Western Copper Corporation

Project Proposal

Carmacks Copper Project
Yukon Territory

Appendix D3

Water Balance Update
Memorandum CCL-CC7
(February 2006)

FINAL DRAFT Memorandum CCL-CC7

Date: February 10, 2006 **Our File:** 044.03

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Subject: Carmacks Copper Project - Water Balance Update

1. Introduction

This Memorandum CCL-CC7 prepared by Clearwater Consultants Ltd. presents an updated water balance for the Carmacks Copper Project. Clearwater Consultants Ltd. Design Memorandum CCL-CC4, "Heap Leach Facility Water Balance" dated December 4, 1998 presented a detailed description of the heap leach facility water balance model which will not be repeated herein. Revisions have been made to the model as follows:

- The water balance model has been expanded to include the entire site including modules for the heap leach facility and events pond, the open pit, the waste rock storage area, and upstream and downstream receiving waters in Williams Creek and in the Yukon River.
- Updated hydrological parameters incorporated in the model are based on the Clearwater Memorandum CCL-CC6, "Site Hydrology Update" dated January 13, 2006.
- Ore moistures have been revised to reflect the planned use of crushed ore rather than ROM ore used in the previous studies.

This memorandum presents a summary of the updated water balance results for the leach pad and events pond, the open pit and the waste dump for average 20 year dry year and 100 year wet year precipitation conditions. Also presented are a series of tables showing the above mining related flows and the total estimated flows at several locations within the Williams Creek catchment and in the Yukon River downstream of Williams Creek.

2. Water Balance Model

All hydrological parameters incorporated in the overall site water balance model are based on Clearwater Consultants Ltd. Memorandum CCL-CC6, "Site Hydrology Update" dated January 13, 2006.

2.1. Leach Pad and Events Pond Module

The module of the water balance model for the leach pad and events pond, including all input data and assumptions, was previously described in Memo CCL-CC4, "Heap Leach Facility Water Balance" dated December 4, 1998. Changes to model input assumptions were the following

- Ore moistures have been revised to reflect the use of crushed ore rather than ROM ore used in the previous studies. Recommended values are presented in the January 11, 2006 memorandum "Solution Storage/Events Pond Sizing" prepared by Alexco Resource Corp. Ore moisture contents used in the updated water balance model were: initial ore moisture 5.0%, leaching moisture 15%, and residual moisture 12%. The potential draindown moisture is thus 3%, equal to the difference between the leaching moisture and the residual moisture contents.

The results of the updated leach pad water balance analyses are discussed in Section 3 and output from the model is presented in Appendix I.

2.2. Open Pit Module

A monthly water balance module was created for the open pit area using the same hydrologic conditions as for the leach pad area. Based on the previous studies the pit area and catchment area variation over the mine life was estimated and rates of potential groundwater inflow to the pit were assumed. Water inflows to the pit were assumed to be pumped from the pit from April through November each year: in-pit water storage was assumed equal to zero. Some of the pit water could be used as make-up water, in the crusher, and/or for truck wash and dust control. Excess water would be routed to a sediment pond prior to release to Williams Creek.

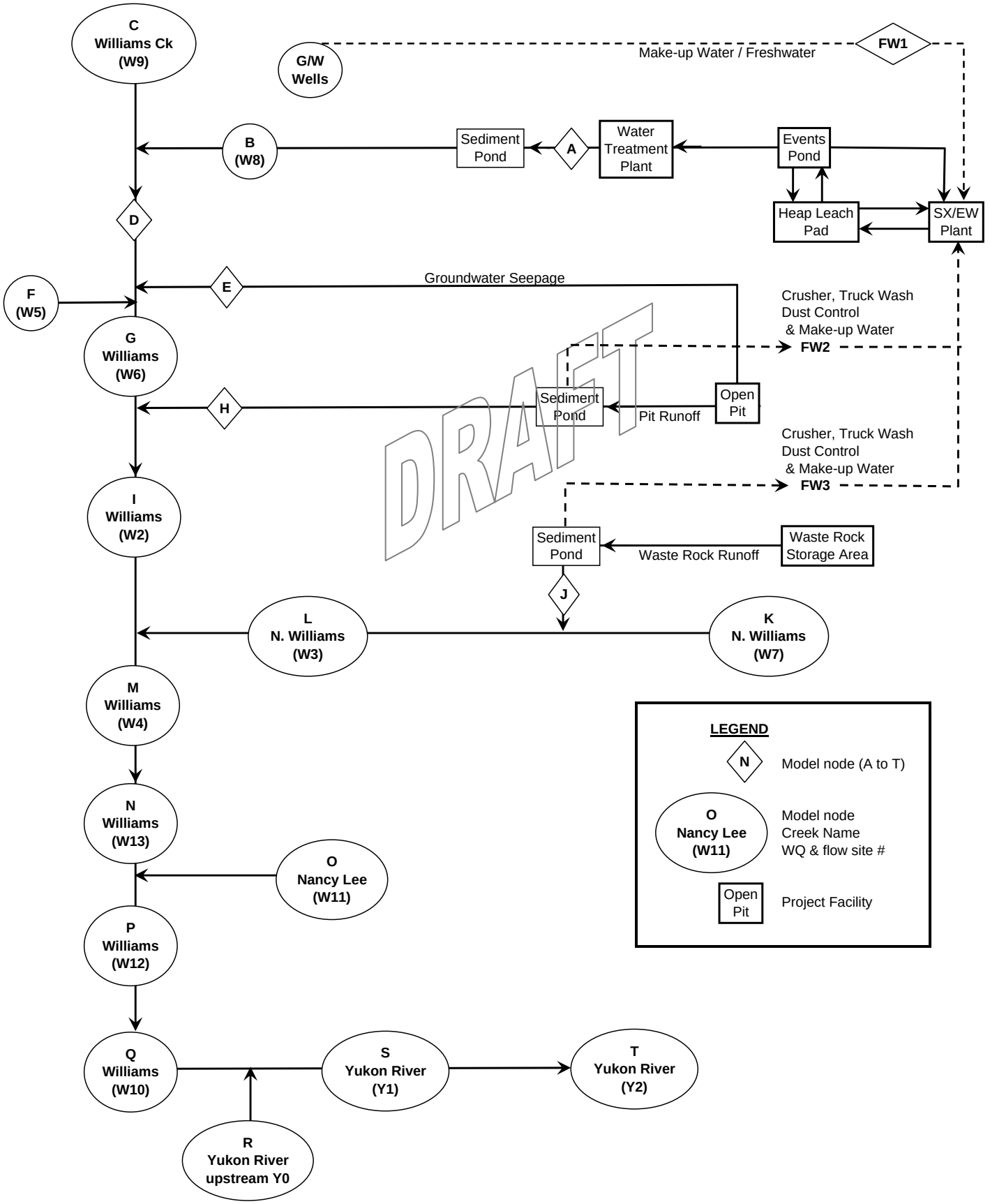
2.3. Waste Rock Storage Area Module

A monthly water balance module was also created for the waste rock storage area using the same hydrologic conditions as for the leach pad area. Catchment areas were estimated from the previous studies. Waste rock operations were assumed to go on throughout the year. Waste rock moisture content was assumed to increase by 2% over the mine life due to precipitation infiltration. A nominal allowance was made for water usage for dust control on haul roads. In addition and depending on availability, waste rock runoff water could be used as make-up water, in the crusher, and/or for truck wash. All runoff from the waste rock and perimeter catchment minus process volumes used would be directed through a sediment pond prior to release to Williams Creek.

2.4. Overall Site Water Balance

Figure CC7-1 shows a schematic of the overall site water balance for the Carmacks Copper Project. The Figure includes the leach pad and events pond, the open pit, the waste rock storage area, and a number of locations along Williams Creek from upstream of the mine development to the Yukon River. Natural runoff flows for all locations within the Williams Creek catchment and for the Yukon River upstream and downstream of Williams Creek were estimated using the monthly flow distributions and annual runoff depths presented in Memo CCL-CC6 dated January 13, 2006. Flows generated from mining operations were added to the natural flows at the locations shown on the Figure. Table CC7-I.9 in Appendix I summarizes catchment areas for all locations.

Figure CC7-1 - Carmacks Copper Project Schematic Overall Site Water Balance Model



3. Water Balance Results

3.1. Leach Pad and Events Pond

The water balance results referring to crushed ore are presented as a series of tables in Appendix I as follows:

- Table CC7-I.1, Summary for average, 20 year dry and 100 year wet precipitation conditions
- Table CC7-I.2 Input Data with the input data and assumptions
- Table CC7-I.3, Leach pad monthly water balance (3 pages), average conditions
- Table CC7-I.4, Events Pond monthly water balance (3 pages), average conditions
- Table CC7-I.5, Annual Summary comparing the three hydrologic conditions

Annual total make-up water requirements for each stage of heap development are summarized in Table CC7-1. Depending on water quality considerations make-up water could be taken from pit water, from runoff from the waste rock storage area, or from wells. Groundwater wells would be located near site W9 on Williams Creek. The water balance model indicated that, on average, about 40% to 60% of total make-up water demand could be met from pit water with the remainder from waste dump runoff and/or groundwater wells. All potable water would be taken from the wells.

Table CC7-1 - Annual Make-Up Water Requirements (m^3 per year)

Condition	Stage I	Stage II	Stage III (Years 4 to 7)	Stages IV to VI
Average	148,000	83,000	23,000 to 47,000	0
Dry Years	163.000	105,000	55,000 to 78,000	0
Wet Years	121,000	44,000	0	0

Table CC7-2 summarizes estimated treat and release requirements. For all precipitation conditions, the system will not require the treatment and release of any excess water during the first three years of ore placement. Average and drier conditions will not require any releases until after Year 7. Some excess water may require treatment and release during Years 4 to 7 as a result of 100 year wet years.

Table CC7-2 - Annual Treat and Release Volumes (m^3 per year)

Condition	Stages I & II (Years 1 to 3)	Stage III (Years 4 to 7)	Stage IV (Years 8 & 9)	Stage V	Stage VI
Average	0	0	79,000 to 100,000	150,000	101,000
Dry Years	0	0	48,000 to 69,000	119,000	70,000
Wet Years	0	8,000 to 31,000	133,000 to 155,000	204,000	156,000

Stage IV corresponds to the period after all ore has been placed but while leaching is still on-going. During the heap rinsing phase (Stage V, Years 10 to 12), it has been assumed that pumping and recirculation rates will be progressively decreased such that draindown of the heap would be accomplished in a controlled manner over a three year period. Volumes for Stage VI are shown in the table to provide an indication of the annual volumes of water expected to report to Williams Creek after heap rinsing has been completed.

Actual monthly treatment and release volumes will be optimized during operations so as to satisfy water quality criteria in the downstream receiving environment. Actual year-to-year treatment volumes will vary depending on the number of lifts of ore under leach, actual ore moisture conditions, and the actual magnitude of monthly and annual precipitation.

3.2. Events Pond Storage Requirements

Total events pond solution storage must include the excess runoff from the critical duration 100 year return period event occurring at the most critical time of the year plus an allowance for draindown from the heap. For average precipitation conditions annual maximum volumes generally occur at the end of the snowmelt period and subsequently decrease during the summer and fall (Table CC7-I.3). Minimum volumes are attained by the end of October and maintained throughout the winter period. No live storage of solution will be available within the heap: all storage will be provided within the events pond.

3.2.1. Hydrologic Event Storage

The recommended hydrological return period for design of the solution storage is 100 years. A number of combinations of 100 year hydrological events were evaluated to determine the critical duration and combinations of events for design of the total solution storage volume. The evaluations included a range of wet period durations from one month to 12 months for the calculation of 100 year return period total precipitation, snowfall, snowmelt and runoff as follows:

- one, two and three months duration for rainfall occurring in the summer period after snowmelt (Cases Ai, Aii and Aiii);
- seven months duration (October through April) for snowfall plus rainfall to calculate total runoff in April (Case B1);
- eight months duration (October through May) for snowfall plus rainfall to calculate total runoff in May (Case B2); and,
- twelve months duration to calculate monthly snowfall and rainfall for the 100 year wet year (Case B).

Details of the various hydrological cases were previously presented in Memo CCL-CC4. The runoff depths for each case were revised based on the updated site hydrology and are shown on Table CC7-I.6. The Table summarizes hydrologic-related events pond storage volumes for all cases evaluated. Maximum storage requirements resulted from Case B2 with a 100 year snowmelt with all melt occurring in May. The same conclusion was reached in the earlier studies. Case B2 entailed a total runoff depth of 306 mm during May. The conditions assumed for Case B2 are repeated following:

Case B2 - a 100 year return period wet year including a 100 year return period snowmelt occurring during May. For this case April runoff was assumed to be zero and total May runoff was 306 mm based on an eight months duration wet period from the previous October through and including May. Monthly rainfall from June to September was prorated so that the total annual precipitation was equal to 496 mm, a 100 year wet year. Evaporation losses during the May snowmelt period were conservatively assumed equal to zero.

The Project Agreement previously stated that storage capacity should be available for the 10 year return period snowmelt plus a 100 year 24 hour storm event plus sufficient draindown capacity. Based on the updated site hydrology, the total potential May runoff associated with the 10 year return period snowmelt plus a 100 year 24 hour storm event would be 296 mm. The adopted Case B2 with 306 mm runoff in May is thus more conservative than the combination of events stated in the Project Agreement.

3.2.2. Draindown Storage

Process interruptions due to power failures, pump breakdown or other operational disruptions may impact directly on the total solution storage requirements. As discussed in the Alexco Resources memorandum, appropriate and conservative allowances for draindown storage would be:

- During the first year of operation storage capacity for 100% draindown
- During subsequent years of operation, storage of 2 days of solution flow at an assumed constant rate of 540 m^3/hour, equal to a total volume of 25,920 m^3. As described in the Alexco report, this volume would provide 10 days storage of actual draindown flows.

As shown on Table CC7-I.6 these draindown volume allowances would be 58,000 m^3 for the first year of operations and 26,000 m^3 thereafter.

3.2.3. Total Storage Requirements

Table CC7-3 summarizes the maximum total solution storage requirements for each year of operation necessary to prevent an uncontrolled release of solution from the Events Pond for the combinations of hydrologic and process events described previously. The table also shows the month in which the maximum occurs each year and the combination of events case leading to the maximum.

Table CC7-3 - Summary of Solution Storage Requirements

Year	Maximum Total Solution Storage (m^3)	Month of Occurrence	Case
1	51,000	May	B2
2	102,000	May	B2
3	102,000	May	B2
4	131,000	May	B2
5	131,000	May	B2
6	131,000	May	B2
7	131,000	May	B2
8	131,000	May	B2
9	126 000	April	B1

(Volumes are rounded up to the nearest 1 000 m^3)

Previous site assessments, geotechnical investigations and engineering design work have indicated that an Events Pond with a storage capacity of 160,000 m^3 can be accommodated. As shown in Table CC7-3, this capacity comfortably exceeds the maximum required total solution storage volume conservatively estimated in the present water balance study by 29,000 m^3 without treatment.

3.3. Open Pit

The monthly and annual open pit water balance results are shown for average precipitation conditions in Tables CC7-I.7A and 7B. Depending on how much pit water is used for make-up, the total annual average release of water from the open pit area may range from about 46,000 m^3/year initially to about 135,000 m^3/year towards the end of mining. The water balance model indicates that, on average, from 40% to 60% of the total make-up water requirement may be met by water from the pit.

After mining, the pit would be allowed to fill at an estimated net average rate of about 145,000 m^3/year. Assuming a pit low wall overflow elevation of about 791 m the total pit volume up to the overflow level would be about 17.5 Mm^3 and about 120 years would be required to fill the pit, assuming average precipitation conditions. The filled pit would ultimately discharge to Williams Creek.

3.4. Waste Rock Storage Area

Tables CC7-I.8A, 8B, and 8C summarize the waste rock storage area water balance including input data and assumptions, monthly flows and the annual summary. During operations total releases from the waste rock storage area sediment pond may range from about 75,000 m^3/year to 100,000 m^3/year. Depending on availability, some waste rock runoff water could be used as make-up water, in the crusher, and/or for truck wash: such uses would decrease the release volumes from the sediment pond. After the completion of mining the waste rock will continue to absorb some moisture from precipitation. Ultimate runoff and seepage flows from the area will depend on whether or not a soil cover is placed over the waste rock and on the material properties of the cover.

3.5. Overall Site Water Balance

Tables CC7-I.10, 11, 12 and 13 show the results of the overall site water balance model for average conditions for four points over the mine life. Leaching operations are represented by Years 2 and 5 when no releases of treated effluent will be made from the events pond. Year 10 represents a year during the heap rinsing and detoxification phase when the total potential draindown volume within the heap will be progressively released over an assumed three year period. Year 14 represents conditions after final closure assuming no further treatment is required for heap area runoff.

4. Conclusions

The water balance for the proposed Carmacks Copper site in Williams Creek has been updated and expanded to include all components of the mine development and the Williams Creek and Yukon River receiving waters. Hydrological conditions have been updated to reflect the best estimates of site conditions. Ore moisture contents have been revised to reflect the planned use of crushed ore on the heap.

Results from the water balance model are presented in a series of tables in Appendix I. Compared to previous water balance results for run-of-mine (ROM) ore, the present evaluation indicates that, for average precipitation conditions process make-up water requirements have increased somewhat. Treatment and release volumes are lower for all stages of mining except Stage V during heap rinsing and progressive release of the draindown inventory.

The recommended draindown storage criteria are storage of 100% of potential draindown in Year 1 of operations (58,000 m^3) and storage of two days of solution flow at the assumed maximum constant rate of 540 m^3/hour (26,000 m^3) thereafter. As described in the Alexco Resource Corp. report, this volume would provide about 10 days storage of actual draindown flows from the heap.

Total solution storage was calculated for a number of combinations of hydrologic and process-related events. The recommended conservative criteria are storage of a 100 year snowmelt in May resulting from an eight month duration wet period in conjunction with the above draindown volume allowances and a further conservative assumption of no evaporation losses during the May snowmelt. Total solution storage volumes required have decreased slightly since the previous studies.

Maximum total storage volumes required were estimated herein to be 131,000 m^3 (138,000 m^3 estimated previously). Previous engineering design studies indicated that an Events Pond with a storage capacity of 160,000 m^3 can be accommodated on the site. This capacity comfortably exceeds the maximum required total solution storage volume conservatively estimated in the present water balance study by 29,000 m^3.

CLEARWATER CONSULTANTS LTD.

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APPENDIX I

Carmacks Copper Project
Water Balance Update
Crushed Ore

Table CC7-I.1A - Summary of Monthly Water Balance

Average Conditions

VERSION **2.1**

	Maximum	Minimum	Initial		Ore Moistures	
Nominal In-Heap Storage	500	500	500	m3	Initial	5.0%
Events Pond Storage	160,000	500	0	m3	Leaching	15.0%
Total Solution Storage	160,500	1,000	500	m3	Residual	12.0%

Treatment Capacity = 270 m3/hour

Maximum Daily Ore Production 9,872 tpd

CRUSHED Ore

		Precipitation	In-Heap Storage		Events Pond Storage		Maximum			Make-Up Water Requirements			
Year	Stage	Return Period	Minimum Volume	Maximum Volume	Minimum Volume	Maximum Volume	Total Storage	Total Treated	Total Spilled	Total Required	From Pit	From WRSA	From Wells
										FW	**FW2**	**FW3**	**FW1**
1	I	2	500	500	500	23,982	24,482	0	0	147,865	65,233	24,045	58,587
2	II	2	500	500	500	36,023	36,523	0	0	82,920	47,687	3,703	31,531
3	II	2	500	500	500	36,023	36,523	0	0	83,002	48,917	2,473	31,612
4	III	2	500	500	500	49,982	50,482	0	0	46,584	24,564	0	22,020
5	III	2	500	500	500	49,982	50,482	0	0	43,408	24,564	0	18,845
6	III	2	500	500	500	49,982	50,482	0	0	34,342	15,463	0	18,880
7	III	2	500	500	500	49,982	50,482	0	0	23,835	10,279	0	13,557
8	III / IV	2	500	500	500	49,982	50,482	79,060	0	0	0	0	0
9	IV	2	500	500	500	26,325	26,825	100,233	0	0	0	0	0
10	V	2	500	500	500	500	1,000	149,719	0	0	0	0	0
11	V	2	500	500	500	500	1,000	149,719	0	0	0	0	0
12	V	2	500	500	500	500	1,000	149,719	0	0	0	0	0
13	VI	2	500	500	500	500	1,000	101,181	0	0	0	0	0
14	VI	2	500	500	500	500	1,000	101,181	0	0	0	0	0
15	VI	2	500	500	500	500	1,000	101,181	0	0	0	0	0

NOTES 1) All volumes in cubic metres.
2) "Maximum Total Water Storage" corresponds to the maximum concurrent total of In-Heap plus Events Pond storage.
3) Return Period is for Annual Precipitation, Rainfall and Snowfall.

Table CC7-I.1B - Summary of Monthly Water Balance

Dry Years

VERSION **2.1**

	Maximum	Minimum	Initial		Ore Moistures	
Nominal In-Heap Storage	500	500	500	m3	Initial	5.0%
Events Pond Storage	160,000	500	0	m3	Leaching	15.0%
Total Solution Storage	160,500	1,000	500	m3	Residual	12.0%

Treatment Capacity = 270 m3/hour
Maximum Daily Ore Production 9,872 tpd

CRUSHED Ore

		Precipitation	In-Heap Storage		Events Pond Storage		Maximum			Make-Up Water Requirements			
Year	Stage	Return Period	Minimum Volume	Maximum Volume	Minimum Volume	Maximum Volume	Total Storage	Total Treated	Total Spilled	Total Required	From Pit	From WRSA	From Wells
										FW	**FW2**	**FW3**	**FW1**
1	I	20 yr DRY	500	500	500	16,241	16,741	-	-	163,283	53,568	20,575	89,139
2	II	20 yr DRY	500	500	500	24,799	25,299	-	-	105,276	53,568	15,455	36,253
3	II	20 yr DRY	500	500	500	24,799	25,299	-	-	105,358	55,394	15,851	34,113
4	III	20 yr DRY	500	500	500	34,415	34,915	-	-	77,589	47,730	7,839	22,020
5	III	20 yr DRY	500	500	500	34,415	34,915	-	-	74,414	47,730	7,839	18,845
6	III	20 yr DRY	500	500	500	34,415	34,915	-	-	65,348	40,990	5,478	18,880
7	III	20 yr DRY	500	500	500	34,415	34,915	-	-	54,841	35,806	5,478	13,557
8	III / IV	20 yr DRY	500	500	500	34,415	34,915	48,054	-	-	0	0	0
9	IV	20 yr DRY	500	500	500	17,616	18,116	69,228	-	-	0	0	0
10	V	20 yr DRY	500	500	500	500	1,000	118,713	-	-	0	0	0
11	V	20 yr DRY	500	500	500	500	1,000	118,713	-	-	0	0	0
12	V	20 yr DRY	500	500	500	500	1,000	118,713	-	-	0	0	0
13	VI	20 yr DRY	500	500	500	500	1,000	70,176	-	-	0	0	0
14	VI	20 yr DRY	500	500	500	500	1,000	70,176	-	-	0	0	0
15	VI	20 yr DRY	500	500	-	-	500	70,676	-	-	0	0	0

NOTES 1) All volumes in cubic metres.
2) "Maximum Total Water Storage" corresponds to the maximum concurrent total of In-Heap plus Events Pond storage.
3) Return Period is for Annual Precipitation, Rainfall and Snowfall.

Table CC7-I.1C - Summary of Monthly Water Balance

Wet Years

VERSION **2.1**

	Maximum	Minimum	Initial		Ore Moistures	
Nominal In-Heap Storage	500	500	500	m3	Initial	5.0%
Events Pond Storage	160,000	500	0	m3	Leaching	15.0%
Total Solution Storage	160,500	1,000	500	m3	Residual	12.0%

Treatment Capacity = 270 m3/hour
Maximum Daily Ore Production 9,872 tpd

CRUSHED Ore

		Precipitation	In-Heap Storage		Events Pond Storage		Maximum			Make-Up Water Requirements			
Year	Stage	Return Period	Minimum Volume	Maximum Volume	Minimum Volume	Maximum Volume	Total Storage	Total Treated	Total Spilled	Total Required	From Pit	From WRSA	From Wells
										FW	**FW2**	**FW3**	**FW1**
1	I	100 yr WET	500	500	500	37,571	38,071	-	-	120,800	63,699	9,172	47,929
2	II	100 yr WET	500	500	500	55,728	56,228	-	-	43,674	12,144	0	31,531
3	II	100 yr WET	500	500	500	55,728	56,228	-	-	43,756	12,144	0	31,612
4	III	100 yr WET	500	500	500	77,310	77,810	7,849	-	-	0	0	0
5	III	100 yr WET	500	500	500	77,310	77,810	11,024	-	-	0	0	0
6	III	100 yr WET	500	500	500	77,310	77,810	20,090	-	-	0	0	0
7	III	100 yr WET	500	500	500	77,310	77,810	30,597	-	-	0	0	0
8	III / IV	100 yr WET	500	500	500	77,310	77,810	133,492	-	-	0	0	0
9	IV	100 yr WET	500	500	500	41,614	42,114	154,666	-	-	0	0	0
10	V	100 yr WET	500	500	500	500	1,000	204,151	-	-	0	0	0
11	V	100 yr WET	500	500	500	500	1,000	204,151	-	-	0	0	0
12	V	100 yr WET	500	500	500	500	1,000	204,151	-	-	0	0	0
13	VI	100 yr WET	500	500	500	500	1,000	155,614	-	-	0	0	0
14	VI	100 yr WET	500	500	500	500	1,000	155,614	-	-	0	0	0
15	VI	100 yr WET	500	500	-	-	500	156,114	-	-	0	0	0

NOTES 1) All volumes in cubic metres.
2) "Maximum Total Water Storage" corresponds to the maximum concurrent total of In-Heap plus Events Pond storage.
3) Return Period is for Annual Precipitation, Rainfall and Snowfall.

Table CC7-I.2 - Carmacks Copper Project - Heap Leach Pad Water Balance - Input Data

Process Input Data

Stage	Year	Stacked Ore Tonnes	Leach Pad Area m2	Precipitation Return Period	No. of Leaching Lifts	Top of Heap Area m2	% of Heap Covered
I	1	1,963,500	142,000	2	3.2	50,000	0%
II	2	1,973,229	219,000	2	4.1	70,000	0%
II	3	1,974,396	219,000	2	5	90,000	0%
III	4	1,837,363	315,000	2	6	110,000	0%
III	5	1,792,000	315,000	2	7	120,000	0%
III	6	1,792,500	315,000	2	7.5	130,000	0%
III	7	1,642,400	315,000	2	8	120,000	0%
III / IV	8	302,481	315,000	2	8	110,000	0%
IV	9	0	315,000	2	8	100,000	0%
V	10	0	315,000	2	0	100,000	0%
V	11	0	315,000	2	0	100,000	0%
V	12	0	315,000	2	0	100,000	0%
VI	13	0	315,000	2	0	100,000	0%
VI	14	0	315,000	2	0	100,000	0%
VI	15	0	315,000	2	0	100,000	0%
	TOTAL	13,277,869					

Notes
1) Top of heap area is at the start of the indicated year.
2) No. of Leaching Lifts is at the end of the indicated year.
3) 100% soil cover may be placed on heap after Year 12.
4) Heap draindown over three years (10 to 12)

Average Conditions

CRUSHED Ore

VERSION 2.1

Ore Production Parameters

Maximum Daily Ore Production	9,872	tpd
Leaching Lift Height	8	m
Dry Density of Heap Ore	1.6	t/m3

CRUSHED Ore

Ore Moisture Contents

Initial	5.0%	by weight
Leaching	15.0%	by weight
Residual	12.0%	by weight

Leach Cycle Time 120 days

Flow Rates

Max. Solution Flow On Pad	540	m3/hr
Maximum Treatment Rate	270	m3/hr
Maximum Area under Leach	47,400	m2
Other Inflows to Heap Leach	0	m3/hr

Events Pond Areas

Total Catchment	29,100	m2
Pond Area	5,200	m2

Waste Rock Production Parameters

Waste mined for 350 days/yr at 21,429 tpd from May-Oct
at 21,429 tpd from November -April

Water Storage Volumes (m3)

	Maximum	Minimum	Initial
Nominal In-Heap Storage	500	500	500
Events Pond Storage	160,000	500	0
Total Solution Storage	160,500	1,000	500

Hydrological Input Data - Williams Creek Area

	Average Monthly Conditions							
	Rainfall	Snowfall	Snowmelt	Evaporation	Operating	Releases allowed from		
Month	mm	mm	mm	mm	Days	Pit	Events	Waste
March	0	13.5	0	0	0	NO	NO	NO
April	14.1	12.3	61.0	0	0	YES	YES	YES
May	13.9	0	61.0	90	17	YES	YES	YES
June	39.6	0	0	108	30	YES	YES	YES
July	57.2	0	0	100	31	YES	YES	YES
Aug	41.3	0	0	70	31	YES	YES	YES
Sept	30.4	0	0	32	30	YES	YES	YES
Oct	0	28.2	0	0	31	YES	YES	YES
Nov	0	26.7	0	0	30	YES	YES	YES
Dec	0	23.3	0	0	0	NO	NO	NO
Jan	0	21.7	0	0	0	NO	NO	NO
Feb	0	16.2	0	0	0	NO	NO	NO
TOTAL	196.5	141.9	121.9	400	200			
	338.4	% of Annual Snowmelt in						
		April	50%					
		May	50%					

Use Pit Water for Make-Up YES
Use Waste Rock Runoff Water for Make-Up YES

Winter Sublimation Losses 20 mm

Annual Total Precipitation

Return Period (years)		Precipitation	Rainfall
1	Dry	248	143.8
2	Average	338	196.0
10	Wet	416	241.3
20	Wet	443	256.9
100	Wet	496	287.7
200	Wet	516	299.3
500	Wet	543	314.9

(Note - Dry Year equal to 20 year return period)

Annual Percent Rainfall 58%

Evaporation Coefficients

For Area under Leach Irrigation	10%
For Heap & Overliner	5%
For Events Pond	100%
For Natural Undisturbed Ground	34%
For Pit Walls	10%

Table CC7-I.3 - Carmacks Copper Project - Heap Leach Pad Monthly Water Balance

Average Conditions
CRUSHED Ore

Version 2.1

Daily Ore Production	9,872	tpd							
Initial Ore Moisture	5.0%	by weight	Leach Cycle Time	120	days				
Leaching Ore Moisture	15.0%		Max. Solution Flow On Pad	540	m3/hr	Events Pond Areas (m2)		Maximum Allowable Storage			Evaporation Coefficients	
Residual ore Moisture	12.0%		Other Inflows to Heap	0	m3/hr	Total Catchment	29,100	In-Heap	500	m3 (nominal)	For Area under Leach	10%
Maximum Area under Leach	47,400	m2				Pond Area	5,200	Events Pond	160,000	m3	For Heap & Overliner	5%
Leaching Lift Height	8	m						Total Solution Storage	160,500	m3	For Events Pond Catchment	100%
Dry Density of Heap Ore	1.6	t/m3										

No. of Days		YEAR	Month	Stacked Leach Ore		AREAS - m2			Runoff		Evap'n Depth	WATER INFLOWS - m3			WATER OUTFLOWS and LOSSES - m3					MAKE-UP WATER REQUIREMENTS				FW	NET INFLOW	Release to Events	TOTAL IN-HEAP
				Stacked	Volume	Under	Total Heap	Uncovered	Return	Depth		Leach Pad	Other	TOTAL	Evaporation Losses		Permanent Loss	Initial Loss to	TOTAL	Total	From Heap	Total	From	From	TO HEAP	Pond	STORAGE
				tonnes	m3	Leach	& Overliner	Heap	Period	mm	mm	Runoff	Inflows	IN	Leach Area	Heap&O'Liner	to Ore Moisture	Leaching Ore	OUT	Required	Storage	Other	Events Pond	Fresh			
Total	Operating			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
31	0	1	-1-March	0	0	0	142,000	142,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	1	1-April	0	0	0	142,000	142,000	2	75.1	0	10,657	0	10,657	0	0	0	0	0	0	0	0	0	0	10,657	10,157	500
31	17	1	1-May	167,824	104,890	13,111	142,000	142,000	2	74.9	90	10,629	0	10,629	118	580	0	0	698	0	0	0	0	0	9,931	9,931	500
30	30	1	1-June	296,160	185,100	36,249	142,000	142,000	2	39.6	108	5,623	0	5,623	391	571	32,479	13,920	47,361	41,738	0	41,738	24,073	17,665	0	0	500
31	31	1	July	306,032	191,270	47,400	142,000	142,000	2	57.2	100	8,122	0	8,122	474	473	21,422	9,181	31,550	23,428	0	23,428	1,145	22,283	0	0	500
31	31	1	Aug	306,032	191,270	47,400	142,000	142,000	2	41.3	70	5,865	0	5,865	332	331	21,422	9,181	31,266	25,402	0	25,402	838	24,564	0	0	500
30	30	1	Sept	296,160	185,100	47,400	142,000	142,000	2	30.4	32	4,317	0	4,317	152	151	20,731	8,885	29,919	25,602	0	25,602	718	24,884	0	0	500
31	31	1	Oct	306,032	191,270	47,400	142,000	142,000	2	0.0	0	0	0	0	0	0	21,422	9,181	30,603	30,603	0	30,603	0	30,603	0	0	500
30	30	1	Nov	285,260	178,288	47,400	142,000	142,000	2	0	0	0	0	0	0	0	19,968	7,898	27,866	27,866	0	27,866	0	27,866	0	0	500
31	0	1	Dec	0	0	47,400	142,000	142,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	1	Jan	0	0	47,400	142,000	142,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
28	0	1	Feb	0	0	47,400	142,000	142,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	1	March	0	0	47,400	142,000	142,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
30	0	2	2-April	0	0	47,400	219,000	219,000	2	75.1	0	16,436	0	16,436	0	0	0	0	0	0	0	0	0	0	16,436	16,436	500
31	17	2	2-May	167,824	104,890	47,400	219,000	219,000	2	74.9	90	16,392	0	16,392	427	772	0	0	1,199	0	0	0	0	0	15,193	15,193	500
30	30	2	2-June	296,160	185,100	47,400	219,000	219,000	2	39.6	108	8,672	0	8,672	512	927	32,479	6,553	40,470	31,798	0	31,798	31,798	0	0	0	500
31	31	2	July	306,032	191,270	47,400	219,000	219,000	2	57.2	100	12,527	0	12,527	474	858	21,422	6,553	29,307	16,780	0	16,780	5,461	11,319	0	0	500
31	31	2	Aug	306,032	191,270	47,400	219,000	219,000	2	41.3	70	9,045	0	9,045	332	601	21,422	3,276	25,631	16,586	0	16,586	838	15,748	0	0	500
30	30	2	Sept	296,160	185,100	47,400	219,000	219,000	2	30.4	32	6,658	0	6,658	152	275	20,731	0	21,157	14,500	0	14,500	718	13,782	0	0	500
31	31	2	Oct	306,032	191,270	47,400	219,000	219,000	2	0.0	0	0	0	0	0	0	21,422	0	21,422	21,422	0	21,422	0	21,422	0	0	500
30	30	2	Nov	294,989	184,368	47,400	219,000	219,000	2	0	0	0	0	0	0	0	20,649	0	20,649	20,649	0	20,649	0	20,649	0	0	500
31	0	2	Dec	0	0	47,400	219,000	219,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	2	Jan	0	0	47,400	219,000	219,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
28	0	2	Feb	0	0	47,400	219,000	219,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	2	March	0	0	47,400	219,000	219,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
30	0	3	3-April	0	0	47,400	219,000	219,000	2	75.1	0	16,436	0	16,436	0	0	0	0	0	0	0	0	0	0	16,436	16,436	500
31	17	3	3-May	167,824	104,890	47,400	219,000	219,000	2	74.9	90	16,392	0	16,392	427	772	0	0	1,199	0	0	0	0	0	15,193	15,193	500
30	30	3	3-June	296,160	185,100	47,400	219,000	219,000	2	39.6	108	8,672	0	8,672	512	927	32,479	6,553	40,470	31,798	0	31,798	31,798	0	0	0	500
31	31	3	July	306,032	191,270	47,400	219,000	219,000	2	57.2	100	12,527	0	12,527	474	858	21,422	6,553	29,307	16,780	0	16,780	5,461	11,319	0	0	500
31	31	3	Aug	306,032	191,270	47,400	219,000	219,000	2	41.3	70	9,045	0	9,045	332	601	21,422	3,276	25,631	16,586	0	16,586	838	15,748	0	0	500
30	30	3	Sept	296,160	185,100	47,400	219,000	219,000	2	30.4	32	6,658	0	6,658	152	275	20,731	0	21,157	14,500	0	14,500	718	13,782	0	0	500
31	31	3	Oct	306,032	191,270	47,400	219,000	219,000	2	0.0	0	0	0	0	0	0	21,422	0	21,422	21,422	0	21,422	0	21,422	0	0	500
30	30	3	Nov	296,156	185,098	47,400	219,000	219,000	2	0	0	0	0	0	0	0	20,731	0	20,731	20,731	0	20,731	0	20,731	0	0	500
31	0	3	Dec	0	0	47,400	219,000	219,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	3	Jan	0	0	47,400	219,000	219,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
28	0	3	Feb	0	0	47,400	219,000	219,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	3	March	0	0	47,400	219,000	219,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
30	0	4	4-April	0	0	47,400	315,000	315,000	2	75.1	0	23,641	0	23,641	0	0	0	0	0	0	0	0	0	0	23,641	23,641	500
31	17	4	4-May	167,824	104,890	47,400	315,000	315,000	2	74.9	90	23,578	0	23,578	427	1,204	0	0	1,631	0	0	0	0	0	21,947	21,947	500
30	30	4	4-June	296,160	185,100	47,400	315,000	315,000	2	39.6	108	12,474	0	12,474	512	1,445	32,479	7,281	41,716	29,242	0	29,242	29,242	0	0	0	500
31	31	4	July	306,032	191,270	47,400	315,000	315,000	2	57.2	100	18,018	0	18,018	474	1,338	21,422	7,281	30,515	12,497	0	12,497	12,497	0	0	0	500
31	31	4	Aug	306,032	191,270	47,400	315,000	315,000	2	41.3	70	13,010	0	13,010	332	937	21,422	3,640	26,331	13,321	0	13,321	10,316	3,006	0	0	500
30	30	4	Sept	296,160	185,100	47,400	315,000	315,000	2	30.4	32	9,576	0	9,576	152	428	20,731	0	21,311	11,735	0	11,735	718	11,017	0	0	500
31	31	4	Oct	306,032	191,270	47,400	315,000	315,000	2	0.0	0	0	0	0	0	0	21,422	0	21,422	21,422	0	21,422	0	21,422	0	0	500
30	30	4	Nov	159,123	99,452	47,400	315,000	315,000	2	0	0	0	0	0	0	0	11,139	0	11,139	11,139	0	11,139	0	11,139	0	0	500
31	0	4	Dec	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	4	Jan	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
28	0	4	Feb	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	4	March	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
30	0	5	5-April	0	0	47,400	315,000	315,000	2	75.1	0	23,641	0	23,641	0	0	0	0	0	0	0	0	0	0	23,641	23,641	500
31	17	5	5-May	167,824	104,890	47,400	315,000	315,000	2	74.9	90	23,578	0	23,578	427	1,204	0	0	1,631	0	0	0	0	0	21,947	21,947	500
30	30	5	5-June	296,160	185,100	47,400	315,000	315,000	2	39.6	108	12,474	0	12,474	512	1,445	32,479	7,281	41,716	29,242	0	29,242	29,242	0	0	0	500
31	31	5	July	306,032	191,270	47,400	315,000	315,000	2	57.2	100	18,018	0	18,018	474	1,338	21,422	7,281	30,515	12,497	0	12,497	12,497	0	0	0	500
31	31	5	Aug	306,032	191,270	47,400	315,000	315,000	2	41.3	70	13,010	0	13,010	332	937	21,422	3,640	26,331	13,321	0	13,321	10,316	3,006	0	0	500
30	30	5	Sept	296,160	185,100	47,400	315,000	315,000	2	30.4	32	9,576	0	9,576	152	428	20,731	0	21,311	11,735	0	11,735	718	11,017	0	0	500
31	31	5	Oct	306,032	191,270	47,400	315,000	315,000	2	0.0	0	0	0	0	0	0	21,422	0	21,422	21,422	0	21,422	0	21,422	0	0	500
30	30	5	Nov	113,760	71,100	47,400	315,000	315,000	2	0	0	0	0	0	0	0	7,963	0	7,963	7,963	0	7,963	0	7,963	0	0	500
31	0	5	Dec	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	5	Jan	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500

Table CC7-I.3 - Carmacks Copper Project - Heap Leach Pad Monthly Water Balance

Average Conditions
CRUSHED Ore

Version 2.1

Daily Ore Production	9,872	tpd							
Initial Ore Moisture	5.0%	by weight	Leach Cycle Time	120	days				
Leaching Ore Moisture	15.0%		Max. Solution Flow On Pad	540	m3/hr	Events Pond Areas (m2)		Maximum Allowable Storage			Evaporation Coefficients	
Residual ore Moisture	12.0%		Other Inflows to Heap	0	m3/hr	Total Catchment	29,100	In-Heap	500	m3 (nominal)	For Area under Leach	10%
Maximum Area under Leach	47,400	m2				Pond Area	5,200	Events Pond	160,000	m3	For Heap & Overliner	5%
Leaching Lift Height	8	m						Total Solution Storage	160,500	m3	For Events Pond Catchment	100%
Dry Density of Heap Ore	1.6	t/m3										

				Stacked Leach Ore		AREAS - m2			Runoff		Evap'n	WATER INFLOWS - m3			WATER OUTFLOWS and LOSSES - m3					MAKE-UP WATER REQUIREMENTS				FW	NET	Release	TOTAL
No. of Days		YEAR	Month	Stacked	Volume	Under	Total Heap	Uncovered	Return	Depth	Depth	Leach Pad	Other	TOTAL	Evaporation Losses		Permanent Loss	Initial Loss to	TOTAL	Total	From Heap	Total	From	From	INFLOW	to Events	IN-HEAP
				tonnes	m3	Leach	& Overliner	Heap	Period	mm	mm	Runoff	Inflows	IN	Leach Area	Heap&O'Liner	to Ore Moisture	Leaching Ore	OUT	Required	Storage	Other	Events Pond	Fresh	TO HEAP	Pond	STORAGE
Total	Operating			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
28	0	5	Feb	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	5	March	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
30	0	6	6-April	0	0	47,400	315,000	315,000	2	75.1	0	23,641	0	23,641	0	0	0	0	0	0	0	0	0	0	23,641	23,641	500
31	17	6	6-May	167,824	104,890	47,400	315,000	315,000	2	74.9	90	23,578	0	23,578	427	1,204	0	0	1,631	0	0	0	0	0	21,947	21,947	500
30	30	6	6-June	296,160	185,100	47,400	315,000	315,000	2	39.6	108	12,474	0	12,474	512	1,445	32,479	3,640	38,076	25,602	0	25,602	25,602	0	0	0	500
31	31	6	July	306,032	191,270	47,400	315,000	315,000	2	57.2	100	18,018	0	18,018	474	1,338	21,422	3,640	26,875	8,857	0	8,857	8,857	0	0	0	500
31	31	6	Aug	306,032	191,270	47,400	315,000	315,000	2	41.3	70	13,010	0	13,010	332	937	21,422	1,820	24,511	11,501	0	11,501	11,501	0	0	0	500
30	30	6	Sept	296,160	185,100	47,400	315,000	315,000	2	30.4	32	9,576	0	9,576	152	428	20,731	0	21,311	11,735	0	11,735	6,813	4,922	0	0	500
31	31	6	Oct	306,032	191,270	47,400	315,000	315,000	2	0.0	0	0	0	0	0	0	21,422	0	21,422	21,422	0	21,422	0	21,422	0	0	500
30	30	6	Nov	114,260	71,413	47,400	315,000	315,000	2	0	0	0	0	0	0	0	7,998	0	7,998	7,998	0	7,998	0	7,998	0	0	500
31	0	6	Dec	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	6	Jan	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
28	0	6	Feb	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	6	March	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
30	0	7	7-April	0	0	47,400	315,000	315,000	2	75.1	0	23,641	0	23,641	0	0	0	0	0	0	0	0	0	0	23,641	23,641	500
31	17	7	7-May	167,824	104,890	47,400	315,000	315,000	2	74.9	90	23,578	0	23,578	427	1,204	0	0	1,631	0	0	0	0	0	21,947	21,947	500
30	30	7	7-June	296,160	185,100	47,400	315,000	315,000	2	39.6	108	12,474	0	12,474	512	1,445	32,479	3,640	38,076	25,602	0	25,602	25,602	0	0	0	500
31	31	7	July	306,032	191,270	47,400	315,000	315,000	2	57.2	100	18,018	0	18,018	474	1,338	21,422	3,640	26,875	8,857	0	8,857	8,857	0	0	0	500
31	31	7	Aug	306,032	191,270	47,400	315,000	315,000	2	41.3	70	13,010	0	13,010	332	937	21,422	1,820	24,511	11,501	0	11,501	11,501	0	0	0	500
30	30	7	Sept	296,160	185,100	47,400	315,000	315,000	2	30.4	32	9,576	0	9,576	152	428	20,731	0	21,311	11,735	0	11,735	6,813	4,922	0	0	500
31	31	7	Oct	270,192	168,870	47,400	315,000	315,000	2	0.0	0	0	0	0	0	0	18,913	0	18,913	18,913	0	18,913	0	18,913	0	0	500
30	**0**	7	Nov	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	7	Dec	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	7	Jan	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
28	0	7	Feb	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	7	March	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
30	0	8	8-April	0	0	47,400	315,000	315,000	2	75.1	0	23,641	0	23,641	0	0	0	0	0	0	0	0	0	0	23,641	23,641	500
31	17	8	8-May	167,824	104,890	47,400	315,000	315,000	2	74.9	90	23,578	0	23,578	427	1,204	0	0	1,631	0	0	0	0	0	21,947	21,947	500
30	**13.6**	8	8-June	134,657	84,161	47,400	315,000	315,000	2	39.6	108	12,474	0	12,474	512	1,445	21,174	0	23,131	10,657	0	10,657	10,657	0	0	0	500
31	**0**	8	July	0	0	47,400	315,000	315,000	2	57.2	100	18,018	0	18,018	474	1,338	0	0	1,812	0	0	0	0	0	16,206	16,206	500
31	**0**	8	Aug	0	0	47,400	315,000	315,000	2	41.3	70	13,010	0	13,010	332	937	0	0	1,268	0	0	0	0	0	11,741	11,741	500
30	**0**	8	Sept	0	0	47,400	315,000	315,000	2	30.4	32	9,576	0	9,576	152	428	0	0	580	0	0	0	0	0	8,996	8,996	500
31	**0**	8	Oct	0	0	47,400	315,000	315,000	2	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
30	**0**	8	Nov	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	8	Dec	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	8	Jan	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
28	0	8	Feb	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	8	March	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
30	0	9	9-April	0	0	47,400	315,000	315,000	2	75.1	0	23,641	0	23,641	0	0	0	0	0	0	0	0	0	0	23,641	23,641	500
31	**0**	9	9-May	0	0	47,400	315,000	315,000	2	74.9	90	23,578	0	23,578	427	1,204	0	0	1,631	0	0	0	0	0	21,947	21,947	500
30	**0**	9	9-June	0	0	47,400	315,000	315,000	2	39.6	108	12,474	0	12,474	512	1,445	0	0	1,957	0	0	0	0	0	10,517	10,517	500
31	**0**	9	July	0	0	47,400	315,000	315,000	2	57.2	100	18,018	0	18,018	474	1,338	0	0	1,812	0	0	0	0	0	16,206	16,206	500
31	**0**	9	Aug	0	0	47,400	315,000	315,000	2	41.3	70	13,010	0	13,010	332	937	0	0	1,268	0	0	0	0	0	11,741	11,741	500
30	**0**	9	Sept	0	0	47,400	315,000	315,000	2	30.4	32	9,576	0	9,576	152	428	0	0	580	0	0	0	0	0	8,996	8,996	500
31	**0**	9	Oct	0	0	47,400	315,000	315,000	2	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
30	**0**	9	Nov	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	9	Dec	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	9	Jan	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
28	0	9	Feb	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	9	March	0	0	47,400	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
30	0	10	10-April	0	0	0	315,000	315,000	2	75.1	0	23,641	0	23,641	0	0	0	0	0	0	0	0	0	0	23,641	23,641	500
31	**0**	10	10-May	0	0	0	315,000	315,000	2	74.9	90	23,578	0	23,578	0	1,418	0	-8,090	-6,672	0	0	0	0	0	30,250	30,250	500
30	0	10	10-June	0	0	0	315,000	315,000	2	39.6	108	12,474	0	12,474	0	1,701	0	-8,090	-6,389	0	0	0	0	0	18,863	18,863	500
31	0	10	July	0	0	0	315,000	315,000	2	57.2	100	18,018	0	18,018	0	1,575	0	-8,090	-6,515	0	0	0	0	0	24,533	24,533	500
31	0	10	Aug	0	0	0	315,000	315,000	2	41.3	70	13,010	0	13,010	0	1,103	0	-8,090	-6,987	0	0	0	0	0	19,997	19,997	500
30	0	10	Sept	0	0	0	315,000	315,000	2	30.4	32	9,576	0	9,576	0	504	0	-8,090	-7,586	0	0	0	0	0	17,162	17,162	500
31	0	10	Oct	0	0	0	315,000	315,000	2	0.0	0	0	0	0	0	0	0	-8,090	-8,090	0	0	0	0	0	8,090	8,090	500
30	0	10	Nov	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	10	Dec	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500

Table CC7-I.3 - Carmacks Copper Project - Heap Leach Pad Monthly Water Balance

Average Conditions
CRUSHED Ore

Version 2.1

Daily Ore Production	9,872	tpd						
Initial Ore Moisture	5.0%	by weight	Leach Cycle Time	120	days			
Leaching Ore Moisture	15.0%		Max. Solution Flow On Pad	540	m3/hr	Events Pond Areas (m2)		
Residual ore Moisture	12.0%		Other Inflows to Heap	0	m3/hr	Total Catchment	29,100	
Maximum Area under Leach	47,400	m2				Pond Area	5,200	
Leaching Lift Height	8	m						
Dry Density of Heap Ore	1.6	t/m3						

Maximum Allowable Storage			Evaporation Coefficients	
In-Heap	500	m3 (nominal)	For Area under Leach	10%
Events Pond	160,000	m3	For Heap & Overliner	5%
Total Solution Storage	160,500	m3	For Events Pond Catchment	100%

No. of Days		YEAR	Month	Stacked Leach Ore		AREAS - m2			Runoff		Evap'n	WATER INFLOWS - m3			WATER OUTFLOWS and LOSSES - m3					MAKE-UP WATER REQUIREMENTS				FW	NET	Release	TOTAL
				Stacked	Volume	Under	Total Heap	Uncovered	Return	Depth	Depth	Leach Pad	Other	TOTAL	Evaporation Losses		Permanent Loss	Initial Loss to	TOTAL	Total	From Heap	Total	From	From	INFLOW	to Events	IN-HEAP
				tonnes	m3	Leach	& Overliner	Heap	Period	mm	mm	Runoff	Inflows	IN	Leach Area	Heap&O'Liner	to Ore Moisture	Leaching Ore	OUT	Required	Storage	Other	Events Pond	Fresh	TO HEAP	Pond	STORAGE
Total	Operating			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
31	0	10	Jan	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
28	0	10	Feb	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	10	March	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
30	0	11	11-April	0	0	0	315,000	315,000	2	75.1	0	23,641	0	23,641	0	0	0	0	0	0	0	0	0	0	23,641	23,641	500
31	0	11	11-May	0	0	0	315,000	315,000	2	74.9	90	23,578	0	23,578	0	1,418	0	-8,090	-6,672	0	0	0	0	0	30,250	30,250	500
30	0	11	11-June	0	0	0	315,000	315,000	2	39.6	108	12,474	0	12,474	0	1,701	0	-8,090	-6,389	0	0	0	0	0	18,863	18,863	500
31	0	11	July	0	0	0	315,000	315,000	2	57.2	100	18,018	0	18,018	0	1,575	0	-8,090	-6,515	0	0	0	0	0	24,533	24,533	500
31	0	11	Aug	0	0	0	315,000	315,000	2	41.3	70	13,010	0	13,010	0	1,103	0	-8,090	-6,987	0	0	0	0	0	19,997	19,997	500
30	0	11	Sept	0	0	0	315,000	315,000	2	30.4	32	9,576	0	9,576	0	504	0	-8,090	-7,586	0	0	0	0	0	17,162	17,162	500
31	0	11	Oct	0	0	0	315,000	315,000	2	0.0	0	0	0	0	0	0	0	-8,090	-8,090	0	0	0	0	0	8,090	8,090	500
30	0	11	Nov	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	11	Dec	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	11	Jan	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
28	0	11	Feb	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	11	March	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
30	0	12	12-April	0	0	0	315,000	315,000	2	75.1	0	23,641	0	23,641	0	0	0	0	0	0	0	0	0	0	23,641	23,641	500
31	0	12	12-May	0	0	0	315,000	315,000	2	74.9	90	23,578	0	23,578	0	1,418	0	-8,090	-6,672	0	0	0	0	0	30,250	30,250	500
30	0	12	12-June	0	0	0	315,000	315,000	2	39.6	108	12,474	0	12,474	0	1,701	0	-8,090	-6,389	0	0	0	0	0	18,863	18,863	500
31	0	12	July	0	0	0	315,000	315,000	2	57.2	100	18,018	0	18,018	0	1,575	0	-8,090	-6,515	0	0	0	0	0	24,533	24,533	500
31	0	12	Aug	0	0	0	315,000	315,000	2	41.3	70	13,010	0	13,010	0	1,103	0	-8,090	-6,987	0	0	0	0	0	19,997	19,997	500
30	0	12	Sept	0	0	0	315,000	315,000	2	30.4	32	9,576	0	9,576	0	504	0	-8,090	-7,586	0	0	0	0	0	17,162	17,162	500
31	0	12	Oct	0	0	0	315,000	315,000	2	0.0	0	0	0	0	0	0	0	-8,090	-8,090	0	0	0	0	0	8,090	8,090	500
30	0	12	Nov	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	12	Dec	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	12	Jan	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
28	0	12	Feb	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	12	March	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
30	0	13	13-April	0	0	0	315,000	315,000	2	75.1	0	23,641	0	23,641	0	0	0	0	0	0	0	0	0	0	23,641	23,641	500
31	0	13	13-May	0	0	0	315,000	315,000	2	74.9	90	23,578	0	23,578	0	1,418	0	0	1,418	0	0	0	0	0	22,160	22,160	500
30	0	13	13-June	0	0	0	315,000	315,000	2	39.6	108	12,474	0	12,474	0	1,701	0	0	1,701	0	0	0	0	0	10,773	10,773	500
31	0	13	July	0	0	0	315,000	315,000	2	57.2	100	18,018	0	18,018	0	1,575	0	0	1,575	0	0	0	0	0	16,443	16,443	500
31	0	13	Aug	0	0	0	315,000	315,000	2	41.3	70	13,010	0	13,010	0	1,103	0	0	1,103	0	0	0	0	0	11,907	11,907	500
30	0	13	Sept	0	0	0	315,000	315,000	2	30.4	32	9,576	0	9,576	0	504	0	0	504	0	0	0	0	0	9,072	9,072	500
31	0	13	Oct	0	0	0	315,000	315,000	2	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
30	0	13	Nov	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	13	Dec	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	13	Jan	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
28	0	13	Feb	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	13	March	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
30	0	14	14-April	0	0	0	315,000	315,000	2	75.1	0	23,641	0	23,641	0	0	0	0	0	0	0	0	0	0	23,641	23,641	500
31	0	14	14-May	0	0	0	315,000	315,000	2	74.9	90	23,578	0	23,578	0	1,418	0	0	1,418	0	0	0	0	0	22,160	22,160	500
30	0	14	14-June	0	0	0	315,000	315,000	2	39.6	108	12,474	0	12,474	0	1,701	0	0	1,701	0	0	0	0	0	10,773	10,773	500
31	0	14	July	0	0	0	315,000	315,000	2	57.2	100	18,018	0	18,018	0	1,575	0	0	1,575	0	0	0	0	0	16,443	16,443	500
31	0	14	Aug	0	0	0	315,000	315,000	2	41.3	70	13,010	0	13,010	0	1,103	0	0	1,103	0	0	0	0	0	11,907	11,907	500
30	0	14	Sept	0	0	0	315,000	315,000	2	30.4	32	9,576	0	9,576	0	504	0	0	504	0	0	0	0	0	9,072	9,072	500
31	0	14	Oct	0	0	0	315,000	315,000	2	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
30	0	14	Nov	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	14	Dec	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	14	Jan	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
28	0	14	Feb	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
31	0	14	March	0	0	0	315,000	315,000	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500

Table CC7-I.4 - Carmacks Copper Project - Events Pond Monthly Water Balance

Version 2.1

Average Conditions
CRUSHED Ore

Events Pond Areas
Total Catchment 29,100 m2
Pond Area 5,200 m2

Events Pond Water Storage Limits
Maximum 160,000 m3
Minimum 500 m3
Initial 0 m3

		AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	In-Heap plus Events Pond AL
		Water Inflows from		Water Losses to			Potential	Treated	Untreated	Remaining	Cumulative Volumes		Total
YEAR	Month	Precipitation Runoff	Heap Storage	Pond Evaporation	Make-up to Heap	NET INFLOW	Volume in Storage	Volume Released	Volume	Volume in Storage	Treated & Released	Untreated	Solution Storage
1	-1-March	0	0	0	0	0	0	0	0	0	0	0	0
1	1-April	2,184	10,157	0	0	12,341	12,341	0	0	23,982	0	0	12,841
1	1-May	2,178	9,931	468	0	11,641	23,982	0	0	23,982	0	0	24,482
1	1-June	1,152	0	562	24,073	-23,482	500	0	0	500	0	0	1,000
1	July	1,665	0	520	1,145	0	500	0	0	500	0	0	1,000
1	Aug	1,202	0	364	838	0	500	0	0	500	0	0	1,000
1	Sept	885	0	166	718	0	500	0	0	500	0	0	1,000
1	Oct	0	0	0	0	0	500	0	0	500	0	0	1,000
1	Nov	0	0	0	0	0	500	0	0	500	0	0	1,000
1	Dec	0	0	0	0	0	500	0	0	500	0	0	1,000
1	Jan	0	0	0	0	0	500	0	0	500	0	0	1,000
1	Feb	0	0	0	0	0	500	0	0	500	0	0	1,000
1	March	0	0	0	0	0	500	0	0	500	0	0	1,000
2	2-April	2,184	16,436	0	0	18,620	19,120	0	0	19,120	0	0	19,620
2	2-May	2,178	15,193	468	0	16,903	36,023	0	0	36,023	0	0	36,523
2	2-June	1,152	0	562	31,798	-31,207	4,817	0	0	4,817	0	0	5,317
2	July	1,665	0	520	5,461	-4,317	500	0	0	500	0	0	1,000
2	Aug	1,202	0	364	838	0	500	0	0	500	0	0	1,000
2	Sept	885	0	166	718	0	500	0	0	500	0	0	1,000
2	Oct	0	0	0	0	0	500	0	0	500	0	0	1,000
2	Nov	0	0	0	0	0	500	0	0	500	0	0	1,000
2	Dec	0	0	0	0	0	500	0	0	500	0	0	1,000
2	Jan	0	0	0	0	0	500	0	0	500	0	0	1,000
2	Feb	0	0	0	0	0	500	0	0	500	0	0	1,000
2	March	0	0	0	0	0	500	0	0	500	0	0	1,000
3	3-April	2,184	16,436	0	0	18,620	19,120	0	0	19,120	0	0	19,620
3	3-May	2,178	15,193	468	0	16,903	36,023	0	0	36,023	0	0	36,523
3	3-June	1,152	0	562	31,798	-31,207	4,817	0	0	4,817	0	0	5,317
3	July	1,665	0	520	5,461	-4,317	500	0	0	500	0	0	1,000
3	Aug	1,202	0	364	838	0	500	0	0	500	0	0	1,000
3	Sept	885	0	166	718	0	500	0	0	500	0	0	1,000
3	Oct	0	0	0	0	0	500	0	0	500	0	0	1,000
3	Nov	0	0	0	0	0	500	0	0	500	0	0	1,000
3	Dec	0	0	0	0	0	500	0	0	500	0	0	1,000
3	Jan	0	0	0	0	0	500	0	0	500	0	0	1,000
3	Feb	0	0	0	0	0	500	0	0	500	0	0	1,000
3	March	0	0	0	0	0	500	0	0	500	0	0	1,000
4	4-April	2,184	23,641	0	0	25,825	26,325	0	0	26,325	0	0	26,825
4	4-May	2,178	21,947	468	0	23,657	49,982	0	0	49,982	0	0	50,482
4	4-June	1,152	0	562	29,242	-28,652	21,330	0	0	21,330	0	0	21,830
4	July	1,665	0	520	12,497	-11,352	9,978	0	0	9,978	0	0	10,478
4	Aug	1,202	0	364	10,316	-9,478	500	0	0	500	0	0	1,000
4	Sept	885	0	166	718	0	500	0	0	500	0	0	1,000
4	Oct	0	0	0	0	0	500	0	0	500	0	0	1,000
4	Nov	0	0	0	0	0	500	0	0	500	0	0	1,000
4	Dec	0	0	0	0	0	500	0	0	500	0	0	1,000
4	Jan	0	0	0	0	0	500	0	0	500	0	0	1,000
4	Feb	0	0	0	0	0	500	0	0	500	0	0	1,000
4	March	0	0	0	0	0	500	0	0	500	0	0	1,000
5	5-April	2,184	23,641	0	0	25,825	26,325	0	0	26,325	0	0	26,825
5	5-May	2,178	21,947	468	0	23,657	49,982	0	0	49,982	0	0	50,482
5	5-June	1,152	0	562	29,242	-28,652	21,330	0	0	21,330	0	0	21,830
5	July	1,665	0	520	12,497	-11,352	9,978	0	0	9,978	0	0	10,478
5	Aug	1,202	0	364	10,316	-9,478	500	0	0	500	0	0	1,000
5	Sept	885	0	166	718	0	500	0	0	500	0	0	1,000
5	Oct	0	0	0	0	0	500	0	0	500	0	0	1,000
5	Nov	0	0	0	0	0	500	0	0	500	0	0	1,000
5	Dec	0	0	0	0	0	500	0	0	500	0	0	1,000
5	Jan	0	0	0	0	0	500	0	0	500	0	0	1,000

Table CC7-I.4 - Carmacks Copper Project - Events Pond Monthly Water Balance

Version 2.1

Events Pond Areas
Total Catchment 29,100 m2
Pond Area 5,200 m2

Events Pond Water Storage Limits
Maximum 160,000 m3
Minimum 500 m3
Initial 0 m3

Average Conditions
CRUSHED Ore

		AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	In-Heap plus Events Pond AL
		Water Inflows from		Water Losses to							Cumulative Volumes		
YEAR	Month	Precipitation Runoff	Heap Storage	Pond Evaporation	Make-up to Heap	NET INFLOW	Potential Volume in Storage	Treated Volume Released	Untreated Volume	Remaining Volume in Storage	Treated & Released	Untreated	Total Solution Storage
5	Feb	0	0	0	0	0	500	0	0	500	0	0	1,000
5	March	0	0	0	0	0	500	0	0	500	0	0	1,000
6	6-April	2,184	23,641	0	0	25,825	26,325	0	0	26,325	0	0	26,825
6	6-May	2,178	21,947	468	0	23,657	49,982	0	0	49,982	0	0	50,482
6	6-June	1,152	0	562	25,602	-25,011	24,970	0	0	24,970	0	0	25,470
6	July	1,665	0	520	8,857	-7,712	17,258	0	0	17,258	0	0	17,758
6	Aug	1,202	0	364	11,501	-10,663	6,595	0	0	6,595	0	0	7,095
6	Sept	885	0	166	6,813	-6,095	500	0	0	500	0	0	1,000
6	Oct	0	0	0	0	0	500	0	0	500	0	0	1,000
6	Nov	0	0	0	0	0	500	0	0	500	0	0	1,000
6	Dec	0	0	0	0	0	500	0	0	500	0	0	1,000
6	Jan	0	0	0	0	0	500	0	0	500	0	0	1,000
6	Feb	0	0	0	0	0	500	0	0	500	0	0	1,000
6	March	0	0	0	0	0	500	0	0	500	0	0	1,000
7	7-April	2,184	23,641	0	0	25,825	26,325	0	0	26,325	0	0	26,825
7	7-May	2,178	21,947	468	0	23,657	49,982	0	0	49,982	0	0	50,482
7	7-June	1,152	0	562	25,602	-25,011	24,970	0	0	24,970	0	0	25,470
7	July	1,665	0	520	8,857	-7,712	17,258	0	0	17,258	0	0	17,758
7	Aug	1,202	0	364	11,501	-10,663	6,595	0	0	6,595	0	0	7,095
7	Sept	885	0	166	6,813	-6,095	500	0	0	500	0	0	1,000
7	Oct	0	0	0	0	0	500	0	0	500	0	0	1,000
7	Nov	0	0	0	0	0	500	0	0	500	0	0	1,000
7	Dec	0	0	0	0	0	500	0	0	500	0	0	1,000
7	Jan	0	0	0	0	0	500	0	0	500	0	0	1,000
7	Feb	0	0	0	0	0	500	0	0	500	0	0	1,000
7	March	0	0	0	0	0	500	0	0	500	0	0	1,000
8	8-April	2,184	23,641	0	0	25,825	26,325	0	0	26,325	0	0	26,825
8	8-May	2,178	21,947	468	0	23,657	49,982	0	0	49,982	0	0	50,482
8	8-June	1,152	0	562	10,657	-10,066	39,916	39,416	0	500	39,416	0	1,000
8	July	1,665	16,206	520	0	17,351	17,851	17,351	0	500	56,766	0	1,000
8	Aug	1,202	11,741	364	0	12,579	13,079	12,579	0	500	69,345	0	1,000
8	Sept	885	8,996	166	0	9,714	10,214	9,714	0	500	79,060	0	1,000
8	Oct	0	0	0	0	0	500	0	0	500	79,060	0	1,000
8	Nov	0	0	0	0	0	500	0	0	500	79,060	0	1,000
8	Dec	0	0	0	0	0	500	0	0	500	79,060	0	1,000
8	Jan	0	0	0	0	0	500	0	0	500	79,060	0	1,000
8	Feb	0	0	0	0	0	500	0	0	500	79,060	0	1,000
8	March	0	0	0	0	0	500	0	0	500	79,060	0	1,000
9	9-April	2,184	23,641	0	0	25,825	26,325	0	0	26,325	79,060	0	26,825
9	9-May	2,178	21,947	468	0	23,657	49,982	49,482	0	500	128,542	0	1,000
9	9-June	1,152	10,517	562	0	11,108	11,608	11,108	0	500	139,649	0	1,000
9	July	1,665	16,206	520	0	17,351	17,851	17,351	0	500	157,000	0	1,000
9	Aug	1,202	11,741	364	0	12,579	13,079	12,579	0	500	169,579	0	1,000
9	Sept	885	8,996	166	0	9,714	10,214	9,714	0	500	179,293	0	1,000
9	Oct	0	0	0	0	0	500	0	0	500	179,293	0	1,000
9	Nov	0	0	0	0	0	500	0	0	500	179,293	0	1,000
9	Dec	0	0	0	0	0	500	0	0	500	179,293	0	1,000
9	Jan	0	0	0	0	0	500	0	0	500	179,293	0	1,000
9	Feb	0	0	0	0	0	500	0	0	500	179,293	0	1,000
9	March	0	0	0	0	0	500	0	0	500	179,293	0	1,000
10	10-April	2,184	23,641	0	0	25,825	26,325	25,825	0	500	205,118	0	1,000
10	10-May	2,178	30,250	468	0	31,960	32,460	31,960	0	500	237,078	0	1,000
10	10-June	1,152	18,863	562	0	19,453	19,953	19,453	0	500	256,531	0	1,000
10	July	1,665	24,533	520	0	25,677	26,177	25,677	0	500	282,208	0	1,000
10	Aug	1,202	19,997	364	0	20,834	21,334	20,834	0	500	303,043	0	1,000
10	Sept	885	17,162	166	0	17,880	18,380	17,880	0	500	320,923	0	1,000
10	Oct	0	8,090	0	0	8,090	8,590	8,090	0	500	329,012	0	1,000
10	Nov	0	0	0	0	0	500	0	0	500	329,012	0	1,000
10	Dec	0	0	0	0	0	500	0	0	500	329,012	0	1,000

Table CC7-I.4 - Carmacks Copper Project - Events Pond Monthly Water Balance

Version 2.1

Average Conditions
CRUSHED Ore

Events Pond Areas

Total Catchment	29,100	m2
Pond Area	5,200	m2

Events Pond Water Storage Limits

Maximum	160,000	m3
Minimum	500	m3
Initial	0	m3

		AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	In-Heap plus Events Pond AL
		Water Inflows from		Water Losses to			Potential	Treated	Untreated	Remaining	Cumulative Volumes		Total
YEAR	Month	Precipitation Runoff	Heap Storage	Pond Evaporation	Make-up to Heap	NET INFLOW	Volume in Storage	Volume Released	Volume	Volume in Storage	Treated & Released	Untreated	Solution Storage
10	Jan	0	0	0	0	0	500	0	0	500	329,012	0	1,000
10	Feb	0	0	0	0	0	500	0	0	500	329,012	0	1,000
10	March	0	0	0	0	0	500	0	0	500	329,012	0	1,000
11	11-April	2,184	23,641	0	0	25,825	26,325	25,825	0	500	354,837	0	1,000
11	11-May	2,178	30,250	468	0	31,960	32,460	31,960	0	500	386,797	0	1,000
11	11-June	1,152	18,863	562	0	19,453	19,953	19,453	0	500	406,250	0	1,000
11	July	1,665	24,533	520	0	25,677	26,177	25,677	0	500	431,927	0	1,000
11	Aug	1,202	19,997	364	0	20,834	21,334	20,834	0	500	452,762	0	1,000
11	Sept	885	17,162	166	0	17,880	18,380	17,880	0	500	470,642	0	1,000
11	Oct	0	8,090	0	0	8,090	8,590	8,090	0	500	478,731	0	1,000
11	Nov	0	0	0	0	0	500	0	0	500	478,731	0	1,000
11	Dec	0	0	0	0	0	500	0	0	500	478,731	0	1,000
11	Jan	0	0	0	0	0	500	0	0	500	478,731	0	1,000
11	Feb	0	0	0	0	0	500	0	0	500	478,731	0	1,000
11	March	0	0	0	0	0	500	0	0	500	478,731	0	1,000
12	12-April	2,184	23,641	0	0	25,825	26,325	25,825	0	500	504,556	0	1,000
12	12-May	2,178	30,250	468	0	31,960	32,460	31,960	0	500	536,516	0	1,000
12	12-June	1,152	18,863	562	0	19,453	19,953	19,453	0	500	555,969	0	1,000
12	July	1,665	24,533	520	0	25,677	26,177	25,677	0	500	581,646	0	1,000
12	Aug	1,202	19,997	364	0	20,834	21,334	20,834	0	500	602,481	0	1,000
12	Sept	885	17,162	166	0	17,880	18,380	17,880	0	500	620,361	0	1,000
12	Oct	0	8,090	0	0	8,090	8,590	8,090	0	500	628,450	0	1,000
12	Nov	0	0	0	0	0	500	0	0	500	628,450	0	1,000
12	Dec	0	0	0	0	0	500	0	0	500	628,450	0	1,000
12	Jan	0	0	0	0	0	500	0	0	500	628,450	0	1,000
12	Feb	0	0	0	0	0	500	0	0	500	628,450	0	1,000
12	March	0	0	0	0	0	500	0	0	500	628,450	0	1,000
13	13-April	2,184	23,641	0	0	25,825	26,325	25,825	0	500	654,275	0	1,000
13	13-May	2,178	22,160	468	0	23,870	24,370	23,870	0	500	678,145	0	1,000
13	13-June	1,152	10,773	562	0	11,364	11,864	11,364	0	500	689,509	0	1,000
13	July	1,665	16,443	520	0	17,588	18,088	17,588	0	500	707,097	0	1,000
13	Aug	1,202	11,907	364	0	12,745	13,245	12,745	0	500	719,842	0	1,000
13	Sept	885	9,072	166	0	9,790	10,290	9,790	0	500	729,632	0	1,000
13	Oct	0	0	0	0	0	500	0	0	500	729,632	0	1,000
13	Nov	0	0	0	0	0	500	0	0	500	729,632	0	1,000
13	Dec	0	0	0	0	0	500	0	0	500	729,632	0	1,000
13	Jan	0	0	0	0	0	500	0	0	500	729,632	0	1,000
13	Feb	0	0	0	0	0	500	0	0	500	729,632	0	1,000
13	March	0	0	0	0	0	500	0	0	500	729,632	0	1,000
14	14-April	2,184	23,641	0	0	25,825	26,325	25,825	0	500	755,456	0	1,000
14	14-May	2,178	22,160	468	0	23,870	24,370	23,870	0	500	779,327	0	1,000
14	14-June	1,152	10,773	562	0	11,364	11,864	11,364	0	500	790,691	0	1,000
14	July	1,665	16,443	520	0	17,588	18,088	17,588	0	500	808,278	0	1,000
14	Aug	1,202	11,907	364	0	12,745	13,245	12,745	0	500	821,023	0	1,000
14	Sept	885	9,072	166	0	9,790	10,290	9,790	0	500	830,813	0	1,000
14	Oct	0	0	0	0	0	500	0	0	500	830,813	0	1,000
14	Nov	0	0	0	0	0	500	0	0	500	830,813	0	1,000
14	Dec	0	0	0	0	0	500	0	0	500	830,813	0	1,000
14	Jan	0	0	0	0	0	500	0	0	500	830,813	0	1,000
14	Feb	0	0	0	0	0	500	0	0	500	830,813	0	1,000
14	March	0	0	0	0	0	500	0	0	500	830,813	0	1,000

Table CC7-I.5 - Summary of Annual Water Balances for Leach Pad & Events Pond - Average, Dry & Wet Years

VERSION 2.1

Daily Ore Production	9,872	tpd							
Initial Ore Moisture	5.0%		Max. Solution Flow On Pad	540	m3/hr	Events Pond Areas		Maximum Allowable Storage		
Leaching Ore Moisture	15.0%		Maximum Treatment Rate	270	m3/hr	Total Catchment	29,100 m2	In-Heap	500	m3 (nominal)
Residual ore Moisture	12.0%		Other Inflows to Heap Leach	0	m3/hr	Pond Area	5,200 m2	Events Pond	160,000	m3
Maximum Area under Leach	47,400	m2						Total Solution Storage	160,500	m3
Leaching Lift Height	8	m								
Dry Density of Heap Ore	1.6	t/m3	**CRUSHED Ore**							

(all volumes in cubic metres per year)

YEAR	Stacked Ore (tonnes)	Runoff (mm)	Evap. (mm)	Runoff Inflows: Leach Pad	Runoff Inflows: Events Pond	TOTAL RUNOFF IN	Evaporation & Ore Moisture Losses: Leach Area	Heap & O'Liner	Events Pond	Ore Moisture to: Permanent	Ore Moisture to: Leaching	TOTAL LOSSES OUT	FW1+2+3 Make-Up Water: From Heap	From E. Pond	From Other	NET TOTAL INFLOW	Treat and Release	Remaining Solution in Storage at Year-End
Average Conditions																		
1	1,963,500	318	400	45,213	9,265	54,478	1,467	2,107	2,080	137,445	58,245	201,344	0	26,773	147,865	1,000	0	1,000
2	1,973,229	318	400	69,730	9,265	78,995	1,896	3,432	2,080	138,126	16,381	161,915	0	38,815	82,920	0	0	1,000
3	1,974,396	318	400	69,730	9,265	78,995	1,896	3,432	2,080	138,208	16,381	161,997	0	38,815	83,002	0	0	1,000
4	1,837,363	318	400	100,296	9,265	109,561	1,896	5,352	2,080	128,615	18,202	156,145	0	52,773	46,584	0	0	1,000
5	1,792,000	318	400	100,296	9,265	109,561	1,896	5,352	2,080	125,440	18,202	152,970	0	52,773	43,408	0	0	1,000
6	1,792,500	318	400	100,296	9,265	109,561	1,896	5,352	2,080	125,475	9,101	143,904	0	52,773	34,342	0	0	1,000
7	1,642,400	318	400	100,296	9,265	109,561	1,896	5,352	2,080	114,968	9,101	133,397	0	52,773	23,835	0	0	1,000
8	302,481	318	400	100,296	9,265	109,561	1,896	5,352	2,080	21,174	0	30,502	0	10,657	0	79,060	79,060	1,000
9	0	318	400	100,296	9,265	109,561	1,896	5,352	2,080	0	0	9,328	0	0	0	100,233	100,233	1,000
10	0	318	400	100,296	9,265	109,561	0	6,300	2,080	0	-48,538	-40,158	0	0	0	149,719	149,719	1,000
11	0	318	400	100,296	9,265	109,561	0	6,300	2,080	0	-48,538	-40,158	0	0	0	149,719	149,719	1,000
12	0	318	400	100,296	9,265	109,561	0	6,300	2,080	0	-48,538	-40,158	0	0	0	149,719	149,719	1,000
13	0	318	400	100,296	9,265	109,561	0	6,300	2,080	0	0	8,380	0	0	0	101,181	101,181	1,000
14	0	318	400	100,296	9,265	109,561	0	6,300	2,080	0	0	8,380	0	0	0	101,181	101,181	1,000
15	0	318	400	100,296	9,265	109,561	0	6,300	2,080	0	0	8,380	0	0	0	101,181	101,181	1,000
Dry Years (20-year Return Period)																		
1	1,963,500	228	400	32,418	6,643	39,061	1,467	2,107	2,080	137,445	58,245	201,344	-	17,727	163,283	1,000	-	1,000
2	1,973,229	228	400	49,996	6,643	56,640	1,896	3,432	2,080	138,126	16,381	161,915	-	26,285	105,276	-	-	1,000
3	1,974,396	228	400	49,996	6,643	56,640	1,896	3,432	2,080	138,208	16,381	161,997	-	26,285	105,358	-	-	1,000
4	1,837,363	228	400	71,912	6,643	78,556	1,896	5,352	2,080	128,615	18,202	156,145	-	35,901	77,589	0	-	1,000
5	1,792,000	228	400	71,912	6,643	78,556	1,896	5,352	2,080	125,440	18,202	152,970	-	35,901	74,414	0	-	1,000
6	1,792,500	228	400	71,912	6,643	78,556	1,896	5,352	2,080	125,475	9,101	143,904	-	35,901	65,348	0	-	1,000
7	1,642,400	228	400	71,912	6,643	78,556	1,896	5,352	2,080	114,968	9,101	133,397	-	35,901	54,841	0	-	1,000
8	302,481	228	400	71,912	6,643	78,556	1,896	5,352	2,080	21,174	-	30,502	-	13,978	-	48,054	48,054	1,000
9	-	228	400	71,912	6,643	78,556	1,896	5,352	2,080	-	-	9,328	-	-	-	69,228	69,228	1,000
10	-	228	400	71,912	6,643	78,556	-	6,300	2,080	-	- 48,538	- 40,158	-	-	-	118,713	118,713	1,000
11	-	228	400	71,912	6,643	78,556	-	6,300	2,080	-	- 48,538	- 40,158	-	-	-	118,713	118,713	1,000
12	-	228	400	71,912	6,643	78,556	-	6,300	2,080	-	- 48,538	- 40,158	-	-	-	118,713	118,713	1,000
13	-	228	400	71,912	6,643	78,556	-	6,300	2,080	-	-	8,380	-	-	-	70,176	70,176	1,000
14	-	228	400	71,912	6,643	78,556	-	6,300	2,080	-	-	8,380	-	-	-	70,176	70,176	1,000
15	-	228	400	71,912	6,643	78,556	-	6,300	2,080	-	-	8,380	-	-	-	70,176	70,676	500
Wet Years (100-year Return Period)																		
1	1,963,500	477	400	67,675	13,869	81,544	1,467	2,107	2,080	137,445	58,245	201,344	-	42,654	120,800	1,000	-	1,000
2	1,973,229	477	400	104,373	13,869	118,241	1,896	3,432	2,080	138,126	16,381	161,915	-	60,811	43,674	-	-	1,000
3	1,974,396	477	400	104,373	13,869	118,241	1,896	3,432	2,080	138,208	16,381	161,997	-	60,811	43,756	-	-	1,000
4	1,837,363	477	400	150,125	13,869	163,994	1,896	5,352	2,080	128,615	18,202	156,145	-	74,545	-	7,849	7,849	1,000
5	1,792,000	477	400	150,125	13,869	163,994	1,896	5,352	2,080	125,440	18,202	152,970	-	71,370	-	11,024	11,024	1,000
6	1,792,500	477	400	150,125	13,869	163,994	1,896	5,352	2,080	125,475	9,101	143,904	-	62,304	-	20,090	20,090	1,000
7	1,642,400	477	400	150,125	13,869	163,994	1,896	5,352	2,080	114,968	9,101	133,397	-	51,797	-	30,597	30,597	1,000
8	302,481	477	400	150,125	13,869	163,994	1,896	5,352	2,080	21,174	-	30,502	-	4,826	-	133,492	133,492	1,000
9	-	477	400	150,125	13,869	163,994	1,896	5,352	2,080	-	-	9,328	-	-	-	154,666	154,666	1,000
10	-	477	400	150,125	13,869	163,994	-	6,300	2,080	-	- 48,538	- 40,158	-	-	-	204,151	204,151	1,000
11	-	477	400	150,125	13,869	163,994	-	6,300	2,080	-	- 48,538	- 40,158	-	-	-	204,151	204,151	1,000
12	-	477	400	150,125	13,869	163,994	-	6,300	2,080	-	- 48,538	- 40,158	-	-	-	204,151	204,151	1,000
13	-	477	400	150,125	13,869	163,994	-	6,300	2,080	-	-	8,380	-	-	-	155,614	155,614	1,000
14	-	477	400	150,125	13,869	163,994	-	6,300	2,080	-	-	8,380	-	-	-	155,614	155,614	1,000
15	-	477	400	150,125	13,869	163,994	-	6,300	2,080	-	-	8,380	-	-	-	155,614	156,114	500

Table CC7-I.6 - Carmacks Copper Project - Design Inflow Events and Storage Volumes

CRUSHED Ore

	Maximum	Minimum	
In-Heap Storage Volumes	500	500	m3

VERSION 2.1

Events Pond Storage

CASE	HYDROLOGIC EVENT			Month	Month-End Volumes (m3) in Events Pond Storage														
					Year 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A	Base Case Average Conditions	338	mm/year	April	12,341	19,120	19,120	26,325	26,325	26,325	26,325	26,325	26,325	500	500	500	500	500	500
	- Average Snowmelt 50/50 in April & May			May	23,982	36,023	36,023	49,982	49,982	49,982	49,982	49,982	500	500	500	500	500	500	500
	Total April Runoff =	75.1	mm	June	500	4,817	4,817	21,330	21,330	24,970	24,970	500	500	500	500	500	500	500	500
	May Runoff =	74.9	mm	July	500	500	500	9,978	9,978	17,258	17,258	500	500	500	500	500	500	500	500
	(average runoff thereafter)			August	500	500	500	500	500	6,595	6,595	500	500	500	500	500	500	500	500
				Sept	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
				Oct	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Ai	Base Case Average Conditions			April	22,770	34,242	34,242	47,298	47,298	47,298	47,298	47,298	47,298	500	500	500	500	500	0
	100% Snowmelt in April, Total April Runoff =	136	mm	May	45,558	67,309	67,309	93,373	93,373	93,373	93,373	93,373	500	500	500	500	500	500	0
	PLUS 100 year One Month Wet Period			June	4,411	36,102	36,102	64,721	64,721	68,361	68,361	500	500	500	500	500	500	500	0
	May Runoff =	140	mm	July	500	20,466	20,466	53,369	53,369	60,649	60,649	500	500	500	500	500	500	500	0
	(average runoff thereafter)			August	500	4,718	4,718	40,885	40,885	49,986	49,986	500	500	500	500	500	500	500	0
				Sept	500	500	500	29,868	29,868	38,969	38,969	500	500	500	500	500	500	500	0
				Oct	500	500	500	8,446	8,446	8,498	500	500	500	500	500	500	500	500	0
Aii	Base Case Average Conditions			April	22,770	34,242	34,242	47,298	47,298	47,298	47,298	47,298	47,298	500	500	500	500	500	0
	100% Snowmelt in April, Total April Runoff =	136	mm	May	39,312	58,253	58,253	80,813	80,813	80,813	80,813	80,813	500	500	500	500	500	500	0
	PLUS 100 year Two Month Wet Period			June	9,099	42,900	42,900	74,149	74,149	77,790	77,790	500	500	500	500	500	500	500	0
	May Runoff =	103.5	mm	July	500	27,264	27,264	62,797	62,797	70,078	70,078	500	500	500	500	500	500	500	0
	June Runoff =	103.5	mm	August	500	11,516	11,516	50,313	50,313	59,414	59,414	500	500	500	500	500	500	500	0
	(average runoff thereafter)			Sept	500	500	500	39,297	39,297	48,397	48,397	500	500	500	500	500	500	500	0
				Oct	500	500	500	11,639	8,463	8,498	500	500	500	500	500	500	500	500	0
Aiii	Base Case Average Conditions			April	22,770	34,242	34,242	47,298	47,298	47,298	47,298	47,298	47,298	500	500	500	500	500	0
	Snowmelt in April...Total April Runoff =	136	mm	May	36,951	54,829	54,829	76,065	76,065	76,065	76,065	76,065	500	500	500	500	500	500	0
	PLUS 100 year Three Month Wet Period			June	4,376	36,052	36,052	64,652	64,652	68,293	68,293	500	500	500	500	500	500	500	0
	May Runoff =	89.7	mm	July	500	28,480	28,480	64,483	64,483	71,764	71,764	500	500	500	500	500	500	500	0
	June Runoff =	89.7	mm	August	500	12,732	12,732	52,000	52,000	61,100	61,100	500	500	500	500	500	500	500	0
	July Runoff =	89.7	mm	Sept	500	500	500	40,983	40,983	50,084	50,084	500	500	500	500	500	500	500	0
	(average runoff thereafter)			Oct	500	500	500	11,639	8,463	8,498	500	500	500	500	500	500	500	500	0
B	100 year Wet Year	496	mm/year	April	35,247	52,334	52,334	72,390	72,390	72,390	72,390	72,390	72,390	500	500	500	500	500	0
	with Snowmelt in April			May	37,571	55,728	55,728	77,310	77,310	77,310	77,310	77,310	500	500	500	500	500	500	0
	Total April Runoff =	208.7	mm	June	500	29,113	29,113	55,028	55,028	58,669	58,669	500	500	500	500	500	500	500	0
	Total May Runoff =	20.4	mm	July	500	20,112	20,112	52,877	52,877	60,157	60,157	500	500	500	500	500	500	500	0
	(monthly precipitation prorated each month)			August	500	8,534	8,534	46,178	46,178	55,279	55,279	500	500	500	500	500	500	500	0
				Sept	500	500	500	40,051	40,051	49,152	49,152	500	500	500	500	500	500	500	0
				Oct	500	500	500	11,639	8,463	8,498	500	500	500	500	500	500	500	500	0
B1	100 year Wet Year			April	49,119	72,449	72,449	100,289	100,289	100,289	100,289	100,289	100,289	500	500	500	500	500	0
	with 100 Year Snowmelt in APRIL			May	50,401	74,332	74,332	103,113	103,113	103,113	103,113	103,113	500	500	500	500	500	500	0
	Total April Runoff =	290	mm	June	9,453	43,413	43,413	74,861	74,861	78,502	78,502	500	500	500	500	500	500	500	0
	Total May Runoff =	14.2	mm	July	500	28,194	28,194	64,086	64,086	71,367	71,367	500	500	500	500	500	500	500	0
				August	500	12,312	12,312	51,417	51,417	60,518	60,518	500	500	500	500	500	500	500	0
	(April runoff from 7 Month Wet Period)			Sept	500	500	500	40,707	40,707	49,808	49,808	500	500	500	500	500	500	500	0
				Oct	500	500	500	11,639	8,463	8,498	500	500	500	500	500	500	500	500	0
B2	100 year Wet Year			April	0	500	500	500	500	500	500	500	500	500	500	500	500	500	0
	with 100 Year Snowmelt in MAY			May	50,691	74,752	74,752	103,696	103,696	103,696	103,696	103,696	500	500	500	500	500	500	0
	Total April Runoff =	0	mm	June	9,674	43,733	43,733	75,305	75,305	78,946	78,946	500	500	500	500	500	500	500	0
	Total May Runoff =	306	mm	July	500	28,370	28,370	64,331	64,331	71,611	71,611	500	500	500	500	500	500	500	0
				August	500	12,389	12,389	51,524	51,524	60,624	60,624	500	500	500	500	500	500	500	0
	(May runoff from 8 Month Wet Period)			Sept	500	500	500	40,707	40,707	49,808	49,808	500	500	500	500	500	500	500	0
				Oct	500	500	500	11,639	8,463	8,498	500	500	500	500	500	500	500	500	0

Table CC7-I.6 (continued)

CRUSHED Ore

Inflow Volumes from Process-Related Events

Heap Draindown Volumes

Maximum Area under Leach	47,400	m2
Leaching Lift Height	8	m
Dry Density of Heap Ore	1.6	t/m3
Leaching Ore Moisture Content	15.0%	by weight
Residual Ore Moisture Content	12.0%	by weight

Max. Solution Flow On Pad 540 m3/hr
Use **100%** of Full Potential Draindown Volume in Year 1
Maximum of 25,920 m3 thereafter Equal to **2.0** days at assumed maximum solution flow rate
Equal to **10** days storage of actual expected draindown flows

Period	100% Draindown		# Lifts	Year 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Stage I - end of Year 1	58,245	m3	3.2	58,245														
end of Year 2	74,627	m3	4.1		25,920													
Stage II - end of Year 3	91,008	m3	5			25,920												
end of Year 4	109,210	m3	6				25,920											
end of Year 5	127,411	m3	7					25,920										
Stage III - end of Year 6	136,512	m3	7.5						25,920									
end of Year 7	145,613	m3	8							25,920								
Stage IV - end of Year 8	145,613	m3	8								25,920							
end of Year 9	145,613	m3	8									25,920						
Stage V - start of Year 10	145,613	m3	0										25,920					
start of year 11	97,075	m3	0											25,920				
start of Year 12	48,538	m3	0												25,920			
Stage VI - Years 13 to ...	-	m3	0													0	0	0

NOTES 1) During the first year, potential draindown volumes increase from zero at the end of May to the maximum indicated above by the end of November 100% draindown volumes at the end of each month during Year 1 are:

April	0	m3
May	0	m3
June	13,920	m3
July	23,100	m3
August	32,281	m3
September	41,166	m3
October	50,347	m3
November	58,245	m3

These draindown volumes are added for the respective months **for Year 1 ONLY.**

2) The total draindown "inventory" is assumed to be progressively treated and released during Years 10, 11 and 12.

Evaporation Losses from Ore Sprinkling during May

No ore will be placed or sprinkled during May if Snowmelt occurs during May.
i.e. these evaporation losses are added for Case B2 ONLY

Case	100% Snowmelt in	Year 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A - Base Case Average Conditions	April															
Ai - Base Case + 100 year One Month	April															
Aii - Base Case + 100 year Two Month	April															
Aiii - Base Case + 100 year Three Month	April															
B - 100 yeat Wet Year	April															
B1 - 100 yr. Wet Yr with 100 yr.APRIL Snowmelt	April															
B2 - 100 yr. Wet Yr with 100 yr.MAY Snowmelt	**May**	698	1,199	1,199	1,631	1,631	1,631	1,631	1,631	1,631						

Normal Evaporation Losses apply for all cases with snowmelt during April

No ore sprinkling is carried out after the start of Year 10

Table CC7-I.6 (continued)

Combinations of Events - Total Solution Storage Requirements - Events Pond

Event Combinations are: Hydrologic Cases ***plus*** Process-Related Events and include minimum pond operating volumes at all times

CRUSHED Ore — **VERSION 2.1**

CASE	DESCRIPTION	Month	Total Events Pond Solution Storage (m3) at end of indicated month and Year														
			Year 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A	Base Case Average Conditions	April	12,341	45,040	45,040	52,245	52,245	52,245	52,245	52,245	52,245	26,420	26,420	26,420	500	500	500
	plus Draindown allowance	May	23,982	61,943	61,943	75,902	75,902	75,902	75,902	75,902	26,420	26,420	26,420	26,420	500	500	500
		June	14,420	30,737	30,737	47,250	47,250	50,890	50,890	26,420	26,420	26,420	26,420	26,420	500	500	500
		July	23,600	26,420	26,420	35,898	35,898	43,178	43,178	26,420	26,420	26,420	26,420	26,420	500	500	500
		August	32,781	26,420	26,420	26,420	26,420	32,515	32,515	26,420	26,420	26,420	26,420	26,420	500	500	500
		Sept	41,666	26,420	26,420	26,420	26,420	26,420	26,420	26,420	26,420	26,420	26,420	26,420	500	500	500
		Oct	50,847	26,420	26,420	26,420	26,420	26,420	26,420	26,420	26,420	26,420	26,420	26,420	500	500	500
Ai	Base Case Average Conditions	April	22,770	60,162	60,162	73,218	73,218	73,218	73,218	73,218	73,218	26,420	26,420	26,420	500	500	-
	plus 100 year One Month Wet Period	May	45,558	93,229	93,229	119,293	119,293	119,293	119,293	119,293	26,420	26,420	26,420	26,420	500	500	-
	plus Draindown allowance	June	18,330	62,022	62,022	90,641	90,641	94,281	94,281	26,420	26,420	26,420	26,420	26,420	500	500	-
		July	23,600	46,386	46,386	79,289	79,289	86,569	86,569	26,420	26,420	26,420	26,420	26,420	500	500	-
		August	32,781	30,638	30,638	66,805	66,805	75,906	75,906	26,420	26,420	26,420	26,420	26,420	500	500	-
		Sept	41,666	26,420	26,420	55,788	55,788	64,889	64,889	26,420	26,420	26,420	26,420	26,420	500	500	-
		Oct	50,847	26,420	26,420	34,366	34,366	34,418	26,420	26,420	26,420	26,420	26,420	26,420	500	500	-
Aii	Base Case Average Conditions	April	22,770	60,162	60,162	73,218	73,218	73,218	73,218	73,218	73,218	26,420	26,420	26,420	500	500	-
	plus 100 year Two Month Wet Period	May	39,312	84,173	84,173	106,733	106,733	106,733	106,733	106,733	26,420	26,420	26,420	26,420	500	500	-
	plus Draindown allowance	June	23,018	68,820	68,820	100,069	100,069	103,710	103,710	26,420	26,420	26,420	26,420	26,420	500	500	-
		July	23,600	53,184	53,184	88,717	88,717	95,998	95,998	26,420	26,420	26,420	26,420	26,420	500	500	-
		August	32,781	37,436	37,436	76,233	76,233	85,334	85,334	26,420	26,420	26,420	26,420	26,420	500	500	-
		Sept	41,666	26,420	26,420	65,217	65,217	74,317	74,317	26,420	26,420	26,420	26,420	26,420	500	500	-
		Oct	50,847	26,420	26,420	37,559	34,383	34,418	26,420	26,420	26,420	26,420	26,420	26,420	500	500	-
Aiii	Base Case Average Conditions	April	22,770	60,162	60,162	73,218	73,218	73,218	73,218	73,218	73,218	26,420	26,420	26,420	500	500	-
	plus 100 year Three Month Wet Period	May	36,951	80,749	80,749	101,985	101,985	101,985	101,985	101,985	26,420	26,420	26,420	26,420	500	500	-
	plus Draindown allowance	June	18,296	61,972	61,972	90,572	90,572	94,213	94,213	26,420	26,420	26,420	26,420	26,420	500	500	-
		July	23,600	54,400	54,400	90,403	90,403	97,684	97,684	26,420	26,420	26,420	26,420	26,420	500	500	-
		August	32,781	38,652	38,652	77,920	77,920	87,020	87,020	26,420	26,420	26,420	26,420	26,420	500	500	-
		Sept	41,666	26,420	26,420	66,903	66,903	76,004	76,004	26,420	26,420	26,420	26,420	26,420	500	500	-
		Oct	50,847	26,420	26,420	37,559	34,383	34,418	26,420	26,420	26,420	26,420	26,420	26,420	500	500	-
B	100 year Wet Year	April	35,247	78,254	78,254	98,310	98,310	98,310	98,310	98,310	98,310	26,420	26,420	26,420	500	500	-
	with Snowmelt in April	May	37,571	81,648	81,648	103,230	103,230	103,230	103,230	103,230	26,420	26,420	26,420	26,420	500	500	-
	plus Draindown allowance	June	14,420	55,033	55,033	80,948	80,948	84,589	84,589	26,420	26,420	26,420	26,420	26,420	500	500	-
		July	23,600	46,032	46,032	78,797	78,797	86,077	86,077	26,420	26,420	26,420	26,420	26,420	500	500	-
		August	32,781	34,454	34,454	72,098	72,098	81,199	81,199	26,420	26,420	26,420	26,420	26,420	500	500	-
		Sept	41,666	26,420	26,420	65,971	65,971	75,072	75,072	26,420	26,420	26,420	26,420	26,420	500	500	-
		Oct	50,847	26,420	26,420	37,559	34,383	34,418	26,420	26,420	26,420	26,420	26,420	26,420	500	500	-
B1	100 year Wet Year with 100 Year Snowmelt in APRIL	April	49,119	98,369	98,369	126,209	126,209	126,209	126,209	126,209	**126,209**	26,420	26,420	26,420	500	500	-
		May	50,401	100,252	100,252	129,033	129,033	129,033	129,033	129,033	26,420	26,420	26,420	26,420	500	500	-
	plus Draindown allowance	June	23,372	69,333	69,333	100,781	100,781	104,422	104,422	26,420	26,420	26,420	26,420	26,420	500	500	-
		July	23,600	54,114	54,114	90,006	90,006	97,287	97,287	26,420	26,420	26,420	26,420	26,420	500	500	-
		August	32,781	38,232	38,232	77,337	77,337	86,438	86,438	26,420	26,420	26,420	26,420	26,420	500	500	-
		Sept	41,666	26,420	26,420	66,627	66,627	75,728	75,728	26,420	26,420	26,420	26,420	26,420	500	500	-
		Oct	50,847	26,420	26,420	37,559	34,383	34,418	26,420	26,420	26,420	26,420	26,420	26,420	500	500	-
B2	100 year Wet Year with 100 Year Snowmelt in MAY	April	-	26,420	26,420	26,420	26,420	26,420	26,420	26,420	26,420	26,420	26,420	26,420	500	500	-
		May	**51,389**	**101,871**	**101,871**	**131,247**	**131,247**	**131,247**	**131,247**	**131,247**	28,051	26,420	26,420	26,420	500	500	-
	plus Draindown allowance	June	23,593	69,653	69,653	101,225	101,225	104,866	104,866	26,420	26,420	26,420	26,420	26,420	500	500	-
	plus no ore sprinkling in May	July	23,600	54,290	54,290	90,251	90,251	97,531	97,531	26,420	26,420	26,420	26,420	26,420	500	500	-
		August	32,781	38,309	38,309	77,444	77,444	86,544	86,544	26,420	26,420	26,420	26,420	26,420	500	500	-
		Sept	41,666	26,420	26,420	66,627	66,627	75,728	75,728	26,420	26,420	26,420	26,420	26,420	500	500	-
		Oct	50,847	26,420	26,420	37,559	34,383	34,418	26,420	26,420	26,420	26,420	26,420	26,420	500	500	-

Total Events Pond Solution Storage - Maximum Volumes each Month

CRUSHED Ore

	Month	Year 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	April	49,119	98,369	98,369	126,209	126,209	126,209	126,209	126,209	**126,209**	26,420	26,420	26,420	500	500	500
	May	**51,389**	**101,871**	**101,871**	**131,247**	**131,247**	**131,247**	**131,247**	**131,247**	28,051	26,420	26,420	26,420	500	500	500
	June	23,593	69,653	69,653	101,225	101,225	104,866	104,866	26,420	26,420	26,420	26,420	26,420	500	500	500
	July	23,600	54,400	54,400	90,403	90,403	97,684	97,684	26,420	26,420	26,420	26,420	26,420	500	500	500
	Aug	32,781	38,652	38,652	77,920	77,920	87,020	87,020	26,420	26,420	26,420	26,420	26,420	500	500	500
	Sept	41,666	26,420	26,420	66,903	66,903	76,004	76,004	26,420	26,420	26,420	26,420	26,420	500	500	500
	Oct	50,847	26,420	26,420	37,559	34,383	34,418	26,420	26,420	26,420	26,420	26,420	26,420	500	500	500
Events Pond Storage Capacity Required		51,389	101,871	101,871	**131,247**	131,247	131,247	131,247	131,247	126,209	26,420	26,420	26,420	500	500	500

Table CC7-I.7A - Carmacks Copper Project - Open Pit Monthly Water Balance

						Groundwater Flows in Pit Area					
		Areas - km2				Recharge to		Wall Drainage to		Pit Dewatering	
Years	Phase	Total Area	Pit	Land	Ponds	L/sec	m3/hour	L/sec	m3/hour	L/sec	m3/hour
1,2	I	**0.26**	0.245	**0.01**	**0.005**	**0.5**	1.8	**0.5**	1.8	**1.0**	3.6
3	II	**0.28**	0.265	**0.01**	**0.005**	**0.5**	1.8	**0.5**	1.8	**1.0**	3.6
4 ON	III	**0.305**	0.290	**0.01**	**0.005**	**0.5**	1.8	**0.5**	1.8	**1.0**	3.6
11-15	IV, V	0.305	0.290	0.01	0.005	**1.0**	3.6	**1.0**	3.6	**0.0**	0.0
Evaporation Coefficients			10%	34%	100%						

Ore mined for 200 days/yr at 9,872 tpd ..... Waste Mined for 350 days/yr at 21,429 tpd (May-Oct)
at 21,429 tpd (Nov.-Apr.)

Use Pit Water as FW2 (make-up water for process) YES

	A	B	C	D	E	F	G	H	I	J	K
	Precipitation Runoff		Lake	Inflows - m3			Evaporation	Potential	Used as		Stored
Month	Return Period	Depth mm	Evaporation mm	Direct Precipitation	Recharge + Wall Drainage	Pit Dewatering	& E'Trans Losses	Release m3	Make-Up Water	Actual Release	in Pit
PHASE I PIT - Years 1 & 2					**Average Conditions**				**FW2**		
1-April	2	75.1	0	19,513	2,592	2,592	0	24,697	0	24,697	0
May	2	74.9	90	19,461	2,678	2,678	2,961	21,857	0	21,857	0
June	2	39.6	108	10,296	2,592	2,592	3,553	11,927	11,927	0	0
July	2	57.2	100	14,872	2,678	2,678	3,290	16,939	16,939	0	0
Aug	2	41.3	70	10,738	2,678	2,678	2,303	13,792	13,792	0	0
Sept	2	30.4	32	7,904	2,592	2,592	1,053	12,035	12,035	0	0
Oct	2	0	0	0	2,678	2,678	0	5,357	5,357	0	0
Nov	2	0	0	0	2,592	2,592	0	5,184	5,184	0	0
Dec	2	0	0	0	2,678	2,678	0	5,357	0	0	5,357
Jan	2	0	0	0	2,678	2,678	0	5,357	0	0	10,714
Feb	2	0	0	0	2,419	2,419	0	4,838	0	0	15,552
March	2	0	0	0	2,678	2,678	0	5,357	0	0	20,909
2-April	2	75.1	0	19,513	2,592	2,592	0	24,697	0	31,667	13,939
May	2	74.9	90	19,461	2,678	2,678	2,961	21,857	0	28,826	6,970
June	2	39.6	108	10,296	2,592	2,592	3,553	11,927	0	18,896	0
July	2	57.2	100	14,872	2,678	2,678	3,290	16,939	11,319	5,620	0
Aug	2	41.3	70	10,738	2,678	2,678	2,303	13,792	13,792	0	0
Sept	2	30.4	32	7,904	2,592	2,592	1,053	12,035	12,035	0	0
Oct	2	0	0	0	2,678	2,678	0	5,357	5,357	0	0
Nov	2	0	0	0	2,592	2,592	0	5,184	5,184	0	0
Dec	2	0	0	0	2,678	2,678	0	5,357	0	0	5,357
Jan	2	0	0	0	2,678	2,678	0	5,357	0	0	10,714
Feb	2	0	0	0	2,419	2,419	0	4,838	0	0	15,552
March	2	0	0	0	2,678	2,678	0	5,357	0	0	20,909
PHASE II PIT - Year 3					**Average Conditions**						
3-April	2	75.1	0	21,014	2,592	2,592	0	26,198	0	33,168	13,939
May	2	74.9	90	20,958	2,678	2,678	3,141	23,174	0	30,143	6,970
June	2	39.6	108	11,088	2,592	2,592	3,769	12,503	0	19,472	0
July	2	57.2	100	16,016	2,678	2,678	3,490	17,883	11,319	6,564	0
Aug	2	41.3	70	11,564	2,678	2,678	2,443	14,478	14,478	0	0
Sept	2	30.4	32	8,512	2,592	2,592	1,117	12,579	12,579	0	0
Oct	2	0	0	0	2,678	2,678	0	5,357	5,357	0	0
Nov	2	0	0	0	2,592	2,592	0	5,184	5,184	0	0
Dec	2	0	0	0	2,678	2,678	0	5,357	0	0	5,357
Jan	2	0	0	0	2,678	2,678	0	5,357	0	0	10,714
Feb	2	0	0	0	2,419	2,419	0	4,838	0	0	15,552
March	2	0	0	0	2,678	2,678	0	5,357	0	0	20,909
PHASE III PIT - Years 4 to 8					**Average Conditions**						
4-April	2	75.1	0	22,890	2,592	2,592	0	28,074	0	35,044	13,939
May	2	74.9	90	22,829	2,678	2,678	3,366	24,820	0	31,790	6,970
June	2	39.6	108	12,078	2,592	2,592	4,039	13,223	0	20,192	0
July	2	57.2	100	17,446	2,678	2,678	3,740	19,063	0	19,063	0
Aug	2	41.3	70	12,597	2,678	2,678	2,618	15,335	3,006	12,329	0
Sept	2	30.4	32	9,272	2,592	2,592	1,197	13,259	11,017	2,242	0
Oct	2	0	0	0	2,678	2,678	0	5,357	5,357	0	0
Nov	2	0	0	0	2,592	2,592	0	5,184	5,184	0	0
Dec	2	0	0	0	2,678	2,678	0	5,357	0	0	5,357
Jan	2	0	0	0	2,678	2,678	0	5,357	0	0	10,714
Feb	2	0	0	0	2,419	2,419	0	4,838	0	0	15,552
March	2	0	0	0	2,678	2,678	0	5,357	0	0	20,909
5-April	2	75.1	0	22,890	2,592	2,592	0	28,074	0	35,044	13,939
May	2	74.9	90	22,829	2,678	2,678	3,366	24,820	0	31,790	6,970
June	2	39.6	108	12,078	2,592	2,592	4,039	13,223	0	20,192	0
July	2	57.2	100	17,446	2,678	2,678	3,740	19,063	0	19,063	0
Aug	2	41.3	70	12,597	2,678	2,678	2,618	15,335	3,006	12,329	0
Sept	2	30.4	32	9,272	2,592	2,592	1,197	13,259	11,017	2,242	0
Oct	2	0	0	0	2,678	2,678	0	5,357	5,357	0	0
Nov	2	0	0	0	2,592	2,592	0	5,184	5,184	0	0
Dec	2	0	0	0	2,678	2,678	0	5,357	0	0	5,357
Jan	2	0	0	0	2,678	2,678	0	5,357	0	0	10,714
Feb	2	0	0	0	2,419	2,419	0	4,838	0	0	15,552
March	2	0	0	0	2,678	2,678	0	5,357	0	0	20,909

Table CC7-I.7A - Carmacks Copper Project - Open Pit Monthly Water Balance

						Groundwater Flows in Pit Area					
		Areas - km2				Recharge to		Wall Drainage to		Pit Dewatering	
Years	Phase	Total Area	Pit	Land	Ponds	L/sec	m3/hour	L/sec	m3/hour	L/sec	m3/hour
1,2	I	**0.26**	0.245	**0.01**	**0.005**	**0.5**	1.8	**0.5**	1.8	**1.0**	3.6
3	II	**0.28**	0.265	**0.01**	**0.005**	**0.5**	1.8	**0.5**	1.8	**1.0**	3.6
4 ON	III	**0.305**	0.290	**0.01**	**0.005**	**0.5**	1.8	**0.5**	1.8	**1.0**	3.6
11-15	IV, V	0.305	0.290	0.01	0.005	**1.0**	3.6	**1.0**	3.6	**0.0**	0.0
Evaporation Coefficients			10%	34%	100%						

Ore mined for 200 days/yr at 9,872 tpd ..... Waste Mined for 350 days/yr at 21,429 tpd (May-Oct)
at 21,429 tpd (Nov.-Apr.)

Use Pit Water as FW2 (make-up water for process) YES

	A	B	C	D	E	F	G	H	I	J	K
	Precipitation Runoff		Lake	Inflows - m3			Evaporation	Potential	Used as		Stored
Month	Return Period	Depth mm	Evaporation mm	Direct Precipitation	Recharge + Wall Drainage	Pit Dewatering	& E'Trans Losses	Release m3	Make-Up Water	Actual Release	in Pit
6-April	2	75.1	0	22,890	2,592	2,592	0	28,074	0	35,044	13,939
May	2	74.9	90	22,829	2,678	2,678	3,366	24,820	0	31,790	6,970
June	2	39.6	108	12,078	2,592	2,592	4,039	13,223	0	20,192	0
July	2	57.2	100	17,446	2,678	2,678	3,740	19,063	0	19,063	0
Aug	2	41.3	70	12,597	2,678	2,678	2,618	15,335	0	15,335	0
Sept	2	30.4	32	9,272	2,592	2,592	1,197	13,259	4,922	8,337	0
Oct	2	0	0	0	2,678	2,678	0	5,357	5,357	0	0
Nov	2	0	0	0	2,592	2,592	0	5,184	5,184	0	0
Dec	2	0	0	0	2,678	2,678	0	5,357	0	0	5,357
Jan	2	0	0	0	2,678	2,678	0	5,357	0	0	10,714
Feb	2	0	0	0	2,419	2,419	0	4,838	0	0	15,552
March	2	0	0	0	2,678	2,678	0	5,357	0	0	20,909
7-April	2	75.1	0	22,890	2,592	2,592	0	28,074	0	35,044	13,939
May	2	74.9	90	22,829	2,678	2,678	3,366	24,820	0	31,790	6,970
June	2	39.6	108	12,078	2,592	2,592	4,039	13,223	0	20,192	0
July	2	57.2	100	17,446	2,678	2,678	3,740	19,063	0	19,063	0
Aug	2	41.3	70	12,597	2,678	2,678	2,618	15,335	0	15,335	0
Sept	2	30.4	32	9,272	2,592	2,592	1,197	13,259	4,922	8,337	0
Oct	2	0	0	0	2,678	2,678	0	5,357	5,357	0	0
Nov	2	0	0	0	2,592	2,592	0	5,184	0	5,184	0
Dec	2	0	0	0	2,678	2,678	0	5,357	0	0	5,357
Jan	2	0	0	0	2,678	2,678	0	5,357	0	0	10,714
Feb	2	0	0	0	2,419	2,419	0	4,838	0	0	15,552
March	2	0	0	0	2,678	2,678	0	5,357	0	0	20,909
8-April	2	75.1	0	22,890	2,592	2,592	0	28,074	0	35,044	13,939
May	2	74.9	90	22,829	2,678	2,678	3,366	24,820	0	31,790	6,970
June	2	39.6	108	12,078	2,592	2,592	4,039	13,223	0	20,192	0
July	2	57.2	100	17,446	2,678	0	3,740	16,384	0	16,384	0
Aug	2	41.3	70	12,597	2,678	0	2,618	12,657	0	12,657	0
Sept	2	30.4	32	9,272	2,592	0	1,197	10,667	0	10,667	0
Oct	2	0	0	0	2,678	0	0	2,678	0	2,678	0
Nov	2	0	0	0	2,592	0	0	2,592	0	2,592	0
Dec	2	0	0	0	2,678	0	0	2,678	0	0	2,678
Jan	2	0	0	0	2,678	0	0	2,678	0	0	5,357
Feb	2	0	0	0	2,419	0	0	2,419	0	0	7,776
March	2	0	0	0	2,678	0	0	2,678	0	0	10,454
COMPLETED PIT - Year 9 Onwards					**Average Conditions**			(Allow Pit to fill)			
April	2	75.1	0	22,890	5,184	0	0	28,074	0	0	38,529
May	2	74.9	90	22,829	5,357	0	3,366	24,820	0	0	63,349
June	2	39.6	108	12,078	5,184	0	4,039	13,223	0	0	76,572
July	2	57.2	100	17,446	5,357	0	3,740	19,063	0	0	95,634
Aug	2	41.3	70	12,597	5,357	0	2,618	15,335	0	0	110,970
Sept	2	30.4	32	9,272	5,184	0	1,197	13,259	0	0	124,229
Oct	2	0	0	0	5,357	0	0	5,357	0	0	129,586
Nov	2	0	0	0	5,184	0	0	5,184	0	0	134,770
Dec	2	0	0	0	5,357	0	0	5,357	0	0	140,126
Jan	2	0	0	0	5,357	0	0	5,357	0	0	145,483
Feb	2	0	0	0	4,838	0	0	4,838	0	0	150,322
March	2	0	0	0	5,357	0	0	5,357	0	0	155,678

Note Pit will continue to fill after year 9 until overflow occurs at the low wall. 145,224 m3 per year net inflow

Table CC7-I.7B - Carmacks Copper Project - Open Pit Annual Water Balance Summary

	Inflows - m3			Evaporation	Used for	
Year	Direct Precipitation	Recharge + Wall Drainage	Pit Dewatering	& E'trans Losses	Make-Up Water	NET Total Release
1	82,784	31,536	31,536	13,160	65,233	46,554
2	82,784	31,536	31,536	13,160	47,687	85,009
3	89,152	31,536	31,536	13,960	48,917	89,347
4	97,112	31,536	31,536	14,960	24,564	120,660
5	97,112	31,536	31,536	14,960	24,564	120,660
6	97,112	31,536	31,536	14,960	15,463	129,761
7	97,112	31,536	31,536	14,960	10,279	134,945
8	97,112	31,536	7,862	14,960	0	132,005
9 on	97,112	63,072	0	14,960	0	0

Table CC7-I.8A - Carmacks Copper Project - Waste Rock Storage Areas Water Balance - Input Data

Year	Annual Precipitation Return Period	Annual Precipitation Depth mm	Total Waste tonnes	Areas (ha) Waste Rock
1	2	338	**7,500,000**	**12.0**
2	2	338	**7,500,000**	**24.0**
3	2	338	**7,500,000**	**49.8**
4	2	338	**7,500,000**	**75.6**
5	2	338	**7,500,000**	**75.6**
6	2	338	**7,500,000**	**75.6**
7	2	338	**7,500,000**	**75.6**
8	2	338	**600,000**	**75.6**
9	2	338	-	**75.6**
10	2	338	-	**75.6**
11	2	338	-	**75.6**
12	2	338	-	**75.6**
13	2	338	-	**75.6**
14	2	338	-	**75.6**
15	2	338	-	**75.6**
	Totals		53,100,000	

Total Catchment Area **80.3** ha

Max Rock Moisture Increase **2.0%** by weight
Initial Rock Moisture Content **5.0%**

Waste mined for 350 days/yr
at 21,429 tpd from May-Oct
at 21,429 tpd from November -April

Flow used for Dust Control = **1.0** L/s
Use Water for Process Make-up FW3 **YES**

Percent of total infiltration lost to wetting waste rock
During Snowmelt (April) **60%**
During Other Months **80%**

Average Monthly Conditions at Nominal Elevation 850 m

Month	Rainfall mm	Snowfall mm	Snowmelt mm	Evaporation mm	Number of Operating Days
May	13.9	0.0	61.0	90	**25**
June	39.6	0	0.0	108	**30**
July	57.2	0	0	100	**31**
Aug	41.3	0	0	70	**31**
Sept	30.4	0.0	0	32	**30**
Oct	0	28.2	0	0	**28**
Nov	0	26.7	0	0	**29**
Dec	0	23.3	0	0	**29**
Jan	0	21.7	0	0	**29**
Feb	0	16.2	0	0	**28**
March	0	13.5	0	0	**30**
April	14.1	12.3	61.0	0	**30**
TOTAL	196.5	141.9	121.9	400	350

Sublimation 20 mm

Annual Total Precipitation

Return Period (years)	Precip.	Rainfall	% of Snowmelt in	
1	Dry	248	143.8	April 50%
2	Average	338	196.0	May 50%
10	Wet	416	241.3	
20	Wet	443	256.9	
100	Wet	496	287.7	
200	Wet	516	299.3	
500	Wet	543	314.9	

(Note - Dry Year equal to 20 year return period)

Evaporation Coefficients (times Lake Evaporation)
10% from dump surface
34% from land surface

Runoff Coefficients
0.30 from dump surface
0.30 from land surface after Snowmelt
0.35 from land surface during Snowmelt (April & May)

Table CC7-I.8B - Monthly Water Balance - Waste Rock Storage Area

(all volumes in cubic meters per month)

YEAR	Month	Waste Rock Tonnes	Precipitation Return Period	Precip on Dump	Evap Losses	Moisture to Rock	Total Moisture Content	Runoff from Dump	Flow to Drain	Net Land Runoff	Dust Control Usage	FW3 Used as Make-up Water	Released from Settling
AA	AB	AC		AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM
1	-1-March	0	2	0	0	0	0.0%	0	0	0	0	0	0
1	April	0	2	9,006	0	0	0.0%	2,702	6,304	17,941	0	0	26,947
1	1-May	535,714	2	8,982	1,080	4,166	5.8%	2,695	1,041	17,893	2,160	0	19,469
1	1-June	642,857	2	4,752	1,296	1,624	5.5%	1,426	406	8,114	2,592	5,738	1,615
1	July	664,286	2	6,864	1,200	2,884	5.5%	2,059	721	11,720	2,678	5,344	6,478
1	Aug	664,286	2	4,956	840	2,103	5.4%	1,487	526	8,462	2,678	7,797	0
1	Sept	642,857	2	3,648	384	1,736	5.4%	1,094	434	6,229	2,592	5,165	0
1	Oct	600,000	2	0	0	0	5.3%	0	0	0	0	0	0
1	Nov	621,429	2	0	0	0	5.3%	0	0	0	0	0	0
1	Dec	621,429	2	0	0	0	5.3%	0	0	0	0	0	0
1	Jan	621,429	2	0	0	0	5.2%	0	0	0	0	0	0
1	Feb	600,000	2	0	0	0	5.2%	0	0	0	0	0	0
1	March	642,857	2	0	0	0	5.2%	0	0	0	0	0	0
2	April	642,857	2	18,012	0	7,565	5.3%	5,404	5,043	14,789	0	0	25,236
2	2-May	535,714	2	17,964	2,160	8,332	5.4%	5,389	2,083	14,749	2,160	0	20,061
2	2-June	642,857	2	9,504	2,592	3,249	5.4%	2,851	812	6,688	2,592	0	7,760
2	July	664,286	2	13,728	2,400	5,768	5.4%	4,118	1,442	9,661	2,678	0	12,543
2	Aug	664,286	2	9,912	1,680	4,207	5.4%	2,974	1,052	6,976	2,678	1,957	6,366
2	Sept	642,857	2	7,296	768	3,471	5.4%	2,189	868	5,135	2,592	1,746	3,853
2	Oct	600,000	2	0	0	0	5.4%	0	0	0	0	0	0
2	Nov	621,429	2	0	0	0	5.4%	0	0	0	0	0	0
2	Dec	621,429	2	0	0	0	5.4%	0	0	0	0	0	0
2	Jan	621,429	2	0	0	0	5.3%	0	0	0	0	0	0
2	Feb	600,000	2	0	0	0	5.3%	0	0	0	0	0	0
2	March	642,857	2	0	0	0	5.3%	0	0	0	0	0	0
3	April	642,857	2	37,375	0	15,697	5.4%	11,212	10,465	8,012	0	0	29,689
3	3-May	535,714	2	37,275	4,482	17,289	5.5%	11,183	4,322	7,990	2,160	0	21,335
3	3-June	642,857	2	19,721	5,378	6,741	5.5%	5,916	1,685	3,623	2,592	0	8,633
3	July	664,286	2	28,486	4,980	11,968	5.6%	8,546	2,992	5,234	2,678	0	14,093
3	Aug	664,286	2	20,567	3,486	8,729	5.6%	6,170	2,182	3,779	2,678	1,271	8,182
3	Sept	642,857	2	15,139	1,594	7,203	5.6%	4,542	1,801	2,782	2,592	1,202	5,330
3	Oct	600,000	2	0	0	0	5.6%	0	0	0	0	0	0
3	Nov	621,429	2	0	0	0	5.6%	0	0	0	0	0	0
3	Dec	621,429	2	0	0	0	5.6%	0	0	0	0	0	0
3	Jan	621,429	2	0	0	0	5.5%	0	0	0	0	0	0
3	Feb	600,000	2	0	0	0	5.5%	0	0	0	0	0	0
3	March	642,857	2	0	0	0	5.5%	0	0	0	0	0	0
4	April	642,857	2	56,738	0	23,830	5.6%	17,021	15,887	1,235	0	0	34,142
4	4-May	535,714	2	56,587	6,804	26,245	5.7%	16,976	6,561	1,231	2,160	0	22,609
4	4-June	642,857	2	29,938	8,165	10,233	5.7%	8,981	2,558	558	2,592	0	9,506
4	July	664,286	2	43,243	7,560	18,168	5.8%	12,973	4,542	807	2,678	0	15,643
4	Aug	664,286	2	31,223	5,292	13,251	5.8%	9,367	3,313	582	2,678	0	10,584
4	Sept	642,857	2	22,982	2,419	10,935	5.8%	6,895	2,734	429	2,592	0	7,465
4	Oct	600,000	2	0	0	0	5.8%	0	0	0	0	0	0
4	Nov	621,429	2	0	0	0	5.8%	0	0	0	0	0	0
4	Dec	621,429	2	0	0	0	5.8%	0	0	0	0	0	0
4	Jan	621,429	2	0	0	0	5.8%	0	0	0	0	0	0
4	Feb	600,000	2	0	0	0	5.8%	0	0	0	0	0	0
4	March	642,857	2	0	0	0	5.7%	0	0	0	0	0	0
5	April	642,857	2	56,738	0	23,830	5.8%	17,021	15,887	1,235	0	0	34,142
5	5-May	535,714	2	56,587	6,804	26,245	5.9%	16,976	6,561	1,231	2,160	0	22,609
5	5-June	642,857	2	29,938	8,165	10,233	5.9%	8,981	2,558	558	2,592	0	9,506
5	July	664,286	2	43,243	7,560	18,168	5.9%	12,973	4,542	807	2,678	0	15,643
5	Aug	664,286	2	31,223	5,292	13,251	5.9%	9,367	3,313	582	2,678	0	10,584
5	Sept	642,857	2	22,982	2,419	10,935	6.0%	6,895	2,734	429	2,592	0	7,465
5	Oct	600,000	2	0	0	0	5.9%	0	0	0	0	0	0
5	Nov	621,429	2	0	0	0	5.9%	0	0	0	0	0	0
5	Dec	621,429	2	0	0	0	5.9%	0	0	0	0	0	0
5	Jan	621,429	2	0	0	0	5.9%	0	0	0	0	0	0
5	Feb	600,000	2	0	0	0	5.9%	0	0	0	0	0	0
5	March	642,857	2	0	0	0	5.9%	0	0	0	0	0	0
6	April	642,857	2	56,738	0	23,830	5.9%	17,021	15,887	1,235	0	0	34,142
6	6-May	535,714	2	56,587	6,804	26,245	6.0%	16,976	6,561	1,231	2,160	0	22,609
6	6-June	642,857	2	29,938	8,165	10,233	6.0%	8,981	2,558	558	2,592	0	9,506
6	July	664,286	2	43,243	7,560	18,168	6.0%	12,973	4,542	807	2,678	0	15,643
6	Aug	664,286	2	31,223	5,292	13,251	6.0%	9,367	3,313	582	2,678	0	10,584
6	Sept	642,857	2	22,982	2,419	10,935	6.0%	6,895	2,734	429	2,592	0	7,465
6	Oct	600,000	2	0	0	0	6.0%	0	0	0	0	0	0
6	Nov	621,429	2	0	0	0	6.0%	0	0	0	0	0	0
6	Dec	621,429	2	0	0	0	6.0%	0	0	0	0	0	0
6	Jan	621,429	2	0	0	0	6.0%	0	0	0	0	0	0
6	Feb	600,000	2	0	0	0	6.0%	0	0	0	0	0	0
6	March	642,857	2	0	0	0	5.9%	0	0	0	0	0	0

Table CC7-I.8B - Monthly Water Balance - Waste Rock Storage Area

(all volumes in cubic meters per month)

												FW3	
YEAR	Month	Waste Rock Tonnes	Precipitation Return Period	Precip on Dump	Evap Losses	Moisture to Rock	Total Moisture Content	Runoff from Dump	Flow to Drain	Net Land Runoff	Dust Control Usage	Used as Make-up Water	Released from Settling
AA	AB	AC		AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM
7	April	642,857	2	56,738	0	23,830	6.0%	17,021	15,887	1,235	0	0	34,142
7	7-May	535,714	2	56,587	6,804	26,245	6.0%	16,976	6,561	1,231	2,160	0	22,609
7	7-June	642,857	2	29,938	8,165	10,233	6.0%	8,981	2,558	558	2,592	0	9,506
7	July	664,286	2	43,243	7,560	18,168	6.1%	12,973	4,542	807	2,678	0	15,643
7	Aug	664,286	2	31,223	5,292	13,251	6.1%	9,367	3,313	582	2,678	0	10,584
7	Sept	642,857	2	22,982	2,419	10,935	6.1%	6,895	2,734	429	2,592	0	7,465
7	Oct	600,000	2	0	0	0	6.1%	0	0	0	0	0	0
7	Nov	621,429	2	0	0	0	6.1%	0	0	0	0	0	0
7	Dec	621,429	2	0	0	0	6.0%	0	0	0	0	0	0
7	Jan	621,429	2	0	0	0	6.0%	0	0	0	0	0	0
7	Feb	600,000	2	0	0	0	6.0%	0	0	0	0	0	0
7	March	642,857	2	0	0	0	6.0%	0	0	0	0	0	0
8	April	642,857	2	56,738	0	23,830	6.0%	17,021	15,887	1,235	0	0	34,142
8	8-May	535,725	2	56,587	6,804	26,245	6.1%	16,976	6,561	1,231	2,160	0	22,609
8	8-June	64,275	2	29,938	8,165	10,233	6.1%	8,981	2,558	558	2,592	0	9,506
8	July	0	2	43,243	7,560	18,168	6.1%	12,973	4,542	807	2,678	0	15,643
8	Aug	0	2	31,223	5,292	13,251	6.2%	9,367	3,313	582	2,678	0	10,584
8	Sept	0	2	22,982	2,419	10,935	6.2%	6,895	2,734	429	2,592	0	7,465
8	Oct	0	2	0	0	0	6.2%	0	0	0	0	0	0
8	Nov	0	2	0	0	0	6.2%	0	0	0	0	0	0
8	Dec	0	2	0	0	0	6.2%	0	0	0	0	0	0
8	Jan	0	2	0	0	0	6.2%	0	0	0	0	0	0
8	Feb	0	2	0	0	0	6.2%	0	0	0	0	0	0
8	March	0	2	0	0	0	6.2%	0	0	0	0	0	0
9	April	0	2	56,738	0	23,830	6.2%	17,021	15,887	1,235	0	0	34,142
9	9-May	0	2	56,587	6,804	26,245	6.3%	16,976	6,561	1,231	0	0	24,769
9	9-June	0	2	29,938	8,165	10,233	6.3%	8,981	2,558	558	0	0	12,098
9	July	0	2	43,243	7,560	18,168	6.3%	12,973	4,542	807	0	0	18,322
9	Aug	0	2	31,223	5,292	13,251	6.4%	9,367	3,313	582	0	0	13,262
9	Sept	0	2	22,982	2,419	10,935	6.4%	6,895	2,734	429	0	0	10,057
9	Oct	0	2	0	0	0	6.4%	0	0	0	0	0	0
9	Nov	0	2	0	0	0	6.4%	0	0	0	0	0	0
9	Dec	0	2	0	0	0	6.4%	0	0	0	0	0	0
9	Jan	0	2	0	0	0	6.4%	0	0	0	0	0	0
9	Feb	0	2	0	0	0	6.4%	0	0	0	0	0	0
9	March	0	2	0	0	0	6.4%	0	0	0	0	0	0
10	April	0	2	56,738	0	23,830	6.4%	17,021	15,887	1,235	0	0	34,142
10	10-May	0	2	56,587	6,804	26,245	6.5%	16,976	6,561	1,231	0	0	24,769
10	10-June	0	2	29,938	8,165	10,233	6.5%	8,981	2,558	558	0	0	12,098
10	July	0	2	43,243	7,560	18,168	6.5%	12,973	4,542	807	0	0	18,322
10	Aug	0	2	31,223	5,292	13,251	6.5%	9,367	3,313	582	0	0	13,262
10	Sept	0	2	22,982	2,419	10,935	6.6%	6,895	2,734	429	0	0	10,057
10	Oct	0	2	0	0	0	6.6%	0	0	0	0	0	0
10	Nov	0	2	0	0	0	6.6%	0	0	0	0	0	0
10	Dec	0	2	0	0	0	6.6%	0	0	0	0	0	0
10	Jan	0	2	0	0	0	6.6%	0	0	0	0	0	0
10	Feb	0	2	0	0	0	6.6%	0	0	0	0	0	0
10	March	0	2	0	0	0	6.6%	0	0	0	0	0	0
11	April	0	2	56,738	0	23,830	6.6%	17,021	15,887	1,235	0	0	34,142
11	11-May	0	2	56,587	6,804	26,245	6.7%	16,976	6,561	1,231	0	0	24,769
11	11-June	0	2	29,938	8,165	10,233	6.7%	8,981	2,558	558	0	0	12,098
11	July	0	2	43,243	7,560	18,168	6.7%	12,973	4,542	807	0	0	18,322
11	Aug	0	2	31,223	5,292	13,251	6.7%	9,367	3,313	582	0	0	13,262
11	Sept	0	2	22,982	2,419	10,935	6.8%	6,895	2,734	429	0	0	10,057
11	Oct	0	2	0	0	0	6.8%	0	0	0	0	0	0
11	Nov	0	2	0	0	0	6.8%	0	0	0	0	0	0
11	Dec	0	2	0	0	0	6.8%	0	0	0	0	0	0
11	Jan	0	2	0	0	0	6.8%	0	0	0	0	0	0
11	Feb	0	2	0	0	0	6.8%	0	0	0	0	0	0
11	March	0	2	0	0	0	6.8%	0	0	0	0	0	0

Table CC7-I.8B - Monthly Water Balance - Waste Rock Storage Area

(all volumes in cubic meters per month)

YEAR	Month	Waste Rock Tonnes	Precipitation Return Period	Precip on Dump	Evap Losses	Moisture to Rock	Total Moisture Content	Runoff from Dump	Flow to Drain	Net Land Runoff	Dust Control Usage	FW3 Used as Make-up Water	Released from Settling
AA	AB	AC		AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM
12	April	0	2	56,738	0	23,830	6.8%	17,021	15,887	1,235	0	0	34,142
12	12-May	0	2	56,587	6,804	26,245	6.9%	16,976	6,561	1,231	0	0	24,769
12	12-June	0	2	29,938	8,165	10,233	6.9%	8,981	2,558	558	0	0	12,098
12	July	0	2	43,243	7,560	18,168	6.9%	12,973	4,542	807	0	0	18,322
12	Aug	0	2	31,223	5,292	13,251	6.9%	9,367	3,313	582	0	0	13,262
12	Sept	0	2	22,982	2,419	10,935	6.95%	6,895	2,734	429	0	0	10,057
12	Oct	0	2	0	0	0	6.95%	0	0	0	0	0	0
12	Nov	0	2	0	0	0	6.95%	0	0	0	0	0	0
12	Dec	0	2	0	0	0	6.95%	0	0	0	0	0	0
12	Jan	0	2	0	0	0	6.95%	0	0	0	0	0	0
12	Feb	0	2	0	0	0	6.95%	0	0	0	0	0	0
12	March	0	2	0	0	0	6.95%	0	0	0	0	0	0
13	April	0	2	56,738	0	23,830	7.00%	17,021	15,887	1,235	0	0	34,142
13	13-May	0	2	56,587	6,804	1,476	7.00%	16,976	31,331	1,231	0	0	49,538
13	13-June	0	2	29,938	8,165	0	7.0%	8,981	12,792	558	0	0	22,331
13	July	0	2	43,243	7,560	0	7.0%	12,973	22,710	807	0	0	36,490
13	Aug	0	2	31,223	5,292	0	7.0%	9,367	16,564	582	0	0	26,513
13	Sept	0	2	22,982	2,419	0	7.0%	6,895	13,668	429	0	0	20,992
13	Oct	0	2	0	0	0	7.0%	0	0	0	0	0	0
13	Nov	0	2	0	0	0	7.0%	0	0	0	0	0	0
13	Dec	0	2	0	0	0	7.0%	0	0	0	0	0	0
13	Jan	0	2	0	0	0	7.0%	0	0	0	0	0	0
13	Feb	0	2	0	0	0	7.0%	0	0	0	0	0	0
13	March	0	2	0	0	0	7.0%	0	0	0	0	0	0
14	April	0	2	56,738	0	0	7.0%	17,021	39,716	1,235	0	0	57,972
14	14-May	0	2	56,587	6,804	0	7.0%	16,976	32,807	1,231	0	0	51,014
14	14-June	0	2	29,938	8,165	0	7.0%	8,981	12,792	558	0	0	22,331
14	July	0	2	43,243	7,560	0	7.0%	12,973	22,710	807	0	0	36,490
14	Aug	0	2	31,223	5,292	0	7.0%	9,367	16,564	582	0	0	26,513
14	Sept	0	2	22,982	2,419	0	7.0%	6,895	13,668	429	0	0	20,992
14	Oct	0	2	0	0	0	7.0%	0	0	0	0	0	0
14	Nov	0	2	0	0	0	7.0%	0	0	0	0	0	0
14	Dec	0	2	0	0	0	7.0%	0	0	0	0	0	0
14	Jan	0	2	0	0	0	7.0%	0	0	0	0	0	0
14	Feb	0	2	0	0	0	7.0%	0	0	0	0	0	0
14	March	0	2	0	0	0	7.0%	0	0	0	0	0	0
15	April	0	2	56,738	0	0	7.0%	17,021	39,716	1,235	0	0	57,972
15	15-May	0	2	56,587	6,804	0	7.0%	16,976	32,807	1,231	0	0	51,014
15	15-June	0	2	29,938	8,165	0	7.0%	8,981	12,792	558	0	0	22,331
15	July	0	2	43,243	7,560	0	7.0%	12,973	22,710	807	0	0	36,490
15	Aug	0	2	31,223	5,292	0	7.0%	9,367	16,564	582	0	0	26,513
15	Sept	0	2	22,982	2,419	0	7.0%	6,895	13,668	429	0	0	20,992
15	Oct	0	2	0	0	0	7.0%	0	0	0	0	0	0
15	Nov	0	2	0	0	0	7.0%	0	0	0	0	0	0
15	Dec	0	2	0	0	0	7.0%	0	0	0	0	0	0
15	Jan	0	2	0	0	0	7.0%	0	0	0	0	0	0
15	Feb	0	2	0	0	0	7.0%	0	0	0	0	0	0
15	March	0	2	0	0	0	7.0%	0	0	0	0	0	0

Tables CC7-I.8C - Waste Rock Storage Area - Annual Water Balance Summary

(volumes in cubic meters per year)

YEAR	Waste Rock Tonnes	Precip on Dump	Evap Losses	Moisture to Rock	Runoff from Dump	Flow to Drain	Net Land Runoff	Dust Control Usage	Used as Make-up Water	Net Released from Settling Pond
1	6,857,143	38,208	4,800	12,513	11,462	9,432	70,359	12,701	24,045	54,509
2	7,500,000	76,416	9,600	32,591	22,925	11,300	57,997	12,701	3,703	75,818
3	7,500,000	158,563	19,920	67,627	47,569	23,447	31,420	12,701	2,473	87,262
4	7,500,000	240,710	30,240	102,663	72,213	35,595	4,842	12,701	0	99,949
5	7,500,000	240,710	30,240	102,663	72,213	35,595	4,842	12,701	0	99,949
6	7,500,000	240,710	30,240	102,663	72,213	35,595	4,842	12,701	0	99,949
7	7,500,000	240,710	30,240	102,663	72,213	35,595	4,842	12,701	0	99,949
8	1,242,857	240,710	30,240	102,663	72,213	35,595	4,842	12,701	0	99,949
9	0	240,710	30,240	102,663	72,213	35,595	4,842	0	0	112,650
10	0	240,710	30,240	102,663	72,213	35,595	4,842	0	0	112,650
11	0	240,710	30,240	102,663	72,213	35,595	4,842	0	0	112,650
12	0	240,710	30,240	102,663	72,213	35,595	4,842	0	0	112,650
13	0	240,710	30,240	25,306	72,213	112,951	4,842	0	0	190,006
14	0	240,710	30,240	0	72,213	138,257	4,842	0	0	215,312
15	0	240,710	30,240	0	72,213	138,257	4,842	0	0	215,312

Table CC7-I.9 - Catchment Areas - Williams Creek Site Area

Area Number	Description	Catchment Area (km^2)
W9	Williams Ck upstream of mine area	12.8
W8	Williams Ck Tributary from Leach Pad	0.8
W5	Williams Ck Tributary	3.3
W6	Williams Ck above North Williams Ck	21.8
W2	Williams Ck above North Williams Ck	23.6
W7	Upper North Williams Ck	2.9
W3	North Williams Ck at Williams Ck	5.3
W4	Williams Ck below North Williams Ck	30.7
W13	Williams Creek above Nancy Lee Ck	42.1
W11	Nancy Lee Ck above Williams Ck	44.9
W12	Williams Creek below Nancy Lee Ck	87.0
W10	Williams Creek at Yukon River	87.8
Y0	Yukon River above Williams Creek	83,612
Y1	Yukon River at Williams Creek	83,700
Y2	Yukon River 2km below Williams Creek	83,710

Table CC7-I.10 - Carmacks Copper - Overall Site Water Balance — Average Conditions
Leaching Operations - Year 2

	Item		APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	YEAR
FW1	Make-up Water Required for Process	FW1	0	0	0	11,319	15,748	13,782	21,422	20,649	0	0	0	0	82,920
		Calculation													
A	Leach Pad Area - Calc'd Release Volumes	"Input&Output" BE	0	0	0	0	0	0	0	0	0	0	0	0	0
A'	- Controlled Release Volume	**input**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
B	Williams Creek at W8 (0.8 km2)	= A' + 0.5 km2	2,500	12,948	9,340	6,383	5,654	5,625	3,623	1,713	995	584	296	338	50,000
C	Williams Creek at W9	12.8 km2	64,000	331,469	239,111	163,416	144,744	143,997	92,753	43,855	25,461	14,945	7,585	8,662	1,280,000
D	Williams Creek downstream of W9 (12.8 km2)	= B + C	66,500	344,417	248,452	169,799	150,399	149,622	96,376	45,568	26,456	15,529	7,882	9,000	1,330,000
E	Seepage from Open Pit	Assumed = 0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	Tributary to Williams at W5 (3.3 km2)	3.3 km2	16,500	85,457	61,646	42,131	37,317	37,124	23,913	11,306	6,564	3,853	1,956	2,233	330,000
G	Williams at W6 (21.8 km2)	D+E+F+5.4km2	110,000	569,713	410,973	280,871	248,780	247,496	159,419	75,376	43,762	25,687	13,037	14,888	2,200,000
H	From Open Pit Area	"Pit" L	31,667	28,826	18,896	5,620	0	0	0	0	0	0	0	0	85,009
I	Williams at W2 (23.6 km2)	G + H + 1.8km2	150,667	645,152	463,494	309,471	269,134	267,745	172,463	81,543	47,342	27,789	14,104	16,106	2,465,009
J	From Waste Rock Storage Area Settling Pond	"WasteDump" AD	25,236	20,061	7,760	12,543	6,366	3,853	0	0	0	0	0	0	75,818
K	N. Williams at W7 (2.9 km2)	2.9 km2	14,500	75,098	54,174	37,024	32,794	32,624	21,014	9,936	5,769	3,386	1,719	1,962	290,000
L	N Williams at W3 (5.3 km2)	J + K + 1.6km2	47,736	136,593	91,822	69,994	57,253	54,477	32,608	15,418	8,951	5,254	2,667	3,045	525,818
M	Williams at W4 (30.7 km2)	L + I + 1.8km2	207,402	828,358	588,941	402,445	346,742	342,472	218,115	103,128	59,874	35,144	17,837	20,369	3,170,828
N	Williams at W13 (42.1 km2)	M + 11.4 km2	264,402	1,123,573	801,900	547,987	475,655	470,720	300,723	142,186	82,551	48,455	24,593	28,084	4,310,828
O	Nancy Lee Creek W11 (44.9 km2)	44.9 km2	224,500	1,162,732	838,758	573,231	507,737	505,116	325,360	153,835	89,314	52,425	26,608	30,385	4,490,000
P	Williams d/s Nancy Lee at W12	N + O	488,902	2,286,305	1,640,658	1,121,218	983,391	975,836	626,083	296,021	171,865	100,880	51,201	58,468	8,800,828
Q	Williams at the mouth at W10	P + 0.8 km2	492,902	2,307,022	1,655,602	1,131,432	992,438	984,836	631,880	298,762	173,456	101,814	51,675	59,010	8,880,828
R	Yukon River upstream of Williams Creek	83,612 km2	710,043,734	1,620,736,643	4,133,090,394	4,435,123,923	3,531,672,753	2,967,346,950	2,526,925,544	1,459,828,723	996,534,017	848,696,553	702,272,111	717,285,474	24,649,556,820
S	Yukon River at Y1 d/s Williams	Q + R	710,536,637	1,623,043,665	4,134,745,996	4,436,255,354	3,532,665,191	2,968,331,785	2,527,557,424	1,460,127,485	996,707,473	848,798,367	702,323,786	717,344,484	24,658,437,648
T	Yukon River at Y2 d/s Williams	S + 10km2	710,620,151	1,623,234,295	4,135,232,127	4,436,777,010	3,533,080,584	2,968,680,803	2,527,854,639	1,460,299,189	996,824,685	848,898,190	702,407,124	717,428,850	24,661,337,648

NOTES 1) Monthly flow volumes for Make-up Water, Events Pond Releases, Pit Flows, and Waste Dump Flows calculated from linked spreadsheets for the overall property.
2) Monthly flows for receiving waters (Williams Creek and Yukon River) calculated using monthly % runoff and annual runoff depths.

Table CC7-I.11 - Carmacks Copper - Overall Site Water Balance — Average Conditions
Leaching Operations - Year 5

	Item		APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	YEAR
FW1	Make-up Water Required for Process	FW1	0	0	0	0	3,006	11,017	21,422	7,963	0	0	0	0	43,408
	Releases (m3) from :	Calculation													
A	Leach Pad Area - Calc'd Release Volumes	"Input&Output" BE	0	0	0	0	0	0	0	0	0	0	0	0	0
A'	- Controlled Release Volume	**input**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
B	Williams Creek at W8 (0.8 km2)	= A' + 0.5 km2	2,500	12,948	9,340	6,383	5,654	5,625	3,623	1,713	995	584	296	338	50,000
C	Williams Creek at W9	12.8 km2	64,000	331,469	239,111	163,416	144,744	143,997	92,753	43,855	25,461	14,945	7,585	8,662	1,280,000
D	Williams Creek downstream of W9 (12.8 km2)	= B + C	66,500	344,417	248,452	169,799	150,399	149,622	96,376	45,568	26,456	15,529	7,882	9,000	1,330,000
E	Seepage from Open Pit	Assumed = 0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	Tributary to Williams at W5 (3.3 km2)	3.3 km2	16,500	85,457	61,646	42,131	37,317	37,124	23,913	11,306	6,564	3,853	1,956	2,233	330,000
G	Williams at W6 (21.8 km2)	D+E+F+5.4km2	110,000	569,713	410,973	280,871	248,780	247,496	159,419	75,376	43,762	25,687	13,037	14,888	2,200,000
H	From Open Pit Area	"Pit" L	35,044	31,790	20,192	19,063	12,329	2,242	0	0	0	0	0	0	120,660
I	Williams at W2 (23.6 km2)	G + H + 1.8km2	154,044	648,115	464,790	322,914	281,464	269,988	172,463	81,543	47,342	27,789	14,104	16,106	2,500,660
J	From Waste Rock Storage Area Settling Pond	"WasteDump" AD	34,142	22,609	9,506	15,643	10,584	7,465	0	0	0	0	0	0	99,949
K	N. Williams at W7 (2.9 km2)	2.9 km2	14,500	75,098	54,174	37,024	32,794	32,624	21,014	9,936	5,769	3,386	1,719	1,962	290,000
L	N Williams at W3 (5.3 km2)	J + K + 1.6km2	56,642	139,141	93,569	73,094	61,470	58,089	32,608	15,418	8,951	5,254	2,667	3,045	549,949
M	Williams at W4 (30.7 km2)	L + I + 1.8km2	219,686	833,869	591,984	418,988	363,289	348,327	218,115	103,128	59,874	35,144	17,837	20,369	3,230,609
N	Williams at W13 (42.1 km2)	M + 11.4 km2	276,686	1,129,084	804,942	564,530	492,202	476,574	300,723	142,186	82,551	48,455	24,593	28,084	4,370,609
O	Nancy Lee Creek W11 (44.9 km2)	44.9 km2	224,500	1,162,732	838,758	573,231	507,737	505,116	325,360	153,835	89,314	52,425	26,608	30,385	4,490,000
P	Williams d/s Nancy Lee at W12	N + O	501,186	2,291,815	1,643,700	1,137,761	999,938	981,691	626,083	296,021	171,865	100,880	51,201	58,468	8,860,609
Q	Williams at the mouth at W10	P + 0.8 km2	505,186	2,312,532	1,658,644	1,147,975	1,008,985	990,690	631,880	298,762	173,456	101,814	51,675	59,010	8,940,609
R	Yukon River upstream of Williams Creek	83,612 km2	710,043,734	1,620,736,643	4,133,090,394	4,435,123,923	3,531,672,753	2,967,346,950	2,526,925,544	1,459,828,723	996,534,017	848,696,553	702,272,111	717,285,474	24,649,556,820
S	Yukon River at Y1 d/s Williams	Q + R	710,548,921	1,623,049,176	4,134,749,038	4,436,271,898	3,532,681,738	2,968,337,640	2,527,557,424	1,460,127,485	996,707,473	848,798,367	702,323,786	717,344,484	24,658,497,429
T	Yukon River at Y2 d/s Williams	S + 10km2	710,632,436	1,623,239,806	4,135,235,169	4,436,793,554	3,533,097,131	2,968,686,657	2,527,854,639	1,460,299,189	996,824,685	848,898,190	702,407,124	717,428,850	24,661,397,429

Table CC7-I.12 - Carmacks Copper - Overall Site Water Balance — Average Conditions
Heap Rinsing and Detoxification Operations - Typical Year 10

	Item		APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	YEAR
FW1	Make-up Water Required for Process	FW1	0	0	0	0	0	0	0	0	0	0	0	0	0
	Releases (m3) from :	Calculation													
A	Leach Pad Area - Calc'd Release Volumes	"Input&Output" BE	25,825	31,960	19,453	25,677	20,834	17,880	8,090	0	0	0	0	0	149,719
A'	- Controlled Release Volume	**input**	**0**	**57,719**	**20,000**	**26,000**	**20,000**	**18,000**	**8,000**	**0**	**0**	**0**	**0**	**0**	149,719
B	Williams Creek at W8 (0.8 km2)	= A' + 0.5 km2	2,500	70,667	29,340	32,383	25,654	23,625	11,623	1,713	995	584	296	338	199,719
C	Williams Creek at W9	12.8 km2	64,000	331,469	239,111	163,416	144,744	143,997	92,753	43,855	25,461	14,945	7,585	8,662	1,280,000
D	Williams Creek downstream of W9 (12.8 km2)	= B + C	66,500	402,136	268,452	195,799	170,399	167,622	104,376	45,568	26,456	15,529	7,882	9,000	1,479,719
E	Seepage from Open Pit	Assumed = 0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	Tributary to Williams at W5 (3.3 km2)	3.3 km2	16,500	85,457	61,646	42,131	37,317	37,124	23,913	11,306	6,564	3,853	1,956	2,233	330,000
G	Williams at W6 (21.8 km2)	D+E+F+5.4km2	110,000	627,432	430,973	306,871	268,780	265,496	167,419	75,376	43,762	25,687	13,037	14,888	2,349,719
H	From Open Pit Area	"Pit" L	0	0	0	0	0	0	0	0	0	0	0	0	0
I	Williams at W2 (23.6 km2)	G + H + 1.8km2	119,000	674,045	464,598	329,851	289,134	285,745	180,463	81,543	47,342	27,789	14,104	16,106	2,529,719
J	From Waste Rock Storage Area Settling Pond	"WasteDump" AD	34,142	24,769	12,098	18,322	13,262	10,057	0	0	0	0	0	0	112,650
K	N. Williams at W7 (2.9 km2)	2.9 km2	14,500	75,098	54,174	37,024	32,794	32,624	21,014	9,936	5,769	3,386	1,719	1,962	290,000
L	N Williams at W3 (5.3 km2)	J + K + 1.6km2	56,642	141,301	96,161	75,772	64,149	60,681	32,608	15,418	8,951	5,254	2,667	3,045	562,650
M	Williams at W4 (30.7 km2)	L + I + 1.8km2	184,642	861,958	594,383	428,604	373,638	366,676	226,115	103,128	59,874	35,144	17,837	20,369	3,272,369
N	Williams at W13 (42.1 km2)	M + 11.4 km2	241,642	1,157,173	807,342	574,146	502,551	494,924	308,723	142,186	82,551	48,455	24,593	28,084	4,412,369
O	Nancy Lee Creek W11 (44.9 km2)	44.9 km2	224,500	1,162,732	838,758	573,231	507,737	505,116	325,360	153,835	89,314	52,425	26,608	30,385	4,490,000
P	Williams d/s Nancy Lee at W12	N + O	466,142	2,319,905	1,646,099	1,147,377	1,010,287	1,000,040	634,083	296,021	171,865	100,880	51,201	58,468	8,902,369
Q	Williams at the mouth at W10	P + 0.8 km2	470,142	2,340,622	1,661,044	1,157,590	1,019,334	1,009,040	639,880	298,762	173,456	101,814	51,675	59,010	8,982,369
R	Yukon River upstream of Williams Creek	83,612 km2	710,043,734	1,620,736,643	4,133,090,394	4,435,123,923	3,531,672,753	2,967,346,950	2,526,925,544	1,459,828,723	996,534,017	848,696,553	702,272,111	717,285,474	24,649,556,820
S	Yukon River at Y1 d/s Williams	Q + R	710,513,877	1,623,077,265	4,134,751,438	4,436,281,513	3,532,692,087	2,968,355,990	2,527,565,424	1,460,127,485	996,707,473	848,798,367	702,323,786	717,344,484	24,658,539,189
T	Yukon River at Y2 d/s Williams	S + 10km2	710,597,392	1,623,267,895	4,135,237,569	4,436,803,169	3,533,107,480	2,968,705,007	2,527,862,639	1,460,299,189	996,824,685	848,898,190	702,407,124	717,428,850	24,661,439,189

NOTE Monthly controlled release rates of treated effluent from the Events Pond (Row A') may be adjusted to maximize dilution in the downstream receiving waters during heap rinsing (assumed completed over three ye
Controlled Release volumes shown above are for illustrative purposes only. Pit inflows stored in pit as pit is filling.

Table CC7-I.13 - Carmacks Copper - Overall Site Water Balance — Average Conditions
Closure Conditions

	Item		APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	YEAR
FW1	Make-up Water Required for Process	FW1	0	0	0	0	0	0	0	0	0	0	0	0	0
	Releases (m3) from :	Calculation													
A	Leach Pad Area - Calc'd Discharge Volume	"Input&Output" BE	25,825	23,870	11,364	17,588	12,745	9,790	0	0	0	0	0	0	101,181
A'	- Actual Discharge Volume	**equals A**	**25,825**	**23,870**	**11,364**	**17,588**	**12,745**	**9,790**	**0**	**0**	**0**	**0**	**0**	**0**	101,181
B	Williams Creek at W8 (0.8 km2)	= A' + 0.5 km2	28,325	36,818	20,704	23,971	18,399	15,415	3,623	1,713	995	584	296	338	151,181
C	Williams Creek at W9	12.8 km2	64,000	331,469	239,111	163,416	144,744	143,997	92,753	43,855	25,461	14,945	7,585	8,662	1,280,000
D	Williams Creek downstream of W9 (12.8 km2)	= B + C	92,325	368,288	259,815	187,387	163,143	159,413	96,376	45,568	26,456	15,529	7,882	9,000	1,431,181
E	Seepage from Open Pit	Assumed = 0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	Tributary to Williams at W5 (3.3 km2)	3.3 km2	16,500	85,457	61,646	42,131	37,317	37,124	23,913	11,306	6,564	3,853	1,956	2,233	330,000
G	Williams at W6 (21.8 km2)	D+E+F+5.4km2	135,825	593,583	422,336	298,458	261,524	257,286	159,419	75,376	43,762	25,687	13,037	14,888	2,301,181
H	From Open Pit Area	"Pit" L	28,074	24,820	13,223	19,063	15,335	13,259	5,357	5,184	5,357	5,357	4,838	5,357	145,224
I	Williams at W2 (23.6 km2)	G + H + 1.8km2	172,899	665,016	469,184	340,501	297,214	290,795	177,819	86,727	52,699	33,145	18,942	21,463	2,626,405
J	From Waste Rock Storage Area Settling Pond	"WasteDump" AD	57,972	51,014	22,331	36,490	26,513	20,992	0	0	0	0	0	0	215,312
K	N. Williams at W7 (2.9 km2)	2.9 km2	14,500	75,098	54,174	37,024	32,794	32,624	21,014	9,936	5,769	3,386	1,719	1,962	290,000
L	N Williams at W3 (5.3 km2)	J + K + 1.6km2	80,472	167,546	106,394	93,941	77,400	71,616	32,608	15,418	8,951	5,254	2,667	3,045	665,312
M	Williams at W4 (30.7 km2)	L + I + 1.8km2	262,371	879,175	609,203	457,422	394,969	382,660	223,471	108,312	65,231	40,501	22,676	25,726	3,471,718
N	Williams at W13 (42.1 km2)	M + 11.4 km2	319,371	1,174,390	822,161	602,964	523,882	510,908	306,079	147,370	87,908	53,812	29,431	33,441	4,611,718
O	Nancy Lee Creek W11 (44.9 km2)	44.9 km2	224,500	1,162,732	838,758	573,231	507,737	505,116	325,360	153,835	89,314	52,425	26,608	30,385	4,490,000
P	Williams d/s Nancy Lee at W12	N + O	543,871	2,337,121	1,660,919	1,176,195	1,031,619	1,016,024	631,440	301,205	177,222	106,236	56,039	63,825	9,101,718
Q	Williams at the mouth at W10	P + 0.8 km2	547,871	2,357,838	1,675,864	1,186,409	1,040,665	1,025,024	637,237	303,946	178,813	107,170	56,513	64,367	9,181,718
R	Yukon River upstream of Williams Creek	83,612 km2	710,043,734	1,620,736,643	4,133,090,394	4,435,123,923	3,531,672,753	2,967,346,950	2,526,925,544	1,459,828,723	996,534,017	848,696,553	702,272,111	717,285,474	24,649,556,820
S	Yukon River at Y1 d/s Williams	Q + R	710,591,606	1,623,094,482	4,134,766,258	4,436,310,332	3,532,713,419	2,968,371,974	2,527,562,780	1,460,132,669	996,712,830	848,803,724	702,328,625	717,349,841	24,658,738,538
T	Yukon River at Y2 d/s Williams	S + 10km2	710,675,121	1,623,285,112	4,135,252,389	4,436,831,988	3,533,128,811	2,968,720,991	2,527,859,996	1,460,304,373	996,830,042	848,903,547	702,411,963	717,434,207	24,661,638,538

NOTE After final closure actual discharges from the Events Pond area will be equal to the natural rate of runoff from the area (Row A).
Table CC7-I.13 (Closure Conditions) assumes pit has filled and is overflowing to Willliams Creek. Pit filling time may be in the order of 120 years.