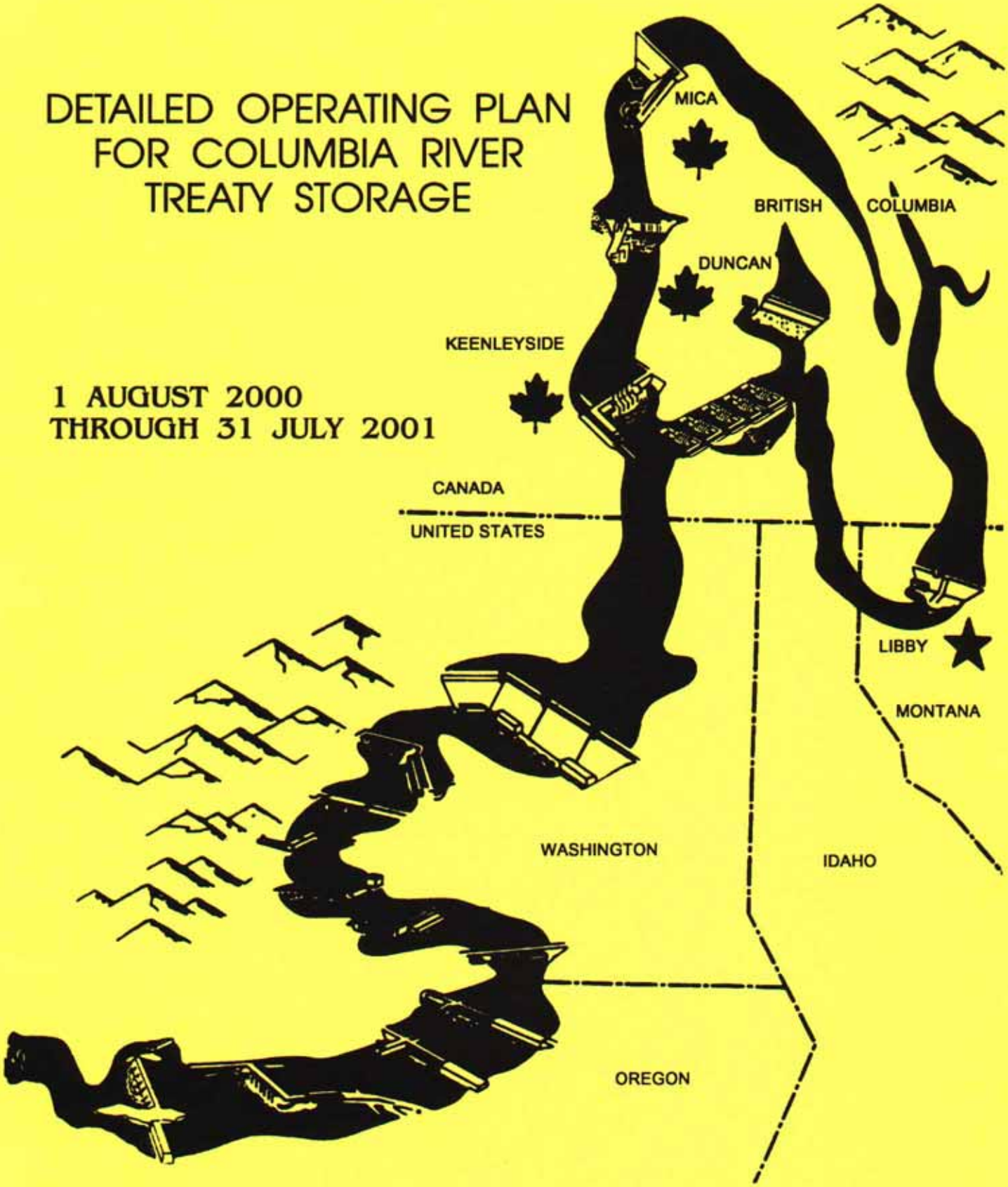
DETAILED OPERATING PLAN FOR COLUMBIA RIVER TREATY STORAGE



1 AUGUST 2000
THROUGH 31 JULY 2001

COLUMBIA RIVER TREATY OPERATING COMMITTEE

JULY 2000

COLUMBIA RIVER TREATY ENTITY AGREEMENT ON THE

DETAILED OPERATING PLAN

FOR COLUMBIA RIVER TREATY STORAGE

1 AUGUST 2000 THROUGH 31 JULY 2001

Article XIV 2.(k) of the Columbia River Treaty between Canada and the United States of America (Treaty) provides that the Entities develop a Detailed Operating Plan for each year's actual operation.

The Entities agree that Treaty storage will be operated and electric power delivered in accordance with the attached "Detailed Operating Plan for Columbia River Treaty Storage - 1 August 2000 through 31 July 2001" (2000-01 Detailed Operating Plan), dated August 2000. The Detailed Operating Plan was prepared in accordance with the document "Principles and Procedures for the Preparation and Use of Hydroelectric Operating Plans," dated December 1991. The Entities agree the referenced Principles and Procedures will guide the Entities in implementing the 2000-01 Detailed Operating Plan.

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

Executed for the Canadian Entity this 11th day of July, 2000.

By _____
Brian R.D. Smith
Chair

Executed for the United States Entity this 5th day of July, 2000.

By _____
Judith A. Johansen
Chairman

By _____
Brigadier General Carl A. Strock
Member

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DETAILED OPERATING PLAN FOR COLUMBIA RIVER TREATY STORAGE 1 AUGUST 2000 THROUGH 31 JULY 2001

I. REFERENCES AND INTERPRETATION

In this document:

A. "Assured Operating Plan" (AOP) means the document "Columbia River Treaty Hydroelectric Operating Plan-Assured Operating Plan for Operating Year 2000-01" dated January 2000."

B. "Canadian storage" means the storage provided by Canada under Article II of the Treaty, which is a total of 19.12 cubic kilometers ($km^3 = 10^9 m^3$) (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 Plan" means the document "Columbia River Treaty Flood Control Operating Plan," dated October 1999. The flood control allocation for this Operating Year will be 2.56 km^3 (2.08 Maf) at Mica and 6.29 km^3 (5.1 Maf) at Arrow as indicated respectively by Chart 5 and Chart 7 of the Flood Control Plan.

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 US Army Corps of Engineers on behalf of the U.S. Entity for the Libby project in accordance with Section 9 of the LCA.

H. "Operating Committee" means the Columbia River Treaty Operating Committee.

I. "Operating Year" means the period from 1 August 2000 through 31 July 2001.

J. "Principles and Procedures" (POP) means the document "Principles and Procedures for the Preparation and Use of Hydroelectric Operating Plans," dated December 1991.

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 document of that title dated 1 January 1992, with subsequent modifications as agreed by the Operating Committee.

M. "Treaty Storage Regulation" (TSR) means the Coordinated System hydroregulation study performed for the Operating Committee by Bonneville Power Administration (BPA) staff that implements the DOP operating criteria using actual and forecasted stream flow conditions.

N. "Weekly Treaty Storage Operation Agreement" means the note electronically transferred (e-mail or fax) 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.

II. PREPARATION AND SCOPE

A. General

This Detailed Operating Plan (DOP) for Canadian storage is based on the operating criteria contained in the 2000-01 Assured Operating Plan (AOP) and its supporting hydroregulation studies, together with scheduling procedures and other mutually beneficial changes from the AOP data agreed to by the Entities.

B. Storage Amounts

This DOP incorporates the use of Standard International (SI, or metric) measurements; for operational purposes, reliance should be placed on measurements in the English system. The usable Canadian storage space available for power purposes during the Operating Year is 19.12 km^3 (15.5 Maf) in Canada distributed as follows:

Duncan Reservoir
1.73 km^3 (1.4 Maf) [1,726.81 hm^3 (705.8 thousand second-foot-days (ksfd))] between elevations 576.68 meters (m) (1892.0 feet) and 546.87 m (1794.2 feet) measured at Duncan forebay. (Based on British Columbia Hydro and Power Authority (BC Hydro) table dated 21 February 1973.)

Arrow Reservoir
8.76 km^3 (7.1 Maf) [8,757.85 hm^3 (3579.6 ksfd)] between elevations 440.13 m (1444.0 feet) and 419.98 m (1377.9 feet) measured at Fauquier, B.C. (Based on BC Hydro table dated 28 February 1974.)

Kinbasket Reservoir (Mica)
8.63 km^3 (7.0 Maf) [8,634.54 hm^3 (3529.2 ksfd)] measured at Mica forebay. (Based on BC Hydro table dated 25 March 1974.)

The usable Canadian storage available for normal flood control purposes for the Operating Year is 1.57 km^3 (1.27 Maf) in Duncan Reservoir below elevation 576.68 m (1892.0 feet); 6.29 km^3 (5.1 Maf) in Arrow Reservoir below elevation 440.13 m

(1444.0 feet); and 2.57 km³ (2.08 Maf) in Kinbasket Lake (Mica Reservoir) except that additional storage may also be operated for flood control purposes under special circumstances, as described in the Flood Control Plan. Prior to 31 December 2000, the Canadian Entity may request, and with the approval of the Operating Committee, flood control space may be transferred between Mica and Arrow.

C. Preparation of the Treaty Storage Regulation Study

The Treaty Storage Regulation (TSR) study uses DOP operating criteria for both Canadian and U.S. projects to define a Canadian storage operation. The 2000-01 TSR 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 2000-01 AOP Step I hydroregulation study, except for the following changes agreed to by the Operating Committee:

1. Brownlee storage operation is simulated by using CRC's and ECC's instead of the fixed operation from Idaho Power Company. The Base ECC was the CRC1 except May and July when it was the URC. The VECC's were the same as the 50-year average for January, May and June, and the same as the CRC1 for February through April. The CRC's were the 1929 through 1932 storage operation.

2. Duncan and Libby are operated according to the five-step mode of operation, as agreed to for the 2001-02 AOP studies, to avoid exceeding the International Joint Commission (IJC) maximum levels for Kootenay Lake. The Operating Committee may agree to develop and implement a revised plan of operation, including the appropriate drafting priority, in accordance with the Flood Control Operating Plan.

3. Flood control rule curves were updated to the February 1, 2000, data submittals from the Corps of Engineers. This includes Canadian storage and main U.S. projects such as Libby, Hungry Horse, Grand Coulee, Brownlee, Dworshak, and John Day. It is based on the historical no-shift flood control between Coulee and Dworshak.

4. Water supply forecast errors and distribution factors for Canadian projects as updated in August 1997.

5. Hydro-independent data are based on the 50-year average used in the 2000-01 AOP.

6. The hydroregulation model used is BPA's HYDSIM version 24a.

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.

The TSR includes the operating guides and limits listed in Sections VI and VII of this DOP. During the operating year, the Operating Committee may agree to other mutually beneficial changes to the TSR data and model.

D. Libby

Beginning with this DOP, Libby operating limits and the expected operation of the Libby project are no longer included in the DOP. That information will now be available in the Libby Operating Plan prepared by the U.S. Entity. The operation of Libby in the 2000-01 TSR will be based on the 2000-01 AOP Step 1 hydro-regulation study.

III. POWER DELIVERIES

A. Delivery of the Canadian Entitlement

Under Section 2.(1)(a) of the Canadian Entitlement Purchase Agreement (CEPA), the sale of the Canadian Entitlement attributable to Duncan Lake storage terminated on 31 March 1998, and the sale attributable to Arrow Lakes storage terminated on 31 March 1999. Under Section 2(3) of CEPA, the percentage of the downstream power benefits attributable to each Canadian storage project is the percentage of that storage as set out in Article II of the Treaty to the total Canadian storage. The storage volume at Duncan lake is 1.73 km^3 (1.4 Maf), at Arrow Lakes is 8.76 km^3 (7.1 Maf), the whole Canadian storage is 19.12 km^3 (15.5 Maf), so the ratio is 8.5/15.5. There is a 2.5 aMW reduction to the 2000-01 Energy Entitlement according to item 7 of the "Columbia River Treaty Entity Agreement on the 1998/99, 1999/00, and 2000/01 Assured Operating Plan and Determination of Downstream Power Benefit Studies," dated 5 April 1995. The obligation of the United States to return Canadian Entitlement to Canada for operating year 2000-01 beginning the period 1 August 2000 through 31 July 2001 is computed to be:

1. Energy Entitlement Returned
   Average Annual Energy = (508.4-2.5) aMW * (8.5/15.5) = 277.4 aMW

2. Capacity Entitlement Returned
   Dependable Capacity = 1447.3 MW * (8.5/15.5) = 793.7 MW

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. Entitlement Purchase Agreement Compensation

The Entity agreements on the Determination of Downstream Power Benefits (DDPB) for the 2000-01 and 2001-02 Operating Years indicated that the U.S. Entity is not entitled to receive any energy or dependable capacity from BC Hydro during the period 1 August 2000 through 31 July 2001, in accordance with Sections 7 and 10 of the Canadian Entitlement Purchase Agreement dated 13 August 1964.

C. LCA Power

In accordance with Section 7(b) of the Libby Coordination Agreement (LCA), the Canadian Entity shall deliver to the U.S. Entity one (1) average MW, shaped flat, during the period 1 August 2000 through 31 July 2001. 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 the Bonneville Power Administration (BPA), for delivery of LCA power at the points of interconnection between BC Hydro and the Federal Columbia River Transmission System.

D. 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 the Bonneville Power Administration (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 2000 through 31 July 2001 shall be in accordance with Sections I through VII of this DOP and any operational agreements signed by the Entities during the operating year. Consistent with the operating principles in this section, the Operating Committee may from time-to-time agree to mutually beneficial changes to the operating procedures and data contained in this document. These changes will be documented and reported to the Entities.

B. Storage Operation to TSR Level

Except as allowed in subsections C and D below, 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.

C. Storage Operation Above and Below TSR Levels

Consistent with flood control, operating limits, and the principles and limitations defined below, the Operating Committee may agree to mutually beneficial arrangements for storage above and below the TSR levels to meet power and nonpower 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 nonpower objectives. When appropriate, the Operating Committee will make suitable arrangements for delivery of power relating to sharing of power benefits from operational agreements.

2. Nonpower Objectives:

Operations designed to help meet nonpower objectives do not imply that either Entity acknowledges any obligation, domestic or international, to meet those objectives. The Entities agree that operations for nonpower 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.

Canadian nonpower objectives contemplated include, but are not limited to, whitefish and trout spawning downstream of Keenleyside, dust storm avoidance upstream of Keenleyside, and recreation needs. U.S. nonpower objectives include, but are not limited to, storage up to 1.23 km^3 (1 Maf) for anadromous fish flow augmentation, minimum flows at Vernita Bar for fish spawning, and recreation needs. Nonpower 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 nonpower 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 Treaty storage operation.

D. Provisional Draft at Arrow

The Canadian Section of the Operating Committee may provisionally draft from (store into) 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 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. Preliminary seasonal runoff volume forecasts for the Columbia River at The Dalles, Oregon, shall be made available by the U.S. Section on the second 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 ten days and the last ten days of each month). The actual and forecasted unregulated stream flows, variable energy content curves, the flood control storage evacuation requirements, and the variable flood control refill curves determined by the U.S. Army Corps of Engineers will be updated for each TSR study as agreed by the Operating Committee. Additional weekly studies will be performed at the request of either section of the Operating Committee to reflect the most current forecast unregulated stream flows, variable energy content curves, flood control space storage evacuation requirements, and flood control refill curves for

determining the Canadian storage releases.

During the Flood Control Storage Evacuation Period and the Flood Control Refill period, the projects Upper Rule Curves will be determined through 31 July by the North Pacific Region, Northwestern Division, U.S. Army Corps of Engineers, in accordance with the Flood Control Plan and the Principles and Procedures as referenced in Section I. 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:

1. Weekly Agreement for Storage Regulation during the Storage Drawdown Season

   a) Timing: A preliminary request will be made not later than noon each Thursday, followed by a final agreement by noon Friday, if necessary.

   b) Confirmation: Confirmation of the Treaty Storage Operation Agreement will 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 _____ (*day, month [spell-out], and year*) that the _____ (*storing/drafting*) of an estimated _____ ksfd ____ (*in/from)* the whole of Canadian storage for the Period _____ through _____ is consistent with the Detailed Operating Plan.
>
> 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 DOP TSR expected end-of-_____ (*month, except split April & August*) storage level for the whole of Canadian storage of _____ ksfd.
> This operation includes expected _____ (*storage above/draft below*) the end-of-month (except April & August) DOP TSR level for the whole of Canadian storage of _____ ksfd.

   c) Period Covered by Weekly Treaty Storage Operation Agreement: The period covered by the agreement shall be from 0800 hours on the Saturday following the date of weekly request to 0800 hours on the Saturday a week later. Changes from the previous week's agreement shall commence at 0800 hours on Saturday, or as soon thereafter as permitted by the limits of VII(B)7.

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 12), Arrow (Exhibit 13), and Mica (Exhibit 14). The change in Arrow storage content will be determined using the recorded reservoir elevation at the gauge near Fauquier, B.C.

e) Delivery: Storage releases 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 storage water agreed to is released from Duncan, Arrow, and Mica reservoirs, provided an amount equal to or greater than the storage water release from Duncan reservoir is concurrently discharged from Kootenay Lake.

f) 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 US Section, up to five (5) mid-week requests for changes to the Canadian storage operation, consistent with the 2000-01 AOP, this DOP, and operating agreements entered into pursuant to this DOP.

g) Provisional Draft: Scheduling arrangements for provisional draft from (store into) Arrow reservoir, in accordance with Section 10 of the LCA, shall be done concurrent with and similar to the Weekly Treaty Storage Operation Agreement.

h) Non-routine Operation: Any special operation that is agreed to by the Operating Committee will be suitably documented.

2. Daily Agreement for Storage Regulation during Flood Control Season

a) Forecasts: Day-to-day stream flow forecasts will be accomplished by use of computer simulation by the National Weather Service River Forecasting Center. The regulation center required by the Flood Control 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) Daily Requests for Project Outflows: Pursuant to the operating rules in the Flood Control Plan, the outflows from individual Canadian storage projects are specified on a day-to-day basis. 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. Daily 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 fax 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 fax. 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.

3. 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 upper rule curve, then an appropriate outflow schedule for that reservoir will be determined to ensure that the reservoir will be drafted to its upper rule curve as soon as feasible.

VI. OPERATING GUIDES

A. Operating Rule Curve

The Operating Rule Curve for the whole of Canadian storage shall be the sum of the Operating Rule Curves for each of Duncan, Arrow, and Mica. The Operating Rule Curve for each of the Duncan, Arrow, and Mica Reservoirs during the period 1 August 2000 through 31 July 2001 is determined in accordance with the reference documents of Section 1, and is defined as follows:

1. During the period 1 August 2000 through 31 December2000, it is the higher of the First Critical Rule Curve or the Assured Refill Curve.

2. During the period 1 January 2001 through 31 July 2001, it is the higher of the First Critical Rule Curve or the Assured Refill Curve, unless the Variable Refill Curve is below the higher of the above two curves; then it is defined by the Variable Refill Curve.

3. During the period 1 January 2001 through 15 April 2001, it will not be lower than the Limiting Rule Curve 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 2000-01 Operating Year, it will not be higher than the Upper 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 monthly average outflows tabulated with specified qualifications under Operating Limits. The obligation to operate Mica 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 Variable Refill Curves for Arrow, Duncan, and Mica shall be constructed based on the power discharge requirement specified in Exhibit 7.

7. The Variable Refill Curves for Arrow may be constructed as specified in a) below, if agreed by the Operating Committee, otherwise b) will apply.

   a) If the projected live Mica storage content at the end of the current month using most likely Mica inflow and target outflows (expected live Mica storage content) is less than that computed for the Variable Refill Curve for Mica, the Variable Refill Curve for Arrow will be calculated using the Arrow Local Inflow Method as follows:

      (i) The forecast volume of inflow for Arrow will exclude the volume of inflow above the Mica project (Arrow local inflow). This 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).

      (iv) For the purpose of calculating the rule curve for the whole of Canadian storage, the Variable Refill Curve for Mica will be set equal to the expected live Mica Treaty storage content.

   (b) If the expected live Mica storage content is greater than that computed for the Variable Refill Curve for Mica, the Variable Refill Curve for Arrow will be computed using the Arrow Total Inflow Method, i.e., the forecast volume of inflow above the Mica project will be included. The space in Mica to be deducted from the Arrow total inflow will be equal to the amount of storage draft determined by the Operating Rule Curve for Mica as defined in paragraphs VI(A)2 through VI(A)4 and VI(A)6.

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. Rule Curves for Future Operating Years

The following tables, including adjustments, have been agreed to by the Entities:

1.	Second Critical Rule Curves for Duncan, Arrow, Mica, and the whole of Canadian storage for Operating Year 2001-02.	Exhibit 9
2.	Third Critical Rule Curves for Duncan, Arrow, Mica, and the whole of Canadian storage for Operating Year 2002-03	Exhibit 10
3.	Fourth Critical Rule Curves for Duncan, Arrow, Mica, and the whole Canadian storage for Operating Year 2003-04.	Exhibit 11

D. 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 12
2.	Arrow Reservoir Capacity Table (based on BC Hydro Combined Storage Table dated 28 February 1974).	Exhibit 13
3.	Mica Reservoir Capacity Table (based on BC Hydro table dated 25 March 1974).	Exhibit 14

VII. OPERATING LIMITS

A. Duncan Project

1. Maximum outflow is 566.34 cubic meters per second (m^3/s) (20,000 cubic feet per second (cfs)) through outlets with the limit of 283.17 m^3/s (10,000 cfs) each month in the TSR model.

2. Minimum average weekly outflow is 2.83 m^3/s (100 cfs).

3. Maximum rate of change in outflow is normally 113.27 m^3/s (4,000 cfs) per day

unless a larger change is necessary to accomplish the objectives of the Flood Control 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 draft in elevation during any month is limited to the equivalent of 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 and in the TSR be limited to a maximum of 2,265 m^3/s (80,000 cfs) unless higher outflows are needed to meet flood control requirements.

2. Minimum average weekly outflow is 141.58 m^3/s (5,000 cfs).

3. Maximum rate of change in outflow is normally 424.75 m^3/s (15,000 cfs) per day unless a larger change is necessary to accomplish the objectives of the Flood Control 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 monthly draft in elevation limited to the equivalent of 0.30 m (1 foot) per day

7. Advance notice for changes in outflow for:

a) Drop in downstream level of

0.15 m (½ foot)	-	None,
0.30 m (1 foot)	-	1 hour,
0.61 m (2 feet)	-	2 hours,
0.91 m (3 feet)	-	24 hours, and

b) Rise in downstream level of

0.15 m (½ foot)	-	None,
0.30 m (1 foot)	-	1 hour,
0.61 m (2 feet)	-	2 hours,
0.91 m (3 feet)	-	7 hours, only if notice is received before 10:00 a.m. that day, otherwise 24-hour notice is required.

C. Mica Project

The Mica Project Treaty storage will be operated according to the Mica Project Operating Criteria shown in the following table except as qualified in subsections VII(C)1 through VII(C)9.

1. Variable Refill Curves (VRC) shall be constructed based on a power discharge requirement as indicated in Exhibit 7 with 31 July Treaty storage content of 8,634.54 hm^3 (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 8455.94 hm^3 (3456.2 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)9. The End of Previous Month Arrow Storage Content will be determined from the current TSR. 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 table below and as defined in Note 2/, and by the maximum outflow as defined in Note 1/ when the Target End-of-Month Storage Content is below 8,634.54 hm^3 (3529.2 ksfd) unless needed to accomplish the objectives of the Flood Control Plan.

4. Mica operation to the Target Month Average Outflow shall be limited by the Minimum Target Treaty Content shown in the table below. 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 8455.94 hm^3 (3456.2 ksfd).

6. Mica outflows will be increased during the months October through June as required to avoid violation of the Upper Rule Curve.

7. During the period January through July, the End of Previous Month Arrow Storage Content used to determine the Mica project operation in paragraph VII(C)2 shall be obtained only from a TSR study that uses the Arrow Total Inflow method (as defined in paragraph VI(A)7b) continuously from January through July.

8. Each month, within two working days of determination of the final TSR, normally available within the first ten days of the month, one correction to the adjusted Mica outflow may be made, consistent with subsections VII(C)3 through VII(C)7.

9. Storage releases from Mica in excess of 8.63 km^3 (7 Maf) that result from operating Mica under the criteria described in VII(C)2 through VII(C)8 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 8.63 km^3 (7 Maf). The total combined storage draft from Mica and Arrow will not exceed 17.39 km^3 (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)

Month	End of Previous Month Arrow Storage Content (ksfd)	Target Operation		Minimum Target Treaty Content at Mica 2/ (ksfd)	Minimum Outflow (cfs)
		Month Average Outflow (cfs)	End-of-Month Storage Content 1/ (ksfd)		
August 1-15	2.600 - FULL	-	3.486.2	0.0	15.000
	1.650 - 2.600	17.000			
	0 - 1.650	26.000			
August 16-31	3.400 - FULL	-	3.529.2	0.0	15.000
	1.450 - 3.400	24.000			
	0 - 1.450	27.000			
September	3.460 - FULL	-	3.529.2	0.0	10.000
	1.600 - 3.460	22.000			
	0 - 1.600	27.000			
October	3.150 - FULL	-	3.386.2	0.0	10.000
	1.300 - 3.150	22.000			
	0 - 1.300	28.000			
November	3.070 - FULL	-	3.056.2	0.0	12.000
	2.320 - 3.070	22.000			
	0 - 2.320	28.000			
December	2.650 - FULL	25.000		0.0	21.000
	1.930 - 2.650	27.000			
	0 - 1.930	29.000			
January	2.430 - FULL	26.000		106.2	15.000
	1.270 - 2.430	28.000			
	0 - 1.270	30.000			
February	2.050 - FULL	23.000		0.0	15.000
	2.045 - 2.050	21.000			
	0 - 2.045	26.000			
March	1.680 - FULL	22.000		0.0	15.000
	150 - 1.680	27.000			
	0 - 150	32.000			
April 1-15	1.810 - FULL	26.000		0.0	12.000
	50 - 1.810	-	136.2		
	0 - 50	12.000			
April 16-30	1.050 - FULL	-	106.2	0.0	10.000
	20 - 1.050	-	0.0		
	0 - 20	10.000			
May	220 - FULL	10.000 3/		0.0	10.000 3/
	0 - 220	23.000			
June	440 - FULL	10.000 3/		0.0	10.000 3/
	0 - 440	17.000			
July	3.175 - FULL	-	3.456.2	0.0	10.000 3/
	1.660 - 3.175	10.000			
	0 - 1.660	21.000			

Notes:

1/ A maximum outflow of 34,000 cfs will apply if the Target End-of-Month Storage Content is less than 3,529.2 ksfd in every month except April, May, and June. For these months, the maximum outflow is 29,000 cfs in April 1-15, 27,000 cfs in April 16-30, 30,000 cfs in May and 33,000 cfs in June.

2/ Mica outflows will be reduced to minimum to maintain the reservoir above the minimum Treaty storage content. This will override any target flow.

3/ The Entities have agreed to change the Mica minimum outflow from 8,000 cfs listed in the AOP to 10,000 cfs.

Mica Project Operating Criteria (SI)

Month	End of Previous Month Arrow Storage Content (hm^3)	Target Operation		Minimum Target Treaty Content at Mica 2/ (hm^3)	Minimum Outflow (m^3/s)
		Month Average Outflow (m^3/s)	End-of-Month Storage Content 1/ (hm^3)		
August 1-15	6361.2 - FULL	-	8529.3	0.0	424.75
	4036.9 - 6361.2	481.39			
	0.0 - 4036.9	736.24			
August 16-31	3547.6 - FULL	-	8634.5	0.0	424.75
	3547.6 - 8318.4	679.60			
	0.0 - 3547.6	764.55			
September	8465.2 - FULL	-	8634.5	0.0	283.17
	3914.6 - 8465.2	622.97			
	0.0 - 3914.6	764.55			
October	7706.8 - FULL	-	8284.7	0.0	283.17
	3180.6 - 7706.8	622.97			
	0.0 - 3180.6	792.87			
November	7511.1 - FULL	-	7477.3	0.0	339.80
	5676.1 - 7511.1	622.97			
	0.0 - 5676.1	792.87			
December	6483.5 - FULL	707.92		0.0	594.65
	4721.9 - 6483.5	764.55			
	0.0 - 4721.9	821.19			
January	5945.2 - FULL	736.24		259.8	424.75
	3107.2 - 5945.2	792.87			
	0.0 - 3107.2	849.50			
February	5015.5 - FULL	651.29		0.0	424.75
	5003.3 - 5015.5	594.65			
	0.0 - 5003.3	736.24			
March	4110.3 - FULL	622.97		0.0	424.75
	367.0 - 4110.3	764.55			
	0.0 - 367.0	906.14			
April 1-15	4428.3 - FULL	736.24		0.0	339.80
	122.3 - 4428.3	-	333.2		
	0.0 - 122.3	339.80			
April 16-30	2568.9 - FULL	-	259.8	0.0	283.17
	48.9 - 2568.9	-	0.0		
	0.0 - 48.9	283.17			
May	538.3 - FULL	283.17 3/		0.0	283.17 3/
	0.0 - 538.3	651.29			
June	1076.5 - FULL	283.17 3/	0.0	0.0	283.17 3/
	0.0 - 1076.5	481.39			
July	7768.0 - FULL	-	8455.9	0.0	283.17 3/
	4061.4 - 7768.0	283.17			
	0.0 - 4061.4	594.65			

Notes:

1/ A maximum outflow of 962.77 m^3/s will apply if the Target End-of-Month Storage Content is less than 8634.5 hm^3 in every month except April , May, and June. For these months, the maximum outflow is 821.19 m^3/s in April 1-15, 764.55 m^3/s in April 16-30, 849.50 m^3/s in May and 934.48 m^3/s in June.

2/ Mica outflows will be reduced to minimum to maintain the reservoir above the minimum Treaty storage content. This will override any target flow.

3/ The Entities have agreed to change the Mica minimum outflow from 226.53 m^3/s listed in the AOP to 283.17 m^3/s.

Exhibit 1 - Assured Refill Curves (English) 1/

	DUNCAN					MICA						ARROW					
	1931 Inflow	PDR	Water Available for Refill		ARC	1931 Inflow	PDR	Water Available for Refill		CRC1	ARC	1931 Inflow	PDR	Water Available for Refill		MICA Refill	ARC
Month	cfs 3/	cfs 4/	cfs	ksfd	ksfd	cfs	cfs 4/	cfs	ksfd	ksfd	ksfd	cfs	cfs 4/	cfs	ksfd	ksfd 2/	ksfd
July	7320	2000	5320	164.9	705.8	56477	20000	36477	1130.8	3388.1	3529.2	88586	50000	38586	1196.2	1037.6	3579.6
June	8030	2000	6030	180.9	540.9	60178	20000	40178	1205.3	2491.6	2398.4	114636	45000	69636	2089.1	1298.5	3421.0
May	5170	1500	3670	113.8	360.0	28058	20000	8058	249.8	844.2	1193.1	68098	40000	28098	871.0	249.8	2630.5
Apr2	981	1500	-519	-7.8	246.2	7217	20000	-12783	-191.7	383.9	943.3	20504	40000	-19496	-292.4	-191.7	2009.2
Apr1	981	1500	-519	-7.8	254.0	4679	20000	-15321	-229.8	858.2	1135.0	10700	40000	-29300	-439.5	-443.8	2109.9
Mar	555	1500	-945	-29.3	261.8	3219	20000	-16781	-520.2	1578.8	1364.8	7653	40000	-32347	-1002.8	-321.1	2105.7
Feb	428	1500	-1072	-30.0	291.1	2593	20000	-17407	-487.4	1899.9	1885.0	5813	40000	-34187	-957.2	-472.5	2787.3
Jan	428	100	328	10.2	321.1	2834	3000	-166	-5.1	1894.6	2372.4	6430	5000	1430	44.3	-9.1	3272.0
Dec	461	100	361	11.2	310.9	3533	3000	533	16.5	2381.5	2377.6	6694	5000	1694	52.5	-582.0	3218.6
Nov	684	100	584	17.5	299.7	5176	3000	2176	65.3	2963.5	2361.1	9483	5000	4483	134.5	-335.5	2584.1
Oct	1090	100	990	30.7	282.2	8751	3000	5751	178.3	3299.0	2295.8	14691	5000	9691	300.4	152.3	2114.1
Sep	2310	100	2210	66.3	251.5	23110	3000	20110	603.3	3146.7	2117.5	39739	5000	34739	1042.2	-382.5	1966.0
Aug2	4530	100	4430	70.9	185.2	38261	3000	35261	564.2	3529.2	1514.2	62605	5000	57605	921.7	0.0	541.3
Aug1	4530	100	4430	66.5	114.3	53542	3000	50542	758.1	3529.2	950.0	82249	5000	77249	1158.7	3529.2	0.0

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

	DUNCAN					MICA						ARROW					
	1931 Inflow	PDR	Water Available for Refill		ARC	1931 Inflow	PDR	Water Available For Refill		CRC1	ARC	1931 Inflow	PDR	Water Available For Refill		MICA Refill	ARC
Month	m^3/s 3/	m^3/s 4/	m^3/s	hm^3	hm^3	m^3/s	m^3/s 4/	m^3/s	hm^3	hm^3	hm^3	m^3/s	m^3/s 4/	m^3/s	hm^3	hm^3 2/	hm^3
July	207.28	56.63	150.65	403.5	1726.8	1599.25	566.34	1032.91	2766.6	8289.3	8634.5	2508.47	1415.84	1092.63	2926.5	2538.6	8757.8
June	227.38	56.63	170.75	442.6	1323.3	1704.05	566.34	1137.71	2949.0	6095.9	5868.0	3246.13	1274.26	1971.87	5111.1	3177.0	8369.9
May	146.40	42.48	103.92	278.3	880.7	794.51	566.34	228.18	611.2	2065.4	2919.0	1928.32	1132.67	795.65	2131.1	611.2	6435.7
Apr2	27.78	42.48	-14.70	-19.0	602.4	204.36	566.34	-361.97	-469.1	939.2	2307.8	580.61	1132.67	-552.06	-715.5	-469.1	4915.8
Apr1	27.78	42.48	-14.70	-19.0	621.4	132.49	566.34	-433.84	-562.3	2099.7	2776.9	302.99	1132.67	-829.68	-1075.3	-1085.8	5162.2
Mar	15.72	42.48	-26.76	-71.7	640.5	91.15	566.34	-475.18	-1272.7	3862.7	3339.2	216.71	1132.67	-915.96	-2453.3	-785.6	5151.7
Feb	12.12	42.48	-30.36	-73.4	712.1	73.43	566.34	-492.91	-1192.5	4648.3	4612.0	164.61	1132.67	-968.07	-2342.0	-1156.1	6819.4
Jan	12.12	2.83	9.29	24.9	785.6	80.25	84.95	-4.70	-12.6	4635.3	5804.4	182.08	141.58	40.49	108.5	-22.2	8005.3
Dec	13.05	2.83	10.22	27.4	760.7	100.04	84.95	15.09	40.4	5826.6	5817.0	189.55	141.58	47.97	128.5	-1423.9	7874.7
Nov	19.37	2.83	16.54	42.9	733.3	146.57	84.95	61.62	159.7	7250.5	5776.6	268.53	141.58	126.94	329.0	-820.8	6322.3
Oct	30.87	2.83	28.03	75.1	690.5	247.80	84.95	162.85	436.2	8071.3	5616.9	416.00	141.58	274.42	735.0	372.6	5172.4
Sep	65.41	2.83	62.58	162.2	615.4	654.40	84.95	569.45	1476.0	7698.7	5180.7	1125.28	141.58	983.70	2549.8	-935.8	4810.0
Aug2	128.28	2.83	125.44	173.4	453.2	1083.43	84.95	998.48	1380.3	8634.5	3704.7	1772.77	141.58	1631.19	2255.0	0.0	1324.4
Aug1	128.28	2.83	125.44	162.6	279.7	1516.14	84.95	1431.19	1854.8	8634.5	2324.3	2329.03	141.58	2187.45	2835.0	8634.5	0.0

Notes on Exhibit 1 and Exhibit 1M:

1/ The Assured Refill Curve 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 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 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 1990 Level Modified streamflow (Hydrosim file).

4/ PDRs are from the 2000-01 AOP.

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

End-of-Month Usable Storage Content

	(English) (ksfd)				(SI) (hm^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	3579.6	705.8	7814.6	8634.5	8757.8	1726.8	19119.2
September	3146.7	3536.6	688.9	7372.2	7698.7	8652.6	1685.5	18036.8
October	3299.0	3113.5	690.0	7102.5	8071.3	7617.5	1688.2	17377.0
November	2963.5	3030.1	566.6	6560.2	7250.5	7413.4	1386.2	16050.2
December	2381.5	2675.9	345.3	5402.7	5826.6	6546.9	844.8	13218.2
January	1894.6	1698.6	283.0	3876.2	4635.3	4155.8	692.4	9483.5
February	1899.9	876.5	275.0	3051.4	4648.3	2144.4	672.8	7465.6
March	1578.8	968.2	222.8	2769.8	3862.7	2368.8	545.1	6776.6
April 15	858.2	508.5	231.2	1597.9	2099.7	1244.1	565.7	3909.4
April 30	383.9	359.0	239.6	982.5	939.2	878.3	586.2	2403.8
May	844.2	896.1	340.0	2080.3	2065.4	2192.4	831.8	5089.7
June	2491.6	2402.0	572.2	5465.8	6095.9	5876.7	1399.9	13372.6
July	3388.1	3033.0	695.0	7116.1	8289.3	7420.5	1700.4	17410.3

Source: First-year critical rule curves from the 2000-01 AOP.

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

End-of-Month Usable Storage Content

	(English) (ksfd)				(SI) (hm^3)			
Month	**Mica**	**Arrow**	**Duncan**	**Total**	**Mica**	**Arrow**	**Duncan**	**Total**
August 15	3529.2	3338.5	705.8	7573.5	8634.5	8168.0	1726.8	18529.3
August 31	3520.3	3327.1	696.7	7544.1	8612.8	8140.1	1704.5	18457.4
September	3146.7	3214.6	617.8	6979.1	7698.7	7864.8	1511.5	17075.1
October	2568.9	3113.5	474.4	6156.8	6285.1	7617.5	1160.7	15063.2
November	1462.5	3030.1	281.1	4773.7	3578.2	7413.4	687.7	11679.3
December	1121.6	2255.2	111.2	3488.0	2744.1	5517.6	272.1	8533.7
January	749.4	771.5	1.2	1522.1	1833.5	1887.6	2.9	3724.0
February	733.0	833.1	0.1	1566.2	1793.4	2038.3	0.2	3831.9
March	580.4	839.7	8.8	1428.9	1420.0	2054.4	21.5	3495.9
April 15	13.0	508.5	32.0	553.5	31.8	1244.1	78.3	1354.2
April 30	0.0	359.0	55.3	414.3	0.0	878.3	135.3	1013.6
May	293.9	574.5	170.0	1038.4	719.1	1405.6	415.9	2540.5
June	925.1	2393.6	320.0	3638.7	2263.3	5856.2	782.9	8902.4
July	2269.7	3033.0	473.0	5775.7	5553.0	7420.5	1157.2	14130.8

Adjusted for Crossover

Source: The 2000-01 second-year critical rule curves are from the 2000-01 AOP unless higher than the first year critical rule curve. This procedure differs from the normal procedure to use data from the previous DOP because the 1999-00 DOP did not use data from the 2000-01 AOP.

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

End-of-Month Usable Storage Content

	(English) (ksfd)				(SI) (hm^3)			
Month	**Mica**	**Arrow**	**Duncan**	**Total**	**Mica**	**Arrow**	**Duncan**	**Total**
August 15	2861.6	3323.6	538.8	6724.0	7001.2	8131.5	1318.2	16450.9
August 31	2948.8	3305.8	593.8	6848.4	7214.5	8088.0	1452.8	16755.3
September	2941.0	3214.6	601.8	6757.4	7195.5	7864.8	1472.4	16532.7
October	2170.6	3113.5	474.4	5758.5	5310.6	7617.5	1160.7	14088.7
November	1151.2	3030.1	281.1	4462.4	2816.5	7413.4	687.7	10917.7
December	1038.4	2165.2	111.2	3314.8	2540.5	5297.4	272.1	8110.0
January	749.4	644.5	1.2	1395.1	1833.5	1576.8	2.9	3413.3
February	733.0	556.0	0.1	1289.1	1793.4	1360.3	0.2	3153.9
March	580.4	782.1	8.8	1371.3	1420.0	1913.5	21.5	3355.0
April 15	2.8	508.5	22.2	533.5	6.9	1244.1	54.3	1305.3
April 30	0.0	346.3	2.0	348.3	0.0	847.3	4.9	852.2
May	0.0	502.2	28.5	530.7	0.0	1228.7	69.7	1298.4
June	816.4	2185.9	109.0	3111.3	1997.4	5348.0	266.7	7612.1
July	1867.9	2228.6	238.3	4334.8	4570.0	5452.5	583.0	10605.5

Adjusted for Crossover

Source: The 2000-01 third-year critical rule curves are from the 2000-01 AOP unless higher than the first or second year critical rule curves. This procedure differs from the normal procedure to use data from the second previous DOP because the 1998-99 DOP did not use data from the 2000-01 AOP.

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

End-of-Month Usable Storage Content

	(English) (ksfd)				(SI) (hm^3)			
Month	**Mica**	**Arrow**	**Duncan**	**Total**	**Mica**	**Arrow**	**Duncan**	**Total**
August 15	1685.6	2471.8	240.0	4397.4	4124.0	6047.5	587.2	10758.7
August 31	1802.5	2045.2	200.0	4047.7	4410.0	5003.8	489.3	9903.1
September	1515.8	1920.1	170.0	3605.9	3708.6	4697.7	415.9	8822.2
October	1147.5	1503.8	160.0	2811.3	2807.5	3679.2	391.5	6878.1
November	513.5	1422.8	1.3	1937.6	1256.3	3481.0	3.2	4740.5
December	9.1	1206.0	8.0	1223.1	22.3	2950.6	19.6	2992.4
January	9.1	473.5	1.0	483.6	22.3	1158.5	2.4	1183.2
February	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: The 2000-01 fourth-year critical rule curves are from the 2000-01 AOP unless higher than the first, second, or third year critical rule curves. This procedure differs from the normal procedure to use data from the third previous DOP because the 1997-98 DOP did not use data from the 2000-01 AOP.

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

End-of-Month Usable Storage Content

	(English) (ksfd)			(SI) (hm^3)		
Month	**Mica**	**Arrow**	**Duncan**	**Mica**	**Arrow**	**Duncan**
January	628.1	1652.7	1.2	1536.7	4043.5	2.9
February	310.3	1071.0	0.0	759.2	2620.3	0.0
March	114.3	172.7	0.0	279.6	422.5	0.0
Apr-15	0.0	1.1	0.1	0.0	2.7	0.2

Source: ECC Lower Limits for Mica, Arrow, and Duncan are from the 2000-01 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. The 2000-01 AOP studies made for the U.S. Coordinated System operation indicate that the PDR's for all cyclic reservoirs must be greater that project minimum release to allow filling in accordance with the Principles and Procedures coincident with carrying system firm load when the Columbia River at The Dalles natural January-July runoff volume is lower than 95 million acre-feet (MAF). The following schedule for PDR's will apply when computing the VRC's during the period January 1 through June 1, unless the Operating Committee agrees to updated study results.

POWER DISCHARGE REQUIREMENTS
FOR JANUARY - JULY VOLUME RUNOFF
OF THE COLUMBIA RIVER AT THE DALLES, OREGON
(cfs)

PDRs	Jan	Feb	Mar	Ap1	Ap2	May	Jun	Jul
				Mica				
ARC	3000	20000	20000	20000	20000	20000	20000	20000
80 MAF	3000	10000	10000	10000	12000	20000	20000	20000
95 MAF	3000	3000	3000	8000	12000	18000	20000	20000
110 MAF	3000	3000	3000	8000	12000	18000	20000	20000
				Arrow				
ARC	5000	40000	40000	40000	40000	40000	45000	50000
80 MAF	5000	20000	22000	25000	30000	35000	42000	44000
95 MAF	5000	5000	5000	8000	20000	23000	33000	34300
110 MAF	5000	5000	5000	8000	20000	23000	33000	34300
				Duncan				
ARC	100	1500	1500	1500	1500	1500	2000	2000
80 MAF	100	1000	1000	1000	2000	2000	2000	2200
95 MAF	100	100	100	100	400	600	1800	2000
110 MAF	100	100	100	100	400	600	1800	2000

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 Requirements will be interpolated linearly between the values shown above.

(2) Data is from the 2000-01 AOP for Canadian projects. 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. The 2000-01 AOP studies made for the U.S. Coordinated System operation indicate that the PDR's for all cyclic reservoirs must be greater that project minimum release to allow filling in accordance with the Principles and Procedures coincident with carrying system firm load when the Columbia River at The Dalles natural January-July runoff volume is lower than 117.18 cubic kilometer (km^3). The following schedule for PDR's will apply when computing the VRC's during the period January 1 through June 1, unless the Operating Committee agrees to updated study results.

POWER DISCHARGE REQUIREMENTS
FOR JANUARY - JULY VOLUME RUNOFF
OF THE COLUMBIA RIVER AT THE DALLES, OREGON
(m^3/s)

PDRs	Jan	Feb	Mar	Ap1	Ap2	May	Jun	Jul
				Mica				
ARC	84.95	566.34	566.34	566.34	566.34	566.34	566.34	566.34
98.68 km^3	84.95	283.17	283.17	283.17	339.80	566.34	566.34	566.34
117.18 km^3	84.95	84.95	84.95	226.53	339.80	509.70	566.34	566.34
135.69 km^3	84.95	84.95	84.95	226.53	339.80	509.70	566.34	566.34
				Arrow				
ARC	141.58	1132.67	1132.67	1132.67	1132.67	1132.67	1274.26	1415.84
98.68 km^3	141.58	566.34	622.97	707.92	849.50	991.09	1189.31	1245.94
117.18 km^3	141.58	141.58	141.58	226.53	566.34	651.29	934.46	971.27
135.69 km^3	141.58	141.58	141.58	226.53	566.34	651.29	934.46	971.27
				Duncan				
ARC	2.83	42.48	42.48	42.48	42.48	42.48	56.63	56.63
98.68 km^3	2.83	28.32	28.32	28.32	56.63	56.63	56.63	62.30
117.18 km^3	2.83	2.83	2.83	2.83	11.33	16.99	50.97	56.63
135.69 km^3	2.83	2.83	2.83	2.83	11.33	16.99	50.97	56.63

Notes:

(1) If the forecasted natural January through July volume runoff at The Dalles is less than 98.68 km^3, the Power Discharge Requirements in the 98.68 km^3 schedule will be used. For intermediate forecasted volumes, the Power Discharge Requirements will be interpolated linearly between the values shown above.

(2) Data is from the 2000-01 AOP for Canadian projects. 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	LOADS	RESOURCES						REGULATED HYDRO LOAD
	Total Loads 1/	Hydro Indep. 2/	Imports 3/	Thermal (Large & Small)	Combst. Turbine	Misc. 4/	Total	
August 15	21512	1338	1271	4649	2173	2110	11542	9970.1
August 31	21428	1202	1250	4649	2089	2110	11300	10128.1
September	20964	1192	1003	4649	2070	2076	10991	9972.6
October	21363	1127	1163	4649	2310	2061	11310	10053.0
November	23304	1182	1785	4650	2268	2063	11947	11356.8
December	24922	1328	2014	4650	2310	2062	12364	12558.8
January	25565	1318	1972	4650	2310	2057	12307	13258.3
February	24468	1293	1863	4650	2310	2063	12179	12289.3
March	23123	1167	1512	4462	2310	2070	11522	11601.1
April 15	21897	1205	1205	4115	1853	2118	10496	11400.9
April 30	22029	1471	1109	3398	1141	2026	9145	12884.2
May	22468	1496	1065	2145	1607	1510	7823	14645.4
June	22697	1752	1260	4003	1855	2050	10920	11777.0
July	22881	1653	1344	4649	2212	2118	11977	10904.7

Notes:

1/ The total loads as the sum of PNW Area load, firm exports, maintenance, and firm surplus.

2/ Based on the 50-year average.

3/ Imports include 96.6 annual aMW of seasonal exchanges.

4/ Miscellaneous resources include PURPA, cogeneration, renewable, and energy management system.

Source: Loads and Resources are from the 2000-01 AOP DDPB Document, Table 1A, Regulated Hydro Load plus Other Coordination Hydro.

Exhibit 9 - Second Critical Rule Curves for OY 01-02 (English & SI)

End-of-Month Usable Storage Content

	(English) (ksfd)				(SI) (hm^3)			
Month	**Mica**	**Arrow**	**Duncan**	**Total**	**Mica**	**Arrow**	**Duncan**	**Total**
August 15	3511.0	3543.3	705.8	7760.1	8590.0	8669.0	1726.8	18985.9
August 31	3478.7	3506.7	684.8	7670.2	8511.0	8579.5	1675.4	18765.9
September	3110.6	3208.9	685.5	7005.0	7610.4	7850.9	1677.1	17138.4
October	2577.7	3199.4	660.2	6437.3	6306.6	7827.7	1615.2	15749.5
November	1732.4	2860.8	476.9	5070.1	4238.5	6999.2	1166.8	12404.5
December	1675.2	1717.5	240.0	3632.7	4098.5	4202.0	587.2	8887.8
January	712.6	801.5	63.8	1577.9	1743.4	1960.9	156.1	3860.5
February	565.8	848.8	40.0	1454.6	1384.3	2076.7	97.9	3558.8
March	561.7	774.0	2.1	1337.8	1374.3	1893.7	5.1	3273.1
April 15	39.7	426.1	11.9	477.7	97.1	1042.5	29.1	1168.7
April 30	12.9	284.7	21.6	319.2	31.6	696.5	52.8	781.0
May	651.9	689.0	118.6	1459.5	1594.9	1685.7	290.2	3570.8
June	1858.2	1801.4	329.4	3989.0	4546.3	4407.3	805.9	9759.5
July	2969.9	3005.2	523.7	6498.8	7266.2	7352.5	1281.3	15900.0

Source: These rule curves are from the 2001-02 second year AOP study.

Exhibit 10 - Third Critical Rule Curves for OY 02-03 (English & SI)

End-of-Month Usable Storage Content

	(English) (ksfd)				(SI) (hm^3)			
Month	**Mica**	**Arrow**	**Duncan**	**Total**	**Mica**	**Arrow**	**Duncan**	**Total**
August 15	3032.8	3096.6	564.1	6693.5	7420.0	7576.1	1380.1	16376.3
August 31	3058.0	3101.0	618.2	6777.2	7481.7	7586.9	1512.5	16581.1
September	2898.8	3079.7	578.6	6557.1	7092.2	7534.8	1415.6	16042.6
October	2652.3	2671.2	532.7	5856.2	6489.1	6535.4	1303.3	14327.8
November	2077.4	2188.5	427.7	4693.6	5082.6	5354.4	1046.4	11483.4
December	1476.1	1384.0	217.0	3077.1	3611.4	3386.1	530.9	7528.4
January	501.0	514.4	61.0	1076.4	1225.7	1258.5	149.2	2633.5
February	489.6	415.5	45.8	950.9	1197.9	1016.6	112.1	2326.5
March	496.4	430.2	57.7	984.3	1214.5	1052.5	141.2	2408.2
April 15	31.0	181.6	57.4	270.0	75.8	444.3	140.4	660.6
April 30	0.0	13.5	57.1	70.6	0.0	33.0	139.7	172.7
May	160.3	394.0	18.8	573.1	392.2	964.0	46.0	1402.1
June	1257.6	1288.6	192.3	2738.5	3076.8	3152.7	470.5	6700.0
July	1815.8	1841.5	346.1	4003.4	4442.5	4505.4	846.8	9794.7

Source: These rule curves are from the 2002-03 third year AOP study.

Exhibit 11 - Fourth Critical Rule Curves for OY 03-04 (English & SI)

End-of-Month Usable Storage Content

	(English) (ksfd)				(SI) (hm^3)			
Month	**Mica**	**Arrow**	**Duncan**	**Total**	**Mica**	**Arrow**	**Duncan**	**Total**
August 15	1893.2	1782.0	36.5	3711.7	4631.9	4359.8	89.3	9081.0
August 31	1800.3	1611.4	39.5	3451.2	4404.6	3942.5	96.6	8443.7
September	1434.0	1482.4	29.3	2945.7	3508.4	3626.8	71.7	7206.9
October	1034.7	1348.1	56.5	2439.3	2531.5	3298.3	138.2	5968.0
November	808.2	807.8	52.9	1668.9	1977.3	1976.4	129.4	4083.1
December	48.5	161.6	0.4	210.5	118.7	395.4	1.0	515.0
January	0.0	13.5	0.2	13.7	0.0	33.0	0.5	33.5
February	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
March	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
April 15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
April 30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
May	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
June	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
July	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: These rule curves are from the 2003-04 fourth year AOP study.

Exhibit 12 – Mica Reservoir Capacity Table (English)

ksfd

ELEVATION IN FEET	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	AVERAGE DIFFERENCE PER TENTH 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
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
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 12 – Mica Reservoir Capacity Table (English)

ksfd

ELEVATION IN FEET	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	AVERAGE DIFFERENCE PER TENTH FT
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
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	4.16
2401.	6606.7	6610.9	6615.0	6619.2	6623.3	6627.4	6631.6	6635.7	6639.9	6644.0	4.14
2400.	6565.5	6569.7	6573.8	6577.9	6582.1	6586.2	6590.3	6594.5	6598.6	6602.7	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 12 – Mica Reservoir Capacity Table (English)

ksfd

ELEVATION IN FEET	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	AVERAGE DIFFERENCE PER TENTH 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
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
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
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	5165.0	5168.0	5171.1	5174.2	5177.2	5180.3	5183.3	3.05
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 12 – Mica Reservoir Capacity Table **(English)**

ksfd

ELEVATION IN FEET	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	AVERAGE DIFFERENCE PER TENTH 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
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
2338.	4525.5	4528.2	4530.9	4533.6	4536.4	4539.1	4541.8	4544.5	4547.3	4550.0	2.72
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	4452.3	4455.0	4457.7	4460.4	4463.1	4465.8	4468.5	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	4159.9	4162.5	4165.1	4167.7	4170.3	4173.0	4175.6	2.62
2323.	4125.9	4128.5	4131.2	4133.8	4136.4	4139.0	4141.6	4144.2	4146.8	4149.4	2.61
2322.	4099.9	4102.5	4105.1	4107.7	4110.3	4112.9	4115.5	4118.1	4120.7	4123.3	2.61
2321.	4074.0	4076.6	4079.1	4081.7	4084.3	4086.9	4089.5	4092.1	4094.7	4097.3	2.59
2320.	4048.1	4050.7	4053.3	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

Exhibit 12M– Mica Reservoir Capacity Table (SI)

hm³

ELEVATION IN METERS	.00	.03	.06	.09	.12	.15	.18	.21	.24	.27	AVERAGE DIFFERENCE PER 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 12M– Mica 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
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 12M– Mica 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
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	15302.6	15312.0	15321.5	15330.9	15340.4	15349.9	15359.3	15368.8	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	15106.2	15115.5	15124.8	15134.0	15143.3	15152.6	15162.0	15171.3	15180.6	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
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	7.34
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 12M– Mica 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
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	10702.2	10708.7	10715.3	10721.8	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
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

Exhibit 13 – Arrow Reservoir Capacity Table (English)

ksfd

ELEVATION IN FEET	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	AVERAGE DIFFERENCE PER TENTH FT
1444.	3579.6										
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	2349.7	2355.6	2361.5	2367.5	2373.4	2379.3	2385.3	5.93
1423.	2272.8	2278.7	2284.6	2290.5	2296.4	2302.3	2308.3	2314.2	2320.1	2326.0	5.91
1422.	2214.1	2220.0	2225.8	2231.7	2237.6	2243.4	2249.3	2255.2	2261.1	2266.9	5.87
1421.	2155.7	2161.5	2167.4	2173.2	2179.1	2184.9	2190.7	2196.6	2202.4	2208.3	5.84
1420.	2097.7	2103.5	2109.3	2115.1	2120.9	2126.7	2132.5	2138.3	2144.1	2149.9	5.80
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
1409.	1484.5	1489.9	1495.3	1500.7	1506.1	1511.4	1516.8	1522.2	1527.6	1533.0	5.39
1408.	1430.9	1436.3	1441.6	1447.0	1452.3	1457.7	1463.1	1468.4	1473.8	1479.1	5.36
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 13 – 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
1392.	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	4.78
1390.	524.2	528.9	533.7	538.4	543.1	547.8	552.6	557.3	562.0	566.8	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
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 13M – 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
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 13M– 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
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 14 – Duncan Reservoir Capacity Table (English)

ksfd

ELEVATION IN FEET	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	AVERAGE DIFFERENCE PER TENTH 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
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
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
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
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 14 – Duncan Reservoir Capacity Table (English)

ksfd

ELEVATION IN FEET	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	AVERAGE DIFFERENCE PER TENTH 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 14 – Duncan Reservoir Capacity Table (English)

ksfd

ELEVATION IN FEET	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	AVERAGE DIFFERENCE PER TENTH 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 14M– Duncan 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
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
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
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	1321.2	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
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	924.1	926.0	928.0	930.0	931.9	933.6	935.6	937.5	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

Exhibit 14M– Duncan 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
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
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 14M– Duncan 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
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