

COLUMBIA RIVER TREATY ENTITY AGREEMENT ON THE DETAILED OPERATING PLAN FOR COLUMBIA RIVER TREATY STORAGE 1 AUGUST 2005 THROUGH 31 JULY 2006

Article XIV 2.(k) of the Columbia River Treaty between Canada and the United States of America (Treaty) provides that the power and duties of the Entities includes preparation and implementation of detailed operating plans that may produce results more advantageous to both countries than those that would arise from operation under the Assured Operating Plan (AOP).

The Entities agree that Treaty storage shall be operated and electric power delivered in accordance with the attached "Detailed Operating Plan for Columbia River Treaty Storage – I August 2005 through 31 July 2006" (2005-06 Detailed Operating Plan), dated June 2005.

The Entities agree that the December 2003 Entity Agreement on "Principles and Procedures for Preparing and Implementing of Hydroelectric Operating Plans for Operation of Canadian Treaty Storage," or its successor, will guide the Entities in implementing the 2005-06 Detailed Operating Plan.

The Entities direct the Columbia River Treaty Operating Committee to execute an agreement which, for Treaty Storage Regulation purposes, will produce the same Treaty flows at the U.S.-Canadian border as that provided in the 2005-06 AOP, as modified by this DOP, unless otherwise agreed by the Committee.

In witness thereof, the Entities have caused this agreement to be executed.

Executed for the Canadian Entity this 20 day of June, 2005.

By Robert G. Elfon

Executed for the United States Entity this 24th day of June ., 2005.

By

Stephen J. Wright

Chairman

Ву

Brigadier General William T. Grisoli

Member

TABLE OF CONTENTS

I.	REFERENCES AND INTERPRETATION	1
II.	PREPARATION AND SCOPE	2
	A. General	2
	B. STORAGE AMOUNTS	
	C. PREPARATION OF THE TREATY STORAGE REGULATION STUDY	
	D. CHANGES TO THE TSR	
***	E. LIBBY	
III.	POWER DELIVERIES	
	A. DELIVERY OF THE CANADIAN ENTITLEMENT	
	B. LCA POWER	
	C. OPERATIONAL AGREEMENT POWER	
IV.	STORAGE OPERATION	5
	A. OPERATION AUTHORITY	
	B. STORAGE OPERATION TO TSR LEVEL	
	C. STORAGE OPERATION ABOVE AND BELOW TSR LEVELS	
	D. Provisional Draft at Arrow	
V.	SCHEDULING STORAGE REGULATION	
	A. OPERATING DATA	
	B. VOLUME RUNOFF FORECASTS	
	C. TREATY STORAGE REGULATION STUDY	
	D. SCHEDULING AGREEMENTS	
VI.	OPERATING GUIDES	10
	A. OPERATING RULE CURVE	
	B. RULE CURVES AND OPERATING DATA	
	C. RESERVOIR CAPACITY TABLES	
VII.	OPERATING LIMITS	12
	A. DUNCAN PROJECT	12
	B. ARROW PROJECT	13
	C. MICA PROJECT	13
	MICA PROJECT OPERATING CRITERIA (ENGLISH)	
	MICA PROJECT OPERATING CRITERIA (SI)	
EXH	TBITS	
	EXHIBIT 1 - ASSURED REFILL CURVES (ENGLISH) 1/	
	EXHIBIT 1M - ASSURED REFILL CURVES (SI) 1/	
	EXHIBIT 2 - FIRST CRITICAL RULE CURVES (ENGLISH & SI)	
	EXHIBIT 3 - SECOND CRITICAL PULL CURVES (ENGLISH & SI)	
	EXHIBIT 4 - THIRD CRITICAL RULE CURVES (ENGLISH & SI)	
	EXHIBIT 5 - FOURTH CRITICAL RULE CURVES (ENGLISH & SI)	
	EXHIBIT 7 - VARIABLE REFILL CURVE PROCEDURES (ENGLISH)	
	EXHIBIT 7M - VARIABLE REFILL CURVE PROCEDURES (SI)	

EXHIBIT 8 - COORDINATED SYSTEM LOADS AND RESOURCES USED IN THE TSR	23
EXHIBIT 9 – DUNCAN RESERVOIR CAPACITY TABLE (ENGLISH)	24
EXHIBIT 9 – DUNCAN RESERVOIR CAPACITY TABLE (ENGLISH)	
EXHIBIT 9 – DUNCAN RESERVOIR CAPACITY TABLE (ENGLISH)	26
EXHIBIT 9M- DUNCAN RESERVOIR CAPACITY TABLE (SI)	27
EXHIBIT 9M- DUNCAN RESERVOIR CAPACITY TABLE (SI)	28
EXHIBIT 9M- DUNCAN RESERVOIR CAPACITY TABLE (SI)	29
EXHIBIT 10 – ARROW RESERVOIR CAPACITY TABLE (ENGLISH)	30
EXHIBIT 10 – ARROW RESERVOIR CAPACITY TABLE (ENGLISH)	31
EXHIBIT 10M – ARROW RESERVOIR CAPACITY TABLE (SI)	32
EXHIBIT 10M – ARROW RESERVOIR CAPACITY TABLE (SI)	33
EXHIBIT 11 – MICA RESERVOIR CAPACITY TABLE (ENGLISH)	34
EXHIBIT 11 – MICA RESERVOIR CAPACITY TABLE (ENGLISH)	35
EXHIBIT 11 – MICA RESERVOIR CAPACITY TABLE (ENGLISH)	36
EXHIBIT 11 – MICA RESERVOIR CAPACITY TABLE (ENGLISH)	37
EXHIBIT 11M- MICA RESERVOIR CAPACITY TABLE (SI)	38
EXHIBIT 11M- MICA RESERVOIR CAPACITY TABLE (SI)	
EXHIBIT 11M- MICA RESERVOIR CAPACITY TABLE (SI)	
EXHIBIT 11M-MICA RESERVOIR CAPACITY TARLE (SI)	41

DETAILED OPERATING PLAN FOR COLUMBIA RIVER TREATY STORAGE 1 AUGUST 2005 THROUGH 31 JULY 2006

I. REFERENCES AND INTERPRETATION

In this document:

- A. "Assured Operating Plan" (AOP06) means the document "Columbia River Treaty Hydroelectric Operating Plan Assured Operating Plan for Operating Year 2005-06" dated August 2001."
- B. "Canadian storage" means the storage provided by Canada under Article II of the Treaty, which is a total of 19.119 cubic kilometers (km³ = 10° cubic meter) (15.5 million acre feet (Maf)) at the Mica, Duncan, and Arrow reservoirs.
- C. "Delivery of the Canadian Entitlement" means the Entity Agreement on Aspects of the delivery of the Canadian Entitlement for 1 April 1998 through 15 September 2024 between the Canadian Entity and the United States Entity, dated 29 March, 1999, together with its Attachment B Scheduling Guidelines as they may be subsequently modified or amended by the Operating Committee.
- D. "Detailed Operating Plan" (DOP) means a detailed operating plan prepared for the Operating Year by the Operating Committee pursuant to the guidelines provided in the Principles and Procedures and consisting of the contents of this document.
- E. "Flood Control Operating Plan" means the document "Columbia River Treaty Flood Control Operating Plan," dated May 2003.
- F. "Libby Coordination Agreement (LCA)" means the "Columbia River Treaty Entity Agreement Coordinating the Operation of the Libby Project With the Operation Of Hydroelectric Plans on the Kootenay River and Elsewhere in Canada", dated 16 February 2000.
- G. "Libby Operating Plan" means the operating plan prepared by the U.S. Army Corps of Engineers ("Corps of Engineers") on behalf of the U.S. Entity for the Libby project in accordance with Section 9 of the LCA, and incorporated as Attachment B to the LCA.
- H. "Operating Committee" means the Columbia River Treaty Operating Committee.
- I. "Operating Year" means the period from 1 August 2005 through 31 July 2006.
- J. "Principles and Procedures" (POP) means the document "Columbia River Treaty Principles and Procedures for Preparation and Use of Hydroelectric Operating Plans for Canadian Treaty Storage," dated October 2003, or any future document the Entities agree supersedes the 2003 document, and any Appendices approved by the Operating Committee.

- K. "Refill Regulations" means multi-water-year hydro regulations that determine the Power Discharge Requirements used in the calculation of the Assured Refill Curves and the Variable Refill Curves. The Corps of Engineers' staff performs these regulations for the Operating Committee.
- L. "Runoff Volume Forecast Program for Canadian Columbia River Treaty Reservoirs" means the August 1997 document of that title, with subsequent modifications as agreed by the Operating Committee.
- M. "Supplemental Operating Agreements" (SOA) means agreements signed either by the Entities, or the Operating Committee, that authorize storage operations above or below that provided by the DOP TSR.
- N. "Treaty Storage Regulation" (TSR) means the Coordinated System hydro regulation study performed for the Operating Committee by Bonneville Power Administration (BPA) staff using actual and forecasted streamflow conditions and implementing operating criteria contained in this DOP including any changes agreed to under Section II(D) but excluding Sections IV(C & D).
- O. "Weekly Treaty Storage Operation Agreement" means the note electronically transferred (e-mail or FaxTM) each Friday from the U.S. Section to the Canadian Section of the Operating Committee to confirm the verbal agreement by the Operating Committee for the weekly Treaty storage changes and outflows that implement this DOP, including any changes agreed to under Section II(D) and Sections IV(C & D).

II. PREPARATION AND SCOPE

A. General

This DOP for Canadian storage is based on the operating criteria contained in the AOP06 and its supporting hydro regulation studies with agreed revisions noted in Subsection II(C) below, together with scheduling procedures and other mutually beneficial changes from the AOP data agreed to by the Entities.

This DOP incorporates the use of the International System of Units (SI, or Metric); for operational purposes, reliance should be placed on measurements in the English system.

B. Storage Amounts

1. The usable Canadian storage space available for power purposes during the Operating Year is 19.119 km³ (15.5 Maf) in Canada distributed as follows:

Duncan Reservoir

1.727 km³ (1.4 Maf, 705.8 thousand second-foot-days (ksfd)) between elevations 576.68 meters (m) (1892.0 feet) and 546.87 m (1794.2 feet) as measured at Duncan forebay, and based on British Columbia Hydro and Power Authority (BC Hydro) table dated 21 February 1973.

Arrow Reservoir

8.758 km³ (7.1 Maf, 3579.6 ksfd) between elevations 440.13 m (1444.0 feet) and 419.98 m (1377.9 feet) as measured at Fauquier, B.C, and based on

BC Hydro table dated 28 February 1974.

Mica Reservoir

8.634 km³ (7 Maf, 3529.2 ksfd) between elevations 754.38 m (2475.0 feet) and 707.41 m (2320.9 feet) as measured at Mica forebay, and based on BC Hydro table dated 25 March 1974. The total available storage between these elevations is 14.802 km³ (12 Maf, 6050.0 ksfd), but only 8.634 km³ (7 Maf, 3529.2 ksfd) of this storage is required for power purposes.

2. The requirements for flood control operations are defined in the Treaty and the Flood Control Operating Plan. In accordance with Section 6-6 of the Flood Control Operating Plan, the Canadian Entity has selected a reallocation of Mica/Arrow system flood control space to be 5.033 km³ (4.08 Maf) at Mica and 4.441 km³ (3.6 Maf) at Arrow for the 2005-06 Operating Year. The usable Canadian storage available for normal flood control purposes during the 2005-06 Operating Year will be 1.567 km³ (1.27 Maf) in Duncan Reservoir below elevation 576.68 m (1892.0 feet), 4.441 km³ (3.6 Maf) in Arrow Reservoir below elevation 440.13 m (1444.0 feet), and 5.033 km³ (4.08 Maf) in Mica Reservoir. Additional storage may also be operated for flood control purposes under special circumstances, as described in Section 3-2 of the Flood Control Operating Plan.

To the extent that the flood control storage allocation differs from that included in the AOP06, the Operating Committee will develop and execute an agreement that will result in the same Treaty flows at the U.S.-Canadian border as that provided in the AOP06, as modified in subsection II(C), unless otherwise agreed by the Committee.

In order to accommodate minimum fish flow needs downstream of Duncan Dam, BC Hydro will likely request a variance for the 2005-06 operating year to the February Duncan flood control draft requirements in the current (2003) Flood Control Operating Plan. The Corps of Engineers will review this variance request in its normal manner.

C. Preparation of the Treaty Storage Regulation Study

The TSR study uses DOP operating criteria for both Canadian and U.S. projects to define a Canadian storage operation. The TSR06 study shall be based on the loads, thermal and other resources, rule curves, non-power constraints, and other plant and operating data contained in the AOP06 Step I hydro regulation study (which included the Kootenay Lake 5-step logic and Brownlee operation to Coordinated System Proportional Draft Point), except for the following changes agreed to by the Entities.

- 1. Flood control rule curves for Canadian projects will be defined as noted in subsection II(B)2 above.
- 2. U.S. flood control curves will include VarQ at Hungry Horse but not at Libby, and will not include Variable End-of-December flood control rule curves at Libby or shifted flood control from Brownlee and Dworshak to Grand Coulee. Flood control curves at Grand Coulee will be adjusted for additional draft below flood control levels at upstream reservoirs in accordance with the Flood Control Operating Plan. Flood control rule curves at Coeur d'Alene Lake (Post Falls) will

be updated to the 1 February 2001 Pacific Northwest Coordination Agreement (PNCA) data submittal.

- 3. Use of the Operating Rule Curve (ORC) for the upstream refill requirement at both Canadian and U.S. projects to calculate the variable refill curve.
- 4. Use of the hydro-independent generation included in the PNCA Actual Energy Regulation (AER) and the 60-year median values for hydro independents not included in the AER from the AOP06 Step I hydro regulation study.
- 5. Addition of a maximum January outflow limit at Arrow of 2,265 m³/s (80,000 cfs) for the TSR only.
- 6. Brownlee's storage operation will be based on critical rule curves and energy content curves included in the AOP06, but the project minimum outflows will be calculated based on the local minimum flow at Lime Point.
- 7. Use of updated distribution factors at Hungry Horse and Grand Coulee, based on the 2000 level modified flows from the U.S. Department of Interior, Bureau of Reclamation, as submitted for use in the PNCA 2004-05 and later operating years. Use of updated Forecast Errors (hedges) for Libby, and distribution factors for Libby and Dworshak, based on the 1 February 2005 PNCA data submittal.
- 8. For current and future months, update Coulee pumping flows to the 1 February 2005 PNCA data submittal, or current forecast values if available, and use actual values for after-the-fact months. Adjustments to return flows are not needed because the observed streamflows and streamflow forecasts include return flows.
- 9. The plant data (physical description) at Arrow and Brilliant will be updated to the 1 February 2005 PNCA data submittal.
- 10. Use of forecasted streamflows as a percentage of 71-year medians from the 2000 Modified Flows without Grand Coulee pumping.
- 11. The hydro regulation model used will be PCHYDSIM version 27, or later version if agreed by the Operating Committee.

The Lower Granite April-July volume runoff forecast, used to calculate Lower Granite minimum fish flow objectives during April through August, will be updated in the TSR06 studies.

The TSR includes the operating guides and limits listed in Sections VI and VII of this DOP.

D. Changes to the TSR

During the operating year, the Operating Committee may agree to mutually beneficial changes to the TSR data and model.

E. Libby

Libby operating limits and the expected operation of the Libby project are not included in

the DOP. That information is available in the Libby Operating Plan that will be updated by the U.S. Entity when planned operations change. The operation of Libby in the TSR06 will be based on the AOP06 Step 1 operating criteria.

III. POWER DELIVERIES

A. Delivery of the Canadian Entitlement

The obligation of the United States to return the Canadian Entitlement to Canada for operating year 2005-06 during the period 1 August 2005 through 31 July 2006 based on the AOP06 is:

Dependable Capacity = 1,218.0 MW Average Annual Usable Energy = 535.1 aMW

Arrangement for the delivery of this Canadian entitlement power, including the point of delivery, transmission losses, and scheduling guidelines, are defined by the Entity Agreement on Aspects of the Delivery of Canadian Entitlement dated 29 March 1999, and Articles V and VIII of the Columbia River Treaty. Section 11 of Attachment B to the Entity Agreement delegates to the Operating Committee the responsibility for modifying or amending Attachment B - Scheduling Guidelines, as needed from time to time.

B. LCA Power

In accordance with Section 7(b) of the LCA, the Canadian Entity shall deliver to the U.S. Entity one (1) average MW, shaped flat, during the period 1 August 2005 through 31 July 2006. In accordance with Section 10 of the LCA, the Entities shall deliver and receive power relating to the provisional draft of Arrow reservoir. Suitable arrangements will be made between BC Hydro and BPA for delivery of LCA power at the points of interconnection between B.C. Hydro and the Federal Columbia River Transmission System.

C. Operational Agreement Power

In accordance with subsection IV(C) of this DOP, the Entities shall deliver and/or receive power required by operational agreements entered into by the Operating Committee. Suitable arrangements will be made between BC Hydro and BPA for delivery of Operational Agreement Power at the points of interconnection between BC Hydro and the Federal Columbia River Transmission System.

IV. STORAGE OPERATION

A. Operation Authority

The operation of Canadian storage by the Columbia River Treaty Operating Committee during the period 1 August 2005 through 31 July 2006 shall be in accordance with Sections I through VII of this DOP and any SOAs signed by the Entities during the operating year. Consistent with the operating objectives in this section, the Operating Committee is authorized to enter into subsequent SOAs on behalf of the Entities for mutual benefits within the period covered by this DOP.

B. Storage Operation to TSR Level

The weekly Treaty Storage Operation Agreements shall be based on operating Canadian storage to the end-of-month contents contained in the current TSR study, except as allowed in subsections C and D below or the Flood Control Operating Plan.

C. Storage Operation Above and Below TSR Levels

Consistent with the Flood Control Operating Plan, operating limits defined in Section VII, and the objectives and limitations defined in this Sub-Section, the Operating Committee may agree to mutually beneficial SOAs to store above or draft below the TSR levels to meet power and non-power objectives.

1. Power Objectives:

Power objectives include minimizing spill and optimizing energy production, power marketing, and purchase decisions. Operations for power objectives may be combined with non-power objectives. When appropriate, the Operating Committee will make suitable arrangements for delivery of power relating to sharing of power benefits from operational agreements.

2. Non-power Objectives:

Operations designed to help meet non-power objectives do not imply that either Entity acknowledges any obligation, domestic or international, to meet those objectives. The Entities agree that operations for non-power objectives do not set a precedent concerning any current or future dispute over Treaty rights and obligations, nor do they set a precedent for non-power objectives or flow objectives and contents.

Potential Canadian non-power objectives may include, but are not limited to, whitefish and trout spawning downstream of Arrow, dust storm avoidance upstream of Arrow, and recreation needs. Potential U.S. non-power objectives may include, but are not limited to, storage up to 1.233 km³ (1 Maf) for anadromous fish flow augmentation, minimum flows at Bonneville dam and at Vernita Bar for fish spawning, and recreation needs. Non-power objectives considered in this section do not include flood control and operating limits in Section VII.

Recognizing that it may not be possible to meet all non-power objectives, the Operating Committee shall in general attempt to share equally the risk and amount of failure. The parties shall make reasonable efforts to use available flexibility at their projects prior to requesting changes to the Treaty storage operation.

The values used in the AOP studies to define the various rule curves were period-end values only. In actual operation, it is necessary to operate in such a manner during the course of each period that these period-end values can be achieved in accordance with the operating rules. Due to the normal variation of power load and streamflow during any period, straight-line interpolation between the period-end points should not be assumed. During the storage drawdown season, Canadian storage should not be drafted below its period-end point at any time during the period unless it can be conservatively demonstrated that sufficient inflow is available, in excess of the minimum outflow required to serve power demand, to refill the reservoir to its end-of-period values as required.

From time to time, due to updated forecasts or differences between forecast and actual inflows, the actual operation of Treaty composite storage will differ from the end of period storage prescribed by the TSR as modified by SOAs. The Operating Committee will make reasonable efforts to correct these differences via the regular weekly Treaty flow request process in a timely manner without exceeding the specified project limits for discharges and ramp-rates.

D. Provisional Draft at Arrow

The Canadian Section of the Operating Committee may provisionally draft from Arrow reservoir below TSR levels in accordance with Section 10 of the LCA.

V. SCHEDULING STORAGE REGULATION

A. Operating Data

The Operating Committee will exchange all current operating data necessary for the regulation of Canadian storage projects as soon as available, including the beginning and end of the flood control season.

B. Volume Runoff Forecasts

Seasonal runoff volume forecasts for Canadian Treaty Projects shall be made available by the Canadian Section no later than the seventh working day of each month, as required. The Operating Committee may request forecasts of seasonal runoff volume at periods other than those representing month-end conditions if hydrologic conditions warrant. Seasonal runoff volume forecasts for the Columbia River at The Dalles, Oregon, shall be made available by the U.S. Section no later than the seventh working day of each month, as required.

C. Treaty Storage Regulation Study

The TSR study is performed at least twice each month (within the first nine working days and the last eight working days of each month). Actual unregulated streamflows and forecasted unregulated streamflows will be updated for each TSR study. Variable energy content curves, flood control storage evacuation requirements, and variable flood control refill curves will be updated for the first TSR of the month. At the request of either section of the Operating Committee, additional TSR studies shall be performed to reflect the most current unregulated streamflow forecasts and rule curves. The Operating Committee shall agree on procedures for developing streamflow forecasts and rule curves at that time.

Errors and omissions in the TSR will be handled as follows, unless otherwise agreed:

- 1. All identified errors, omissions, or revisions in the TSR issued during the current operating year should be documented and reported to the Operating Committee.
- 2. Errors/omissions identified within two working days of the initial TSR distribution which, in the view of either Section, may affect the final TSR for the previous operation period or which may impact operations prior to issuance of the next TSR, should be corrected immediately and the TSR re-run. If such errors/omissions are

identified after the two-day review period, the TSR will be corrected only if requested by either Section of the Operating Committee.

- Errors/omissions that do not affect the final TSR for the previous period or impact operations prior to issuance of the next TSR should be corrected in the subsequent TSR.
- Errors/omissions that affect periods previously finalized and which result in a significant impact to the TSR in future periods, should be brought to the attention of the Committee for resolution.

During the Flood Control Storage Evacuation Period and the Flood Control Refill period, project Flood Control Curves will be determined through 30 June by the North Pacific Region, Northwestern Division, U.S. Army Corps of Engineers, in accordance with the Flood Control Operating Plan. These curves will be computed consistent with the timing of the TSR Schedule.

D. **Scheduling Agreements**

Unless otherwise agreed, requests by the U.S. Section of the Operating Committee for the regulation of the Canadian storage content will be made to the Canadian Section on a regular basis in accordance with the following procedures:

- Weekly Agreement for Storage Regulation unless required for Flood Control 1.
 - A preliminary request will be made not later than noon each a) Thursday, followed by a final agreement by noon Friday.
 - Confirmation: Confirmation of the Treaty Storage Operation Agreement will b) be transmitted via electronic mail or fax on Friday in accordance with the following format unless otherwise agreed:

This message confirms our verbal agreement on (date)
that the (storing/drafting) of an estimated ksfd (in/from
the whole of Canadian storage for the Period is
consistent with the Detailed Operating Plan (DOP).
This agreement is based on an estimated average inflow during the above-
mentioned period of kcfs to Duncan Reservoir,
kcfs to Libby Reservoir,
kcfs to Mica Reservoir, an
Estimated average regulated inflow of
kcfs to Arrow Reservoir, and an
Estimated regulated outflow of
kcfs from the Libby Project,
That will result in average weekly Treaty discharges of
kcfs from the Duncan Project,
kcfs from the Mica Project, and
kcfs from the Arrow Project.
This operation of the whole of Canadian storage is based on the(date)
DOP TSR expected end-of (month, except split April & August)
storage level for the whole of Canadian storage of ksfd.

This operation includes expect	ted (storag	ge above/draft below) the
end-of (month, excep	ot April & August) DOP	TSR level for the whole
of Canadian storage of	ksfd.	

Treaty discharges will be made effective at the Canadian-United States border. The Weekly Treaty Storage Operation Agreement will be deemed to have been fulfilled if the total amount of Treaty water agreed to is released from Arrow plus Duncan reservoir provided an amount equal to or greater than the water released from Duncan reservoir is concurrently discharged from Kootenay Lake.

- c) <u>Period Covered by Weekly Treaty Storage Operation Agreement</u>: The period covered by the agreement shall be from Saturday following the date of the weekly request to the following Friday.
- d) Release Determination: The amount of water released or stored during the period of the Weekly Treaty Operation Storage Agreement will be determined by the changes in reservoir contents based on the recorded reservoir elevation and storage capacity tables for Duncan (Exhibit 9), Arrow (Exhibit 10), and Mica (Exhibit 11). The change in Arrow storage content will be determined using the recorded reservoir elevation at the gauge near Fauquier, B.C.
- e) Modification: If any modification to a written Weekly Treaty Storage Operation Agreement is agreed by the Operating Committee, a further written Storage Agreement superseding the original will be dispatched immediately by the U.S. Section of the Operating Committee to the Canadian Section of the Operating Committee. In accordance with Section 12 of the LCA, the Canadian Section shall implement at the request of the U.S. Section, up to five (5) mid-week requests for changes to the Canadian storage operation, consistent with this DOP and operating agreements entered into pursuant to this DOP. In addition, upon receipt of the preliminary weekly request each Thursday, the Canadian Section may request a modification to the current week's Treaty Storage Operation as may be necessary to meet flow ramping and fish salvage requirements in transitioning project releases from one Treaty week into the next, subject to agreement by the U.S. Section.
- f) <u>Provisional Draft</u>: Scheduling arrangements for provisional draft from Arrow reservoir, in accordance with Section 10 of the LCA, shall be done during the Weekly Treaty Storage Operation Agreement phone call, and subsequently confirmed in the Weekly Treaty Storage Operation Agreement.
- g) <u>Non-routine Operation</u>: Any special operation that is agreed to by the Operating Committee will be suitably documented.

2. Agreement for Storage Regulation during Flood Control

a) <u>Forecasts</u>: Daily time-step streamflow forecasts will be accomplished by use of computer simulation by the National Weather Service River Forecast Center. The regulation center required by the Flood Control Operating Plan for the flood regulation will be located in the North Pacific Region, Northwestern Division, U.S. Army Corps of Engineers offices in Portland, Oregon.

- b) Requests for Project Outflows: Pursuant to the operating rules in the Flood Control Operating Plan, the outflows from individual Canadian storage projects may be specified, as outlined in the Flood Control Operating Plan. Requests will be coordinated by telephone daily or on an as needed basis, by conference calls between members of the Operating Committee or their representatives. The requests will normally prescribe the requested outflows as a mean daily discharge in cubic feet per second, for the 24-hour period from noon to noon of each day. Requests for project outflows will be determined by methods as agreed upon, and documented with a confirmation agreement by a message transmitted via e-mail or FaxTM from the Corps of Engineers, in Portland, Oregon. The Canadian Section of the Operating Committee or their representative will make acknowledgment of this agreement via e-mail or FaxTM. Any modification of the documented daily request shall be agreed by the Operating Committee before being put into effect, and shall be documented immediately using the procedure described above.
- c) Regulation during Winter Floods: Daily requests for project outflows from Canadian projects are normally implemented in the flood control refill period. During the occurrence of winter floods (periods of high winter flows) in the Lower Columbia River, if a special regulation of Arrow storage becomes necessary to preserve the natural flood control storage effect, then the outflows from Arrow will be regulated on a day-to-day basis by agreement of the Operating Committee in accordance with the requests of the U.S. Section of the Operating Committee. Insofar as possible the outflows from Arrow will not exceed the calculated natural lake outflows until the space obligated for this purpose as shown on Chart 5 of the Flood Control Operating Plan is filled. The requests for such regulation will be in accordance with procedures described above. If, as a result of operation for winter flood control, a reservoir ends up above its flood control rule curve, then an appropriate outflow schedule for that reservoir will be determined to ensure that the reservoir will be drafted to its flood control rule curve as soon as feasible.

VI. OPERATING GUIDES

A. Operating Rule Curve

The ORC for the whole of Canadian storage shall be the sum of the ORC's for each of Duncan, Arrow, and Mica. The ORC for each of the Duncan, Arrow, and Mica Reservoirs during the period 1 August 2005 through 31 July 2006 is determined in accordance with the reference documents of Section I, and is defined as follows:

- 1. During the period 1 August 2005 through 31 December 2005, it is the higher of the First Critical Rule Curve or the Assured Refill Curve.
- 2. During the period 1 January 2006 through 31 July 2006, it is the higher of the First Critical Rule Curve or the Assured Refill Curve, unless the Variable Refill Curve (VRC) is below the higher of the above two curves; then it is defined by the VRC.

- 3. During the period 1 January 2006 through 15 April 2006, it will not be lower than the Operating Rule Curve Lower Limit designed to protect firm loads with recurrence of 1936-37 hydro conditions unless a lower reservoir elevation is required for flood control (Exhibit 6).
- 4. During any month in the 2005-06 Operating Year, it will not be higher than the Flood Control Rule Curve, defined as the maximum elevation of each reservoir established by flood control requirements and may be modified on mutual agreement for construction and other contingency requirements.
- 5. Operation of Mica will be in accordance with the Mica Project Operating Criteria tabulated with specified qualifications in Section VII(C). Differences between Mica's storage operation and its ORC (or Proportional Draft Point (PDP) if different) shall be balanced with equal and opposite changes to Arrow's ORC (or PDP) to the extent possible within agreed Operating Limits. The obligation to operate Mica and Arrow to produce optimum benefits in Canada and downstream in the United States will be deemed to have been fulfilled by operating to these criteria.
- 6. The VRC's for Arrow, Duncan, and Mica shall be constructed based on procedures, power discharge requirements, and Variable Refill Curve Lower Limits as specified in Exhibit 7, except that the Operating Committee, in consideration of mutually beneficial operating arrangements, may agree to use an alternate procedure for Arrow which uses Arrow local inflows (Arrow Local Inflow Method) as follows.
 - a) If the current TSR study shows for the end of the current month that 1) the projected Mica Treaty storage content is lower than its ORC, and 2) the Coordinated System draft point is on the ORC, then the VRC for Arrow will be calculated as follows:
 - i) The forecast volume of inflow for Arrow will exclude the volume of inflow above the Mica project. This Arrow local inflow volume will be reduced by a forecast error such that there is a 95 percent probability that the reduced forecast is equaled or exceeded.
 - ii) The total Mica target outflow as specified in VII(C) will be added to the forecast volume described in a(i) above.
 - iii) In computing water available for refill of Arrow Reservoir the power discharge requirements for Arrow as specified in Exhibit 7 will be deducted from the volume calculated in a(ii).
 - b) During any period when the Arrow Local Inflow Method is used, the Mica/Arrow balancing (as described in subsection VI(A)5) is not used. This is implemented in BPA's hydro regulation model by setting the composite ORC for Canadian storage equal to the Mica Treaty storage content as defined in Subsection VII(C), plus the ORC at Arrow and Duncan.

B. Rule Curves and Operating Data

Rule Curves and Operating data are shown in both English and SI (Metric) units. SI values are displayed with either one or two decimal places to assure consistency with English units and do not imply that level of precision.

1.	Assured Refill Curve for Duncan, Arrow, and Mica.	Exhibit 1
2.	First Critical Rule Curve for Duncan, Arrow, Mica, and the whole of Canadian storage.	Exhibit 2
3.	Second Critical Rule Curve for Duncan, Arrow, Mica, and the whole of Canadian storage.	Exhibit 3
4.	Third Critical Rule Curve for Duncan, Arrow, Mica, and the whole of Canadian storage.	Exhibit 4
5.	Fourth Critical Rule Curve for Duncan, Arrow, Mica, and the whole of Canadian storage.	Exhibit 5
6.	Lower Limit for Operating Rule Curve based on 1936-37 Hydro Conditions.	Exhibit 6
7.	Variable Refill Curve Procedures.	Exhibit 7
8.	Coordinated System Loads and Resources	Exhibit 8

C. Reservoir Capacity Tables

The following tables shall be considered to be the official storage for the projects:

1.	Duncan Reservoir Capacity Table (based on BC Hydro Table dated 21 February 1973).	Exhibit 9
2.	Arrow Reservoir Capacity Table (based on BC Hydro Combined Storage Table dated 28 February 1974).	Exhibit 10
3.	Mica Reservoir Capacity Table (based on BC Hydro Table dated 25 March 1974).	Exhibit 11

VII. OPERATING LIMITS

A. Duncan Project

- 1. Maximum outflow is 566.34 m³/s (20,000 cfs) through outlets but limited to 283.17 m³/s (10,000 cfs) each month in the TSR model.
- 2. Minimum average weekly outflow is 2.83 m³/s (100 cfs).
- 3. Maximum rate of change in outflow is normally 113.27 m³/s (4,000 cfs) per day unless a larger change is necessary to accomplish the objectives of the Flood

Control Operating Plan.

- 4. Normal full pool elevation is 576.68 m (1,892.0 feet).
- 5. Normal minimum pool elevation is 546.87 m (1,794.2 feet).
- 6. Normal maximum reservoir average monthly draft rate in elevation during any month is limited to 0.30 m (1 foot) per day.

B. Arrow Project

- 1. Maximum outflow is limited to physical capability only, except during January when Attachment C to the LCA requires that outflows in actual operations be limited to a maximum of 2,265 m³/s (80,000 cfs) unless otherwise agreed or higher outflows are needed to meet flood control requirements.
- 2. Minimum average weekly outflow is 141.58 m³/s (5,000 cfs).
- 3. Maximum rate of change in outflow is normally 424.75 m³/s (15,000 cfs) per day unless a larger change is necessary to accomplish the objectives of the Flood Control Operating Plan.
- 4. Normal full pool elevation is 440.13 m (1,444.0 feet).
- 5. Normal minimum pool elevation is 419.98 m (1,377.9 feet).
- 6. Normal maximum reservoir average monthly draft rate in elevation during any month is limited to 0.30 m (1 foot) per day.

C. Mica Project

The Mica Project Treaty storage operation in the TSR will be according to the Mica Project Operating Criteria shown in the following table except as qualified in subsections VII(C)1 through VII(C)7.

- 1. VRC shall be constructed according to Exhibit 7 with the 31 July Treaty storage content of 8,634.54 hm³ (3,529.2 ksfd). However, the Operating Committee may agree to set Mica's VRC July refill target equal to the Mica End of Month Storage Content of 8438.6 hm³ (3449.1 ksfd) indicated on the following "Mica Project Operating Criteria" table.
- 2. Mica project operation will be determined by the End of Previous Month Arrow Storage Content as shown in the following table, except for the limitations or changes required by subsections VII(C)3 through VII(C)8. The End of Previous Month Arrow Storage Content shall be determined from a current TSR study, except that during January through July only the normal procedures for determining Arrow's VRC (as specified in Exhibit 7) will be included. Mica's operation will be defined either by a Target End of Month Storage Content or a Target Month Average Outflow.
- 3. Mica operation to the Target End-of-Month Treaty Storage Contents shall be

limited by the Minimum Outflows shown in the following table and as defined in Note $\underline{2}$ /, and by the Maximum Outflow as defined in Note $\underline{1}$ / when the Target Endof-Month Storage Content is below 8,634.54 hm³ (3,529.2 ksfd) unless needed to accomplish the objectives of the Flood Control Operating Plan.

- 4. Mica operation to the Target Month Average Outflow shall be limited by the Minimum Target Treaty Content shown in the following table. Mica outflows shall be reduced as required down to a lower limit of the Minimum Outflow shown in the table below, to prevent draft below the Minimum Target Treaty Storage Content. Minimum Outflows may cause the reservoir to draft below the Minimum Target Treaty Content.
- 5. During July, the Mica operation to the Target Month Average Outflow shall not be less than the outflow necessary to meet the Target End-of-Month Storage Content of 8438.6 hm³ (3449.1 ksfd).
- 6. Mica outflows will be increased during the months October through June as required to avoid violation of the Flood Control Rule Curve.
- 7. Treaty storage releases from Mica in excess of 8.634 km³ (7 Maf) that result from operating Mica under the criteria described in VII(C)2 through VII(C)7 above will be retained in the Arrow reservoir, subject to flood control criteria at Arrow, and Mica will be reduced to Minimum Outflow as required to minimize releases in excess of 8.634 km³ (7 Maf). The total combined storage draft from Mica and Arrow will not exceed 17.392 km³ (14.1 Maf) unless flood control criteria will not permit the additional Mica storage releases for minimum flow purposes to be retained at Arrow.

MICA PROJECT OPERATING CRITERIA (English)

Arrow Storage Content (68d) (68) (68d) (68d)			Target (Operation	Target C	ts	
August 1-15	Month						Minimum
August 1-15							Outflow
2,160 - 2,600 25,000 - 0.0 - 15,5							(cfs)
December 3,000 32,000 3,59,2 - 15,50	August 1-15			3,499.1		34,000	15,000
August 16-31		, ,	,	-		-	15,000
1,950			32,000	.	0.0	.	15,000
Color	August 16-31	· ·	-	3,529.2			15,000
September			,	-			15,000
1,900 - 3,440		0 - 1,950	32,000	-	0.0		15,000
1,900 - 3,440	September	3,440 - FULL	-	3,524.1	-	34,000	10,000
Decider 3,275 FULL - 3,344.1 - 34,000 10,000		1,900 - 3,440	22,000	-	0.0	-	10,000
Decider 3,275 FULL - 3,344.1 - 34,000 10,000		1,500 - 1,900	27,000	-	0.0	-	10,000
Decober 3,275 FULL - 3,344.1 - 34,000 100 1,000 1,100 - 2,530 23,000 - 0.0 - 10,00 - 10,00 1,100 - 2,530 23,000 - 0.0 0.0 - 10,00 - 12,000 - 10,00 - 12,000 - 10,00 - 12,000 - 1			32,000	-	0.0	-	10,000
2,530	October		-	3.344.1		34.000	10,000
1,100 2,530 23,000 - 0,0 - 10,0 0 1,100 32,000 - 0,0 - 10,0 2,990 3,030 20,000 0,0 12,0 800 2,990 24,000 0,0 12,0 800 2,990 24,000 0,0 12,0 800 2,990 32,000 4,1 21,1 2,450 2,780 5ULL 25,000 4,1 21,1 600 2,450 30,000 4,1 21,1 600 2,450 30,000 4,1 21,1 600 2,450 30,000 4,1 21,1 1,240 2,340 24,000 0,0 15,1 1,240 2,300 29,000 0,0 15,1 1,240 2,300 29,000 0,0 15,1 1,070 1,260 20,000 0,0 15,1 1,070 1,260 20,000 0,0 15,1 1,070 1,070 25,000 0,0 15,1 1,070 1,070 25,000 0,0 15,1 1,070 1,070 25,000 0,0 15,1 1,070 1,070 25,000 0,0 15,1 1,070 1,070 25,000 0,0 15,1 1,070 1,070 25,000 0,0 15,1 1,070 1,070 25,000 0,0 15,1 1,070 1,070 25,000 0,0 15,1 1,070 1,070 25,000 0,0 15,1 1,070 1,070 25,000 0,0 15,1 1,070 1,070 25,000 0,0 15,1 1,070 1,070 25,000 0,0 15,1 1,070 1,070 25,000 0,0 15,1 1,070 1,070 1,000 0,0 15,1 1,070 1,070 1,000 0,0 15,1 1,070 1,070 1,000 0,0 15,1 1,070 1,070 1,000 0,0 10,1 1,070 1,070 1,000 0,0 10,1 1,150 1,240 1,000 0,0 0,0 10,1 1,150 1,240 1,000 0,0 0,0 10,1 1,150 1,240 1,000 0,0 0,0 18,1 1,150 1,240 1,000 0,0 0,0 18,1 1,150 1,240 1,000 0,0 0,0 18,1 1,150 1,240 1,000 0,0 0,0 0,0 1,150 1,240 1,000 0,0 0,0 0,0 1,150 1,240 1,000 0,0 0,0 0,0 1,150 1,240 1,000 0,0 0,0 0,0 1,150 1,240 1,000 0,0 0,0 0,0 1,150 1,240 1,240 1,2000 0,0 0,0 1,150 1,240 1,240 1,2000 0,0 0,0 1,150 1,240 1,240 1,2000 0,0 0,0 1,150 1,240 1,240 1,2000 0,0 0,0 1,150 1,240 1,240 1,240 1,240 1,150 1,240 1,240 1,240 1,150 1,240 1		· ·	20,000	-	0.0	-	10,000
0 - 1,100 32,000 - 0,0 - 10,0			,	_		_	10,000
November			,	_		_	10,000
2,990 - 3,030 20,000 0.0 12,000 0.0 12,000 0.0 12,000 0.0 12,000 0.0 12,000 0.0 12,000 0.0 12,000 0.0 12,000 0.0 12,000 0.0 12,000 0.0 12,000 0.0 12,000 0.0 12,000 0.0 0.0 12,000 0.0	Vovember						12,000
Secondary Seco	10 Vellioei		,				12,000
December 2,780 FULL 25,000 4.1 21,000 4.1		, ,					12,000
December 2,780 FULL 25,000 4.1 21,		· · · · · · · · · · · · · · · · · · ·					12,000
2,450 - 2,780 23,000 4.1 21,4 600 - 2,450 30,000 4.1 21,4 600 - 2,450 30,000 4.1 21,4 600 - 32,000 32,000 4.1 21,4 600 - 32,000 23,000 0.0 15,4 1,240 - 2,300 29,000 0.0 15,4 1,240 - 2,300 29,000 0.0 15,4 1,240 - 1,240 31,000 0.0 0.0 1,070 - 1,240 31,000 0.0 15,4 1,070 - 1,240 20,000 0.0 15,4 1,070 - 1,260 20,000 0.0 15,4 1,070 - 1,070 25,000 0.0 0.0 1,000 - 760 26,000 0.0 0.0 1,000 - 495 21,000 0.0 15,4 495 - 700 19,000 0.0 15,4 495 - 700 19,000 0.0 15,4 495 - 700 19,000 0.0 15,4 495 - 700 19,000 0.0 15,4 497 - 700 - FULL 16,000 - 0.0 - 13,4 1,000 - 495 21,000 0.0 15,4 497 - 1,550 - 104.1 - 29,000 13,4 1,500 - FULL 16,000 - 0.0 - 13,4 497 - 730 24,000 - 0.0 - 13,4 497 - 730 24,000 0.0 0.0 1,150 - 1,240 12,000 0.0 0.0 1,150 - 1,240 12,000 0.0 0.0 1,150 - 1,240 12,000 0.0 0.0 1,150 - 1,240 12,000 0.0 0.0 1,150 - 1,150 10,000 0.0 0.0 1,150 - 1,150 10,000 0.0 0.0 335 - 395 14,000 0.0 0.0 48 335 - 395 14,000 0.0 0.0 630 - 1,075 10,000 0.0 0.0 630 - 1,075 10,000 0.0 0.0 1,800 0.0 0.0 8,8 1,900 0.0 0.0 0.0 1,800 0.0 0.0 0.0	Dagamban						
Company	December		- ,				21,000
1							21,000
Sanuary		,					21,000
2,300 - 2,340							21,000
1,240 - 2,300	January	7	,				15,000
1,240							15,000
February							15,000
1,070 - 1,260			31,000		0.0		15,000
Total Content	February	1,260 - FULL	22,000		0.0		15,000
March 700 - 760 26,000 0.0 15,0 March 700 - FULL 20,000 0.0 15,0 495 - 700 19,000 0.0 15,0 100 - 495 21,000 0.0 15,0 0 - 100 25,000 0.0 0.0 15,0 April 1-15 1,550 - FULL 16,000 - 0.0 - 13,0 995 - 1,550 - 104.1 - 29,000 13,0 730 - 995 - 0.0 - 29,000 13,0 0 - 730 24,000 - 0.0 - 29,000 13,0 April 16-30 1,240 FULL 13,000 0.0 - 13,0 April 16-30 1,240 12,000 0.0 10,0 May 755 - FULL 10,000 0.0 10,0 May 755 - FULL 10,000 0.0 8, 335 - 395 14,000 0.0 8, 335 - 395 14,000 0.0 8, 335 - 395 14,000 0.0 8, 335 - 395 14,000 0.0 8, 335 - 395 14,000 0.0 8, 335 - 305 14,000 0.0 0.0 8, 335 - 305 14,000 0.0 0.0 8, 335 - 305 14,000 0.0 0.0 8, 335 - 305 14,000 0.0 0.0 8, 335 - 305 14,000 0.0 0.0 8, 335 - 305 14,000 0.0 0.0 8, 335 - 305 14,000 0.0 0.0 8, 335 - 305 14,000 0.0 0.0 8, 335 - 305 14,000 0.0 0.0 8, 335 - 305 14,000 0.0 0.0 8, 335 - 305 14,000 0.0 0.0 8, 335 - 305 14,000 0.0 0.0 8, 335 - 305 14,000 0.0 0.0 8, 335 - 305 14,000 0.0 0.0 8, 335 - 305 14,000 0.0 0.0 8, 335 - 305 14,000 0.0 0.0 0.0 8, 335 - 305 14,000 0.0 0.0 0.0 8, 335 - 305 14,000 0.0 0.0 0.0 0.0 8, 335 - 305 14,000 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		1,070 - 1,260	20,000		0.0		15,000
March 700 - FULL 20,000 0.0 15,0 495 - 700 19,000 0.0 15,0 100 - 495 21,000 0.0 15,0 0 - 100 25,000 0.0 15,0 April 1-15 1,550 - FULL 16,000 - 0.0 - 0.0 - 13,0 995 - 1,550 - 730 - 995 - 0.0 - 0.0 - 29,000 13,0 730 - 995 - 0.0 - 0.0 - 29,000 13,0 April 16-30 1,240 - FULL 13,000 - 0.0 - 0.0 - 13,4 April 16-30 1,240 - FULL 13,000 - 0.0 0.0 10,0 0 - 1,150 - 1,240 - 12,000 - 0.0 0.0 10,0 0.0 10,0 May 755 - FULL - 10,000 - 0.0 0.0 8, 335 - 395 - 14,000 - 0.0 8, 335 - 395 - 14,000 - 335 - 8,000 - 0.0 0.0 8, 0.0 8, 40 - 335 - 8,000 - 1,075 - 1,500 - 8,000 - 0.0 0.0 8, 0.0 8, 400 - 630 - 1,075 - 10,000 - 0.0 0.0 8, 0.0 0.0 8,		760 - 1,070	25,000		0.0		15,000
A95 - 700		0 - 760	26,000		0.0		15,000
A95 - 700	March	700 - FULL	20,000		0.0		15,000
100 - 495			,				15,000
April 1-15		100 - 495			0.0		15,000
April 1-15			,				15,000
995 - 1,550	April 1-15					-	13,000
Table Tabl	r		-	104 1		29,000	13,000
0 - 730			_			,	13,000
April 16-30			24,000			27,000	13,000
1,150 - 1,240	April 16.30			·····		· · · · · · · · · · · · · · · · · · ·	
May 755 - FULL 755 10,000 8,00 0.0 10,000 8,00 May 755 - FULL 10,000 0.0 0.0 8,000 0.0	rp111 10-30	*					10,000
May							10,000
395 - 755							10,000
335 - 395	viay						8,000
O - 335 8,000 0.0 8 June 1,500 - FULL 10,000 0.0 8 1,075 - 1,500 8,000 0.0 8 630 - 1,075 10,000 0.0 8 0 - 630 18,000 0.0 8 July 2,330 - FULL - 3,449.1 - 34,000 10 1,870 - 2,330 18,000 - 0.0 - 10							8,000
June 1,500 - FULL 10,000 0.0 8, 1,075 - 1,500 8,000 0.0 8, 630 - 1,075 10,000 0.0 8, 00 - 630 18,000 0.0 8, 00 0.0 8, 00 0.0 10,000 0.0 10,870 - 2,330 18,000 - 0.0 - 10,000 - 10,0							8,000
1,075 - 1,500							8,000
630 - 1,075	une	· ·					8,000
July 0 - 630 18,000 0.0 8,000 1,870 - 2,330 18,000 - 3,449.1 - 34,000 10 0.0 - 10							8,000
uly 2,330 - FULL - 3,449.1 - 34,000 10 1,870 - 2,330 18,000 - 0.0 - 10		630 - 1,075	10,000		0.0		8,000
uly 2,330 - FULL - 3,449.1 - 34,000 10 1,870 - 2,330 18,000 - 0.0 - 10		0 - 630	18,000		0.0		8,000
1,870 - 2,330 18,000 - 0.0 - 10	uly		-	3,449.1		34,000	10,000
	-	*	18.000	-, -,		- ,	10,000
0 - 1,870 30,000 - 0.0 - 10			,	-		_	10,000

Notes: 1/ For end-of-month storage content target operation, a maximum outflow of 34,000 cfs will apply if the Target End-of-Period Storage Content is less than 3529.2 ksfd in every month, except April 1-15 the maximum outflow is 29,000 cfs. These maximum flows may be exceeded for flood control.

^{2/} For month average outflow target operation, Mica outflows will be reduced to minimum to maintain the reservoir above the Minimum Target Treaty Storage Content.

MICA PROJECT OPERATING CRITERIA (SI)

		Target (Operation	Target	Operation Limi	ts
Month	End of Previous Month	Month Average	End-of-Month	Minimum Target Treaty		Minimum
	Arrow Storage Content	Outflow	Storage Content 1/	Storage Content 2/	Maximum Outflow	Outflow
	(hm³)	(m^3/s)	(hm ³)	(hm³)	(m^3/s)	(m^3/s)
August 1-15	6361.2 - FULL	-	8560.9	-	962.77	424.75
	5284.7 - 6361.2	707.92	-	0.0	-	424.75
	0.0 - 5284.7	906.14	-	0.0	-	424.75
August 16-31	8318.4 - FULL	-	8634.5	-		424.75
	4770.9 - 8318.4	707.92	-	0.0		424.75
	0.0 - 4770.9	906.14	-	0.0		424.75
September	8416.3 - FULL	-	8622.1	-	962.77	283.17
	4648.5 - 8416.3	622.97	-	0.0	-	283.17
	3669.9 - 4648.5	764.55	-	0.0	-	283.17
	0.0 - 3669.9	906.14	-	0.0	-	283.17
October	8012.6 - FULL	-	8181.7	-	962.77	283.17
	6189.9 - 8012.6	566.34	-	0.0	-	283.17
	2691.3 - 6189.9	651.29	-	0.0	-	283.17
	0.0 - 2691.3	906.14	-	0.0	-	283.17
November	7413.2 - FULL	651.29		0.0		339.80
	7315.3 - 7413.2	566.34		0.0		339.80
	1957.3 - 7315.3	679.60		0.0		339.80
	0.0 - 1957.3	906.14		0.0		339.80
December	6801.5 - FULL	707.92		10.0		594.65
	5994.2 - 6801.5	651.29		10.0		594.65
	1468.0 - 5994.2	849.50		10.0		594.65
	0.0 - 1468.0	906.14		10.0		594.65
January	5725.0 - FULL	736.24		0.0		424.75
Junuar y	5627.2 - 5725.0	679.60		0.0		424.75
	3033.8 - 5627.2	821.19		0.0		424.75
	0.0 - 3033.8	877.82		0.0		424.75
February	3082.7 - FULL	622.97		0.0		424.75
Cordary	2617.9 - 3082.7	566.34		0.0		424.75
	1859.4 - 2617.9	707.92		0.0		424.75
	0.0 - 1859.4	736.24		0.0		424.75
March	1712.6 - FULL	566.34		0.0		424.75
iviai cii	1211.1 - 1712.6	538.02		0.0		424.75
	244.7 - 1211.1	594.65		0.0		424.75
	0.0 - 244.7	707.92		0.0		424.75
April 1-15	3792.2 - FULL	453.07		0.0		368.12
Арт 1-13	2434.4 - 3792.2	-	254.7	-	821.19	368.12
	1786.0 - 2434.4		0.0	_	821.19	368.12
	0.0 - 1786.0	679.60	-	0.0	021.17	368.12
April 16-30	3033.8 - FULL	368.12		0.0		283.17
1pm 10-30	2813.6 - 3033.8	339.80		0.0		283.17
	0.0 - 2813.6	283.17		0.0		283.17
May	1847.2 - FULL	283.17		0.0		226.53
iviay	966.4 - 1847.2	226.53		0.0		226.53
	819.6 - 966.4	396.44		0.0		226.53
	0.0 - 819.6	226.53		0.0		226.53
June	3669.9 - FULL	283.17		0.0		226.53
Julic	2630.1 - 3669.9	226.53		0.0		226.53
	1541.4 - 2630.1	283.17		0.0		226.53
	0.0 - 1541.4	509.70		0.0		226.53
Inde			0/20 6		062.77	
July	5700.6 - FULL	- 500.70	8438.6	-	962.77	283.17
	4575.1 - 5700.6	509.70	-	0.0	-	283.17
Notes:	0.0 - 4575.1	849.50	<u> </u>	0.0		283.17

Notes

^{1/}For end-of-month storage content target operation, a maximum outflow of 962.77 m³/s will apply if the Target End-of-Period Storage Content is less than 8634.5 hm³ in every month, except April 1-15 the maximum outflow is 821.19 m³/s. These maximum flows may be exceeded for flood control.

^{2/} For month average outflow target operation, Mica outflows will be reduced to minimum to maintain the reservoir above the Minimum Target Treaty Storage Content.

EXHIBITS

Exhibit 1 - Assured Refill Curves (English) 1/

		DUNCAN MICA									ARR	OW					
			Water Av					Water						Water			
	1931	DDD	for Re	efill	A D.C.	1931	DDD	Availa		CD C1	A D.C.	1931	DDD	Avail		MICA	A D.C.
Month	Inflow cfs 3/	PDR cfs 4/	cfs	ksfd	ARC ksfd	Inflow cfs	PDR cfs 4/	for Re	Ksfd	CRC1 ksfd	ARC ksfd	Inflow cfs	PDR _	for R	ksfd	Refill ksfd 2/	ARC ksfd
July							_						cfs <u>4</u> /				
	7320	2750	4570	141.7	705.8	56494	50053	6441	199.7	2968.5	3529.2	88803	70098	18705	579.9	199.7	3579.6
June	8030	183	7847	235.4	564.1	60134	24021	36113	1083.4	2028.4	3329.5	114433	52482	61951	1858.5	1083.4	3199.4
May	5170	1560	3610	111.9	328.7	28065	3003	25062	776.9	460.3	2246.1	69071	21175	47896	1484.8	776.9	2424.3
Apr2	1137	369	768	11.5	216.8	7218	3000	4218	63.3	0.0	1469.2	20470	12138	8332	125.0	63.3	1716.4
Apr1	825	100	725	10.9	205.3	4666	7388	-2722	-40.8	220.3	1405.9	12047	8892	3155	47.3	-40.8	1654.7
Mar	555	100	455	14.1	194.4	3218	3001	217	6.7	534.5	1446.8	7849	7189	660	20.5	6.7	1566.6
Feb	428	100	328	9.2	180.3	2589	8569	-5980	-167.4	771.5	1440.1	5759	8363	-2604	-72.9	-167.4	1552.8
Jan	428	100	328	10.2	171.1	2834	3000	-166	-5.1	1364.1	1607.5	6451	5000	1451	45.0	-543.8	1458.3
Dec	461	100	361	11.2	161.0	3531	3000	531	16.5	2151.3	1612.6	6480	5000	1480	45.9	-769.9	869.5
Nov	684	100	584	17.5	149.8	5176	3000	2176	65.3	2921.2	1596.2	9369	5000	4369	131.1	-452.9	53.7
Oct	1089	100	989	30.7	132.2	8761	3000	5761	178.6	3374.1	1530.9	14427	5000	9427	292.2	-155.1	0.0
Sep	2310	100	2210	66.3	101.6	23080	3000	20080	602.4	3529.2	1352.3	38807	5000	33807	1014.2	0.0	0.0
Aug2	3875	100	3775	60.4	35.3	39436	3000	36436	583.0	3529.2	749.9	61741	5000	56741	907.9	0.0	0.0
Aug1	5228	100	5128	76.9	0.0	52209	3000	49209	738.1	3529.2	166.9	81724	5000	76724	1150.9	3529.2	0.0

Exhibit 1M - Assured Refill Curves (SI) 1/

		DU	J NCA	N		MICA							ARROW				
	1931		Wat Avail			1931		Wat Avail	-			1931		Wa Avai		MICA	
	Inflow	PDR	for Re	efill	ARC	Inflow	PDR	For R	efill	CRC1	ARC	Inflow	PDR	For I	Refill	Refill	ARC
Month	m ³ /s <u>3</u> /	m ³ /s	m ³ /s	hm ³	hm^3	m ³ /s	$m^3/s \underline{4}/$	m ³ /s	hm ³	hm ³	hm ³	m ³ /s	m ³ /s <u>4</u> /	m ³ /s	hm ³	hm ³ <u>2</u> /	hm ³
July	207.29	77.87	129.41	346.6	1726.8	1599.74	1417.34	182.39	488.5	7262.7	8634.5	2514.60	1984.95	529.67	1418.7	488.5	8757.8
June	227.38	5.18	222.20	576.0	1380.2	1702.80	680.20	1022.61	2650.6	4962.7	8146.0	3240.36	1486.12	1754.26	4547.1	2650.6	7827.7
May	146.40	44.17	102.22	273.8	804.2	794.72	85.04	709.68	1900.8	1126.2	5495.4	1955.86	599.61	1356.26	3632.7	1900.8	5931.2
Apr2	32.20	10.45	21.75	28.2	530.4	204.39	84.95	119.44	154.8	0.0	3594.6	579.65	343.71	235.94	305.8	154.8	4199.4
Apr1	23.36	2.83	20.53	26.6	502.3	132.13	209.20	-77.08	-99.9	539.0	3439.8	341.13	251.79	89.34	115.8	-99.9	4048.4
Mar	15.70	2.83	12.88	34.5	475.7	91.12	84.98	6.14	16.5	1307.7	3539.7	222.24	203.57	18.69	50.1	16.5	3832.7
Feb	12.12	2.83	9.29	22.5	441.1	73.32	242.65	-169.33	-409.7	1887.6	3523.2	163.09	236.81	-73.74	-178.4	-409.7	3799.1
Jan	12.12	2.83	9.29	24.9	418.7	80.25	84.95	-4.70	-12.6	3337.4	3932.9	182.67	141.58	41.09	110.1	-1330.5	3567.9
Dec	13.05	2.83	10.22	27.4	393.8	100.00	84.95	15.04	40.3	5263.4	3945.5	183.49	141.58	41.91	112.3	-1883.6	2127.3
Nov	19.37	2.83	16.54	42.9	366.4	146.55	84.95	61.62	159.7	7147.0	3905.2	265.30	141.58	123.72	320.7	-1108.1	131.4
Oct	30.85	2.83	28.01	75.0	323.6	248.07	84.95	163.13	436.9	8255.1	3745.5	408.52	141.58	266.94	715.0	-379.5	0.0
Sep	65.41	2.83	62.58	162.2	248.5	653.55	84.95	568.60	1473.8	8634.5	3308.5	1098.88	141.58	957.31	2481.4	0.0	0.0
Aug2	109.73	2.83	106.90	147.8	86.3	1116.70	84.95	1031.75	1426.3	8634.5	1834.7	1748.31	141.58	1606.72	2221.2	0.0	0.0
Aug1	148.04	2.83	145.21	188.2	0.0	1478.39	84.95	1393.44	1805.9	8634.5	408.4	2314.16	141.58	2172.58	2815.7	8634.5	0.0

Notes on Exhibit 1 and Exhibit 1M:

- 1/ The Assured Refill Curve (ARC) indicates the end-of-month storage content required to assure refill of Canadian storage by 31 July based on 1931 historical monthly inflow. The monthly inflow at each reservoir is reduced by deducting the Power Discharge Requirements (PDR) and water required for refill, if any, at upstream reservoirs. The Entities may agree to revise the data upon the completion of the Refill Study by the Operating Committee.
- 2/ Upstream refill requirement: these values are computed by subtracting current month from previous month's higher of Mica's ARC or first critical rule curve (CRC1) except July value is Mica full minus previous month's higher of Mica's ARC or CRC1. CRC1 is shown in Exhibit 2.
- 3/ Inflows are from the 2000 Level Modified streamflow (Hydrosim file).
- $4/\,\,$ PDRs are from the 2005-06 AOP.

Exhibit 2 - First Critical Rule Curves (English & SI)

End-of-Month Usable Storage Content

		(Eng				`	SI) m ³)	
Month	Mica	Arrow	Duncan	Total	Mica	Arrow	Duncan	Total
August 15	3529.2	3579.6	705.8	7814.6	8634.5	8757.8	1726.8	19119.2
August 31	3529.2	3443.3	705.8	7678.3	8634.5	8424.4	1726.8	18785.7
September	3529.2	3005.8	694.7	7229.7	8634.5	7354.0	1699.7	17688.2
October	3374.1	2800.6	702.1	6876.8	8255.1	6851.9	1717.8	16824.8
November	2921.2	2530.9	687.8	6139.9	7147.0	6192.1	1682.8	15021.9
December	2151.3	2283.5	504.1	4938.9	5263.4	5586.8	1233.3	12083.5
January	1364.1	1213.7	404.6	2982.4	3337.4	2969.4	989.9	7296.7
February	771.5	927.0	234.3	1932.8	1887.6	2268.0	573.2	4728.8
March	534.5	567.3	142.9	1244.7	1307.7	1388.0	349.6	3045.3
April 15	220.3	566.7	140.1	927.1	539.0	1386.5	342.8	2268.2
April 30	0.0	548.7	135.0	683.7	0.0	1342.4	330.3	1672.7
May	460.3	1430.2	252.5	2143.0	1126.2	3499.1	617.8	5243.1
June	2028.4	3028.2	527.3	5583.9	4962.7	7408.8	1290.1	13661.6
July	2968.5	3579.4	674.1	7222.0	7262.7	8757.4	1649.3	17669.3

Source: First-year critical rule curves from the 2005-06 AOP.

Exhibit 3 - Second Critical Rule Curves (English & SI)

End-of-Month Usable Storage Content

		(Engli (ksfd			(SI) (hm ³)						
Month	Mica	Arrow	Duncan	Total	Mica	Arrow	Duncan	Total			
August 15	3529.2	3387.0	595.5	7511.7	8634.5	8286.6	1457.0	18378.1			
August 31	3264.8	3443.3	656.3	7364.4	7987.7	8424.4	1605.7	18017.7			
September	3063.8	2759.8	680.3	6503.9	7495.9	6752.1	1664.4	15912.4			
October	2052.4	2715.4	702.1	5469.9	5021.4	6643.5	1717.8	13382.7			
November	1842.0	1857.2	447.0	4146.2	4506.6	4543.8	1093.6	10144.1			
December	1277.0	1151.0	457.8	2885.8	3124.3	2816.0	1120.1	7060.4			
January	419.3	353.7	330.0	1103.0	1025.9	865.4	807.4	2698.6			
February	348.3	255.0	164.9	768.2	852.2	623.9	403.4	1879.5			
March	211.1	50.1	11.5	272.7	516.5	122.6	28.1	667.2			
April 15	220.3	139.8	34.8	394.9	539.0	342.0	85.1	966.2			
April 30	0.0	125.7	58.0	183.7	0.0	307.5	141.9	449.4			
May	393.8	1430.2	173.0	1997.0	963.5	3499.1	423.3	4885.9			
June	825.5	3028.2	374.6	4228.3	2019.7	7408.8	916.5	10345.0			
July	2651.6	3052.4	500.4	6204.4	6487.4	7468.0	1224.3	15179.7			

Adjusted for Crossover

Source: Second-year critical rule curves from the 2005-06 AOP, except when higher than the first-year critical rule curve use the first-year critical curve.

Exhibit 4 - Third Critical Rule Curves (English & SI)

End-of-Month Usable Storage Content

		(Englis (ksfd			(SI) (hm³)						
Month	Mica	Arrow	Duncan	Total	Mic	a Arrow	Duncan	Total			
August 15	2887.1	3191.6	499.7	6578.4	7063.	6 7808.6	1222.6	16094.7			
August 31	2895.4	3077.4	559.9	6532.7	7083.	9 7529.2	1369.9	15982.9			
September	2579.7	2759.8	626.2	5965.7	6311.	5 6752.1	1532.1	14595.7			
October	2052.4	2107.1	656.9	4816.4	5021.	4 5155.2	1607.2	11783.8			
November	1809.1	1787.3	404.4	4000.8	4426.	1 4372.8	989.4	9788.4			
December	1201.4	1151.0	258.4	2610.8	2939.	3 2816.0	632.2	6387.6			
January	419.3	353.7	230.0	1003.0	1025.	9 865.4	562.7	2453.9			
February	141.3	32.4	51.4	225.1	345.	7 79.3	125.8	550.7			
March	0.0	0.0	0.0	0.0	0.	0.0	0.0	0.0			
April 15	25.2	59.0	13.0	97.2	61.	7 144.3	31.8	237.8			
April 30	0.0	13.7	0.0	13.7	0.	0 33.5	0.0	33.5			
May	331.0	724.9	88.6	1144.5	809.	<u>8</u> 1773.5	216.8	2800.1			
June	825.5	2401.4	102.9	3329.8	2019.	7 5875.3	251.8	8146.7			
July	1358.9	3020.1	40.3	4419.3	3324.	7 7389.0	98.6	10812.3			

Adjusted for Crossover

Source: Third-year critical rule curves from the 2005-06 AOP.

Exhibit 5 - Fourth Critical Rule Curves (English & SI)

End-of-Month Usable Storage Content

		(Engl i (ksfd				(S (hn	á	
Month	Mica	Arrow	Duncan	Total	Mica	Arrow	Duncan	Total
August 15	1318.2	2935.7	20.0	4273.9	3225.1	7182.5	48.9	10456.5
August 31	1114.6	2647.3	2.0	3763.9	2727.0	6476.9	4.9	9208.8
September	829.4	2195.1	1.0	3025.5	2029.2	5370.5	2.4	7402.2
October	1030.8	1102.0	2.0	2134.8	2522.0	2696.2	4.9	5223.0
November	486.8	713.3	1.0	1201.1	1191.0	1745.2	2.4	2938.6
December	0.0	262.8	0.1	262.9	0.0	643.0	0.2	643.2
January	0.0	0.1	0.0	0.1	0.0	0.2	0.0	0.2
February	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: Fourth-year critical rule curves from the 2005-06AOP.

Exhibit 6 - Operating Rule Curve Lower Limit (English & SI)

End-of-Month Usable Storage Content

		(English) (ksfd)		(SI) (hm³)					
Month	Mica	Arrow	Duncan	Mica	Arrow	Duncan			
January	306.7	273.5	35.9	750.4	669.1	87.8			
February	50.9	45.7	4.3	124.5	111.8	10.5			
March	0.0	0.0	0.0	0.0	0.0	0.0			
Apr-15	0.2	0.4	0.0	0.5	1.0	0.0			

Source: Operating Rule Curve Lower Limits for Mica, Arrow, and Duncan are from the 2005-06 AOP.

Exhibit 7 - Variable Refill Curve Procedures (English)

The Variable Refill Curves (VRC) indicate the end-of-month storage content required to refill Canadian storage based on forecasts of natural inflow volume. The probable forecast volume at each reservoir is reduced by deducting the 95 percent confidence forecast error, Power Discharge Requirements (PDR), and water required for refill at upstream reservoirs based on the ORC. The Entities have agreed to limit the VRC to be no lower than the Variable Refill Curve Lower Limit (VRCLL), which is defined by studies that optimize power production during the refill period. The VRCLL's are a function of the unregulated January through July runoff volume at The Dalles, Oregon. The following schedule for PDR's and VRCLL's will apply when computing the VRC's during the period January 1 through June 1, unless the Operating Committee agrees to use updated study results.

POWER DISCHARGE REQUIREMENTS, IN CFS, AND VARIABLE REFILL CURVE LOWER LIMITS, IN KSFD, FOR JANUARY - JULY VOLUME RUNOFF OF THE COLUMBIA RIVER AT THE DALLES, OREGON

Project	Jan	Feb	Mar	Ap1	Ap2	May	Jun	Jul
Mica								
ARC PDR's	3000	8569	3001	7388	3000	3003	24021	50053
80 MAF PDR's	3000	5000	5000	5000	5000	5000	18000	38000
95 MAF PDR's	3000	3000	3000	3000	5000	5000	18000	38000
110 MAF PDR's	3000	3000	3000	3000	5000	5000	18000	38000
80 MAF VRCLL's	224.9	241.3	270.8	331.0	470.1	1460.8	2823.8	N/A
95 MAF VRCLL's	39.3	0.0	20.7	27.3	0.0	681.8	2297.2	N/A
110 MAF VRCLL's	11.9	0.0	0.0	0.0	3.7	658.7	1809.5	N/A
Distribution Factors	0.9750	0.9770	0.9740	0.9812	0.9650	0.7950	0.4950	N/A
Forecast Errors (ksfd)	652.9	510.3	465.3	444.4	444.4	360.4	360.4	N/A
Arrow								
ARC PDR's	5000	8363	7189	8892	12138	21175	52482	70098
80 MAF PDR's	5000	5000	5000	5000	5000	5000	54000	56000
95 MAF PDR's	5000	5000	5000	5000	5000	5000	54000	56000
110 MAF PDR's	5000	5000	5000	5000	5000	5000	54000	56000
80 MAF VRCLL's	138.7	211.9	378.4	553.0	833.0	2118.5	3039.6	N/A
95 MAF VRCLL's	14.6	0.2	18.9	32.1	26.7	1164.4	2953.5	N/A
110 MAF VRCLL's	2.0	0.0	17.2	0.0	4.7	900.0	2703.8	N/A
Distribution Factors – Total	0.9710	0.9747	0.9691	0.9741	0.9530	0.7483	0.4631	N/A
Forecast Errors (ksfd) – Total	1233.1	987.3	825.3	715.1	715.1	501.4	501.4	N/A
Distribution Factors – Local	0.9680	0.9730	0.9640	0.9680	0.9390	0.7020	0.4270	N/A
Forecast Errors (ksfd) - Local	761.8	632.8	504.9	403.2	403.2	341.8	341.8	N/A
Duncan								
ARC PDR's	100	100	100	100	369	1560	183	2750
80 MAF PDR's	100	100	100	100	100	1800	2000	3500
95 MAF PDR's	100	100	100	100	100	1800	2000	3500
110 MAF PDR's	100	100	100	100	100	1800	2000	3500
80 MAF VRCLL's	190.5	40.6	62.1	81.9	114.8	323.1	555.5	N/A
95 MAF VRCLL's	27.6	18.8	16.9	0.0	33.2	204.6	522.7	N/A
110 MAF VRCLL's	5.9	0.0	0.3	4.8	2.9	105.5	444.6	N/A
Distribution Factors	0.9720	0.9790	0.9740	0.9790	0.9570	0.7580	0.4690	N/A
Forecast Errors (ksfd)	118.4	109.0	97.5	88.1	88.1	73.3	73.3	N/A

Notes:

- (1) If the forecasted natural January through July volume runoff at The Dalles is less than 80 Maf, the Power Discharge Requirement in the 80 Maf schedule will be used. For intermediate forecasted volumes, the Power Discharge Requirement will be interpolated linearly between the values shown above.
- (2) PDR's and VRCLL's are from the 2005-06 AOP. Data may be revised upon completion of the Operating Committee Refill Studies. The Canadian Entity reserves the right to request changes to the revised data.

Exhibit 7M - Variable Refill Curve Procedures (SI)

The Variable Refill Curves (VRC) indicate the end-of-month storage content required to refill Canadian storage based on forecasts of natural inflow volume. The probable forecast volume at each reservoir is reduced by deducting the 95 percent confidence forecast error, Power Discharge Requirements (PDR), and water required for refill at upstream reservoirs based on the ORC. The Entities have agreed to limit the VRC to be no lower than the Variable Refill Curve Lower Limit (VRCLL), which is defined by studies that optimize power production during the refill period. The VRCLL's are a function of the unregulated January through July runoff volume at The Dalles, Oregon. The following schedule for PDR's and VRCLL's will apply when computing the VRC's during the period January 1 through June 1, unless the Operating Committee agrees to use updated study results.

POWER DISCHARGE REQUIREMENTS, IN m³/s,
AND VARIABLE REFILL CURVE LOWER LIMITS, IN hm³, FOR
JANUARY - JULY VOLUME RUNOFF OF THE COLUMBIA RIVER AT THE DALLES, OREGON

Project	Jan	Feb	Mar	Ap1	Ap2	May	Jun	Jul
Mica								
ARC PDR's	84.95	242.65	84.98	209.20	84.95	85.04	680.20	1417.34
98.68 km ³ PDR's	84.95	141.58	141.58	141.58	141.58	141.58	509.70	1076.04
117.18 km ³ PDR's	84.95	84.95	84.95	84.95	141.58	141.58	509.70	1076.04
135.69 km ³ PDR's	84.95	84.95	84.95	84.95	141.58	141.58	509.70	1076.04
98.68 km ³ VRCLL	550.2	590.4	662.5	809.8	1150.1	3574.0	6908.7	N/A
117.18 km³ VRCLL	96.2	0.0	50.6	66.8	0.0	1668.1	5620.3	N/A
135.69 km ³ VRCLL	29.1	0.0	0.0	0.0	9.1	1611.6	4427.1	N/A
Distribution Factors	0.9750	0.9770	0.9740	0.9812	0.9650	0.7950	0.4950	N/A
Forecast Errors (hm ³)	1597.4	1248.5	1138.4	1087.3	1087.3	881.8	881.8	N/A
Arrow								
ARC PDR's	141.58	236.81	203.57	251.79	343.71	599.61	1486.12	1984.95
98.68 km ³ PDR's	141.58	141.58	141.58	141.58	141.58	141.58	1529.11	1585.74
117.18 km ³ PDR's	141.58	141.58	141.58	141.58	141.58	141.58	1529.11	1585.74
135.69 km ³ PDR's	141.58	141.58	141.58	141.58	141.58	141.58	1529.11	1585.74
98.68 km ³ VRCLL	339.3	518.4	925.8	1353.0	2038.0	5183.1	7436.7	N/A
117.18 km ³ VRCLL	35.7	0.5	46.2	78.5	65.3	2848.8	7226.0	N/A
135.69 km ³ VRCLL	4.9	0.0	42.1	0.0	11.5	2201.9	6615.1	N/A
Distribution Factors - Total	0.9710	0.9747	0.9691	0.9741	0.9530	0.7483	0.4631	N/A
Forecast Errors (hm³) - Total	3016.9	2415.5	2019.2	1749.6	1749.6	1226.7	1226.7	N/A
Distribution Factors - Local	0.9680	0.9730	0.9640	0.9680	0.9390	0.7020	0.4270	N/A
Forecast Errors (hm ³) - Local	1863.8	1548.2	1235.3	986.5	986.5	836.2	836.2	N/A
Duncan								
ARC PDR's	2.83	2.83	2.83	2.83	10.45	44.17	5.18	77.87
98.68 km ³ PDR's	2.83	2.83	2.83	2.83	2.83	50.97	56.63	99.11
117.18 km ³ PDR's	2.83	2.83	2.83	2.83	2.83	50.97	56.63	99.11
135.69 km ³ PDR's	2.83	2.83	2.83	2.83	2.83	50.97	56.63	99.11
98.68 km³ VRCLL	466.1	99.3	151.9	200.4	280.9	790.5	1359.1	N/A
117.18 km ³ VRCLL	67.5	46.0	41.3	0.0	81.2	500.6	1278.8	N/A
135.69 km ³ VRCLL	14.4	0.0	0.7	11.7	7.1	258.1	1087.8	N/A
Distribution Factors	0.9720	0.9790	0.9740	0.9790	0.9570	0.7580	0.4690	N/A
Forecast Errors (hm ³)	289.7	266.7	238.5	215.5	215.5	179.3	179.3	N/A

Notes

- (1) If the forecasted natural January through July volume runoff at The Dalles is less than 98.7 km³, the Power Discharge Requirement in the 98.7 km³ schedule will be used. For intermediate forecasted volumes, the Power Discharge Requirement will be interpolated linearly between the values shown above.
- (2) PDR's and VRCLL's are from the 2005-06 AOP. Data may be revised upon completion of the Operating Committee Refill Studies. The Canadian Entity reserves the right to request changes to the revised data.

Exhibit 8 - Coordinated System Loads and Resources used in the TSR (ENERGY in aMW)

Month	Total Loads 1/	Other Resources 2/	Coordinated Hydro Load 3/
With	Total Loads 1/	Other Resources 21	Coordinated Hydro Lload 5/
August 15	20911	9813	11097
August 31	20833	9707	11125
September	20401	9592	10809
October	21068	11326	9742
November	23016	12199	10817
December	24625	11772	12853
January	25199	12464	12735
February	24129	12568	11561
March	22794	11519	11275
April 15	21566	11016	10550
April 30	21655	7593	14061
May	21028	6299	14729
June	20876	6837	14039
July	21052	8669	12383

Notes: (Data for columns 1, 2, and 3 are from Table 1A of the 2005-06 AOP/DDPB Document).

^{1/} The total loads are the Pacific Northwest regional firm load plus pumping (line 1).

^{2/} Other resources include total flows out (line 2j), total load served by flows-in (line 3e), total load served by non-step1 resources, without coordinated resources (line 4e - 4b), total thermal installations (line 6i), and hydro maintenance (line 7a). Other resources include hydro independents (1929 for example) which will be updated from the best data available.

^{3/} AOP 2005-06 Coordinated Hydro Model Load, line 7b.

Exhibit 9 – Duncan Reservoir Capacity Table (English) ksfd

ELEVATION IN											AVERAGE DIFFERENCE PER TENTH
FEET	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	FT
1892.	705.8										
1891.	696.9	697.8	698.7	699.6	700.5	701.3	702.2	703.1	704.0	704.9	0.89
1890.	688.0	688.9	689.8	690.7	691.6	692.4	693.3	694.2	695.1	696.0	0.89
1000.	000.0	000.7	007.0	070.7	071.0	0)2.4	073.3	074.2	075.1	070.0	0.07
1889.	679.2	680.1	681.0	681.8	682.7	683.6	684.5	685.4	686.2	687.1	0.88
1888.	670.4	671.3	672.2	673.0	673.9	674.8	675.7	676.6	677.4	678.3	0.88
1887.	661.5	662.4	663.3	664.2	665.1	665.9	666.8	667.7	668.6	669.5	0.89
1886.	652.8	653.7	654.5	655.4	656.3	657.1	658.0	658.9	659.8	660.6	0.87
1885.	644.0	644.9	645.8	646.6	647.5	648.4	649.3	650.2	651.0	651.9	0.88
1884.	635.3	636.2	637.0	637.9	638.8	639.6	640.5	641.4	642.3	643.1	0.87
1883.	626.6	627.5	628.3	629.2	630.1	630.9	631.8	632.7	633.6	634.4	0.87
1882.	617.9	618.8	619.6	620.5	621.4	622.2	623.1	624.0	624.9	625.7	0.87
1881.	609.2	610.1	610.9	611.8	612.7	613.5	614.4	615.3	616.2	617.0	0.87
1880.	600.6	601.5	602.3	603.2	604.0	604.9	605.8	606.6	607.5	608.3	0.86
1880.	000.0	001.5	002.3	003.2	004.0	004.9	005.8	000.0	007.3	000.5	0.80
1879.	592.0	592.9	593.7	594.6	595.4	596.3	597.2	598.0	598.9	599.7	0.86
1878.	583.4	584.3	585.1	586.0	586.8	587.7	588.6	589.4	590.3	591.1	0.86
1877.	574.8	575.7	576.5	577.4	578.2	579.1	580.0	580.8	581.7	582.5	0.86
1876.	566.3	567.1	568.0	568.8	569.7	570.5	571.4	572.2	573.1	573.9	0.85
1875.	557.8	558.6	559.5	560.3	561.2	562.0	562.9	563.7	564.6	565.4	0.85
1075.	227.0	220.0	003.0	200.2	201.2	002.0	002.9	00017	20.110	20211	0.00
1874.	549.3	550.1	551.0	551.8	552.7	553.5	554.4	555.2	556.1	556.9	0.85
1873.	540.9	541.7	542.6	543.4	544.3	545.1	545.9	546.8	547.6	548.5	0.84
1872.	532.4	533.2	534.1	534.9	535.8	536.6	537.5	538.3	539.2	540.0	0.85
1871.	524.0	524.8	525.7	526.5	527.4	528.2	529.0	529.9	530.7	531.6	0.84
1870.	515.7	516.5	517.4	518.2	519.0	519.8	520.7	521.5	522.3	523.2	0.83
1869.	507.3	508.1	509.0	509.8	510.7	511.5	512.3	513.2	514.0	514.9	0.84
1868.	499.0	499.8	500.7	501.5	502.3	503.1	504.0	504.8	505.6	506.5	0.83
1867.	490.7	491.5	492.4	493.2	494.0	494.8	495.7	496.5	497.3	498.2	0.83
1866.	482.4	483.2	484.1	484.9	485.7	486.5	487.4	488.2	489.0	489.9	0.83
1865.	474.2	475.0	475.8	476.7	477.5	478.3	479.1	479.9	480.8	481.6	0.82
1051	4550	1550		450.7	450.0	150.1	450.0	454.5	150 -	450.4	0.00
1864.	466.0	466.8	467.6	468.5	469.3	470.1	470.9	471.7	472.6	473.4	0.82
1863.	457.8	458.6	459.4	460.3	461.1	461.9	462.7	463.5	464.4	465.2	0.82
1862.	449.7	450.5	451.3	452.1	452.9	453.7	454.6	455.4	456.2	457.0	0.81
1861.	441.6	442.4	443.2	444.0	444.8	445.6	446.5	447.3	448.1	448.9	0.81
1860.	433.5	434.3	435.1	435.9	436.7	437.5	438.4	439.2	440.0	440.8	0.81
1859.	425.4	426.2	427.0	427.8	428.6	429.4	430.3	431.1	431.9	432.7	0.81
1858.	417.4	418.2	419.0	419.8	420.6	421.4	422.2	423.0	423.8	424.6	0.80
1857.	409.4	410.2	411.0	411.8	412.6	413.4	414.2	415.0	415.8	416.6	0.80
1856.	401.4	402.2	403.0	403.8	404.6	405.4	406.2	407.0	407.8	408.6	0.80
1855.	393.5	394.3	395.1	395.9	396.7	397.4	398.2	399.0	399.8	400.6	0.79
1854.	385.6	386.4	387.2	388.0	388.8	389.5	390.3	391.1	391.9	392.7	0.79
1853.	377.7	378.5	379.3	380.1	380.9	381.6	382.4	383.2	384.0	384.8	0.79
1852.	369.9	370.7	371.5	372.2	373.0	373.8	374.6	375.4	376.1	376.9	0.78
1851.	362.1	362.9	363.7	364.4	365.2	366.0	366.8	367.6	368.3	369.1	0.78
1850.	354.3	355.1	355.9	356.6	357.4	358.2	359.0	359.8	360.5	361.3	0.78

Exhibit 9 – Duncan Reservoir Capacity Table (English) ksfd

ELEVATION IN											AVERAGE DIFFERENCE PER TENTH
FEET	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	FT
1849.	346.6	347.4	348.1	348.9	349.7	350.4	351.2	352.0	352.8	353.5	0.77
1848.	338.9	339.7	340.4	341.2	342.0	342.7	343.5	344.3	345.1	345.8	0.77
1847.	331.2	332.0	332.7	333.5	334.3	335.0	335.8	336.6	337.4	338.1	0.77
1846.	323.6	324.4	325.1	325.9	326.6	327.4	328.2	328.9	329.7	330.4	0.76
1845.	316.0	316.8	317.5	318.3	319.0	319.8	320.6	321.3	322.1	322.8	0.76
1844.	308.5	309.2	310.0	310.7	311.5	312.2	313.0	313.7	314.5	315.2	0.75
1843.	300.9	301.7	302.4	303.2	303.9	304.7	305.5	306.2	307.0	307.7	0.76
1842.	293.5	294.2	295.0	295.7	296.5	297.2	297.9	298.7	299.4	300.2	0.74
1841.	286.0	286.7	287.5	288.2	289.0	289.7	290.5	291.2	292.0	292.7	0.75
1840.	278.6	279.3	280.1	280.8	281.6	282.3	283.0	283.8	284.5	285.3	0.74
1839.	271.2	271.9	272.7	273.4	274.2	274.9	275.6	276.4	277.1	277.9	0.74
1838.	263.9	264.6	265.4	266.1	266.8	267.5	268.3	269.0	269.7	270.5	0.73
1837.	256.6	257.3	258.1	258.8	259.5	260.2	261.0	261.7	262.4	263.2	0.73
1836.	249.4	250.1	250.8	251.6	252.3	253.0	253.7	254.4	255.2	255.9	0.72
1835.	242.2	242.9	243.6	244.4	245.1	245.8	246.5	247.2	248.0	248.7	0.72
1834.	235.0	235.7	236.4	237.2	237.9	238.6	239.3	240.0	240.8	241.5	0.72
1833.	227.9	228.6	229.3	230.0	230.7	231.4	232.2	232.9	233.6	234.3	0.71
1832.	220.8	221.5	222.2	222.9	223.6	224.3	225.1	225.8	226.5	227.2	0.71
1831.	213.8	214.5	215.2	215.9	216.6	217.3	218.0	218.7	219.4	220.1	0.70
1830.	206.8	207.5	208.2	208.9	209.6	210.3	211.0	211.7	212.4	213.1	0.70
1829.	199.9	200.6	201.3	202.0	202.7	203.3	204.0	204.7	205.4	206.1	0.69
1828.	193.0	193.7	194.4	195.1	195.8	196.4	197.1	197.8	198.5	199.2	0.69
1827.	186.1	186.8	187.5	188.2	188.9	189.5	190.2	190.9	191.6	192.3	0.69
1826.	179.3	180.0	180.7	181.3	182.0	182.7	183.4	184.1	184.7	185.4	0.68
1825.	172.6	173.3	173.9	174.6	175.3	175.9	176.6	177.3	178.0	178.6	0.67
1824.	165.9	166.6	167.2	167.9	168.6	169.2	169.9	170.6	171.3	171.9	0.67
1823.	159.2	159.9	160.5	161.2	161.9	162.5	163.2	163.9	164.6	165.2	0.67
1822.	152.6	153.3	153.9	154.6	155.2	155.9	156.6	157.2	157.9	158.5	0.66
1821.	146.1	146.7	147.4	148.0	148.7	149.3	150.0	150.6	151.3	151.9	0.65
1820.	139.6	140.2	140.9	141.5	142.2	142.8	143.5	144.1	144.8	145.4	0.65
1819.	133.2	133.8	134.5	135.1	135.8	136.4	137.0	137.7	138.3	139.0	0.64
1818.	126.8	127.4	128.1	128.7	129.4	130.0	130.6	131.3	131.9	132.6	0.64
1817.	120.5	121.1	121.8	122.4	123.0	123.6	124.3	124.9	125.5	126.2	0.63
1816.	114.3	114.9	115.5	116.2	116.8	117.4	118.0	118.6	119.3	119.9	0.62
1815.	108.1	108.7	109.3	110.0	110.6	111.2	111.8	112.4	113.1	113.7	0.62
1814.	102.0	102.6	103.2	103.8	104.4	105.0	105.7	106.3	106.9	107.5	0.61
1813.	96.0	96.6	97.2	97.8	98.4	99.0	99.6	100.2	100.8	101.4	0.60
1812.	90.0	90.6	91.2	91.8	92.4	93.0	93.6	94.2	94.8	95.4	0.60
1811.	84.1	84.7	85.3	85.9	86.5	87.0	87.6	88.2	88.8	89.4	0.59
1810.	78.3	78.9	79.5	80.0	80.6	81.2	81.8	82.4	82.9	83.5	0.58

Exhibit 9 – Duncan Reservoir Capacity Table (English) ksfd

											AVERAGE
ELEVATION											DIFFERENCE
IN			•			_		_			PER TENTH
FEET	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	FT
1809.	72.5	73.1	73.7	74.2	74.8	75.4	76.0	76.6	77.1	77.7	0.58
1808.	66.9	67.5	68.0	68.6	69.1	69.7	70.3	70.8	71.4	71.9	0.56
1807.	61.3	61.9	62.4	63.0	63.5	64.1	64.7	65.2	65.8	66.3	0.56
1806.	55.8	56.3	56.9	57.4	58.0	58.5	59.1	59.6	60.2	60.7	0.55
1805.	50.4	50.9	51.5	52.0	52.6	53.1	53.6	54.2	54.7	55.3	0.54
1804.	45.1	45.6	46.2	46.7	47.2	47.7	48.3	48.8	49.3	49.9	0.53
1803.	39.9	40.4	40.9	41.5	42.0	42.5	43.0	43.5	44.1	44.6	0.52
1802.	34.8	35.3	35.8	36.3	36.8	37.3	37.9	38.4	38.9	39.4	0.51
1801.	29.8	30.3	30.8	31.3	31.8	32.3	32.8	33.3	33.8	34.3	0.50
1800.	25.0	25.5	26.0	26.4	26.9	27.4	27.9	28.4	28.8	29.3	0.48
1799.	20.3	20.8	21.2	21.7	22.2	22.6	23.1	23.6	24.1	24.5	0.47
1798.	15.7	16.2	16.6	17.1	17.5	18.0	18.5	18.9	19.4	19.8	0.46
1797.	11.3	11.7	12.2	12.6	13.1	13.5	13.9	14.4	14.8	15.3	0.44
1796.	7.1	7.5	7.9	8.4	8.8	9.2	9.6	10.0	10.5	10.9	0.42
1795.	3.0	3.4	3.8	4.2	4.6	5.0	5.5	5.9	6.3	6.7	0.41
1794.			0.0	0.4	0.8	1.1	1.5	1.9	2.3	2.6	0.37

Exhibit 9M– Duncan Reservoir Capacity Table (SI) hm³

ELEVATION IN METERS	.00	.03	.06	.09	.12	.15	.18	.21	.24	.27	AVERAGE DIFFERENCE PER 3/100 M
WILTERS											3/100 111
576.68	1726.8										
576.38	1705.0	1707.2	1709.4	1711.6	1713.8	1715.8	1718.0	1720.2	1722.4	1724.6	2.18
576.07	1683.3	1685.5	1687.7	1689.9	1692.1	1694.0	1696.2	1698.4	1700.6	1702.8	2.18
5,010,	1000.0	100010	100717	100,1,	10,211	1070	1070.2	10,0	1,00.0	1,02.0	2.10
575.77	1661.7	1663.9	1666.1	1668.1	1670.3	1672.5	1674.7	1676.9	1678.9	1681.1	2.15
575.46	1640.2	1642.4	1644.6	1646.6	1648.8	1651.0	1653.2	1655.4	1657.3	1659.5	2.15
575.16	1618.4	1620.6	1622.8	1625.0	1627.2	1629.2	1631.4	1633.6	1635.8	1638.0	2.18
574.85	1597.1	1599.3	1601.3	1603.5	1605.7	1607.7	1609.9	1612.1	1614.3	1616.2	2.13
574.55	1575.6	1577.8	1580.0	1582.0	1584.2	1586.4	1588.6	1590.8	1592.7	1594.9	2.15
574.24	1554.3	1556.5	1558.5	1560.7	1562.9	1564.8	1567.0	1569.2	1571.5	1573.4	2.13
573.94	1533.0	1535.2	1537.2	1539.4	1541.6	1543.6	1545.8	1548.0	1550.2	1552.1	2.13
573.63	1511.8	1514.0	1515.9	1518.1	1520.3	1522.3	1524.5	1526.7	1528.9	1530.8	2.13
573.33	1490.5	1492.7	1494.6	1496.8	1499.0	1501.0	1503.2	1505.4	1507.6	1509.6	2.13
573.03	1469.4	1471.6	1473.6	1475.8	1477.7	1479.9	1482.2	1484.1	1486.3	1488.3	2.10
	1110.1	4.50 -				4.470.0		44504			2.10
572.72	1448.4	1450.6	1452.5	1454.7	1456.7	1458.9	1461.1	1463.1	1465.3	1467.2	2.10
572.42	1427.3	1429.5	1431.5	1433.7	1435.7	1437.9	1440.1	1442.0	1444.2	1446.2	2.10
572.11	1406.3	1408.5	1410.5	1412.7	1414.6	1416.8	1419.0	1421.0	1423.2	1425.1	2.10
571.81	1385.5	1387.5	1389.7	1391.6	1393.8	1395.8	1398.0	1399.9	1402.1	1404.1	2.08
571.50	1364.7	1366.7	1368.9	1370.8	1373.0	1375.0	1377.2	1379.1	1381.4	1383.3	2.08
571.20	1343.9	1345.9	1348.1	1350.0	1352.2	1354.2	1356.4	1358.4	1360.6	1362.5	2.08
570.89	1323.4	1325.3	1327.5	1329.5	1331.7	1333.6	1335.6	1337.8	1339.8	1342.0	2.06
570.59	1302.6	1304.5	1306.7	1308.7	1310.9	1312.8	1315.0	1317.0	1319.2	1342.0	2.08
570.28	1282.0	1284.0	1286.2	1288.1	1290.3	1292.3	1294.3	1296.5	1298.4	1300.6	2.06
569.98	1261.7	1263.7	1265.9	1267.8	1269.8	1271.7	1273.9	1275.9	1277.9	1280.1	2.03
307.76	1201.7	1203.7	1203.7	1207.0	1207.0	12/1./	1273.7	1273.7	12//.)	1200.1	2.03
569.67	1241.2	1243.1	1245.3	1247.3	1249.5	1251.4	1253.4	1255.6	1257.6	1259.8	2.06
569.37	1220.9	1222.8	1225.0	1227.0	1228.9	1230.9	1233.1	1235.0	1237.0	1239.2	2.03
569.06	1200.5	1202.5	1204.7	1206.7	1208.6	1210.6	1212.8	1214.7	1216.7	1218.9	2.03
568.76	1180.2	1182.2	1184.4	1186.4	1188.3	1190.3	1192.5	1194.4	1196.4	1198.6	2.03
568.45	1160.2	1162.1	1164.1	1166.3	1168.3	1170.2	1172.2	1174.1	1176.3	1178.3	2.01
568.15	1140.1	1142.1	1144.0	1146.2	1148.2	1150.1	1152.1	1154.1	1156.3	1158.2	2.01
567.84	1120.1	1122.0	1124.0	1126.2	1128.1	1130.1	1132.0	1134.0	1136.2	1138.2	2.01
567.54	1100.2	1102.2	1104.2	1106.1	1108.1	1110.0	1112.2	1114.2	1116.1	1118.1	1.98
567.23	1080.4	1082.4	1084.3	1086.3	1088.2	1090.2	1092.4	1094.4	1096.3	1098.3	1.98
566.93	1060.6	1062.6	1064.5	1066.5	1068.4	1070.4	1072.6	1074.5	1076.5	1078.5	1.98
566.62	1040.8	1042.7	1044.7	1046.7	1048.6	1050.6	1052.8	1054.7	1056.7	1058.6	1.98
566.32	1021.2	1023.2	1025.1	1027.1	1029.0	1031.0	1033.0	1034.9	1036.9	1038.8	1.96
566.01	1001.6	1003.6	1005.6	1007.5	1009.5	1011.4	1013.4	1015.3	1017.3	1019.3	1.96
565.71	982.1	984.0	986.0	987.9	989.9	991.9	993.8	995.8	997.7	999.7	1.96
565.41	962.7	964.7	966.7	968.6	970.6	972.3	974.2	976.2	978.2	980.1	1.93
565.10	943.4	945.4	947.3	949.3	951.2	953.0	954.9	956.9	958.8	960.8	1.93
564.80	943.4	926.0	928.0	930.0	931.2	933.6	934.9	930.9	939.5	941.5	1.93
564.49	905.0	907.0	908.9	910.6	912.6	914.5	916.5	918.5	920.2	922.1	1.91
564.19	885.9	887.9	889.8	891.5	893.5	895.5	897.4	899.4	901.1	903.0	1.91
563.88	866.8	868.8	870.7	872.5	874.4	876.4	878.3	880.3	882.0	884.0	1.91
505.00	0.00.0	0.00.0	070.7	072.3	0,7.7	0,0.4	0,0.5	000.5	002.0	007.0	1./1

Exhibit 9M– Duncan Reservoir Capacity Table (SI) $${\rm hm}^3$$

ELEVATION IN											AVERAGE DIFFERENCE PER
METERS	.00	.03	.06	.09	.12	.15	.18	.21	.24	.27	3/100 M
563.58	848.0	849.9	851.7	853.6	855.6	857.3	859.2	861.2	863.2	864.9	1.88
563.27	829.2	831.1	832.8	834.8	836.7	838.4	840.4	842.4	844.3	846.0	1.88
562.97	810.3	812.3	814.0	815.9	817.9	819.6	821.6	823.5	825.5	827.2	1.88
562.66	791.7	793.7	795.4	797.3	799.1	801.0	803.0	804.7	806.6	808.4	1.86
562.36	773.1	775.1	776.8	778.8	780.5	782.4	784.4	786.1	788.0	789.8	1.86
5.62.05	754.0	7565	750.4	760.2	762.1	762.0	765.0	767.5	760.5	771.0	1.02
562.05	754.8	756.5	758.4	760.2	762.1	763.8	765.8	767.5	769.5	771.2	1.83
561.75	736.2	738.1	739.9	741.8	743.5	745.5	747.4	749.1	751.1	752.8	1.86
561.44	718.1	719.8	721.7	723.5	725.4	727.1	728.8	730.8	732.5	734.5	1.81
561.14	699.7	701.4	703.4	705.1	707.1	708.8	710.7	712.4	714.4	716.1	1.83
560.83	681.6	683.3	685.3	687.0	689.0	690.7	692.4	694.3	696.1	698.0	1.81
560.53	663.5	665.2	667.2	668.9	670.9	672.6	674.3	676.2	678.0	679.9	1.81
560.22	645.7	647.4	649.3	651.0	652.8	654.5	656.4	658.1	659.8	661.8	1.79
559.92	627.8	629.5	631.5	633.2	634.9	636.6	638.6	640.3	642.0	643.9	1.79
559.61	610.2	611.9	613.6	615.6	617.3	619.0	620.7	622.4	624.4	626.1	1.76
559.31	592.6	594.3	596.0	597.9	599.7	601.4	603.1	604.8	606.8	608.5	1.76
559.00	575.0	576.7	578.4	580.3	582.0	583.8	585.5	587.2	589.1	590.9	1.76
558.70	557.6	559.3	561.0	562.7	564.4	566.1	568.1	569.8	571.5	573.2	1.74
558.39	540.2	541.9	543.6	545.3	547.1	548.8	550.7	552.4	554.2	555.9	1.74
558.09	523.1	524.8	526.5	528.2	529.9	531.6	533.4	535.1	536.8	538.5	1.71
557.79	506.0	507.7	509.4	511.1	512.8	514.5	516.2	517.9	519.7	521.4	1.71
557.48	489.1	490.8	492.5	494.2	495.9	497.4	499.1	500.8	502.5	504.2	1.69
557.18	472.2	473.9	475.6	477.3	479.0	480.5	482.2	483.9	485.7	487.4	1.69
556.87	455.3	457.0	458.7	460.5	462.2	463.6	465.3	467.1	468.8	470.5	1.69
556.57	438.7	440.4	442.1	443.6	445.3	447.0	448.7	450.4	451.9	453.6	1.66
556.26	422.3	424.0	425.5	427.2	428.9	430.4	432.1	433.8	435.5	437.0	1.64
555.96	405.9	407.6	409.1	410.8	412.5	414.0	415.7	417.4	419.1	420.6	1.64
555.65	389.5	391.2	392.7	394.4	396.1	397.6	399.3	401.0	402.7	404.2	1.64
555.35	373.4	375.1	376.5	378.2	379.7	381.4	383.1	384.6	386.3	387.8	1.61
555.04	357.4	358.9	360.6	362.1	363.8	365.3	367.0	368.5	370.2	371.6	1.59
554.74	341.5	343.0	344.7	346.2	347.9	349.4	351.1	352.6	354.3	355.7	1.59
554.43	325.9	327.4	329.1	330.5	332.2	333.7	335.2	336.9	338.4	340.1	1.57
554.13	310.2	311.7	313.4	314.9	316.6	318.1	319.5	321.2	322.7	324.4	1.57
553.82	294.8	296.3	298.0	299.5	300.9	302.4	304.1	305.6	307.0	308.8	1.54
553.52	279.6	281.1	282.6	284.3	285.8	287.2	288.7	290.2	291.9	293.3	1.52
553.21	264.5	265.9	267.4	269.1	270.6	272.1	273.5	275.0	276.7	278.2	1.52
552.91	249.6	251.0	252.5	254.0	255.4	256.9	258.6	260.1	261.5	263.0	1.49
552.60	234.9	236.3	237.8	239.3	240.7	242.2	243.7	245.1	246.6	248.1	1.47
552.30	220.2	221.7	223.1	224.6	226.1	227.5	229.0	230.5	231.9	233.4	1.47
551.99	205.8	207.2	208.7	210.2	211.6	212.9	214.3	215.8	217.3	218.7	1.44
551.69	191.6	193.0	194.5	195.7	197.2	198.7	200.1	201.6	202.8	204.3	1.42

Exhibit 9M– Duncan Reservoir Capacity Table (SI) $$\operatorname{hm}^3$$

ELEVATION IN METERS	.00	.03	.06	.09	.12	.15	.18	.21	.24	.27	AVERAGE DIFFERENCE PER 3/100 M
551.38	177.4	178.8	180.3	181.5	183.0	184.5	185.9	187.4	188.6	190.1	1.42
551.08	163.7	165.1	166.4	167.8	169.1	170.5	172.0	173.2	174.7	175.9	1.37
550.77	150.0	151.4	152.7	154.1	155.4	156.8	158.3	159.5	161.0	162.2	1.37
550.47	136.5	137.7	139.2	140.4	141.9	143.1	144.6	145.8	147.3	148.5	1.35
550.17	123.3	124.5	126.0	127.2	128.7	129.9	131.1	132.6	133.8	135.3	1.32
	110.3	111.6	113.0	114.3	115.5	116.7	118.2	119.4	120.6	122.1	1.30
549.56	97.6	98.8	100.1	101.5	102.8	104.0	105.2	106.4	107.9	109.1	1.27
549.25	85.1	86.4	87.6	88.8	90.0	91.3	92.7	93.9	95.2	96.4	1.25
548.95	72.9	74.1	75.4	76.6	77.8	79.0	80.2	81.5	82.7	83.9	1.22
548.64	61.2	62.4	63.6	64.6	65.8	67.0	68.3	69.5	70.5	71.7	1.17
548.34	49.7	50.9	51.9	53.1	54.3	55.3	56.5	57.7	59.0	59.9	1.15
548.03	38.4	39.6	40.6	41.8	42.8	44.0	45.3	46.2	47.5	48.4	1.13
547.73	27.6	28.6	29.8	30.8	32.1	33.0	34.0	35.2	36.2	37.4	1.08
547.42	17.4	18.3	19.3	20.6	21.5	22.5	23.5	24.5	25.7	26.7	1.03
547.42	17.4	18.3	19.3	20.6	21.5	22.5	23.5	24.5	25.7	26.7	1.03
546.81			0.0	1.0	2.0	2.7	3.7	4.6	5.6	6.4	0.91

Exhibit 10 – Arrow Reservoir Capacity Table (English) ksfd

					KSI	a					
ELEVATION IN FEET	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	AVERAGE DIFFERENCE PER TENTH FT
1444.	3579.6										
		2520.6	2527.2	25227	2540.2	2546.0	2552.4	2550.0	25665	2572.0	(55
1443.	3514.1	3520.6	3527.2	3533.7	3540.3	3546.8	3553.4	3559.9	3566.5	3573.0	6.55
1442.	3448.9	3455.4	3461.9	3468.5	3475.0	3481.5	3488.0	3494.5	3501.1	3507.6	6.52
1441.	3384.0	3390.5	3397.0	3403.5	3410.0	3416.4	3422.9	3429.4	3435.9	3442.4	6.49
1440.	3319.5	3325.9	3332.4	3338.8	3345.3	3351.7	3358.2	3364.6	3371.1	3377.5	6.45
1439.	3255.2	3261.6	3268.1	3274.5	3280.9	3287.3	3293.8	3300.2	3306.6	3313.1	6.43
1438.	3191.4	3197.8	3204.2	3210.5	3216.9	3223.3	3229.7	3236.1	3242.4	3248.8	6.38
1437.	3127.8	3134.2	3140.5	3146.9	3153.2	3159.6	3166.0	3172.3	3178.7	3185.0	6.36
1436.	3064.6	3070.9	3077.2	3083.6	3089.9	3096.2	3102.5	3108.8	3115.2	3121.5	6.32
1435.	3001.7	3008.0	3014.3	3020.6	3026.9	3033.1	3039.4	3045.7	3052.0	3058.3	6.29
1434.	2939.2	2945.4	2951.7	2957.9	2964.2	2970.4	2976.7	2982.9	2989.2	2995.4	6.25
1433.	2877.0	2883.2	2889.4	2895.7	2901.9	2908.1	2914.3	2920.5	2926.8	2933.0	6.22
1432.	2815.1	2821.3	2827.5	2833.7	2839.9	2846.0	2852.2	2858.4	2864.6	2870.8	6.19
1431.	2753.5	2759.7	2765.8	2772.0	2778.1	2784.3	2790.5	2796.6	2802.8	2808.9	6.16
1430.	2692.3	2698.4	2704.5	2710.7	2716.8	2722.9	2729.0	2735.1	2741.3	2747.4	6.12
1429.	2631.5	2637.6	2643.7	2649.7	2655.8	2661.9	2668.0	2674.1	2680.1	2686.2	6.08
1428.	2570.9	2577.0	2583.0	2589.1	2595.1	2601.2	2607.3	2613.3	2619.4	2625.4	6.06
1427.	2510.7	2516.7	2522.7	2528.8	2534.8	2540.8	2546.8	2552.8	2558.9	2564.9	6.02
1426.	2450.8	2456.8	2462.8	2468.8	2474.8	2480.7	2486.7	2492.7	2498.7	2504.7	5.99
1425.	2391.2	2397.2	2403.1	2409.1	2415.0	2421.0	2427.0	2432.9	2438.9	2444.8	5.96
1424.	2331.9	2337.8	2343.8	2240.7	2255 6	2361.5	2367.5	2373.4	2379.3	2385.3	5.93
1424. 1423.	2331.9	2337.8	2343.6	2349.7 2290.5	2355.6	2302.3	2308.3	2314.2	2379.3	2326.0	5.91
1423. 1422.		2220.0			2296.4	2243.4					5.87
1422. 1421.	2214.1	2161.5	2225.8	2231.7	2237.6	2184.9	2249.3 2190.7	2255.2 2196.6	2261.1	2266.9	5.84
	2155.7		2167.4 2109.3	2173.2	2179.1				2202.4	2208.3	5.80
1420.	2097.7	2103.5	2109.3	2115.1	2120.9	2126.7	2132.5	2138.3	2144.1	2149.9	3.80
1419.	2040.1	2045.9	2051.6	2057.4	2063.1	2068.9	2074.7	2080.4	2086.2	2091.9	5.76
1418.	1982.9	1988.6	1994.3	2000.1	2005.8	2011.5	2017.2	2022.9	2028.7	2034.4	5.72
1417.	1926.1	1931.8	1937.5	1943.1	1948.8	1954.5	1960.2	1965.9	1971.5	1977.2	5.68
1416.	1869.6	1875.2	1880.9	1886.5	1892.2	1897.8	1903.5	1909.1	1914.8	1920.4	5.65
1415.	1813.5	1819.1	1824.7	1830.3	1835.9	1841.5	1847.2	1852.8	1858.4	1864.0	5.61
1414.	1757.8	1763.4	1768.9	1774.5	1780.1	1785.6	1791.2	1796.8	1802.4	1807.9	5.57
1413.	1702.4	1707.9	1713.5	1719.0	1724.6	1730.1	1735.6	1741.2	1746.7	1752.3	5.54
1412.	1647.4	1652.9	1658.4	1663.9	1669.4	1674.9	1680.4	1685.9	1691.4	1696.9	5.50
1411.	1592.7	1598.2	1603.6	1609.1	1614.6	1620.0	1625.5	1631.0	1636.5	1641.9	5.47
1410.	1538.4	1543.8	1549.3	1554.7	1560.1	1565.5	1571.0	1576.4	1581.8	1587.3	5.43
1400	1404 5	1490.0	1405.2	1500.7	1506 1	1511 4	15160	1500.0	1507.6	1522.0	£ 20
1409. 1408.	1484.5	1489.9	1495.3	1500.7	1506.1	1511.4 1457.7	1516.8	1522.2 1468.4	1527.6 1473.8	1533.0	5.39 5.36
	1430.9	1436.3	1441.6	1447.0	1452.3		1463.1			1479.1	
1407.	1377.7	1383.0	1388.3	1393.7	1399.0	1404.3	1409.6	1414.9	1420.3	1425.6	5.32
1406.	1324.7	1330.0	1335.3	1340.6	1345.9	1351.2	1356.5	1361.8	1367.1	1372.4	5.30
1405.	1272.1	1277.4	1282.6	1287.9	1293.1	1298.4	1303.7	1308.9	1314.2	1319.4	5.26

Exhibit 10 – Arrow Reservoir Capacity Table (English) ksfd

ELEVATION IN FEET	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	AVERAGE DIFFERENCE PER TENTH FT
1404.	1219.5	1224.8	1230.0	1235.3	1240.5	1245.8	1251.1	1256.3	1261.6	1266.8	5.26
1403.	1167.3	1172.5	1177.7	1183.0	1188.2	1193.4	1198.6	1203.8	1209.1	1214.3	5.22
1402.	1115.4	1120.6	1125.8	1131.0	1136.2	1141.3	1146.5	1151.7	1156.9	1162.1	5.19
1401.	1063.9	1069.0	1074.2	1079.3	1084.5	1089.6	1094.8	1099.9	1105.1	1110.2	5.15
1400.	1012.8	1017.9	1023.0	1028.1	1033.2	1038.3	1043.5	1048.6	1053.7	1058.8	5.11
1399.	962.5	967.5	972.6	977.6	982.6	987.6	992.7	997.7	1002.7	1007.8	5.03
1398.	912.7	917.7	922.7	927.6	932.6	937.6	942.6	947.6	952.5	957.5	4.98
1397.	863.2	868.1	873.1	878.0	883.0	887.9	892.9	897.8	902.8	907.7	4.95
1396.	814.1	819.0	823.9	828.8	833.7	838.6	843.6	848.5	853.4	858.3	4.91
1395	765.2	770.1	775.0	779.9	784.8	789.6	794.5	799.4	804.3	809.2	4.89
1394.	716.2	721.1	726.0	730.9	735.8	740.7	745.6	750.5	755.4	760.3	4.90
1393.	667.5	672.4	677.2	682.1	687.0	691.8	696.7	701.6	706.5	711.3	4.87
1393.	619.3	624.1	628.9	633.8	638.6	643.4	648.2	653.0	657.9	662.7	4.82
1391.	571.5	576.3	581.1	585.8	590.6	595.4	600.2	605.0	609.7	614.5	4.82
1391.	524.2	528.9	533.7	538.4	543.1	547.8	552.6	557.3	562.0	566.8	4.73
1390.	324.2	320.9	333.1	336.4	343.1	347.6	332.0	331.3	302.0	300.8	4.73
1389.	477.9	482.5	487.2	491.8	496.4	501.0	505.7	510.3	514.9	519.6	4.63
1388.	432.3	436.9	441.4	446.0	450.5	455.1	459.7	464.2	468.8	473.3	4.56
1387.	387.2	391.7	396.2	400.7	405.2	409.7	414.3	418.8	423.3	427.8	4.51
1386.	342.6	347.1	351.5	356.0	360.4	364.9	369.4	373.8	378.3	382.7	4.46
1385.	298.5	302.9	307.3	311.7	316.1	320.5	325.0	329.4	333.8	338.2	4.41
1384.	254.6	259.0	263.4	267.8	272.2	276.5	280.9	285.3	289.7	294.1	4.39
1383.	211.2	215.5	219.9	224.2	228.6	232.9	237.2	241.6	245.9	250.3	4.34
1382.	168.4	172.7	177.0	181.2	185.5	189.8	194.1	198.4	202.6	206.9	4.28
1381.	126.1	130.3	134.6	138.8	143.0	147.2	151.5	155.7	159.9	164.2	4.23
1380.	84.3	88.5	92.7	96.8	101.0	105.2	109.4	113.6	117.7	121.9	4.18
1300.	04.5	00.5	72.1	70.0	101.0	103.2	107.4	113.0	117.7	121.)	4.10
1379.	43.2	47.3	51.4	55.5	59.6	63.7	67.9	72.0	76.1	80.2	4.11
1378.	2.7	6.7	10.8	14.8	18.9	22.9	27.0	31.0	35.1	39.1	4.05
1377.										0.0	2.70

Exhibit 10M – Arrow Reservoir Capacity Table (SI) $$\operatorname{hm}^3$$

ELEVATION IN METERS	.00	.03	.06	.09	.12	.15	.18	.21	.24	.27	AVERAGE DIFFERENCE PER 3/100 M
440.13	8757.8										
439.83	8597.6	8613.5	8629.6	8645.6	8661.7	8677.6	8693.7	8709.7	8725.8	8741.7	16.03
439.52	8438.1	8454.0	8469.9	8486.0	8501.9	8517.8	8533.7	8549.6	8565.8	8581.7	15.95
439.22	8279.3	8295.2	8311.1	8327.0	8342.9	8358.6	8374.5	8390.4	8406.3	8422.2	15.88
438.91	8121.5	8137.1	8153.0	8168.7	8184.6	8200.3	8216.2	8231.8	8247.7	8263.4	15.78
438.61	7964.2	7979.8	7995.7	8011.4	8027.0	8042.7	8058.6	8074.3	8089.9	8105.8	15.73
438.30	7808.1	7823.7	7839.4	7854.8	7870.5	7886.1	7901.8	7917.4	7932.9	7948.5	15.61
438.00	7652.5	7668.1	7683.5	7699.2	7714.6	7730.3	7745.9	7761.3	7777.0	7792.4	15.56
437.69	7497.9	7513.3	7528.7	7544.3	7559.7	7575.2	7590.6	7606.0	7621.6	7637.1	15.46
437.39	7344.0	7359.4	7374.8	7390.2	7405.6	7420.8	7436.2	7451.6	7467.0	7482.4	15.39
437.08	7191.0	7206.2	7221.6	7236.8	7252.2	7267.4	7282.8	7298.0	7313.4	7328.5	15.29
436.78	7038.9	7054.0	7069.2	7084.6	7099.8	7115.0	7130.1	7145.3	7160.7	7175.9	15.22
436.47	6887.4	6902.6	6917.8	6932.9	6948.1	6963.0	6978.2	6993.4	7008.5	7023.7	15.14
436.17	6736.7	6751.9	6766.8	6782.0	6796.9	6812.1	6827.2	6842.2	6857.3	6872.3	15.07
435.86	6587.0	6601.9	6616.8	6632.0	6646.9	6661.8	6676.8	6691.7	6706.9	6721.8	14.97
435.56	6438.2	6453.2	6468.1	6482.8	6497.7	6512.6	6527.5	6542.5	6557.1	6572.1	14.88
435.26	6290.0	6304.9	6319.6	6334.5	6349.2	6364.1	6379.0	6393.7	6408.6	6423.3	14.83
434.95	6142.7	6157.4	6172.0	6187.0	6201.6	6216.3	6231.0	6245.7	6260.6	6275.3	14.73
434.65	5996.1	6010.8	6025.5	6040.2	6054.8	6069.3	6084.0	6098.6	6113.3	6128.0	14.66
434.34	5850.3	5865.0	5879.4	5894.1	5908.5	5923.2	5937.9	5952.3	5967.0	5981.4	14.58
434.04	5705.2	5719.7	5734.3	5748.8	5763.2	5777.6	5792.3	5806.8	5821.2	5835.9	14.51
433.73	5560.6	5575.1	5589.5	5603.9	5618.4	5632.8	5647.5	5661.9	5676.4	5690.8	14.46
433.43	5417.0	5431.5	5445.6	5460.1	5474.5	5488.7	5503.1	5517.6	5532.0	5546.2	14.36
433.12	5274.1	5288.3	5302.8	5317.0	5331.4	5345.6	5359.8	5374.2	5388.4	5402.8	14.29
432.82	5132.2	5146.4	5160.6	5174.8	5189.0	5203.2	5217.4	5231.6	5245.8	5259.9	14.19
432.51	4991.3	5005.5	5019.4	5033.6	5047.6	5061.8	5076.0	5089.9	5104.1	5118.0	14.09
432.21	4851.4	4865.3	4879.3	4893.4	4907.4	4921.3	4935.3	4949.2	4963.4	4977.4	13.99
431.90	4712.4	4726.3	4740.3	4754.0	4767.9	4781.9	4795.8	4809.8	4823.5	4837.4	13.90
431.60	4574.2	4587.9	4601.8	4615.5	4629.5	4643.2	4657.1	4670.8	4684.7	4698.5	13.82
431.29	4436.9	4450.6	4464.3	4478.0	4491.7	4505.4	4519.4	4533.1	4546.8	4560.5	13.73
430.99	4300.6	4314.3	4327.8	4341.5	4355.2	4368.6	4382.3	4396.1	4409.8	4423.2	13.63
430.68	4165.1	4178.5	4192.2	4205.7	4219.4	4232.9	4246.3	4260.0	4273.5	4287.2	13.55
430.38	4030.5	4044.0	4057.4	4070.9	4084.4	4097.8	4111.3	4124.7	4138.2	4151.6	13.46
430.07	3896.7	3910.2	3923.4	3936.8	3950.3	3963.5	3976.9	3990.4	4003.9	4017.1	13.38
429.77	3763.8	3777.1	3790.5	3803.7	3816.9	3830.2	3843.6	3856.8	3870.0	3883.5	13.29
429.46	3632.0	3645.2	3658.4	3671.6	3684.8	3697.8	3711.0	3724.2	3737.4	3750.6	13.19
429.16	3500.8	3514.1	3527.0	3540.2	3553.2	3566.4	3579.6	3592.6	3605.8	3618.8	13.11
428.85	3370.7	3383.6	3396.6	3409.8	3422.8	3435.8	3448.7	3461.7	3474.9	3487.9	13.02
428.55	3241.0	3254.0	3266.9	3279.9	3292.9	3305.8	3318.8	3331.8	3344.7	3357.7	12.97
428.24	3112.3	3125.3	3138.0	3151.0	3163.7	3176.7	3189.6	3202.4	3215.3	3228.0	12.87

Exhibit 10M – Arrow Reservoir Capacity Table (SI) hm^3

ELEVATION IN METERS	.00	.03	.06	.09	.12	.15	.18	.21	.24	.27	AVERAGE DIFFERENCE PER 3/100 M
1/121210											0,1001.1
427.94	2983.6	2996.6	3009.3	3022.3	3035.0	3048.0	3060.9	3073.7	3086.6	3099.4	12.87
427.64	2855.9	2868.6	2881.4	2894.3	2907.1	2919.8	2932.5	2945.2	2958.2	2970.9	12.77
427.33	2728.9	2741.7	2754.4	2767.1	2779.8	2792.3	2805.0	2817.7	2830.5	2843.2	12.70
427.03	2602.9	2615.4	2628.1	2640.6	2653.3	2665.8	2678.5	2691.0	2703.7	2716.2	12.60
426.72	2477.9	2490.4	2502.9	2515.3	2527.8	2540.3	2553.0	2565.5	2578.0	2590.5	12.50
426.42	2354.9	2367.1	2379.6	2391.8	2404.0	2416.3	2428.7	2441.0	2453.2	2465.7	12.31
426.11	2233.0	2245.2	2257.5	2269.5	2281.7	2293.9	2306.2	2318.4	2330.4	2342.6	12.18
425.81	2111.9	2123.9	2136.1	2148.1	2160.3	2172.3	2184.6	2196.6	2208.8	2220.8	12.11
425.50	1991.8	2003.8	2015.8	2027.7	2039.7	2051.7	2064.0	2075.9	2087.9	2099.9	12.01
425.20	1872.1	1884.1	1896.1	1908.1	1920.1	1931.8	1943.8	1955.8	1967.8	1979.8	11.96
424.89	1752.3	1764.2	1776.2	1788.2	1800.2	1812.2	1824.2	1836.2	1848.2	1860.1	11.99
424.59	1633.1	1645.1	1656.8	1668.8	1680.8	1692.6	1704.5	1716.5	1728.5	1740.3	11.91
424.28	1515.2	1526.9	1538.7	1550.7	1562.4	1574.1	1585.9	1597.6	1609.6	1621.4	11.79
423.98	1398.2	1410.0	1421.7	1433.2	1445.0	1456.7	1468.4	1480.2	1491.7	1503.4	11.69
423.67	1282.5	1294.0	1305.8	1317.2	1328.7	1340.2	1352.0	1363.5	1375.0	1386.7	11.57
423.37	1169.2	1180.5	1192.0	1203.2	1214.5	1225.7	1237.2	1248.5	1259.8	1271.3	11.33
423.06	1057.7	1068.9	1079.9	1091.2	1102.2	1113.4	1124.7	1135.7	1147.0	1158.0	11.16
422.76	947.3	958.3	969.3	980.4	991.4	1002.4	1013.6	1024.6	1035.6	1046.7	11.03
422.45	838.2	849.2	860.0	871.0	881.8	892.8	903.8	914.5	925.5	936.3	10.91
422.15	730.3	741.1	751.8	762.6	773.4	784.1	795.1	805.9	816.7	827.4	10.79
421.84	622.9	633.7	644.4	655.2	666.0	676.5	687.2	698.0	708.8	719.5	10.74
421.54	516.7	527.2	538.0	548.5	559.3	569.8	580.3	591.1	601.6	612.4	10.62
421.23	412.0	422.5	433.0	443.3	453.8	464.4	474.9	485.4	495.7	506.2	10.47
420.93	308.5	318.8	329.3	339.6	349.9	360.1	370.7	380.9	391.2	401.7	10.35
420.62	206.2	216.5	226.8	236.8	247.1	257.4	267.7	277.9	288.0	298.2	10.23
420.32	105.7	115.7	125.8	135.8	145.8	155.8	166.1	176.2	186.2	196.2	10.06
420.02	6.6	16.4	26.4	36.2	46.2	56.0	66.1	75.8	85.9	95.7	9.91
419.71										0.0	6.61

Exhibit 11 – Mica Reservoir Capacity Table (English) ksfd

ELEVATION IN											AVERAGE DIFFERENCE PER TENTH
FEET	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	FT
2475.	10121.1										5.38
2474.	10067.5	10072.9	10078.2	10083.6	10088.9	10094.3	10099.7	10105.0	10110.4	10115.7	5.36
2473.	10014.1	10019.4	10024.8	10030.1	10035.5	10040.8	10046.1	10051.5	10056.8	10062.2	5.34
2472.	9960.8	9966.1	9971.5	9976.8	9982.1	9987.4	9992.8	9998.1	10003.4	10008.8	5.33
2471.	9907.8	9913.1	9918.4	9923.7	9929.0	9934.3	9939.6	9944.9	9950.2	9955.5	5.30
2470.	9854.8	9860.1	9865.4	9870.7	9876.0	9881.3	9886.6	9891.9	9897.2	9902.5	5.30
2469.	9802.1	9807.4	9812.6	9817.9	9823.2	9828.5	9833.7	9839.0	9844.3	9849.5	5.27
2468.	9749.5	9754.8	9760.0	9765.3	9770.5	9775.8	9781.1	9786.3	9791.6	9796.8	5.26
2467.	9697.1	9702.3	9707.6	9712.8	9718.1	9723.3	9728.5	9733.8	9739.0	9744.3	5.24
2466.	9644.8	9650.0	9655.3	9660.5	9665.7	9671.0	9676.2	9681.4	9686.6	9691.9	5.23
2465.	9592.7	9597.9	9603.1	9608.3	9613.5	9618.8	9624.0	9629.2	9634.4	9639.6	5.21
2464.	9540.8	9546.0	9551.2	9556.4	9561.6	9566.8	9571.9	9577.1	9582.3	9587.5	5.19
2463.	9489.0	9494.2	9499.4	9504.5	9509.7	9514.9	9520.1	9525.3	9530.4	9535.6	5.18
2462.	9437.4	9442.6	9447.7	9452.9	9458.0	9463.2	9468.4	9473.5	9478.7	9483.8	5.16
2461.	9386.0	9391.1	9396.3	9401.4	9406.6	9411.7	9416.8	9422.0	9427.1	9432.3	5.14
2460.	9334.8	9339.9	9345.0	9350.2	9355.3	9360.4	9365.5	9370.6	9375.8	9380.9	5.12
2459.	9283.7	9288.8	9293.9	9299.0	9304.1	9309.3	9314.4	9319.5	9324.6	9329.7	5.11
2458.	9232.8	9237.9	9243.0	9248.1	9253.2	9258.3	9263.3	9268.4	9273.5	9278.6	5.09
2457.	9182.0	9187.1	9192.2	9197.2	9202.3	9207.4	9212.5	9217.6	9222.6	9227.7	5.08
2456.	9131.4	9136.5	9141.5	9146.6	9151.6	9156.7	9161.8	9166.8	9171.9	9176.9	5.06
2455.	9081.0	9086.0	9091.1	9096.1	9101.2	9106.2	9111.2	9116.3	9121.3	9126.4	5.04
2454.	9030.8	9035.8	9040.8	9045.9	9050.9	9055.9	9060.9	9065.9	9071.0	9076.0	5.02
2453.	8980.7	8985.7	8990.7	8995.7	9000.7	9005.8	9010.8	9015.8	9020.8	9025.8	5.01
2452.	8930.8	8935.8	8940.8	8945.8	8950.8	8955.8	8960.7	8965.7	8970.7	8975.7	4.99
2451.	8881.0	8886.0	8891.0	8895.9	8900.9	8905.9	8910.9	8915.9	8920.8	8925.8	4.98
2450.	8831.4	8836.4	8841.3	8846.3	8851.2	8856.2	8861.2	8866.1	8871.1	8876.0	4.96
2449.	8782.0	8786.9	8791.9	8796.8	8801.8	8806.7	8811.6	8816.6	8821.5	8826.5	4.94
2448.	8732.8	8737.7	8742.6	8747.6	8752.5	8757.4	8762.3	8767.2	8772.2	8777.1	4.92
2447.	8683.7	8688.6	8693.5	8698.4	8703.3	8708.3	8713.2	8718.1	8723.0	8727.9	4.91
2447. 2446.	8634.8	8639.7	8644.6	8649.5	8654.4	8659.3	8664.1	8669.0	8673.9	8678.8	4.89
2445.	8586.0	8590.9	8595.8	8600.6	8605.5	8610.4	8615.3	8620.2	8625.0	8629.9	4.88
2113.	0200.0	0370.7	0373.0	0000.0	0005.5	0010.1	0013.3	0020.2	0023.0	002).)	1.00
2444.	8537.5	8542.4	8547.2	8552.1	8556.9	8561.8	8566.6	8571.5	8576.3	8581.2	4.85
2443.	8489.1	8493.9	8498.8	8503.6	8508.5	8513.3	8518.1	8523.0	8527.8	8532.7	4.84
2442.	8440.8	8445.6	8450.5	8455.3	8460.1	8465.0	8469.8	8474.6	8479.4	8484.3	4.83
2441.	8392.7	8397.5	8402.3	8407.1	8411.9	8416.8	8421.6	8426.4	8431.2	8436.0	4.81
2440.	8344.8	8349.6	8354.4	8359.2	8364.0	8368.8	8373.5	8378.3	8383.1	8387.9	4.79
2439.	8297.1	8301.9	8306.6	8311.4	8316.2	8321.0	8325.7	8330.5	8335.3	8340.0	4.77
2438.	8249.5	8254.3	8259.0	8263.8	8268.5	8273.3	8278.1	8282.8	8287.6	8292.3	4.76
2437.	8202.1	8206.8	8211.6	8216.3	8221.1	8225.8	8230.5	8235.3	8240.0	8244.8	4.74
2436.	8154.8	8159.5	8164.3	8169.0	8173.7	8178.5	8183.2	8187.9	8192.6	8197.4	4.73
2435.	8107.8	8112.5	8117.2	8121.9	8126.6	8131.3	8136.0	8140.7	8145.4	8150.1	4.70

Exhibit 11 – Mica Reservoir Capacity Table (English) ksfd

ELEVATION IN											AVERAGE DIFFERENCE PER TENTH
FEET	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	FT
2424	0060.0	0065.6	0070.2	9075.0	0070.7	0004.4	0000 0	0002.7	0000 4	0102.1	4.60
2434.	8060.9	8065.6	8070.3	8075.0	8079.7	8084.4	8089.0	8093.7	8098.4	8103.1	4.69
2433.	8014.1	8018.8	8023.5	8028.1	8032.8	8037.5	8042.2	8046.9	8051.5	8056.2	4.68
2432.	7967.5	7972.2	7976.8	7981.5	7986.1	7990.8	7995.5	8000.1	8004.8	8009.4	4.66
2431.	7921.1	7925.7	7930.4	7935.0	7939.7	7944.3	7948.9	7953.6	7958.2	7962.9	4.64
2430.	7874.9	7879.5	7884.1	7888.8	7893.4	7898.0	7902.6	7907.2	7911.9	7916.5	4.62
2429.	7828.8	7833.4	7838.0	7842.6	7847.2	7851.9	7856.5	7861.1	7865.7	7870.3	4.61
2428.	7782.9	7787.5	7792.1	7796.7	7801.3	7805.9	7810.4	7815.0	7819.6	7824.2	4.59
2427.	7737.2	7741.8	7746.3	7750.9	7755.5	7760.1	7764.6	7769.2	7773.8	7778.3	4.57
2426.	7691.6	7696.2	7700.7	7705.3	7709.8	7714.4	7719.0	7723.5	7728.1	7732.6	4.56
2425.	7646.2	7650.7	7655.3	7659.8	7664.4	7668.9	7673.4	7678.0	7682.5	7687.1	4.54
2424.	7600.9	7605.4	7610.0	7614.5	7619.0	7623.6	7628.1	7632.6	7637.1	7641.7	4.53
2423.	7555.9	7560.4	7564.9	7569.4	7573.9	7578.4	7582.9	7587.4	7591.9	7596.4	4.50
2422.	7511.0	7515.5	7520.0	7524.5	7529.0	7533.5	7537.9	7542.4	7546.9	7551.4	4.49
2421.	7466.2	7470.7	7475.2	7479.6	7484.1	7488.6	7493.1	7497.6	7502.0	7506.5	4.48
2420.	7421.6	7426.1	7430.5	7435.0	7439.4	7443.9	7448.4	7452.8	7457.3	7461.7	4.46
2.20.	, .21.0	7.120.1	7 10010	, 15510	, 10,11	,	,	, .52.6	,,	, 1011,	0
2419.	7377.2	7381.6	7386.1	7390.5	7395.0	7399.4	7403.8	7408.3	7412.7	7417.2	4.44
2418.	7333.0	7337.4	7341.8	7346.3	7350.7	7355.1	7359.5	7363.9	7368.4	7372.8	4.42
2417.	7288.9	7293.3	7297.7	7302.1	7306.5	7311.0	7315.4	7319.8	7324.2	7328.6	4.41
2416.	7245.0	7249.4	7253.8	7258.2	7262.6	7267.0	7271.3	7275.7	7280.1	7284.5	4.39
2415.	7201.3	7205.7	7210.0	7214.4	7218.8	7223.2	7227.5	7231.9	7236.3	7240.6	4.37
2414.	7157.7	7162.1	7166.4	7170.8	7175.1	7179.5	7183.9	7188.2	7192.6	7196.9	4.36
2413.	7114.3	7118.6	7123.0	7127.3	7131.7	7136.0	7140.3	7144.7	7149.0	7153.4	4.34
2412.	7071.0	7075.3	7079.7	7084.0	7088.3	7092.7	7097.0	7101.3	7105.6	7110.0	4.33
2411.	7028.0	7032.3	7036.6	7040.9	7045.2	7049.5	7053.8	7058.1	7062.4	7066.7	4.30
2410.	6985.1	6989.4	6993.7	6998.0	7002.3	7006.6	7010.8	7015.1	7019.4	7023.7	4.29
2409.	6942.3	6946.6	6950.9	6955.1	6959.4	6963.7	6968.0	6972.3	6976.5	6980.8	4.28
2408.	6899.7	6904.0	6908.2	6912.5	6916.7	6921.0	6925.3	6929.5	6933.8	6938.0	4.26
2407.	6857.3	6861.5	6865.8	6870.0	6874.3	6878.5	6882.7	6887.0	6891.2	6895.5	4.24
2406.	6815.1	6819.3	6823.5	6827.8	6832.0	6836.2	6840.4	6844.6	6848.9	6853.1	4.22
2405.	6773.0	6777.2	6781.4	6785.6	6789.8	6794.1	6798.3	6802.5	6806.7	6810.9	4.21
2404.	6731.2	6735.3	6739.5	6743.7	6747.9	6752.1	6756.3	6760.5	6764.7	6768.9	4.20
2403.	6689.5	6693.7	6697.9	6702.0	6706.2	6710.4	6714.5	6718.7	6722.9	6727.1	4.17
2402.	6648.0	6652.2	6656.3	6660.5	6664.7	6668.8	6673.0	6677.1	6681.3	6685.5	4.17
2401.	6606.7	6610.9	6615.0	6619.2	6623.3	6627.4	6631.6	6635.7	6639.9	6644.0	4.14
2401. 2400.	6565.5	6569.7	6573.8	6577.9	6582.1	6586.2	6590.3	6594.5	6598.6	6602.7	4.13
∠+00.	0.00.0	0.507.7	0373.0	05/1.7	0302.1	0300.2	0530.3	0574.5	0.570.0	0002.7	4.13
2399.	6524.6	6528.7	6532.8	6536.9	6541.0	6545.1	6549.2	6553.3	6557.4	6561.5	4.11
2398.	6483.9	6487.9	6492.0	6496.1	6500.1	6504.2	6508.3	6512.4	6516.4	6520.5	4.07
2397.	6443.5	6447.6	6451.6	6455.6	6459.6	6463.7	6467.7	6471.8	6475.8	6479.8	4.03
2396.	6403.5	6407.5	6411.5	6415.5	6419.5	6423.5	6427.5	6431.5	6435.5	6439.5	4.00
2395.	6363.9	6367.8	6371.8	6375.7	6379.7	6383.7	6387.6	6391.6	6395.6	6399.5	3.96

Exhibit 11 – Mica Reservoir Capacity Table (English) ksfd

ELEVATION IN	0	1	2	2	4	5	6	7	.8	0	AVERAGE DIFFERENCE PER TENTH
FEET	.0	.1	.2	.3	.4	.5	.6	.7	.0	.9	FT
2394.	6324.5	6328.5	6332.4	6336.3	6340.2	6344.2	6348.1	6352.0	6356.0	6359.9	3.93
2393.	6285.6	6289.5	6293.4	6297.2	6301.1	6305.0	6308.9	6312.8	6316.7	6320.6	3.90
2392.	6246.9	6250.8	6254.6	6258.5	6262.4	6266.2	6270.1	6274.0	6277.8	6281.7	3.87
2391.	6208.6	6212.4	6216.2	6220.0	6223.9	6227.7	6231.5	6235.4	6239.2	6243.1	3.83
2390.	6170.6	6174.4	6178.2	6181.9	6185.7	6189.5	6193.3	6197.2	6201.0	6204.8	3.80
2370.	0170.0	0174.4	0170.2	0101.7	0103.7	0107.5	0175.5	0177.2	0201.0	0204.0	3.00
2389.	6132.9	6136.7	6140.4	6144.2	6147.9	6151.7	6155.5	6159.2	6163.0	6166.8	3.77
2388.	6095.5	6099.2	6103.0	6106.7	6110.4	6114.2	6117.9	6121.7	6125.4	6129.2	3.74
2387.	6058.4	6062.1	6065.8	6069.5	6073.2	6076.9	6080.6	6084.3	6088.1	6091.8	3.71
2386.	6021.7	6025.3	6029.0	6032.7	6036.3	6040.0	6043.7	6047.4	6051.0	6054.7	3.68
2385.	5985.2	5988.8	5992.5	5996.1	5999.7	6003.4	6007.0	6010.7	6014.3	6018.0	3.65
2384.	5949.0	5952.6	5956.2	5959.8	5963.4	5967.0	5970.7	5974.3	5977.9	5981.6	3.62
2383.	5913.0	5916.6	5920.2	5923.8	5927.4	5931.0	5934.6	5938.2	5941.8	5945.4	3.59
2382.	5877.4	5881.0	5884.5	5888.1	5891.7	5895.2	5898.8	5902.3	5905.9	5909.5	3.56
2381.	5842.1	5845.6	5849.2	5852.7	5856.2	5859.7	5863.3	5866.8	5870.3	5873.9	3.53
2380.	5807.0	5810.5	5814.0	5817.5	5821.0	5824.5	5828.0	5831.6	5835.1	5838.6	3.51
2300.	3007.0	2010.2	3011.0	3017.3	3021.0	3021.3	3020.0	3031.0	3033.1	2030.0	3.31
2379.	5772.2	5775.7	5779.1	5782.6	5786.1	5789.6	5793.0	5796.5	5800.0	5803.5	3.48
2378.	5737.6	5741.1	5744.5	5748.0	5751.4	5754.9	5758.3	5761.8	5765.3	5768.7	3.45
2377.	5703.4	5706.8	5710.2	5713.6	5717.1	5720.5	5723.9	5727.3	5730.8	5734.2	3.43
2376.	5669.3	5672.7	5676.1	5679.5	5682.9	5686.3	5689.7	5693.1	5696.5	5700.0	3.41
2375.	5635.5	5638.9	5642.3	5645.6	5649.0	5652.4	5655.8	5659.2	5662.5	5665.9	3.38
2374.	5602.0	5605.3	5608.7	5612.0	5615.4	5618.7	5622.1	5625.5	5628.8	5632.2	3.35
2373.	5568.7	5572.0	5575.4	5578.7	5582.0	5585.3	5588.7	5592.0	5595.3	5598.7	3.33
2372.	5535.6	5538.9	5542.2	5545.5	5548.8	5552.1	5555.4	5558.7	5562.1	5565.4	3.31
2371.	5502.8	5506.1	5509.3	5512.6	5515.9	5519.2	5522.5	5525.7	5529.0	5532.3	3.28
2370.	5470.2	5473.4	5476.7	5479.9	5483.2	5486.5	5489.7	5493.0	5496.3	5499.5	3.26
***	- 10T 0				- 4 0 - -	- 1-0 o		7 450.4	- 1 - 0 - F		224
2369.	5437.8	5441.0	5444.3	5447.5	5450.7	5453.9	5457.2	5460.4	5463.7	5466.9	3.24
2368.	5405.6	5408.9	5412.1	5415.3	5418.5	5421.7	5424.9	5428.1	5431.4	5434.6	3.22
2367.	5373.7	5376.9	5380.1	5383.3	5386.5	5389.7	5392.9	5396.1	5399.3	5402.4	3.19
2366.	5342.0	5345.2	5348.3	5351.5	5354.7	5357.8	5361.0	5364.2	5367.4	5370.5	3.17
2365.	5310.5	5313.6	5316.8	5319.9	5323.0	5326.2	5329.3	5332.5	5335.7	5338.8	3.15
2364.	5279.1	5282.3	5285.4	5288.5	5291.6	5294.8	5297.9	5301.0	5304.2	5307.3	3.13
2363.	5248.0	5251.1	5254.2	5257.4	5260.5	5263.6	5266.7	5269.8	5272.9	5276.0	3.11
2362.	5217.1	5220.2	5223.3	5226.4	5229.5	5232.6	5235.7	5238.7	5241.8	5244.9	3.09
2361.	5186.4	5189.4	5192.5	5195.6	5198.7	5201.7	5204.8	5207.9	5211.0	5214.0	3.07
2360.	5155.9	5158.9	5162.0		5168.0	5171.1	5174.2	5177.2	5180.3	5183.3	3.05
2250	5105 F	5120 5	5121 6	51246	5127 (51407	51427	51467	5140.0	5150.0	2.02
2359.	5125.5	5128.5	5131.6	5134.6	5137.6	5140.7	5143.7	5146.7	5149.8	5152.8	3.03
2358.	5095.4	5098.4	5101.4	5104.4	5107.4	5110.4	5113.4	5116.5	5119.5	5122.5	3.02
2357.	5065.4	5068.4	5071.4	5074.4	5077.4	5080.4	5083.4	5086.4	5089.4	5092.4	3.00
2356.	5035.6	5038.5	5041.5	5044.5	5047.5	5050.4	5053.4	5056.4	5059.4	5062.4	2.98
2355.	5005.9	5008.9	5011.9	5014.8	5017.8	5020.7	5023.7	5026.7	5029.6	5032.6	2.96

Exhibit 11 – Mica Reservoir Capacity Table (English) ksfd

ELEVATION											AVERAGE DIFFERENCE
IN											PER TENTH
FEET	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	FT
2354.	4976.5	4979.4	4982.4	4985.3	4988.3	4991.2	4994.1	4997.1	5000.0	5003.0	2.94
2353.	4947.2	4950.1	4953.0	4956.0	4958.9	4961.8	4964.8	4967.7	4970.6	4973.6	2.93
2352.	4918.0	4920.9	4923.9	4926.8	4929.7	4932.6	4935.5	4938.4	4941.3	4944.3	2.91
2351.	4889.1	4892.0	4894.9	4897.8	4900.6	4903.5	4906.4	4909.3	4912.2	4915.1	2.90
2350.	4860.3	4863.1	4866.0	4868.9	4871.8	4874.6	4877.5	4880.4	4883.3	4886.2	2.88
2330.	1000.5	1005.1	1000.0	1000.5	1071.0	107 1.0	1077.5	1000.1	1005.5	1000.2	2.00
2349.	4831.6	4834.4	4837.3	4840.2	4843.1	4845.9	4848.8	4851.7	4854.5	4857.4	2.87
2348.	4803.1	4805.9	4808.8	4811.6	4814.5	4817.3	4820.2	4823.0	4825.9	4828.7	2.85
2347.	4774.7	4777.5	4780.4	4783.2	4786.0	4788.9	4791.7	4794.6	4797.4	4800.2	2.84
2346.	4746.5	4749.3	4752.1	4755.0	4757.8	4760.6	4763.4	4766.2	4769.1	4771.9	2.82
2345.	4718.4	4721.2	4724.0	4726.8	4729.6	4732.4	4735.3	4738.1	4740.9	4743.7	2.81
2344.	4690.5	4693.3	4696.1	4698.8	4701.6	4704.4	4707.2	4710.0	4712.8	4715.6	2.79
2343.	4662.7	4665.4	4668.2	4671.0	4673.8	4676.5	4679.3	4682.1	4684.9	4687.7	2.78
2342.	4635.0	4637.8	4640.5	4643.3	4646.1	4648.8	4651.6	4654.4	4657.1	4659.9	2.77
2341.	4607.4	4610.2	4613.0	4615.7	4618.5	4621.2	4624.0	4626.7	4629.5	4632.2	2.76
2340.	4580.0	4582.8	4585.5	4588.2	4591.0	4593.7	4596.5	4599.2	4602.0	4604.7	2.74
2339.	4552.7	4555.4	4558.2	4560.9	4563.6	4566.4	4569.1	4571.8	4574.6	4577.3	2.73
2339.	4525.5	4528.2	4530.9	4533.6	4536.4	4539.1	4541.8	4544.5	4547.3	4577.3	2.73
2337.	4498.3	4501.0	4503.7	4506.5	4509.2	4511.9	4514.6	4517.3	4520.0	4522.8	2.72
2336.	4471.2	4473.9	4476.6	4479.3	4482.0	4484.7	4487.5	4490.2	4492.9	4495.6	2.71
2335.	4444.2	4446.9	4449.6	4479.3	4455.0	4457.7	4460.4	4463.1	4465.8	4468.5	2.70
2333.	7777.2	7770.7	4447.0	4432.3	4433.0	4437.7		4405.1	4405.0	4400.5	2.70
2334.	4417.3	4420.0	4422.6	4425.3	4428.0	4430.7	4433.4	4436.1	4438.8	4441.5	2.69
2333.	4390.4	4393.1	4395.8	4398.4	4401.1	4403.8	4406.5	4409.2	4411.9	4414.6	2.69
2332.	4363.6	4366.3	4368.9	4371.6	4374.3	4377.0	4379.7	4382.3	4385.0	4387.7	2.68
2331.	4336.9	4339.6	4342.2	4344.9	4347.6	4350.2	4352.9	4355.6	4358.2	4360.9	2.67
2330.	4310.2	4312.9	4315.6	4318.2	4320.9	4323.6	4326.2	4328.9	4331.6	4334.2	2.66
2329.	4283.7	4286.3	4289.0	4291.6	4294.3	4296.9	4299.6	4302.3	4304.9	4307.6	2.66
2328.	4257.2	4259.8	4262.5	4265.1	4267.8	4270.4	4273.1	4275.7	4278.4	4281.0	2.65
2327.	4230.8	4233.4	4236.1	4238.7	4241.3	4244.0	4246.6	4249.3	4251.9	4254.5	2.64
2326.	4204.5	4207.1	4209.7	4212.3	4215.0	4217.6	4220.2	4222.9	4225.5	4228.1	2.63
2325.	4178.2	4180.8	4183.4	4186.1	4188.7	4191.3	4193.9	4196.6	4199.2	4201.8	2.63
2324.	4152.0	4154.6	4157.2	4150.0	4162.5	1165 1	4167.7	4170.3	4173.0	4175 6	2.62
2323.	4132.0		4131.2	4159.9	4136.4	4165.1		4170.3		4175.6	2.61
2323. 2322.	4099.9	4128.5 4102.5	4131.2	4133.8 4107.7	4136.4	4139.0 4112.9	4141.6 4115.5	4144.2	4146.8 4120.7	4149.4 4123.3	2.61
2321.	4074.0	4076.6	4079.1	4081.7	4084.3	4112.9	4089.5	4092.1	4094.7	4097.3	2.59
2321. 2320.	4048.1	4070.0	4079.1	4055.9	4058.4	4061.0	4063.6	4066.2	4068.8	4071.4	2.59
2319.	4022.3	4024.9	4027.5	4030.0	4032.6	4035.2	4037.8	4040.4	4042.9	4045.5	2.58
4J17.	TU44.3	TU44.7	7041.3	TUJU.U	7032.0	TUJJ.2	TU31.0	TUTU.T	TUT ∠.7	-10+3.3	2.30

Exhibit 11M– Mica Reservoir Capacity Table (SI) hm³

ELEVATION IN	Ī										AVERAGE DIFFERENCE PER
METERS	.00	.03	.06	.09	.12	.15	.18	.21	.24	.27	3/100 M
754.38	24762.3										13.16
754.08	24631.1	24644.4	24657.3	24670.5	24683.5	24696.7	24709.9	24722.9	24736.1	24749.1	13.11
753.77	24500.5	24513.5	24526.7	24539.6	24552.9	24565.8	24578.8	24592.0	24605.0	24618.2	13.06
753.47	24370.1	24383.1	24396.3	24409.2	24422.2	24435.2	24448.4	24461.4	24474.3	24487.5	13.04
753.16	24240.4	24253.4	24266.4	24279.3	24292.3	24305.3	24318.2	24331.2	24344.2	24357.1	12.97
752.86	24110.8	24123.7	24136.7	24149.7	24162.6	24175.6	24188.6	24201.5	24214.5	24227.5	12.97
752.55	23981.8	23994.8	24007.5	24020.5	24033.4	24046.4	24059.1	24072.1	24085.1	24097.8	12.89
752.25	23853.1	23866.1	23878.8	23891.8	23904.5	23917.5	23930.4	23943.2	23956.1	23968.9	12.87
751.94	23724.9	23737.6	23750.6	23763.3	23776.3	23789.0	23801.7	23814.7	23827.4	23840.4	12.82
751.64	23597.0	23609.7	23622.7	23635.4	23648.1	23661.1	23673.8	23686.5	23699.2	23712.2	12.80
751.33	23469.5	23482.2	23494.9	23507.7	23520.4	23533.4	23546.1	23558.8	23571.5	23584.2	12.75
751.03	23342.5	23355.2	23368.0	23380.7	23393.4	23406.1	23418.6	23431.3	23444.1	23456.8	12.70
750.72	23215.8	23228.5	23241.2	23253.7	23266.4	23279.2	23291.9	23304.6	23317.1	23329.8	12.67
750.42	23089.5	23102.3	23114.7	23127.5	23139.9	23152.7	23165.4	23177.9	23190.6	23203.1	12.62
750.11	22963.8	22976.3	22989.0	23001.5	23014.2	23026.7	23039.1	23051.9	23064.3	23077.1	12.58
749.81	22838.5	22851.0	22863.5	22876.2	22888.7	22901.2	22913.6	22926.1	22938.8	22951.3	12.53
749.50	22713.5	22726.0	22738.5	22750.9	22763.4	22776.1	22788.6	22801.1	22813.6	22826.0	12.50
749.20	22589.0	22601.4	22613.9	22626.4	22638.9	22651.4	22663.6	22676.1	22688.5	22701.0	12.45
748.90	22464.7	22477.2	22489.6	22501.9	22514.3	22526.8	22539.3	22551.8	22564.0	22576.5	12.43
748.59	22340.9	22353.4	22365.6	22378.1	22390.3	22402.8	22415.3	22427.5	22440.0	22452.2	12.38
748.29	22217.6	22229.8	22242.3	22254.5	22267.0	22279.2	22291.5	22303.9	22316.2	22328.7	12.33
747.98	22094.8	22107.0	22119.2	22131.7	22143.9	22156.2	22168.4	22180.6	22193.1	22205.3	12.28
747.68	21972.2	21984.4	21996.6	22008.9	22021.1	22033.6	22045.8	22058.1	22070.3	22082.5	12.26
747.37	21850.1	21862.3	21874.6	21886.8	21899.0	21911.3	21923.2	21935.5	21947.7	21959.9	12.21
747.07	21728.3	21740.5	21752.7	21764.7	21776.9	21789.2	21801.4	21813.6	21825.6	21837.9	12.18
746.76	21606.9	21619.1	21631.1	21643.4	21655.3	21667.6	21679.8	21691.8	21704.0	21716.0	12.14
746.46	21486.0	21498.0	21510.3	21522.3	21534.5	21546.5	21558.5	21570.7	21582.7	21594.9	12.09
746.15	21365.7	21377.7	21389.6	21401.9	21413.9	21425.9	21437.8	21449.8	21462.1	21474.1	12.04
745.85	21245.5	21257.5	21269.5	21281.5	21293.5	21305.7	21317.7	21329.7	21341.7	21353.7	12.01
745.54	21125.9	21137.9	21149.9	21161.9	21173.9	21185.8	21197.6	21209.6	21221.6	21233.6	11.96
745.24	21006.5	21018.5	21030.5	21042.2	21054.2	21066.2	21078.2	21090.2	21101.9	21113.9	11.94
744.93	20887.8	20899.8	20911.6	20923.6	20935.3	20947.3	20959.0	20971.0	20982.8	20994.8	11.87
744.63	20769.4	20781.2	20793.2	20804.9	20816.9	20828.6	20840.4	20852.4	20864.1	20876.1	11.84
744.32	20651.3	20663.0	20675.0	20686.7	20698.5	20710.5	20722.2	20734.0	20745.7	20757.7	11.82
744.02	20533.6	20545.3	20557.1	20568.8	20580.6	20592.5	20604.3	20616.0	20627.8	20639.5	11.77
743.71	20416.4	20428.1	20439.9	20451.6	20463.4	20475.1	20486.6	20498.3	20510.1	20521.8	11.72
743.41	20299.7	20311.4	20322.9	20334.7	20346.4	20358.2	20369.7	20381.4	20393.1	20404.6	11.67
743.10	20183.2	20195.0	20206.5	20218.2	20229.7	20241.5	20253.2	20264.7	20276.4	20287.9	11.65
742.80	20067.3	20078.8	20090.5	20102.0	20113.7	20125.2	20136.7	20148.5	20160.0	20171.7	11.60
742.49	19951.5	19963.0	19974.8	19986.3	19997.8	20009.5	20021.0	20032.5	20044.0	20055.8	11.57
742.19	19836.5	19848.0	19859.5	19871.0	19882.5	19894.0	19905.5	19917.0	19928.5	19940.0	11.50

Exhibit 11M– Mica Reservoir Capacity Table (SI) $$\operatorname{hm}^3$$

ELEVATION IN											AVERAGE DIFFERENCE
METERS	.00	.03	.06	.09	.12	.15	.18	.21	.24	.27	PER 3/100 M
741.88	19721.8	19733.3	19744.8	19756.3	19767.8	19779.3	19790.5	19802.0	19813.5	19825.0	11.47
741.58	19607.3	19618.8	19630.3	19641.5	19653.0	19664.5	19676.0	19687.5	19698.8	19710.3	11.45
741.28	19493.3	19504.8	19516.0	19527.5	19538.8	19550.3	19561.8	19573.0	19584.5	19595.8	11.40
740.97	19379.8	19391.0	19402.5	19413.8	19425.3	19436.5	19447.8	19459.3	19470.5	19482.0	11.35
740.67	19266.7	19278.0	19289.2	19300.7	19312.0	19323.2	19334.5	19345.8	19357.3	19368.5	11.30
740.36	19153.9	19165.2	19176.5	19187.7	19199.0	19210.5	19221.7	19233.0	19244.2	19255.5	11.28
740.06	19041.6	19052.9	19064.2	19075.4	19086.7	19097.9	19108.9	19120.2	19131.4	19142.7	11.23
739.75	18929.8	18941.1	18952.1	18963.4	18974.6	18985.9	18996.9	19008.1	19019.4	19030.4	11.18
739.45	18818.3	18829.5	18840.5	18851.8	18862.8	18874.1	18885.3	18896.3	18907.6	18918.6	11.16
739.14	18707.2	18718.2	18729.5	18740.5	18751.7	18762.7	18773.7	18785.0	18796.0	18807.3	11.11
738.84	18596.4	18607.4	18618.6	18629.6	18640.6	18651.9	18662.9	18673.9	18684.9	18696.2	11.08
738.53	18486.3	18497.3	18508.3	18519.3	18530.3	18541.3	18552.3	18563.3	18574.3	18585.4	11.01
738.23	18376.4	18387.4	18398.4	18409.4	18420.5	18431.5	18442.2	18453.2	18464.2	18475.3	10.99
737.92	18266.8	18277.8	18288.8	18299.6	18310.6	18321.6	18332.6	18343.6	18354.4	18365.4	10.96
737.62	18157.7	18168.7	18179.5	18190.5	18201.2	18212.2	18223.3	18234.0	18245.0	18255.8	10.91
737.31	18049.1	18059.8	18070.8	18081.6	18092.6	18103.4	18114.1	18125.1	18135.9	18146.9	10.86
737.01	17940.9	17951.7	17962.4	17973.5	17984.2	17995.0	18005.8	18016.5	18027.5	18038.3	10.81
736.70	17833.0	17843.8	17854.6	17865.3	17876.1	17887.1	17897.9	17908.6	17919.4	17930.2	10.79
736.40	17725.6	17736.4	17747.1	17757.9	17768.7	17779.4	17790.0	17800.7	17811.5	17822.3	10.74
736.09	17618.7	17629.5	17640.0	17650.8	17661.5	17672.3	17682.8	17693.6	17704.3	17714.9	10.69
735.79	17512.0	17522.8	17533.3	17544.1	17554.6	17565.4	17576.1	17586.7	17597.4	17607.9	10.67
735.48	17405.8	17416.4	17427.1	17437.7	17448.4	17458.9	17469.5	17480.2	17490.7	17501.5	10.62
735.18	17299.9	17310.4	17321.2	17331.7	17342.2	17353.0	17363.5	17374.0	17384.6	17395.3	10.59
734.87	17194.7	17205.2	17215.7	17226.3	17236.8	17247.3	17257.8	17268.3	17278.9	17289.4	10.52
734.57	17089.7	17100.3	17110.8	17121.3	17131.8	17142.3	17152.6	17163.1	17173.7	17184.2	10.50
734.26	16985.0	16995.6	17006.1	17016.3	17026.9	17037.4	17047.9	17058.4	17068.7	17079.2	10.47
733.96	16880.8	16891.3	16901.6	16912.1	16922.4	16932.9	16943.4	16953.7	16964.2	16974.5	10.42
733.66	16777.1	16787.3	16797.9	16808.1	16818.7	16828.9	16839.2	16849.7	16860.0	16870.5	10.37
733.35	16673.8	16684.1	16694.4	16704.9	16715.2	16725.4	16735.7	16746.0	16756.5	16766.8	10.32
733.05	16570.8	16581.1	16591.4	16601.6	16611.9	16622.4	16632.7	16643.0	16653.3	16663.5	10.30
732.74	16468.4	16478.7	16489.0	16499.2	16509.5	16519.8	16530.0	16540.3	16550.6	16560.8	10.27
732.44	16366.6	16376.8	16387.0	16397.2	16407.4	16417.6	16427.8	16438.0	16448.2	16458.5	10.21
732.13	16265.1	16275.3	16285.4	16295.6	16305.7	16315.9	16326.1	16336.3	16346.4	16356.6	10.17
731.83	16164.1	16174.2	16184.3	16194.4	16204.5	16214.6	16224.8	16234.9	16245.1	16255.2	10.13
731.52	16063.3	16073.4	16083.5	16093.6	16103.7	16113.8	16123.9	16134.0	16144.1	16154.2	10.10
731.22	15963.0	15973.1	15983.1	15993.1	16003.2	16013.2	16023.3	16033.3	16043.4	16053.4	10.05
730.91	15863.5	15873.4	15883.3	15893.3	15903.2	15913.2	15923.1	15933.1	15943.1	15953.1	9.96
730.61	15764.8	15774.6	15784.5	15794.3	15804.2	15814.0	15823.9	15833.8	15843.7	15853.6	9.87
730.30	15666.8	15676.6	15686.4	15696.2	15706.0	15715.7	15725.5	15735.3	15745.1	15755.0	9.79
730.00	15569.8	15579.5	15589.2	15598.9	15608.6	15618.2	15628.0	15637.7	15647.4	15657.1	9.70

Exhibit 11M– Mica Reservoir Capacity Table (SI) $$\operatorname{hm}^3$$

ELEVATION											AVERAGE DIFFERENCE
IN METERS	.00	.03	.06	.09	.12	.15	.18	.21	.24	.27	PER 3/100 M
729.69	15473.6	15483.2	15492.8	15502.4	15512.0	15521.6	15531.3	15540.9	15550.6	15560.2	9.62
729.39	15378.3	15387.8	15397.3	15406.8	15416.4	15425.9	15435.4	15445.0	15454.5	15464.1	9.53
729.08	15283.7	15293.1	15397.5	15312.0	15321.5	15330.9	15340.4	15349.9	15359.3	15368.8	9.33 9.46
728.78	15189.9	15199.3	15208.6	15218.0	15227.3	15236.6	15246.0	15255.4	15264.8	15274.3	9.37
728.47	15096.9	15199.3	15115.5	15124.8	15134.0	15143.3	15152.6	15162.0	15171.3	15180.6	9.30
728.47	13090.9	13106.2	13113.3	13124.6	13134.0	13143.3	13132.0	13102.0	131/1.3	13180.0	9.30
728.17	15004.7	15013.9	15023.1	15032.3	15041.5	15050.7	15060.0	15069.2	15078.5	15087.7	9.22
727.86	14913.2	14922.4	14931.5	14940.6	14949.8	14958.9	14968.1	14977.3	14986.4	14995.6	9.15
727.56	14822.5	14831.6	14840.6	14849.7	14858.7	14867.8	14876.8	14885.9	14895.0	14904.1	9.07
727.25	14732.6	14741.5	14750.5	14759.5	14768.5	14777.4	14786.5	14795.5	14804.5	14813.5	8.99
726.95	14643.4	14652.3	14661.2	14670.0	14678.9	14687.8	14696.8	14705.7	14714.7	14723.6	8.92
726.64	14554.7	14563.6	14572.4	14581.3	14590.1	14599.0	14607.8	14616.7	14625.6	14634.5	8.86
726.34	14466.8	14475.6	14484.4	14493.2	14502.0	14510.7	14519.5	14528.3	14537.1	14545.9	8.79
726.04	14379.7	14388.4	14397.1	14405.8	14414.5	14423.2	14431.9	14440.7	14449.4	14458.1	8.71
725.73	14293.3	14301.9	14310.6	14319.2	14327.8	14336.4	14345.1	14353.7	14362.4	14371.0	8.64
725.43	14207.4	14215.9	14224.5	14233.1	14241.7	14250.3	14258.9	14267.5	14276.1	14284.7	8.59
725.12	14122.2	14130.7	14139.2	14147.7	14156.2	14164.7	14173.3	14181.8	14190.3	14198.8	8.51
724.82	14037.7	14046.2	14054.6	14063.0	14071.5	14079.9	14088.4	14096.8	14105.3	14113.8	8.45
724.51	13953.8	13962.2	13970.6	13979.0	13987.4	13995.7	14004.1	14012.5	14020.9	14029.3	8.39
724.21	13870.5	13878.8	13887.2	13895.5	13903.8	13912.2	13920.5	13928.8	13937.2	13945.5	8.33
723.90	13787.9	13796.1	13804.4	13812.6	13820.9	13829.1	13837.4	13845.7	13854.0	13862.2	8.26
723.60	13705.8	13714.0	13722.2	13730.4	13738.6	13746.8	13755.0	13763.2	13771.4	13779.7	8.20
723.29	13624.4	13632.5	13640.7	13648.8	13656.9	13665.1	13673.2	13681.4	13689.5	13697.7	8.14
722.99	13543.4	13551.5	13559.6	13567.6	13575.7	13583.8	13591.9	13600.0	13608.1	13616.3	8.09
722.68	13463.1	13471.1	13479.2	13487.2	13495.2	13503.2	13511.3	13519.3	13527.3	13535.4	8.03
722.38	13383.4	13391.3	13399.3	13407.2	13415.2	13423.2	13431.2	13439.1	13447.1	13455.1	7.97
722.07	13304.2	13312.1	13319.9	13327.8	13335.7	13343.6	13351.5	13359.5	13367.5	13375.4	7.92
721.77	13225.5	13233.3	13241.2	13249.0	13256.8	13264.7	13272.6	13280.5	13288.4	13296.3	7.87
721.46	13147.3	13155.1	13162.9	13170.7	13178.5	13186.3	13194.2	13202.0	13209.8	13217.6	7.81
721.16	13069.7	13077.5	13085.2	13092.9	13100.7	13108.4	13116.2	13124.0	13131.8	13139.5	7.76
720.85	12992.6	13000.3	13008.0	13015.7	13023.3	13031.0	13038.8	13046.5	13054.2	13062.0	7.71
720.55	12915.9	12923.6	12931.2	12938.9	12946.5	12954.2	12961.9	12969.5	12977.2	12984.9	7.66
720.24	12839.9	12847.4	12855.0	12862.6	12870.2	12877.8	12885.4	12893.1	12900.7	12908.3	7.61
719.94	12764.2	12771.7	12779.3	12786.9	12794.4	12802.0	12809.5	12817.1	12824.7	12832.3	7.56
719.63	12689.0	12696.5	12704.0	12711.5	12719.1	12726.6	12734.1	12741.6	12749.1	12756.7	7.52
719.33	12614.3	12621.8	12629.2	12636.7	12644.2	12651.6	12659.1	12666.6	12674.0	12681.5	7.46
, 17.33	12017.3	12021.0	12027.2	12030.7	12077.2	12031.0	12037.1	12000.0	12074.0	12001.5	7.10
719.02	12540.1	12547.5	12554.9	12562.3	12569.7	12577.2	12584.6	12592.0	12599.5	12606.9	7.42
718.72	12466.3	12473.7	12481.0	12488.4	12495.8	12503.2	12510.5	12517.9	12525.3	12532.7	7.38
718.42	12392.9	12400.2	12407.6	12414.9	12422.3	12429.6	12436.9	12444.3	12451.6	12459.0	
718.11	12320.0	12327.3	12334.6	12341.9	12349.1	12356.4	12363.7	12371.0	12378.3	12385.6	7.29
717.81	12247.5	12254.8	12262.0	12269.2	12276.5	12283.7	12291.0	12298.2	12305.5	12312.7	7.25

Exhibit 11M– Mica Reservoir Capacity Table (SI) $$\operatorname{hm}^3$$

ELEVATION											AVERAGE DIFFERENCE
IN											PER
METERS	.00	.03	.06	.09	.12	.15	.18	.21	.24	.27	3/100 M
717.50	12175.5	12182.7	12189.9	12197.1	12204.3	12211.5	12218.7	12225.9	12233.1	12240.3	7.20
717.20	12103.7	12110.9	12118.1	12125.2	12132.4	12139.6	12146.8	12153.9	12161.1	12168.3	7.17
716.89	12032.5	12039.6	12046.7	12053.8	12061.0	12068.1	12075.2	12082.3	12089.5	12096.6	7.13
716.59	11961.6	11968.7	11975.8	11982.8	11989.9	11997.0	12004.1	12011.2	12018.3	12025.4	7.09
716.28	11891.1	11898.2	11905.2	11912.2	11919.3	11926.3	11933.4	11940.4	11947.5	11954.5	7.04
715.98	11820.9	11828.0	11835.0	11842.0	11849.0	11856.0	11863.1	11870.1	11877.1	11884.1	7.02
715.67	11751.2	11758.2	11765.1	11772.1	11779.1	11786.0	11793.0	11800.0	11807.0	11814.0	6.97
715.37	11681.8	11688.8	11695.7	11702.6	11709.5	11716.5	11723.4	11730.4	11737.3	11744.3	6.94
715.06	11612.8	11619.7	11626.6	11633.5	11640.4	11647.3	11654.2	11661.1	11668.0	11674.9	6.90
714.76	11544.0	11550.9	11557.8	11564.7	11571.5	11578.4	11585.3	11592.2	11599.0	11605.9	6.87
714.45	11475.7	11482.5	11489.4	11496.2	11503.0	11509.8	11516.7	11523.5	11530.4	11537.2	6.83
714.15	11407.7	11414.5	11421.3	11428.1	11434.9	11441.6	11448.5	11455.3	11462.1	11468.9	6.80
713.84	11340.0	11346.8	11353.5	11360.3	11367.1	11373.8	11380.6	11387.4	11394.1	11400.9	6.77
713.54	11272.6	11279.3	11286.0	11292.8	11299.5	11306.3	11313.0	11319.8	11326.5	11333.3	6.74
712.93	11138.7	11145.4	11152.0	11158.7	11165.4	11172.1	11178.8	11185.4	11192.1	11198.8	6.68
712.62	11072.0	11078.7	11085.4	11092.0	11098.7	11105.3	11112.0	11118.7	11125.3	11132.0	6.66
712.32	11005.5	11012.2	11018.8	11025.5	11032.1	11038.8	11045.4	11052.1	11058.7	11065.4	6.65
712.01	10939.3	10945.9	10952.5	10959.1	10965.8	10972.4	10979.0	10985.6	10992.3	10998.9	6.63
711.71	10873.2	10879.8	10886.4	10893.0	10899.6	10906.2	10912.8	10919.4	10926.0	10932.7	6.61
711.40	10807.3	10813.9	10820.5	10827.0	10833.6	10840.2	10846.8	10853.4	10860.0	10866.6	6.59
711.10	10741.5	10748.1	10754.7	10761.2	10767.8	10774.4	10781.0	10787.5	10794.1	10800.7	6.58
710.80	10676.0	10682.5	10689.1	10695.6	10707.3	10708.7	10715.3	10707.3	10728.4	10734.9	6.55
710.49	10610.6	10617.1	10623.7	10630.2	10636.7	10643.3	10649.8	10656.3	10662.9	10669.4	6.53
710.19	10545.4	10552.0	10558.5	10565.0	10571.5	10578.0	10584.5	10591.1	10597.6	10604.1	6.52
710.17	10343.4	10332.0	10336.3	10303.0	10371.3	10376.0	10304.3	10371.1	10377.0	10004.1	0.52
709.88	10480.4	10486.9	10493.4	10499.9	10506.4	10512.9	10519.4	10525.9	10532.4	10538.9	6.50
709.58	10415.6	10422.1	10428.6	10435.1	10441.5	10448.0	10454.5	10461.0	10467.5	10473.9	6.48
709.27	10351.0	10357.5	10363.9	10370.4	10376.8	10383.3	10389.8	10396.2	10402.7	10409.2	6.46
708.97	10286.6	10293.0	10299.5	10305.9	10312.3	10318.8	10325.2	10331.7	10338.1	10344.6	6.44
708.66	10222.4	10228.8	10235.2	10241.6	10248.0	10254.4	10260.9	10267.3	10273.7	10280.2	6.43
708.36	10158.3	10164.7	10171.1	10177.5	10183.9	10190.3	10196.7	10203.1	10209.5	10215.9	6.40
708.05	10094.5	10100.9	10107.3	10113.6	10120.0	10126.4	10132.8	10139.2	10145.5	10151.9	6.38
707.75	10030.8	10037.1	10043.5	10049.9	10056.2	10062.6	10069.0	10075.4	10081.8	10088.1	6.37
707.44	9967.4	9973.7	9980.0	9986.4	9992.7	9999.0	10005.4	10011.7	10018.1	10024.4	6.34
707.14	9904.1	9910.4	9916.7	9923.1	9929.4	9935.7	9942.0	9948.4	9954.7	9961.0	6.33
706.83	9841.0	9847.3	9853.7	9859.8	9866.2	9872.5	9878.8	9885.1	9891.5	9897.8	6.31