must be provided on 1 September 2017 and quarterly thereafter and include: - Volume of water reduction through each method used on site (including evaporation, water treatment and internal use); - Maintenance log for the Minetek evaporators detailing operational use and down time for maintenance/repairs; - Volumes of water treated, and treated water use, associated with the refurbished water treatment plant; - Running totals, by month, including each method of water reduction, of the total volume of water reduced from the site; and - Site water volume inputs.	CCM submits this report in compliance with this condition. Refer to section 4 of this report.
3	The works determined to be carried out in accordance with the report required under condition 1 must be implemented and completed by 1 March 2019.	N/A

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4 ON SITE WATER MANAGEMENT

The water management strategy on site is focussed on minimising the volume of water that can make contact with potential contaminants through improved pumping systems and strategies, upgraded earth works and the controlled separation and capture of contaminated water.

Core to the current refurbishment and restart programs currently being undertaken on site is the redesign and upgrade of the water treatment plant to facilitate a new water treatment process. This is utilised to treat acidic mine water from the Esperanza Pit prior to pumping into the head of the copper concentrator.

The water treatment plant was commissioned on 25 October 2017. The Process Plant recommenced full operations in the latter half of November 2017.

4.1 Volume of Water Reduction

The water reduction methods undertaken site, and the volumes for the period of this report are shown in Table 2. Table 2 describes water reduction metrics for the period (previous months shown for comparison).

Consumption of treated water for dust suppression on site roads commenced during March 2018.

Other alternatives are being considered to further use treated water, which will continue to decrease the volume of water on site.

Table 2: Site Water Metrics

		2017					2018						
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Rainfall	mm	83	6	37	114.1	242.5	0	0	2.5	0.5	0.00	0.00	23.75
Calculated impact of rainfall (based on area)	ML	21.74	1.57	9.69	29.89	63.52	0	0	9.75	1.95	0.00	0.00	6.22
Seepage and drainage to pit	ML	28.9	33.4	30.1	29.9	44.8	35.6	30.1	39.9	43.1	44.9	45.9	47.1
Tailings	ML	30	109	133	96	146	166	165	177	127	158	150	162
TOTAL INFLOWS	ML	80.8	144.6	173.0	156.0	254.3	202.0	30.1	49.7	45.1	202.90	195.90	215.32
Discharge to the environment	ML	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Evaporation (calculated - Pit and MCD)	ML	40.9	42.7	37.7	35.1	34.4	29.4	23.0	18.6	20.1	24.69	31.18	38.5
Forced Evaporation (mechanical evaporators)	ML	69.2	82.2	77.7	52.1	42.8	37.4	49.8	48.2	42.8	36.9	35.3	28.3
Total Water Treated	ML	50.4	60.6	82.2	62.4	57.2	100.6	96.1	100.2	76.4	84.0	65.3	45.9
Treated Water Consumption	ML	-	-	-	-	8.2	33.5	15.4	15.4	14.1	19	5.2	11.8
NET AFFECT (Inflows - Reductions)	ML	-29.3	19.7	57.5	124.1	211.7	138.8	158.8	183.4	136.1	159.2	159.5	165.0
Pit level at end of month	m	210.9	211.4	212.1	213.1	216.4	215.9	215.1	215	214.5	213.7	213.1	211.9
Total Vol of Contaminated Water Reduction (cumulative) (Action 20)	GL	0.63	0.78	0.94	1.07	1.18	1.33	1.47	1.61	1.73	1.84	1.94	2.02

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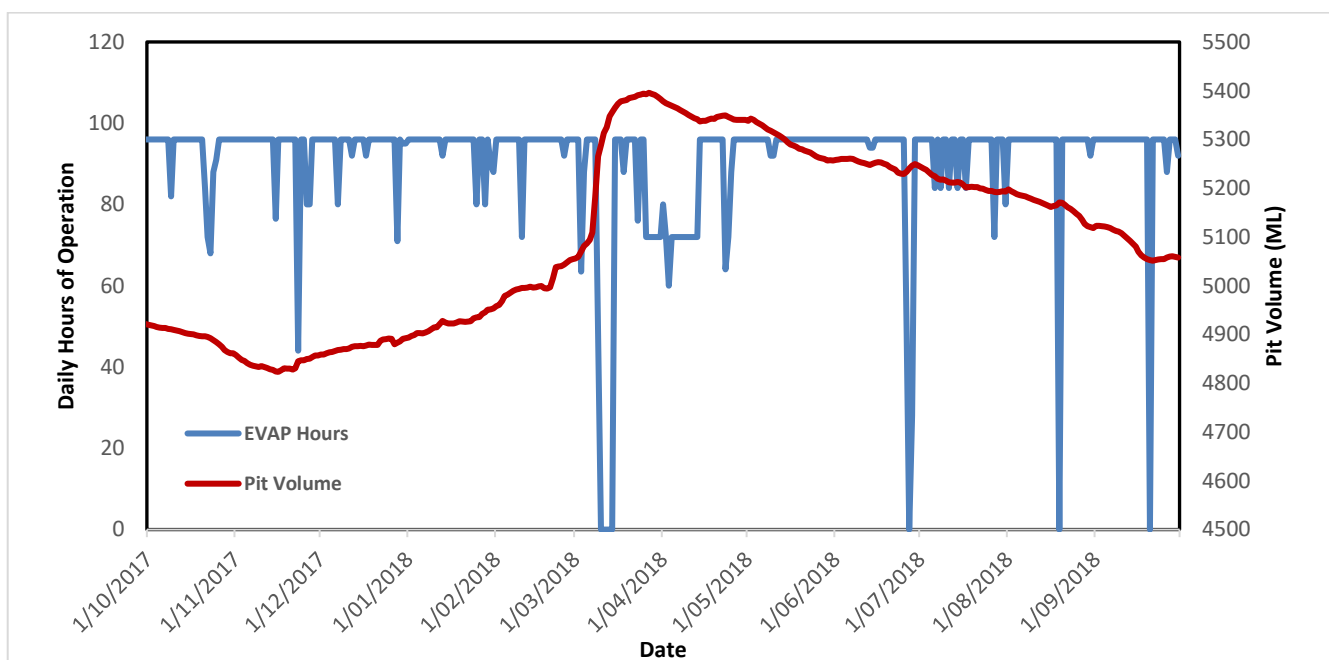
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4.2 Evaporator Operations

As stated in section 4.1, the key method of water reduction on site during the period was evaporators at Esperanza Pit. Two evaporators were installed and commissioned in Q4, 2016 with an additional two evaporators installed and commissioned in June 2017. A total of four evaporators are in operation at the Esperanza Pit. Daily hours of operation versus pit volume (reductions) is shown in Figure 1. An additional 3 evaporators will become operational at the Esperanza Pit/ TSF in November 2018, providing additional water reduction on site.

Maintenance on the evaporators is undertaken through the preventative maintenance system on site and key tasks and activities and the schedule are shown in Table 3. During the period, all regular planned maintenance was undertaken in accordance with this schedule.

Figure 1: Evaporators – Daily Hours of Operation vs Pit Volume



An additional three mechanical evaporators are being reconditioned and expected to be commissioned on the north-eastern side of the pit in November 2018 to further increase mechanical evaporation.

Table 3: Evaporator Preventative Maintenance Strategy

EQUIPMENT	ITEM	ACTIVITY	FREQUENCY
Evaporator	Ring	Clean	Fortnight
		Replace	Fortnight
		Repair	As Required
	Nozzle(s)	Clean	Fortnight
		Replace	As Required
	Body	Clean	Fortnight
	Motor	Clean	Fortnight
	Starter Panel	Clean	Fortnight
Main Pumps	Wet End	Repair	As Required
		Replace	As Required
	Motor	Repair	As Required
		Replace	As Required
Booster Pump	Wet End	Repair	As Required
		Replace	As Required
	Motor	Repair	As Required
Pipework	Valves	Repair	As Required
	Flange	Repair	As Required
	Suction	Move, relocate	Monthly
MCC	PLC/Control System	Reprogram/Optimise	As Required