Snow Peak Mining. 7/5/15.

Boal Gammon rehab plan

KD RM - Rebecca McIntyre.
RM JB - John Banning.

- Want to leave option open to finish stage 1.
- Stage 2 grade in 2 low. Would generate too much PAF for low amount of ore.
- Intention is to close the site

- PAF WRP

- keep. WRD and cap as per plan
- won't leave plastic on top b/c plastic would run when taken off. & WRD needs to be re-profiled so probably won't be left on.
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MWD

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& UNA adit

- ATC commissioned to addres Water balance.
- Should addres whether pit can capture & any seepage from the adit.

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Release

Treat / release

- possibility to do this through amend proces, rather than through TEP.

Through EA amendment, would like to also set site-specific levels.
The default values were not achievable.

Topaz results in high fluoride

Contaminants limits proposed in PMLUP have been proposed for EA amend for site specific data.
Rec to provide actual data (although this is referenced - Table 19/20).
Removing outliers - is this allowed in ANZECC guidelines? John thinks it refers to UK guidelines.
Rec to considered ~~anthropogenic factors~~ the legacy, and the anthropogenic factors.

Engineer designs will only be commissioned once we agree on the PMLUP.

ATC report - expect in 3-4 weeks.

Water quality data to EHP by next week.

Look @ having site closed by Dec 2015.

Ingrid suggest need to amend EA
- PAF to stay on and.
- amend contaminant limits
- treat & release
- amend bore condition

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Treat / release in parallel w/ WRD capping.

EA

- Recalc due to EA amend.

QA/QC:
- Quality assurance
- Quality control

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Release

Snow Peak Mining. 7/5/15.

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Release

Baal Gamman PMLUP discussion 12/6/15.

- KD, IFM, GD, TG, MT, DS. (EHP)
- JA (BGC)
- JB, RM (CSD)

(IFM) Have reviewed the plan. Wanted to discuss the ~~plt~~ letter before send out.

(DS) Ultimately the plan & condition were put in place b/c department recognised the risk and ∴ to backfill the pit.
The departments perspective on that hasn't changed.
Leaving WRD in situ, we have concerns leaving it in perpetuity and ~~the~~ given the issues of past we are concerned w/ management in perpetuity.

(RM) Where could the WR waste go?

(DS) Initial planning would be to manage ongoing basis.
More thoughts around viable options.

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(RN) ~~Come down to water balan~~
Seepage collection in pit

(DS) But ~~BS~~ concern w/ pit capacity and ability to hold that volume

(RN) Couldn't that be addressed in water modelling?

(PS) Yes. But that is still underway.
Current concerns over getting seepage from WRD to pit w/o pumping

(SB) Aware of obvious risk and calculated mitigation to ~~pit~~ WRD
But that is part of the plan to cap WRD

(IFM) Point that right now there is a significant risk to be addressed
And will ~~reo~~ remain their risk until proven otherwise.
Without the modelling we have reservations.

(SB) Plan was to inform of plan and ideas of the rehab.

(RM) Advise previously from EHP was not to compromise engineer before running idea past EHP

(IFM) Fair enough, but we still have reservations

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(DS) WRD capping. This needs to be critically assessed.
Previous critical issues level of ingress through sides of the pit.

(SB) We don't know that level of info

(DS) ATC Williams may have the ability to ~~resp~~ provide this info.

(SB) ATC would be able to plan for contingency in mind.

(IFM) Ultimatly we have concern Have letter ready to go with some comments. We have reservation w/o those tech reports.

(SB) Was today hoping to ascertain whether any major concerns/red flags.
His understanding is ~~to~~ that no major concerns.

(DS) In relation to strategy, we don't make gaurantees one way or another. We recognise that eng. resources being employed. ~~But all accountability~~ is the responsibility of ~~BGC and CSD.~~

IF (SB) We are ultimatly all (BGC & CSD) accountable for the work that is undertaken and the rehab work on site.

(IFM) Treat/release program?
Could work on amend application

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Release

if they submit now.

(RM) minor amend?

(IFM) don't think so. If need to start.

Regardless of rehab progress, would be ideal to get that letter in soonr rather than later.

(IFM) email with info on amendmen

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From: DABINETT Karen [Karen.Dabinett@ehp.qld.gov.au]
Sent: Friday, 12 June 2015 4:09 PM
To: John Banning (John.Banning@csdtin.com.au); Rebecca McIntyre (Rebecca.McIntyre@csdtin.com.au); jallchurch@montominerals.com
CC: FOMIATTI MINNESMA Ingrid; SHARPE Dean; TRENERRY Michael; GRANT Millie; DAVIS Geraldine
Subject: Baal Gammon Post Mine Land Use Plan and EA amendment info for water treat and release program
Attachments: Letter 20150612 Baal Gammon PMLUP review.pdf; gl-bi-wastewater-to-waters-em112.pdf; gl-bi-activities-impacts-water-em963.pdf

Dear John and Rebecca,

Following our teleconference this afternoon, please find attached a letter detailing EHP's concerns and comments on the Baal Gammon Post Mine Land Use Management Plan (PMLUP).

In relation to our discussion regarding a water treatment and release program via an EA amendment, please find following the information required to support the proposed application. The following guidelines will need to be considered to describe/justify any proposed releases to the receiving environment

- Wastewater release to Queensland water technical guideline (EM112) (the wastewater guideline)
- Application requirements for activities with impacts to water Guideline (EM963)

CSD would need to work through the process outlined in the wastewater guideline to determine whether it is possible to get to a stage where a release to the receiving environment is acceptable, and no future releases are required. Table 1 of the Wastewater guideline details the information requirements by EHP for assessing waste water releases.

Other useful links are:

- Water quality guidelines
- Deriving local water quality guidelines fact sheet
- QLD Environmental Protection Policy (Water) 2009
- Qld Water Quality Guidelines
- ANZECC guidelines

Please don't hesitate to contact myself to arrange a meeting to discuss the comments regarding the PMLUP in the letter further.

Cheers

Karen Dabinett
A/ Senior Environmental Officer (Assessment) | Minerals
Environmental Services and Regulation | Northern Region
Department of Environment and Heritage Protection

Level 3, William McCormack Place, 5b Sheridan Street, Cairns.
PO Box 7230 | Cairns QLD 4870

Phone: 07 4222 5324 | **Facsimile:** 07 4222 5070
www.ehp.qld.gov.au

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Queensland Government

Department of
Environment and Heritage Protection

Ref 101/0008744, EPML00792513

12 June 2015

John Banning
Consolidated Tin Mines Limited
395 Lake Street
CAIRNS NORTH QLD 4870

Cc: James Allchurch
Baal Gammon Copper Pty Ltd
Level 1, 33 Ord Street
WEST PERTH, WA 6005

Dear Mr Banning,

Baal Gammon Post Mine Land Use Plan 2015

I refer to the Post Mine Land Use Plan (PMLUP) submitted by Consolidated Tin Mines Ltd (CSD) on behalf of Baal Gammon Copper Pty Ltd (BGC) on 6 May 2015 and discussed in the meeting between the Department of Environment and Heritage Protection (EHP), BGC representative James Allchurch and CSD representatives John Banning and Rebecca McIntyre on 7 May 2015.

EHP has reviewed the PMLUP and has made a determination that the proposed rehabilitation strategy does not meet the requirements of Environmental Authority EPML00792513 (the EA). Firstly, the rehabilitation methodology for the waste rock dump and open pit void outlined in the PMLUP does not comply with that provided in the Environmental Management Plan (EMPlan) for the project, which formed the basis for approval, and was conditioned in the EA. Secondly, the PMLUP does not adequately address the requirements of Condition C2-1 of the EA.

The EMPlan (North Queensland Metals Ltd, 2008) specified that potentially acid forming (PAF) waste generated from mining activities had the potential to adversely impact groundwater and Jamie Creek. To manage this risk, it was proposed that PAF cells would be established within non-acid forming (NAF) waste in the temporary waste rock dump until the end of mine life at which stage all PAF waste would be returned to the bottom of the pit and covered with compacted non-acid forming (NAF) waste. As a result of this commitment, condition D7-3 was applied on the EA.

During the meeting on 7 May 2015, CSD representatives discussed that the majority of waste in the waste rock dump (WRD) which had previously been classified as NAF, had recently been reassessed to be mostly PAF. As a result, CSD has proposed to close and cap the WRD *in situ* due to the calculated volume of PAF waste being greater than the volume available in the pit void.

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PO Box 7230 Cairns
Queensland 4870 Australia
Telephone +61 7 4222 5334
Website www.ehp.qld.gov.au
ABN 46 640 294 485

Release

EHP does not support the proposal for *in situ* rehabilitation of the WRD as contemplated by CSD as EHP considers that the nature of the PAF waste contained within the dump would pose a substantial environmental risk regardless of what capping and cover design is proposed to be put in place given the location of the WRD.

In regard to the requirements for the PMLUP not being met (as per Condition C2-1 of the EA), further detail of these issues are provided in Attachment 1.

EHP understands that CSD and BGC are currently undertaking work on a post-rehabilitation site water balance and other issues relating to the requirements of the PMLUP. EHP encourages CSD/BGC to work with and liaise with us on these matters.

As confirmed during todays teleconference, site accountability will remain the responsibility of CSD and BGC until such time as a surrender application has been accepted by EHP.

EHP would like to take this opportunity to invite you to schedule a meeting to discuss these matters or any other issues relating to rehabilitation planning. Should you have any other enquires regarding this matter, please contact Karen Dabinett of EHP on telephone (07) 4222 5324.

Yours sincerely,

sch4p4(6) Personal Information

Ingrid Fomiatti Minnesma
Director Minerals
Delegate of the Chief Executive

Attachment 1: Comments on Rehabilitation Plan

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Attachment 1: Comments on Post Mine Land Use Plan 2015

In reviewing the plan for Baal Gammon Copper, EHP has considered whether the plan outlines the development of rehabilitation goals, objectives, indicators and completion criteria as specified in the EHP guideline 'Rehabilitation requirements for mining resource activities (EM1122)'. The following comments are made in relation to the submitted Rehabilitation Plan.

Determining objectives and indicators for rehabilitation

- Information regarding the environmental values and land uses of the surrounding environment must be included to provide background information and justification of the rehabilitation goals and objectives.
- Demonstrate how existing surrounding land uses and environmental values of the receiving environment will be preserved or improved.
- Provide a description of areas on the mining lease that will remain undisturbed at the end of mining.
- Demonstrate how the anticipated final landforms compare to the existing undisturbed environment.
- The plan does not detail if any reference sites have been established for the purposes of rehabilitation trials, and the results of these trials.
- As per Table C1 of the EA, it is noted that the post mine land use capability is listed as "no more than 10% of all disturbed lands is class VIII', for the following areas:
    - Stage 2 Pit area
    - Hardstand
    - Mine water dam (MWD)

  And "no more than 30% of all disturbed lands is class VIII' for the following areas:
    - Workshop, administration, go lone and car park
    - Mine magazine area
    - Waste Rock dump (WRD)
    - Topsoil/NAF stockpiles

  The plan does not describe what land use class the remaining land (90% and 70% respectively) for each domain will achieve.

Surface and ground water monitoring

- The surface and ground water contaminant limits proposed by CSD/BGC are based on historical data collected prior to mining activities being conducted under the existing EA. The PMLUP does not include a description of the statistical treatment of the data used to derive these values. Tabled data provided by CSD separate to the PMLUP submission appears to show that these limits have been derived from the maximum contaminant levels in pooled data from 2008-2011 from a number of sampling bores (for derivation of the groundwater contaminant limits) and surface water monitoring sites (for derivation of the surface water contaminant limits). The determination of suitable contaminant limits should be based on the methodology provided by ANZECC/ARMCANZ (2000) or by similar established guidelines.

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Release

- Surface water monitoring is not proposed to be undertaken at any sites on the Walsh River and therefore impacts to environmental values further downstream from monitoring location 'SW6' in Jamie Creek cannot be determined.
- Describe the reliability of the historical sampling data and how quality assurance and quality control (QA/QC) has been ensured.
- Given the site has a history of offsite release events, EHP does not believe the proposed quarterly monitoring frequency is sufficient to monitor for potential release events. As such, EHP believes that the current monthly routine monitoring frequency should be maintained until such time that it can be demonstrated that the potential for release events is minimal.

Management of PAF waste

- As discussed above, the proposal by CSD to rehabilitate the current in-valley PAF-dominated WRD is considered to constitute an unacceptable risk to the environment and therefore, this methodology is not supported by EHP. CSD/BGC will therefore need to determine an alternative solution for encapsulating and managing PAF waste post closure, demonstrating how any future proposal is to be undertaken in accordance with a best practice approach, such as that outlined in the Global Acid Rock Drainage (GARD) guide or any similar established guidelines relating to the prevention and mitigation of acid rock drainage.

Open pit

- As discussed above, the proposal to keep the open pit as a storage for contaminated water and not to backfill with PAF waste is not in line with the rehabilitation methodology proposed in the EMPlan and does not comply with condition D7-3 of the EA. Any proposal for the pit void to remain open as a water storage post closure will need to be supported by site water balance modelling and ongoing verification of modelling accuracy based on actual conditions being experienced at the site over time.
- The hydraulic conductivity between the pit and Jamie Creek was identified in the response from Kagara Ltd to the Notice to conduct or commission an Environmental Evaluation (STAT686) issued by the department on 18 April 2012 following the release of contaminated seepage to Jamie Creek at the base of the pit wall on 7 March 2012. On 17 March 2015, a release of contaminated seepage from the outer wall of the pit was notified to EHP by CSD. The proposal for the pit to remain as a water storage post closure does not address the propensity for the release of contaminated waters to Jamie Creek brought about by peaks in pit water levels.
- The plan notes that the drainage design and erosion controls for the pit will use existing water diversion structures, and the pit will be a catchment for gravity-fed discharges from the waste rock dump (WRD) and Stage 2 pit area. EHP expects that the pit has a limited holding capacity for collection of seepage (in addition to other water inflows such as rain, the addition of contemporary PAF material from the stage 2 pit area, and seepage from Stage 2 pit area) before the pit overtops with subsequent offsite migration of contaminated water. The plan lacks detail on how the

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pit will be managed once pit capacity is reached, and how WRD (and MWD) seepage will be managed from that point onwards.
- The plan does not provide water modelling

Haul roads

- The plan does not provide written confirmation from the landholder about retaining haul roads for site access.

Stage 2 Pit area

- To what depth does the PAF material occur, and will any potentially generated material still be present in the soil once the 'contemporary PAF' has been removed.
- In the absence of any rehabilitation trials, the plan does not provide information on the nominated coverage depths for the of 0.1m NAF cover and 200mm topsoil, and how these depths will provide a sufficiently stable cover that will not erode and will support any vegetation. EHP expects that some erosion will occur until vegetation on top of the cover has matured. The plan does not detail how this erosion will be managed.
- The 'erosion and sediment control plan - Baal Gammon Project (NRA 2011b)' cited in the plan only applies to the initial construction phase of the project

Hardstand

- To what depth does the PAF material occur, and will any potentially generated material still be present in the soil once the 'contemporary PAF' has been removed? How will the presence/absence of any residual PAF material be confirmed? If there is any residual potential PAF generating material remaining, how will this be managed?
- It is noted that no clay capping/capillary break is proposed for the hardstand area. CSD must demonstrate that the absence of a cap/capillary break will not result in the release of contaminants to the environment, from any remaining potentially generated material.
- In the absence of any rehabilitation trials, the plan does not provide information on the nominated topsoil coverage depths and how these depths will provide a sufficiently stable cover that will not erode and will support any vegetation. EHP expects that some erosion will occur until vegetation on top of the cover has matured. The plan does not detail how this erosion will be managed.

Land contamination clearance

- Section 5.2 notes that rehabilitation works may only commence once the area to be rehabilitated has been verified as being at or below acceptable contamination levels. The plan does not outline how each site will be rehabilitated should contamination assessments determine areas are still contaminated (haul roads, Stage 2 pit area, hardstand areas, workshop, administration, go line and car park.

Erosion management

- How will erosion prone areas (such as 0.1m covers) be managed to avoid erosion?
- How often will erosion monitoring be undertaken?

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- What is the purpose of the one-off land capability soil sample monitoring, if land capability has already been established?

Seepage monitoring

- Section 8.3 notes that rates of seepage from the WRD will be monitored and reported in the annual Post-closure monitoring report. However, the plan does not address how seepage from other areas will be monitored, including seepage from the base of the pit into Jamie Creek, through adits (including the UNA adit) and seepage from the MWD.

Rehabilitation/Vegetation

- The rehabilitation treatment designates monitoring without any scope for a response to monitoring should 'issues' be detected. No planting of trees is advocated only seed spreading.
- There is no iterative process, or fixing problems detected in monitoring rehabilitation.
- The completion criteria should include tree size, sustainability and diversity measures
- Subjective measures with analogue sites can be unclear. An explanation on species richness should include a spatial component.
- Tree Density should relate to canopy species. Diversity is different from species richness as a measure.

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Release

From: Rebecca McIntyre [Rebecca.McIntyre@csdtin.com.au]
Sent: Wednesday, 23 December 2015 2:12 PM
To: DAVIS Geraldine
CC: Rod West; James Allchurch
Subject: Baal Gammon T&R monitoring report
Attachments: CSD Baal Gammon T&R Results 2015 Report_FINAL.pdf

Hi Geraldine in accordance with F3-5 of the Baal Gammon EA, please find attached the T&R monitoring report.

Kind regards

Bec McIntyre
Manager - Environment

Consolidated Tin Mines Limited
395 Lake St, Cairns North, QLD 4870
PO Box 4, Mt Garnet, QLD 4872
Mb: s6(4)p4(6) Personal Information
Email: Rebecca.McIntyre@csdtin.com.au
cid:image002.jpg@01D0E4AF.A2C4F190

Please consider the environment before printing this email.

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CONSOLIDATED TIN MINES LIMITED
ABN: 57 126 634 606 ASX: CSD

P: 395 Lake Street, Cairns North QLD 4870
T: +61 7 4032 3319
F: +61 7 4027 9429
E: info@csdtin.com.au

16 December 2015

Geraldine Davis
Senior Environmental Officer
North Queensland Compliance – Environmental Services and Regulation
Department of Environment and Heritage Protection
PO Box 7230, Cairns QLD 4870

Dear Geraldine

SUBJECT: Water Quality Results – Baal Gammon Water Treatment and Release Program 2015

In accordance with Condition F3-5 of the Baal Gammon mine site Environmental Authority (EA) (EPML00792513, dated 7 May 2013) held by Baal Gammon Copper Pty Ltd (BGC), Consolidated Tin Mines Ltd (CSD) provides water quality results[1] for the 2015 Baal Gammon Water Treatment and Release (T&R) Program. Condition F3-5 requires that the EA holder must notify EHP in the event of a release event, and provide a report of results including assessment of potential impacts within two months of undertaking the release monitoring. The Department of Environment and Heritage Protection (EHP) was informed of the commencement of the controlled treated water releases and EHP officers inspected the mine site on 30 October and 16 November 2015. The T&R program has been conducted in accordance with the EA, from the authorised release point to Jamie Creek. Releases occurred from the 23 October 2015, with a total release volume to-date of approximately 22 ML.

The released waters for the T&R program were sampled and analysed in accordance with the EA. The sample analysis data is provided in **Table 1**, in comparison with the default EA trigger levels (Table F3 of the EA) and contaminant limits (Table F4 of the EA). The default EA trigger levels are largely based on guideline values for the protection of aquatic ecosystem values, while the contaminant limits are largely based on guideline values for the protection of stock and drinking water guidelines. It is noted that these values are already not protected by the baseline condition in the Jamie Creek catchment, as previously investigated and reported to EHP (NRA 2011, 2012).[2]

As can be seen from **Table 1**, all release samples complied with the default EA contaminant limits. Exceedance of the default EA trigger level for total zinc and for total and filtered copper occurred on 23 October 2015, but results were well within the 80th percentiles of reference site data (**Table 1**). Therefore released water was of quality suitable for protection of stock and drinking water values, and protection of aquatic ecosystem values. Water quality results at monitoring site SW4 on Jamie Creek immediately (~100m) downstream of the release point prior (21 October 2015) to the commencement of releases to the latest available finalised QA-

[1] Finalised and QA/QC-checked laboratory reports received to 16 December 2015.

[2] NRA 2011. Baal Gammon Receiving Environment Monitoring Program, Prepared by NRA for Kagara Ltd, July 2011.
NRA 2012. Baal Gammon Mine Environmental Investigation 2012 – Receiving Environment Assessment, Prepared by NRA for Kagara Ltd, August 2012.

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QC-checked data (23 November 2015) are graphed in **Figure 1**. The following is noted from **Figure 1**:

- Concentrations of aluminium, arsenic, cadmium, cobalt, copper, EC, fluoride, indium, manganese, nickel, sulphate and zinc declined immediately at site SW4 after commencement of the controlled releases on 23 October 2015 and have remained low since.
- Turbidity, and bismuth and tin concentrations have remained close to or below their respective laboratory limits of reporting (LoRs) at site SW4 throughout the period.
- Total lead concentrations showed a slight increase (24 to 26 µg/L) at the commencement of the program, but has remained low since. As lead has remained <LoR in the release waters (**Table 1**), the initial result is not attributed to the T&R program.
- Total and filtered iron concentrations spiked initially at site SW4. However total iron in the release waters remained below those recorded at site SW4 prior to commencement of the program, while filtered iron has remained <LoR (**Table 1**) therefore the result is not attributed to the T&R program.
- Silver concentrations fluctuated initially, but have remained low since 29 October 2015. As silver has remained <LoR in the release waters (**Table 1**), this fluctuation is not attributed to the T&R program.
- pH has shown little variation at site SW4 during the period.

The above results demonstrate that the T&R program has led to an observable positive impact on water quality in the immediate receiving environment of Jamie Creek.

Monitoring of the release point and receiving environment has not indicated any observable 'slick, or other visible or odourous evidence of oil, grease or petrochemicals' nor any 'visible floating oil, grease, scum, litter or other objectionable matter'(EA Condition F1-4), nor any observable erosion of bed or banks, or sediment deposition (EA Condition F1-6), attributable to the release waters.

CSD will continue to conduct the T&R program and monitor the release waters and receiving environment in accordance with the EA. Final laboratory reports are available upon request. The forthcoming 2015-2016 wet season Receiving Environment Monitoring Program (REMP) limnology and fish surveys will further consider and evaluate potential impacts of the T&R program on the receiving environment.

Yours sincerely,

sch4p4(6) Signature

Bec McIntyre
Manager – Environment
Consolidated Tin Mines Limited

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Table 1: Water quality results – Baal Gammon 2015 Water Treatment and Release Program

Parameter	Unit	EA Default Trigger Level[1]	EA Default Contaminant Limit[2]	Release Sample[4]							
				23/10/2015	24/10/2015	25/10/2015	26/10/2015	28/10/2015	29/10/2015	18/11/2015	23/11/2015
pH	pH units	6-7.5	5-9	6.13	7.45	6.38	6.21	6.19	6.12	6.81	6.00
Electrical Conductivity	µS/cm	250	5970	46.2	102.9	63.2	31.5	48.8	56.2	69	57.4
Turbidity	NTU	15	-	4.0	5.8	5.5	5.0	0.5	<0.5	<0.5	<0.5
Fluoride	µg/L	- (1700)[3]	2000	880	670	890	910	1100	730	1000	660
Sulphate	mg/L	- (29.8)[3]	1000	4.6	2.4	9.6	1.4	6.2	7.2	7.1	6.6
Aluminium – filtered	mg/L	0.055	5	0.019	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aluminium – total	mg/L	0.055	5	0.037	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic – filtered	µg/L	13	500	<3	<3	<3	<3	<3	<3	<3	<3
Arsenic – total	µg/L	13	500	<3	<3	<3	<3	<3	<3	<3	<3
Bismuth – filtered	µg/L	0.7	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bismuth – total	µg/L	0.7	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cadmium – filtered	µg/L	0.2	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Cadmium – total	µg/L	0.2	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Cobalt – filtered	µg/L	2.8	1000	<1	<1	<1	<1	<1	<1	<1	<1
Cobalt – total	µg/L	2.8	1000	<1	<1	<1	<1	<1	<1	<1	<1
Copper – filtered	µg/L	1.4 (350)[3]	1000	14	<1	<1	1	<1	<1	<1	<1
Copper – total	µg/L	1.4 (360)[3]	1000	25	<1	<1	<1	<1	<1	<1	<1
Indium – filtered	µg/L	- (<50)[3]	-	<50	<50	<50	<50	<50	<50	<50	<50
Indium – total	µg/L	- (<50)[3]	-	<50	<50	<50	<50	<50	<50	<50	<50
Iron – filtered	mg/L	0.3	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron – total	mg/L	0.3	-	0.032	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005
Lead – filtered	µg/L	3.4	10	<1	<1	<1	<1	<1	<1	<1	<1
Lead – total	µg/L	3.4	10	<1	<1	<1	<1	<1	<1	<1	<1
Manganese – filtered	mg/L	1.9	-	0.009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Manganese – total	mg/L	1.9	-	0.009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Nickel – filtered	µg/L	11	20	<1	<1	<1	<1	<1	<1	<1	<1
Nickel – total	µg/L	11	20	<1	<1	<1	<1	<1	<1	<1	<1
Silver – filtered	µg/L	0.05	100	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver – total	µg/L	0.05	100	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tin – filtered	µg/L	3	-	<2	<2	<2	<2	<2	<2	<2	<2
Tin – total	µg/L	3	-	<2	<2	<2	<2	<2	<2	<2	<2
Zinc – filtered	µg/L	8	3000	7	<5	<5	<5	<5	<5	<5	<5
Zinc – total	µg/L	8 (276)[3]	3000	9	<5	<5	<5	<5	<5	<5	<5

[1] Table F3 – Receiving water contaminant trigger levels of EA EPML00792513 (dated 7 May 2013).
[2] Table F4 – Receiving water contaminant limits of EA EPML00792513 (dated 7 May 2013).
[3] 80th percentile of Jamie Creek reference site data (sites SW0.1, SW2, SW5) from last 24 sample points.
[4] Finalised and QA/QC-checked laboratory reports received to 16 December 2015.
- no default value listed in the EA.

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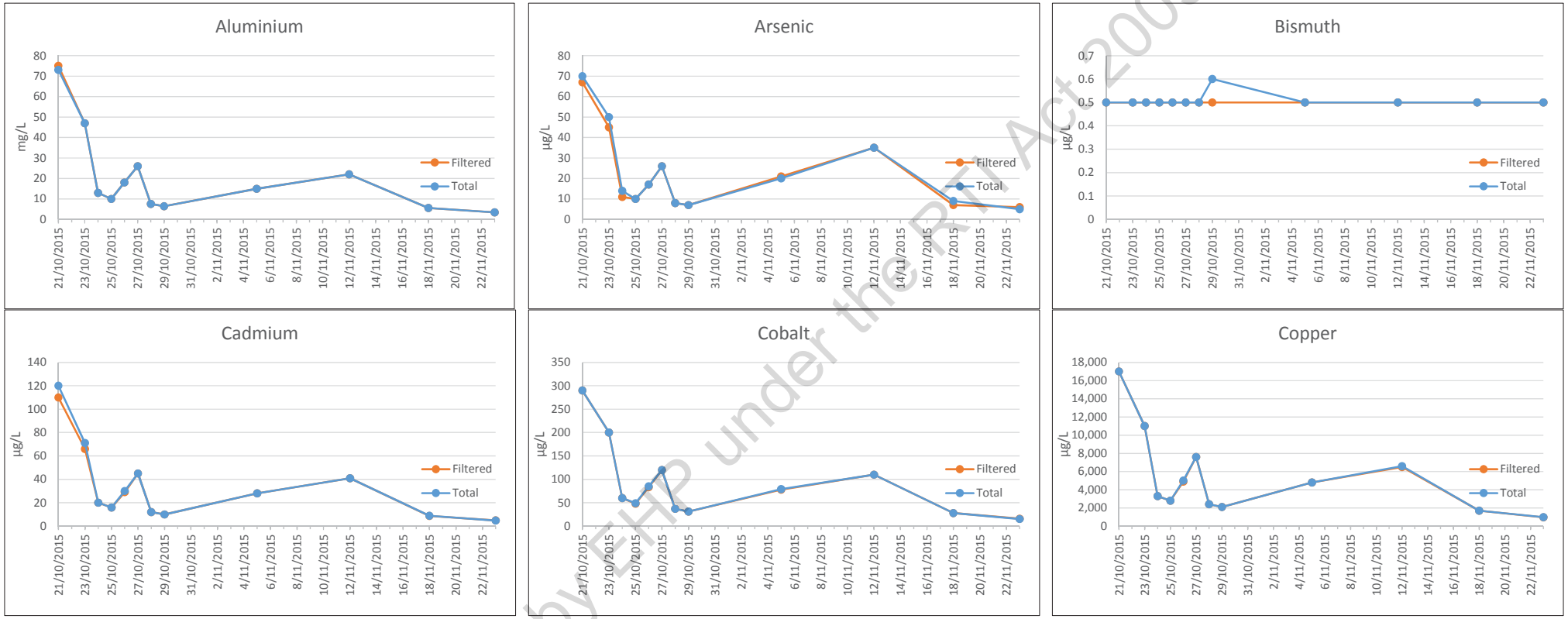
Figure 1: Water quality results – routine monitoring site SW4



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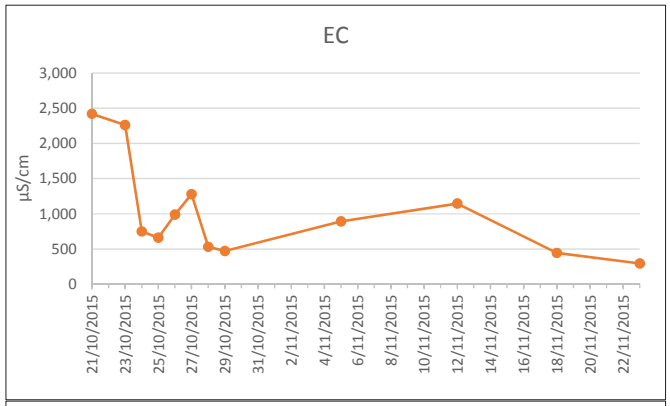

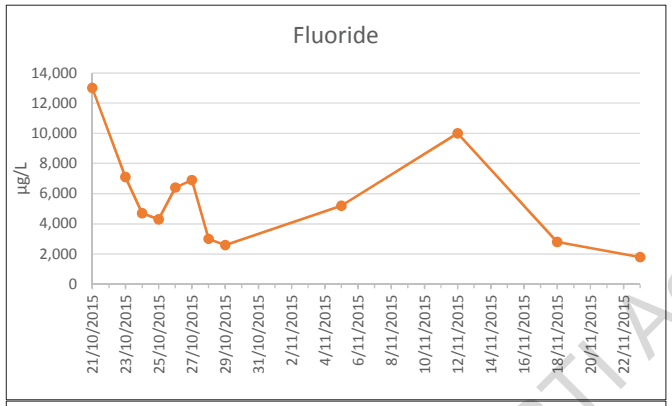

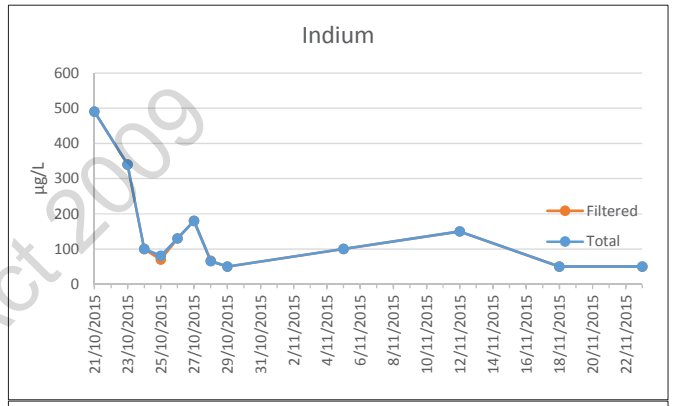

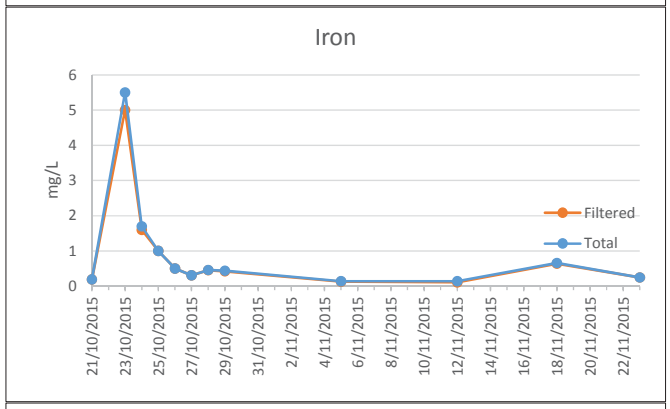

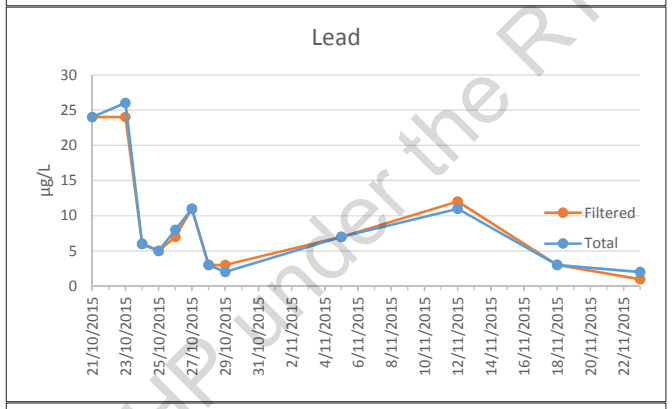

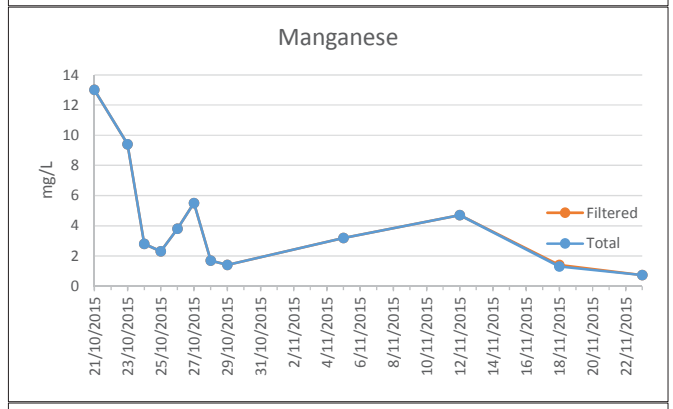

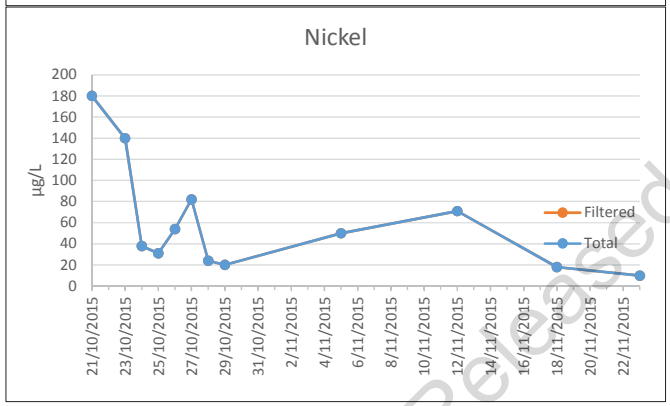

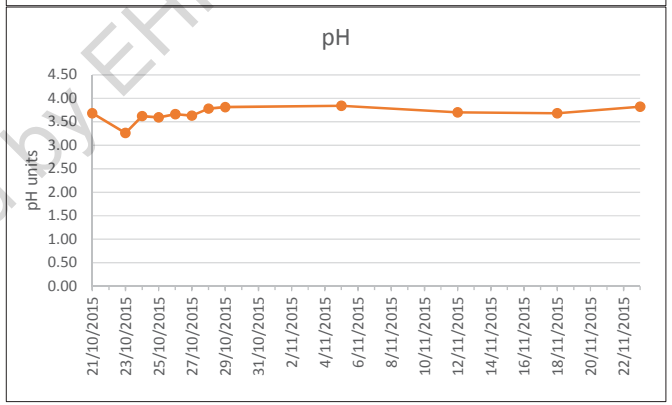

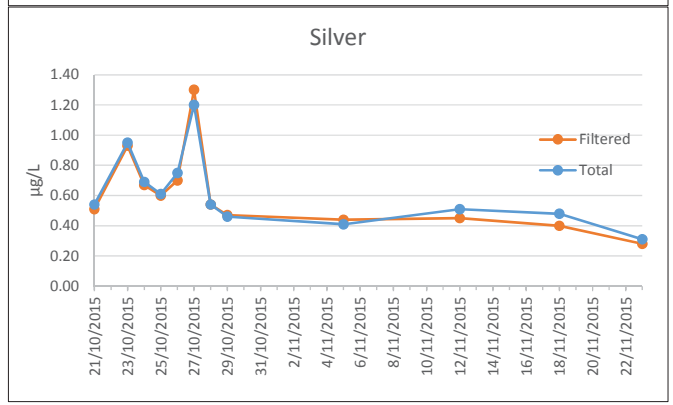

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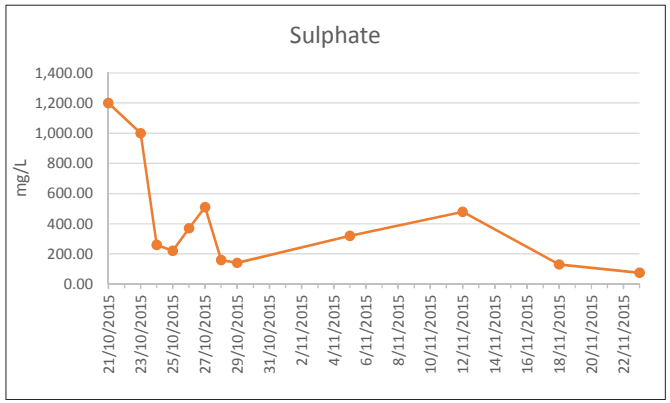

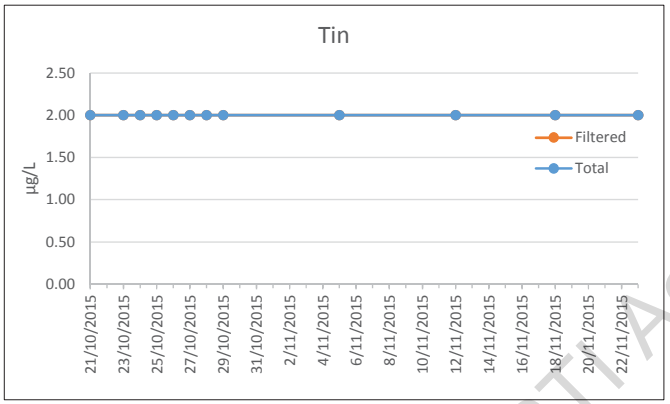

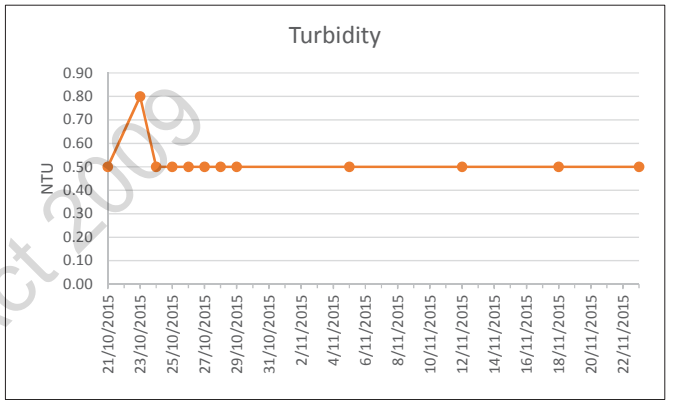

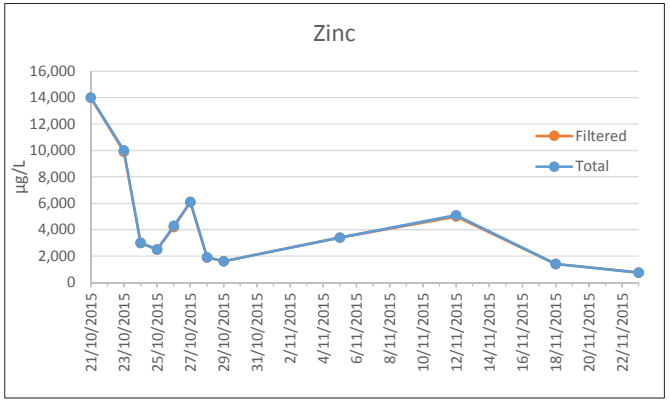

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From: Rebecca McIntyre [Rebecca.McIntyre@csdtin.com.au]
Sent: Wednesday, 23 December 2015 2:33 PM
To: BASKARAN Arun
CC: EHP-Northern_Cairns_Pollution_Alerts
Subject: Baal Gammon treat & release program

Hi Arun,

As discussed on the phone today, the most recent preliminary lab results for the Baal Gammon treat and release program has shown an exceedance for fluoride – result of 2.2mg/L. I have asked SGS to check the preliminary result, and the test has returned the same.

The crew on-site continue to conduct in-situ readings for fluoride using a calibrated meter, and current results are well below 1mg/L. The meter is being re-calibrated by CSD today.

Another treat and release program water sample is being collected today by CSD, and will be submitted to SGS Cairns for analysis.

Kind regards

Bec McIntyre
Manager - Environment

Consolidated Tin Mines Limited
395 Lake St, Cairns North, QLD 4870
PO Box 4, Mt Garnet, QLD 4872
Mb sch4p4(6) Personal information
Email: Rebecca.McIntyre@csdtin.com.au
cid:image002.jpg@01D0E4AF.A2C4F190

Please consider the environment before printing this email.

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From: DAVIS Geraldine [Geraldine.Davis@ehp.qld.gov.au]
Sent: Monday, 18 January 2016 10:04 AM
To: 'Jeff Moore'
CC: OFFNER Sarah
Subject: RE: Baal Gammon

Hi Jeff,

Thanks for you enquiry about the wastewater treat and release activities being conducted at the Baal Gammon Mine.

I can confirm that the reagents you listed below were present at the time I observed the treatment of contaminated waters at the site in November 2015.

Please be aware that due to privacy issues, any further information being sought in relation to this will need to be made under the *Right to Information Act 2009* (RTI).

I don't recall there being a written proposal made to EHP regarding the planned treatment process as it was stated to EHP that the activity was able to be carried out under the existing conditions of Baal Gammon Copper's environmental authority (in regard to the activity being able to meet the water quality release limits). Conversations which I had with site representatives about the treatment process were formally recorded and would be a document available under the RTI process.

Information about the RTI application process is available at :
http://www.rti.qld.gov.au/

Kind regards,

Geraldine Davis
Senior Environmental Officer
North Queensland Compliance | Environmental Services and Regulation
Department of Environment and Heritage Protection

P 07 4222 5384
Level 3, 5B Sheridan Street, Cairns QLD 4870
PO Box 7230, Cairns QLD 4870

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From: Jeff Moore [mailto:j.moore@virtualcurtain.com.au]
Sent: Friday, 15 January 2016 3:12 PM
To: DAVIS Geraldine
Subject: Baal Gammon

Hi Geraldine,

Thank you for taking my phone call today on behalf of Virtual Curtain Limited (VCL).

You may be aware that VCL/CSIRO introduced patented "hydrotalcite" technology to the Baal Gammon mine site in late 2013 for the purpose of pre-treating contaminated in-pit wastewater, prior to final polishing by RO and release into Jamie Creek. The job was very successful and Snow Peak Mining (SPM) were able to subsequently re-commence mining. All targets for wastewater release were met.

This "hydrotalcite" technology is patented by CSIRO and commercialised by VCL. Australian patents are in force and the intellectual property covered by the patents is of significant commercial value to CSIRO and VCL. The key reagents used at Baal Gammon to create the hydrotalcite mineral in-situ, to remove toxicity and neutralise acidity in wastewaters at Baal Gammon, are magnesium in the form of magnesium chloride and caustic in the form of sodium

hydroxide. The use of these reagents in acid wastewaters to form hydrotalcite is patented technology.

Would you please confirm that your observations and/or discussions with SPM are that these reagents are being introduced into the Baal Gammon pit wastewater for the purpose of remediating the wastewater for eventual discharge. I understand that reverse osmosis equipment may be being used at Baal Gammon to polish the wastewater prior to release in a similar fashion to the remediation work previously carried out in late 2013 .

I look forward to any response or comments/feedback that you may have on this matter as soon as possible. The matter is of significant importance to both VCL and CSIRO in Australia.

Best regards

Jeff Moore

Jeff Moore
Executive Director
Virtual Curtain Limited
ACN 129 687 029

photo 1

Suite 1, 6 Richardson Street
West Perth 6005 Western Australia
PO Box 1559 West Perth 6872 Western Australia
P: +61 (0)8 9226 0866
M: +61 (0)400 927 202

j.moore@virtualcurtain.com.au
www.virtualcurtain.com.au

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Released under the Official Information Act 2009

Release

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Release

RTI Act 2009

Released by Environment NT Act 2009

Release

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Release

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Release

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30/10/2015

FLAKES

2205 LB. / 1000 K

MAGNESIUM CHLORIDE HEXAHYDR

$(MgCl_2 \cdot 6H_2O)$

CAS. NO. 7791-18-6

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30/10/2015

Released under the RTI Act

Release

Released under FOI Act 2009

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Released under the RTI Act 2009

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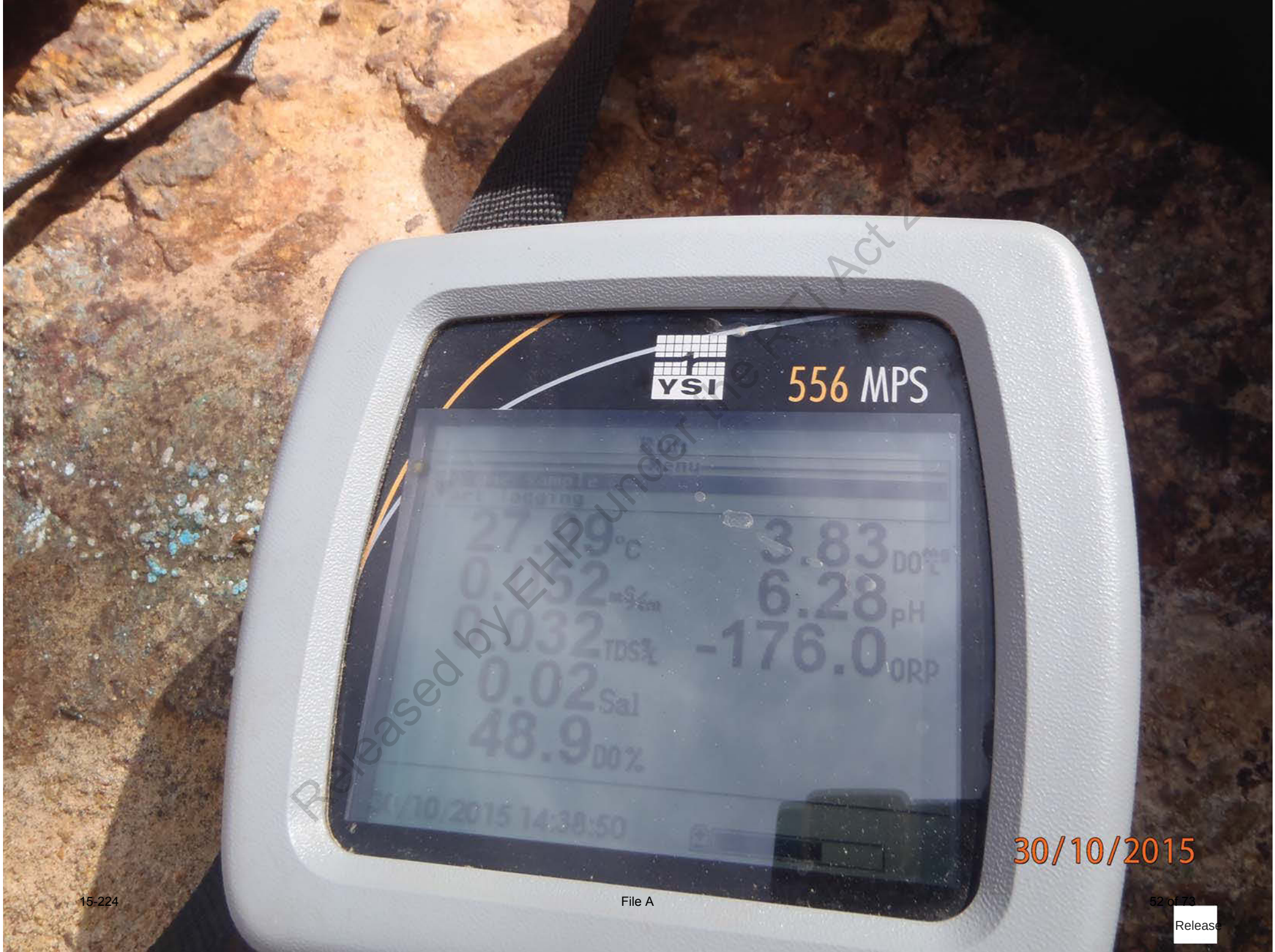

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30/10/2015

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30/10/2015

Release

Release

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Under the RTI Act 2009

Release

Notice of appeal and application for a Stay – Baal Gammon mine

The quantity and quality of contamination of the environment that is likely to be caused if the stay is granted.

and

The proximity of the place at or from which the contamination incident is happening or happened to a place with environmental values that may be adversely affected by the contamination.

It is suggested our instructions are that we *object* to the stay of proceedings as the intent of the Clean-up Notice around contaminated water storage is to prevent a repeat of previous incidents where discharges of contaminated water from the pit to Jamie Creek has occurred. The back filling of the pit is intended as a long term solution to this issue.

To understand the potential risk of further unauthorised contaminant releases in the upcoming wet season, it is important to understand the preceding rainfall conditions and the pit storage capacity in the leadup to the unauthorised release in March 2015. The following details are important:

(a) At the end of the 2013/14 wet season (1 April 2014) the pit had been emptied of contaminated water through a managed 'treat and release' program, approved by the department; and
(b) Under this program, 92ML of water was released over a 5 month period, to the point where the pit was empty and hence had maximum capacity to contain contaminated water; and
(c) Between 1 April 2014- 31 March 2015, the total rainfall experienced in the area (as measured at the nearby Herberton weather station) was 1142mm, which was less than the average total rainfall of 1150.4mm recorded for Herberton.

Under these circumstances, it is of deep concern to the department that a release of highly contaminated water occurred from the pit in March 2015, even under quite optimal conditions (empty pit and below average rainfall) for the containment of contaminated water.

The most recent pit water volume known by the department was 83.72ML recorded on 17 June 2015; the current volumes are unknown, however it can be said with confidence that the pit would currently contain significantly more contaminated water volumes than its empty status at the end of March 2014. The logical conclusion then is that if there is a stay period of 6-8 months, which would include the upcoming wet season, there is a very high likelihood that a repeat of the unauthorised releases will occur, unless urgent action is implemented to reduce the current water levels in the pit prior to the commencement of the 2015/16 wet season.

These releases are likely to cause significant inputs of contaminants to Jamie Creek, and possibly the Walsh River, causing further degradation of the environmental values in both river systems.

Water quality within the pit and impacts on environmental values

The water quality held within the pit contains very high levels of contaminants including, fluoride, aluminium, copper, zinc, lead, arsenic and cadmium and the water is also very acidic. Releases of this water in March 2015 caused the deterioration of water quality in Jamie Creek downstream of the mine for at least 2km, and degraded the environmental values of Jamie Creek which are: an aquatic ecosystem, stock watering and use of the water by Watsonville residents for domestic

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purposes. For example, copper concentrations in Jamie Creek were at levels which would cause acute ecotoxicological effects to aquatic life downstream of the pit, which were significantly higher than the upstream site and also significantly higher for the downstream sites prior to the commencement of the March 2015 releases.

Further releases of highly contaminated waters are likely to add to the concentrations of contaminants in the sediments of Jamie Creek, adding top a more permanent contamination issue in the creek.

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Queensland Government
Department of
Environment and Heritage Protection

Ref 101/0008744, STAT947 and CR66897

4 September 2015

Baal Gammon Copper Pty Ltd
Level 1, 33 Ord Street
WEST PERTH WA 6005

cc Consolidated Tin Mines Limited
395 Lake Street
CAIRNS QLD 4870

cc Snow Peak Mining Pty Ltd
395 Lake Street
CAIRNS QLD 4870

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Dear Sir/Madam

Re: Clean-up notice pursuant to section 363H of the *Environmental Protection Act 1994*

I refer to recent discussions and correspondence between the Department of Environment and Heritage Protection (the department), Baal Gammon Copper Pty Ltd, Consolidated Tin Mines Limited and Snow Peak Mining Pty Ltd regarding the activities at the Baal Gammon Mine on land described as ML20388 (the site) and a draft Clean Up Notice prepared by the department regarding the site.

Further to our discussions, and as a result of subsequent consideration of a written submission by Mr John Banning on behalf of Baal Gammon Copper Pty Ltd and Snow Peak Pty Ltd, the department has decided to issue Baal Gammon Copper Pty Ltd, Consolidated Tin Mines Limited and Snow Peak Mining Pty Ltd with a Clean-up Notice pursuant to section 363H of the *Environmental Protection Act 1994*. Please find that notice enclosed with this letter as well as information regarding your review and appeal rights and obligations.

Should you have any further enquiries, please contact Geraldine Davis, Senior Environmental Officer of the department on telephone (07) 4722 5384.

Level 10 Verde Tower
445 Flinders Street Townsville
PO Box 5391 Townsville
Queensland 4810 Australia
Telephone + 61 7 4722 5353
Facsimile + 61 7 4722 5351
Website www.ehp.qld.gov.au
ABN 46 640 294 485

Release

Yours sincerely

sch4p4(6) Personal Information

Rob Little
A\ Manager (Compliance), Minerals
Delegate of the Chief Executive
Environmental Protection Act 1994

Enc 1. STAT947 – Clean-up Notice

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Notice

Environmental Protection Act 1994

Clean-up Notice

This clean-up notice is issued by the administering authority pursuant to section 363H of the Environmental Protection Act 1994 to advise you of a decision requiring you to take the stated action in regard to a contamination incident.

Baal Gammon Copper Pty Ltd
Level 1, 33 Ord Street
WEST PERTH WA 6005

ACN 149 583 933

And

Consolidated Tin Mines Limited
395 Lake Street CAIRNS QLD 4870

ACN 126 634 606

And

Snow Peak Mining Pty Ltd
395 Lake Street
CAIRNS QLD 4870

ACN 161 212 504

Your reference:

Our reference: STAT 947

4 September 2015

Take notice: that under the *Environmental Protection Act 1994* (the Act) a clean-up notice is issued to Baal Gammon Copper Pty Ltd, Consolidated Tin Mines Limited and Snow Peak Mining Pty Ltd (you) by the administering authority. The administering authority is the Chief Executive of the Department of Environment and Heritage Protection (the department).

The clean-up notice is issued in respect to the activities of Baal Gammon Copper Pty Ltd, Consolidated Tin Mines Limited and Snow Peak Mining Pty Ltd at the Baal Gammon Mine on land described as ML20388 (the site).

A. Grounds

The clean-up notice is issued on the following grounds:

1. A contamination incident has occurred; and/or

ABN 46 640 294 485

Great state. Great opportunity.

Queensland Government

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Release

A contamination incident continues to occur.

Between 17 and 22 March 2015, a visible release occurred from the site to Jamie Creek. Sampling conducted on 18 March 2015 of the water discharging from the site revealed the presence of contaminants.

In addition, water samples obtained from Jamie Creek between April-June 2015 indicate the ongoing contamination of Jamie Creek downstream of the open cut pit, relative to the upstream sites until at least June 2015.

The contamination incident is said to be continuing given the ongoing contamination of Jamie Creek. The ongoing contamination indicates that either:

(a) the March release continues to impact the creek; and/or

(b) Jamie Creek is being further contaminated via a subsurface release from the pit.

The department is satisfied that the contamination incident has caused or is likely to cause serious or material environmental harm.

2. You are a prescribed person for a contamination incident pursuant to section 363G of the Act.

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

General

- Baal Gammon Copper Pty Ltd (BGC) is the holder of Environmental Authority (EA) EPML00792513 for the site.
- Consolidated Tin Mines Limited (CSD) has been operating the site since January 2015.
- Snow Peak Mining Pty Ltd (SPM) is a signatory to a Mineral Rights Agreement (MRA) with BGC regarding the site.
- CSD is carrying out mining activities on the site under the EA held by BGC. Current mining activities being carried out on the site by CSD include activities associated with 'care and maintenance'.
- BGC is a 'prescribed person' pursuant to section 363G of the *Environmental Protection Act 1994* for the following reasons:
  - BGC, as the EA holder and the leaseholder at the time of the incident is causing and permitting the incident to happen by:
    - allowing CSD to operate the site under the EA; and/or
    - failing to undertake actions to stop the contamination.
  - BGC, as the EA holder, and the leaseholder at the time of the incident is, and was:
    - the owner of the contaminants involved in the incident; and/or
    - an occupier of the place at which the incident is happening and did happen.

  And/or:

- CSD is a 'prescribed person' pursuant to section 363G of the *Environmental Protection Act 1994* for the following reasons:
  - CSD, as the current mine operator, and the mine operator at the time of the incident:

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- is causing and permitting the incident to happen by failing to undertake actions to prevent the incident from occurring; and/or
- is, and was an occupier of the place at which the incident is happening and did happen; and/or
- is and was the person in control of the contaminant involved in the incident.

And/or:

- SPM is a 'prescribed person' pursuant to section 363G of the *Environmental Protection Act 1994* for the following reasons:
  - SPM is a signatory to a Mineral Rights Agreement (MRA) with BGC regarding the site and retains legal access and is considered to be:
    - a person who permitted the incident to happen; and/or
    - an occupier of a place at or from which the incident happened; and/or
    - the owner, or person in control, of a contaminant involved in the incident.

The lack of action to address the generation, containment and release of contaminated water from the site has resulted in the contamination incident and serious or material environmental harm.

Seepage from the open cut pit and downstream water quality

- On 17 March 2015, CSD advised the department of a release of contaminated water to Jamie Creek from the base of the outer wall of the open cut pit at the site.
- On 18 March 2015, departmental officers inspected the site and observed seepage from the base of the outer wall of the open cut pit at the site to Jamie Creek. During the inspection, the officers took samples of the water from the open cut pit, seepage from the pit, and of Jamie Creek.
- The analysis of the samples collected on 18 March 2015 confirmed the presence of contaminants with characteristics consistent with water contained in the open cut pit (refer to Table 1 below).
- Comparisons between the samples of the seepage water and the water contained in the open cut pit indicated that the source of the seepage to Jamie Creek is the water contained in the open cut pit.
- The water quality characteristics of both the open cut pit water and the seepage sampled by departmental officers on 18 March 2015 are consistent with Acid Mine Drainage. Acid Mine Drainage has the potential to cause environmental harm.
- The receiving water contaminant trigger levels and contaminant limits contained in Table F3 and Table F4 of the EA are based on guideline values designed to protect the various environmental values associated with downstream waters impacted by activities at the site.
- The environmental values for Jamie Creek include ecosystem values, use of the water for domestic purposes by residents of Watsonville and stock watering.
- The sampling on 18 March 2015 by EHP staff of the water quality of Jamie Creek at SW4 (approximately 300m downstream of the seepage observed by EHP staff) showed a marked increase in concentrations of numerous contaminants (listed in Table 1 below) which exceed the contaminant trigger levels and contaminant limits specified in Table F3 and Table F4 of the EA respectively.
- The sample results from 18 March 2015 indicate that contaminants (listed in Table 1 below) were released to the environment as a result of the contamination incident.
- The sample results depict the similarities in open cut pit water and seepage, as well as the elevated concentrations of contaminants in Jamie Creek downstream of the seepage, relative to the reference site.

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Table 1 – Sample results obtained on 18 March 2015 by EHP officers

Parameter	Unit	BG02 – seepage water	Open cut pit water	SW4 (300m d/s of seepage)	SW0.1 (reference)
pH	pH unit	3.10	3.12	3.56	6.84
EC	µS/cm	2535	2,628	1130	41
Sulfate	µg/L	1,300,000	1,300,000	470,000	840
Fluoride (total)	µg/L	40,000	45,000	13,000	180
Aluminium (dissolved)	µg/L	82,000	78,000	28,000	840
Arsenic (dissolved)	µg/L	36	26	22	4
Cadmium (dissolved)	µg/L	230	200	67	<0.1
Cobalt (dissolved)	µg/L	440	430	150	<1
Copper (dissolved)	µg/L	37,000	38,000	12,000	4
Lead (dissolved)	µg/L	33	58	9	<1
Manganese (dissolved)	µg/L	14,000	14,000	4,900	<5
Nickel (dissolved)	µg/L	320	300	100	<1
Zinc (dissolved)	µg/L	23,000	23,000	7,800	6

- Sample results have also been provided by CSD for samples collected at SW4 within the minesite, SW6 (approximately 1km downstream of the mine) and SW7 (approximately 2km downstream of the mine) on 29 April 2015, 21 May 2015 and 2 June 2015. These results indicate a continuation of the marked increase in concentrations of numerous contaminants which are elevated above the contaminant trigger levels and contaminant limits provided in Table F3 and Table F4 of the EA, respectively, relative to the upstream reference site, and they are also elevated at SW4, relative to concentrations at SW4 prior to the commencement of the visible release of contaminants.
- All of the abovementioned sample results indicate continued contamination of Jamie Creek downstream of the open cut pit, relative to the upstream sites. The most likely explanation for the elevations in contaminant concentrations is either (a) the effects of the visible release (between 17-22 March 2015) are still impacting on the creek, or (b) the contamination incident is continuing via a subsurface release from the pit, or (c) a combination of (a) and (b).
- The initial contamination incident that commenced on 17 March 2015 and sampled on 18 March 2015, and the continuation of the contamination after this date has caused deterioration of water quality in Jamie Creek. The sampling shows that receiving water quality is adversely affected downstream of the mine for at least 2km and has degraded the environmental values of Jamie Creek. The degradation of water quality and its effects is material environmental harm as it is not trivial or negligible in nature, extent or context.

Contaminated water storage volumes

- A hydraulic connection between the open cut pit and Jamie Creek was previously identified in BGC and Kagara's response to the Department's Notice to Conduct or Commission an Environmental Evaluation (EE Notice) STAT686. The response indicates:

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- There exists a '*threshold level at which seepage from the open cut pit expresses into the adjacent Jamie Creek* (as advised by Kagara)'; and
- that '*the mechanism for this seepage is considered through the upper soils/weathered basement sequences and historical underground mine workings*' (AWA, 2012).

- Mining of the open cut pit since BGC and Kagara's response to the EE Notice has resulted in changes to the pit configuration but it is considered that a hydraulic connection still exists between the open cut pit and Jamie Creek, given the strong physico-chemical similarities between the open cut pit water and the seepage found to be discharging at the base of the pit wall by the department on 18 March 2015.
- According to the 2014 Annual Regulated Dam Safety Review Report for the Baal Gammon Mine (ATCW, 2014), 45.9ML of available storage is needed in the pit to contain a 72 hour, 1 in 100 annual exceedance probability (AEP) event, also known as the 'extreme storm storage' (ESS) allowance.
- Currently, the management of water in the pit by CSD allows for this 45.9ML of storage to be available below a maximum pit water storage volume of 166.7ML, the level at which water in the pit would reach the emergency spillway
- This volume of water is equivalent to a relative level (RL) of 892.1m.
- According to the ATCW (2014) calculations, the maximum volume of water which could be kept in the pit in order to afford the ESS allowance is 120.8ML.
- The release of contaminated seepage to Jamie Creek which was observed by departmental officers on 18 March 2015 occurred when the volume in the pit contained 101.24ML, at RL 887.285m, the highest recorded level for the 2014/2015 wet season.

Prior to the notified release of visible seepage (which commenced on 17 March 2015), the last recorded volume in the open cut pit at which seepage was not observed to be discharging to Jamie Creek was 95.09ML on 12 March 2015, equating to a relative level of RL 886.82m. Given that the pit has been shown to release water at a level well below a volume of 120.8ML (166.7ML – 45.9ML), the department is of the view that the ESS calculations for the pit are erroneous as they do not take into account the known potential of the pit to release contaminated water below this volume of water.

Waste Rock Dump

- During an inspection by departmental officers on 17 June 2015 it was identified that the Waste Rock Dump (WRD) cover had sustained a significant degree of deterioration, with numerous rips exposing large sections of waste rock, allowing for a greater degree of rainwater infiltration.
- Significant volumes of contaminated material are known to be contained in the WRD.
- Increased rainwater infiltration through the exposed contaminants resulting from the deterioration of the WRD cover has the potential to result in increased volumes of contaminated runoff/seepage from infiltration of storm water runoff through the exposed waste rock.
- The increased volumes of contaminated runoff/seepage water would need to be accommodated within the mine site's contaminated water storages; the increased volumes of contaminated water would potentially contribute to seepage from the mine pit.
- It is the Department's assessment that the potential for the increased generation of contaminated water from this contaminated runoff/seepage promotes an increased risk of a release to receiving waters given that the site is already holding excess water and does not have the capacity to contain contaminated water generated for a three month wet season 1 in 100 AEP, 72 hour event.

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Summary

- The department is satisfied that the contamination incident, being the visible seepage between 17-22 March 2015 from the mine pit and the continued contamination of the environment by either (a) the ongoing effects of the visible release (between 17-22 March 2015), or (b) the continuation of the contamination incident via a subsurface release from the pit, or (c) a combination of (a) and (b), has caused, continues to cause and is likely to cause (if not rectified) material environmental harm. The environmental harm is the adverse effect on the environmental values of an aquatic ecosystem, stock watering and domestic use and that harm is material as it is not trivial or negligible in nature, extent or context.
- It is also considered that serious environmental harm has occurred, because the costs in taking appropriate action to (i) prevent or minimise the harm; and (ii) rehabilitate or restore the environment to its condition before the harm, would exceed the $50,000 threshold amount (as defined in section 17(2) of the *Environmental Protection Act 1994*).
- Measures are required to prevent or minimise the potential for contaminated water to be generated at the site and for contaminated water to be released from the site to Jamie Creek.

B. Requirements

You are required to do the following:

A. Contaminated Water Storage and Waste Rock Dump Management

1. By 5pm on 25 September 2015:
   (i) Re-evaluate the required contaminated water storage allowance for the high hazard dams containing hazardous waste to achieve compliance with condition (G1-1) and (G9-1) of the EA, based on a full supply level in the open cut pit at RL 886.82m or lower, and

   (ii) Provide written certification from a suitably qualified and experienced person of the required storage volumes required to comply with the above conditions.

2. By 5pm on 13 November 2015:

   (i) Reduce contaminated water volumes at the site to meet the revised contaminated water storage allowance as determined by requirement 1 of this Clean-Up Notice; and

   (ii) Ensure all areas of the waste rock dump are covered to prevent the ingress of rainfall and stormwater runoff.

3. By 5pm on 20 November 2015, provide the department with written certification from a suitably qualified and experienced person that the site's water management system has sufficient contaminated collection, pumping and storage capacity to prevent the unlawful release of contaminated water, for events up to and including the events defined in condition G1.1 and G9.1 of the EA.

4. By 5pm on 1 July 2016:

   (i) Remove all contaminated water from the site; (including that stored in the mine water dam and the open cut pit); and

   (ii) Backfill the open cut pit with the waste rock from the waste rock dump; and

   (iii) Cover the waste rock and any remaining waste rock with material to:

   (a) prevent the ingress of rainfall to the waste rock; and

   (b) prevent seepage and runoff of water into the waste rock; and

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(c) shed water away from the waste rock; and

(d) prevent the release of contaminants from the waste rock and former pit void to waters.

5. From the date of issue of this Clean-up Notice, until 13 November 2015, provide written advice at a frequency not less than every 14 days to the department detailing:

(a) details of the actions taken to actively and lawfully reduce the volume of water stored at the site to achieve the contaminated water containment requirements specified in item 2 above and the effectiveness of those actions; and

(b) the available storage in the mine water dam and the open cut pit (for the open cut pit this is to be based on a full supply level at RL 886.82m or lower for the pit in its current configuration); and

(c) a summary of action taken to ensure an impermeable cover is placed on the waste rock dump in accordance with item 2(ii) of this notice.

6 From the date of issue of this Clean-up Notice, until 1 July 2016, provide written advice at a frequency not less than every 28 days to the department detailing the actions taken to achieve the requirements of item 4 of this notice.

B. Other information:

- This Clean-up Notice does not authorise non-compliance with the conditions of Environmental Authority EPML00792513.

Definitions

"Suitably qualified and experienced person" means a person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the Professional Engineers Act 2002, and has demonstrated competency and relevant experience in civil engineering with the required qualifications in dam safety and dam design.

"Extreme storm storage (ESS)" means a storm storage allowance determined in accordance with the criteria in the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EHP, 2013), and is equivalent to the mandatory reporting level.

"Release" means the release of contaminated or potentially contaminated water from the site.

Note:

- The requirements of the clean-up notice take effect immediately upon service of the notice.
- This notice remains in force until further notice from the administering authority.

C. Appeal rights

The provisions regarding reviews of decisions and appeals are found in sections 519 to 539 of the Act. Internal review of the decision to issue a clean-up notice is not available. If you are dissatisfied with the decision to issue this clean-up notice, you may apply to the relevant court for a stay of the decision to issue the clean-up notice.

A person who is dissatisfied with the decision may be able to appeal against that decision to the relevant court within 22 business days after receiving notice of the decision.

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

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Release

For further information about reviews and appeals see the information sheet – Internal review and appeal to the Planning and Environment Court (EM1866).[1]

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

D. Penalties

Failing to comply with a clean-up notice is an offence unless you have a reasonable excuse.

- The maximum penalty for an individual for wilfully contravening a clean-up notice is 6250 penalty units, totalling $736,250 or five years imprisonment.
- The maximum penalty for a corporation for wilfully contravening a clean-up notice is 31,250 penalty units, totalling $3,681,250 or 5 years imprisonment.

If you do not comply with the clean-up notice, an authorised person may also take any of the actions stated in the notice and the department may recover from you the costs incurred in taking the actions.

Should you have any queries in relation to the notice, please contact Geraldine Davis on telephone number 07 42225384.

sch4p4(6) Personal information	4.9.15
Signature	Date

Rob Little

Manager Compliance

Delegate of the Chief Executive

Department of Environment and Heritage Protection

Environmental Protection Act 1994

Enquiries:

Geraldine Davis

Ph: (07) 42225384

Email: geraldine.davis@ehp.qld.gov.au

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[1] This is the publication number. The publication number can be used as a search term to find the latest version of a publication at <www.ehp.qld.gov.au>.