

Appendix 2: Giant Mine: Interim Underground Stabilisation Activities - Void Volume, Underground Access, Stope Backfill Requirements - February 12, 2014 Version

Stope Complex	Void Volume Information					Underground Access and Mine Plan Information		Crown or Sill Pillar Thickness Information	Specification and Conceptual Mitigation Plan Information			
	Individual Void Description	Are cavity scans (even partials) available (Y to N)	Current neat volume estimate (m³) *	Description of confidence level in Neat Volume (see legend below)	Do inaccessible or un-quantifiable exit voids exist that may allow paste backfill to leak out (Y or N), and what is the relative potential for leakage from the void?	Underground Access Possible?	Has area been visited by Golder (Y or N), have the engineering level plans been assessed (Y or N).		Required level of paste required in targetted void to be backfilled	Specification backfill volume (including some leakage potential)	Mandatory and Possible Fill Barricades in Conceptual Mitigation Plans	
											Mandatory and Possible Conventional Barricades	Mandatory and Possible Remote Borehole Barricades
B1-18 Stope Complex	B1-18 Stope, B1-18 Upper Stope and B1-18 Upper Access	Y, Lidar	2,000	C1, C4	Y, but neat volume estimate includes some contingency for leakage.	Access is possible but backfill placed in 2013 has blocked some previously accessible areas.	Y, Y	Crown pillar nominally 5 to 25m thick, see crown pillar thickness contour drawing	1/20th crown pillar thickness (water license requirement) with a flat paste profile.	2000	1	
B3-06 Stope Complex	B3-06 South / Upper (east and west limbs)	Y, cms and c-als	1,500	C1, C2	Y, exits in the form of timbered manways exist but the leakage is quantified in the next line.	Access to B3-06 South / Upper west limb exists but it is not currently safe, no access to the East limb exists	Y, mine plans partly assessed.	Sill pillar nominally 3m to 15m thick, see sill pillar thickness contour drawing	Both east and west limbs of the B3-06 South / Upper stope void must be filled to the base of where the arsenic bulkhead raises intersect the void with a flat paste profile - see conceptual mitigation plan.	1500	1	
	B3-06 South / Lower Development - raises, mill holes, lower drifts, etc. that will fill up behind planned remote barricades	N	2,800	C4	Y, exits exist that are not well quantified but these leakage points are likely through development that can be plugged remotely.	No access.	N, mine plans partly assessed.		n/a	3220		2
	B3-06 North / B3-02 - potential it will need to be filled	Y, Lidar	12,500	C1	Y, exits that would be difficult to plug exist but are visible. Fill would only be required here if containment of fill in B3-06 drawpoints is unsuccessful.	Northern portion (3-02 stope), partly accessible and visible, 3rd level 3-06 lower stope and drawpoints not currently accessible but visible.	Y, mine plans partly assessed.		n/a	assume no fill required	Will only be required if remote barricades do not work	
A3-70 Stope	3-70 Stope void	Y, c-als	12000	C1, Golder - new c-als from Nov. 2013	Y, volume well quantified and stope is partly backfilled, possible exit voids through fill and in timbered manways in-between sub-levels.	No access.	N, mine plans checked	Crown pillar nominally 14 to 30m thick, see crown pillar thickness contour drawing	Backfill required to within 1m of the high point of the back (top) of the void with a flat paste profile.	12600		
	Backfill in connected drifts to keep fill in stope	Y - partial c-als	500	C1, Golder - new c-also from Nov. 2013	Y, but mine plans show few connections.		N, mine plans checked		n/a	525		1
B3-10 Mid (B2-02, B2-04, B2-18, B3-10) Stope Complex	B3-10 Mid Complex Below 2nd Level (2-02, 3-10 stopes)	Y, partial Lidar	6,000	C1/C4 - not all areas accessible for cms	Y, exit voids exist that cannot be fully quantified.	Some access possible, old accesses blocked off of main ramp with plywood and muck - may be possible to get in past this for inspection in future.	Y but only partial access, mine plans checked.	Crown pillar nominally 52 to 92m thick, see crown pillar thickness contour drawing. The critical issue is the rib pillar with arsenic stope B2-12/13/14.	n/a	6900	4	
	B3-10 Mid Complex above 2nd Level (2-04, 2-18 stopes)	Y, partial Lidar	11,000	C1/C4 - not all areas accessible for cms	Y, exit voids exist but once lower area is filled there the possibility of inaccessible exits is lower.		Y but only partial access, mine plans checked.		Backfill void to within 2m of the high point of the back (top) of voids (up to 3 separate areas) with a flat paste profile.	11550	2	

Total Neat Volume Estimate (m³)	
48,300	Includes B3-06 North / Lower (B3-02 Stope)
35,800	Not including B3-06 North / Lower (B3-02 Stope)

Specification Fill Volume (Does not include B3-06 North / Lower Stope)	Specified Total Void Volume Estimate (m³)	Mandatory and Possible Conventional Barricades	Mandatory and Possible Remote Borehole Barricades
Anticipated Leakage (relative to 35,800 m³)	39000	8	3
	9%		

Potential additional paste legend (leakage)	No leakage expected
	+5% leakage
	+10% leakage

Assumptions:
Leakage amounts are limited based on assumption of management controls

Volume determination approach used in assessment of confidence levels:
 C1 - Based upon recent c-als and/or Lidar scans - may be multiple voids in any one stope complex
 C2 - Based upon dated cms, surveys, may be multiple voids in any one stope complex
 C3 - Rough estimate based on drilling investigation - void encountered and fill level estimated
 C4 - Rough estimate based on historical mining plans and mining practices - presence of fill unknown
 C5 - Very rough estimate mine plans not yet assessed