Thalanga Copper Mines Pty Ltd

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Mr Wing Leung
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Environmental Protection Agency
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12 June 2015

Dear Sir

Re: Transitional Environment Program (TEP) MAN17020

In accordance with the commitments made in the TEP please accept this report on surface water flows at the Highway Reward mine. This report covers the period from 10 December 2014 until 11 June 2015. The TEP sites were sampled fortnightly during the notional wet season from 1 December until 30 March. This period was characterised by extremely low rainfall on site with few short duration flow events (Figure 3).

Table 1 Site Rainfall

Month	Rainfall mm
December	37
January	86
February	16
March	15
April	0
May	0
June (to 12 June)	0

At each fortnightly TEP sampling event, on the few occasions when water or flow was present, site pH was taken along with flow. The samples were analysed for acidity with the aim of developing an acidity flux for each site and then comparing the flux in terms of duration and strength with rainfall to provide an indication of the source (influent rainfall or waste rock dump seepage).

Rain events on site on 20, 21 and 25 January and on 13 February trigged flow events to the north which were sampled as SW flows (EA compliance monitoring) on 22 and 27 January. These are shown in Figure 3.

SW6 FLOW PATH DRAIN

The flow path towards SW6 runs along the western side of the base of the Highway Waste rock dump. Flows along this path are measured at SF2 (TEP site 004) and downstream of that at TEP sample sites 003, 002 and 001. Results are tabulated below from 004 through to 001. No flows were recorded on TEP sample days with occasional small pools of water available for sampling.

Table 2 TEP Sample Site 004

Date	pH	Acidity mg/L	Flow	Converted L/s	Flux
12-Dec-14		245	0	0	0
26-Jan-15		23	0	0	0
9-Mar-15	4.1	225	0	0	0

In Table 2 it can be seen that no surface flow was recorded. Ponded water was sufficient to allow pH to be read on one occasion. The pH was below 5 indicating an upstream acidity source. The acidity concentrations recorded ranged from 23 mg/L to 245 mg/L also indicating an upstream source of acidity.

Table 3 TEP Sample Site 003

Date	pH	Acidity mg/L	Flow	Converted L/s	Flux
26-Jan-15		27	0	0	0

TEP site 003 reflected the lack of rainfall and flow. The single acidity reading shows an increase from the weir upstream at 004 however this is within the margin of accuracy for the sampling.

Table 4 TEP Sample Site 002

Date	pH	Acidity mg/L	Flow	Converted L/s	Flux
26-Jan-15		33	0	0	0

TEP site 002 follows the pattern of minimal surface flow established at 003. The slightly increased acidity (compared to 003) may indicate that additional sources are present between 003 and 002.

Table 5 TEP Sample Site 001

Date	pH	Acidity mg/L	Flow	Converted L/s	Flux
26-Jan-15		27	0	0	0

The flow pattern at 001 replicated those at 002 and 003.

SW5 FLOW PATH

The surface flows from the lease towards SW5 were blocked in late 2014 as previously reported. There were no flows from the site towards SW5 during this period.

Figure 1 Flow Monitoring Locations Highway Reward

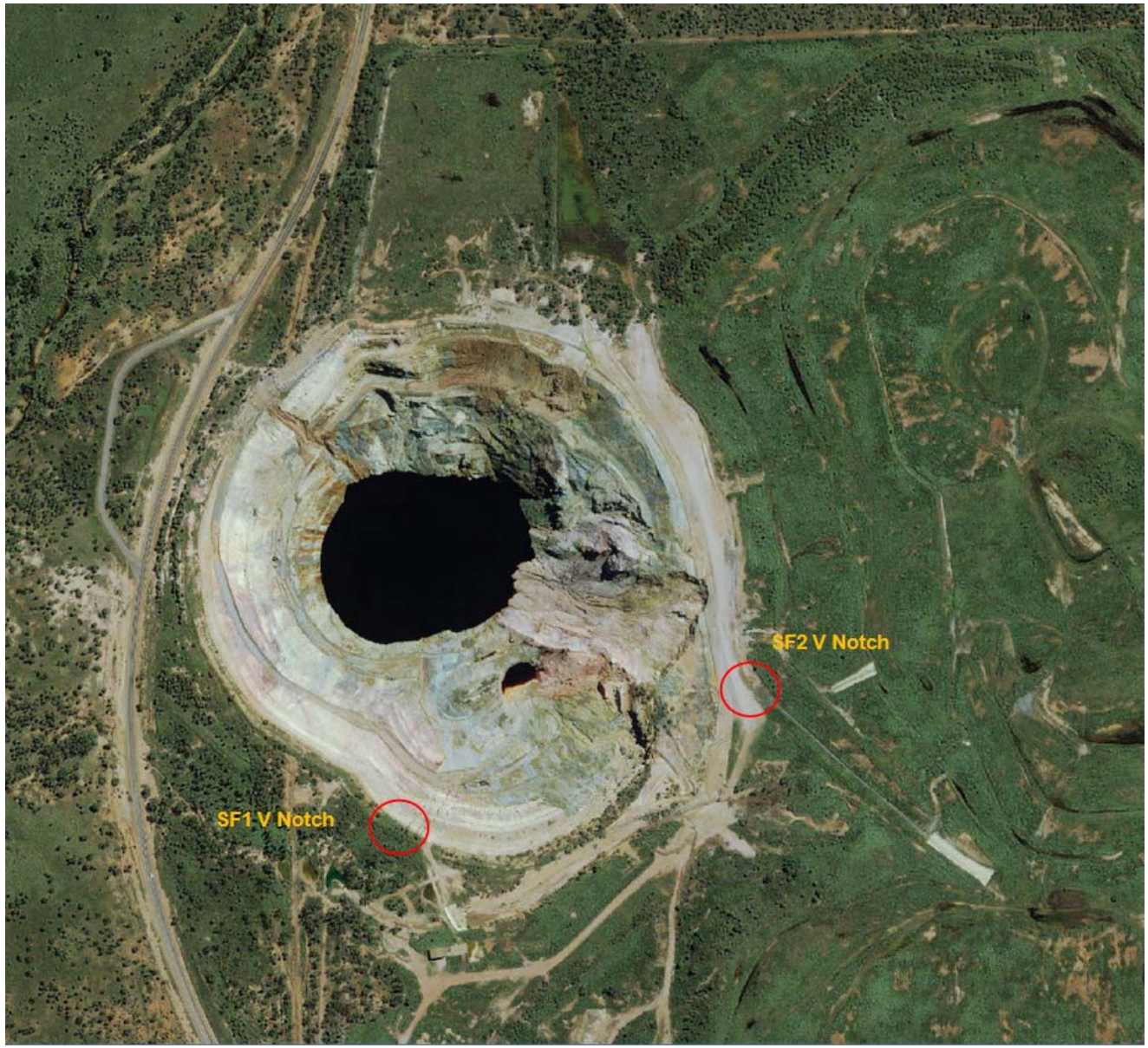
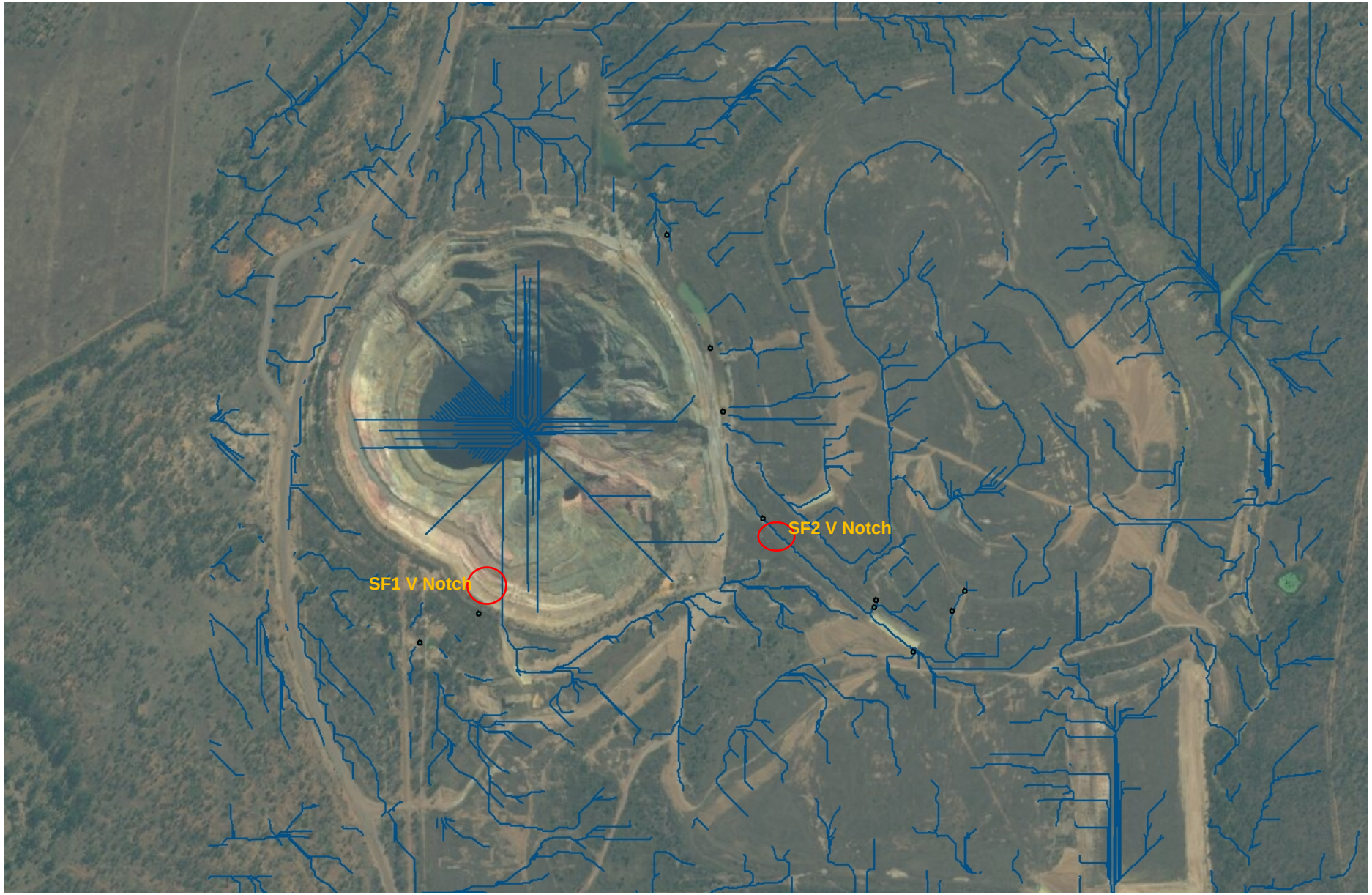


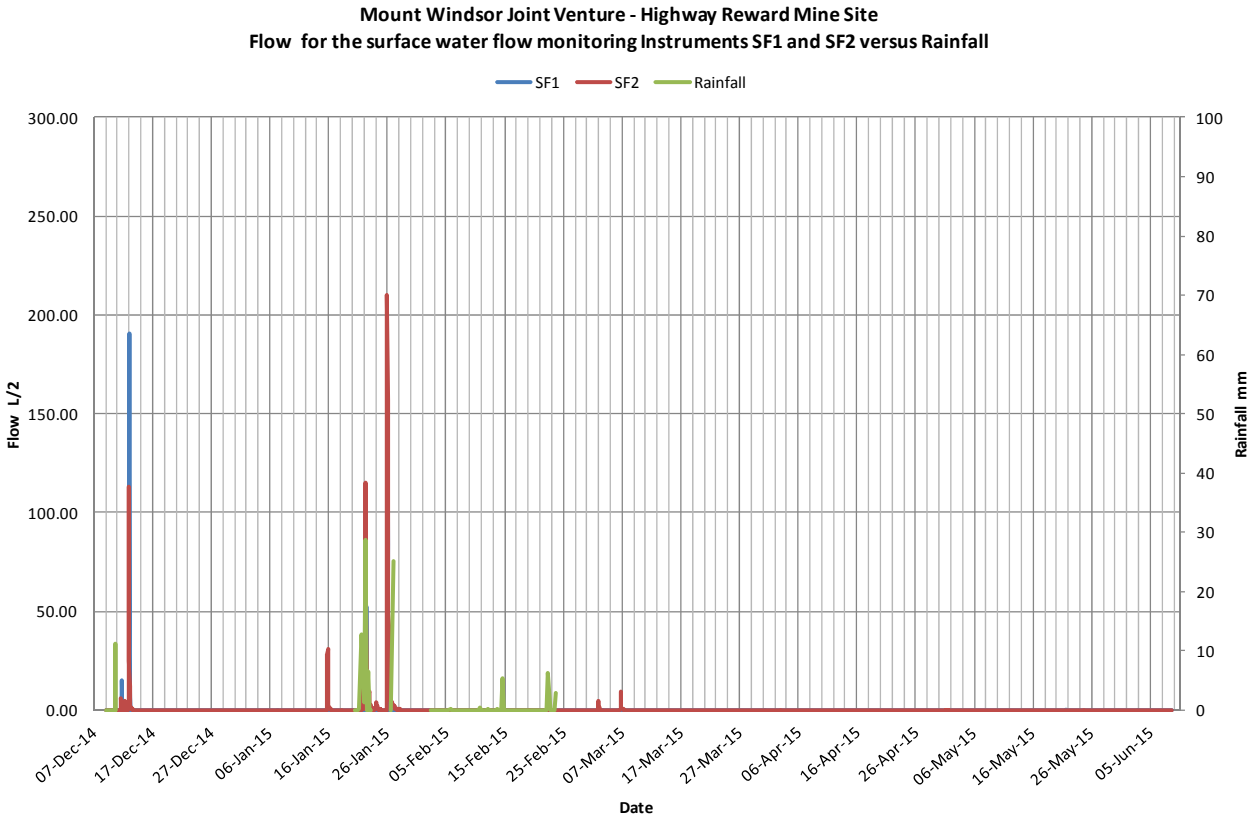
Figure 2 **Site Flow Lines and Sample Points**



PIT V-NOTCH

The pit v notch SF1 has provided similar flow regimes to SF2 and can be seen in Figure 3.

Figure 3 Flows and Rainfall



TEP Sample Site 010 records the water flowing into the pit and away from the SW5 sample site.

Table 6 TEP Sample Site 011

Date	Acidity mg/L	Flow	Converted L/s	Flux
26-Jan-15	64	0	0	0

SURVEY PIT WATER HEIGHT

Plate 1 shows the pit water height in September 2011, Plate 2 shows the water level in February 2014, Plate 3 in August 2014, Plate 4 in October 2014, Plate 5 in January 2015 and Plate 6 in April 2015. The pit water level has risen in accordance with the pit water balance model predictions during this time.

Plate 1 **Pit Water Height September 2011**

Plate 2 **Pit Water Height February 2014**

Plate 3 **Pit Water Height August 2014**

Plate 4 **Pit Water Height October 2014**

Plate 5 **Pit Water Height January 2015**

Plate 6 **Pit Water Height April 2015**

SUMMARY

Drought conditions on site have prevented any runoff or seepage estimates being made during the monitoring period.

Mining one are contracted to monitor the flows and rainfall as variables to calibrate the runoff coefficient for the site. This work is scheduled for completion in early 2016.

Please feel free to call me if you have any questions.

Yours sincerely

Stephen Kent
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