Non-Treaty Storage Agreement

Technical Report: Appendices M - O

Bonneville
POWER ADMINISTRATION

March 1990

APPENDIX M
SENSITIVITY STUDIES

Part 7

Resident Fish

Reservoirs

Streams

APPENDIX M
SENSITIVITY STUDIES
Part 7
Resident Fish

Reservoirs

Frequency of end-of-period elevation changes from the No-Action alternative greater than five feet for the contract years 1991, 1993, 1995, 1997, 2001, and 2005. (Libby, Hungry Horse, Grand Coulee, and Dworshak).

Additional reservoir elevation data can be found in Appendix M, Parts 1 & 2.G.

Streams

The average change in flow at Columbia Falls from the No Action alternative for contract years 1991, 1993, 1995, 1997, 2001, and 2005.

The frequency of monthly average flows at Columbia Falls that are less than 4.5 kcfs and less than 3.5 kcfs for contract years 1991, 1993, 1995, 1997, 2001, and 2005 (absolute values).

The average change in flow at Libby from the No Action alternative for contract years 1991, 1993, 1995, 1997, 2001, and 2005.

The frequency of monthly average flows at Libby that are less than 4.0 kcfs for contract years 1991, 1993, 1995, 1997, 2001, and 2005 (absolute values).

STUDY KEY

FMXBANHL - No Action Alternative with high Pacific Northwest loads (also referred to as base case on some tables).

FMXA1NHL - Proposed Alternative used as an opportunity resource with high Pacific Northwest loads.

IMXA2NHL - Proposed Alternative used as a firm resource with high Pacific Northwest loads.

EMXBASHL - No Action Alternative with high Pacific Southwest loads and high gas prices (also referred to as base case on some tables).

EMXA1SHL - Proposed Alternative used as an opportunity resource with high Pacific Southwest loads and high gas prices.

IMXA2SHL - Proposed Alternative used as a firm resource with high Pacific Southwest loads and high gas prices.

EMXBAADC - No Action Alternative using the alternative dispatch criteria (also referred to as base case on some tables).

EMXA1ADC - Proposed Alternative used as an opportunity resource using the alternative dispatch criteria.

GMXBASAS - No Action Alternative with the signed Spill Agreement (also referred to as base case on some tables).

GMXA1SAS - Proposed Alternative used as an opportunity resource with the signed Spill Agreement.

HMXA2SAS - Proposed Alternative used as a firm resource with the signed Spill Agreement.

AMXBAARO - No Action Alternative, also refer to as the base case on individual tables (also referred to as base case on some tables).

EMXA1E03 - Proposed Alternative used as an opportunity resource expiring in the year 2003 (shows end effects).

IMXA2E03 - Proposed Alternative used as a firm resource expiring in the year 2003 (shows end effects).

FREQUENCY OF END OF PERIOD RESERVOIR ELEVATION
CHANGES FROM BASE CASE GREATER THAN 5 FEET (%)

HUNGRY HORSE

TEST CASE	CONTRACT YEAR	SEPT (+/-)	OCT (+/-)	NOV (+/-)	DEC (+/-)	JAN (+/-)	FEB (+/-)	MAR (+/-)	AP1 (+/-)	AP2 (+/-)	MAY (+/-)	JUNE (+/-)	JULY (+/-)	AG1 (+/-)	AG2 (+/-)
FMXBANHL	1991	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FMXA1NHL	1991	2.0/ 0.5	2.0/ 0.5	2.0/ 0.5	1.5/ 0.5	0.5/ 0.5	2.5/ 0.5	4.0/ 0.5	4.5/ 1.0	3.0/ 1.0	2.5/ 1.0	3.0/ 1.0	1.5/ 0.5	1.5/ 0.5	2.0/ 1.0
IMXA2NHL	1991	13.5/ 1.0	14.5/ 1.0	14.5/ 1.0	14.5/ 0.5	14.5/ 0.5	15.5/ 0.0	19.0/ 0.0	20.5/ 0.0	19.5/ 0.0	18.0/ 0.0	17.0/ 0.0	12.5/ 0.0	13.0/ 0.5	12.5/ 0.5
FMXBANHL	1993	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FMXA1NHL	1993	1.0/ 0.0	1.0/ 0.0	0.5/ 0.0	0.5/ 0.0	0.5/ 0.0	0.5/ 0.0	2.0/ 0.0	2.0/ 0.5	2.0/ 0.5	1.5/ 0.5	1.5/ 0.0	1.5/ 0.5	3.0/ 0.5	19.0/ 0.0
IMXA2NHL	1993	14.0/ 2.5	15.0/ 2.5	15.0/ 2.5	15.0/ 2.5	11.0/ 2.0	11.0/ 1.5	10.5/ 1.5	12.0/ 1.5	12.0/ 1.5	11.0/ 1.0	12.0/ 0.5	12.0/ 1.0	12.5/ 1.0	18.5/ 0.5
FMXBANHL	1995	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FMXA1NHL	1995	17.0/ 1.5	18.0/ 1.5	16.5/ 1.5	17.5/ 1.5	12.0/ 0.5	9.0/ 1.0	8.0/ 1.5	7.0/ 2.0	5.0/ 2.0	3.5/ 2.0	3.0/ 2.0	3.0/ 2.5	4.0/ 3.0	17.0/ 2.5
IMXA2NHL	1995	26.5/ 0.5	28.0/ 0.5	28.0/ 0.5	28.0/ 0.5	25.0/ 0.5	21.0/ 0.5	23.0/ 0.5	22.5/ 0.5	19.5/ 0.5	16.0/ 0.0	18.0/ 0.0	16.0/ 0.0	18.5/ 0.5	20.0/ 1.5
FMXBANHL	1997	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FMXA1NHL	1997	14.5/ 3.5	15.0/ 3.5	14.0/ 3.5	14.0/ 2.5	9.5/ 2.5	8.0/ 2.0	4.5/ 1.5	4.5/ 2.0	5.0/ 2.0	4.0/ 0.5	2.0/ 1.0	2.5/ 1.0	2.0/ 2.0	8.5/ 2.0
IMXA2NHL	1997	24.0/ 0.5	26.5/ 0.5	24.5/ 0.0	24.5/ 0.0	21.0/ 0.0	18.5/ 0.5	15.0/ 0.0	16.5/ 0.0	19.0/ 0.0	18.5/ 0.0	20.5/ 0.0	17.0/ 0.0	18.0/ 0.0	19.0/ 0.0
FMXBANHL	2001	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FMXA1NHL	2001	29.0/ 0.0	29.0/ 0.0	31.0/ 0.5	31.0/ 0.5	23.5/ 1.0	19.5/ 1.0	12.5/ 1.5	12.0/ 1.5	11.5/ 1.5	9.0/ 1.0	8.5/ 0.5	8.5/ 0.0	8.5/ 0.5	13.0/ 2.0
IMXA2NHL	2001	21.5/ 0.5	23.5/ 0.5	23.5/ 0.5	25.5/ 0.5	23.5/ 0.5	20.0/ 0.5	17.0/ 0.5	18.0/ 0.5	17.0/ 0.5	14.0/ 0.5	14.5/ 0.5	13.5/ 0.5	15.0/ 0.0	21.0/ 0.0
FMXBANHL	2005	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FMXA1NHL	2005	27.0/ 0.0	27.0/ 0.5	28.5/ 0.5	30.0/ 0.5	23.5/ 0.5	18.0/ 0.5	14.0/ 0.5	10.5/ 0.5	10.0/ 0.5	8.5/ 0.5	9.0/ 0.0	9.0/ 0.0	9.5/ 0.0	12.5/ 0.0
IMXA2NHL	2005	12.5/ 0.5	13.5/ 0.5	14.0/ 0.5	15.5/ 0.5	14.5/ 0.5	15.5/ 0.5	14.0/ 0.5	14.5/ 0.5	13.5/ 0.5	12.5/ 0.5	14.5/ 0.5	14.0/ 0.5	13.5/ 0.5	19.0/ 0.5

LIBBY

TEST CASE	CONTRACT YEAR	SEPT (+/-)	OCT (+/-)	NOV (+/-)	DEC (+/-)	JAN (+/-)	FEB (+/-)	MAR (+/-)	AP1 (+/-)	AP2 (+/-)	MAY (+/-)	JUNE (+/-)	JULY (+/-)	AG1 (+/-)	AG2 (+/-)
FMXBANHL	1991	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FMXA1NHL	1991	0.5/ 0.0	1.0/ 0.0	1.0/ 0.0	1.0/ 0.0	1.0/ 0.0	1.5/ 0.0	1.5/ 0.0	1.5/ 0.0	1.5/ 0.0	1.0/ 0.5	1.0/ 0.0	0.5/ 0.0	0.5/ 0.0	0.0/ 0.0
IMXA2NHL	1991	10.5/ 0.5	6.0/ 0.5	4.5/ 3.0	3.5/ 1.0	1.5/ 1.5	9.5/ 1.0	11.0/ 1.5	13.0/ 2.0	13.0/ 1.5	8.0/ 0.5	4.5/ 0.0	7.5/ 0.0	10.0/ 0.5	9.5/ 0.5
FMXBANHL	1993	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FMXA1NHL	1993	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	1.0/ 0.0	0.5/ 0.0	0.5/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	1.0/ 0.0	2.5/ 0.0
IMXA2NHL	1993	7.0/ 1.0	4.0/ 0.5	3.5/ 1.5	1.5/ 2.0	2.0/ 5.0	1.5/ 2.5	3.5/ 2.0	4.5/ 2.0	4.5/ 2.0	3.0/ 2.0	1.5/ 2.0	4.5/ 0.5	7.5/ 0.0	9.5/ 0.0
FMXBANHL	1995	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FMXA1NHL	1995	2.0/ 0.0	2.5/ 0.0	1.5/ 0.0	2.0/ 0.0	1.5/ 0.0	2.0/ 0.5	1.0/ 0.5	1.0/ 0.5	0.5/ 0.5	0.5/ 0.5	0.5/ 0.5	1.0/ 1.0	2.0/ 1.0	5.5/ 1.0
IMXA2NHL	1995	9.5/ 1.0	9.5/ 1.0	4.5/ 2.0	5.0/ 3.0	2.5/ 1.0	6.0/ 0.5	7.0/ 0.5	7.0/ 0.5	6.5/ 0.5	3.5/ 0.5	4.5/ 0.5	8.5/ 0.0	12.0/ 0.0	15.0/ 0.0
FMXBANHL	1997	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FMXA1NHL	1997	3.0/ 0.0	2.5/ 0.0	2.5/ 0.0	2.0/ 0.0	1.0/ 0.0	1.0/ 1.0	1.0/ 1.0	1.0/ 1.0	1.0/ 1.0	1.0/ 0.5	0.5/ 0.0	0.5/ 0.0	1.5/ 0.0	3.0/ 0.0
IMXA2NHL	1997	9.5/ 0.5	9.0/ 0.0	5.5/ 2.5	5.5/ 1.0	4.0/ 1.5	5.0/ 1.0	5.0/ 0.5	6.5/ 0.5	6.5/ 0.5	2.0/ 0.5	2.5/ 0.0	9.5/ 0.0	12.5/ 0.0	12.0/ 0.0
FMXBANHL	2001	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FMXA1NHL	2001	2.5/ 0.0	8.0/ 0.0	12.5/ 0.0	7.0/ 0.0	3.0/ 0.0	7.5/ 0.5	8.0/ 0.0	7.5/ 0.0	7.5/ 0.0	4.5/ 0.0	4.0/ 0.0	4.0/ 0.0	4.5/ 0.0	4.5/ 0.0
IMXA2NHL	2001	7.5/ 0.0	6.0/ 0.0	5.0/ 1.0	1.5/ 1.0	1.5/ 4.5	6.0/ 3.0	6.5/ 2.0	7.0/ 2.0	6.5/ 2.0	3.5/ 1.5	4.0/ 1.0	6.5/ 0.0	7.0/ 0.0	7.0/ 0.0
FMXBANHL	2005	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FMXA1NHL	2005	2.5/ 0.0	9.0/ 0.0	15.0/ 0.5	10.0/ 0.0	6.0/ 0.0	6.0/ 0.0	7.0/ 0.0	7.5/ 0.0	7.5/ 0.0	6.5/ 0.0	6.0/ 0.0	4.5/ 0.0	4.5/ 0.0	5.0/ 0.0
IMXA2NHL	2005	4.5/ 0.0	4.5/ 0.0	3.0/ 0.5	3.0/ 1.5	2.0/ 3.0	5.5/ 2.0	6.0/ 2.5	6.0/ 2.0	7.0/ 2.0	5.5/ 1.5	4.5/ 1.5	6.5/ 0.5	7.0/ 0.5	8.0/ 0.5

FREQUENCY OF END OF PERIOD RESERVOIR ELEVATION
CHANGES FROM BASE CASE GREATER THAN 5 FEET (%)

GRAND COULEE

TEST CASE	CONTRACT YEAR	SEPT (+/-)	OCT (+/-)	NOV (+/-)	DEC (+/-)	JAN (+/-)	FEB (+/-)	MAR (+/-)	AP1 (+/-)	AP2 (+/-)	MAY (+/-)	JUNE (+/-)	JULY (+/-)	AG1 (+/-)	AG2 (+/-)
FMXBANHL	1991	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FMXA1NHL	1991	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.5/ 0.0	0.0/ 0.0	0.5/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
IMXA2NHL	1991	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.5	0.0/ 0.5	4.5/ 0.5	4.5/ 0.0	2.5/ 0.0	0.0/ 0.5	2.0/ 0.0	1.0/ 0.0	1.5/ 0.0	1.5/ 0.0
FMXBANHL	1993	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FMXA1NHL	1993	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
IMXA2NHL	1993	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.5/ 0.5	0.5/ 0.0	1.5/ 2.0	1.5/ 0.5	0.0/ 0.0	0.5/ 0.5	0.5/ 0.0	0.5/ 0.0	0.5/ 0.0	0.5/ 0.0
FMXBANHL	1995	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FMXA1NHL	1995	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.5	0.5/ 0.5	0.0/ 0.5	0.0/ 0.5	0.0/ 0.5	0.5/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
IMXA2NHL	1995	1.0/ 0.0	1.0/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 1.0	1.0/ 1.0	2.0/ 4.0	1.0/ 2.0	1.0/ 0.5	1.0/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
FMXBANHL	1997	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FMXA1NHL	1997	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.5	1.0/ 0.5	2.0/ 0.0	1.0/ 0.0	0.5/ 0.0	0.5/ 0.0	0.5/ 0.5	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
IMXA2NHL	1997	0.0/ 0.0	0.0/ 0.0	0.5/ 0.0	0.5/ 0.0	2.0/ 0.0	1.5/ 0.0	3.5/ 0.0	2.5/ 0.5	2.0/ 0.0	1.0/ 0.5	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
FMXBANHL	2001	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FMXA1NHL	2001	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	1.0/ 0.0	3.5/ 0.5	1.0/ 0.5	1.0/ 0.5	0.5/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
IMXA2NHL	2001	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.5/ 0.5	1.0/ 0.5	3.0/ 0.0	2.0/ 0.5	1.0/ 0.5	0.0/ 1.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
FMXBANHL	2005	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FMXA1NHL	2005	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	2.0/ 0.0	1.0/ 0.0	3.0/ 0.5	1.5/ 1.0	1.0/ 0.5	2.5/ 0.5	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
IMXA2NHL	2005	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	3.0/ 0.5	4.0/ 1.0	1.0/ 0.0	0.0/ 1.0	1.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0

DHORSHAK

TEST CASE	CONTRACT YEAR	SEPT (+/-)	OCT (+/-)	NOV (+/-)	DEC (+/-)	JAN (+/-)	FEB (+/-)	MAR (+/-)	AP1 (+/-)	AP2 (+/-)	MAY (+/-)	JUNE (+/-)	JULY (+/-)	AG1 (+/-)	AG2 (+/-)
FMXBANHL	1991	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FMXA1NHL	1991	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	2.5/ 0.0	0.5/ 0.5	1.0/ 0.0	1.5/ 0.0	0.5/ 0.0	0.5/ 0.5	0.5/ 0.5	0.5/ 0.5	0.5/ 0.0	0.5/ 0.0	0.5/ 0.5
IMXA2NHL	1991	8.5/ 0.5	8.5/ 0.5	8.5/ 0.5	13.0/ 1.0	12.5/ 0.0	8.5/ 1.0	7.5/ 2.0	6.5/ 2.0	6.5/ 2.5	5.5/ 1.0	9.5/ 0.5	9.5/ 0.0	9.0/ 1.0	9.0/ 2.5
FMXBANHL	1993	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FMXA1NHL	1993	1.0/ 0.0	0.5/ 0.0	0.5/ 0.0	2.0/ 0.5	1.0/ 0.5	1.0/ 0.0	1.5/ 0.0	1.5/ 0.0	1.5/ 0.0	1.5/ 0.0	0.5/ 0.0	1.0/ 0.0	3.0/ 0.5	22.5/ 0.0
IMXA2NHL	1993	7.0/ 4.0	7.0/ 2.5	7.0/ 1.0	9.5/ 1.5	7.5/ 1.5	2.5/ 2.5	4.5/ 4.0	4.0/ 1.5	3.0/ 0.5	3.0/ 0.0	8.5/ 0.5	10.0/ 1.0	11.5/ 1.5	20.0/ 1.0
FMXBANHL	1995	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FMXA1NHL	1995	14.5/ 0.0	11.5/ 0.0	7.5/ 0.0	6.5/ 0.0	5.5/ 0.0	3.0/ 0.0	3.0/ 0.0	2.0/ 0.5	1.5/ 0.5	1.5/ 1.0	1.5/ 1.5	1.5/ 1.0	6.0/ 1.0	18.5/ 3.0
IMXA2NHL	1995	19.5/ 2.0	18.0/ 2.0	15.0/ 2.0	18.5/ 1.5	12.5/ 1.0	7.0/ 4.5	8.5/ 4.0	6.5/ 1.5	5.5/ 2.0	5.0/ 0.5	13.5/ 0.5	14.5/ 0.0	15.0/ 0.5	23.0/ 2.5
FMXBANHL	1997	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FMXA1NHL	1997	8.5/ 1.0	7.5/ 0.5	2.0/ 0.0	3.5/ 0.0	3.0/ 0.0	2.0/ 0.0	3.5/ 0.0	2.5/ 0.0	2.0/ 0.0	1.5/ 0.0	1.5/ 1.0	1.0/ 0.5	2.0/ 0.0	11.0/ 0.0
IMXA2NHL	1997	17.0/ 1.0	15.0/ 1.0	12.0/ 1.0	16.0/ 1.5	12.0/ 0.5	7.0/ 1.5	7.0/ 3.0	5.0/ 1.0	5.5/ 2.0	5.0/ 0.5	7.5/ 0.5	13.0/ 1.5	12.5/ 0.5	15.0/ 1.0
FMXBANHL	2001	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FMXA1NHL	2001	15.0/ 0.0	13.5/ 0.0	11.0/ 0.0	14.5/ 0.5	12.0/ 0.5	9.5/ 1.0	7.0/ 0.5	5.0/ 0.5	5.5/ 0.5	4.0/ 0.0	5.5/ 0.0	4.5/ 0.0	5.5/ 0.0	8.5/ 0.5
IMXA2NHL	2001	14.5/ 1.0	14.0/ 0.5	11.5/ 0.5	22.0/ 0.5	16.5/ 0.0	11.5/ 0.5	9.0/ 0.5	7.5/ 0.5	7.5/ 0.5	3.5/ 0.5	7.0/ 0.5	12.5/ 0.0	13.5/ 0.0	16.0/ 0.0
FMXBANHL	2005	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
FMXA1NHL	2005	11.5/ 0.0	10.5/ 0.0	8.5/ 0.0	16.0/ 0.0	12.5/ 0.0	13.0/ 0.0	10.0/ 0.5	5.5/ 0.5	5.0/ 0.5	4.5/ 0.0	5.5/ 0.0	5.0/ 0.0	7.0/ 0.0	11.5/ 0.5
IMXA2NHL	2005	10.0/ 0.5	10.0/ 0.5	9.0/ 0.0	15.5/ 0.5	14.5/ 0.5	11.5/ 1.0	12.0/ 0.5	8.0/ 0.5	5.5/ 0.5	5.0/ 0.5	9.5/ 1.0	12.0/ 0.0	12.5/ 0.0	17.0/ 0.0

FREQUENCY OF END OF PERIOD RESERVOIR ELEVATION
CHANGES FROM BASE CASE GREATER THAN 5 FEET (%)

HUNGRY HORSE

TEST CASE	CONTRACT YEAR	SEPT (+/-)	OCT (+/-)	NOV (+/-)	DEC (+/-)	JAN (+/-)	FEB (+/-)	MAR (+/-)	AP1 (+/-)	AP2 (+/-)	MAY (+/-)	JUNE (+/-)	JULY (+/-)	AG1 (+/-)	AG2 (+/-)
EMXBASHL	1991	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1SHL	1991	4.5/ 0.0	5.0/ 0.0	5.5/ 0.0	5.0/ 0.0	5.5/ 0.0	6.0/ 0.0	5.5/ 0.0	5.0/ 0.0	3.5/ 0.0	3.0/ 0.0	1.5/ 0.0	1.5/ 0.0	1.5/ 0.0	2.5/ 0.0
IMXA2SHL	1991	10.5/ 5.0	11.0/ 5.5	12.0/ 5.0	11.5/ 5.0	13.5/ 6.5	14.0/ 3.0	18.5/ 3.0	21.5/ 3.0	19.5/ 1.5	12.0/ 1.0	10.5/ 1.0	8.5/ 1.0	11.0/ 1.5	13.0/ 2.0
EMXBASHL	1993	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1SHL	1993	1.5/ 0.0	1.5/ 0.0	2.0/ 0.0	2.5/ 0.0	3.5/ 0.0	4.0/ 0.0	4.0/ 0.0	3.5/ 0.0	3.5/ 0.0	3.0/ 0.0	3.0/ 0.0	2.5/ 0.0	2.5/ 0.0	11.0/ 0.0
IMXA2SHL	1993	9.5/14.5	9.5/14.0	10.0/12.0	8.5/12.5	8.0/ 8.5	8.5/ 5.5	7.0/ 3.0	9.5/ 3.0	9.0/ 2.0	6.0/ 2.0	10.0/ 2.0	9.5/ 1.0	9.0/ 1.5	12.5/ 1.0
EMXBASHL	1995	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1SHL	1995	38.0/ 0.0	39.0/ 0.0	39.0/ 0.0	39.5/ 0.0	30.5/ 0.0	24.5/ 0.5	21.5/ 0.5	24.0/ 0.5	21.5/ 0.5	17.5/ 0.0	15.0/ 0.5	14.5/ 0.5	14.0/ 0.5	15.5/ 0.5
IMXA2SHL	1995	31.0/ 1.5	31.5/ 1.5	31.5/ 1.5	31.0/ 1.5	26.5/ 1.5	24.0/ 1.5	25.5/ 1.5	29.5/ 1.5	27.5/ 1.5	22.0/ 1.5	21.5/ 1.5	20.0/ 1.0	22.5/ 1.5	25.5/ 1.0
EMXBASHL	1997	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1SHL	1997	25.0/ 0.5	24.5/ 0.0	24.5/ 0.0	24.0/ 0.0	19.0/ 0.0	14.5/ 0.0	11.0/ 0.5	11.5/ 0.5	7.0/ 1.0	5.5/ 0.5	7.0/ 0.0	6.5/ 0.0	7.0/ 0.0	11.0/ 0.0
IMXA2SHL	1997	28.0/ 0.5	28.5/ 0.5	28.0/ 0.5	26.5/ 0.5	22.0/ 0.5	17.5/ 0.5	18.0/ 0.5	19.0/ 0.5	19.0/ 0.5	17.0/ 0.5	20.0/ 0.5	18.5/ 0.0	19.0/ 0.5	23.0/ 1.0
EMXBASHL	2001	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1SHL	2001	10.0/ 0.0	9.5/ 0.0	11.0/ 0.0	12.5/ 0.0	12.5/ 0.0	12.5/ 0.0	10.0/ 0.0	9.5/ 0.0	9.5/ 0.0	8.0/ 0.0	8.0/ 0.0	7.5/ 0.0	8.5/ 0.0	12.0/ 0.5
IMXA2SHL	2001	25.0/ 0.5	25.5/ 0.5	24.5/ 0.5	24.5/ 0.5	25.0/ 0.5	19.0/ 0.5	18.0/ 1.0	18.5/ 0.5	20.0/ 0.5	16.0/ 0.5	16.0/ 0.5	14.0/ 0.5	15.5/ 0.0	21.5/ 0.5
EMXBASHL	2005	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1SHL	2005	17.0/ 0.0	18.0/ 0.0	20.0/ 0.0	22.0/ 0.0	15.5/ 0.0	14.0/ 0.0	11.5/ 0.0	10.5/ 0.0	10.0/ 0.0	8.5/ 0.0	9.0/ 0.0	9.5/ 0.0	11.0/ 0.5	12.5/ 0.5
IMXA2SHL	2005	19.5/ 0.5	21.5/ 0.5	22.5/ 0.0	21.5/ 0.0	18.5/ 0.5	16.5/ 0.0	15.0/ 0.0	14.5/ 0.0	13.5/ 0.0	12.0/ 0.0	12.0/ 0.5	9.5/ 0.5	9.5/ 0.5	16.5/ 0.5

LIBBY

TEST CASE	CONTRACT YEAR	SEPT (+/-)	OCT (+/-)	NOV (+/-)	DEC (+/-)	JAN (+/-)	FEB (+/-)	MAR (+/-)	AP1 (+/-)	AP2 (+/-)	MAY (+/-)	JUNE (+/-)	JULY (+/-)	AG1 (+/-)	AG2 (+/-)
EMXBASHL	1991	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1SHL	1991	1.5/ 0.0	1.5/ 0.0	2.0/ 0.0	1.5/ 0.0	1.5/ 0.0	1.0/ 0.0	0.5/ 0.0	0.5/ 0.0	0.5/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.5/ 0.0
IMXA2SHL	1991	6.5/ 0.5	7.0/ 0.5	4.0/ 4.0	11.0/ 3.0	3.5/ 7.5	3.0/ 6.5	2.5/ 5.5	2.0/ 5.5	2.0/ 5.5	1.5/ 4.0	4.0/ 2.5	4.0/ 1.0	4.5/ 0.5	5.0/ 1.0
EMXBASHL	1993	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1SHL	1993	0.5/ 0.0	1.0/ 0.0	1.5/ 0.0	2.5/ 0.0	1.0/ 0.0	2.5/ 0.0	3.5/ 0.0	4.0/ 0.0	3.5/ 0.0	1.5/ 0.0	0.5/ 0.0	0.0/ 0.0	0.5/ 0.0	0.0/ 0.0
IMXA2SHL	1993	6.0/ 1.0	7.0/ 2.0	3.5/ 2.5	3.0/ 1.5	2.0/ 5.0	2.0/ 4.5	2.5/ 4.5	2.5/ 4.5	2.5/ 4.5	2.0/ 3.5	3.0/ 1.0	3.5/ 1.0	6.0/ 0.0	6.5/ 0.0
EMXBASHL	1995	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1SHL	1995	8.0/ 0.0	10.5/ 0.5	12.5/ 0.5	14.5/ 0.5	9.0/ 0.5	9.0/ 0.5	8.0/ 0.5	9.5/ 0.5	9.5/ 0.5	4.5/ 0.5	2.5/ 0.0	2.0/ 0.0	3.5/ 0.0	5.5/ 0.0
IMXA2SHL	1995	12.0/ 0.5	13.0/ 0.5	10.5/ 3.0	16.0/ 2.5	9.0/ 4.5	7.0/ 3.5	7.0/ 2.5	9.0/ 2.5	8.5/ 2.5	6.0/ 1.0	4.5/ 0.0	8.0/ 0.5	10.5/ 0.0	11.5/ 0.0
EMXBASHL	1997	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1SHL	1997	2.5/ 0.0	6.5/ 0.0	6.5/ 0.0	6.5/ 0.0	6.5/ 0.0	7.5/ 0.0	8.0/ 0.0	8.0/ 0.0	7.5/ 0.0	5.0/ 0.0	2.5/ 0.0	1.0/ 0.0	2.0/ 0.0	2.0/ 0.0
IMXA2SHL	1997	10.0/ 0.0	10.5/ 0.0	7.0/ 2.0	9.0/ 0.5	7.5/ 3.0	7.5/ 3.0	8.5/ 4.0	9.0/ 4.0	9.0/ 4.0	5.0/ 1.5	3.0/ 0.5	3.5/ 0.5	7.0/ 0.0	9.5/ 0.0
EMXBASHL	2001	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1SHL	2001	2.5/ 0.0	5.0/ 0.0	6.0/ 0.5	5.5/ 0.5	1.5/ 0.0	4.0/ 0.0	4.0/ 0.0	4.5/ 0.0	4.5/ 0.0	2.5/ 0.0	2.0/ 0.0	1.5/ 0.0	1.5/ 0.0	2.5/ 0.0
IMXA2SHL	2001	8.5/ 0.0	11.5/ 0.0	8.0/ 1.0	9.0/ 2.0	2.0/ 2.5	5.5/ 2.0	6.0/ 1.5	7.5/ 1.5	7.0/ 1.5	3.0/ 0.5	3.5/ 0.0	8.5/ 1.0	8.5/ 0.0	9.5/ 0.0
EMXBASHL	2005	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1SHL	2005	1.5/ 0.0	6.0/ 0.0	8.0/ 0.0	7.0/ 0.0	4.5/ 0.0	6.5/ 0.0	6.0/ 0.0	5.0/ 0.0	5.0/ 0.0	3.5/ 0.0	3.5/ 0.0	2.5/ 0.0	2.5/ 0.0	2.5/ 0.0
IMXA2SHL	2005	6.0/ 0.0	4.5/ 0.0	4.5/ 1.5	4.5/ 1.5	1.0/ 4.0	4.5/ 2.5	5.0/ 2.0	5.0/ 2.0	5.0/ 2.0	2.0/ 2.0	5.0/ 1.5	5.5/ 0.0	6.5/ 0.0	6.5/ 0.0

FREQUENCY OF END OF PERIOD RESERVOIR ELEVATION
CHANGES FROM BASE CASE GREATER THAN 5 FEET (%)

GRAND COULEE

TEST CASE	CONTRACT YEAR	SEPT (+/-)	OCT (+/-)	NOV (+/-)	DEC (+/-)	JAN (+/-)	FEB (+/-)	MAR (+/-)	AP1 (+/-)	AP2 (+/-)	MAY (+/-)	JUNE (+/-)	JULY (+/-)	AG1 (+/-)	AG2 (+/-)
EMXBASHL	1991	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1SHL	1991	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.5/ 0.0	1.0/ 0.0	0.0/ 0.5	0.0/ 0.5	0.0/ 0.0	0.0/ 0.5	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
IMXA2SHL	1991	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	1.5/ 0.5	2.0/ 1.0	1.5/ 1.0	2.5/ 1.5	1.5/ 0.5	1.0/ 1.5	0.0/ 0.0	0.0/ 0.0	0.5/ 0.0	0.5/ 0.0
EMXBASHL	1993	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1SHL	1993	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	1.0/ 0.0	1.0/ 0.0	1.0/ 0.0	1.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
IMXA2SHL	1993	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.5/ 0.0	0.5/ 1.0	0.5/ 2.0	2.0/ 1.5	1.0/ 1.5	0.5/ 1.5	0.5/ 0.0	0.5/ 0.0	0.5/ 0.0	0.5/ 0.0
EMXBASHL	1995	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1SHL	1995	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.5/ 0.0	1.0/ 0.0	3.5/ 0.0	2.5/ 0.0	2.0/ 0.0	1.5/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
IMXA2SHL	1995	0.0/ 0.0	0.0/ 0.0	0.5/ 0.0	0.5/ 0.0	3.0/ 0.5	4.0/ 0.5	5.0/ 0.5	3.0/ 0.5	2.0/ 0.0	1.5/ 1.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
EMXBASHL	1997	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1SHL	1997	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.5/ 0.0	1.0/ 0.0	2.0/ 0.0	2.0/ 0.0	1.5/ 0.0	0.5/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
IMXA2SHL	1997	0.0/ 0.0	0.0/ 0.0	0.5/ 0.0	0.5/ 0.0	3.0/ 1.5	2.5/ 0.5	3.5/ 0.5	1.5/ 0.0	1.0/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
EMXBASHL	2001	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1SHL	2001	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	1.5/ 0.0	2.0/ 0.0	1.0/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
IMXA2SHL	2001	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	1.0/ 0.0	1.5/ 0.5	2.5/ 0.0	2.5/ 0.0	0.0/ 0.5	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
EMXBASHL	2005	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1SHL	2005	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.5	0.0/ 0.0	1.5/ 0.0	1.0/ 0.0	0.0/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
IMXA2SHL	2005	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.5/ 0.5	0.5/ 0.0	3.5/ 0.5	1.0/ 0.0	0.0/ 0.0	0.0/ 2.5	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0

DWORSHAK

TEST CASE	CONTRACT YEAR	SEPT (+/-)	OCT (+/-)	NOV (+/-)	DEC (+/-)	JAN (+/-)	FEB (+/-)	MAR (+/-)	AP1 (+/-)	AP2 (+/-)	MAY (+/-)	JUNE (+/-)	JULY (+/-)	AG1 (+/-)	AG2 (+/-)
EMXBASHL	1991	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1SHL	1991	3.0/ 0.5	3.0/ 0.5	3.0/ 0.5	2.0/ 0.0	1.5/ 0.5	0.5/ 0.0	0.5/ 0.0	0.5/ 0.5	0.0/ 0.5	0.0/ 0.0	0.5/ 0.0	0.5/ 0.0	1.0/ 0.0	1.0/ 0.0
IMXA2SHL	1991	10.0/ 1.0	10.0/ 1.0	9.0/ 0.5	14.0/ 2.0	11.0/ 2.5	6.0/ 2.5	7.5/ 2.5	6.0/ 2.5	5.0/ 2.0	4.5/ 1.5	5.5/ 1.5	7.5/ 0.5	10.0/ 1.0	11.5/ 2.5
EMXBASHL	1993	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1SHL	1993	2.0/ 0.0	2.0/ 0.0	2.5/ 0.0	4.0/ 0.0	3.5/ 0.0	2.5/ 0.0	3.5/ 0.0	2.5/ 0.0	2.5/ 0.0	1.5/ 0.0	1.0/ 0.0	1.0/ 0.0	1.0/ 0.0	10.0/ 0.0
IMXA2SHL	1993	8.0/ 7.0	8.5/ 7.5	7.0/ 3.5	10.0/ 3.5	7.0/ 2.5	4.5/ 3.5	6.5/ 4.5	4.5/ 3.5	4.0/ 3.0	3.0/ 1.0	6.5/ 2.0	8.0/ 0.5	8.0/ 1.5	13.0/ 2.0
EMXBASHL	1995	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1SHL	1995	26.0/ 0.5	24.0/ 0.5	16.5/ 0.5	23.0/ 1.0	17.0/ 1.0	12.5/ 0.5	11.0/ 0.0	8.0/ 0.0	9.0/ 0.0	7.0/ 0.0	6.5/ 0.5	6.0/ 0.5	6.0/ 0.5	10.0/ 0.5
IMXA2SHL	1995	23.5/ 1.5	25.0/ 1.5	19.5/ 1.5	25.0/ 2.5	17.5/ 3.0	10.0/ 3.5	13.5/ 2.5	11.5/ 1.5	8.5/ 0.5	7.5/ 0.5	11.0/ 0.5	15.5/ 0.5	19.0/ 0.5	22.0/ 1.0
EMXBASHL	1997	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1SHL	1997	16.0/ 0.0	13.0/ 0.0	7.5/ 0.0	11.0/ 0.0	8.5/ 0.0	8.5/ 0.0	8.5/ 1.0	5.0/ 0.0	4.0/ 0.0	3.5/ 0.0	3.0/ 0.0	4.0/ 0.0	4.0/ 0.0	7.5/ 0.0
IMXA2SHL	1997	19.0/ 1.0	20.0/ 0.5	14.0/ 0.5	20.5/ 1.0	15.0/ 1.0	8.0/ 2.0	10.0/ 3.0	7.5/ 0.5	7.0/ 0.5	6.0/ 0.5	9.5/ 0.0	13.0/ 0.0	16.0/ 0.0	16.0/ 1.5
EMXBASHL	2001	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1SHL	2001	6.5/ 0.0	7.0/ 0.0	5.5/ 0.0	10.5/ 0.5	7.5/ 0.5	5.5/ 0.0	6.0/ 0.0	4.5/ 0.0	3.5/ 0.0	3.0/ 0.0	3.0/ 0.0	2.5/ 0.0	4.0/ 0.0	8.0/ 0.0
IMXA2SHL	2001	16.5/ 0.0	16.0/ 0.0	11.0/ 0.0	20.0/ 0.5	11.5/ 0.5	7.0/ 3.0	10.0/ 4.0	8.0/ 2.0	5.5/ 2.0	3.5/ 1.0	7.5/ 1.0	12.5/ 0.0	14.5/ 0.0	18.5/ 0.0
EMXBASHL	2005	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1SHL	2005	9.0/ 0.0	9.0/ 0.0	5.0/ 0.0	11.5/ 0.0	7.5/ 0.0	7.5/ 0.0	5.5/ 0.0	5.0/ 0.0	3.5/ 0.0	3.5/ 0.0	6.0/ 0.0	5.0/ 0.0	6.0/ 0.0	8.5/ 0.5
IMXA2SHL	2005	12.5/ 0.0	12.5/ 0.0	8.5/ 0.5	12.0/ 0.5	10.0/ 0.0	6.0/ 1.5	8.0/ 2.5	5.0/ 0.5	4.0/ 0.5	3.0/ 0.5	5.5/ 1.5	11.5/ 0.0	13.0/ 0.0	18.0/ 0.0

FREQUENCY OF END OF PERIOD RESERVOIR ELEVATION
CHANGES FROM BASE CASE GREATER THAN 5 FEET (%)

HUNGRY HORSE

TEST CASE	CONTRACT YEAR	SEPT (+/-)	OCT (+/-)	NOV (+/-)	DEC (+/-)	JAN (+/-)	FEB (+/-)	MAR (+/-)	AP1 (+/-)	AP2 (+/-)	MAY (+/-)	JUNE (+/-)	JULY (+/-)	AG1 (+/-)	AG2 (+/-)
EHXBAADC	1991	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EHXA1ADC	1991	0.5/ 0.0	0.5/ 0.0	0.5/ 0.0	1.0/ 0.0	1.0/ 0.0	2.5/ 0.0	2.5/ 0.0	2.5/ 0.0	2.5/ 0.0	1.0/ 0.0	1.0/ 0.0	1.5/ 0.0	2.0/ 0.5	1.5/ 0.5
EHXBAADC	1993	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EHXA1ADC	1993	0.0/ 0.5	0.0/ 0.5	0.5/ 0.5	1.0/ 0.5	3.0/ 0.5	2.5/ 0.5	3.0/ 0.0	3.0/ 0.0	3.5/ 0.5	3.0/ 0.5	2.0/ 0.5	2.0/ 0.5	2.0/ 0.0	8.0/ 0.0
EHXBAADC	1995	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EHXA1ADC	1995	28.0/ 0.5	29.0/ 0.5	29.0/ 0.5	29.0/ 0.5	23.0/ 0.0	18.5/ 0.0	13.5/ 0.0	12.5/ 0.0	12.0/ 1.0	10.0/ 1.0	7.5/ 1.0	7.5/ 0.5	7.5/ 0.5	14.0/ 0.5
EHXBAADC	1997	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EHXA1ADC	1997	19.5/ 0.5	20.0/ 0.5	19.5/ 0.5	19.5/ 0.5	12.5/ 0.5	8.0/ 0.0	7.5/ 0.5	8.5/ 0.5	7.0/ 0.5	3.5/ 0.5	6.0/ 0.5	6.5/ 0.5	7.5/ 0.5	9.5/ 0.5
EHXBAADC	2001	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EHXA1ADC	2001	23.0/ 0.0	23.5/ 0.0	25.0/ 0.0	25.0/ 0.0	22.5/ 0.0	19.0/ 0.0	13.0/ 0.0	12.0/ 0.0	11.0/ 0.0	6.5/ 0.0	7.5/ 0.0	7.0/ 0.0	7.5/ 0.0	12.0/ 0.0
EHXBAADC	2005	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EHXA1ADC	2005	15.5/ 0.5	17.0/ 0.5	17.5/ 0.5	18.5/ 0.5	12.5/ 0.5	12.0/ 0.5	10.0/ 0.5	9.0/ 0.5	9.5/ 0.5	6.0/ 0.5	5.5/ 0.5	7.0/ 1.5	8.0/ 1.5	9.5/ 1.5

LIBBY

TEST CASE	CONTRACT YEAR	SEPT (+/-)	OCT (+/-)	NOV (+/-)	DEC (+/-)	JAN (+/-)	FEB (+/-)	MAR (+/-)	AP1 (+/-)	AP2 (+/-)	MAY (+/-)	JUNE (+/-)	JULY (+/-)	AG1 (+/-)	AG2 (+/-)
EHXBAADC	1991	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EHXA1ADC	1991	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	1.5/ 0.5	1.5/ 0.5	1.5/ 0.5	1.5/ 0.5	1.5/ 0.5	1.0/ 0.5	0.5/ 0.5	0.0/ 0.5	0.0/ 0.0	0.5/ 0.0
EHXBAADC	1993	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EHXA1ADC	1993	0.5/ 0.0	0.5/ 0.0	1.5/ 0.0	1.5/ 0.0	0.5/ 0.0	2.5/ 0.0	2.5/ 0.0	2.5/ 0.0	2.0/ 0.0	1.5/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
EHXBAADC	1995	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EHXA1ADC	1995	5.5/ 0.0	5.5/ 0.0	5.0/ 0.0	5.5/ 0.0	4.0/ 0.0	6.0/ 1.0	5.5/ 1.0	6.5/ 1.0	6.5/ 1.0	4.0/ 1.0	1.5/ 0.5	1.5/ 0.5	1.5/ 0.0	1.5/ 0.0
EHXBAADC	1997	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EHXA1ADC	1997	1.5/ 0.0	3.5/ 0.0	3.5/ 0.0	3.5/ 0.0	4.0/ 0.0	4.5/ 0.0	5.0/ 0.0	6.0/ 0.0	5.0/ 0.0	3.0/ 0.0	1.5/ 0.0	0.5/ 0.0	1.0/ 0.0	2.0/ 0.0
EHXBAADC	2001	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EHXA1ADC	2001	2.0/ 0.0	5.0/ 0.0	7.5/ 0.0	9.0/ 0.0	5.0/ 0.0	6.0/ 0.0	5.5/ 0.0	6.0/ 0.0	5.5/ 0.0	4.0/ 0.0	2.5/ 0.0	2.0/ 0.0	2.0/ 0.0	2.0/ 0.0
EHXBAADC	2005	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EHXA1ADC	2005	1.5/ 0.0	5.5/ 0.0	8.0/ 0.0	6.5/ 0.0	3.0/ 0.0	6.0/ 0.5	6.0/ 0.5	6.0/ 0.5	6.0/ 0.5	5.0/ 0.0	2.5/ 0.0	2.5/ 0.0	2.0/ 0.0	2.5/ 0.0

FREQUENCY OF END OF PERIOD RESERVOIR ELEVATION
CHANGES FROM BASE CASE GREATER THAN 5 FEET (%)

GRAND COULEE

TEST CASE	CONTRACT YEAR	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	AP1	AP2	MAY	JUNE	JULY	AG1	AG2
		(+/-)	(+/-)	(+/-)	(+/-)	(+/-)	(+/-)	(+/-)	(+/-)	(+/-)	(+/-)	(+/-)	(+/-)	(+/-)	(+/-)
EMXBAADC	1991	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1ADC	1991	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	1.0/ 1.0	1.0/ 1.5	1.0/ 1.5	1.5/ 1.5	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
EMXBAADC	1993	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1ADC	1993	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.5/ 0.0	1.0/ 0.0	0.5/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
EMXBAADC	1995	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1ADC	1995	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.5/ 0.0	0.0/ 0.0	3.0/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
EMXBAADC	1997	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1ADC	1997	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	1.0/ 0.0	1.0/ 0.0	0.0/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
EMXBAADC	2001	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1ADC	2001	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	2.0/ 0.0	2.0/ 0.0	1.0/ 0.0	1.5/ 0.0	0.5/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
EMXBAADC	2005	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1ADC	2005	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.5/ 0.0	0.5/ 0.0	1.5/ 0.0	1.5/ 0.0	0.0/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0

DWORSHAK

TEST CASE	CONTRACT YEAR	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	AP1	AP2	MAY	JUNE	JULY	AG1	AG2
		(+/-)	(+/-)	(+/-)	(+/-)	(+/-)	(+/-)	(+/-)	(+/-)	(+/-)	(+/-)	(+/-)	(+/-)	(+/-)	(+/-)
EMXBAADC	1991	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1ADC	1991	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	1.0/ 0.0	1.0/ 0.0	1.0/ 0.0	1.0/ 0.5	0.5/ 1.0	1.0/ 0.0	0.5/ 0.5	0.0/ 0.5	0.5/ 0.5	1.5/ 0.5
EMXBAADC	1993	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1ADC	1993	1.0/ 0.0	1.0/ 0.0	1.5/ 0.0	4.5/ 0.5	2.5/ 0.5	3.0/ 0.0	3.5/ 0.5	2.5/ 0.0	2.0/ 0.0	1.5/ 0.0	0.5/ 0.0	1.0/ 0.0	1.0/ 0.0	8.5/ 0.0
EMXBAADC	1995	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1ADC	1995	16.5/ 0.5	14.5/ 0.5	8.0/ 0.5	13.5/ 0.5	11.0/ 0.0	8.5/ 0.0	5.0/ 0.5	4.5/ 0.5	5.5/ 0.0	4.5/ 0.0	3.0/ 0.0	4.0/ 0.0	3.5/ 0.0	12.0/ 0.0
EMXBAADC	1997	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1ADC	1997	9.0/ 1.0	7.5/ 1.0	3.5/ 1.0	3.5/ 0.5	4.5/ 0.5	4.5/ 0.5	5.5/ 0.5	3.5/ 0.0	2.0/ 0.0	1.5/ 0.0	3.5/ 0.0	4.0/ 0.0	3.0/ 0.0	4.5/ 0.0
EMXBAADC	2001	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1ADC	2001	9.5/ 0.0	10.0/ 0.0	7.5/ 0.0	14.5/ 0.5	13.0/ 0.5	10.0/ 0.0	9.0/ 0.0	6.5/ 0.0	5.5/ 0.0	3.5/ 0.0	3.5/ 0.0	3.5/ 0.0	3.5/ 0.0	9.0/ 0.0
EMXBAADC	2005	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1ADC	2005	9.0/ 0.0	7.0/ 0.0	5.0/ 0.0	10.5/ 0.0	7.0/ 0.0	9.0/ 0.5	6.0/ 0.5	4.5/ 0.0	3.0/ 0.0	3.0/ 0.0	5.5/ 0.0	3.5/ 0.0	3.5/ 0.0	6.5/ 1.0

FREQUENCY OF END OF PERIOD RESERVOIR ELEVATION
CHANGES FROM BASE CASE GREATER THAN 5 FEET (%)

HUNGRY HORSE

TEST CASE	CONTRACT YEAR	SEPT (+/-)	OCT (+/-)	NOV (+/-)	DEC (+/-)	JAN (+/-)	FEB (+/-)	MAR (+/-)	AP1 (+/-)	AP2 (+/-)	MAY (+/-)	JUNE (+/-)	JULY (+/-)	AG1 (+/-)	AG2 (+/-)
G1XBASAS	1991	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
G1XA1SAS	1991	0.0/ 0.0	0.0/ 0.0	0.5/ 0.0	1.0/ 0.5	1.5/ 0.0	1.5/ 0.0	1.5/ 0.0	2.0/ 0.5	2.0/ 0.5	1.0/ 0.0	1.5/ 0.0	1.5/ 0.5	1.5/ 1.5	1.0/ 1.5
H1XA2SAS	1991	15.5/ 2.5	15.0/ 2.5	16.0/ 2.5	16.0/ 2.5	18.0/ 2.0	18.5/ 0.5	21.0/ 1.0	22.0/ 0.5	20.0/ 1.0	12.0/ 1.0	12.5/ 0.0	11.0/ 0.5	13.5/ 0.5	13.5/ 1.5
G1XBASAS	1993	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
G1XA1SAS	1993	1.5/ 0.0	1.5/ 0.0	1.5/ 0.0	1.5/ 0.0	3.0/ 0.0	3.0/ 0.5	3.0/ 0.5	3.0/ 0.5	2.5/ 0.5	2.5/ 0.0	2.0/ 0.0	1.5/ 0.0	1.5/ 0.0	10.5/ 0.0
H1XA2SAS	1993	11.0/11.0	11.5/10.0	11.0/ 8.5	10.5/ 8.0	10.0/ 5.0	11.0/ 3.5	11.5/ 1.5	12.5/ 1.5	10.5/ 1.0	8.0/ 0.5	12.0/ 0.5	11.5/ 0.5	12.5/ 0.0	18.0/ 0.0
G1XBASAS	1995	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
G1XA1SAS	1995	34.0/ 1.0	36.0/ 1.0	36.0/ 1.0	37.0/ 1.0	26.5/ 1.0	20.5/ 1.0	17.5/ 0.5	19.5/ 0.5	18.0/ 0.5	13.5/ 0.0	12.0/ 0.5	10.5/ 0.5	11.0/ 0.5	18.0/ 0.5
H1XA2SAS	1995	32.0/ 2.0	32.0/ 2.0	30.0/ 2.0	30.5/ 2.0	25.5/ 1.5	22.5/ 1.5	25.0/ 1.5	28.0/ 1.5	26.5/ 1.5	21.0/ 1.5	21.5/ 1.0	20.5/ 1.0	23.0/ 1.0	25.5/ 0.5
G1XBASAS	1997	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
G1XA1SAS	1997	24.0/ 1.0	26.0/ 1.0	25.0/ 0.5	26.0/ 0.5	17.5/ 0.5	12.5/ 0.0	10.0/ 0.5	10.5/ 0.5	7.5/ 1.0	5.5/ 1.0	7.5/ 1.0	8.0/ 1.0	9.5/ 1.0	12.0/ 1.0
H1XA2SAS	1997	29.0/ 0.5	27.5/ 0.5	26.0/ 0.5	25.0/ 0.5	24.0/ 0.5	17.0/ 0.5	17.0/ 0.5	18.5/ 0.5	19.0/ 0.5	18.0/ 0.5	22.5/ 0.5	20.5/ 0.5	20.0/ 0.5	24.5/ 1.0
G1XBASAS	2001	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
G1XA1SAS	2001	25.5/ 0.0	24.5/ 0.0	23.5/ 0.0	24.0/ 0.0	21.0/ 0.0	17.0/ 0.0	11.0/ 0.0	9.0/ 0.0	7.5/ 0.0	6.0/ 0.0	7.0/ 0.0	7.5/ 0.0	7.5/ 0.0	10.5/ 0.0
H1XA2SAS	2001	24.0/ 0.5	23.5/ 0.5	23.0/ 0.5	24.5/ 1.0	22.5/ 1.0	19.5/ 0.5	17.5/ 0.5	19.0/ 0.5	19.0/ 0.5	15.0/ 0.5	17.0/ 0.5	14.5/ 0.5	16.0/ 0.0	20.0/ 1.0
G1XBASAS	2005	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
G1XA1SAS	2005	17.5/ 0.5	19.0/ 0.5	19.0/ 0.5	21.0/ 0.5	15.5/ 0.5	14.0/ 0.5	12.5/ 0.5	11.5/ 0.5	11.0/ 0.5	7.5/ 0.5	7.0/ 0.5	8.0/ 1.0	9.5/ 1.0	12.0/ 0.5
H1XA2SAS	2005	18.0/ 0.0	19.5/ 0.0	20.5/ 0.0	22.0/ 0.0	17.5/ 0.5	15.5/ 0.5	16.0/ 0.5	16.5/ 0.5	16.0/ 0.5	12.5/ 0.5	13.0/ 1.0	11.5/ 1.0	13.0/ 1.0	19.0/ 0.5

LIBBY

TEST CASE	CONTRACT YEAR	SEPT (+/-)	OCT (+/-)	NOV (+/-)	DEC (+/-)	JAN (+/-)	FEB (+/-)	MAR (+/-)	AP1 (+/-)	AP2 (+/-)	MAY (+/-)	JUNE (+/-)	JULY (+/-)	AG1 (+/-)	AG2 (+/-)
G1XBASAS	1991	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
G1XA1SAS	1991	0.0/ 0.0	0.0/ 0.0	0.0/ 0.5	0.0/ 0.5	0.0/ 1.0	0.5/ 1.0	0.5/ 1.0	0.5/ 1.0	0.5/ 1.0	0.5/ 0.5	0.5/ 0.5	0.0/ 0.5	0.0/ 0.0	0.0/ 0.0
H1XA2SAS	1991	5.0/ 0.5	5.5/ 1.5	5.0/ 2.0	12.5/ 3.0	3.0/ 8.0	2.5/ 5.0	2.0/ 5.0	1.5/ 5.0	1.5/ 5.0	1.0/ 2.5	3.0/ 1.5	4.0/ 0.5	4.5/ 1.0	4.5/ 1.0
G1XBASAS	1993	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
G1XA1SAS	1993	0.0/ 0.0	0.0/ 0.0	1.0/ 0.0	1.5/ 0.0	0.5/ 0.0	1.0/ 0.0	1.5/ 0.0	1.5/ 0.5	1.0/ 0.5	1.0/ 0.0	1.0/ 0.0	0.0/ 0.0	0.5/ 0.0	0.0/ 0.0
H1XA2SAS	1993	7.5/ 1.0	7.0/ 1.5	4.0/ 1.5	4.0/ 1.0	3.5/ 4.5	4.0/ 4.0	3.5/ 4.0	3.5/ 4.0	4.0/ 4.0	3.5/ 3.0	4.5/ 1.5	4.0/ 0.0	8.0/ 0.0	8.5/ 0.0
G1XBASAS	1995	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
G1XA1SAS	1995	7.5/ 0.0	9.5/ 0.0	9.5/ 0.0	12.0/ 0.0	10.0/ 0.0	8.0/ 1.0	7.0/ 0.5	8.5/ 0.5	8.5/ 0.5	5.0/ 0.5	2.0/ 0.0	2.0/ 0.0	1.5/ 0.5	2.5/ 0.5
H1XA2SAS	1995	14.5/ 0.5	14.0/ 0.5	11.5/ 4.0	14.5/ 3.0	8.5/ 5.0	7.5/ 3.0	7.0/ 2.0	8.5/ 2.0	8.0/ 1.5	6.5/ 1.0	5.5/ 0.0	8.5/ 0.0	12.5/ 0.0	13.5/ 0.0
G1XBASAS	1997	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
G1XA1SAS	1997	2.5/ 0.0	6.0/ 0.0	6.0/ 0.0	5.5/ 0.0	5.5/ 0.0	6.0/ 0.0	6.0/ 0.0	7.0/ 0.0	6.5/ 0.0	4.0/ 0.0	2.0/ 0.0	1.5/ 0.0	1.5/ 0.0	2.0/ 0.0
H1XA2SAS	1997	11.0/ 0.0	12.0/ 0.0	8.0/ 1.5	10.5/ 1.0	7.5/ 3.5	8.0/ 1.0	8.0/ 1.0	9.0/ 1.0	8.0/ 1.0	5.0/ 0.5	3.5/ 0.5	4.0/ 1.0	9.0/ 0.0	11.0/ 0.0
G1XBASAS	2001	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
G1XA1SAS	2001	3.5/ 0.0	7.0/ 0.0	9.0/ 0.0	9.0/ 0.0	4.5/ 0.0	5.0/ 0.0	5.0/ 0.0	5.0/ 0.0	5.0/ 0.0	3.0/ 0.0	2.0/ 0.0	2.0/ 0.0	2.0/ 0.0	2.0/ 0.0
H1XA2SAS	2001	9.5/ 0.0	8.0/ 0.0	6.0/ 0.5	7.0/ 1.5	3.5/ 3.0	4.5/ 2.0	5.0/ 1.5	6.5/ 1.5	5.5/ 1.5	3.0/ 0.5	4.5/ 0.0	9.0/ 0.5	9.5/ 0.0	10.0/ 0.0
G1XBASAS	2005	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
G1XA1SAS	2005	3.0/ 0.0	8.0/ 0.0	9.0/ 0.0	7.5/ 0.0	4.5/ 0.0	7.0/ 0.5	6.5/ 0.5	6.0/ 0.5	6.0/ 0.5	5.0/ 0.0	2.5/ 0.0	2.0/ 0.0	2.5/ 0.0	2.5/ 0.0
H1XA2SAS	2005	7.0/ 0.0	5.5/ 0.0	5.0/ 1.0	5.0/ 0.5	1.5/ 2.5	3.5/ 2.0	4.0/ 2.0	5.0/ 2.0	5.0/ 2.0	3.0/ 1.0	6.0/ 1.5	5.5/ 0.0	8.5/ 0.0	8.5/ 0.0

FREQUENCY OF END OF PERIOD RESERVOIR ELEVATION
CHANGES FROM BASE CASE GREATER THAN 5 FEET (%)

GRAND COULEE

TEST CASE	CONTRACT YEAR	SEPT (+/-)	OCT (+/-)	NOV (+/-)	DEC (+/-)	JAN (+/-)	FEB (+/-)	MAR (+/-)	AP1 (+/-)	AP2 (+/-)	MAY (+/-)	JUNE (+/-)	JULY (+/-)	AG1 (+/-)	AG2 (+/-)
G1XBASAS	1991	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
G1XA1SAS	1991	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.5	0.0/ 0.5	0.5/ 1.5	1.0/ 2.0	0.5/ 1.5	0.5/ 1.5	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
H1XA2SAS	1991	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	1.5/ 1.0	1.5/ 0.5	2.0/ 2.5	2.5/ 3.0	2.0/ 3.0	1.0/ 3.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
G1XBASAS	1993	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
G1XA1SAS	1993	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.5/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
H1XA2SAS	1993	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.5/ 0.0	0.5/ 1.0	1.0/ 1.5	2.0/ 1.0	0.5/ 1.0	0.5/ 0.0	0.5/ 0.0	0.5/ 0.0	0.5/ 0.0	0.5/ 0.0
G1XBASAS	1995	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
G1XA1SAS	1995	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.5/ 0.0	1.0/ 0.0	4.5/ 0.0	2.5/ 0.0	1.0/ 0.5	1.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
H1XA2SAS	1995	0.5/ 0.0	0.5/ 0.0	1.0/ 0.0	1.0/ 0.0	3.5/ 0.5	4.5/ 0.0	5.0/ 1.0	3.0/ 0.5	2.0/ 0.0	1.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
G1XBASAS	1997	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
G1XA1SAS	1997	0.0/ 0.0	0.0/ 0.0	0.5/ 0.0	0.5/ 0.0	1.5/ 0.0	2.0/ 0.0	1.0/ 0.0	1.5/ 0.0	0.5/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
H1XA2SAS	1997	0.0/ 0.0	0.5/ 0.0	0.5/ 0.0	0.5/ 0.0	2.0/ 0.5	3.0/ 0.5	3.0/ 0.5	1.5/ 0.0	1.0/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
G1XBASAS	2001	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
G1XA1SAS	2001	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	1.0/ 0.0	1.5/ 0.0	1.0/ 0.0	0.5/ 0.0	0.5/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
H1XA2SAS	2001	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	1.5/ 1.0	2.0/ 0.0	2.5/ 0.0	0.0/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
G1XBASAS	2005	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
G1XA1SAS	2005	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.5/ 0.0	0.0/ 0.0	2.0/ 0.0	1.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
H1XA2SAS	2005	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.5/ 0.5	0.5/ 0.0	4.5/ 0.5	1.5/ 0.0	0.5/ 0.0	0.0/ 1.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0

DWORSHAK

TEST CASE	CONTRACT YEAR	SEPT (+/-)	OCT (+/-)	NOV (+/-)	DEC (+/-)	JAN (+/-)	FEB (+/-)	MAR (+/-)	AP1 (+/-)	AP2 (+/-)	MAY (+/-)	JUNE (+/-)	JULY (+/-)	AG1 (+/-)	AG2 (+/-)
G1XBASAS	1991	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
G1XA1SAS	1991	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.5/ 0.5	0.5/ 0.0	0.5/ 0.0	1.5/ 0.0	1.0/ 0.5	1.0/ 1.0	0.5/ 0.5	0.5/ 1.0	0.5/ 1.0	0.5/ 1.0	0.5/ 1.0
H1XA2SAS	1991	10.0/ 0.5	9.5/ 0.5	8.0/ 0.5	17.5/ 1.0	13.0/ 0.5	7.5/ 1.5	6.5/ 3.0	5.5/ 2.5	4.0/ 2.0	4.0/ 1.5	6.0/ 1.0	8.5/ 0.5	10.0/ 1.0	12.0/ 1.0
G1XBASAS	1993	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
G1XA1SAS	1993	1.0/ 0.0	1.0/ 0.0	1.5/ 0.0	5.5/ 0.5	3.5/ 0.5	3.5/ 0.0	3.0/ 0.0	1.5/ 0.0	1.5/ 0.0	1.0/ 0.0	0.5/ 0.0	1.0/ 0.0	1.0/ 0.0	10.5/ 0.0
H1XA2SAS	1993	9.5/ 4.0	9.5/ 4.0	8.0/ 2.5	11.5/ 3.5	9.5/ 2.0	6.5/ 3.5	8.5/ 3.5	6.0/ 2.5	5.0/ 2.0	4.0/ 1.5	8.5/ 0.0	10.5/ 0.0	11.0/ 1.0	16.5/ 1.5
G1XBASAS	1995	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
G1XA1SAS	1995	22.5/ 1.0	21.0/ 1.0	12.0/ 1.0	19.0/ 0.5	15.0/ 0.5	12.0/ 0.5	9.5/ 0.5	7.5/ 0.5	8.5/ 0.0	6.5/ 0.0	6.0/ 0.5	5.5/ 0.5	5.0/ 0.0	15.0/ 0.0
H1XA2SAS	1995	24.5/ 1.5	25.0/ 1.5	19.0/ 1.5	23.5/ 2.5	17.0/ 2.5	11.5/ 3.0	12.5/ 2.5	10.5/ 1.5	9.0/ 0.5	8.0/ 0.5	13.5/ 0.0	17.0/ 0.5	17.5/ 1.0	23.0/ 1.5
G1XBASAS	1997	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
G1XA1SAS	1997	15.0/ 1.0	12.5/ 1.0	7.5/ 0.5	11.0/ 0.0	10.5/ 0.0	9.5/ 0.0	8.0/ 0.5	5.5/ 0.0	4.0/ 0.0	3.0/ 0.0	4.0/ 0.0	4.5/ 0.0	3.5/ 0.0	8.0/ 0.0
H1XA2SAS	1997	19.0/ 0.5	18.5/ 0.5	16.0/ 0.5	19.0/ 1.0	16.0/ 0.5	9.5/ 0.5	10.0/ 0.5	8.5/ 0.0	7.5/ 0.0	6.0/ 0.0	10.5/ 0.0	14.0/ 0.0	14.5/ 0.5	19.5/ 2.0
G1XBASAS	2001	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
G1XA1SAS	2001	11.5/ 0.0	11.5/ 0.0	8.5/ 0.0	13.0/ 0.0	11.5/ 0.0	9.5/ 0.0	8.5/ 0.5	6.0/ 0.5	5.0/ 0.5	4.0/ 0.0	2.5/ 0.0	3.0/ 0.0	3.5/ 0.0	9.5/ 0.0
H1XA2SAS	2001	19.5/ 0.5	19.0/ 0.0	13.5/ 0.0	20.5/ 1.0	13.0/ 0.5	7.5/ 2.0	9.0/ 2.5	7.5/ 2.0	5.0/ 2.0	3.5/ 1.0	7.0/ 1.0	12.0/ 0.0	13.0/ 0.0	18.0/ 0.0
G1XBASAS	2005	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
G1XA1SAS	2005	11.5/ 0.0	10.5/ 0.0	6.5/ 0.0	12.0/ 0.0	9.0/ 0.0	9.5/ 0.5	7.5/ 1.0	6.0/ 0.5	5.0/ 0.5	4.5/ 0.5	5.5/ 0.0	3.5/ 0.0	4.0/ 0.0	7.5/ 0.0
H1XA2SAS	2005	11.5/ 0.0	12.5/ 0.0	9.0/ 0.0	14.5/ 0.5	10.5/ 0.0	6.5/ 2.5	9.5/ 1.5	5.5/ 0.0	4.0/ 0.0	3.0/ 0.0	5.5/ 1.0	13.0/ 0.0	11.5/ 0.0	19.0/ 0.5

FREQUENCY OF END OF PERIOD RESERVOIR ELEVATION
CHANGES FROM BASE CASE GREATER THAN 5 FEET (%)

HUNGRY HORSE

TEST CASE	CONTRACT YEAR	SEPT (+/-)	OCT (+/-)	NOV (+/-)	DEC (+/-)	JAN (+/-)	FEB (+/-)	MAR (+/-)	AP1 (+/-)	AP2 (+/-)	MAY (+/-)	JUNE (+/-)	JULY (+/-)	AG1 (+/-)	AG2 (+/-)
AMXBAARO	1991	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1E03	1991	0.5/ 0.0	0.5/ 0.0	0.5/ 0.0	1.0/ 0.0	1.5/ 0.0	1.5/ 0.0	1.5/ 0.0	1.5/ 0.5	1.5/ 0.5	0.5/ 0.0	1.0/ 0.0	1.0/ 0.5	1.0/ 1.0	0.5/ 1.0
IMXA2E03	1991	14.5/ 3.0	14.5/ 3.0	14.0/ 3.5	15.0/ 3.5	17.0/ 3.0	18.0/ 1.5	20.5/ 2.0	21.5/ 2.0	19.0/ 2.0	10.5/ 1.0	10.0/ 0.5	9.0/ 1.0	12.0/ 1.0	11.5/ 2.0
AMXBAARO	1993	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1E03	1993	1.5/ 0.0	1.5/ 0.0	1.5/ 0.0	1.5/ 0.0	2.0/ 0.0	3.0/ 0.5	3.0/ 1.0	3.0/ 1.0	2.5/ 1.0	2.0/ 0.5	2.0/ 0.0	1.5/ 0.0	1.5/ 0.5	10.5/ 0.5
IMXA2E03	1993	10.0/11.5	10.5/10.5	10.0/ 9.0	10.0/ 8.0	9.5/ 4.5	10.0/ 3.0	11.0/ 1.0	11.5/ 1.0	10.5/ 0.5	8.5/ 0.0	11.5/ 0.0	11.0/ 0.0	12.0/ 0.0	17.0/ 0.0
AMXBAARO	1995	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1E03	1995	32.0/ 1.0	33.5/ 1.0	34.0/ 1.0	34.5/ 1.0	25.5/ 1.0	20.0/ 1.0	17.5/ 0.5	20.0/ 0.5	18.0/ 0.5	14.0/ 0.0	12.0/ 0.5	10.5/ 0.5	9.5/ 0.5	17.5/ 0.5
IMXA2E03	1995	31.0/ 2.0	31.0/ 2.0	29.5/ 2.0	29.0/ 2.0	25.5/ 1.5	22.0/ 1.5	24.5/ 1.5	27.5/ 1.5	26.0/ 1.5	21.0/ 1.5	21.5/ 1.0	20.0/ 1.0	22.5/ 1.0	25.0/ 0.5
AMXBAARO	1997	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1E03	1997	24.0/ 1.0	25.0/ 1.0	25.0/ 0.5	25.5/ 0.5	18.0/ 0.5	13.0/ 0.0	10.0/ 0.5	10.0/ 0.5	8.0/ 1.0	6.5/ 1.0	7.5/ 1.0	8.0/ 0.5	9.5/ 0.5	12.0/ 0.5
IMXA2E03	1997	28.0/ 0.5	28.0/ 0.5	26.0/ 0.5	25.5/ 0.5	21.5/ 0.5	17.0/ 0.5	17.0/ 0.5	18.0/ 0.5	18.5/ 0.5	18.0/ 0.5	20.5/ 0.5	20.0/ 0.5	20.0/ 0.5	24.0/ 1.0
AMXBAARO	2001	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1E03	2001	25.0/ 0.0	24.5/ 0.0	24.5/ 0.0	24.0/ 0.0	22.0/ 0.0	17.5/ 0.0	10.0/ 0.0	9.0/ 0.0	7.5/ 0.0	6.5/ 0.0	6.0/ 0.0	7.0/ 0.0	7.0/ 0.0	10.5/ 0.0
IMXA2E03	2001	23.0/ 1.0	23.5/ 1.0	22.5/ 1.0	23.0/ 1.0	21.5/ 1.0	18.5/ 0.5	17.5/ 1.0	18.5/ 0.5	18.5/ 0.5	14.5/ 0.5	15.5/ 0.5	15.0/ 0.5	16.5/ 0.0	18.5/ 0.0
AMXBAARO	2005	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1E03	2005	0.5/ 0.5	0.0/ 0.5	0.0/ 0.5	0.0/ 0.5	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
IMXA2E03	2005	2.5/ 1.5	2.5/ 1.5	4.0/ 1.5	4.5/ 1.5	4.0/ 1.0	4.5/ 1.0	4.0/ 1.0	4.0/ 1.5	4.0/ 1.0	2.0/ 0.0	1.0/ 0.0	1.0/ 1.0	1.0/ 1.0	1.0/ 1.5

LIBBY

TEST CASE	CONTRACT YEAR	SEPT (+/-)	OCT (+/-)	NOV (+/-)	DEC (+/-)	JAN (+/-)	FEB (+/-)	MAR (+/-)	AP1 (+/-)	AP2 (+/-)	MAY (+/-)	JUNE (+/-)	JULY (+/-)	AG1 (+/-)	AG2 (+/-)
AMXBAARO	1991	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1E03	1991	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.5	0.5/ 0.5	0.5/ 0.5	0.5/ 0.5	0.5/ 0.5	0.5/ 0.5	0.0/ 0.5	0.0/ 0.5	0.0/ 0.0	0.0/ 0.0
IMXA2E03	1991	4.0/ 0.5	5.5/ 1.5	5.0/ 2.5	12.5/ 5.0	3.0/ 9.0	2.5/ 6.0	2.0/ 6.0	1.5/ 5.0	1.5/ 5.0	1.0/ 2.5	3.0/ 2.5	4.0/ 1.0	4.5/ 1.5	4.5/ 1.5
AMXBAARO	1993	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1E03	1993	0.0/ 0.0	0.0/ 0.0	0.5/ 0.0	1.5/ 0.0	0.5/ 0.0	1.0/ 0.0	1.5/ 0.0	1.5/ 0.0	1.0/ 0.0	1.0/ 0.0	1.0/ 0.0	0.0/ 0.0	0.5/ 0.0	0.0/ 0.0
IMXA2E03	1993	7.5/ 1.0	7.0/ 1.5	3.5/ 2.0	3.5/ 1.5	3.0/ 4.5	4.0/ 4.5	4.0/ 4.0	4.0/ 4.5	4.0/ 4.5	3.0/ 3.0	4.0/ 1.5	4.0/ 0.0	7.5/ 0.0	8.5/ 0.0
AMXBAARO	1995	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1E03	1995	7.0/ 0.0	9.5/ 0.0	9.0/ 0.0	12.0/ 0.0	9.5/ 0.0	8.0/ 1.0	7.0/ 0.5	8.5/ 0.5	8.0/ 0.5	5.0/ 0.5	2.0/ 0.0	2.0/ 0.0	1.5/ 0.0	2.5/ 0.0
IMXA2E03	1995	13.0/ 0.5	13.5/ 0.5	11.5/ 3.5	13.5/ 2.5	8.5/ 4.5	7.0/ 3.0	7.0/ 1.5	8.5/ 1.5	8.0/ 1.5	6.0/ 1.0	4.5/ 0.0	8.5/ 0.0	12.5/ 0.0	13.0/ 0.0
AMXBAARO	1997	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1E03	1997	2.5/ 0.0	6.0/ 0.0	6.5/ 0.0	5.5/ 0.0	5.5/ 0.0	6.0/ 0.0	6.0/ 0.0	7.0/ 0.0	6.5/ 0.0	4.0/ 0.0	2.0/ 0.0	1.0/ 0.0	1.0/ 0.0	1.5/ 0.0
IMXA2E03	1997	10.5/ 0.0	11.0/ 0.0	8.0/ 1.5	10.0/ 0.5	7.5/ 4.0	7.5/ 1.5	7.5/ 1.5	9.0/ 1.0	8.0/ 1.0	5.0/ 0.5	3.5/ 0.5	4.0/ 1.5	8.0/ 0.0	11.0/ 0.0
AMXBAARO	2001	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1E03	2001	4.0/ 0.0	7.5/ 0.0	9.0/ 0.0	9.0/ 0.0	4.5/ 0.0	4.5/ 0.0	5.0/ 0.0	5.0/ 0.0	4.5/ 0.0	3.0/ 0.0	2.0/ 0.0	2.0/ 0.0	2.0/ 0.0	2.0/ 0.0
IMXA2E03	2001	9.0/ 0.0	7.5/ 0.0	5.0/ 1.0	6.0/ 1.5	3.5/ 3.0	4.0/ 2.5	4.5/ 2.0	5.5/ 2.0	4.5/ 2.0	3.0/ 0.5	4.0/ 0.0	8.5/ 1.0	9.5/ 0.0	9.5/ 0.0
AMXBAARO	2005	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EMXA1E03	2005	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 1.0	0.0/ 0.5	0.0/ 0.5	0.0/ 0.5	0.0/ 0.5	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
IMXA2E03	2005	0.5/ 1.0	0.5/ 1.5	0.5/ 2.0	0.0/ 2.0	0.0/ 2.5	0.5/ 1.0	0.5/ 1.0	0.5/ 1.0	0.5/ 1.0	0.0/ 0.5	0.0/ 0.5	0.0/ 0.5	0.0/ 0.5	0.0/ 0.0

FREQUENCY OF END OF PERIOD RESERVOIR ELEVATION
CHANGES FROM BASE CASE GREATER THAN 5 FEET (%)

GRAND COULEE

TEST CASE	CONTRACT YEAR	SEPT (+/-)	OCT (+/-)	NOV (+/-)	DEC (+/-)	JAN (+/-)	FEB (+/-)	MAR (+/-)	AP1 (+/-)	AP2 (+/-)	MAY (+/-)	JUNE (+/-)	JULY (+/-)	AG1 (+/-)	AG2 (+/-)
AMXBAARO	1991	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EIXA1E03	1991	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.5/ 0.5	1.0/ 1.0	0.5/ 1.0	0.5/ 0.5	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
IIXA2E03	1991	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	1.5/ 1.5	1.5/ 1.5	2.0/ 3.0	2.5/ 3.5	2.0/ 3.0	1.0/ 3.0	0.5/ 0.5	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
AMXBAARO	1993	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EIXA1E03	1993	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.5/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
IIXA2E03	1993	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.5/ 0.0	0.5/ 1.0	1.0/ 1.5	1.5/ 1.0	0.5/ 1.0	0.0/ 0.5	0.5/ 0.0	0.5/ 0.0	0.5/ 0.0	0.5/ 0.0
AMXBAARO	1995	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EIXA1E03	1995	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	1.0/ 0.0	3.0/ 0.0	2.5/ 0.0	1.0/ 0.5	1.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
IIXA2E03	1995	0.0/ 0.0	0.5/ 0.0	0.5/ 0.0	1.0/ 0.0	3.5/ 0.5	4.5/ 0.0	5.5/ 1.0	3.0/ 0.5	2.0/ 0.0	1.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
AMXBAARO	1997	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EIXA1E03	1997	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.5/ 0.0	1.5/ 0.0	2.0/ 0.0	1.0/ 0.0	1.5/ 0.0	0.5/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
IIXA2E03	1997	0.0/ 0.0	0.5/ 0.0	0.5/ 0.0	0.5/ 0.0	2.0/ 0.5	2.5/ 0.5	3.0/ 0.5	1.5/ 0.0	1.0/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
AMXBAARO	2001	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EIXA1E03	2001	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	1.0/ 0.0	2.0/ 0.0	1.0/ 0.0	0.5/ 0.0	0.5/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
IIXA2E03	2001	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	1.5/ 1.0	2.0/ 0.0	2.0/ 0.0	0.5/ 0.0	0.5/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
AMXBAARO	2005	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EIXA1E03	2005	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
IIXA2E03	2005	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.5	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0

DWORSHAK

TEST CASE	CONTRACT YEAR	SEPT (+/-)	OCT (+/-)	NOV (+/-)	DEC (+/-)	JAN (+/-)	FEB (+/-)	MAR (+/-)	AP1 (+/-)	AP2 (+/-)	MAY (+/-)	JUNE (+/-)	JULY (+/-)	AG1 (+/-)	AG2 (+/-)
AMXBAARO	1991	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EIXA1E03	1991	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	1.0/ 0.0	1.0/ 0.5	1.0/ 1.0	0.5/ 0.0	0.5/ 0.5	0.5/ 0.5	0.5/ 0.5	0.5/ 0.5
IIXA2E03	1991	9.5/ 0.5	8.5/ 0.5	7.5/ 0.5	16.0/ 2.0	11.5/ 1.5	7.0/ 1.5	6.5/ 3.0	5.5/ 3.0	4.0/ 2.0	4.0/ 2.5	6.0/ 1.0	9.0/ 1.0	9.5/ 1.5	12.0/ 1.5
AMXBAARO	1993	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EIXA1E03	1993	0.5/ 0.0	0.5/ 0.0	1.0/ 0.0	5.0/ 0.5	4.0/ 0.5	3.5/ 0.0	3.0/ 0.5	1.5/ 0.0	1.5/ 0.0	1.5/ 0.0	0.5/ 0.0	1.0/ 0.0	1.0/ 0.0	10.5/ 0.0
IIXA2E03	1993	9.5/ 3.5	9.5/ 4.0	8.0/ 2.5	11.5/ 3.0	8.5/ 2.0	6.5/ 3.0	7.5/ 2.5	5.5/ 1.5	5.0/ 1.0	3.5/ 0.5	7.5/ 0.0	10.0/ 0.0	10.5/ 1.0	16.5/ 1.5
AMXBAARO	1995	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EIXA1E03	1995	21.0/ 1.0	19.5/ 1.0	11.5/ 1.0	18.5/ 0.5	14.0/ 0.5	11.0/ 0.5	9.0/ 0.5	7.5/ 0.5	8.0/ 0.0	6.5/ 0.0	5.5/ 0.5	5.5/ 0.0	5.0/ 0.0	15.0/ 0.0
IIXA2E03	1995	23.0/ 1.5	24.0/ 1.5	19.0/ 1.5	23.5/ 2.5	16.5/ 2.5	10.0/ 3.0	13.0/ 2.5	10.5/ 1.5	9.0/ 0.5	8.0/ 0.5	12.5/ 0.0	17.0/ 0.5	17.5/ 1.0	23.0/ 1.5
AMXBAARO	1997	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EIXA1E03	1997	15.0/ 1.0	13.0/ 1.0	7.0/ 0.5	10.0/ 0.0	10.0/ 0.0	9.5/ 0.0	8.5/ 0.5	6.0/ 0.0	4.5/ 0.0	3.0/ 0.0	4.0/ 0.0	4.5/ 0.0	4.0/ 0.0	8.5/ 0.0
IIXA2E03	1997	18.0/ 0.5	18.0/ 0.5	16.0/ 0.5	18.0/ 1.0	15.5/ 0.5	9.5/ 1.5	10.0/ 0.5	8.5/ 0.0	7.5/ 0.0	6.0/ 0.5	10.0/ 0.0	13.0/ 0.0	14.0/ 0.5	18.5/ 2.0
AMXBAARO	2001	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EIXA1E03	2001	12.0/ 0.0	12.0/ 0.0	9.0/ 0.0	13.0/ 0.0	11.5/ 0.0	9.5/ 0.0	8.0/ 0.5	6.0/ 0.5	5.0/ 0.5	4.0/ 0.0	2.5/ 0.0	3.5/ 0.0	3.0/ 0.0	8.5/ 0.0
IIXA2E03	2001	19.0/ 0.5	18.5/ 0.0	13.0/ 0.0	20.5/ 1.0	12.5/ 0.5	6.5/ 2.5	8.0/ 3.0	7.0/ 2.0	4.5/ 2.0	3.0/ 1.0	6.5/ 1.0	11.0/ 0.0	12.5/ 0.0	17.0/ 0.0
AMXBAARO	2005	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
EIXA1E03	2005	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.5	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0	0.0/ 0.0
IIXA2E03	2005	0.5/ 1.5	0.5/ 1.0	0.0/ 1.0	0.0/ 1.5	0.0/ 0.5	0.0/ 1.0	0.0/ 0.0	0.5/ 0.5	0.5/ 0.5	0.5/ 0.5	0.0/ 0.5	0.0/ 0.5	0.0/ 0.0	0.0/ 0.5

THE FREQUENCY OF FLOWS LESS THAN 4.5 KCFS (%)
COMPARISONS FOR PROJECT: COLUMBIA FALLS

YEAR	STUDY	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
1991	FMXBANHL	35.4	35.4	56.9	64.6	18.5	13.8	21.5	16.9	1.5	0.0	0.0	6.2	18.5	52.3
	FMXA1NHL	35.4	35.4	56.9	66.2	18.5	15.4	21.5	16.9	1.5	0.0	0.0	7.7	18.5	52.3
	IMXA2NHL	41.5	36.9	55.4	58.5	15.4	12.3	20.0	18.5	3.1	0.0	0.0	7.7	15.4	44.6
1993	FMXBANHL	36.9	40.0	67.7	70.8	29.2	21.5	23.1	23.1	6.2	0.0	0.0	10.8	9.2	29.2
	FMXA1NHL	36.9	40.0	69.2	70.8	27.7	21.5	23.1	21.5	6.2	0.0	0.0	10.8	10.8	40.0
	IMXA2NHL	32.3	41.5	63.1	67.7	27.7	20.0	18.5	20.0	6.2	0.0	0.0	10.8	13.8	32.3
1995	FMXBANHL	36.9	38.5	58.5	50.8	36.9	30.8	41.5	26.2	6.2	0.0	0.0	1.5	23.1	36.9
	FMXA1NHL	35.4	35.4	53.8	50.8	36.9	27.7	41.5	24.6	6.2	0.0	0.0	1.5	21.5	36.9
	IMXA2NHL	35.4	41.5	55.4	47.7	35.4	29.2	40.0	24.6	6.2	0.0	0.0	1.5	21.5	36.9
1997	FMXBANHL	36.9	47.7	60.0	69.2	32.3	24.6	26.2	32.3	9.2	0.0	0.0	1.5	12.3	43.1
	FMXA1NHL	36.9	49.2	60.0	60.0	27.7	23.1	26.2	33.8	9.2	0.0	0.0	1.5	12.3	44.6
	IMXA2NHL	49.2	52.3	60.0	56.9	26.2	21.5	23.1	33.8	9.2	0.0	0.0	1.5	7.7	38.5
2001	FMXBANHL	35.4	50.8	64.6	61.5	43.1	29.2	36.9	21.5	9.2	0.0	0.0	3.1	4.7	43.8
	FMXA1NHL	47.7	58.5	64.6	64.6	35.4	29.2	33.8	21.5	7.7	0.0	0.0	3.1	6.3	45.3
	IMXA2NHL	41.5	52.3	64.6	61.5	30.8	21.5	35.4	23.1	10.8	0.0	0.0	3.1	6.3	50.0
2005	FMXBANHL	39.1	48.4	60.9	60.9	31.3	25.0	31.3	25.0	3.1	0.0	0.0	10.9	23.4	67.2
	FMXA1NHL	53.1	56.3	70.3	64.1	26.6	23.4	28.1	23.4	3.1	0.0	0.0	10.9	26.6	71.9
	IMXA2NHL	43.8	50.0	65.6	68.8	25.0	21.9	29.7	25.0	3.1	0.0	0.0	9.4	26.6	65.6

THE FREQUENCY OF FLOWS LESS THAN 3.5 KCFS (%)
COMPARISONS FOR PROJECT: COLUMBIA FALLS

YEAR	STUDY	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
1991	FMXBANHL	0.0	0.0	0.0	0.0	0.0	1.5	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	FMXA1NHL	0.0	0.0	0.0	0.0	0.0	1.5	4.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	IMXA2NHL	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	FMXBANHL	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	FMXA1NHL	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	IMXA2NHL	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	FMXBANHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	FMXA1NHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	IMXA2NHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	FMXBANHL	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0
	FMXA1NHL	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	IMXA2NHL	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	FMXBANHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	FMXA1NHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	IMXA2NHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	FMXBANHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	FMXA1NHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	IMXA2NHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

COMPARISONS FOR PLANT: COLUMBIA FALLS
MEAN CHANGE IN END OF PERIOD FLOWS,KCFS

STUDY	YEAR	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
FMXBANHL	1991	5.4	4.8	4.5	4.2	9.0	9.3	7.8	8.2	14.1	24.0	23.4	11.1	6.1	5.0
FMXA1NHL	1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	0.0	0.0	0.0	0.1	0.0	0.0
IMXA2NHL	1991	-0.5	0.0	0.0	0.1	0.1	0.1	0.0	-0.3	0.1	0.1	-0.1	0.2	0.2	0.4
FMXBANHL	1993	5.4	4.6	4.1	4.0	8.2	8.7	7.2	7.1	15.8	23.4	23.3	11.1	7.6	7.0
FMXA1NHL	1993	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	-0.7	-0.9
IMXA2NHL	1993	-0.2	0.0	0.1	0.1	0.1	0.0	0.1	-0.1	0.0	0.0	0.0	0.1	-0.3	-0.7
FMXBANHL	1995	5.6	5.2	4.6	4.4	8.2	8.2	7.1	8.1	14.1	23.4	23.3	10.5	7.5	6.8
FMXA1NHL	1995	0.0	0.0	0.1	0.0	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.0	-0.4	-0.4
IMXA2NHL	1995	-0.3	-0.1	0.0	0.0	0.2	-0.1	0.1	0.1	0.3	0.0	-0.1	0.1	-0.1	-0.2
FMXBANHL	1997	5.3	4.5	4.3	4.1	8.3	8.8	7.6	8.0	12.9	22.5	26.1	11.3	6.9	5.8
FMXA1NHL	1997	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0	-0.3	-0.3
IMXA2NHL	1997	-0.3	0.0	0.1	0.1	0.3	0.2	0.2	-0.3	-0.2	0.1	0.0	0.3	0.0	-0.1
FMXBANHL	2001	6.0	4.5	4.2	4.1	7.5	8.0	6.6	7.0	13.8	21.4	24.7	11.8	7.0	5.6
FMXA1NHL	2001	-1.0	0.0	0.0	0.0	0.2	0.1	0.3	0.0	0.2	0.0	0.0	0.1	0.0	-0.1
IMXA2NHL	2001	-0.6	0.0	0.0	0.0	0.3	0.2	0.2	-0.1	0.0	0.0	-0.1	0.2	-0.2	-0.5
FMXBANHL	2005	5.5	4.6	4.2	4.0	7.9	8.3	6.8	7.0	14.4	22.3	23.3	10.4	6.0	4.7
FMXA1NHL	2005	-0.7	0.0	-0.1	0.0	0.4	0.1	0.2	0.1	0.1	0.0	0.1	0.0	-0.2	-0.2
IMXA2NHL	2005	-0.3	0.0	-0.1	0.0	0.3	0.1	0.2	-0.1	0.0	0.0	0.0	0.1	0.1	0.1

THE FREQUENCY OF FLOWS LESS THAN 4.5 KCFS (%)
COMPARISONS FOR PROJECT: COLUMBIA FALLS

YEAR	STUDY	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
1991	EMXBASHL	6.2	21.5	47.7	43.1	35.4	27.7	26.2	27.7	1.5	0.0	0.0	7.7	20.0	56.9
	EMXA1SHL	9.2	23.1	47.7	44.6	33.8	29.2	26.2	26.2	1.5	0.0	0.0	7.7	20.0	56.9
	EMXA2SHL	6.2	24.6	47.7	36.9	33.8	26.2	24.6	26.2	1.5	0.0	0.0	6.2	16.9	53.8
1993	EMXBASHL	13.8	29.2	56.9	49.2	36.9	23.1	21.5	23.1	6.2	0.0	0.0	10.8	18.5	52.3
	EMXA1SHL	13.8	29.2	61.5	55.4	36.9	23.1	23.1	23.1	6.2	0.0	0.0	10.8	21.5	60.0
	EMXA2SHL	3.1	27.7	56.9	52.3	36.9	23.1	23.1	24.6	6.2	0.0	0.0	10.8	12.3	53.8
1995	EMXBASHL	12.3	26.2	50.8	52.3	40.0	33.8	35.4	23.1	3.1	0.0	0.0	0.0	29.2	63.1
	EMXA1SHL	10.8	30.8	52.3	50.8	32.3	29.2	38.5	23.1	6.2	0.0	0.0	1.5	27.7	63.1
	EMXA2SHL	6.2	26.2	49.2	46.2	38.5	33.8	36.9	26.2	6.2	0.0	0.0	1.5	29.2	64.6
1997	EMXBASHL	23.1	29.2	53.8	56.9	29.2	23.1	23.1	29.2	7.7	0.0	0.0	3.1	23.1	64.6
	EMXA1SHL	30.8	36.9	53.8	58.5	24.6	21.5	20.0	30.8	6.2	0.0	0.0	3.1	23.1	64.6
	EMXA2SHL	16.9	40.0	56.9	53.8	26.2	18.5	20.0	29.2	7.7	0.0	0.0	3.1	20.0	60.0
2001	EMXBASHL	27.7	49.2	56.9	56.9	38.5	26.2	33.8	16.9	9.2	0.0	0.0	3.1	7.8	45.3
	EMXA1SHL	27.7	52.3	60.0	61.5	36.9	29.2	29.2	16.9	10.8	0.0	0.0	3.1	6.3	43.8
	EMXA2SHL	26.2	46.2	56.9	58.5	33.8	23.1	29.2	21.5	9.2	0.0	0.0	3.1	4.7	42.2
2005	EMXBASHL	32.8	42.2	57.8	64.1	35.9	28.1	35.9	31.3	4.7	0.0	0.0	7.8	26.6	65.6
	EMXA1SHL	48.4	50.0	67.2	68.8	29.7	23.4	32.8	28.1	4.7	0.0	0.0	7.8	29.7	68.8
	EMXA2SHL	39.1	50.0	65.6	65.6	29.7	28.1	29.7	28.1	4.7	0.0	0.0	6.3	25.0	68.8

THE FREQUENCY OF FLOWS LESS THAN 3.5 KCFS (%)
COMPARISONS FOR PROJECT: COLUMBIA FALLS

YEAR	STUDY	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
1991	EMXBASHL	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EMXA1SHL	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EMXA2SHL	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	EMXBASHL	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EMXA1SHL	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EMXA2SHL	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	EMXBASHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EMXA1SHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EMXA2SHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	EMXBASHL	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0
	EMXA1SHL	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0
	EMXA2SHL	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	EMXBASHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EMXA1SHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EMXA2SHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	EMXBASHL	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EMXA1SHL	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EMXA2SHL	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0

COMPARISONS FOR PLANT: COLUMBIA FALLS
MEAN CHANGE IN END OF PERIOD FLOWS,KCFS

STUDY	YEAR	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
EMXBASHL	1991	8.2	4.6	4.5	4.4	8.1	8.3	7.2	7.8	13.8	23.9	23.3	11.2	6.1	4.9
EMXA1SHL	1991	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0
IMXA2SHL	1991	0.1	0.0	-0.1	0.1	0.0	-0.1	0.1	-0.1	0.3	0.0	-0.1	-0.1	0.0	0.1
EMXBASHL	1993	7.1	4.5	4.1	4.1	7.8	8.2	6.8	6.9	15.6	23.4	23.2	11.0	6.4	5.4
EMXA1SHL	1993	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.3	-0.4
IMXA2SHL	1993	0.8	0.0	0.0	0.0	-0.2	-0.2	-0.2	-0.1	-0.1	0.0	-0.1	0.0	-0.1	-0.2
EMXBASHL	1995	7.8	5.2	4.7	4.4	7.9	7.7	7.0	8.4	14.0	23.2	23.0	10.3	6.0	5.0
EMXA1SHL	1995	-0.5	0.0	0.0	0.0	0.3	0.3	0.1	-0.3	-0.1	0.0	0.1	0.2	0.0	0.0
IMXA2SHL	1995	0.1	-0.1	0.0	0.1	0.2	0.1	0.0	-0.5	-0.2	0.0	0.0	0.1	-0.1	-0.2
EMXBASHL	1997	6.7	4.7	4.4	4.1	8.2	8.7	7.5	8.1	12.8	22.4	25.9	11.2	6.3	5.0
EMXA1SHL	1997	-0.8	0.0	0.0	0.0	0.3	0.2	0.3	-0.1	0.1	0.0	-0.1	0.0	-0.2	-0.1
IMXA2SHL	1997	-0.3	0.0	0.0	0.1	0.3	0.3	0.1	0.0	-0.3	0.1	0.0	0.1	-0.2	-0.1
EMXBASHL	2001	6.4	4.5	4.2	4.1	7.7	8.1	6.7	7.4	13.9	21.4	24.7	11.6	7.1	5.7
EMXA1SHL	2001	-0.4	0.0	0.0	0.0	0.0	0.0	0.2	-0.1	-0.1	0.0	0.0	0.1	-0.1	-0.1
IMXA2SHL	2001	-0.6	0.0	0.0	0.0	0.0	0.3	0.3	-0.3	-0.2	0.0	-0.1	0.2	-0.1	-0.4
EMXBASHL	2005	6.0	4.7	4.2	4.0	7.6	8.1	6.6	6.9	14.2	22.3	23.3	10.6	6.2	5.0
EMXA1SHL	2005	-0.6	0.0	-0.1	-0.1	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	-0.1
IMXA2SHL	2005	-0.8	-0.1	-0.1	0.0	0.4	0.0	0.1	0.0	0.2	0.0	0.0	0.2	-0.1	-0.2

THE FREQUENCY OF FLOWS LESS THAN 4.5 KCFS (%)
COMPARISONS FOR PROJECT: COLUMBIA FALLS

YEAR	STUDY	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
1991	EMXBAADC	9.2	23.1	46.2	46.2	35.4	26.2	26.2	29.2	1.5	0.0	0.0	9.2	23.1	55.4
	EMXA1ADC	7.7	23.1	46.2	44.6	33.8	26.2	26.2	29.2	1.5	0.0	0.0	9.2	23.1	55.4
1993	EMXBAADC	12.3	26.2	55.4	47.7	36.9	20.0	21.5	23.1	6.2	0.0	0.0	10.8	18.5	52.3
	EMXA1ADC	12.3	26.2	56.9	50.8	38.5	20.0	21.5	23.1	6.2	0.0	0.0	10.8	21.5	60.0
1995	EMXBAADC	10.8	24.6	49.2	52.3	40.0	33.8	36.9	24.6	3.1	0.0	0.0	0.0	16.9	46.2
	EMXA1ADC	10.8	29.2	50.8	49.2	38.5	32.3	36.9	23.1	3.1	0.0	0.0	0.0	24.6	60.0
1997	EMXBAADC	23.1	30.8	56.9	61.5	30.8	23.1	23.1	30.8	9.2	0.0	0.0	3.1	16.9	55.4
	EMXA1ADC	27.7	33.8	55.4	56.9	27.7	21.5	21.5	32.3	9.2	0.0	0.0	3.1	20.0	56.9
2001	EMXBAADC	24.6	43.1	60.0	55.4	43.1	33.8	36.9	18.5	9.2	0.0	0.0	3.1	6.3	43.8
	EMXA1ADC	27.7	52.3	61.5	60.0	36.9	32.3	30.8	16.9	10.8	0.0	0.0	3.1	6.3	43.8
2005	EMXBAADC	32.8	43.8	57.8	65.6	35.9	28.1	35.9	29.7	4.7	0.0	0.0	7.8	23.4	60.9
	EMXA1ADC	48.4	46.9	67.2	67.2	28.1	26.6	37.5	26.6	4.7	0.0	0.0	7.8	26.6	68.8

THE FREQUENCY OF FLOWS LESS THAN 3.5 KCFS (%)
COMPARISONS FOR PROJECT: COLUMBIA FALLS

YEAR	STUDY	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
1991	EMXBAADC	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EMXA1ADC	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	EMXBAADC	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EMXA1ADC	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	EMXBAADC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EMXA1ADC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	EMXBAADC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EMXA1ADC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	EMXBAADC	0.0	0.0	0.0	0.0	0.0	1.6	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EMXA1ADC	0.0	0.0	0.0	0.0	0.0	1.6	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0

COMPARISONS FOR PLANT: COLUMBIA FALLS
MEAN CHANGE IN END OF PERIOD FLOWS,KCFS

STUDY	YEAR	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
EMXBAADC	1991	8.0	4.6	4.5	4.3	8.1	8.4	7.2	7.8	13.9	23.9	23.4	11.2	6.1	4.7
EMXA1ADC	1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
EMXBAADC	1993	7.4	4.5	4.2	4.1	7.8	8.1	6.8	6.9	15.5	23.4	23.2	11.0	6.4	5.4
EMXA1ADC	1993	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.3	-0.4
EMXBAADC	1995	7.8	5.1	4.7	4.4	7.9	7.9	7.0	8.2	14.0	23.2	23.1	10.3	6.5	5.6
EMXA1ADC	1995	-0.4	0.0	0.1	0.0	0.2	0.2	0.1	0.1	0.1	0.0	0.1	-0.1	-0.3	-0.5
EMXBAADC	1997	6.7	4.7	4.3	4.1	8.0	8.6	7.4	8.0	12.7	22.4	26.0	11.3	6.5	5.2
EMXA1ADC	1997	-0.6	0.0	0.1	0.1	0.3	0.2	0.3	-0.1	0.0	0.0	-0.1	0.0	-0.3	-0.2
EMXBAADC	2001	6.9	4.6	4.2	4.1	7.6	7.8	6.6	7.2	13.7	21.4	24.7	11.6	7.2	5.8
EMXA1ADC	2001	-0.7	-0.1	0.0	-0.1	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.1	-0.1	-0.1
EMXBAADC	2005	5.8	4.7	4.2	4.0	7.6	8.1	6.6	7.0	14.1	22.3	23.4	10.6	6.3	5.0
EMXA1ADC	2005	-0.5	0.0	-0.1	0.0	0.3	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	-0.1

THE FREQUENCY OF FLOWS LESS THAN 4.5 KCFS (%)
COMPARISONS FOR PROJECT: COLUMBIA FALLS

YEAR	STUDY	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
1991	GM1XBASAS	9.2	23.1	46.2	46.2	33.8	26.2	26.2	27.7	0.0	0.0	0.0	9.2	24.6	60.0
	GM1XA1SAS	7.7	23.1	46.2	46.2	32.3	26.2	26.2	29.2	0.0	0.0	0.0	9.2	24.6	56.9
	MM1XA2SAS	9.2	30.8	52.3	35.4	30.8	24.6	23.1	27.7	1.5	0.0	0.0	9.2	20.0	56.9
1993	GM1XBASAS	13.8	26.2	55.4	49.2	36.9	20.0	21.5	23.1	6.2	0.0	0.0	10.8	18.5	53.8
	GM1XA1SAS	13.8	27.7	60.0	50.8	36.9	20.0	23.1	23.1	6.2	0.0	0.0	10.8	20.0	60.0
	MM1XA2SAS	3.1	27.7	55.4	50.8	36.9	21.5	23.1	24.6	6.2	0.0	0.0	10.8	15.4	55.4
1995	GM1XBASAS	10.8	24.6	49.2	52.3	40.0	33.8	36.9	23.1	3.1	0.0	0.0	0.0	16.9	46.2
	GM1XA1SAS	9.2	30.8	52.3	50.8	35.4	29.2	38.5	21.5	6.2	0.0	0.0	0.0	24.6	60.0
	MM1XA2SAS	6.2	26.2	49.2	46.2	38.5	32.3	36.9	26.2	6.2	0.0	0.0	1.5	18.5	47.7
1997	GM1XBASAS	21.5	30.8	56.9	61.5	29.2	23.1	23.1	29.2	9.2	0.0	0.0	3.1	16.9	55.4
	GM1XA1SAS	27.7	35.4	55.4	55.4	24.6	21.5	20.0	29.2	7.7	0.0	0.0	3.1	21.5	60.0
	MM1XA2SAS	16.9	33.8	58.5	52.3	26.2	20.0	23.1	29.2	9.2	0.0	0.0	3.1	12.3	49.2
2001	GM1XBASAS	24.6	44.6	60.0	56.9	44.6	33.8	36.9	20.0	9.2	0.0	0.0	3.1	6.3	43.8
	GM1XA1SAS	27.7	50.8	61.5	58.5	36.9	30.8	30.8	16.9	9.2	0.0	0.0	3.1	6.3	43.8
	MM1XA2SAS	21.5	41.5	55.4	58.5	41.5	27.7	30.8	24.6	9.2	0.0	0.0	3.1	4.7	43.8
2005	GM1XBASAS	34.4	43.8	57.8	67.2	35.9	28.1	35.9	26.6	4.7	0.0	0.0	7.8	20.3	60.9
	GM1XA1SAS	51.6	46.9	68.8	71.9	28.1	26.6	32.8	25.0	4.7	0.0	0.0	7.8	26.6	67.2
	MM1XA2SAS	37.5	50.0	68.8	67.2	28.1	28.1	32.8	26.6	4.7	0.0	0.0	6.3	21.9	64.1

THE FREQUENCY OF FLOWS LESS THAN 3.5 KCFS (%)
COMPARISONS FOR PROJECT: COLUMBIA FALLS

YEAR	STUDY	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
1991	GM1XBASAS	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	GM1XA1SAS	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	MM1XA2SAS	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	GM1XBASAS	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	GM1XA1SAS	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	MM1XA2SAS	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	GM1XBASAS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	GM1XA1SAS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	MM1XA2SAS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	GM1XBASAS	0.0	0.0	0.0	0.0	0.0	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0
	GM1XA1SAS	0.0	0.0	0.0	0.0	0.0	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0
	MM1XA2SAS	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	GM1XBASAS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	GM1XA1SAS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	MM1XA2SAS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	GM1XBASAS	0.0	0.0	0.0	0.0	0.0	1.6	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	GM1XA1SAS	0.0	0.0	0.0	0.0	0.0	1.6	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	MM1XA2SAS	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0

COMPARISONS FOR PLANT: COLUMBIA FALLS
MEAN CHANGE IN END OF PERIOD FLOWS,KCFS

STUDY	YEAR	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
GMXBASAS	1991	8.0	4.6	4.5	4.3	8.1	8.4	7.3	7.8	13.9	23.9	23.5	11.2	6.1	4.6
GMXA1SAS	1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.1
MMXA2SAS	1991	-0.1	0.0	-0.1	0.1	0.1	-0.1	0.1	0.0	0.2	0.1	-0.2	-0.1	0.1	0.2
GMXBASAS	1993	7.1	4.5	4.1	4.1	7.9	8.2	6.9	7.0	15.5	23.4	23.2	11.0	6.4	5.4
GMXA1SAS	1993	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	-0.4	-0.4
MMXA2SAS	1993	0.8	0.0	0.0	0.0	-0.2	-0.3	-0.1	-0.2	0.0	0.0	-0.1	0.0	-0.2	-0.3
GMXBASAS	1995	7.8	5.2	4.7	4.4	7.9	7.8	7.0	8.4	14.0	23.2	23.0	10.3	6.5	5.6
GMXA1SAS	1995	-0.4	0.0	0.0	0.0	0.3	0.2	0.1	-0.2	-0.1	0.0	0.1	0.1	-0.4	-0.6
MMXA2SAS	1995	0.3	-0.1	0.0	0.1	0.2	0.0	0.0	-0.5	-0.2	0.0	0.0	0.2	-0.2	-0.2
GMXBASAS	1997	6.8	4.7	4.3	4.1	8.0	8.6	7.4	8.1	12.7	22.4	26.0	11.3	6.6	5.2
GMXA1SAS	1997	-0.7	0.0	0.1	0.1	0.4	0.3	0.4	0.0	0.2	0.0	-0.1	0.0	-0.3	-0.2
MMXA2SAS	1997	-0.4	0.0	0.1	0.1	0.4	0.3	0.1	-0.2	-0.2	0.1	-0.1	0.1	-0.2	0.0
GMXBASAS	2001	6.9	4.5	4.2	4.1	7.6	7.9	6.5	7.1	13.7	21.4	24.7	11.6	7.2	5.8
GMXA1SAS	2001	-0.7	0.0	0.0	0.0	0.0	0.1	0.3	0.1	0.2	0.0	0.0	0.1	-0.1	-0.1
MMXA2SAS	2001	-0.4	0.0	0.1	0.1	0.0	0.2	0.3	-0.3	-0.1	0.0	-0.1	0.2	-0.2	-0.4
GMXBASAS	2005	5.7	4.7	4.2	4.0	7.6	8.1	6.6	7.1	14.2	22.3	23.4	10.6	6.3	5.1
GMXA1SAS	2005	-0.6	0.0	-0.1	-0.1	0.4	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	-0.1
MMXA2SAS	2005	-0.6	0.0	-0.1	0.0	0.4	0.0	0.1	0.0	0.1	0.0	0.0	0.2	0.0	-0.1

THE FREQUENCY OF FLOWS LESS THAN 4.5 KCFS (%)
COMPARISONS FOR PROJECT: COLUMBIA FALLS

YEAR	STUDY	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
1991	AMXBAARO	9.2	23.1	46.2	47.7	35.4	26.2	26.2	30.8	0.0	0.0	0.0	9.2	24.6	60.0
	EMXA1E03	7.7	23.1	46.2	46.2	33.8	26.2	26.2	30.8	0.0	0.0	0.0	9.2	24.6	53.5
	IMXA2E03	7.7	29.2	50.8	35.4	29.2	24.6	23.1	27.7	1.5	0.0	0.0	9.2	21.5	56.9
1993	AMXBAARO	13.8	26.2	55.4	49.2	36.9	20.0	20.0	23.1	6.2	0.0	0.0	10.8	18.5	53.8
	EMXA1E03	13.8	26.2	60.0	50.8	36.9	20.0	21.5	23.1	6.2	0.0	0.0	10.8	23.1	60.0
	IMXA2E03	4.6	29.2	56.9	52.3	35.4	21.5	23.1	24.6	6.2	0.0	0.0	9.2	15.4	56.9
1995	AMXBAARO	10.8	24.6	49.2	52.3	40.0	33.8	36.9	24.6	3.1	0.0	0.0	0.0	16.9	44.6
	EMXA1E03	10.8	29.2	52.3	50.8	33.8	27.7	38.5	23.1	6.2	0.0	0.0	0.0	24.6	60.0
	IMXA2E03	6.2	26.2	49.2	46.2	38.5	32.3	36.9	26.2	6.2	0.0	0.0	1.5	16.9	47.7
1997	AMXBAARO	23.1	30.8	56.9	61.5	30.8	23.1	23.1	30.8	9.2	0.0	0.0	3.1	16.9	56.9
	EMXA1E03	26.2	33.8	55.4	55.4	24.6	23.1	20.0	30.8	7.7	0.0	0.0	3.1	21.5	60.0
	IMXA2E03	16.9	33.8	58.5	52.3	26.2	20.0	23.1	29.2	9.2	0.0	0.0	3.1	12.3	52.3
2001	AMXBAARO	24.6	43.1	60.0	56.9	43.1	33.8	36.9	18.5	9.2	0.0	0.0	3.1	6.3	43.8
	EMXA1E03	27.7	50.8	60.0	58.5	36.9	30.8	29.2	16.9	9.2	0.0	0.0	3.1	6.3	43.8
	IMXA2E03	21.5	41.5	55.4	58.5	41.5	27.7	30.8	24.6	9.2	0.0	0.0	3.1	4.7	43.8
2005	AMXBAARO	32.8	43.8	57.8	65.6	35.9	28.1	35.9	28.1	4.7	0.0	0.0	7.8	23.4	60.9
	EMXA1E03	32.8	43.8	56.3	65.6	35.9	28.1	34.4	28.1	4.7	0.0	0.0	7.8	23.4	60.9
	IMXA2E03	32.8	43.8	57.8	65.6	35.9	28.1	34.4	28.1	4.7	0.0	0.0	7.8	21.9	60.9

THE FREQUENCY OF FLOWS LESS THAN 3.5 KCFS (%)
COMPARISONS FOR PROJECT: COLUMBIA FALLS

YEAR	STUDY	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
1991	AMXBAARO	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EMXA1E03	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	IMXA2E03	0.0	0.0	0.0	0.0	0.0	1.5	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	AMXBAARO	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EMXA1E03	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	IMXA2E03	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	AMXBAARO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EMXA1E03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	IMXA2E03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	AMXBAARO	0.0	0.0	0.0	0.0	0.0	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0
	EMXA1E03	0.0	0.0	0.0	0.0	0.0	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0
	IMXA2E03	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	AMXBAARO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EMXA1E03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	IMXA2E03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	AMXBAARO	0.0	0.0	0.0	0.0	0.0	1.6	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	EMXA1E03	0.0	0.0	0.0	0.0	0.0	1.6	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	IMXA2E03	0.0	0.0	0.0	0.0	0.0	1.6	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0

COMPARISONS FOR PLANT: COLUMBIA FALLS
MEAN CHANGE IN END OF PERIOD FLOWS,KCFS

STUDY	YEAR	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
AMXBAARO	1991	8.0	4.6	4.5	4.3	8.1	8.4	7.3	7.7	13.9	23.9	23.4	11.2	6.1	4.6
EMXA1E03	1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.1
IMXA2E03	1991	0.1	0.0	-0.1	0.1	0.2	0.0	0.1	0.0	0.2	0.1	-0.2	-0.1	0.0	0.2
AMXBAARO	1993	7.1	4.5	4.1	4.1	7.9	8.2	6.9	7.0	15.6	23.4	23.2	11.0	6.4	5.4
EMXA1E03	1993	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	-0.4	-0.4
IMXA2E03	1993	0.8	0.0	0.0	0.0	-0.2	-0.3	-0.1	-0.2	0.0	0.0	-0.1	0.0	-0.2	-0.3
AMXBAARO	1995	7.8	5.2	4.7	4.4	7.9	7.9	7.0	8.2	14.0	23.2	23.1	10.3	6.5	5.6
EMXA1E03	1995	-0.4	0.0	0.0	0.0	0.3	0.2	0.1	-0.2	-0.1	0.0	0.1	0.1	-0.4	-0.6
IMXA2E03	1995	0.3	-0.1	0.0	0.1	0.2	0.0	0.0	-0.3	-0.1	0.0	0.0	0.2	-0.2	-0.2
AMXBAARO	1997	6.7	4.7	4.3	4.1	8.0	8.6	7.4	8.0	12.7	22.4	26.0	11.3	6.5	5.2
EMXA1E03	1997	-0.7	0.0	0.1	0.1	0.4	0.3	0.4	0.0	0.2	0.0	-0.1	0.0	-0.3	-0.2
IMXA2E03	1997	-0.3	0.0	0.1	0.1	0.4	0.3	0.1	-0.2	-0.2	0.1	-0.1	0.1	-0.2	0.0
AMXBAARO	2001	6.8	4.6	4.2	4.1	7.6	7.9	6.5	7.2	13.7	21.4	24.7	11.6	7.2	5.8
EMXA1E03	2001	-0.7	0.0	0.0	0.0	0.1	0.2	0.4	0.1	0.1	0.0	-0.1	0.1	-0.1	-0.1
IMXA2E03	2001	-0.4	0.0	0.1	0.0	0.0	0.3	0.3	-0.3	-0.1	0.0	-0.1	0.2	-0.1	-0.4
AMXBAARO	2005	5.8	4.7	4.2	4.0	7.6	8.1	6.6	7.0	14.2	22.3	23.4	10.6	6.3	5.1
EMXA1E03	2005	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
IMXA2E03	2005	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0

COMPARISONS FOR PLANT: LIBBY
MEAN CHANGE IN END OF PERIOD FLOWS,KCFS

STUDY	YEAR	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
FMXBANHL	1991	8.1	8.2	15.4	22.6	19.4	16.5	5.9	4.7	4.7	8.6	7.5	13.3	10.5	7.6
FMXA1NHL	1991	0.0	0.0	0.0	0.1	0.0	-0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
IMXA2NHL	1991	-0.1	0.1	1.0	-0.6	0.2	-0.5	-0.1	-0.2	0.0	0.2	0.1	-0.2	-0.1	0.1
FMXBANHL	1993	8.1	8.1	15.6	22.4	18.9	15.6	5.7	4.5	4.6	9.1	7.6	13.1	12.0	8.2
FMXA1NHL	1993	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.9	-0.4
IMXA2NHL	1993	0.0	0.0	0.9	-0.5	0.3	-0.2	-0.1	-0.1	0.0	0.1	0.1	-0.3	-1.0	-0.4
FMXBANHL	1995	7.5	7.6	15.8	21.6	17.9	15.1	5.8	4.4	4.7	8.5	7.3	12.4	12.3	8.5
FMXA1NHL	1995	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.7	-0.4
IMXA2NHL	1995	0.2	0.2	0.9	-0.3	0.2	-0.4	-0.1	0.0	0.0	0.0	0.0	-0.3	-1.0	-0.4
FMXBANHL	1997	7.4	7.7	15.2	23.4	18.1	15.8	5.5	4.6	4.9	8.2	7.5	13.1	11.0	7.5
FMXA1NHL	1997	0.1	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.5	-0.2
IMXA2NHL	1997	0.2	0.0	0.9	-0.4	0.3	-0.1	0.0	-0.2	0.0	0.1	0.0	-0.4	-0.7	-0.1
FMXBANHL	2001	8.1	7.3	14.9	23.8	18.4	15.5	5.3	4.3	4.9	9.1	7.4	12.9	10.1	7.2
FMXA1NHL	2001	-0.4	-0.2	-0.1	0.6	0.1	-0.1	0.0	0.0	0.0	0.1	0.1	0.0	-0.3	-0.1
IMXA2NHL	2001	-0.2	0.0	0.6	0.0	0.4	-0.4	-0.1	0.0	0.0	0.1	-0.1	-0.1	-0.4	-0.1
FMXBANHL	2005	7.6	7.3	14.3	25.0	18.6	14.9	5.5	4.4	4.5	8.6	7.0	12.8	10.1	7.2
FMXA1NHL	2005	-0.3	-0.4	-0.1	0.5	0.0	-0.1	0.0	0.0	0.0	0.2	0.2	0.1	-0.3	-0.1
IMXA2NHL	2005	0.0	-0.2	0.5	0.0	0.1	-0.3	0.0	0.0	-0.1	0.1	0.0	-0.2	-0.4	-0.1

THE FREQUENCY OF FLOWS LESS THAN 4 KCFS (%)
COMPARISONS FOR PROJECT: LIBBY

YEAR	STUDY	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
1991	FMXBANHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	19.5	16.5	7.0	0.0	0.0
	FMXA1NHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	18.5	15.5	6.5	0.0	0.0
	IMXA2NHL	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	14.5	14.0	9.0	0.0	0.0
1993	FMXBANHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.5	15.5	11.0	0.0	0.0
	FMXA1NHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.5	16.0	11.0	0.0	0.0
	IMXA2NHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.5	15.5	14.5	0.0	0.0
1995	FMXBANHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.0	21.0	15.5	0.0	0.0
	FMXA1NHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.5	20.5	15.0	0.0	0.0
	IMXA2NHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.5	18.0	19.0	0.0	0.0
1997	FMXBANHL	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5	0.0	22.5	13.5	11.0	0.0	0.0
	FMXA1NHL	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	22.5	13.0	11.0	0.0	0.0
	IMXA2NHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.5	15.0	15.5	0.0	0.0
2001	FMXBANHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.0	17.5	15.5	0.0	0.0
	FMXA1NHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.0	15.0	17.0	0.0	0.0
	IMXA2NHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.0	17.0	16.5	0.0	0.0
2005	FMXBANHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.5	19.5	14.5	0.0	0.0
	FMXA1NHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.0	16.0	15.5	0.0	0.0
	IMXA2NHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.0	18.5	18.5	0.0	0.0

COMPARISONS FOR PLANT: LIBBY
MEAN CHANGE IN END OF PERIOD FLOWS,KCFS

STUDY	YEAR	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
EMXBASHL	1991	9.7	11.7	17.2	17.3	19.2	15.7	5.8	4.6	4.7	8.5	7.6	13.1	10.0	7.4
EMXA1SHL	1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
IMXA2SHL	1991	-0.3	0.1	0.8	-0.9	0.7	-0.1	0.0	0.0	0.0	-0.1	-0.2	-0.2	-0.1	0.0
EMXBASHL	1993	9.4	9.9	16.1	19.7	18.5	15.2	5.6	4.5	4.6	9.1	7.9	12.9	10.7	7.6
EMXA1SHL	1993	0.0	0.0	-0.1	0.0	0.1	-0.1	0.0	0.0	0.0	0.0	0.1	0.0	-0.3	-0.2
IMXA2SHL	1993	0.1	0.3	0.7	-0.9	0.3	0.0	0.0	0.0	0.0	-0.1	-0.2	-0.2	-0.6	-0.2
EMXBASHL	1995	9.6	8.8	16.0	20.8	17.1	14.8	5.6	4.6	4.7	8.3	7.4	12.3	10.4	7.4
EMXA1SHL	1995	-0.5	-0.1	0.1	0.3	0.4	0.0	0.1	-0.1	0.0	0.2	0.0	0.0	-0.3	-0.1
IMXA2SHL	1995	-0.2	0.2	0.9	-0.7	0.7	-0.1	0.0	-0.1	0.0	0.0	-0.1	-0.2	-0.8	-0.2
EMXBASHL	1997	8.6	8.8	15.9	21.8	17.9	15.3	5.6	4.7	5.0	8.1	7.4	12.4	10.7	7.5
EMXA1SHL	1997	-0.2	-0.2	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	-0.2	-0.1
IMXA2SHL	1997	0.0	0.2	0.8	-0.6	0.3	0.0	0.0	0.0	-0.1	0.1	0.1	0.0	-0.9	-0.3
EMXBASHL	2001	8.6	8.1	15.7	21.9	18.6	15.6	5.4	4.5	4.9	9.1	7.3	12.9	10.3	7.4
EMXA1SHL	2001	-0.1	-0.3	0.0	0.2	0.2	0.0	0.0	-0.1	0.0	0.1	0.0	0.0	-0.3	-0.1
IMXA2SHL	2001	-0.1	0.0	0.8	-0.3	0.4	-0.2	-0.1	-0.2	0.0	0.0	0.0	-0.2	-0.5	-0.2
EMXBASHL	2005	8.2	7.9	15.2	22.8	18.3	14.6	5.6	4.5	4.4	8.6	7.4	13.2	10.2	7.2
EMXA1SHL	2005	-0.2	-0.3	0.0	0.3	0.1	-0.2	0.0	0.0	0.0	0.2	0.1	0.0	-0.2	-0.1
IMXA2SHL	2005	0.0	-0.1	1.0	-0.5	0.5	-0.2	0.0	-0.1	0.0	0.1	-0.2	-0.2	-0.5	-0.1

THE FREQUENCY OF FLOWS LESS THAN 4 KCFS (%)
COMPARISONS FOR PROJECT: LIBBY

YEAR	STUDY	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
1991	EMXBASHL	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	19.0	15.0	12.0	0.0	0.0
	EMXA1SHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	18.5	15.0	12.0	0.0	0.0
	IMXA2SHL	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	20.0	17.0	12.0	0.0	0.0
1993	EMXBASHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.0	11.0	10.0	0.0	0.0
	EMXA1SHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.5	10.5	10.0	0.0	0.0
	IMXA2SHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.0	14.5	13.0	0.0	0.0
1995	EMXBASHL	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	24.0	19.0	18.0	0.0	0.0
	EMXA1SHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.5	20.0	18.5	0.0	0.0
	IMXA2SHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.5	21.0	17.5	0.0	0.0
1997	EMXBASHL	0.0	0.0	0.0	0.0	0.0	0.5	0.0	1.0	0.0	23.0	15.5	19.0	0.0	0.0
	EMXA1SHL	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5	0.0	21.5	14.0	18.5	0.0	0.0
	IMXA2SHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.5	16.5	19.0	0.0	0.0
2001	EMXBASHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	17.0	15.5	0.0	0.0
	EMXA1SHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.5	16.5	14.5	0.0	0.0
	IMXA2SHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.0	16.0	17.0	0.0	0.0
2005	EMXBASHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.5	12.5	12.0	0.0	0.0
	EMXA1SHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.0	10.0	12.5	0.0	0.0
	IMXA2SHL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.0	14.5	13.5	0.0	0.0

COMPARISONS FOR PLANT: LIBBY
MEAN CHANGE IN END OF PERIOD FLOWS,KCFS

STUDY	YEAR	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
EMXBAADC	1991	9.6	11.7	17.2	17.2	19.4	15.8	5.7	4.5	4.7	8.5	7.6	13.0	10.1	7.4
EMXA1ADC	1991	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EMXBAADC	1993	9.4	10.1	16.2	19.5	18.5	15.3	5.6	4.6	4.6	8.9	7.8	12.9	10.7	7.5
EMXA1ADC	1993	0.0	0.0	-0.1	0.0	0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	-0.1
EMXBAADC	1995	9.7	8.8	16.0	20.8	17.2	14.8	5.6	4.6	4.8	8.3	7.3	12.4	10.9	7.7
EMXA1ADC	1995	-0.5	0.0	0.1	0.3	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	-0.4	-0.2
EMXBAADC	1997	8.7	9.1	16.0	21.4	17.9	15.4	5.6	4.7	5.0	8.0	7.3	12.4	11.0	7.7
EMXA1ADC	1997	-0.2	-0.1	0.0	0.2	0.0	0.0	0.0	-0.1	0.0	0.1	0.1	0.0	-0.3	-0.2
EMXBAADC	2001	8.8	8.1	15.7	21.8	18.5	15.4	5.4	4.4	4.9	9.1	7.3	12.9	10.3	7.4
EMXA1ADC	2001	-0.3	-0.1	-0.1	0.3	0.2	0.0	0.0	-0.1	0.0	0.1	0.1	0.0	-0.2	-0.1
EMXBAADC	2005	8.2	7.9	15.2	22.7	18.4	14.8	5.6	4.4	4.4	8.6	7.3	13.2	10.3	7.1
EMXA1ADC	2005	-0.2	-0.3	0.0	0.3	0.0	-0.1	0.0	0.0	0.0	0.2	0.1	0.1	-0.2	-0.1

THE FREQUENCY OF FLOWS LESS THAN 4 KCFS (%)
COMPARISONS FOR PROJECT: LIBBY

YEAR	STUDY	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
1991	EMXBAADC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.0	14.5	12.5	0.0	0.0
	EMXA1ADC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.0	14.5	12.0	0.0	0.0
1993	EMXBAADC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	12.5	9.5	0.0	0.0
	EMXA1ADC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.0	13.0	11.0	0.0	0.0
1995	EMXBAADC	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	24.5	19.0	16.5	0.0	0.0
	EMXA1ADC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.0	19.0	16.5	0.0	0.0
1997	EMXBAADC	0.0	0.0	0.0	0.0	0.5	0.5	0.5	1.0	0.0	25.5	16.0	18.0	0.0	0.0
	EMXA1ADC	0.0	0.0	0.0	0.0	0.5	0.5	0.0	1.0	0.0	23.5	15.0	17.5	0.0	0.0
2001	EMXBAADC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.5	17.0	15.5	0.0	0.0
	EMXA1ADC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.0	17.0	15.0	0.0	0.0
2005	EMXBAADC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.5	12.5	10.5	0.0	0.0
	EMXA1ADC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.0	10.0	10.0	0.0	0.0

COMPARISONS FOR PLANT: LIBBY
MEAN CHANGE IN END OF PERIOD FLOWS,KCFS

STUDY	YEAR	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
GHXBASAS	1991	9.6	11.7	17.2	17.2	19.3	15.8	5.7	4.5	4.7	8.5	7.6	13.1	10.1	7.3
GHXA1SAS	1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0
HHXA2SAS	1991	-0.2	0.2	0.5	-0.8	0.7	-0.1	0.0	0.0	0.0	-0.1	-0.2	-0.2	-0.2	0.1
GHXBASAS	1993	9.4	10.1	16.1	19.5	18.6	15.3	5.6	4.5	4.6	9.0	7.8	12.9	10.8	7.5
GHXA1SAS	1993	0.0	-0.1	-0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.3	-0.2
HHXA2SAS	1993	0.1	0.2	0.7	-0.7	0.3	-0.1	0.0	0.0	0.0	0.0	-0.2	-0.2	-0.6	-0.1
GHXBASAS	1995	9.6	8.8	16.0	20.8	17.1	14.8	5.6	4.6	4.8	8.3	7.3	12.4	10.9	7.7
GHXA1SAS	1995	-0.5	-0.1	0.1	0.2	0.3	0.0	0.0	-0.1	0.0	0.2	0.1	0.0	-0.5	-0.3
HHXA2SAS	1995	-0.3	0.3	0.9	-0.7	0.7	-0.2	0.0	-0.1	0.0	0.0	-0.1	-0.2	-0.9	-0.2
GHXBASAS	1997	8.7	9.1	16.1	21.4	17.9	15.3	5.6	4.7	5.0	8.0	7.2	12.4	11.1	7.7
GHXA1SAS	1997	-0.2	-0.2	0.0	0.4	0.0	0.1	0.0	-0.1	0.0	0.1	0.1	0.1	-0.4	-0.2
HHXA2SAS	1997	0.0	0.1	0.7	-0.4	0.4	0.0	0.0	-0.1	0.0	0.1	0.0	0.0	-0.9	-0.3
GHXBASAS	2001	8.8	8.0	15.7	21.8	18.5	15.4	5.4	4.5	4.9	9.1	7.3	12.9	10.4	7.5
GHXA1SAS	2001	-0.3	-0.2	-0.1	0.4	0.2	0.1	0.0	-0.1	0.0	0.1	0.0	0.0	-0.3	-0.1
HHXA2SAS	2001	-0.2	0.2	0.8	-0.4	0.4	-0.1	0.0	-0.1	0.0	0.0	-0.2	-0.2	-0.5	-0.2
GHXBASAS	2005	8.1	7.9	15.1	22.8	18.4	14.8	5.6	4.4	4.4	8.6	7.4	13.2	10.3	7.2
GHXA1SAS	2005	-0.2	-0.3	0.0	0.3	0.1	-0.2	0.0	0.0	0.0	0.2	0.1	0.0	-0.2	-0.1
HHXA2SAS	2005	0.0	-0.1	1.0	-0.5	0.4	-0.2	0.0	0.0	0.0	0.0	-0.1	-0.2	-0.5	-0.1

THE FREQUENCY OF FLOWS LESS THAN 4 KCFS (%)
COMPARISONS FOR PROJECT: LIBBY

YEAR	STUDY	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
1991	GHXBASAS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.5	14.5	12.0	0.0	0.0
	GHXA1SAS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.0	14.5	12.0	0.0	0.0
	HHXA2SAS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	17.5	14.0	0.0	0.0
1993	GHXBASAS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.0	12.5	10.5	0.0	0.0
	GHXA1SAS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.0	12.0	10.5	0.0	0.0
	HHXA2SAS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.5	16.0	14.5	0.0	0.0
1995	GHXBASAS	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	24.5	19.0	16.5	0.0	0.0
	GHXA1SAS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.0	19.0	16.0	0.0	0.0
	HHXA2SAS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.5	21.5	17.5	0.0	0.0
1997	GHXBASAS	0.0	0.0	0.0	0.0	0.5	0.5	0.5	1.0	0.0	25.5	16.0	18.0	0.0	0.0
	GHXA1SAS	0.0	0.0	0.0	0.0	0.0	0.5	0.0	1.0	0.0	23.0	14.5	16.5	0.0	0.0
	HHXA2SAS	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	22.0	17.5	19.0	0.0	0.0
2001	GHXBASAS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.5	16.0	15.0	0.0	0.0
	GHXA1SAS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.0	16.0	15.0	0.0	0.0
	HHXA2SAS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.5	18.0	16.5	0.0	0.0
2005	GHXBASAS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	12.5	10.0	0.0	0.0
	GHXA1SAS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.0	10.0	11.0	0.0	0.0
	HHXA2SAS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.5	13.0	12.5	0.0	0.0

COMPARISONS FOR PLANT: LIBBY
MEAN CHANGE IN END OF PERIOD FLOWS,KCFS

STUDY	YEAR	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
AMXBAARO	1991	9.6	11.7	17.2	17.2	19.4	15.8	5.7	4.5	4.7	8.5	7.6	13.0	10.1	7.3
EMXA1E03	1991	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
IMXA2E03	1991	-0.2	0.3	0.6	-0.7	0.6	-0.1	0.0	0.0	0.0	-0.1	-0.2	-0.2	-0.2	0.1
AMXBAARO	1993	9.4	10.1	16.1	19.5	18.6	15.3	5.6	4.5	4.6	9.0	7.9	12.9	10.7	7.5
EMXA1E03	1993	0.0	-0.1	-0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.3	-0.2
IMXA2E03	1993	0.1	0.2	0.7	-0.7	0.3	0.0	0.0	0.0	0.0	0.0	-0.2	-0.2	-0.6	-0.1
AMXBAARO	1995	9.6	8.8	16.0	20.8	17.2	14.7	5.6	4.6	4.8	8.3	7.3	12.4	10.9	7.7
EMXA1E03	1995	-0.5	-0.1	0.1	0.2	0.3	0.0	0.0	-0.1	0.0	0.2	0.1	0.0	-0.5	-0.3
IMXA2E03	1995	-0.2	0.3	0.9	-0.7	0.7	-0.1	0.0	0.0	0.0	0.0	-0.1	-0.2	-0.9	-0.2
AMXBAARO	1997	8.7	9.1	16.1	21.4	17.9	15.4	5.6	4.7	5.0	8.0	7.3	12.4	11.0	7.6
EMXA1E03	1997	-0.2	-0.2	0.0	0.4	0.0	0.1	0.0	-0.1	0.0	0.1	0.1	0.1	-0.4	-0.2
IMXA2E03	1997	0.0	0.2	0.6	-0.5	0.4	0.0	0.0	-0.1	0.0	0.1	0.0	0.0	-0.9	-0.3
AMXBAARO	2001	8.8	8.0	15.7	21.8	18.5	15.4	5.4	4.4	4.9	9.1	7.3	12.9	10.3	7.4
EMXA1E03	2001	-0.3	-0.2	-0.1	0.4	0.2	0.1	0.0	-0.1	0.0	0.1	0.0	0.0	-0.3	-0.1
IMXA2E03	2001	-0.2	0.2	0.8	-0.4	0.4	-0.1	-0.1	-0.1	0.0	0.0	-0.1	-0.2	-0.5	-0.2
AMXBAARO	2005	8.1	7.9	15.1	22.8	18.4	14.8	5.6	4.4	4.4	8.6	7.3	13.2	10.3	7.1
EMXA1E03	2005	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
IMXA2E03	2005	0.0	0.1	0.1	-0.1	0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

THE FREQUENCY OF FLOWS LESS THAN 4 KCFS (%)
COMPARISONS FOR PROJECT: LIBBY

YEAR	STUDY	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR1	APR2	MAY	JUNE	JULY	AUG1	AUG2
1991	AMXBAARO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.5	14.5	12.0	0.0	0.0
	EMXA1E03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.0	15.0	12.5	0.0	0.0
	IMXA2E03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	18.0	14.0	0.0	0.0
1993	AMXBAARO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.0	12.5	10.0	0.0	0.0
	EMXA1E03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.5	12.5	10.5	0.0	0.0
	IMXA2E03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.0	15.5	14.5	0.0	0.0
1995	AMXBAARO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.0	19.0	16.5	0.0	0.0
	EMXA1E03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.0	19.5	16.0	0.0	0.0
	IMXA2E03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.5	21.5	17.5	0.0	0.0
1997	AMXBAARO	0.0	0.0	0.0	0.0	0.5	0.5	0.5	1.0	0.0	25.5	16.0	18.0	0.0	0.0
	EMXA1E03	0.0	0.0	0.0	0.0	0.0	0.5	0.0	1.0	0.0	23.5	14.5	17.5	0.0	0.0
	IMXA2E03	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	22.0	17.5	19.0	0.0	0.0
2001	AMXBAARO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.5	17.0	15.5	0.0	0.0
	EMXA1E03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.0	17.5	15.0	0.0	0.0
	IMXA2E03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.5	18.0	17.0	0.0	0.0
2005	AMXBAARO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.5	12.5	10.0	0.0	0.0
	EMXA1E03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.5	12.5	10.0	0.0	0.0
	IMXA2E03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	12.5	10.0	0.0	0.0

APPENDIX M

SENSITIVITY STUDIES

Part 8
Anadromous Fish

Water Budget/Flow and Vernita Bar
Overgeneration Spill
Survival

APPENDIX M

Part 8

Anadromous Fish

Water Budget/Flow and Vernita Bar

The frequency of water budget flows less than 134 kcfs at Priest Rapids during the month of May based on SAM study results.

The frequency of flows greater than 125 kcfs in October and November at Priest Rapids.

The frequency of flows less than 70 kcfs December through April at Priest Rapids.

Additional flow data can be found in Appendix M, Part 1 & 2.

Overgeneration Spill

Overgeneration spill tables can be found in Appendix M, Part 3.G.

Survival

The relative change in mean survival for the contract years 1991, 1993, 1995, 1997, 2001, and 2005. (The difference in mean survival between the proposal and the No-Action alternatives divided by the No-Action alternative survival).

The frequency of relative survival increases and decreases greater than 1 and 5 percent for the contract years 1991, 1993, 1995, 1997, 2001, and 2005.

STUDY KEY

FMXBANHL - No Action Alternative with high Pacific Northwest loads (also referred to as base case on some tables).

FMXA1NHL - Proposed Alternative used as an opportunity resource with high Pacific Northwest loads.

IMXA2NHL - Proposed Alternative used as a firm resource with high Pacific Northwest loads.

EMXBASHL - No Action Alternative with high Pacific Southwest loads and high gas prices (also referred to as base case on some tables).

EMXA1SHL - Proposed Alternative used as an opportunity resource with high Pacific Southwest loads and high gas prices.

IMXA2SHL - Proposed Alternative used as a firm resource with high Pacific Southwest loads and high gas prices.

EMXBAADC - No Action Alternative using the alternative dispatch criteria (also referred to as base case on some tables).

EMXA1ADC - Proposed Alternative used as an opportunity resource using the alternative dispatch criteria.

GMXBASAS - No Action Alternative with the signed Spill Agreement (also referred to as base case on some tables).

GMXA1SAS - Proposed Alternative used as an opportunity resource with the signed Spill Agreement.

HMXA2SAS - Proposed Alternative used as a firm resource with the signed Spill Agreement.

AMXBAARO - No Action Alternative, also refer to as the base case on individual tables (also referred to as base case on some tables).

EMXA1E03 - Proposed Alternative used as an opportunity resource expiring in the year 2003 (shows end effects).

IMXA2E03 - Proposed Alternative used as a firm resource expiring in the year 2003 (shows end effects).

OPPORTUNITY STORAGE

PNW HIGH LOADS

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BPAHYSUM Summary

Base Study: FMXBANHL : NTS : TE3AC : 1.0 MAF : PNW HIGH LOAD Date: 22-JUN-89 17:16:29
Incr Study: FMXA1NHL : NTS : TE3AC : 2.5 MAF : PNW HIGH LOAD Date: 23-JUN-89 01:46:58
Difference = (Incr Study) - (Base Study)
Number of Games: 200
All Water Years

****

Frequency Distribution

		Grand Coulee Elev LT 1240 feet			Priest Rapids Discharge GE 125 kcfs						Priest Rapids Discharge LT 134 kcfs		
		(Base)	(Incr)	(Diff)	(Base)		(Incr)		(Diff)		(Base)	(Incr)	(Diff)
Year	Num	May	May	May	Oct	Nov	Oct	Nov	Oct	Nov	May	May	May
1989	200	34	34	0	0	1	0	1	0	0	4	4	0
1990	200	34	34	0	1	2	1	2	0	0	6	6	0
1991	200	42	42	0	0	1	0	1	0	0	3	3	0
1992	200	35	35	0	1	1	0	2	-1	1	3	3	0
1993	200	38	38	0	0	3	0	2	0	-1	6	6	0
1994	200	37	37	0	1	1	0	2	-1	1	10	10	0
1995	200	38	38	0	0	0	0	1	0	1	5	5	0
1996	200	32	32	0	0	0	0	1	0	1	3	3	0
1997	200	37	37	0	0	0	0	0	0	0	6	6	0
1998	200	43	43	0	0	0	0	0	0	0	5	5	0
1999	200	30	30	0	0	0	0	0	0	0	9	9	0
2000	200	41	41	0	1	0	0	0	-1	0	1	1	0
2001	200	45	45	0	0	0	0	0	0	0	3	3	0
2002	200	33	33	0	1	0	1	1	0	1	6	6	0
2003	200	40	40	0	1	0	0	1	-1	1	4	4	0
2004	200	40	40	0	2	0	0	0	-2	0	2	2	0
2005	200	31	31	0	1	0	0	0	-1	0	7	7	0
2006	200	36	36	0	1	0	0	0	-1	0	2	2	0
2007	200	23	23	0	0	0	0	0	0	0	6	6	0
2008	200	49	49	0	0	0	0	0	0	0	4	3	-1

OPPORTUNITY STORAGE

PNW HIGH LOADS

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*****************************************************************************************************************************
                                                   BPAHYSUM Summary
Base Study:     FMXBANHL : NTS : TE3AC : 1.0 MAF : PNW HIGH LOAD                    Date:  22-JUN-89 17:16:29
Incr Study:     FMXA1NHL : NTS : TE3AC : 2.5 MAF : PNW HIGH LOAD                    Date:  23-JUN-89 01:46:58
Difference = (Incr Study) - (Base Study)
Number of Games: 200
All Water Years
*****************************************************************************************************************************
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Frequency Distribution

Priest Rapids Discharge
LT 70 kcfs

		(Base)						(Incr)						(Diff)					
Year	Num	Dec	Jan	Feb	Mar	Ap1	Ap2	Dec	Jan	Feb	Mar	Ap1	Ap2	Dec	Jan	Feb	Mar	Ap1	Ap2
1989	200	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
1990	200	0	0	0	1	0	0	0	0	0	0	0	3	0	0	0	-1	0	3
1991	200	0	0	1	0	1	1	0	0	0	0	1	1	0	0	-1	0	0	0
1992	200	1	0	1	5	2	2	1	0	1	3	2	1	0	0	0	-2	0	-1
1993	200	0	0	0	4	0	2	0	0	0	3	0	2	0	0	0	-1	0	0
1994	200	0	0	1	3	2	2	0	0	1	3	2	1	0	0	0	0	0	-1
1995	200	0	0	1	3	0	3	0	0	1	4	0	3	0	0	0	1	0	0
1996	200	0	0	0	2	0	2	0	0	0	2	0	0	0	0	0	0	0	-2
1997	200	0	0	2	2	2	1	0	0	2	2	1	0	0	0	0	0	-1	-1
1998	200	0	0	3	6	0	2	0	0	2	5	0	2	0	0	-1	-1	0	0
1999	200	0	0	4	5	4	7	0	0	4	3	5	7	0	0	0	-2	1	0
2000	200	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0
2001	200	0	0	2	3	0	2	1	0	0	3	0	2	1	0	-2	0	0	0
2002	200	0	0	4	6	0	3	0	0	1	4	0	3	0	0	-3	-2	0	0
2003	200	0	0	1	2	0	1	0	0	0	3	0	1	0	0	-1	1	0	0
2004	200	0	0	0	5	0	2	0	0	0	7	0	1	0	0	0	2	0	-1
2005	200	0	0	0	1	0	2	0	0	0	1	0	2	0	0	0	0	0	0
2006	200	0	0	4	6	0	0	0	0	1	5	0	0	0	0	-3	-1	0	0
2007	200	0	0	2	5	0	2	0	0	1	4	0	0	0	0	-1	-1	0	-2
2008	200	0	0	1	5	1	3	0	0	1	5	1	1	0	0	0	0	0	-2

OPPORTUNITY STORAGE

SW HIGH LOADS/HIGH GAS PRICES

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BPAHYSUM Summary

Base Study: EMXBASHL : NTS : TE3AC : 1.0 MAF : PSW HI LOAD W/HI GAS Date: 17-JUN-89 06:46:11
Incr Study: EMXA1SHL : NTS : TE3AC : 2.5 MAF : PSW HIGH LOAD W/HIGH G Date: 17-JUN-89 13:27:50
Difference = (Incr Study) - (Base Study)
Number of Games: 200
All Water Years

****

Frequency Distribution

		Grand Coulee Elev LT 1240 feet			Priest Rapids Discharge GE 125 kcfs						Priest Rapids Discharge LT 134 kcfs		
		(Base)	(Incr)	(Diff)	(Base)		(Incr)		(Diff)		(Base)	(Incr)	(Diff)
Year	Num	May	May	May	Oct	Nov	Oct	Nov	Oct	Nov	May	May	May
1989	200	34	34	0	9	11	9	11	0	0	4	4	0
1990	200	34	34	0	6	12	6	12	0	0	6	6	0
1991	200	42	42	0	10	11	8	11	-2	0	3	3	0
1992	200	35	35	0	7	2	7	2	0	0	3	3	0
1993	200	38	38	0	6	9	4	6	-2	-3	6	6	0
1994	200	37	37	0	3	2	0	1	-3	-1	8	8	0
1995	200	38	38	0	0	1	0	0	0	-1	5	5	0
1996	200	32	32	0	0	0	0	0	0	0	3	3	0
1997	200	37	37	0	1	1	0	1	-1	0	6	6	0
1998	200	43	43	0	7	7	2	2	-5	-5	6	6	0
1999	200	30	30	0	3	1	0	0	-3	-1	9	9	0
2000	200	41	41	0	0	0	0	0	0	0	1	1	0
2001	200	45	45	0	1	2	0	1	-1	-1	3	3	0
2002	200	33	33	0	5	7	3	5	-2	-2	6	6	0
2003	200	40	40	0	3	3	0	1	-3	-2	5	5	0
2004	200	40	40	0	1	1	0	0	-1	-1	2	2	0
2005	200	31	31	0	1	0	0	0	-1	0	7	7	0
2006	200	36	36	0	1	2	0	1	-1	-1	2	2	0
2007	200	23	23	0	0	0	0	0	0	0	7	7	0
2008	200	49	49	0	0	0	0	0	0	0	7	7	0

OPPORTUNITY STORAGE

SW HIGH LOADS/HIGH GAS PRICES

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*****************************************************************************************************************************
                                                   BPAHYSUM Summary
Base Study:    EMXBASHL : NTS : TE3AC : 1.0 MAF : PSW HI LOAD W/HI GAS          Date:  17-JUN-89 06:46:11
Incr Study:    EMXA1SHL : NTS : TE3AC : 2.5 MAF : PSW HIGH LOAD W/HIGH G        Date:  17-JUN-89 13:27:50
Difference = (Incr Study) - (Base Study)
Number of Games: 200
All Water Years
*****************************************************************************************************************************
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Frequency Distribution

Priest Rapids Discharge
LT 70 kcfs

		(Base)						(Incr)						(Diff)					
Year	Num	Dec	Jan	Feb	Mar	Ap1	Ap2	Dec	Jan	Feb	Mar	Ap1	Ap2	Dec	Jan	Feb	Mar	Ap1	Ap2
1989	200	0	0	5	1	0	0	0	0	5	1	0	0	0	0	0	0	0	0
1990	200	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0
1991	200	0	0	0	2	1	2	0	0	0	0	1	2	0	0	0	-2	0	0
1992	200	0	0	3	3	1	1	0	0	3	2	1	1	0	0	0	-1	0	0
1993	200	0	0	0	4	0	0	0	0	0	3	0	0	0	0	0	-1	0	0
1994	200	0	0	5	3	3	1	0	0	4	4	3	1	0	0	-1	1	0	0
1995	200	0	0	7	4	2	0	0	0	5	2	1	0	0	0	-2	-2	-1	0
1996	200	0	0	1	1	0	0	1	0	0	1	0	0	1	0	-1	0	0	0
1997	200	0	0	2	3	2	1	0	0	2	3	1	1	0	0	0	0	-1	0
1998	200	0	0	3	4	1	0	0	0	1	1	1	0	0	0	-2	-3	0	0
1999	200	0	1	4	6	4	3	0	1	2	6	4	3	0	0	-2	0	0	0
2000	200	0	0	0	3	0	0	0	0	0	1	0	0	0	0	0	-2	0	0
2001	200	1	0	2	2	0	0	0	0	1	1	0	0	-1	0	-1	-1	0	0
2002	200	0	0	1	2	1	1	0	0	0	1	1	1	0	0	-1	-1	0	0
2003	200	0	0	2	5	0	1	0	0	1	3	0	0	0	0	-1	-2	0	-1
2004	200	0	0	1	3	0	2	0	0	0	1	0	0	0	0	-1	-2	0	-2
2005	200	1	0	2	0	0	2	0	0	0	0	0	0	-1	0	-2	0	0	-2
2006	200	0	0	1	7	0	2	0	0	0	4	0	0	0	0	-1	-3	0	-2
2007	200	0	0	0	4	0	5	0	0	0	4	0	0	0	0	0	0	0	-5
2008	200	0	0	1	2	1	5	0	0	0	1	1	1	0	0	-1	-1	0	-4

OPPORTUNITY STORAGE

ALTERNATIVE DISPATCH CRITERIA

****

BPAHYSUM Summary

Base Study: EMXBAADC:NTS:TE3AC:1.0 MAF: ALTER DISPATCHING CRITIA Date: 7-JUN-89 18:09:01
Incr Study: EMXA1ADC:NTS:TE3AC:2.5 MAF : ALTER DISPATCHING CRITERIA Date: 7-JUN-89 22:23:05
Difference = (Incr Study) - (Base Study)
Number of Games: 200
All Water Years

****

Frequency Distribution

		Grand Coulee Elev LT 1240 feet			Priest Rapids Discharge GE 125 kcfs						Priest Rapids Discharge LT 134 kcfs		
					(Base)		(Incr)		(Diff)				
Year	Num	(Base) May	(Incr) May	(Diff) May	Oct	Nov	Oct	Nov	Oct	Nov	(Base) May	(Incr) May	(Diff) May
1989	200	34	34	0	1	5	1	5	0	0	4	4	0
1990	200	34	34	0	3	11	3	11	0	0	6	6	0
1991	200	42	42	0	8	15	4	12	-4	-3	2	2	0
1992	200	35	35	0	6	7	5	8	-1	1	3	3	0
1993	200	38	38	0	4	11	3	9	-1	-2	6	6	0
1994	200	37	37	0	2	2	0	4	-2	2	8	8	0
1995	200	38	38	0	0	0	0	0	0	0	5	5	0
1996	200	32	32	0	0	0	0	1	0	1	4	4	0
1997	200	37	37	0	1	1	0	1	-1	0	6	6	0
1998	200	43	43	0	6	6	2	5	-4	-1	6	6	0
1999	200	30	30	0	3	1	0	1	-3	0	9	9	0
2000	200	41	41	0	0	0	0	3	0	3	1	1	0
2001	200	45	45	0	1	2	0	7	-1	5	3	3	0
2002	200	33	33	0	5	7	2	6	-3	-1	6	6	0
2003	200	40	40	0	3	3	0	1	-3	-2	5	5	0
2004	200	40	40	0	1	1	0	0	-1	-1	2	2	0
2005	200	31	31	0	1	0	0	5	-1	5	7	7	0
2006	200	36	36	0	1	2	0	1	-1	-1	3	3	0
2007	200	23	23	0	0	0	0	4	0	4	8	8	0
2008	200	49	49	0	0	0	0	1	0	1	7	7	0

OPPORTUNITY STORAGE

ALTERNATIVE DISPATCH CRITERIA

****

BPAHYSUM Summary

Base Study: EMXBAADC:NTS:TE3AC:1.0 MAF: ALTER DISPATCHING CRITIA Date: 7-JUN-89 18:09:01
Incr Study: EMXA1ADC:NTS:TE3AC:2.5 MAF : ALTER DISPATCHING CRITERIA Date: 7-JUN-89 22:23:05
Difference = (Incr Study) - (Base Study)
Number of Games: 200
All Water Years

****

Frequency Distribution

Priest Rapids Discharge
LT 70 kcfs

		(Base)						(Incr)						(Diff)					
Year	Num	Dec	Jan	Feb	Mar	Ap1	Ap2	Dec	Jan	Feb	Mar	Ap1	Ap2	Dec	Jan	Feb	Mar	Ap1	Ap2
1989	200	0	0	4	2	0	0	0	0	4	2	0	0	0	0	0	0	0	0
1990	200	0	0	4	2	0	0	0	0	0	0	0	0	0	0	-4	-2	0	0
1991	200	0	0	4	5	0	0	0	0	1	3	0	0	0	0	-3	-2	0	0
1992	200	0	0	4	3	1	3	0	0	4	4	1	3	0	0	0	1	0	0
1993	200	0	0	1	3	0	0	0	0	1	3	0	0	0	0	0	0	0	0
1994	200	0	0	5	4	3	1	0	0	6	4	3	1	0	0	1	0	0	0
1995	200	0	0	5	4	2	0	0	0	7	3	1	0	0	0	2	-1	-1	0
1996	200	1	0	0	2	0	0	2	0	0	2	0	0	1	0	0	0	0	0
1997	200	0	0	1	5	2	2	0	0	1	4	2	0	0	0	0	-1	0	-2
1998	200	0	0	3	4	1	0	0	0	1	2	1	0	0	0	-2	-2	0	0
1999	200	0	1	4	7	4	3	0	1	3	6	4	3	0	0	-1	-1	0	0
2000	200	0	0	0	3	0	0	0	0	0	1	0	0	0	0	0	-2	0	0
2001	200	1	0	2	2	0	0	0	0	1	1	0	0	-1	0	-1	-1	0	0
2002	200	0	0	1	2	1	1	0	0	0	1	1	1	0	0	-1	-1	0	0
2003	200	0	0	3	5	0	1	0	0	1	5	0	1	0	0	-2	0	0	0
2004	200	0	0	1	3	0	1	0	0	0	2	0	0	0	0	-1	-1	0	-1
2005	200	0	0	1	0	0	1	0	0	0	0	0	0	0	0	-1	0	0	-1
2006	200	0	0	2	4	0	1	0	0	0	3	0	0	0	0	-2	-1	0	-1
2007	200	0	0	1	4	0	4	0	0	1	3	1	1	0	0	0	-1	1	-3
2008	200	0	0	1	2	2	4	0	0	0	1	1	2	0	0	-1	-1	-1	-2

OPPORTUNITY STORAGE

SPILL AGREEMENT SIGNED

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BPAHYSUM Summary

Base Study: GMXBASAS : NTS : TE3AC : 1.0 MAF : SPILL AGREEMENT SIGNED Date: 23-JUN-89 17:00:59
Incr Study: GMXA1SAS : NTS : TE3AC : 2.5 MAF : SPILL AGREEMENT SIGNED Date: 26-JUN-89 19:00:23
Difference = (Incr Study) - (Base Study)
Number of Games: 200
All Water Years

****

Frequency Distribution

		Grand Coulee Elev LT 1240 feet			Priest Rapids Discharge GE 125 kcfs						Priest Rapids Discharge LT 134 kcfs		
		(Base)	(Incr)	(Diff)	(Base)		(Incr)		(Diff)		(Base)	(Incr)	(Diff)
Year	Num	May	May	May	Oct	Nov	Oct	Nov	Oct	Nov	May	May	May
1989	200	34	34	0	1	1	1	1	0	0	4	4	0
1990	200	34	34	0	5	11	5	11	0	0	6	6	0
1991	200	42	42	0	9	13	8	9	-1	-4	2	2	0
1992	200	35	35	0	7	5	7	5	0	0	3	3	0
1993	200	38	38	0	7	10	3	8	-4	-2	7	7	0
1994	200	37	37	0	2	2	0	4	-2	2	8	8	0
1995	200	38	38	0	0	0	0	0	0	0	5	5	0
1996	200	32	32	0	0	0	0	2	0	2	4	3	-1
1997	200	37	37	0	1	1	0	1	-1	0	6	6	0
1998	200	43	43	0	6	6	2	3	-4	-3	8	7	-1
1999	200	30	30	0	3	2	0	1	-3	-1	9	9	0
2000	200	41	41	0	0	0	0	0	0	0	1	1	0
2001	200	45	45	0	1	2	0	2	-1	0	3	3	0
2002	200	33	33	0	5	7	3	7	-2	0	6	6	0
2003	200	40	40	0	3	3	0	1	-3	-2	5	5	0
2004	200	40	40	0	1	1	0	0	-1	-1	2	2	0
2005	200	31	31	0	1	0	0	0	-1	0	7	7	0
2006	200	36	36	0	1	2	1	2	0	0	3	3	0
2007	200	23	23	0	0	0	0	0	0	0	8	8	0
2008	200	49	49	0	0	0	0	0	0	0	7	7	0

OPPORTUNITY STORAGE

SPILL AGREEMENT SIGNED

****

BPAHYSUM Summary

Base Study: GMXBASAS : NTS : TE3AC : 1.0 MAF : SPILL AGREEMENT SIGNED Date: 23-JUN-89 17:00:59
Incr Study: GMXA1SAS : NTS : TE3AC : 2.5 MAF : SPILL AGREEMENT SIGNED Date: 26-JUN-89 19:00:23
Difference = (Incr Study) - (Base Study)
Number of Games: 200
All Water Years

****

Frequency Distribution

Priest Rapids Discharge
LT 70 kcfs

		--- (Base) ---						--- (Incr) ---						--- (Diff) ---					
Year	Num	Dec	Jan	Feb	Mar	Ap1	Ap2	Dec	Jan	Feb	Mar	Ap1	Ap2	Dec	Jan	Feb	Mar	Ap1	Ap2
1989	200	0	0	4	2	0	0	0	0	4	2	0	0	0	0	0	0	0	0
1990	200	0	0	3	2	0	4	0	0	0	0	0	4	0	0	-3	-2	0	0
1991	200	0	0	2	2	0	0	0	0	1	1	0	0	0	0	-1	-1	0	0
1992	200	0	0	4	4	1	1	0	0	1	2	1	1	0	0	-3	-2	0	0
1993	200	0	0	1	3	0	0	0	0	1	3	0	0	0	0	0	0	0	0
1994	200	0	0	5	4	3	1	0	0	4	5	3	1	0	0	-1	1	0	0
1995	200	0	0	5	4	2	0	0	0	5	3	1	0	0	0	0	-1	-1	0
1996	200	1	0	0	2	0	0	2	0	0	1	0	0	1	0	0	-1	0	0
1997	200	0	0	1	5	2	2	0	0	1	3	2	0	0	0	0	-2	0	-2
1998	200	0	0	4	4	1	0	0	0	1	2	1	0	0	0	-3	-2	0	0
1999	200	0	1	3	7	4	3	0	1	2	7	4	3	0	0	-1	0	0	0
2000	200	0	0	0	3	0	0	0	0	0	2	0	0	0	0	0	-1	0	0
2001	200	1	0	1	2	0	1	0	0	0	2	0	0	-1	0	-1	0	0	-1
2002	200	0	0	1	1	1	1	0	0	0	1	1	1	0	0	-1	0	0	0
2003	200	0	0	2	5	0	1	0	0	1	5	0	1	0	0	-1	0	0	0
2004	200	0	0	0	3	0	1	0	0	0	3	0	1	0	0	0	0	0	0
2005	200	0	0	1	0	0	1	0	0	0	0	0	1	0	0	-1	0	0	0
2006	200	0	0	2	4	0	0	0	0	0	3	0	0	0	0	-2	-1	0	0
2007	200	0	0	1	4	1	4	0	0	0	4	1	1	0	0	-1	0	0	-3
2008	200	0	0	0	2	2	5	0	0	0	1	1	2	0	0	0	-1	-1	-3

OPPORTUNITY STORAGE

EXPIRE 2003

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BPAHYSUM Summary

Base Study: AMXBAARO : NTS : TE3AC : 1.0 MAF : ALT RESOURCE ORDER Date: 28-MAR-89 17:23:39
Incr Study: EMXA1E03 : NTS : TE3AC : 2.5 MAF : EXPIRES 2003 Date: 6-JUN-89 21:11:12
Difference = (Incr Study) - (Base Study)
Number of Games: 200
All Water Years

****

Frequency Distribution

		Grand Coulee Elev LT 1240 feet			Priest Rapids Discharge GE 125 kcfs						Priest Rapids Discharge LT 134 kcfs		
		(Base)	(Incr)	(Diff)	(Base)		(Incr)		(Diff)		(Base)	(Incr)	(Diff)
Year	Num	May	May	May	Oct	Nov	Oct	Nov	Oct	Nov	May	May	May
1989	200	34	34	0	1	1	1	1	0	0	4	4	0
1990	200	34	34	0	6	11	6	11	0	0	6	6	0
1991	200	42	42	0	9	13	8	8	-1	-5	2	2	0
1992	200	35	35	0	7	5	7	5	0	0	3	3	0
1993	200	38	38	0	8	10	3	8	-5	-2	6	7	1
1994	200	37	37	0	1	2	0	3	-1	1	8	8	0
1995	200	38	38	0	0	0	0	0	0	0	5	5	0
1996	200	32	32	0	0	0	0	3	0	3	4	3	-1
1997	200	37	37	0	1	1	0	1	-1	0	6	6	0
1998	200	43	43	0	6	6	2	3	-4	-3	6	6	0
1999	200	30	30	0	3	2	0	1	-3	-1	9	9	0
2000	200	41	41	0	0	0	0	0	0	0	1	1	0
2001	200	45	45	0	1	2	0	2	-1	0	3	3	0
2002	200	33	33	0	5	7	3	7	-2	0	6	6	0
2003	200	40	40	0	3	3	0	1	-3	-2	5	5	0
2004	200	40	40	0	1	1	0	0	-1	-1	2	2	0
2005	200	31	31	0	1	0	0	0	-1	0	7	7	0
2006	200	36	36	0	1	2	1	2	0	0	3	3	0
2007	200	23	23	0	0	0	0	0	0	0	8	8	0
2008	200	49	49	0	0	0	0	0	0	0	7	7	0

OPPORTUNITY STORAGE

EXPIRE 2003

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BPAHYSUM Summary

Base Study: AMXBAARO : NTS : TE3AC : 1.0 MAF : ALT RESOURCE ORDER Date: 28-MAR-89 17:23:39
Incr Study: EMXA1E03 : NTS : TE3AC : 2.5 MAF : EXPIRES 2003 Date: 6-JUN-89 21:11:12
Difference = (Incr Study) - (Base Study)
Number of Games: 200
All Water Years

****

Frequency Distribution

Priest Rapids Discharge
LT 70 kcfs

		(Base)						(Incr)						(Diff)					
Year	Num	Dec	Jan	Feb	Mar	Ap1	Ap2	Dec	Jan	Feb	Mar	Ap1	Ap2	Dec	Jan	Feb	Mar	Ap1	Ap2
1989	200	0	0	4	2	0	0	0	0	4	2	0	0	0	0	0	0	0	0
1990	200	0	0	3	2	0	4	0	0	0	0	0	4	0	0	-3	-2	0	0
1991	200	0	0	2	3	0	0	0	0	1	2	0	0	0	0	-1	-1	0	0
1992	200	0	0	4	4	1	1	0	0	1	2	1	1	0	0	-3	-2	0	0
1993	200	0	0	1	3	0	0	0	0	1	2	0	0	0	0	0	-1	0	0
1994	200	0	0	5	4	3	1	0	0	4	5	3	1	0	0	-1	1	0	0
1995	200	0	0	5	3	1	0	0	0	5	3	1	0	0	0	0	0	0	0
1996	200	1	0	0	2	0	0	2	0	0	1	0	0	1	0	0	-1	0	0
1997	200	0	0	1	5	2	2	0	0	1	3	2	0	0	0	0	-2	0	-2
1998	200	0	0	3	4	1	0	0	0	1	1	1	0	0	0	-2	-3	0	0
1999	200	0	1	4	7	4	3	0	1	3	6	4	3	0	0	-1	-1	0	0
2000	200	0	0	0	3	0	0	0	0	0	2	0	0	0	0	0	-1	0	0
2001	200	1	0	2	2	0	1	0	0	0	2	0	0	-1	0	-2	0	0	-1
2002	200	0	0	1	1	1	1	0	0	0	1	1	1	0	0	-1	0	0	0
2003	200	0	0	2	5	0	1	0	0	1	5	0	1	0	0	-1	0	0	0
2004	200	0	0	0	3	0	1	0	0	0	3	0	2	0	0	0	0	0	1
2005	200	0	0	1	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0
2006	200	0	0	2	4	0	0	0	0	2	4	0	0	0	0	0	0	0	0
2007	200	0	0	1	4	0	4	0	0	1	4	0	4	0	0	0	0	0	0
2008	200	0	0	1	2	2	5	0	0	1	2	2	5	0	0	0	0	0	0

FIRM USE

PNW HIGH LOADS

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BPAHYSUM Summary

Base Study: FMXBANHL : NTS : TE3AC : 1.0 MAF : PNW HIGH LOAD Date: 22-JUN-89 17:16:29
Incr Study: IMXA2NHL : NTS : TE3AC : 2.5 MAF : FIRM USE : NWHILD Date: 21-OCT-89 09:08:26
Difference = (Incr Study) - (Base Study)
Number of Games: 200
All Water Years

****

Frequency Distribution

		Grand Coulee Elev LT 1240 feet			Priest Rapids Discharge GE 125 kcfs						Priest Rapids Discharge LT 134 kcfs		
					(Base)		(Incr)		(Diff)				
Year	Num	(Base) May	(Incr) May	(Diff) May	Oct	Nov	Oct	Nov	Oct	Nov	(Base) May	(Incr) May	(Diff) May
1989	200	34	34	0	0	1	0	3	0	2	4	4	0
1990	200	34	34	0	1	2	2	2	1	0	6	6	0
1991	200	42	42	0	0	1	0	0	0	-1	3	2	-1
1992	200	35	35	0	1	1	0	0	-1	-1	3	3	0
1993	200	38	38	0	0	3	0	1	0	-2	6	6	0
1994	200	37	37	0	1	1	1	0	0	-1	10	8	-2
1995	200	38	38	0	0	0	0	0	0	0	5	5	0
1996	200	32	32	0	0	0	0	0	0	0	3	3	0
1997	200	37	37	0	0	0	0	0	0	0	6	6	0
1998	200	43	43	0	0	0	0	0	0	0	5	5	0
1999	200	30	30	0	0	0	0	0	0	0	9	9	0
2000	200	41	41	0	1	0	0	0	-1	0	1	1	0
2001	200	45	45	0	0	0	0	0	0	0	3	3	0
2002	200	33	33	0	1	0	2	1	1	1	6	6	0
2003	200	40	40	0	1	0	1	0	0	0	4	4	0
2004	200	40	40	0	2	0	0	1	-2	1	2	2	0
2005	200	31	31	0	1	0	0	0	-1	0	7	7	0
2006	200	36	36	0	1	0	0	0	-1	0	2	2	0
2007	200	23	23	0	0	0	0	0	0	0	6	7	1
2008	200	49	49	0	0	0	0	0	0	0	4	4	0

FIRM USE

PNW HIGH LOADS

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*****************************************************************************************************************************
                                                   BPAHYSUM Summary
Base Study:    FMXBANHL : NTS : TE3AC : 1.0 MAF : PNW HIGH LOAD                    Date:  22-JUN-89 17:16:29
Incr Study:    IMXA2NHL : NTS : TE3AC : 2.5 MAF : FIRM USE : NWHILD                Date:  21-OCT-89 09:08:26
Difference = (Incr Study) - (Base Study)
Number of Games: 200
All Water Years
*****************************************************************************************************************************
```

Frequency Distribution

Priest Rapids Discharge
LT 70 kcfs

		(Base)						(Incr)						(Diff)					
Year	Num	Dec	Jan	Feb	Mar	Ap1	Ap2	Dec	Jan	Feb	Mar	Ap1	Ap2	Dec	Jan	Feb	Mar	Ap1	Ap2
1989	200	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	-1	0	0
1990	200	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	-1	0	0
1991	200	0	0	1	0	1	1	0	0	0	1	1	1	0	0	-1	1	0	0
1992	200	1	0	1	5	2	2	1	0	0	3	1	1	0	0	-1	-2	-1	-1
1993	200	0	0	0	4	0	2	0	0	0	2	0	1	0	0	0	-2	0	-1
1994	200	0	0	1	3	2	2	0	0	0	3	1	1	0	0	-1	0	-1	-1
1995	200	0	0	1	3	0	3	0	0	1	4	0	0	0	0	0	1	0	-3
1996	200	0	0	0	2	0	2	0	0	0	2	0	0	0	0	0	0	0	-2
1997	200	0	0	2	2	2	1	0	0	0	4	0	2	0	0	-2	2	-2	1
1998	200	0	0	3	6	0	2	0	0	2	7	0	1	0	0	-1	1	0	-1
1999	200	0	0	4	5	4	7	0	0	1	5	1	3	0	0	-3	0	-3	-4
2000	200	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0
2001	200	0	0	2	3	0	2	1	0	1	1	0	2	1	0	-1	-2	0	0
2002	200	0	0	4	6	0	3	0	0	1	5	0	2	0	0	-3	-1	0	-1
2003	200	0	0	1	2	0	1	0	0	2	3	0	1	0	0	1	1	0	0
2004	200	0	0	0	5	0	2	0	0	0	5	0	1	0	0	0	0	0	-1
2005	200	0	0	0	1	0	2	0	0	0	1	0	2	0	0	0	0	0	0
2006	200	0	0	4	6	0	0	0	0	2	5	0	0	0	0	-2	-1	0	0
2007	200	0	0	2	5	0	2	0	0	1	5	0	0	0	0	-1	0	0	-2
2008	200	0	0	1	5	1	3	0	0	1	2	1	1	0	0	0	-3	0	-2

FIRM USE

SW HIGH LOADS/HIGH GAS PRICES

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BPAHYSUM Summary

Base Study: EMXBASHL : NTS : TE3AC : 1.0 MAF : PSW HI LOAD W/HI GAS Date: 17-JUN-89 06:46:11
Incr Study: IMXA2SHL:NTS:TE3AC:2.5 MAF:FIRM USE:FELCC 165: SWHLHG Date: 20-OCT-89 16:00:27
Difference = (Incr Study) - (Base Study)
Number of Games: 200
All Water Years

****

Frequency Distribution

		Grand Coulee Elev LT 1240 feet			Priest Rapids Discharge GE 125 kcfs						Priest Rapids Discharge LT 134 kcfs		
					(Base)		(Incr)		(Diff)				
Year	Num	(Base) May	(Incr) May	(Diff) May	Oct	Nov	Oct	Nov	Oct	Nov	(Base) May	(Incr) May	(Diff) May
1989	200	34	34	0	9	11	9	16	0	5	4	4	0
1990	200	34	34	0	6	12	5	12	-1	0	6	6	0
1991	200	42	42	0	10	11	11	11	1	0	3	3	0
1992	200	35	35	0	7	2	7	5	0	3	3	3	0
1993	200	38	38	0	6	9	5	8	-1	-1	6	6	0
1994	200	37	37	0	3	2	1	1	-2	-1	8	8	0
1995	200	38	38	0	0	1	0	0	0	-1	5	5	0
1996	200	32	32	0	0	0	0	0	0	0	3	3	0
1997	200	37	37	0	1	1	1	1	0	0	6	6	0
1998	200	43	43	0	7	7	3	3	-4	-4	6	5	-1
1999	200	30	30	0	3	1	3	1	0	0	9	8	-1
2000	200	41	41	0	0	0	0	0	0	0	1	1	0
2001	200	45	45	0	1	2	1	2	0	0	3	3	0
2002	200	33	33	0	5	7	3	7	-2	0	6	6	0
2003	200	40	40	0	3	3	4	1	1	-2	5	4	-1
2004	200	40	40	0	1	1	0	0	-1	-1	2	2	0
2005	200	31	31	0	1	0	0	0	-1	0	7	7	0
2006	200	36	36	0	1	2	0	1	-1	-1	2	2	0
2007	200	23	23	0	0	0	0	1	0	1	7	7	0
2008	200	49	49	0	0	0	0	1	0	1	7	7	0

FIRM USE

SW HIGH LOADS/HIGH GAS PRICES

****

BPAHYSUM Summary

Base Study: EMXBASHL : NTS : TE3AC : 1.0 MAF : PSW HI LOAD W/HI GAS Date: 17-JUN-89 06:46:11
Incr Study: IMXA2SHL:NTS:TE3AC:2.5 MAF:FIRM USE:FELCC 165: SWHLHG Date: 20-OCT-89 16:00:27
Difference = (Incr Study) - (Base Study)
Number of Games: 200
All Water Years

****

Frequency Distribution

Priest Rapids Discharge
LT 70 kcfs

		(Base)						(Incr)						(Diff)					
Year	Num	Dec	Jan	Feb	Mar	Ap1	Ap2	Dec	Jan	Feb	Mar	Ap1	Ap2	Dec	Jan	Feb	Mar	Ap1	Ap2
1989	200	0	0	5	1	0	0	0	0	4	1	0	0	0	0	-1	0	0	0
1990	200	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	-1
1991	200	0	0	0	2	1	2	0	0	0	2	1	2	0	0	0	0	0	0
1992	200	0	0	3	3	1	1	0	0	3	4	1	1	0	0	0	1	0	0
1993	200	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0	0	0	0
1994	200	0	0	5	3	3	1	0	0	4	3	2	1	0	0	-1	0	-1	0
1995	200	0	0	7	4	2	0	0	0	4	3	0	0	0	0	-3	-1	-2	0
1996	200	0	0	1	1	0	0	1	0	0	1	0	0	1	0	-1	0	0	0
1997	200	0	0	2	3	2	1	0	0	1	2	0	1	0	0	-1	-1	-2	0
1998	200	0	0	3	4	1	0	0	0	1	3	1	0	0	0	-2	-1	0	0
1999	200	0	1	4	6	4	3	1	1	1	6	2	3	1	0	-3	0	-2	0
2000	200	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0
2001	200	1	0	2	2	0	0	0	0	1	2	0	0	-1	0	-1	0	0	0
2002	200	0	0	1	2	1	1	0	0	0	2	1	1	0	0	-1	0	0	0
2003	200	0	0	2	5	0	1	0	0	1	4	0	0	0	0	-1	-1	0	-1
2004	200	0	0	1	3	0	2	0	0	0	3	0	0	0	0	-1	0	0	-2
2005	200	1	0	2	0	0	2	1	0	0	1	0	1	0	0	-2	1	0	-1
2006	200	0	0	1	7	0	2	0	0	1	4	0	0	0	0	0	-3	0	-2
2007	200	0	0	0	4	0	5	0	0	0	4	0	0	0	0	0	0	0	-5
2008	200	0	0	1	2	1	5	0	0	1	2	1	2	0	0	0	0	0	-3

FIRM USE

SPILL AGREEMENT SIGNED

```
*****************************************************************************************************************************
                                                   BPAHYSUM Summary
Base Study:    GMXBASAS : NTS : TE3AC : 1.0 MAF : SPILL AGREEMENT SIGNED          Date:  23-JUN-89 17:00:59
Incr Study:    HMXA2SAS : NTS : TE3AC : 2.5 MAF : FIRM USE : SAS                  Date:  29-OCT-89 19:00:21
Difference = (Incr Study) - (Base Study)
Number of Games: 200
All Water Years
*****************************************************************************************************************************
```

Frequency Distribution

		Grand Coulee Elev LT 1240 feet			Priest Rapids Discharge GE 125 kcfs						Priest Rapids Discharge LT 134 kcfs		
		(Base)	(Incr)	(Diff)	(Base)		(Incr)		(Diff)		(Base)	(Incr)	(Diff)
Year	Num	May	May	May	Oct	Nov	Oct	Nov	Oct	Nov	May	May	May
1989	200	34	34	0	1	1	2	8	1	7	4	4	0
1990	200	34	34	0	5	11	7	13	2	2	6	6	0
1991	200	42	42	0	9	13	11	12	2	-1	2	2	0
1992	200	35	35	0	7	5	8	7	1	2	3	3	0
1993	200	38	38	0	7	10	8	12	1	2	7	6	-1
1994	200	37	37	0	2	2	1	5	-1	3	8	8	0
1995	200	38	38	0	0	0	0	1	0	1	5	5	0
1996	200	32	32	0	0	0	0	1	0	1	4	3	-1
1997	200	37	37	0	1	1	1	1	0	0	6	6	0
1998	200	43	43	0	6	6	6	4	0	-2	8	5	-3
1999	200	30	30	0	3	2	2	4	-1	2	9	8	-1
2000	200	41	41	0	0	0	0	0	0	0	1	1	0
2001	200	45	45	0	1	2	1	2	0	0	3	3	0
2002	200	33	33	0	5	7	5	7	0	0	6	6	0
2003	200	40	40	0	3	3	3	1	0	-2	5	4	-1
2004	200	40	40	0	1	1	0	0	-1	-1	2	2	0
2005	200	31	31	0	1	0	0	0	-1	0	7	7	0
2006	200	36	36	0	1	2	1	2	0	0	3	2	-1
2007	200	23	23	0	0	0	0	1	0	1	8	8	0
2008	200	49	49	0	0	0	0	1	0	1	7	7	0

FIRM USE

SPILL AGREEMENT SIGNED

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*****************************************************************************************************************************
                                                   BPAHYSUM Summary
Base Study:    GMXBASAS : NTS : TE3AC : 1.0 MAF : SPILL AGREEMENT SIGNED          Date:  23-JUN-89 17:00:59
Incr Study:    HMXA2SAS : NTS : TE3AC : 2.5 MAF : FIRM USE : SAS                  Date:  29-OCT-89 19:00:21
Difference = (Incr Study) - (Base Study)
Number of Games: 200
All Water Years
*****************************************************************************************************************************
```

Frequency Distribution

Priest Rapids Discharge
LT 70 kcfs

		(Base)						(Incr)						(Diff)					
Year	Num	Dec	Jan	Feb	Mar	Ap1	Ap2	Dec	Jan	Feb	Mar	Ap1	Ap2	Dec	Jan	Feb	Mar	Ap1	Ap2
1989	200	0	0	4	2	0	0	0	0	3	2	0	0	0	0	-1	0	0	0
1990	200	0	0	3	2	0	4	0	0	0	1	0	0	0	0	-3	-1	0	-4
1991	200	0	0	2	2	0	0	0	0	2	1	0	0	0	0	0	-1	0	0
1992	200	0	0	4	4	1	1	0	0	1	2	1	1	0	0	-3	-2	0	0
1993	200	0	0	1	3	0	0	0	0	1	4	0	0	0	0	0	1	0	0
1994	200	0	0	5	4	3	1	0	0	5	3	2	1	0	0	0	-1	-1	0
1995	200	0	0	5	4	2	0	0	0	5	3	0	0	0	0	0	-1	-2	0
1996	200	1	0	0	2	0	0	1	0	0	2	0	0	0	0	0	0	0	0
1997	200	0	0	1	5	2	2	0	0	1	2	1	1	0	0	0	-3	-1	-1
1998	200	0	0	4	4	1	0	0	0	1	3	1	0	0	0	-3	-1	0	0
1999	200	0	1	3	7	4	3	2	1	2	6	2	3	2	0	-1	-1	-2	0
2000	200	0	0	0	3	0	0	0	0	0	2	0	0	0	0	0	-1	0	0
2001	200	1	0	1	2	0	1	0	0	1	2	0	0	-1	0	0	0	0	-1
2002	200	0	0	1	1	1	1	0	0	0	2	1	1	0	0	-1	1	0	0
2003	200	0	0	2	5	0	1	0	0	1	5	0	0	0	0	-1	0	0	-1
2004	200	0	0	0	3	0	1	0	0	0	6	0	0	0	0	0	3	0	-1
2005	200	0	0	1	0	0	1	1	0	0	1	0	2	1	0	-1	1	0	1
2006	200	0	0	2	4	0	0	0	0	1	3	0	0	0	0	-1	-1	0	0
2007	200	0	0	1	4	1	4	0	0	1	4	1	1	0	0	0	0	0	-3
2008	200	0	0	0	2	2	5	0	0	0	3	1	1	0	0	0	1	-1	-4

FIRM USE

EXPIRE 2003

****

BPAHYSUM Summary

Base Study: AMXBAARO : NTS : TE3AC : 1.0 MAF : ALT RESOURCE ORDER Date: 28-MAR-89 17:23:39
Incr Study: IMXA2E03 :NTSF :TE3AC :2.5 MAF :FIRM USE :EXPIRE 03 Date: 21-OCT-89 00:29:22
Difference = (Incr Study) - (Base Study)
Number of Games: 200
All Water Years

****

Frequency Distribution

		Grand Coulee Elev LT 1240 feet			Priest Rapids Discharge GE 125 kcfs						Priest Rapids Discharge LT 134 kcfs		
		(Base)	(Incr)	(Diff)	(Base)		(Incr)		(Diff)		(Base)	(Incr)	(Diff)
Year	Num	May	May	May	Oct	Nov	Oct	Nov	Oct	Nov	May	May	May
1989	200	34	34	0	1	1	2	8	1	7	4	4	0
1990	200	34	34	0	6	11	7	13	1	2	6	6	0
1991	200	42	42	0	9	13	11	12	2	-1	2	2	0
1992	200	35	35	0	7	5	8	7	1	2	3	3	0
1993	200	38	38	0	8	10	8	12	0	2	6	6	0
1994	200	37	37	0	1	2	1	6	0	4	8	8	0
1995	200	38	38	0	0	0	0	0	0	0	5	5	0
1996	200	32	32	0	0	0	0	1	0	1	4	3	-1
1997	200	37	37	0	1	1	1	1	0	0	6	6	0
1998	200	43	43	0	6	6	6	4	0	-2	6	5	-1
1999	200	30	30	0	3	2	2	4	-1	2	9	8	-1
2000	200	41	41	0	0	0	0	0	0	0	1	1	0
2001	200	45	45	0	1	2	1	2	0	0	3	3	0
2002	200	33	33	0	5	7	4	7	-1	0	6	6	0
2003	200	40	40	0	3	3	3	1	0	-2	5	4	-1
2004	200	40	40	0	1	1	0	0	-1	-1	2	2	0
2005	200	31	31	0	1	0	0	0	-1	0	7	7	0
2006	200	36	36	0	1	2	1	2	0	0	3	3	0
2007	200	23	23	0	0	0	0	0	0	0	8	8	0
2008	200	49	49	0	0	0	0	0	0	0	7	7	0

FIRM USE

EXPIRE 2003

****

BPAHYSUM Summary

Base Study: AMXBAARO : NTS : TE3AC : 1.0 MAF : ALT RESOURCE ORDER Date: 28-MAR-89 17:23:39
Incr Study: IMXA2E03 :NTSF :TE3AC :2.5 MAF :FIRM USE :EXPIRE 03 Date: 21-OCT-89 00:29:22
Difference = (Incr Study) - (Base Study)
Number of Games: 200
All Water Years

****

Frequency Distribution

Priest Rapids Discharge
LT 70 kcfs

		--- (Base) ---						--- (Incr) ---						--- (Diff) ---					
Year	Num	Dec	Jan	Feb	Mar	Ap1	Ap2	Dec	Jan	Feb	Mar	Ap1	Ap2	Dec	Jan	Feb	Mar	Ap1	Ap2
1989	200	0	0	4	2	0	0	0	0	3	2	0	0	0	0	-1	0	0	0
1990	200	0	0	3	2	0	4	0	0	0	0	0	0	0	0	-3	-2	0	-4
1991	200	0	0	2	3	0	0	0	0	2	1	0	0	0	0	0	-2	0	0
1992	200	0	0	4	4	1	1	0	0	0	2	1	1	0	0	-4	-2	0	0
1993	200	0	0	1	3	0	0	0	0	1	4	0	0	0	0	0	1	0	0
1994	200	0	0	5	4	3	1	0	0	5	3	2	1	0	0	0	-1	-1	0
1995	200	0	0	5	3	1	0	0	0	5	3	0	0	0	0	0	0	-1	0
1996	200	1	0	0	2	0	0	1	0	0	2	0	0	0	0	0	0	0	0
1997	200	0	0	1	5	2	2	0	0	1	2	1	1	0	0	0	-3	-1	-1
1998	200	0	0	3	4	1	0	0	0	1	3	1	0	0	0	-2	-1	0	0
1999	200	0	1	4	7	4	3	1	1	2	6	2	3	1	0	-2	-1	-2	0
2000	200	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0
2001	200	1	0	2	2	0	1	0	0	1	2	0	0	-1	0	-1	0	0	-1
2002	200	0	0	1	1	1	1	0	0	0	2	1	1	0	0	-1	1	0	0
2003	200	0	0	2	5	0	1	0	0	1	5	0	0	0	0	-1	0	0	-1
2004	200	0	0	0	3	0	1	0	0	0	5	0	2	0	0	0	2	0	1
2005	200	0	0	1	0	0	1	1	0	1	0	0	1	1	0	0	0	0	0
2006	200	0	0	2	4	0	0	0	0	3	3	0	0	0	0	1	-1	0	0
2007	200	0	0	1	4	0	4	0	0	1	3	0	3	0	0	0	-1	0	-1
2008	200	0	0	1	2	2	5	0	0	0	2	2	4	0	0	-1	0	0	-1

RELATIVE CHANGES IN SYSTEM STOCK SURVIVAL
FMXA1NHL VS FMXBANHL (BASE CASE)

PROGRAM = DSN=PJI.PF400.RNR.FISHPASS.SAS.REPORTS(FSUM56)
FILES: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG — RUN DATE: AUG/03/89
PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG — RUN DATE: AUG/03/89

		YEARLING			SUBYEARLING			STEELHEAD			SOCKEYE		
POOL	YEAR	MB	MA	RM	MB	MA	RM	MB	MA	RM	MB	MA	RM
WELLS	1991	30.9	30.9	0.0	18.9	18.6	-1.4	35.5	35.5	0.0	26.0	26.1	0.1
	1993	33.9	33.9	0.0	20.4	20.2	-0.9	39.2	39.2	-0.0	27.5	27.5	-0.1
	1995	40.1	40.2	0.3	29.6	29.3	-1.1	47.0	47.1	0.2	34.3	34.3	0.0
	1997	41.5	41.8	0.8	29.2	28.9	-0.9	47.8	47.9	0.2	34.4	34.4	-0.0
	2001	40.5	40.6	0.3	28.5	28.7	0.6	47.1	47.2	0.2	34.0	34.1	0.3
	2005	40.8	40.9	0.2	27.5	27.6	0.3	47.3	47.5	0.3	34.1	34.2	0.3
RRECH	1991	33.1	33.2	0.4	24.0	24.0	0.0	37.6	37.7	0.1	0.0	0.0	0.0
	1993	36.9	37.0	0.3	25.8	25.7	-0.3	41.2	41.3	0.0	0.0	0.0	0.0
	1995	44.8	45.2	1.0	34.8	34.7	-0.2	49.5	49.6	0.1	0.0	0.0	0.0
	1997	46.8	47.3	1.3	34.2	34.2	-0.1	50.3	50.3	0.1	0.0	0.0	0.0
	2001	45.0	45.4	0.9	34.0	34.3	0.9	49.6	49.7	0.2	0.0	0.0	0.0
	2005	46.1	46.5	0.8	33.9	34.1	0.7	49.9	50.0	0.2	0.0	0.0	0.0
RISL	1991	40.7	40.7	0.1	26.3	26.1	-0.7	42.4	42.4	-0.2	34.1	34.1	-0.1
	1993	40.7	40.7	0.2	26.6	26.4	-0.7	42.7	42.7	-0.0	33.9	33.9	0.0
	1995	49.2	49.5	0.8	37.6	37.4	-0.7	53.5	53.5	0.1	42.5	42.5	-0.0
	1997	51.4	52.0	1.1	37.3	37.1	-0.5	54.1	54.1	0.1	42.6	42.6	0.1
	2001	49.4	49.8	0.6	36.8	37.0	0.6	52.5	52.6	0.2	42.0	42.0	0.2
	2005	50.3	50.6	0.6	35.8	36.0	0.4	53.7	53.9	0.3	42.5	42.6	0.3
LWG	1991	82.9	82.9	0.0	59.8	59.8	-0.0	85.6	85.6	-0.0	65.4	65.4	-0.0
	1993	82.1	82.1	0.0	60.1	60.0	-0.0	85.5	85.5	-0.0	65.2	65.2	-0.0
	1995	88.1	88.1	0.0	70.1	70.1	-0.0	89.4	89.4	0.0	74.4	74.5	0.0
	1997	88.5	88.5	0.0	70.3	70.3	-0.0	89.5	89.5	0.0	74.4	74.4	0.0
	2001	88.3	88.3	0.0	70.7	70.7	-0.0	89.7	89.7	0.0	74.8	74.8	-0.0
	2005	87.7	87.8	0.0	70.1	70.1	-0.0	89.3	89.3	0.0	74.3	74.3	0.0
LWM	1991	33.1	33.1	0.0	26.4	26.3	-0.5	40.0	40.0	0.1	0.0	0.0	0.0
	1993	35.6	35.7	0.2	27.1	26.9	-0.6	43.9	44.0	0.1	0.0	0.0	0.0
	1995	37.6	37.9	0.8	33.2	33.1	-0.3	46.3	46.5	0.6	0.0	0.0	0.0
	1997	38.4	38.8	1.2	33.9	33.9	0.0	46.8	47.1	0.7	0.0	0.0	0.0
	2001	38.1	38.4	0.7	34.2	34.2	0.2	46.9	47.2	0.6	0.0	0.0	0.0
	2005	38.8	39.1	0.7	32.1	32.1	0.2	47.8	48.1	0.6	0.0	0.0	0.0
MCN	1991	59.9	60.2	0.4	42.6	42.5	-0.2	67.6	67.6	0.1	0.0	0.0	0.0
	1993	58.5	58.7	0.2	42.4	42.3	-0.2	66.4	66.5	0.1	0.0	0.0	0.0
	1995	63.4	64.0	1.0	53.3	53.3	0.1	72.7	73.0	0.3	0.0	0.0	0.0
	1997	66.2	67.1	1.2	53.2	53.3	0.1	74.1	74.4	0.5	0.0	0.0	0.0
	2001	64.2	64.7	0.8	53.0	53.2	0.4	72.6	72.9	0.4	0.0	0.0	0.0
	2005	65.0	65.5	0.8	52.0	52.4	0.6	73.2	73.5	0.4	0.0	0.0	0.0
JDAY	1991	55.1	55.0	-0.3	44.4	44.6	0.5	59.9	60.0	0.2	0.0	0.0	0.0
	1993	54.6	54.6	-0.1	44.2	44.0	-0.4	59.3	59.3	-0.0	0.0	0.0	0.0
	1995	54.1	54.0	-0.2	46.0	45.8	-0.4	59.5	59.5	0.0	0.0	0.0	0.0
	1997	56.3	56.2	-0.2	44.9	44.9	0.0	62.1	62.1	0.1	0.0	0.0	0.0
	2001	55.6	55.5	-0.2	45.4	45.8	0.7	61.8	62.0	0.5	0.0	0.0	0.0
	2005	56.7	56.7	0.0	44.3	44.6	0.6	61.6	62.1	0.7	0.0	0.0	0.0
DALS	1991	65.8	65.7	-0.2	54.9	54.7	-0.3	65.8	65.8	-0.1	0.0	0.0	0.0
	1993	66.1	66.0	-0.1	54.7	54.5	-0.3	65.8	65.7	-0.2	0.0	0.0	0.0
	1995	65.8	65.8	0.0	55.6	55.3	-0.6	66.1	66.0	-0.2	0.0	0.0	0.0
	1997	69.5	69.5	-0.1	56.3	56.0	-0.5	69.1	69.0	-0.1	0.0	0.0	0.0
	2001	68.7	68.7	0.0	55.9	56.0	0.1	68.9	68.9	0.0	0.0	0.0	0.0
	2005	69.2	69.4	0.3	54.6	54.7	0.1	68.9	69.0	0.1	0.0	0.0	0.0
BONN	1991	87.5	87.5	0.0	79.5	79.5	-0.0	83.6	83.6	-0.0	0.0	0.0	0.0
	1993	87.4	87.4	-0.0	79.5	79.5	-0.1	83.3	83.2	-0.0	0.0	0.0	0.0
	1995	87.0	87.1	0.1	79.6	79.6	-0.0	83.0	83.0	-0.0	0.0	0.0	0.0
	1997	87.2	87.3	0.0	78.5	78.5	-0.0	82.4	82.3	-0.0	0.0	0.0	0.0
	2001	86.9	87.0	0.1	78.0	78.0	-0.0	81.9	81.8	-0.0	0.0	0.0	0.0
	2005	87.2	87.3	0.1	78.3	78.4	0.1	82.5	82.6	0.1	0.0	0.0	0.0
SYS	1991	69.7	69.8	0.0	52.2	52.1	-0.1	72.7	72.7	0.0	50.5	50.5	0.0
	1993	69.9	69.9	0.0	52.2	52.1	-0.2	72.9	72.9	-0.0	50.8	50.8	-0.0
	1995	73.4	73.6	0.2	58.6	58.5	-0.1	76.6	76.7	0.1	59.3	59.3	0.0
	1997	74.5	74.7	0.3	58.1	58.1	-0.0	77.3	77.3	0.1	59.3	59.3	0.0
	2001	73.7	73.8	0.2	57.8	57.9	0.2	77.0	77.1	0.1	59.3	59.4	0.1
	2005	74.0	74.1	0.2	57.3	57.5	0.3	77.0	77.1	0.1	59.2	59.2	0.1

LEGEND
MB = MEAN SURVIVAL WITH BASE CASE CONDITIONS (%) (BASE CASE)
MA = MEAN SURVIVAL WITH ALTERNATIVE CONDITIONS (%) (ALTERNATIVE)
RM = RELATIVE CHANGE IN MEAN SURVIVAL (%)
(ALTERNATIVE SURVIVAL - BASE CASE SURVIVAL) / (BASE CASE SURVIVAL)

DATE RUN= 07DEC89:09:20:57

FREQUENCY OF RELATIVE SURVIVAL CHANGES
EXCEEDING ONE AND FIVE PERCENT

PROGRAM = DSN=PJI.PF400.RNR.SAS.REPORTS(FSUM)
FILE: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG
FILE: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG

	YEARLING				SUBYEARLING				STEELHEAD				SOCKEYE			
POOL	FI1	FI5	FD1	FD5	FI1	FI5	FD1	FD5	FI1	FI5	FD1	FD5	FI1	FI5	FD1	FD5
WELLS	10/	0	8/	0	5/	0	35/	5	10/	0	3/	0	13/	0	0/	0
	5/	0	3/	0	15/	0	33/	8	3/	0	0/	0	0/	0	10/	0
	25/	0	8/	0	18/	3	45/	3	18/	0	8/	0	3/	0	8/	0
	30/	5	3/	0	8/	5	45/	0	18/	0	3/	0	0/	0	5/	0
	15/	0	0/	0	38/	20	23/	3	13/	0	0/	0	15/	0	3/	0
	28/	0	10/	0	33/	10	25/	0	18/	0	0/	0	13/	0	0/	0
RRECH	20/	3	10/	0	15/	5	15/	0	5/	0	0/	0	0/	0	0/	0
	8/	0	0/	0	8/	0	28/	0	3/	0	0/	0	0/	0	0/	0
	28/	10	5/	0	5/	0	10/	0	13/	0	5/	0	0/	0	0/	0
	35/	10	0/	0	13/	0	8/	3	8/	0	3/	0	0/	0	0/	0
	25/	8	3/	0	20/	13	5/	0	10/	0	0/	0	0/	0	0/	0
	35/	5	10/	0	15/	10	15/	0	20/	0	0/	0	0/	0	0/	0
RISL	8/	3	5/	0	10/	0	28/	0	0/	0	8/	0	3/	0	5/	0
	10/	0	0/	0	5/	0	30/	0	3/	0	3/	0	3/	0	0/	0
	33/	8	8/	0	13/	3	43/	0	10/	0	5/	0	5/	0	5/	0
	35/	8	0/	0	8/	5	43/	0	5/	0	5/	0	5/	0	3/	0
	23/	0	0/	0	25/	13	20/	0	3/	0	3/	0	8/	0	3/	0
	30/	0	8/	0	30/	8	18/	0	15/	0	13/	0	15/	0	0/	0
LWG	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0
LWM	10/	0	10/	0	15/	0	23/	0	8/	0	3/	0	0/	0	0/	0
	10/	0	0/	0	0/	0	23/	0	3/	0	0/	0	0/	0	0/	0
	33/	3	3/	0	10/	0	20/	3	23/	0	3/	0	0/	0	0/	0
	38/	5	3/	0	13/	0	8/	0	33/	0	0/	0	0/	0	0/	0
	33/	0	0/	0	25/	0	8/	0	18/	0	0/	0	0/	0	0/	0
	35/	3	8/	0	23/	3	5/	0	23/	0	0/	0	0/	0	0/	0
MCN	13/	5	8/	0	13/	0	20/	0	0/	0	0/	0	0/	0	0/	0
	10/	0	3/	0	0/	0	13/	0	3/	0	0/	0	0/	0	0/	0
	20/	8	5/	0	13/	0	15/	0	20/	0	3/	0	0/	0	0/	0
	30/	10	3/	0	13/	0	10/	0	20/	0	0/	0	0/	0	0/	0
	20/	5	3/	0	28/	0	5/	0	15/	0	0/	0	0/	0	0/	0
	33/	10	13/	0	28/	3	5/	0	23/	3	8/	0	0/	0	0/	0
JDAY	0/	0	15/	0	25/	13	13/	3	13/	0	0/	0	0/	0	0/	0
	3/	0	5/	0	10/	0	20/	0	3/	0	3/	0	0/	0	0/	0
	10/	0	18/	0	13/	0	23/	0	3/	0	3/	0	0/	0	0/	0
	8/	0	23/	0	23/	0	13/	0	5/	0	5/	0	0/	0	0/	0
	5/	0	15/	0	25/	8	10/	0	18/	3	0/	0	0/	0	0/	0
	13/	3	13/	3	15/	13	15/	0	18/	8	0/	0	0/	0	0/	0
DALS	0/	0	15/	0	5/	0	23/	0	0/	0	5/	0	0/	0	0/	0
	0/	0	5/	0	0/	0	15/	0	0/	0	3/	0	0/	0	0/	0
	10/	0	8/	0	3/	0	35/	0	3/	0	13/	0	0/	0	0/	0
	8/	0	13/	0	5/	0	30/	0	3/	0	10/	0	0/	0	0/	0
	10/	0	10/	0	20/	0	13/	0	10/	0	0/	0	0/	0	0/	0
	15/	3	13/	0	18/	0	10/	0	8/	0	0/	0	0/	0	0/	0
BONN	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	3/	0	0/	0	3/	0	3/	0	5/	0	3/	0	0/	0	0/	0
SYS	0/	0	0/	0	5/	0	3/	0	0/	0	0/	0	0/	0	0/	0
	0/	0	0/	0	0/	0	8/	0	0/	0	0/	0	0/	0	0/	0
	8/	0	0/	0	5/	0	5/	0	0/	0	0/	0	0/	0	0/	0
	3/	0	0/	0	5/	0	3/	0	0/	0	0/	0	0/	0	0/	0
	0/	0	0/	0	20/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	3/	0	0/	0	15/	0	3/	0	3/	0	0/	0	0/	0	0/	0

LEGEND
FI1 = PERCENT OF RELATIVE SURVIVAL INCREASES EXCEEDING ONE PERCENT
FI5 = PERCENT OF RELATIVE SURVIVAL INCREASES EXCEEDING FIVE PERCENT
FD1 = PERCENT OF RELATIVE SURVIVAL DECREASES EXCEEDING ONE PERCENT
FD5 = PERCENT OF RELATIVE SURVIVAL DECREASES EXCEEDING FIVE PERCENT

DATE RUN= 07DEC89:09:15:23

RELATIVE CHANGES IN SYSTEM STOCK SURVIVAL
EMXA1SHL VS EMXBASHL (BASE CASE)

PROGRAM = DSN=PJI.PF400.RNR.FISHPASS.SAS.REPORTS(FSUM56)
FILES: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG RUN DATE: AUG/03/89
PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG RUN DATE: AUG/03/89

		YEARLING			SUBYEARLING			STEELHEAD			SOCKEYE		
POOL	YEAR	MB	MA	RM	MB	MA	RM	MB	MA	RM	MB	MA	RM
WELLS	1991	30.9	30.9	0.0	18.9	18.8	-0.3	35.5	35.4	-0.0	26.1	26.2	0.1
	1993	34.1	34.1	0.2	20.3	20.3	0.0	39.3	39.4	0.1	27.7	27.7	0.1
	1995	40.3	40.4	0.4	29.1	29.1	0.1	47.0	47.0	0.2	34.3	34.4	0.0
	1997	41.6	41.9	0.7	29.1	28.9	-0.6	47.9	48.0	0.2	34.3	34.3	0.1
	2001	40.7	40.8	0.4	28.7	28.7	0.1	47.2	47.3	0.3	34.1	34.2	0.1
	2005	40.9	41.0	0.1	27.8	27.9	0.4	47.5	47.6	0.3	34.3	34.4	0.2
RRECH	1991	33.1	33.1	-0.2	24.2	24.3	0.5	37.5	37.6	0.1	0.0	0.0	0.0
	1993	36.9	37.1	0.6	25.9	25.9	-0.0	41.3	41.4	0.1	0.0	0.0	0.0
	1995	45.1	45.5	1.0	34.7	34.8	0.3	49.5	49.6	0.1	0.0	0.0	0.0
	1997	46.8	47.2	0.8	33.8	34.0	0.4	50.2	50.3	0.1	0.0	0.0	0.0
	2001	45.4	45.7	0.8	34.0	34.2	0.5	49.8	49.9	0.2	0.0	0.0	0.0
	2005	45.8	46.4	1.1	34.2	34.5	0.8	49.9	50.1	0.3	0.0	0.0	0.0
RISL	1991	40.5	40.5	0.2	26.4	26.4	0.0	42.2	42.1	-0.0	34.1	34.1	0.0
	1993	40.8	41.0	0.4	26.6	26.6	0.1	42.7	42.6	-0.0	34.0	34.0	0.0
	1995	49.6	50.0	0.7	37.1	37.3	0.4	53.4	53.4	0.1	42.4	42.4	-0.0
	1997	51.6	52.1	1.0	37.0	37.0	-0.1	54.0	54.1	0.2	42.6	42.6	0.1
	2001	49.8	50.1	0.6	36.8	36.9	0.3	52.8	53.0	0.2	42.1	42.2	0.1
	2005	50.1	50.6	1.0	36.1	36.3	0.6	53.7	54.0	0.6	42.5	42.7	0.4
LWG	1991	83.0	83.0	0.0	59.9	59.8	-0.0	85.6	85.6	0.0	65.5	65.5	-0.0
	1993	82.2	82.2	0.0	60.1	60.1	-0.0	85.6	85.6	0.0	65.3	65.3	0.0
	1995	88.1	88.1	0.0	70.1	70.1	0.0	89.4	89.4	0.0	74.5	74.5	0.0
	1997	88.5	88.5	0.0	70.4	70.4	-0.0	89.5	89.5	0.0	74.4	74.4	0.0
	2001	88.3	88.3	0.0	70.8	70.7	-0.0	89.7	89.7	0.0	74.8	74.8	-0.0
	2005	87.7	87.7	0.0	70.1	70.1	-0.0	89.3	89.3	0.0	74.3	74.3	0.0
LWM	1991	33.3	33.4	0.2	27.1	27.1	-0.2	40.2	40.2	0.1	0.0	0.0	0.0
	1993	35.8	35.9	0.4	27.6	27.5	-0.2	44.1	44.2	0.3	0.0	0.0	0.0
	1995	38.0	38.2	0.7	33.4	33.4	-0.0	46.5	46.7	0.5	0.0	0.0	0.0
	1997	38.5	39.0	1.2	34.3	34.2	-0.3	46.9	47.1	0.6	0.0	0.0	0.0
	2001	38.3	38.6	0.6	34.6	34.6	0.1	47.1	47.3	0.5	0.0	0.0	0.0
	2005	38.7	39.0	0.8	32.6	32.6	-0.0	47.8	48.1	0.7	0.0	0.0	0.0
MCN	1991	59.6	59.7	0.1	42.7	42.7	-0.1	67.4	67.5	0.0	0.0	0.0	0.0
	1993	58.6	59.0	0.8	42.4	42.4	-0.0	66.4	66.6	0.2	0.0	0.0	0.0
	1995	64.6	64.7	0.0	53.1	53.2	0.3	73.0	73.1	0.2	0.0	0.0	0.0
	1997	66.7	67.3	0.8	53.1	53.2	0.1	74.2	74.5	0.4	0.0	0.0	0.0
	2001	64.6	65.0	0.7	53.1	53.2	0.2	72.8	73.1	0.4	0.0	0.0	0.0
	2005	64.6	65.5	1.4	52.3	52.6	0.6	73.0	73.4	0.5	0.0	0.0	0.0
JDAY	1991	54.8	54.7	-0.1	45.0	45.2	0.6	60.1	60.3	0.2	0.0	0.0	0.0
	1993	54.6	54.6	-0.1	44.3	44.3	0.1	59.5	59.5	0.1	0.0	0.0	0.0
	1995	53.9	53.8	-0.1	46.0	46.1	0.2	59.5	59.6	0.2	0.0	0.0	0.0
	1997	56.2	56.1	-0.2	44.6	44.6	-0.1	61.8	61.9	0.2	0.0	0.0	0.0
	2001	55.8	55.7	-0.0	45.6	45.8	0.4	61.8	61.9	0.2	0.0	0.0	0.0
	2005	56.5	56.6	0.2	44.7	45.1	0.8	61.9	62.2	0.5	0.0	0.0	0.0
DALS	1991	65.8	65.8	-0.1	54.9	54.9	-0.0	65.9	65.9	0.0	0.0	0.0	0.0
	1993	66.1	66.2	0.1	54.6	54.6	0.0	65.9	65.9	-0.1	0.0	0.0	0.0
	1995	65.8	65.9	0.1	55.3	55.3	-0.0	66.0	66.0	0.0	0.0	0.0	0.0
	1997	69.5	69.4	-0.1	56.2	56.0	-0.4	69.0	68.9	-0.1	0.0	0.0	0.0
	2001	68.9	68.9	0.1	56.1	56.1	-0.0	69.1	69.1	-0.0	0.0	0.0	0.0
	2005	69.0	69.3	0.4	54.8	54.9	0.1	68.9	69.1	0.2	0.0	0.0	0.0
BONN	1991	87.5	87.5	0.0	79.5	79.5	-0.0	83.4	83.4	0.0	0.0	0.0	0.0
	1993	87.4	87.5	0.1	79.5	79.6	0.1	83.2	83.3	0.0	0.0	0.0	0.0
	1995	87.1	87.2	0.1	79.6	79.7	0.0	82.9	82.9	0.0	0.0	0.0	0.0
	1997	87.2	87.2	0.0	78.5	78.5	-0.0	82.3	82.3	-0.0	0.0	0.0	0.0
	2001	87.0	87.0	0.1	78.1	78.1	0.0	82.0	82.0	0.0	0.0	0.0	0.0
	2005	87.1	87.2	0.2	78.2	78.3	0.1	82.4	82.5	0.1	0.0	0.0	0.0
SYS	1991	69.7	69.7	0.0	52.3	52.3	-0.0	72.7	72.7	0.0	50.6	50.6	0.0
	1993	69.9	70.0	0.1	52.2	52.3	0.0	72.9	72.9	0.0	50.9	50.9	0.0
	1995	73.6	73.8	0.2	58.4	58.5	0.2	76.7	76.7	0.1	59.3	59.3	0.0
	1997	74.6	74.7	0.2	58.0	58.0	0.0	77.2	77.3	0.1	59.3	59.3	0.0
	2001	73.8	74.0	0.2	57.9	58.0	0.1	77.1	77.2	0.1	59.4	59.4	0.1
	2005	73.9	74.1	0.3	57.4	57.6	0.4	77.0	77.2	0.2	59.3	59.3	0.1

LEGEND MB = MEAN SURVIVAL WITH BASE CASE CONDITIONS (%) (BASE CASE)
MA = MEAN SURVIVAL WITH ALTERNATIVE CONDITIONS (%) (ALTERNATIVE)
RM = RELATIVE CHANGE IN MEAN SURVIVAL (%)
(ALTERNATIVE SURVIVAL - BASE CASE SURVIVAL) / (BASE CASE SURVIVAL)

DATE RUN= 07DEC89:09:29:22

FREQUENCY OF RELATIVE SURVIVAL CHANGES
EXCEEDING ONE AND FIVE PERCENT

PROGRAM = DSN=PJI.PF400.RNR.SAS.REPORTS(FSUM)
FILE: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG
FILE: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG

	YEARLING				SUBYEARLING				STEELHEAD				SOCKEYE			
POOL	FI1/FI5		FD1/FD5		FI1/FI5		FD1/FD5		FI1/FI5		FD1/FD5		FI1/FI5		FD1/FD5	
WELLS	8/	0	5/	0	18/	3	15/	3	0/	0	3/	0	10/	0	3/	0
	8/	0	5/	0	30/	0	18/	0	15/	0	3/	0	8/	0	3/	0
	25/	0	10/	0	30/	5	33/	3	15/	0	8/	0	8/	0	13/	0
	20/	5	5/	0	23/	8	35/	5	13/	0	3/	0	8/	0	3/	0
	28/	0	3/	0	25/	5	18/	3	15/	0	0/	0	5/	0	5/	0
	23/	0	18/	0	40/	10	28/	3	23/	0	3/	0	20/	0	13/	0
RRECH	5/	3	15/	3	15/	8	8/	0	3/	0	0/	0	0/	0	0/	0
	20/	5	5/	0	10/	0	8/	0	3/	0	3/	0	0/	0	0/	0
	33/	10	10/	0	20/	0	8/	0	10/	0	3/	0	0/	0	0/	0
	33/	3	8/	0	15/	5	10/	0	0/	0	0/	0	0/	0	0/	0
	30/	5	8/	0	13/	5	3/	0	13/	0	3/	0	0/	0	0/	0
	43/	5	10/	0	25/	18	13/	0	10/	0	0/	0	0/	0	0/	0
RISL	3/	3	3/	0	20/	3	15/	0	8/	0	8/	0	5/	0	5/	0
	15/	3	3/	0	23/	0	15/	0	10/	0	8/	0	8/	0	3/	0
	28/	5	13/	0	33/	0	10/	0	15/	3	10/	0	8/	0	13/	0
	35/	8	10/	0	20/	5	33/	3	15/	0	5/	0	15/	0	5/	0
	25/	0	3/	0	25/	0	10/	0	10/	0	3/	0	13/	0	3/	0
	40/	5	13/	0	38/	10	23/	0	35/	0	10/	0	23/	0	0/	0
LWG	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0
LWM	8/	3	3/	0	15/	0	10/	3	3/	0	3/	0	0/	0	0/	0
	20/	0	0/	0	5/	0	10/	0	10/	0	0/	0	0/	0	0/	0
	35/	3	3/	0	23/	0	18/	0	20/	0	0/	0	0/	0	0/	0
	35/	5	3/	0	15/	0	20/	0	25/	0	0/	0	0/	0	0/	0
	28/	0	3/	0	23/	0	0/	0	15/	0	0/	0	0/	0	0/	0
	28/	3	3/	0	33/	0	15/	0	25/	0	0/	0	0/	0	0/	0
MCN	8/	3	8/	0	8/	0	13/	0	3/	0	0/	0	0/	0	0/	0
	13/	5	5/	0	3/	0	8/	0	8/	0	0/	0	0/	0	0/	0
	15/	0	10/	3	15/	0	5/	0	13/	0	3/	0	0/	0	0/	0
	20/	5	5/	0	15/	0	15/	0	8/	0	0/	0	0/	0	0/	0
	25/	3	0/	0	15/	0	3/	0	13/	0	0/	0	0/	0	0/	0
	45/	10	13/	0	28/	0	3/	0	23/	0	8/	0	0/	0	0/	0
JDAY	10/	0	10/	0	23/	8	8/	0	10/	0	3/	0	0/	0	0/	0
	13/	0	13/	0	10/	0	8/	0	0/	0	0/	0	0/	0	0/	0
	15/	0	20/	0	20/	3	15/	0	8/	0	3/	0	0/	0	0/	0
	18/	0	20/	0	13/	5	25/	0	10/	0	8/	0	0/	0	0/	0
	13/	0	18/	0	18/	5	10/	0	10/	0	0/	0	0/	0	0/	0
	30/	3	20/	0	25/	18	18/	0	18/	0	0/	0	0/	0	0/	0
DALS	13/	0	13/	0	10/	0	10/	0	10/	0	10/	0	0/	0	0/	0
	13/	0	5/	0	8/	0	8/	0	3/	0	0/	0	0/	0	0/	0
	15/	0	18/	0	13/	0	10/	0	20/	0	3/	0	0/	0	0/	0
	10/	0	13/	0	15/	0	28/	0	8/	0	8/	0	0/	0	0/	0
	13/	0	10/	0	18/	0	15/	0	10/	0	3/	0	0/	0	0/	0
	28/	0	8/	0	23/	0	15/	0	18/	0	0/	0	0/	0	0/	0
BONN	0/	0	0/	0	3/	0	3/	0	3/	0	0/	0	0/	0	0/	0
	0/	0	0/	0	3/	0	0/	0	3/	0	3/	0	0/	0	0/	0
	0/	0	0/	0	5/	0	0/	0	3/	0	5/	0	0/	0	0/	0
	0/	0	0/	0	0/	0	5/	0	0/	0	8/	0	0/	0	0/	0
	0/	0	0/	0	5/	0	0/	0	3/	0	0/	0	0/	0	0/	0
	0/	0	0/	0	8/	0	3/	0	8/	0	0/	0	0/	0	0/	0
SYS	3/	0	0/	0	5/	0	8/	0	0/	0	0/	0	0/	0	0/	0
	3/	0	0/	0	5/	0	3/	0	0/	0	0/	0	0/	0	0/	0
	3/	0	0/	0	8/	0	3/	0	0/	0	0/	0	0/	0	0/	0
	0/	0	0/	0	13/	0	8/	0	0/	0	0/	0	0/	0	0/	0
	0/	0	0/	0	13/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	8/	0	0/	0	23/	0	0/	0	0/	0	0/	0	0/	0	0/	0

LEGEND FI1 = PERCENT OF RELATIVE SURVIVAL INCREASES EXCEEDING ONE PERCENT
FI5 = PERCENT OF RELATIVE SURVIVAL INCREASES EXCEEDING FIVE PERCENT
FD1 = PERCENT OF RELATIVE SURVIVAL DECREASES EXCEEDING ONE PERCENT
FD5 = PERCENT OF RELATIVE SURVIVAL DECREASES EXCEEDING FIVE PERCENT

DATE RUN= 07DEC89:09:52:26

RELATIVE CHANGES IN SYSTEM STOCK SURVIVAL
EMXA1ADC VS EMXBAADC (BASE CASE)

PROGRAM = DSN=PJI.PF400.RNR.FISHPASS.SAS.REPORTS(FSUM156)
FILES: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG — RUN DATE: AUG/04/89
PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG — RUN DATE: AUG/02/89

		YEARLING			SUBYEARLING			STEELHEAD			SOCKEYE		
POOL	YEAR	MB	MA	RM	MB	MA	RM	MB	MA	RM	MB	MA	RM
WELLS	1991	30.9	31.0	0.2	18.8	18.5	-1.5	35.5	35.5	0.1	26.1	26.1	0.2
	1993	34.1	34.1	0.0	20.3	20.2	-0.7	39.3	39.3	0.0	27.7	27.7	-0.1
	1995	40.4	40.5	0.4	29.3	29.1	-0.9	47.0	47.1	0.3	34.4	34.4	-0.0
	1997	41.6	42.0	0.9	29.1	29.0	-0.6	47.8	48.0	0.3	34.3	34.3	-0.1
	2001	40.6	40.9	0.5	28.7	28.7	0.0	47.2	47.3	0.3	34.1	34.1	0.1
	2005	41.0	41.0	0.1	27.8	27.9	0.5	47.5	47.6	0.3	34.4	34.4	0.2
RRECH	1991	33.2	33.4	0.6	24.2	24.2	0.3	37.5	37.6	0.2	0.0	0.0	0.0
	1993	37.0	37.0	-0.0	25.8	25.8	0.1	41.4	41.4	0.0	0.0	0.0	0.0
	1995	45.2	45.9	1.6	34.8	34.8	-0.1	49.6	49.7	0.2	0.0	0.0	0.0
	1997	46.8	47.4	1.5	33.9	33.8	-0.1	50.2	50.3	0.2	0.0	0.0	0.0
	2001	45.3	45.7	0.8	34.0	34.1	0.3	49.7	49.8	0.2	0.0	0.0	0.0
	2005	45.9	46.3	1.0	34.2	34.4	0.7	49.9	50.1	0.2	0.0	0.0	0.0
RISL	1991	40.5	40.8	0.8	26.3	26.2	-0.6	42.2	42.2	0.0	34.1	34.1	0.1
	1993	41.0	41.0	0.0	26.5	26.5	-0.2	42.6	42.6	0.0	34.0	34.0	0.0
	1995	49.7	50.2	1.2	37.3	37.2	-0.2	53.4	53.5	0.1	42.5	42.6	0.2
	1997	51.5	52.2	1.3	37.0	37.0	-0.2	53.9	54.0	0.3	42.5	42.6	0.2
	2001	49.7	50.1	0.9	36.8	36.8	0.1	52.8	52.9	0.2	42.1	42.1	0.1
	2005	50.2	50.6	0.9	36.1	36.3	0.6	53.7	53.9	0.4	42.6	42.7	0.3
LWG	1991	83.0	83.0	0.0	59.8	59.8	-0.0	85.6	85.6	0.0	65.5	65.4	-0.0
	1993	82.2	82.2	-0.0	60.1	60.1	-0.1	85.6	85.6	0.0	65.3	65.3	-0.0
	1995	88.1	88.1	0.0	70.2	70.1	-0.0	89.4	89.4	0.0	74.5	74.5	0.0
	1997	88.5	88.5	0.0	70.4	70.4	-0.0	89.5	89.5	0.0	74.4	74.4	0.0
	2001	88.3	88.3	0.0	70.8	70.7	-0.0	89.7	89.7	0.0	74.8	74.8	-0.0
	2005	87.7	87.7	0.0	70.1	70.1	0.0	89.3	89.3	-0.0	74.4	74.4	-0.0
LWM	1991	33.3	33.4	0.2	26.9	26.9	-0.0	40.2	40.2	-0.0	0.0	0.0	0.0
	1993	35.9	36.0	0.1	27.5	27.4	-0.3	44.2	44.2	0.1	0.0	0.0	0.0
	1995	38.0	38.4	0.9	33.7	33.6	-0.4	46.5	46.8	0.7	0.0	0.0	0.0
	1997	38.5	39.0	1.2	34.4	34.2	-0.6	46.8	47.2	0.7	0.0	0.0	0.0
	2001	38.3	38.6	0.9	34.6	34.6	0.1	47.1	47.4	0.6	0.0	0.0	0.0
	2005	38.7	39.0	0.8	32.6	32.6	-0.1	47.8	48.1	0.7	0.0	0.0	0.0
MCN	1991	59.9	60.5	1.0	42.6	42.6	-0.2	67.6	67.6	0.1	0.0	0.0	0.0
	1993	59.0	59.0	-0.0	42.4	42.4	-0.0	66.6	66.6	0.0	0.0	0.0	0.0
	1995	64.7	64.9	0.4	53.2	53.3	0.1	73.0	73.2	0.3	0.0	0.0	0.0
	1997	66.7	67.3	0.9	53.1	53.2	0.2	74.1	74.5	0.5	0.0	0.0	0.0
	2001	64.4	65.2	1.2	53.1	53.2	0.2	72.8	73.1	0.5	0.0	0.0	0.0
	2005	64.5	65.5	1.5	52.3	52.6	0.6	73.1	73.4	0.4	0.0	0.0	0.0
JDAY	1991	54.9	54.8	-0.2	44.8	45.0	0.5	60.0	60.2	0.2	0.0	0.0	0.0
	1993	54.5	54.5	-0.1	44.4	44.4	-0.1	59.5	59.5	0.0	0.0	0.0	0.0
	1995	54.0	53.8	-0.3	46.2	46.1	-0.2	59.6	59.6	-0.0	0.0	0.0	0.0
	1997	56.1	56.1	-0.0	44.7	44.6	-0.3	61.8	61.8	-0.0	0.0	0.0	0.0
	2001	55.7	55.7	0.1	45.7	45.7	0.1	61.8	61.9	0.1	0.0	0.0	0.0
	2005	56.5	56.5	0.1	44.7	44.9	0.5	61.9	62.2	0.4	0.0	0.0	0.0
DALS	1991	66.1	66.0	-0.2	54.9	54.7	-0.3	65.9	65.8	-0.1	0.0	0.0	0.0
	1993	66.0	65.9	-0.1	54.6	54.6	-0.0	65.8	65.7	-0.1	0.0	0.0	0.0
	1995	65.9	65.7	-0.3	55.5	55.3	-0.5	66.1	65.9	-0.3	0.0	0.0	0.0
	1997	69.4	69.3	-0.1	56.2	56.0	-0.4	68.9	68.8	-0.1	0.0	0.0	0.0
	2001	68.7	68.8	0.2	56.1	56.0	-0.1	69.0	69.0	-0.0	0.0	0.0	0.0
	2005	68.9	69.2	0.4	54.8	54.9	0.1	68.8	68.9	0.1	0.0	0.0	0.0
BONN	1991	87.6	87.6	0.0	79.6	79.6	-0.0	83.5	83.5	0.0	0.0	0.0	0.0
	1993	87.5	87.5	0.0	79.5	79.5	-0.0	83.2	83.3	0.0	0.0	0.0	0.0
	1995	87.1	87.1	0.0	79.6	79.6	-0.0	82.9	82.9	0.0	0.0	0.0	0.0
	1997	87.2	87.2	-0.0	78.5	78.4	-0.0	82.3	82.3	0.0	0.0	0.0	0.0
	2001	86.9	87.0	0.1	78.0	78.1	0.1	82.0	82.0	0.0	0.0	0.0	0.0
	2005	87.0	87.2	0.2	78.2	78.3	0.1	82.4	82.5	0.1	0.0	0.0	0.0
SYS	1991	69.8	69.8	0.1	52.3	52.2	-0.1	72.7	72.7	0.0	50.6	50.6	0.0
	1993	70.0	70.0	0.0	52.3	52.2	-0.0	72.9	72.9	0.0	50.9	50.9	-0.0
	1995	73.7	73.8	0.2	58.6	58.5	-0.0	76.7	76.7	0.1	59.4	59.4	0.0
	1997	74.5	74.7	0.3	58.0	58.0	0.0	77.2	77.3	0.1	59.3	59.3	0.0
	2001	73.8	74.0	0.2	57.9	58.0	0.2	77.1	77.2	0.1	59.4	59.4	0.0
	2005	73.9	74.1	0.3	57.4	57.6	0.4	77.0	77.2	0.1	59.3	59.3	0.1

LEGEND
MB = MEAN SURVIVAL WITH BASE CASE CONDITIONS (%) (BASE CASE)
MA = MEAN SURVIVAL WITH ALTERNATIVE CONDITIONS (%) (ALTERNATIVE)
RM = RELATIVE CHANGE IN MEAN SURVIVAL (%)
(ALTERNATIVE SURVIVAL - BASE CASE SURVIVAL) / (BASE CASE SURVIVAL)

DATE RUN= 07DEC89:09:32:46

FREQUENCY OF RELATIVE SURVIVAL CHANGES
EXCEEDING ONE AND FIVE PERCENT

PROGRAM = DSN=PJI.PF400.RNR.SAS.REPORTS(FSUM)
FILE: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG
FILE: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG

	YEARLING		SUBYEARLING		STEELHEAD		SOCKEYE	
POOL	FI1/FI5	FD1/FD5	FI1/FI5	FD1/FD5	FI1/FI5	FD1/FD5	FI1/FI5	FD1/FD5
WELLS	10/ 0	10/ 0	8/ 0	30/ 10	8/ 0	3/ 0	15/ 0	3/ 0
	3/ 0	3/ 0	35/ 0	35/ 5	5/ 0	3/ 0	0/ 0	5/ 0
	20/ 0	5/ 0	23/ 3	40/ 3	18/ 0	10/ 0	0/ 0	8/ 0
	30/ 5	3/ 0	18/ 5	35/ 3	15/ 0	0/ 0	0/ 0	8/ 0
	23/ 3	0/ 0	20/ 5	18/ 3	15/ 0	0/ 0	0/ 0	3/ 0
	23/ 0	13/ 0	38/ 10	30/ 0	23/ 0	3/ 0	10/ 0	8/ 0
RRECH	23/ 10	13/ 0	23/ 3	18/ 0	8/ 0	0/ 0	0/ 0	0/ 0
	5/ 0	3/ 0	8/ 0	10/ 0	3/ 0	0/ 0	0/ 0	0/ 0
	33/ 13	5/ 0	5/ 0	13/ 0	8/ 0	0/ 0	0/ 0	0/ 0
	40/ 5	3/ 0	5/ 0	13/ 0	5/ 0	0/ 0	0/ 0	0/ 0
	28/ 5	3/ 0	15/ 0	3/ 0	15/ 0	0/ 0	0/ 0	0/ 0
	43/ 5	13/ 0	23/ 10	3/ 0	13/ 0	0/ 0	0/ 0	0/ 0
RISL	20/ 10	3/ 0	20/ 0	28/ 3	18/ 0	10/ 0	8/ 0	10/ 0
	5/ 0	0/ 0	25/ 0	23/ 3	5/ 0	0/ 0	5/ 0	5/ 0
	35/ 10	5/ 0	25/ 3	30/ 0	10/ 0	5/ 0	10/ 0	3/ 0
	40/ 8	3/ 0	15/ 0	20/ 0	13/ 0	5/ 0	8/ 0	3/ 0
	30/ 3	0/ 0	23/ 0	13/ 0	13/ 0	0/ 0	10/ 0	5/ 0
	40/ 5	10/ 0	35/ 5	15/ 0	28/ 0	10/ 0	20/ 0	0/ 0
LWG	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
LWM	15/ 0	8/ 0	15/ 3	15/ 3	8/ 0	10/ 0	0/ 0	0/ 0
	3/ 0	0/ 0	5/ 0	15/ 0	3/ 0	0/ 0	0/ 0	0/ 0
	33/ 3	0/ 0	8/ 0	20/ 3	30/ 0	0/ 0	0/ 0	0/ 0
	38/ 5	0/ 0	10/ 0	18/ 3	30/ 0	0/ 0	0/ 0	0/ 0
	30/ 3	0/ 0	13/ 0	0/ 0	20/ 0	0/ 0	0/ 0	0/ 0
	33/ 3	3/ 0	20/ 0	13/ 0	20/ 0	0/ 0	0/ 0	0/ 0
MCN	28/ 10	0/ 0	8/ 0	10/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	8/ 0	5/ 3	0/ 0	15/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	18/ 3	3/ 3	8/ 0	8/ 0	18/ 0	0/ 0	0/ 0	0/ 0
	23/ 5	5/ 0	10/ 0	5/ 0	15/ 0	0/ 0	0/ 0	0/ 0
	35/ 10	0/ 0	18/ 0	5/ 0	20/ 0	0/ 0	0/ 0	0/ 0
	40/ 15	10/ 0	25/ 0	3/ 0	20/ 0	10/ 0	0/ 0	0/ 0
JDAY	18/ 0	18/ 0	23/ 8	15/ 0	20/ 0	0/ 0	0/ 0	0/ 0
	5/ 0	8/ 0	10/ 0	13/ 0	3/ 0	0/ 0	0/ 0	0/ 0
	13/ 0	25/ 0	15/ 3	20/ 0	3/ 0	3/ 0	0/ 0	0/ 0
	10/ 0	20/ 0	8/ 0	20/ 0	0/ 0	8/ 0	0/ 0	0/ 0
	15/ 0	10/ 0	13/ 0	15/ 0	5/ 0	3/ 0	0/ 0	0/ 0
	28/ 3	20/ 3	20/ 13	23/ 0	13/ 0	0/ 0	0/ 0	0/ 0
DALS	15/ 0	18/ 0	8/ 0	10/ 0	5/ 0	10/ 0	0/ 0	0/ 0
	3/ 0	8/ 0	13/ 0	8/ 0	3/ 0	3/ 0	0/ 0	0/ 0
	3/ 0	15/ 0	5/ 0	23/ 0	5/ 0	13/ 0	0/ 0	0/ 0
	8/ 0	18/ 0	8/ 0	18/ 0	3/ 0	10/ 0	0/ 0	0/ 0
	10/ 0	8/ 0	10/ 0	13/ 0	5/ 0	3/ 0	0/ 0	0/ 0
	20/ 3	15/ 0	15/ 0	8/ 0	13/ 0	3/ 0	0/ 0	0/ 0
BONN	0/ 0	0/ 0	3/ 0	3/ 0	5/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	3/ 0	3/ 0	3/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	3/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	3/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	3/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	3/ 0	0/ 0	5/ 0	3/ 0	3/ 0	3/ 0	0/ 0	0/ 0
SYS	0/ 0	0/ 0	5/ 0	5/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	5/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	5/ 0	0/ 0	3/ 0	3/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	3/ 0	0/ 0	5/ 0	3/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	3/ 0	0/ 0	8/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	8/ 0	0/ 0	18/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0

LEGEND
FI1 = PERCENT OF RELATIVE SURVIVAL INCREASES EXCEEDING ONE PERCENT
FI5 = PERCENT OF RELATIVE SURVIVAL INCREASES EXCEEDING FIVE PERCENT
FD1 = PERCENT OF RELATIVE SURVIVAL DECREASES EXCEEDING ONE PERCENT
FD5 = PERCENT OF RELATIVE SURVIVAL DECREASES EXCEEDING FIVE PERCENT

DATE RUN= 07DEC89:10:25:07

RELATIVE CHANGES IN SYSTEM STOCK SURVIVAL
GMXA1SAS VS GMXBASAS (BASE CASE)

PROGRAM = DSN=PJI.PF400.RNR.FISHPASS.SAS.REPORTS(FSUM156)
FILES: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG RUN DATE: AUG/03/89
PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG RUN DATE: AUG/03/89

		YEARLING			SUBYEARLING			STEELHEAD			SOCKEYE		
POOL	YEAR	MB	MA	RM	MB	MA	RM	MB	MA	RM	MB	MA	RM
WELLS	1991	31.5	31.4	-0.0	19.1	18.9	-1.0	36.0	36.0	-0.0	26.5	26.5	-0.1
	1993	34.7	34.8	0.1	20.6	20.4	-0.9	39.9	39.9	0.1	28.1	28.1	0.0
	1995	41.1	41.3	0.4	29.6	29.4	-0.8	47.6	47.8	0.2	34.9	34.9	0.1
	1997	42.3	42.6	0.8	29.5	29.2	-0.9	48.4	48.6	0.3	34.7	34.7	0.0
	2001	41.3	41.5	0.4	29.0	29.2	0.6	47.8	47.9	0.3	34.5	34.6	0.3
	2005	41.6	41.7	0.1	28.1	28.2	0.3	48.1	48.2	0.3	34.8	34.8	0.1
RRECH	1991	33.1	33.2	0.0	24.3	24.2	-0.0	37.7	37.7	-0.1	0.0	0.0	0.0
	1993	37.0	37.1	0.2	25.8	25.8	0.0	41.4	41.5	0.1	0.0	0.0	0.0
	1995	45.2	45.8	1.2	34.8	34.8	0.0	49.6	49.7	0.2	0.0	0.0	0.0
	1997	46.8	47.3	1.1	34.0	34.0	0.1	50.2	50.3	0.2	0.0	0.0	0.0
	2001	45.3	45.7	0.7	34.1	34.5	1.0	49.7	49.8	0.3	0.0	0.0	0.0
	2005	46.0	46.3	0.7	34.3	34.5	0.6	49.9	50.0	0.2	0.0	0.0	0.0
RISL	1991	40.6	40.7	0.2	26.4	26.3	-0.5	42.1	42.2	0.0	34.2	34.2	0.0
	1993	41.0	41.1	0.3	26.6	26.5	-0.3	42.6	42.6	-0.0	34.1	34.1	-0.0
	1995	49.8	50.2	0.9	37.3	37.2	-0.3	53.4	53.5	0.2	42.6	42.6	0.1
	1997	51.5	52.2	1.2	37.1	37.0	-0.4	53.8	54.0	0.3	42.5	42.6	0.3
	2001	49.8	50.0	0.5	36.9	37.1	0.7	52.8	52.9	0.2	42.1	42.2	0.3
	2005	50.2	50.6	0.7	36.1	36.3	0.4	53.7	53.8	0.2	42.6	42.7	0.2
LWG	1991	83.0	83.0	-0.0	59.9	59.9	-0.0	85.7	85.7	-0.0	65.6	65.6	0.0
	1993	82.2	82.2	0.0	60.1	60.1	-0.1	85.6	85.6	0.0	65.3	65.3	0.0
	1995	88.1	88.1	0.0	70.2	70.1	-0.0	89.4	89.4	0.0	74.5	74.5	0.0
	1997	88.5	88.5	0.0	70.4	70.4	-0.0	89.5	89.5	0.0	74.4	74.4	-0.0
	2001	88.3	88.3	0.0	70.8	70.7	-0.0	89.7	89.7	0.0	74.8	74.8	0.0
	2005	87.7	87.7	0.0	70.1	70.1	-0.0	89.3	89.3	0.0	74.3	74.3	0.0
LMM	1991	34.7	34.7	0.1	28.3	28.1	-0.5	41.9	41.9	-0.0	0.0	0.0	0.0
	1993	35.9	36.0	0.3	27.5	27.4	-0.3	44.2	44.3	0.3	0.0	0.0	0.0
	1995	38.1	38.4	0.8	33.7	33.5	-0.4	46.5	46.8	0.7	0.0	0.0	0.0
	1997	38.5	39.0	1.1	34.4	34.2	-0.6	46.8	47.1	0.6	0.0	0.0	0.0
	2001	38.3	38.6	0.8	34.7	34.7	0.2	47.1	47.3	0.6	0.0	0.0	0.0
	2005	38.7	39.0	0.7	32.7	32.7	-0.0	47.8	48.1	0.5	0.0	0.0	0.0
MCN	1991	59.7	60.0	0.5	42.8	42.6	-0.3	67.6	67.6	0.1	0.0	0.0	0.0
	1993	58.9	59.0	0.2	42.5	42.4	-0.2	66.6	66.7	0.1	0.0	0.0	0.0
	1995	64.7	64.8	0.1	53.3	53.3	-0.0	73.0	73.2	0.3	0.0	0.0	0.0
	1997	66.6	67.2	1.0	53.2	53.3	0.1	74.1	74.5	0.5	0.0	0.0	0.0
	2001	64.6	65.0	0.6	53.2	53.4	0.3	72.8	73.0	0.4	0.0	0.0	0.0
	2005	64.6	65.3	1.1	52.4	52.6	0.5	73.1	73.3	0.3	0.0	0.0	0.0
JDAY	1991	54.9	54.8	-0.1	45.3	45.4	0.3	60.9	61.0	0.1	0.0	0.0	0.0
	1993	54.7	54.6	-0.1	44.6	44.6	0.0	60.2	60.2	0.1	0.0	0.0	0.0
	1995	54.1	54.1	-0.1	46.5	46.5	-0.1	60.4	60.5	0.2	0.0	0.0	0.0
	1997	56.0	56.0	-0.0	44.9	44.8	-0.3	61.8	61.9	0.1	0.0	0.0	0.0
	2001	55.7	55.6	-0.2	45.9	46.2	0.6	61.9	62.1	0.5	0.0	0.0	0.0
	2005	56.6	56.4	-0.3	45.0	45.2	0.5	62.0	62.3	0.5	0.0	0.0	0.0
DALS	1991	66.2	66.1	-0.2	55.5	55.4	-0.2	66.4	66.3	-0.1	0.0	0.0	0.0
	1993	66.2	66.1	-0.1	55.3	55.2	-0.1	66.3	66.2	-0.1	0.0	0.0	0.0
	1995	66.2	66.2	0.0	56.2	55.9	-0.5	66.7	66.6	-0.1	0.0	0.0	0.0
	1997	69.3	69.3	-0.0	56.2	56.0	-0.5	68.9	68.8	-0.1	0.0	0.0	0.0
	2001	68.8	68.8	-0.1	56.1	56.1	0.1	69.1	69.0	-0.1	0.0	0.0	0.0
	2005	69.1	69.1	0.0	54.8	54.9	0.0	68.9	68.9	-0.0	0.0	0.0	0.0
BONN	1991	87.5	87.5	0.0	79.5	79.5	-0.0	83.4	83.4	0.0	0.0	0.0	0.0
	1993	87.5	87.5	0.0	79.5	79.5	-0.0	83.2	83.2	0.0	0.0	0.0	0.0
	1995	87.1	87.2	0.1	79.6	79.6	0.0	82.9	82.9	0.0	0.0	0.0	0.0
	1997	87.2	87.2	0.0	78.4	78.4	0.0	82.2	82.2	0.0	0.0	0.0	0.0
	2001	87.0	87.0	0.0	78.1	78.0	-0.1	82.0	81.9	-0.0	0.0	0.0	0.0
	2005	87.1	87.2	0.1	78.2	78.2	0.0	82.5	82.5	-0.0	0.0	0.0	0.0
SYS	1991	69.8	69.8	0.0	52.4	52.3	-0.1	72.9	72.9	0.0	50.8	50.8	-0.0
	1993	70.0	70.1	0.1	52.3	52.3	-0.1	73.1	73.1	0.0	51.0	51.0	-0.0
	1995	73.7	73.9	0.2	58.6	58.6	-0.0	76.8	76.9	0.1	59.5	59.5	0.0
	1997	74.6	74.7	0.3	58.1	58.1	-0.0	77.3	77.3	0.1	59.4	59.4	0.0
	2001	73.9	74.0	0.1	58.0	58.1	0.2	77.1	77.2	0.1	59.5	59.6	0.1
	2005	74.0	74.1	0.2	57.5	57.6	0.3	77.1	77.2	0.1	59.4	59.4	0.1

LEGEND
MB = MEAN SURVIVAL WITH BASE CASE CONDITIONS (%) (BASE CASE)
MA = MEAN SURVIVAL WITH ALTERNATIVE CONDITIONS (%) (ALTERNATIVE)
RM = RELATIVE CHANGE IN MEAN SURVIVAL (%)
(ALTERNATIVE SURVIVAL - BASE CASE SURVIVAL) / (BASE CASE SURVIVAL)

DATE RUN= 07DEC89:09:34:44

FREQUENCY OF RELATIVE SURVIVAL CHANGES
EXCEEDING ONE AND FIVE PERCENT

PROGRAM = DSN=PJI.PF400.RNR.SAS.REPORTS(FSUM)
FILE: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG
FILE: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG

	YEARLING		SUBYEARLING		STEELHEAD		SOCKEYE	
POOL	FI1/FI5	FD1/FD5	FI1/FI5	FD1/FD5	FI1/FI5	FD1/FD5	FI1/FI5	FD1/FD5
WELLS	5/ 0	5/ 0	10/ 0	38/ 8	0/ 0	3/ 0	5/ 0	10/ 0
	5/ 0	5/ 0	25/ 3	25/ 10	5/ 0	5/ 0	5/ 0	3/ 0
	28/ 0	5/ 0	18/ 5	40/ 3	15/ 0	3/ 0	13/ 0	5/ 0
	25/ 5	3/ 0	18/ 8	50/ 5	18/ 0	0/ 0	3/ 0	3/ 0
	28/ 0	0/ 0	30/ 20	25/ 3	18/ 0	0/ 0	20/ 0	3/ 0
	23/ 0	15/ 0	35/ 8	28/ 3	18/ 0	3/ 0	15/ 0	8/ 0
RRECH	10/ 0	10/ 0	18/ 0	20/ 0	0/ 0	3/ 0	0/ 0	0/ 0
	10/ 0	5/ 0	8/ 0	8/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	38/ 10	10/ 0	15/ 3	15/ 0	10/ 0	3/ 0	0/ 0	0/ 0
	43/ 3	5/ 0	10/ 5	15/ 0	3/ 0	0/ 0	0/ 0	0/ 0
	28/ 3	3/ 0	18/ 13	5/ 0	18/ 0	0/ 0	0/ 0	0/ 0
	35/ 3	13/ 0	18/ 15	13/ 3	13/ 0	0/ 0	0/ 0	0/ 0
RISL	10/ 0	0/ 0	13/ 0	30/ 0	8/ 0	8/ 0	5/ 0	3/ 0
	10/ 0	3/ 0	18/ 0	23/ 0	5/ 0	5/ 0	5/ 0	5/ 0
	30/ 8	8/ 0	15/ 0	28/ 0	18/ 0	10/ 0	15/ 0	13/ 0
	40/ 5	3/ 0	15/ 3	35/ 0	15/ 0	3/ 0	15/ 0	0/ 0
	28/ 0	3/ 0	25/ 15	25/ 0	8/ 0	3/ 0	15/ 0	0/ 0
	35/ 5	10/ 0	33/ 10	25/ 0	18/ 0	10/ 0	15/ 0	3/ 0
LWG	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
LMM	10/ 0	3/ 0	8/ 0	23/ 0	0/ 0	3/ 0	0/ 0	0/ 0
	13/ 0	0/ 0	8/ 0	13/ 0	13/ 0	0/ 0	0/ 0	0/ 0
	33/ 3	0/ 0	15/ 0	18/ 3	25/ 0	0/ 0	0/ 0	0/ 0
	38/ 5	5/ 0	10/ 0	28/ 0	30/ 0	0/ 0	0/ 0	0/ 0
	33/ 0	0/ 0	25/ 0	8/ 0	18/ 0	0/ 0	0/ 0	0/ 0
	30/ 3	3/ 0	30/ 0	15/ 0	20/ 0	3/ 0	0/ 0	0/ 0
MCN	15/ 8	3/ 0	8/ 0	18/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	8/ 0	5/ 0	0/ 0	15/ 0	8/ 0	0/ 0	0/ 0	0/ 0
	18/ 3	10/ 5	10/ 0	5/ 0	18/ 0	3/ 0	0/ 0	0/ 0
	25/ 8	0/ 0	18/ 0	13/ 0	13/ 0	0/ 0	0/ 0	0/ 0
	20/ 3	0/ 0	23/ 0	8/ 0	15/ 0	0/ 0	0/ 0	0/ 0
	30/ 10	8/ 0	23/ 0	5/ 0	18/ 0	8/ 0	0/ 0	0/ 0
JDAY	5/ 0	13/ 0	20/ 5	15/ 0	8/ 0	3/ 0	0/ 0	0/ 0
	8/ 0	10/ 0	8/ 3	8/ 0	3/ 0	0/ 0	0/ 0	0/ 0
	25/ 0	23/ 0	18/ 0	30/ 0	8/ 0	3/ 0	0/ 0	0/ 0
	23/ 0	20/ 0	13/ 5	28/ 0	8/ 0	8/ 0	0/ 0	0/ 0
	5/ 0	15/ 0	20/ 13	15/ 0	15/ 0	0/ 0	0/ 0	0/ 0
	18/ 0	20/ 5	18/ 15	23/ 3	20/ 0	3/ 0	0/ 0	0/ 0
DALS	5/ 0	15/ 0	3/ 0	8/ 0	8/ 0	8/ 0	0/ 0	0/ 0
	8/ 0	8/ 0	5/ 0	13/ 0	5/ 0	5/ 0	0/ 0	0/ 0
	18/ 0	15/ 0	8/ 0	23/ 0	13/ 0	5/ 0	0/ 0	0/ 0
	10/ 0	13/ 0	15/ 0	38/ 0	3/ 0	10/ 0	0/ 0	0/ 0
	5/ 0	13/ 0	23/ 0	20/ 0	10/ 0	0/ 0	0/ 0	0/ 0
	15/ 0	10/ 0	20/ 0	15/ 0	8/ 0	0/ 0	0/ 0	0/ 0
BONN	0/ 0	0/ 0	3/ 0	0/ 0	5/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	3/ 0	0/ 0	3/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	3/ 0	0/ 0	3/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	3/ 0	0/ 0	5/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	5/ 0	0/ 0	5/ 0	0/ 0	0/ 0
SYS	0/ 0	0/ 0	3/ 0	5/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	8/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	3/ 0	0/ 0	5/ 0	3/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	8/ 0	8/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	20/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	5/ 0	0/ 0	20/ 0	3/ 0	0/ 0	0/ 0	0/ 0	0/ 0

LEGEND
FI1 = PERCENT OF RELATIVE SURVIVAL INCREASES EXCEEDING ONE PERCENT
FI5 = PERCENT OF RELATIVE SURVIVAL INCREASES EXCEEDING FIVE PERCENT
FD1 = PERCENT OF RELATIVE SURVIVAL DECREASES EXCEEDING ONE PERCENT
FD5 = PERCENT OF RELATIVE SURVIVAL DECREASES EXCEEDING FIVE PERCENT

DATE RUN= 07DEC89:10:37:07

RELATIVE CHANGES IN SYSTEM STOCK SURVIVAL
EMXA1E03 VS AMXBAARO (BASE CASE)

PROGRAM = DSN=PJI.PF400.RNR.FISHPASS.SAS.REPORTS(FSUM56)
FILES: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG — RUN DATE: AUG/04/89
PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG — RUN DATE: AUG/02/89

		YEARLING			SUBYEARLING			STEELHEAD			SOCKEYE		
POOL	YEAR	MB	MA	RM	MB	MA	RM	MB	MA	RM	MB	MA	RM
WELLS	1991	30.9	30.9	0.0	18.9	18.7	-0.8	35.5	35.5	0.0	26.2	26.2	-0.1
	1993	34.1	34.2	0.1	20.4	20.2	-0.8	39.3	39.3	0.0	27.7	27.7	-0.0
	1995	40.3	40.5	0.5	29.3	29.1	-0.8	47.0	47.1	0.3	34.4	34.4	0.0
	1997	41.6	42.0	0.8	29.2	28.9	-0.8	47.8	48.0	0.3	34.3	34.3	0.0
	2001	40.7	40.8	0.5	28.7	28.8	0.5	47.2	47.3	0.3	34.1	34.2	0.4
	2005	41.0	41.1	0.2	27.8	27.8	-0.0	47.5	47.6	0.2	34.4	34.4	0.0
RRECH	1991	33.1	33.2	0.2	24.3	24.2	-0.2	37.6	37.6	0.0	0.0	0.0	0.0
	1993	36.9	37.1	0.4	25.8	25.8	-0.1	41.3	41.4	0.1	0.0	0.0	0.0
	1995	45.1	45.7	1.3	34.8	34.8	0.0	49.6	49.6	0.1	0.0	0.0	0.0
	1997	46.8	47.3	1.1	33.9	33.9	-0.0	50.2	50.3	0.2	0.0	0.0	0.0
	2001	45.3	45.6	0.7	34.0	34.4	1.0	49.7	49.8	0.2	0.0	0.0	0.0
	2005	45.9	46.1	0.3	34.2	34.1	-0.2	49.9	50.0	0.1	0.0	0.0	0.0
RISL	1991	40.5	40.6	0.2	26.4	26.2	-0.5	42.1	42.1	0.0	34.1	34.1	0.0
	1993	40.9	41.1	0.4	26.6	26.5	-0.3	42.6	42.6	-0.0	34.0	34.0	0.0
	1995	49.6	50.1	1.0	37.3	37.2	-0.3	53.4	53.5	0.2	42.5	42.5	0.0
	1997	51.5	52.2	1.3	37.1	36.9	-0.3	53.9	54.0	0.3	42.5	42.6	0.2
	2001	49.7	50.0	0.6	36.8	37.1	0.7	52.8	52.9	0.2	42.1	42.2	0.3
	2005	50.2	50.4	0.4	36.1	36.0	-0.1	53.7	53.8	0.1	42.6	42.7	0.1
LWG	1991	83.0	83.0	-0.0	59.8	59.8	-0.0	85.7	85.6	-0.0	65.5	65.5	-0.0
	1993	82.2	82.2	0.0	60.1	60.1	-0.1	85.6	85.6	0.0	65.3	65.3	0.0
	1995	88.1	88.1	0.0	70.2	70.1	-0.0	89.4	89.4	0.0	74.5	74.5	0.0
	1997	88.5	88.5	0.0	70.4	70.4	-0.0	89.5	89.5	-0.0	74.4	74.4	0.0
	2001	88.3	88.3	-0.0	70.8	70.7	-0.0	89.7	89.7	0.0	74.8	74.8	0.0
	2005	87.7	87.7	0.0	70.1	70.1	-0.0	89.3	89.3	0.0	74.3	74.3	0.0
LWM	1991	33.3	33.3	-0.1	27.2	26.9	-0.9	40.2	40.2	-0.1	0.0	0.0	0.0
	1993	35.8	36.0	0.4	27.5	27.4	-0.6	44.1	44.3	0.3	0.0	0.0	0.0
	1995	38.0	38.4	0.9	33.7	33.5	-0.4	46.5	46.8	0.7	0.0	0.0	0.0
	1997	38.5	39.0	1.2	34.5	34.2	-0.7	46.8	47.1	0.6	0.0	0.0	0.0
	2001	38.3	38.6	0.8	34.6	34.7	0.3	47.1	47.3	0.6	0.0	0.0	0.0
	2005	38.7	38.9	0.5	32.7	32.6	-0.2	47.8	48.0	0.4	0.0	0.0	0.0
MCN	1991	59.7	59.9	0.5	42.7	42.6	-0.3	67.5	67.5	0.1	0.0	0.0	0.0
	1993	58.8	59.0	0.3	42.4	42.3	-0.2	66.5	66.6	0.2	0.0	0.0	0.0
	1995	64.7	64.7	0.1	53.2	53.2	0.0	73.0	73.2	0.3	0.0	0.0	0.0
	1997	66.6	67.2	1.0	53.2	53.2	0.1	74.1	74.5	0.5	0.0	0.0	0.0
	2001	64.6	65.0	0.6	53.1	53.3	0.3	72.8	73.0	0.4	0.0	0.0	0.0
	2005	64.6	65.0	0.5	52.3	52.3	0.0	73.1	73.2	0.2	0.0	0.0	0.0
JDAY	1991	54.8	54.7	-0.1	45.1	45.0	-0.1	60.2	60.2	0.0	0.0	0.0	0.0
	1993	54.6	54.5	-0.1	44.4	44.3	-0.1	59.5	59.5	0.0	0.0	0.0	0.0
	1995	54.0	53.9	-0.2	46.2	46.2	-0.1	59.6	59.7	0.1	0.0	0.0	0.0
	1997	56.0	56.0	-0.1	44.8	44.6	-0.4	61.8	61.9	0.1	0.0	0.0	0.0
	2001	55.7	55.6	-0.2	45.6	46.0	0.8	61.8	62.1	0.4	0.0	0.0	0.0
	2005	56.6	56.6	-0.1	44.8	44.7	-0.2	61.9	62.0	0.0	0.0	0.0	0.0
DALS	1991	66.0	65.9	-0.2	55.0	54.8	-0.3	65.9	65.8	-0.1	0.0	0.0	0.0
	1993	66.0	65.9	-0.1	54.7	54.6	-0.2	65.9	65.7	-0.2	0.0	0.0	0.0
	1995	65.9	65.9	0.0	55.5	55.3	-0.4	66.1	66.0	-0.1	0.0	0.0	0.0
	1997	69.4	69.3	-0.0	56.3	56.0	-0.5	68.9	68.8	-0.1	0.0	0.0	0.0
	2001	68.8	68.7	-0.1	56.1	56.2	0.1	69.1	69.0	-0.1	0.0	0.0	0.0
	2005	69.1	69.1	-0.0	54.8	54.8	-0.1	69.0	68.9	-0.1	0.0	0.0	0.0
BONN	1991	87.5	87.5	0.0	79.5	79.5	-0.0	83.4	83.4	0.0	0.0	0.0	0.0
	1993	87.5	87.5	0.0	79.5	79.5	-0.0	83.2	83.3	0.0	0.0	0.0	0.0
	1995	87.1	87.2	0.1	79.6	79.6	0.0	82.9	82.9	0.0	0.0	0.0	0.0
	1997	87.2	87.2	0.0	78.4	78.5	0.0	82.2	82.2	-0.0	0.0	0.0	0.0
	2001	87.0	87.0	0.0	78.1	78.0	-0.1	82.0	81.9	-0.0	0.0	0.0	0.0
	2005	87.1	87.1	0.0	78.2	78.2	-0.0	82.5	82.5	0.0	0.0	0.0	0.0
SYS	1991	69.7	69.7	0.0	52.3	52.2	-0.2	72.7	72.7	0.0	50.6	50.6	-0.0
	1993	70.0	70.0	0.1	52.3	52.2	-0.2	72.9	72.9	0.0	50.9	50.9	-0.0
	1995	73.6	73.8	0.2	58.5	58.5	-0.0	76.7	76.7	0.1	59.4	59.4	0.0
	1997	74.5	74.7	0.3	58.0	58.0	-0.0	77.2	77.3	0.1	59.3	59.3	0.0
	2001	73.8	73.9	0.1	57.9	58.0	0.2	77.1	77.2	0.1	59.4	59.5	0.1
	2005	73.9	74.0	0.1	57.4	57.4	-0.0	77.1	77.1	0.1	59.3	59.3	0.0

LEGEND
MB = MEAN SURVIVAL WITH BASE CASE CONDITIONS (%) (BASE CASE)
MA = MEAN SURVIVAL WITH ALTERNATIVE CONDITIONS (%) (ALTERNATIVE)
RM = RELATIVE CHANGE IN MEAN SURVIVAL (%)
(ALTERNATIVE SURVIVAL - BASE CASE SURVIVAL) / (BASE CASE SURVIVAL)

DATE RUN= 07DEC89:09:39:07

FREQUENCY OF RELATIVE SURVIVAL CHANGES
EXCEEDING ONE AND FIVE PERCENT

PROGRAM = DSN=PJI.PF400.RNR.SAS.REPORTS(FSUM)
FILE: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG
FILE: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG

	YEARLING		SUBYEARLING		STEELHEAD		SOCKEYE	
POOL	FI1/FI5	FD1/FD5	FI1/FI5	FD1/FD5	FI1/FI5	FD1/FD5	FI1/FI5	FD1/FD5
WELLS	3/ 0	5/ 0	10/ 0	35/ 5	3/ 0	3/ 0	3/ 0	5/ 0
	3/ 0	3/ 0	25/ 3	30/ 5	8/ 0	5/ 0	3/ 0	3/ 0
	28/ 0	8/ 0	18/ 5	43/ 3	15/ 0	5/ 0	8/ 0	10/ 0
	23/ 5	5/ 0	23/ 8	43/ 5	15/ 0	0/ 0	3/ 0	5/ 0
	30/ 0	0/ 0	30/ 20	28/ 3	18/ 0	0/ 0	18/ 0	3/ 0
	13/ 0	0/ 0	3/ 0	3/ 0	13/ 0	0/ 0	0/ 0	0/ 0
RRECH	13/ 0	8/ 0	13/ 0	18/ 0	3/ 0	3/ 0	0/ 0	0/ 0
	13/ 0	5/ 0	8/ 0	13/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	35/ 10	8/ 0	15/ 3	18/ 0	10/ 0	3/ 0	0/ 0	0/ 0
	40/ 3	5/ 0	10/ 5	23/ 0	3/ 0	0/ 0	0/ 0	0/ 0
	28/ 3	3/ 0	23/ 13	8/ 0	18/ 0	0/ 0	0/ 0	0/ 0
	13/ 3	5/ 0	3/ 0	10/ 0	5/ 0	0/ 0	0/ 0	0/ 0
RISL	8/ 0	0/ 0	13/ 0	38/ 0	8/ 0	5/ 0	5/ 0	3/ 0
	13/ 0	0/ 0	15/ 0	18/ 0	5/ 0	3/ 0	3/ 0	3/ 0
	30/ 8	8/ 0	20/ 0	28/ 0	15/ 0	10/ 0	18/ 0	13/ 0
	43/ 5	3/ 0	15/ 5	35/ 0	13/ 0	3/ 0	13/ 0	0/ 0
	28/ 0	3/ 0	30/ 15	23/ 0	5/ 0	0/ 0	18/ 0	3/ 0
	20/ 3	0/ 0	0/ 0	5/ 0	3/ 0	3/ 0	5/ 0	0/ 0
LWG	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
LWM	8/ 0	10/ 0	5/ 0	20/ 5	3/ 0	10/ 0	0/ 0	0/ 0
	18/ 0	0/ 0	3/ 0	18/ 3	10/ 0	0/ 0	0/ 0	0/ 0
	35/ 3	0/ 0	15/ 0	15/ 3	25/ 0	0/ 0	0/ 0	0/ 0
	43/ 5	5/ 0	13/ 0	25/ 3	30/ 0	0/ 0	0/ 0	0/ 0
	33/ 0	0/ 0	30/ 0	8/ 0	18/ 0	0/ 0	0/ 0	0/ 0
	23/ 3	0/ 0	3/ 0	10/ 0	15/ 0	0/ 0	0/ 0	0/ 0
MCN	15/ 8	5/ 0	5/ 0	18/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	10/ 0	5/ 0	0/ 0	18/ 0	8/ 0	0/ 0	0/ 0	0/ 0
	18/ 3	10/ 5	10/ 0	5/ 0	20/ 0	3/ 0	0/ 0	0/ 0
	25/ 8	0/ 0	15/ 0	10/ 0	13/ 0	0/ 0	0/ 0	0/ 0
	20/ 3	0/ 0	23/ 0	10/ 0	18/ 0	0/ 0	0/ 0	0/ 0
	13/ 5	0/ 0	0/ 0	0/ 0	10/ 0	0/ 0	0/ 0	0/ 0
JDAY	8/ 0	13/ 0	15/ 3	18/ 0	5/ 0	5/ 0	0/ 0	0/ 0
	8/ 0	10/ 0	8/ 0	10/ 0	3/ 0	0/ 0	0/ 0	0/ 0
	20/ 0	18/ 0	18/ 3	28/ 0	8/ 0	3/ 0	0/ 0	0/ 0
	20/ 0	20/ 0	13/ 5	28/ 3	10/ 0	8/ 0	0/ 0	0/ 0
	5/ 0	15/ 0	23/ 13	13/ 0	15/ 0	0/ 0	0/ 0	0/ 0
	3/ 0	5/ 0	3/ 0	10/ 0	0/ 0	0/ 0	0/ 0	0/ 0
DALS	5/ 0	15/ 0	5/ 0	13/ 0	5/ 0	8/ 0	0/ 0	0/ 0
	8/ 0	8/ 0	5/ 0	10/ 0	3/ 0	8/ 0	0/ 0	0/ 0
	15/ 0	15/ 0	10/ 0	25/ 0	13/ 0	5/ 0	0/ 0	0/ 0
	10/ 0	10/ 0	15/ 0	35/ 0	3/ 0	8/ 0	0/ 0	0/ 0
	5/ 0	13/ 0	25/ 0	20/ 0	10/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
BONN	0/ 0	0/ 0	3/ 0	0/ 0	5/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	3/ 0	3/ 0	3/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	3/ 0	0/ 0	3/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	5/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
SYS	0/ 0	0/ 0	0/ 0	10/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	3/ 0	5/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	3/ 0	0/ 0	8/ 0	3/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	8/ 0	5/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	23/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	3/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0

LEGEND
FI1 = PERCENT OF RELATIVE SURVIVAL INCREASES EXCEEDING ONE PERCENT
FI5 = PERCENT OF RELATIVE SURVIVAL INCREASES EXCEEDING FIVE PERCENT
FD1 = PERCENT OF RELATIVE SURVIVAL DECREASES EXCEEDING ONE PERCENT
FD5 = PERCENT OF RELATIVE SURVIVAL DECREASES EXCEEDING FIVE PERCENT

DATE RUN= 07DEC89:11:21:39

RELATIVE CHANGES IN SYSTEM STOCK SURVIVAL
INXA2NHL VS FNXBANHL (BASE CASE)

PROGRAM = DSN=PJI.PF400.RNR.FISHPASS.SAS.REPORTS(FSUM156)
FILES: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG RUN DATE: AUG/03/89
PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG RUN DATE: OCT/25/89

		YEARLING			SUBYEARLING			STEELHEAD			SOCKEYE		
POOL	YEAR	MB	MA	RM	MB	MA	RM	MB	MA	RM	MB	MA	RM
WELLS	1991	30.9	30.9	0.1	18.9	18.8	-0.4	35.5	35.6	0.2	26.0	26.1	0.4
	1993	33.9	34.0	0.3	20.4	20.4	0.2	39.2	39.3	0.3	27.5	27.6	0.1
	1995	40.1	40.3	0.5	29.6	29.4	-0.4	47.0	47.2	0.4	34.3	34.4	0.2
	1997	41.5	41.7	0.4	29.2	29.2	-0.1	47.8	47.9	0.2	34.4	34.4	-0.0
	2001	40.5	40.6	0.3	28.5	28.6	0.4	47.1	47.2	0.3	34.0	34.0	0.2
	2005	40.8	40.9	0.3	27.5	27.7	0.4	47.3	47.5	0.4	34.1	34.2	0.3
RRECH	1991	33.1	32.9	-0.5	24.0	24.1	0.3	37.6	37.7	0.3	0.0	0.0	0.0
	1993	36.9	36.8	-0.2	25.8	25.8	-0.0	41.2	41.3	0.2	0.0	0.0	0.0
	1995	44.8	45.3	1.2	34.8	34.8	0.0	49.5	49.7	0.3	0.0	0.0	0.0
	1997	46.8	47.0	0.6	34.2	34.2	0.0	50.3	50.3	0.1	0.0	0.0	0.0
	2001	45.0	45.2	0.6	34.0	34.1	0.5	49.6	49.7	0.2	0.0	0.0	0.0
	2005	46.1	46.2	0.2	33.9	34.0	0.3	49.9	50.0	0.3	0.0	0.0	0.0
RISL	1991	40.7	40.5	-0.4	26.3	26.3	-0.0	42.4	42.4	-0.0	34.1	34.2	0.2
	1993	40.7	40.7	0.1	26.6	26.7	0.2	42.7	42.8	0.3	33.9	34.0	0.3
	1995	49.2	49.6	0.8	37.6	37.6	-0.2	53.5	53.5	0.2	42.5	42.6	0.3
	1997	51.4	51.7	0.6	37.3	37.3	0.1	54.1	54.1	0.1	42.6	42.6	0.1
	2001	49.4	49.7	0.5	36.8	36.9	0.4	52.5	52.7	0.3	42.0	42.0	0.2
	2005	50.3	50.5	0.5	35.8	36.0	0.5	53.7	53.9	0.2	42.5	42.6	0.4
LWG	1991	82.9	82.9	-0.0	59.8	59.8	-0.0	85.6	85.6	0.0	65.4	65.4	0.0
	1993	82.1	82.1	-0.0	60.1	60.1	-0.0	85.5	85.5	-0.0	65.2	65.2	-0.0
	1995	88.1	88.1	0.0	70.1	70.1	-0.0	89.4	89.4	0.0	74.4	74.5	0.0
	1997	88.5	88.5	0.0	70.3	70.3	-0.0	89.5	89.5	0.0	74.4	74.4	0.0
	2001	88.3	88.3	0.0	70.7	70.7	-0.0	89.7	89.7	0.0	74.8	74.8	-0.0
	2005	87.7	87.8	0.0	70.1	70.1	-0.0	89.3	89.3	0.0	74.3	74.3	0.0
LWM	1991	33.1	33.0	-0.3	26.4	26.4	0.0	40.0	39.9	-0.1	0.0	0.0	0.0
	1993	35.6	35.6	-0.1	27.1	27.1	0.0	43.9	43.9	0.0	0.0	0.0	0.0
	1995	37.6	37.9	0.8	33.2	33.2	-0.1	46.3	46.5	0.6	0.0	0.0	0.0
	1997	38.4	38.6	0.6	33.9	33.9	0.1	46.8	47.0	0.4	0.0	0.0	0.0
	2001	38.1	38.3	0.5	34.2	34.2	0.0	46.9	47.1	0.4	0.0	0.0	0.0
	2005	38.8	38.9	0.4	32.1	32.1	0.2	47.8	48.0	0.5	0.0	0.0	0.0
MCN	1991	59.9	59.6	-0.6	42.6	42.6	-0.0	67.6	67.5	-0.1	0.0	0.0	0.0
	1993	58.5	58.1	-0.7	42.4	42.4	0.2	66.4	66.4	0.0	0.0	0.0	0.0
	1995	63.4	64.1	1.2	53.3	53.3	0.1	72.7	72.9	0.2	0.0	0.0	0.0
	1997	66.2	66.8	0.8	53.2	53.3	0.1	74.1	74.3	0.3	0.0	0.0	0.0
	2001	64.2	64.2	-0.0	53.0	53.1	0.2	72.6	72.8	0.3	0.0	0.0	0.0
	2005	65.0	65.1	0.3	52.0	52.2	0.4	73.2	73.4	0.2	0.0	0.0	0.0
JDAY	1991	55.1	55.2	0.1	44.4	44.4	0.1	59.9	59.9	0.0	0.0	0.0	0.0
	1993	54.6	54.8	0.3	44.2	44.1	-0.1	59.3	59.3	-0.1	0.0	0.0	0.0
	1995	54.1	54.1	0.0	46.0	46.0	0.0	59.5	59.6	0.1	0.0	0.0	0.0
	1997	56.3	56.3	0.0	44.9	44.9	0.1	62.1	62.1	0.0	0.0	0.0	0.0
	2001	55.6	55.7	0.2	45.4	45.6	0.3	61.8	61.8	0.1	0.0	0.0	0.0
	2005	56.7	56.7	-0.1	44.3	44.5	0.4	61.6	61.9	0.4	0.0	0.0	0.0
DALS	1991	65.8	65.9	0.0	54.9	54.9	-0.0	65.8	65.9	0.1	0.0	0.0	0.0
	1993	66.1	66.0	-0.0	54.7	54.7	0.1	65.8	65.9	0.1	0.0	0.0	0.0
	1995	65.8	65.7	-0.2	55.6	55.5	-0.2	66.1	66.1	-0.0	0.0	0.0	0.0
	1997	69.5	69.5	0.0	56.3	56.2	-0.1	69.1	69.1	0.0	0.0	0.0	0.0
	2001	68.7	68.8	0.2	55.9	56.0	0.1	68.9	69.0	0.1	0.0	0.0	0.0
	2005	69.2	69.1	-0.1	54.6	54.7	0.2	68.9	68.9	0.0	0.0	0.0	0.0
BONN	1991	87.5	87.5	0.0	79.5	79.6	0.0	83.6	83.7	0.1	0.0	0.0	0.0
	1993	87.4	87.4	-0.0	79.5	79.5	-0.0	83.3	83.3	0.1	0.0	0.0	0.0
	1995	87.0	87.1	0.0	79.6	79.6	-0.0	83.0	83.0	0.0	0.0	0.0	0.0
	1997	87.2	87.3	0.0	78.5	78.5	0.0	82.4	82.4	0.0	0.0	0.0	0.0
	2001	86.9	87.0	0.1	78.0	78.0	0.1	81.9	81.9	0.1	0.0	0.0	0.0
	2005	87.2	87.2	0.0	78.3	78.3	-0.0	82.5	82.6	0.0	0.0	0.0	0.0
SYS	1991	69.7	69.7	-0.1	52.2	52.2	0.0	72.7	72.7	0.0	50.5	50.6	0.1
	1993	69.9	69.9	-0.0	52.2	52.3	0.1	72.9	72.9	0.0	50.8	50.8	0.1
	1995	73.4	73.6	0.2	58.6	58.6	0.0	76.6	76.7	0.1	59.3	59.3	0.1
	1997	74.5	74.6	0.1	58.1	58.1	0.1	77.3	77.3	0.1	59.3	59.3	-0.0
	2001	73.7	73.8	0.1	57.8	57.9	0.1	77.0	77.1	0.1	59.3	59.4	0.0
	2005	74.0	74.0	0.1	57.3	57.4	0.2	77.0	77.1	0.1	59.2	59.2	0.1

LEGEND
MB = MEAN SURVIVAL WITH BASE CASE CONDITIONS (%) (BASE CASE)
MA = MEAN SURVIVAL WITH ALTERNATIVE CONDITIONS (%) (ALTERNATIVE)
RM = RELATIVE CHANGE IN MEAN SURVIVAL (%)
(ALTERNATIVE SURVIVAL - BASE CASE SURVIVAL) / (BASE CASE SURVIVAL)

DATE RUN= 07DEC89:09:23:41

FREQUENCY OF RELATIVE SURVIVAL CHANGES
EXCEEDING ONE AND FIVE PERCENT

PROGRAM = DSN=PJI.PF400.RNR.SAS.REPORTS(FSUM)
FILE: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG
FILE: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG

		YEARLING		SUBYEARLING		STEELHEAD		SOCKEYE	
POOL	YEAR	FI1/FI5	FD1/FD5	FI1/FI5	FD1/FD5	FI1/FI5	FD1/FD5	FI1/FI5	FD1/FD5
WELLS	1991	18/ 0	13/ 0	35/ 0	40/ 0	8/ 0	5/ 0	18/ 0	0/ 0
	1993	15/ 0	3/ 0	45/ 3	30/ 0	8/ 0	3/ 0	8/ 0	3/ 0
	1995	25/ 0	0/ 0	20/ 3	28/ 3	20/ 0	0/ 0	8/ 0	3/ 0
	1997	15/ 3	3/ 0	23/ 8	40/ 0	13/ 0	3/ 0	0/ 0	3/ 0
	2001	15/ 0	0/ 0	35/ 8	8/ 0	15/ 0	0/ 0	10/ 0	0/ 0
	2005	18/ 0	3/ 0	33/ 13	20/ 3	18/ 0	0/ 0	10/ 0	3/ 0
RRECH	1991	20/ 3	28/ 10	20/ 3	13/ 0	13/ 0	3/ 0	0/ 0	0/ 0
	1993	13/ 0	18/ 3	15/ 3	20/ 0	8/ 0	0/ 0	0/ 0	0/ 0
	1995	35/ 5	5/ 0	5/ 0	8/ 0	15/ 0	3/ 0	0/ 0	0/ 0
	1997	30/ 3	5/ 0	8/ 0	10/ 0	8/ 0	3/ 0	0/ 0	0/ 0
	2001	15/ 5	0/ 0	15/ 8	8/ 0	10/ 0	0/ 0	0/ 0	0/ 0
	2005	25/ 3	13/ 3	15/ 5	5/ 0	15/ 0	3/ 0	0/ 0	0/ 0
RISL	1991	13/ 0	20/ 5	28/ 0	30/ 0	13/ 0	10/ 0	10/ 0	3/ 0
	1993	13/ 0	10/ 0	33/ 0	28/ 0	8/ 3	8/ 0	8/ 0	3/ 0
	1995	30/ 5	8/ 0	20/ 0	25/ 0	18/ 0	8/ 0	23/ 3	3/ 0
	1997	20/ 0	5/ 0	15/ 0	18/ 0	5/ 0	8/ 0	8/ 0	5/ 0
	2001	15/ 0	0/ 0	23/ 0	8/ 0	3/ 0	3/ 0	10/ 0	0/ 0
	2005	25/ 0	3/ 0	28/ 3	10/ 0	13/ 0	10/ 0	18/ 0	0/ 0
LWG	1991	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	1993	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	1995	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	1997	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	2001	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	2005	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
LWM	1991	10/ 0	18/ 0	23/ 0	15/ 0	5/ 0	8/ 0	0/ 0	0/ 0
	1993	10/ 0	8/ 0	15/ 0	18/ 0	3/ 0	0/ 0	0/ 0	0/ 0
	1995	33/ 3	5/ 0	5/ 0	13/ 0	25/ 0	0/ 0	0/ 0	0/ 0
	1997	20/ 3	0/ 0	10/ 0	8/ 0	20/ 0	0/ 0	0/ 0	0/ 0
	2001	20/ 0	0/ 0	5/ 0	8/ 0	13/ 0	0/ 0	0/ 0	0/ 0
	2005	23/ 0	8/ 0	18/ 0	3/ 0	15/ 0	0/ 0	0/ 0	0/ 0
MCN	1991	8/ 0	23/ 0	20/ 0	18/ 0	3/ 0	5/ 0	0/ 0	0/ 0
	1993	8/ 3	18/ 8	18/ 0	8/ 0	5/ 0	3/ 0	0/ 0	0/ 0
	1995	18/ 10	5/ 0	10/ 0	10/ 0	13/ 0	0/ 0	0/ 0	0/ 0
	1997	23/ 5	3/ 0	8/ 0	0/ 0	13/ 0	0/ 0	0/ 0	0/ 0
	2001	18/ 5	10/ 5	8/ 0	3/ 0	15/ 0	0/ 0	0/ 0	0/ 0
	2005	25/ 0	10/ 3	10/ 0	3/ 0	15/ 0	3/ 0	0/ 0	0/ 0
JDAY	1991	28/ 0	13/ 3	20/ 0	25/ 0	8/ 0	5/ 0	0/ 0	0/ 0
	1993	18/ 0	8/ 0	15/ 5	25/ 0	0/ 0	8/ 0	0/ 0	0/ 0
	1995	13/ 0	15/ 0	23/ 3	20/ 0	10/ 0	0/ 0	0/ 0	0/ 0
	1997	8/ 0	13/ 0	10/ 0	13/ 0	5/ 0	0/ 0	0/ 0	0/ 0
	2001	3/ 3	5/ 0	15/ 3	10/ 0	10/ 0	5/ 0	0/ 0	0/ 0
	2005	15/ 3	13/ 3	18/ 8	3/ 0	10/ 0	0/ 0	0/ 0	0/ 0
DALS	1991	20/ 0	13/ 0	15/ 0	13/ 0	5/ 0	3/ 0	0/ 0	0/ 0
	1993	13/ 0	8/ 0	13/ 0	10/ 0	5/ 0	5/ 0	0/ 0	0/ 0
	1995	13/ 0	15/ 0	5/ 0	13/ 0	3/ 0	5/ 0	0/ 0	0/ 0
	1997	10/ 0	8/ 0	8/ 0	5/ 0	3/ 0	3/ 0	0/ 0	0/ 0
	2001	5/ 3	5/ 0	10/ 0	8/ 0	5/ 0	0/ 0	0/ 0	0/ 0
	2005	13/ 3	8/ 3	18/ 0	8/ 0	5/ 0	5/ 0	0/ 0	0/ 0
BONN	1991	0/ 0	3/ 0	0/ 0	5/ 0	0/ 0	3/ 0	0/ 0	0/ 0
	1993	0/ 0	0/ 0	0/ 0	3/ 0	3/ 0	0/ 0	0/ 0	0/ 0
	1995	3/ 0	0/ 0	0/ 0	3/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	1997	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	3/ 0	0/ 0	0/ 0
	2001	3/ 0	0/ 0	3/ 0	0/ 0	3/ 0	0/ 0	0/ 0	0/ 0
	2005	3/ 0	3/ 0	3/ 0	5/ 0	3/ 0	3/ 0	0/ 0	0/ 0
SYS	1991	0/ 0	5/ 0	8/ 0	5/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	1993	0/ 0	3/ 0	5/ 0	3/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	1995	8/ 0	0/ 0	0/ 0	3/ 0	0/ 0	0/ 0	3/ 0	0/ 0
	1997	3/ 0	0/ 0	3/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	2001	3/ 0	0/ 0	5/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	2005	3/ 0	3/ 0	5/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0

LEGEND
FI1 = PERCENT OF RELATIVE SURVIVAL INCREASES EXCEEDING ONE PERCENT
FI5 = PERCENT OF RELATIVE SURVIVAL INCREASES EXCEEDING FIVE PERCENT
FD1 = PERCENT OF RELATIVE SURVIVAL DECREASES EXCEEDING ONE PERCENT
FD5 = PERCENT OF RELATIVE SURVIVAL DECREASES EXCEEDING FIVE PERCENT

DATE RUN= 07DEC89:09:28:53

RELATIVE CHANGES IN SYSTEM STOCK SURVIVAL
INXA2SHL VS EMXBASHL (BASE CASE)

PROGRAM = DSN=PJI.PF400.RNR.FISHPASS.SAS.REPORTS(FSUM56)
FILES: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG — RUN DATE: AUG/03/89
PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG — RUN DATE: OCT/25/89

		YEARLING			SUBYEARLING			STEELHEAD			SOCKEYE		
POOL	YEAR	MB	MA	RM	MB	MA	RM	MB	MA	RM	MB	MA	RM
WELLS	1991	30.9	31.1	0.6	18.9	18.7	-1.0	35.5	35.6	0.4	26.1	26.2	0.3
	1993	34.1	34.2	0.2	20.3	20.3	0.1	39.3	39.5	0.4	27.7	27.7	0.2
	1995	40.3	40.5	0.5	29.1	29.1	-0.0	47.0	47.1	0.4	34.3	34.4	0.1
	1997	41.6	41.9	0.5	29.1	29.0	-0.4	47.9	48.0	0.2	34.3	34.3	0.0
	2001	40.7	40.8	0.2	28.7	28.7	0.2	47.2	47.4	0.4	34.1	34.2	0.1
	2005	40.9	41.0	0.2	27.8	27.9	0.3	47.5	47.6	0.3	34.3	34.4	0.1
RRECH	1991	33.1	33.1	0.0	24.2	24.2	-0.1	37.5	37.7	0.3	0.0	0.0	0.0
	1993	36.9	36.9	0.2	25.9	25.8	-0.3	41.3	41.4	0.2	0.0	0.0	0.0
	1995	45.1	45.4	0.7	34.7	34.7	0.0	49.5	49.6	0.1	0.0	0.0	0.0
	1997	46.8	47.0	0.5	33.8	33.9	0.2	50.2	50.3	0.1	0.0	0.0	0.0
	2001	45.4	45.4	0.2	34.0	34.1	0.2	49.8	49.8	0.2	0.0	0.0	0.0
	2005	45.8	46.1	0.6	34.2	34.3	0.4	49.9	50.0	0.2	0.0	0.0	0.0
RISL	1991	40.5	40.6	0.3	26.4	26.2	-0.5	42.2	42.2	0.1	34.1	34.1	0.1
	1993	40.8	41.0	0.3	26.6	26.6	0.1	42.7	42.8	0.4	34.0	34.1	0.4
	1995	49.6	50.0	0.9	37.1	37.2	0.1	53.4	53.4	0.0	42.4	42.5	0.1
	1997	51.6	51.9	0.7	37.0	37.0	-0.1	54.0	54.0	0.1	42.6	42.5	-0.0
	2001	49.8	50.0	0.3	36.8	36.9	0.2	52.8	53.0	0.3	42.1	42.2	0.2
	2005	50.1	50.4	0.6	36.1	36.2	0.3	53.7	53.9	0.3	42.5	42.7	0.3
LWG	1991	83.0	83.0	0.0	59.9	59.8	-0.1	85.6	85.6	0.0	65.5	65.5	-0.0
	1993	82.2	82.2	0.0	60.1	60.1	-0.0	85.6	85.5	-0.0	65.3	65.3	0.0
	1995	88.1	88.1	0.0	70.1	70.1	-0.0	89.4	89.4	0.0	74.5	74.5	0.0
	1997	88.5	88.5	0.0	70.4	70.4	-0.0	89.5	89.5	0.0	74.4	74.4	-0.0
	2001	88.3	88.3	-0.0	70.8	70.7	-0.0	89.7	89.7	-0.0	74.8	74.8	-0.0
	2005	87.7	87.7	0.0	70.1	70.1	-0.0	89.3	89.3	-0.0	74.3	74.3	-0.0
LWM	1991	33.3	33.4	0.2	27.1	26.9	-0.8	40.2	40.3	0.3	0.0	0.0	0.0
	1993	35.8	35.8	0.2	27.6	27.4	-0.5	44.1	44.2	0.3	0.0	0.0	0.0
	1995	38.0	38.2	0.6	33.4	33.4	-0.1	46.5	46.7	0.6	0.0	0.0	0.0
	1997	38.5	38.8	0.8	34.3	34.2	-0.4	46.9	47.1	0.4	0.0	0.0	0.0
	2001	38.3	38.4	0.2	34.6	34.6	-0.0	47.1	47.2	0.2	0.0	0.0	0.0
	2005	38.7	38.9	0.6	32.6	32.6	0.1	47.8	48.0	0.5	0.0	0.0	0.0
MCN	1991	59.6	59.4	-0.3	42.7	42.6	-0.3	67.4	67.5	0.1	0.0	0.0	0.0
	1993	58.6	58.6	0.0	42.4	42.3	-0.0	66.4	66.6	0.3	0.0	0.0	0.0
	1995	64.6	64.7	0.0	53.1	53.1	0.1	73.0	73.1	0.2	0.0	0.0	0.0
	1997	66.7	67.0	0.3	53.1	53.2	0.1	74.2	74.4	0.3	0.0	0.0	0.0
	2001	64.6	64.6	0.0	53.1	53.2	0.1	72.8	73.0	0.3	0.0	0.0	0.0
	2005	64.6	65.1	0.8	52.3	52.5	0.3	73.0	73.3	0.3	0.0	0.0	0.0
JDAY	1991	54.8	54.8	-0.0	45.0	44.9	-0.2	60.1	60.1	0.0	0.0	0.0	0.0
	1993	54.6	54.8	0.3	44.3	44.3	-0.1	59.5	59.4	-0.1	0.0	0.0	0.0
	1995	53.9	53.7	-0.5	46.0	46.1	0.1	59.5	59.6	0.1	0.0	0.0	0.0
	1997	56.2	56.1	-0.2	44.6	44.6	-0.0	61.8	61.8	0.1	0.0	0.0	0.0
	2001	55.8	55.8	0.0	45.6	45.7	0.1	61.8	61.8	0.0	0.0	0.0	0.0
	2005	56.5	56.5	-0.1	44.7	44.9	0.5	61.9	62.0	0.2	0.0	0.0	0.0
DALS	1991	65.8	65.8	-0.0	54.9	54.8	-0.2	65.9	65.9	-0.0	0.0	0.0	0.0
	1993	66.1	66.0	-0.1	54.6	54.7	0.1	65.9	65.9	-0.1	0.0	0.0	0.0
	1995	65.8	65.6	-0.4	55.3	55.3	-0.1	66.0	65.9	-0.2	0.0	0.0	0.0
	1997	69.5	69.4	-0.1	56.2	56.1	-0.2	69.0	68.9	-0.1	0.0	0.0	0.0
	2001	68.9	68.9	-0.0	56.1	56.1	0.0	69.1	69.1	0.1	0.0	0.0	0.0
	2005	69.0	69.0	-0.0	54.8	54.9	0.1	68.9	69.0	0.1	0.0	0.0	0.0
BONN	1991	87.5	87.5	0.1	79.5	79.5	0.0	83.4	83.4	0.0	0.0	0.0	0.0
	1993	87.4	87.5	0.0	79.5	79.5	0.0	83.2	83.4	0.1	0.0	0.0	0.0
	1995	87.1	87.1	-0.0	79.6	79.5	-0.1	82.9	82.8	-0.1	0.0	0.0	0.0
	1997	87.2	87.2	0.0	78.5	78.5	-0.0	82.3	82.3	-0.0	0.0	0.0	0.0
	2001	87.0	87.0	0.0	78.1	78.1	0.0	82.0	82.0	0.0	0.0	0.0	0.0
	2005	87.1	87.1	0.0	78.2	78.2	-0.0	82.4	82.5	0.0	0.0	0.0	0.0
SYS	1991	69.7	69.7	0.1	52.3	52.2	-0.2	72.7	72.7	0.0	50.6	50.6	0.0
	1993	69.9	70.0	0.0	52.2	52.3	0.0	72.9	73.0	0.1	50.9	50.9	0.1
	1995	73.6	73.7	0.1	58.4	58.4	-0.0	76.7	76.7	0.1	59.3	59.4	0.0
	1997	74.6	74.6	0.1	58.0	58.0	0.0	77.2	77.3	0.1	59.3	59.3	-0.0
	2001	73.8	73.9	0.0	57.9	58.0	0.1	77.1	77.2	0.1	59.4	59.4	0.0
	2005	73.9	74.0	0.1	57.4	57.5	0.2	77.0	77.1	0.1	59.3	59.3	0.0

LEGEND
MB = MEAN SURVIVAL WITH BASE CASE CONDITIONS (%) (BASE CASE)
MA = MEAN SURVIVAL WITH ALTERNATIVE CONDITIONS (%) (ALTERNATIVE)
RM = RELATIVE CHANGE IN MEAN SURVIVAL (%)
(ALTERNATIVE SURVIVAL - BASE CASE SURVIVAL) / (BASE CASE SURVIVAL)

DATE RUN= 07DEC89:09:31:10

FREQUENCY OF RELATIVE SURVIVAL CHANGES
EXCEEDING ONE AND FIVE PERCENT

PROGRAM = DSN=PJI.PF400.RNR.SAS.REPORTS(FSUM)
FILE: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG
FILE: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG

		YEARLING		SUBYEARLING		STEELHEAD		SOCKEYE	
POOL	YEAR	FI1/FI5	FD1/FD5	FI1/FI5	FD1/FD5	FI1/FI5	FD1/FD5	FI1/FI5	FD1/FD5
WELLS	1991	18/ 3	10/ 0	25/ 0	33/ 13	10/ 3	8/ 0	15/ 3	8/ 0
	1993	18/ 0	8/ 0	35/ 0	23/ 0	18/ 0	3/ 0	8/ 0	8/ 0
	1995	33/ 0	10/ 0	13/ 3	20/ 0	18/ 0	3/ 0	10/ 0	5/ 0
	1997	18/ 3	0/ 0	25/ 3	30/ 3	13/ 0	0/ 0	8/ 0	0/ 0
	2001	18/ 0	0/ 0	30/ 5	23/ 0	18/ 0	0/ 0	3/ 0	3/ 0
	2005	18/ 0	8/ 0	38/ 8	20/ 0	23/ 0	5/ 0	8/ 0	3/ 0
RRECH	1991	18/ 5	20/ 5	25/ 3	25/ 0	10/ 3	5/ 0	0/ 0	0/ 0
	1993	23/ 3	13/ 0	18/ 0	30/ 5	8/ 0	0/ 0	0/ 0	0/ 0
	1995	40/ 8	13/ 3	8/ 0	5/ 0	13/ 0	5/ 0	0/ 0	0/ 0
	1997	23/ 3	10/ 0	10/ 3	3/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	2001	20/ 0	15/ 0	13/ 0	15/ 0	10/ 0	0/ 0	0/ 0	0/ 0
	2005	35/ 5	10/ 3	23/ 3	8/ 0	13/ 0	3/ 0	0/ 0	0/ 0
RISL	1991	13/ 5	8/ 3	15/ 0	28/ 0	23/ 3	8/ 3	10/ 3	8/ 3
	1993	23/ 3	8/ 0	28/ 0	25/ 0	18/ 3	8/ 0	18/ 3	5/ 0
	1995	35/ 5	8/ 0	8/ 0	10/ 0	18/ 0	13/ 0	13/ 0	10/ 0
	1997	25/ 3	3/ 0	18/ 3	28/ 0	13/ 0	8/ 0	10/ 0	10/ 0
	2001	18/ 0	8/ 0	20/ 0	10/ 0	15/ 0	5/ 0	15/ 0	3/ 0
	2005	23/ 3	5/ 0	28/ 0	15/ 0	18/ 0	8/ 0	13/ 0	3/ 0
LWG	1991	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	1993	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	1995	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	1997	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	2001	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	2005	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
LWM	1991	20/ 3	8/ 0	15/ 0	25/ 8	10/ 3	5/ 0	0/ 0	0/ 0
	1993	15/ 0	3/ 0	15/ 0	20/ 3	13/ 0	3/ 0	0/ 0	0/ 0
	1995	38/ 0	5/ 0	8/ 0	13/ 0	28/ 0	5/ 0	0/ 0	0/ 0
	1997	28/ 3	3/ 0	5/ 0	18/ 0	20/ 0	0/ 0	0/ 0	0/ 0
	2001	18/ 0	3/ 0	10/ 0	10/ 0	15/ 0	0/ 0	0/ 0	0/ 0
	2005	28/ 3	5/ 0	20/ 0	8/ 0	20/ 0	3/ 0	0/ 0	0/ 0
MCN	1991	10/ 0	13/ 5	13/ 0	23/ 0	8/ 0	3/ 0	0/ 0	0/ 0
	1993	18/ 0	5/ 3	13/ 0	10/ 0	13/ 0	3/ 0	0/ 0	0/ 0
	1995	10/ 0	13/ 3	5/ 0	5/ 0	18/ 0	5/ 0	0/ 0	0/ 0
	1997	18/ 3	3/ 3	8/ 0	5/ 0	10/ 0	0/ 0	0/ 0	0/ 0
	2001	18/ 0	8/ 3	8/ 0	0/ 0	13/ 0	0/ 0	0/ 0	0/ 0
	2005	25/ 10	8/ 0	15/ 0	0/ 0	13/ 0	3/ 0	0/ 0	0/ 0
JDAY	1991	20/ 3	13/ 3	23/ 5	28/ 3	8/ 3	10/ 0	0/ 0	0/ 0
	1993	15/ 3	8/ 3	15/ 3	25/ 3	0/ 0	8/ 0	0/ 0	0/ 0
	1995	13/ 0	23/ 5	13/ 0	15/ 0	8/ 0	5/ 0	0/ 0	0/ 0
	1997	8/ 0	18/ 0	18/ 0	15/ 0	8/ 0	3/ 0	0/ 0	0/ 0
	2001	13/ 0	13/ 0	15/ 0	18/ 0	3/ 0	0/ 0	0/ 0	0/ 0
	2005	18/ 0	13/ 3	23/ 8	10/ 0	10/ 0	0/ 0	0/ 0	0/ 0
DALS	1991	8/ 0	10/ 0	10/ 0	15/ 0	3/ 0	5/ 0	0/ 0	0/ 0
	1993	10/ 0	13/ 3	18/ 0	5/ 0	5/ 0	5/ 0	0/ 0	0/ 0
	1995	8/ 0	13/ 3	8/ 0	8/ 0	3/ 0	5/ 0	0/ 0	0/ 0
	1997	5/ 0	13/ 0	10/ 0	18/ 0	3/ 0	5/ 0	0/ 0	0/ 0
	2001	8/ 0	8/ 0	15/ 0	10/ 0	3/ 0	0/ 0	0/ 0	0/ 0
	2005	18/ 3	13/ 3	13/ 0	5/ 0	5/ 0	5/ 0	0/ 0	0/ 0
BONN	1991	3/ 0	0/ 0	3/ 0	5/ 0	3/ 0	3/ 0	0/ 0	0/ 0
	1993	0/ 0	3/ 0	5/ 0	3/ 0	5/ 0	3/ 0	0/ 0	0/ 0
	1995	0/ 0	3/ 0	0/ 0	5/ 0	0/ 0	5/ 0	0/ 0	0/ 0
	1997	0/ 0	0/ 0	3/ 0	0/ 0	0/ 0	3/ 0	0/ 0	0/ 0
	2001	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	2005	3/ 0	3/ 0	3/ 0	3/ 0	3/ 0	3/ 0	0/ 0	0/ 0
SYS	1991	5/ 0	3/ 0	3/ 0	8/ 0	3/ 0	3/ 0	3/ 0	3/ 0
	1993	3/ 0	3/ 0	8/ 0	5/ 0	3/ 0	0/ 0	3/ 0	0/ 0
	1995	3/ 0	5/ 0	0/ 0	3/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	1997	0/ 0	0/ 0	3/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	2001	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	2005	5/ 0	3/ 0	3/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0

LEGEND
FI1 = PERCENT OF RELATIVE SURVIVAL INCREASES EXCEEDING ONE PERCENT
FI5 = PERCENT OF RELATIVE SURVIVAL INCREASES EXCEEDING FIVE PERCENT
FD1 = PERCENT OF RELATIVE SURVIVAL DECREASES EXCEEDING ONE PERCENT
FD5 = PERCENT OF RELATIVE SURVIVAL DECREASES EXCEEDING FIVE PERCENT

DATE RUN= 07DEC89:10:12:24

RELATIVE CHANGES IN SYSTEM STOCK SURVIVAL
MMXA2SAS VS GMXBASAS (BASE CASE)

PROGRAM = DSN=PJI.PF400.RNR.FISHPASS.SAS.REPORTS(FSUM156)
FILES: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG RUN DATE: AUG/03/89
PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG RUN DATE: OCT/31/89

		YEARLING			SUBYEARLING			STEELHEAD			SOCKEYE		
POOL	YEAR	MB	MA	RM	MB	MA	RM	MB	MA	RM	MB	MA	RM
WELLS	1991	31.5	31.6	0.5	19.1	18.9	-0.9	36.0	36.1	0.5	26.5	26.6	0.3
	1993	34.7	34.8	0.3	20.6	20.7	0.2	39.9	40.0	0.4	28.1	28.1	0.2
	1995	41.1	41.2	0.4	29.6	29.6	-0.0	47.6	47.8	0.3	34.9	34.9	0.1
	1997	42.3	42.5	0.6	29.5	29.5	-0.1	48.4	48.6	0.3	34.7	34.7	0.0
	2001	41.3	41.4	0.2	29.0	29.1	0.2	47.8	47.9	0.3	34.5	34.6	0.2
	2005	41.6	41.7	0.1	28.1	28.2	0.4	48.1	48.2	0.4	34.8	34.9	0.2
RRECH	1991	33.1	33.4	0.9	24.3	24.2	-0.0	37.7	37.8	0.4	0.0	0.0	0.0
	1993	37.0	37.0	0.0	25.8	25.8	0.1	41.4	41.5	0.2	0.0	0.0	0.0
	1995	45.2	45.4	0.5	34.8	34.8	-0.1	49.6	49.7	0.1	0.0	0.0	0.0
	1997	46.8	47.0	0.5	34.0	34.0	0.1	50.2	50.3	0.2	0.0	0.0	0.0
	2001	45.3	45.4	0.2	34.1	34.3	0.5	49.7	49.8	0.2	0.0	0.0	0.0
	2005	46.0	46.1	0.3	34.3	34.4	0.4	49.9	50.0	0.2	0.0	0.0	0.0
RISL	1991	40.6	40.9	0.6	26.4	26.2	-0.5	42.1	42.4	0.6	34.2	34.4	0.5
	1993	41.0	41.1	0.2	26.6	26.7	0.3	42.6	42.8	0.5	34.1	34.3	0.4
	1995	49.8	50.0	0.6	37.3	37.3	0.1	53.4	53.4	-0.1	42.6	42.6	0.0
	1997	51.5	52.0	0.8	37.1	37.1	-0.0	53.8	54.0	0.2	42.5	42.6	0.3
	2001	49.8	49.9	0.3	36.9	37.0	0.4	52.8	52.9	0.2	42.1	42.2	0.3
	2005	50.2	50.4	0.4	36.1	36.3	0.5	53.7	53.9	0.2	42.6	42.7	0.2
LWG	1991	83.0	83.0	0.0	59.9	59.9	-0.0	85.7	85.7	0.0	65.6	65.6	-0.0
	1993	82.2	82.2	0.0	60.1	60.1	-0.0	85.6	85.6	0.0	65.3	65.3	0.0
	1995	88.1	88.1	0.0	70.2	70.1	-0.0	89.4	89.4	0.0	74.5	74.5	0.0
	1997	88.5	88.5	0.0	70.4	70.4	-0.0	89.5	89.5	0.0	74.4	74.4	-0.0
	2001	88.3	88.3	-0.0	70.8	70.7	-0.0	89.7	89.7	-0.0	74.8	74.8	-0.0
	2005	87.7	87.7	0.0	70.1	70.1	-0.0	89.3	89.3	0.0	74.3	74.3	-0.0
LWM	1991	34.7	34.8	0.5	28.3	28.2	-0.2	41.9	42.0	0.3	0.0	0.0	0.0
	1993	35.9	36.0	0.1	27.5	27.5	0.2	44.2	44.3	0.2	0.0	0.0	0.0
	1995	38.1	38.3	0.6	33.7	33.6	-0.0	46.5	46.8	0.6	0.0	0.0	0.0
	1997	38.5	38.9	0.8	34.4	34.3	-0.2	46.8	47.1	0.5	0.0	0.0	0.0
	2001	38.3	38.4	0.4	34.7	34.7	0.1	47.1	47.2	0.3	0.0	0.0	0.0
	2005	38.7	38.9	0.5	32.7	32.7	-0.1	47.8	48.0	0.4	0.0	0.0	0.0
MCN	1991	59.7	59.8	0.2	42.8	42.7	-0.2	67.6	67.7	0.2	0.0	0.0	0.0
	1993	58.9	58.8	-0.3	42.5	42.5	0.0	66.6	66.7	0.2	0.0	0.0	0.0
	1995	64.7	64.6	-0.3	53.3	53.3	0.0	73.0	73.2	0.2	0.0	0.0	0.0
	1997	66.6	66.9	0.6	53.2	53.3	0.2	74.1	74.4	0.4	0.0	0.0	0.0
	2001	64.6	64.7	0.0	53.2	53.3	0.1	72.8	73.0	0.3	0.0	0.0	0.0
	2005	64.6	64.9	0.5	52.4	52.6	0.4	73.1	73.2	0.2	0.0	0.0	0.0
JDAY	1991	54.9	55.3	0.6	45.3	45.2	-0.0	60.9	60.9	0.1	0.0	0.0	0.0
	1993	54.7	54.9	0.4	44.6	44.6	-0.0	60.2	60.2	-0.0	0.0	0.0	0.0
	1995	54.1	53.8	-0.5	46.5	46.5	-0.1	60.4	60.5	0.1	0.0	0.0	0.0
	1997	56.0	56.0	-0.0	44.9	44.9	-0.1	61.8	61.9	0.0	0.0	0.0	0.0
	2001	55.7	55.7	0.0	45.9	46.1	0.3	61.9	62.0	0.2	0.0	0.0	0.0
	2005	56.6	56.7	0.1	45.0	45.2	0.4	62.0	62.2	0.3	0.0	0.0	0.0
DALS	1991	66.2	66.3	0.2	55.5	55.4	-0.2	66.4	66.6	0.2	0.0	0.0	0.0
	1993	66.2	66.2	0.1	55.3	55.3	0.1	66.3	66.4	0.1	0.0	0.0	0.0
	1995	66.2	65.8	-0.6	56.2	56.1	-0.1	66.7	66.5	-0.3	0.0	0.0	0.0
	1997	69.3	69.3	-0.1	56.2	56.2	-0.1	68.9	68.8	-0.1	0.0	0.0	0.0
	2001	68.8	68.8	-0.0	56.1	56.1	0.0	69.1	69.1	0.1	0.0	0.0	0.0
	2005	69.1	69.2	0.2	54.8	54.9	0.1	68.9	69.0	0.1	0.0	0.0	0.0
BONN	1991	87.5	87.6	0.1	79.5	79.7	0.1	83.4	83.6	0.2	0.0	0.0	0.0
	1993	87.6	87.5	-0.0	79.5	79.5	0.0	83.2	83.4	0.2	0.0	0.0	0.0
	1995	87.1	87.0	-0.1	79.6	79.5	-0.2	82.9	82.8	-0.2	0.0	0.0	0.0
	1997	87.2	87.2	-0.0	78.4	78.4	0.0	82.2	82.2	-0.0	0.0	0.0	0.0
	2001	87.0	87.0	0.0	78.1	78.1	0.0	82.0	82.0	0.0	0.0	0.0	0.0
	2005	87.1	87.2	0.1	78.2	78.3	0.1	82.5	82.5	0.1	0.0	0.0	0.0
SYS	1991	69.8	69.9	0.1	52.4	52.4	-0.0	72.9	73.0	0.1	50.8	50.9	0.1
	1993	70.0	70.0	0.0	52.3	52.3	0.0	73.1	73.1	0.1	51.0	51.1	0.1
	1995	73.7	73.7	0.0	58.6	58.6	-0.1	76.8	76.9	0.0	59.5	59.5	0.0
	1997	74.6	74.7	0.1	58.1	58.1	0.1	77.3	77.3	0.1	59.4	59.4	0.1
	2001	73.9	73.9	0.1	58.0	58.0	0.1	77.1	77.2	0.1	59.5	59.5	0.1
	2005	74.0	74.0	0.1	57.5	57.6	0.2	77.1	77.2	0.1	59.4	59.4	0.1

LEGEND
MB = MEAN SURVIVAL WITH BASE CASE CONDITIONS (%) (BASE CASE)
MA = MEAN SURVIVAL WITH ALTERNATIVE CONDITIONS (%) (ALTERNATIVE)
RM = RELATIVE CHANGE IN MEAN SURVIVAL (%)
(ALTERNATIVE SURVIVAL - BASE CASE SURVIVAL) / (BASE CASE SURVIVAL)

DATE RUN= 07DEC89:09:36:39

FREQUENCY OF RELATIVE SURVIVAL CHANGES
EXCEEDING ONE AND FIVE PERCENT

PROGRAM = DSN=PJI.PF400.RNR.SAS.REPORTS(FSUM)
FILE: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG
FILE: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG

		YEARLING				SUBYEARLING				STEELHEAD				SOCKEYE			
POOL	YEAR	FI1/FI5		FD1/FD5		FI1/FI5		FD1/FD5		FI1/FI5		FD1/FD5		FI1/FI5		FD1/FD5	
WELLS	1991	15/	3	10/	0	18/	0	30/	8	13/	3	5/	0	13/	3	10/	0
	1993	15/	0	5/	0	35/	3	20/	0	15/	0	0/	0	10/	3	5/	0
	1995	23/	0	8/	0	10/	3	15/	0	23/	0	3/	0	10/	0	5/	0
	1997	23/	3	3/	0	25/	3	33/	0	23/	0	3/	0	10/	0	3/	0
	2001	18/	0	0/	0	30/	8	18/	0	15/	0	0/	0	13/	0	3/	0
	2005	20/	0	10/	0	35/	8	18/	0	18/	0	3/	0	15/	0	3/	0
RRECH	1991	18/	8	5/	0	23/	0	20/	0	5/	3	3/	0	0/	0	0/	0
	1993	18/	3	15/	0	23/	3	20/	3	8/	0	0/	0	0/	0	0/	0
	1995	35/	5	15/	3	8/	0	8/	0	15/	0	5/	0	0/	0	0/	0
	1997	25/	3	13/	0	13/	0	5/	0	3/	0	3/	0	0/	0	0/	0
	2001	18/	0	8/	0	15/	5	5/	0	13/	0	0/	0	0/	0	0/	0
	2005	23/	3	15/	0	18/	5	5/	0	15/	0	3/	0	0/	0	0/	0
RISL	1991	10/	3	3/	0	15/	0	30/	0	15/	5	5/	0	10/	3	3/	0
	1993	20/	3	10/	0	38/	0	20/	0	15/	3	5/	0	8/	3	5/	0
	1995	30/	3	13/	0	10/	0	8/	0	18/	0	15/	0	13/	0	15/	0
	1997	28/	0	3/	0	18/	0	15/	0	18/	0	8/	0	13/	0	5/	0
	2001	15/	0	3/	0	25/	5	15/	0	13/	0	8/	0	20/	0	3/	0
	2005	25/	3	10/	0	30/	0	15/	0	20/	0	8/	0	15/	0	3/	0
LWG	1991	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	1993	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	1995	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	1997	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	2001	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	2005	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0
LWM	1991	23/	3	3/	0	18/	0	28/	0	13/	3	3/	0	0/	0	0/	0
	1993	15/	3	5/	0	20/	0	15/	0	13/	0	0/	0	0/	0	0/	0
	1995	35/	0	8/	0	8/	0	8/	0	28/	0	5/	0	0/	0	0/	0
	1997	30/	3	3/	0	5/	0	13/	0	25/	0	0/	0	0/	0	0/	0
	2001	15/	0	0/	0	8/	0	5/	0	10/	0	0/	0	0/	0	0/	0
	2005	23/	3	8/	0	18/	0	5/	0	18/	0	5/	0	0/	0	0/	0
MCN	1991	15/	0	3/	3	8/	0	18/	0	8/	0	0/	0	0/	0	0/	0
	1993	15/	3	13/	5	15/	0	10/	0	10/	0	3/	0	0/	0	0/	0
	1995	10/	3	15/	5	8/	0	5/	0	15/	0	5/	0	0/	0	0/	0
	1997	20/	5	8/	3	13/	0	0/	0	10/	0	0/	0	0/	0	0/	0
	2001	13/	3	8/	5	10/	0	0/	0	13/	0	0/	0	0/	0	0/	0
	2005	23/	5	8/	0	23/	0	3/	0	15/	0	5/	0	0/	0	0/	0
JDAY	1991	18/	5	8/	0	23/	5	28/	3	10/	3	8/	0	0/	0	0/	0
	1993	20/	3	5/	3	18/	5	33/	3	3/	0	10/	0	0/	0	0/	0
	1995	8/	0	23/	5	5/	3	20/	0	3/	0	5/	0	0/	0	0/	0
	1997	15/	0	20/	0	13/	0	15/	0	8/	0	5/	0	0/	0	0/	0
	2001	5/	0	10/	0	18/	0	8/	0	13/	0	0/	0	0/	0	0/	0
	2005	20/	3	10/	0	20/	8	8/	0	13/	0	3/	0	0/	0	0/	0
DALS	1991	13/	3	13/	0	5/	0	13/	0	10/	0	3/	0	0/	0	0/	0
	1993	15/	0	10/	3	20/	0	5/	0	10/	0	5/	0	0/	0	0/	0
	1995	5/	0	20/	5	8/	0	5/	0	0/	0	8/	0	0/	0	0/	0
	1997	5/	0	8/	0	8/	0	8/	0	3/	0	5/	0	0/	0	0/	0
	2001	8/	0	8/	0	13/	0	10/	0	5/	0	0/	0	0/	0	0/	0
	2005	15/	3	5/	0	18/	0	8/	0	10/	0	0/	0	0/	0	0/	0
BONN	1991	5/	0	0/	0	5/	0	0/	0	10/	0	3/	0	0/	0	0/	0
	1993	0/	0	3/	0	3/	0	3/	0	3/	0	3/	0	0/	0	0/	0
	1995	0/	0	3/	0	0/	0	5/	0	0/	0	8/	0	0/	0	0/	0
	1997	0/	0	0/	0	0/	0	3/	0	0/	0	5/	0	0/	0	0/	0
	2001	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	2005	3/	0	0/	0	3/	0	0/	0	3/	0	0/	0	0/	0	0/	0
SYS	1991	5/	0	0/	0	8/	0	5/	0	3/	0	0/	0	3/	0	0/	0
	1993	3/	0	3/	0	8/	0	3/	0	3/	0	0/	0	3/	0	0/	0
	1995	0/	0	5/	0	5/	0	5/	0	0/	0	0/	0	0/	0	0/	0
	1997	0/	0	0/	0	3/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	2001	0/	0	0/	0	5/	0	0/	0	0/	0	0/	0	0/	0	0/	0
	2005	8/	0	0/	0	8/	0	0/	0	0/	0	0/	0	0/	0	0/	0

LEGEND
FI1 = PERCENT OF RELATIVE SURVIVAL INCREASES EXCEEDING ONE PERCENT
F15 = PERCENT OF RELATIVE SURVIVAL INCREASES EXCEEDING FIVE PERCENT
FD1 = PERCENT OF RELATIVE SURVIVAL DECREASES EXCEEDING ONE PERCENT
FD5 = PERCENT OF RELATIVE SURVIVAL DECREASES EXCEEDING FIVE PERCENT

DATE RUN= 07DEC89:10:51:50

RELATIVE CHANGES IN SYSTEM STOCK SURVIVAL
IMXA2E03 VS AMXBAARO (BASE CASE)

PROGRAM = DSN=PJI.PF400.RNR.FISHPASS.SAS.REPORTS(FSUM156)
FILES: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG — RUN DATE: AUG/04/89
PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG — RUN DATE: OCT/25/89

		YEARLING			SUBYEARLING			STEELHEAD			SOCKEYE		
POOL	YEAR	MB	MA	RM	MB	MA	RM	MB	MA	RM	MB	MA	RM
WELLS	1991	30.9	31.1	0.7	18.9	18.8	-0.6	35.5	35.7	0.5	26.2	26.3	0.4
	1993	34.1	34.2	0.3	20.4	20.4	0.0	39.3	39.5	0.4	27.7	27.7	0.2
	1995	40.3	40.5	0.4	29.3	29.3	-0.1	47.0	47.1	0.3	34.4	34.4	0.1
	1997	41.6	41.9	0.6	29.2	29.1	-0.1	47.8	48.0	0.3	34.3	34.3	0.0
	2001	40.7	40.7	0.2	28.7	28.8	0.3	47.2	47.3	0.3	34.1	34.2	0.2
	2005	41.0	41.1	0.1	27.8	27.8	-0.1	47.5	47.6	0.1	34.4	34.4	-0.0
RRECH	1991	33.1	33.3	0.7	24.3	24.3	-0.1	37.6	37.7	0.4	0.0	0.0	0.0
	1993	36.9	37.0	0.1	25.8	25.8	0.1	41.3	41.4	0.2	0.0	0.0	0.0
	1995	45.1	45.4	0.5	34.8	34.7	-0.1	49.6	49.6	0.1	0.0	0.0	0.0
	1997	46.8	47.0	0.5	33.9	33.9	-0.1	50.2	50.3	0.1	0.0	0.0	0.0
	2001	45.3	45.5	0.3	34.0	34.2	0.6	49.7	49.8	0.2	0.0	0.0	0.0
	2005	45.9	46.1	0.2	34.2	34.2	-0.2	49.9	50.0	0.1	0.0	0.0	0.0
RISL	1991	40.5	40.7	0.5	26.4	26.3	-0.4	42.1	42.3	0.4	34.1	34.2	0.3
	1993	40.9	41.0	0.3	26.6	26.6	0.3	42.6	42.8	0.5	34.0	34.1	0.3
	1995	49.6	49.9	0.6	37.3	37.3	0.1	53.4	53.4	-0.0	42.5	42.5	-0.0
	1997	51.5	52.0	0.8	37.1	37.1	0.0	53.9	53.9	0.2	42.5	42.6	0.2
	2001	49.7	49.9	0.4	36.8	37.0	0.5	52.8	52.9	0.3	42.1	42.2	0.3
	2005	50.2	50.4	0.3	36.1	36.0	-0.1	53.7	53.8	0.1	42.6	42.7	0.1
LWG	1991	83.0	83.0	0.0	59.8	59.8	-0.0	85.7	85.6	-0.0	65.5	65.5	-0.0
	1993	82.2	82.2	0.0	60.1	60.1	-0.1	85.6	85.6	0.0	65.3	65.3	0.0
	1995	88.1	88.1	0.0	70.2	70.1	-0.0	89.4	89.4	0.0	74.5	74.5	0.0
	1997	88.5	88.5	0.0	70.4	70.4	-0.0	89.5	89.5	0.0	74.4	74.4	-0.0
	2001	88.3	88.3	-0.0	70.8	70.7	-0.0	89.7	89.7	-0.0	74.8	74.8	-0.0
	2005	87.7	87.7	0.0	70.1	70.1	-0.0	89.3	89.3	0.0	74.3	74.3	-0.0
LWM	1991	33.3	33.4	0.3	27.2	27.0	-0.5	40.2	40.3	0.2	0.0	0.0	0.0
	1993	35.8	35.9	0.1	27.5	27.6	0.1	44.1	44.2	0.2	0.0	0.0	0.0
	1995	38.0	38.2	0.6	33.7	33.6	-0.2	46.5	46.7	0.6	0.0	0.0	0.0
	1997	38.5	38.8	0.8	34.5	34.2	-0.9	46.8	47.1	0.5	0.0	0.0	0.0
	2001	38.3	38.4	0.3	34.6	34.6	0.2	47.1	47.2	0.3	0.0	0.0	0.0
	2005	38.7	38.9	0.4	32.7	32.6	-0.4	47.8	48.0	0.3	0.0	0.0	0.0
MCN	1991	59.7	59.7	0.0	42.7	42.6	-0.2	67.5	67.6	0.1	0.0	0.0	0.0
	1993	58.8	58.7	-0.2	42.4	42.4	0.0	66.5	66.7	0.2	0.0	0.0	0.0
	1995	64.7	64.4	-0.4	53.2	53.2	0.0	73.0	73.1	0.2	0.0	0.0	0.0
	1997	66.6	66.9	0.5	53.2	53.2	0.2	74.1	74.4	0.4	0.0	0.0	0.0
	2001	64.6	64.6	0.0	53.1	53.2	0.2	72.8	73.0	0.3	0.0	0.0	0.0
	2005	64.6	64.9	0.5	52.3	52.3	-0.0	73.1	73.2	0.2	0.0	0.0	0.0
JDAY	1991	54.8	55.0	0.4	45.1	45.0	-0.2	60.2	60.2	0.0	0.0	0.0	0.0
	1993	54.6	54.8	0.4	44.4	44.3	-0.1	59.5	59.5	-0.1	0.0	0.0	0.0
	1995	54.0	53.7	-0.5	46.2	46.1	-0.2	59.6	59.6	0.0	0.0	0.0	0.0
	1997	56.0	56.0	-0.0	44.8	44.6	-0.4	61.8	61.8	-0.0	0.0	0.0	0.0
	2001	55.7	55.7	0.0	45.6	45.8	0.4	61.8	62.0	0.2	0.0	0.0	0.0
	2005	56.6	56.6	-0.1	44.8	44.8	-0.1	61.9	62.0	0.0	0.0	0.0	0.0
DALS	1991	66.0	66.1	0.1	55.0	54.8	-0.3	65.9	66.0	0.1	0.0	0.0	0.0
	1993	66.0	66.0	0.0	54.7	54.7	0.1	65.9	65.9	0.1	0.0	0.0	0.0
	1995	65.9	65.6	-0.5	55.5	55.4	-0.1	66.1	65.9	-0.3	0.0	0.0	0.0
	1997	69.4	69.3	-0.1	56.3	56.2	-0.1	68.9	68.8	-0.1	0.0	0.0	0.0
	2001	68.8	68.8	-0.0	56.1	56.2	0.1	69.1	69.1	0.1	0.0	0.0	0.0
	2005	69.1	69.0	-0.1	54.8	54.8	-0.1	69.0	68.9	-0.0	0.0	0.0	0.0
BONN	1991	87.5	87.6	0.1	79.5	79.6	0.1	83.4	83.5	0.1	0.0	0.0	0.0
	1993	87.5	87.5	-0.0	79.5	79.5	0.0	83.2	83.4	0.1	0.0	0.0	0.0
	1995	87.1	87.0	-0.1	79.6	79.5	-0.2	82.9	82.8	-0.1	0.0	0.0	0.0
	1997	87.2	87.2	-0.0	78.4	78.4	-0.0	82.2	82.2	-0.0	0.0	0.0	0.0
	2001	87.0	87.0	0.0	78.1	78.1	-0.0	82.0	82.0	0.0	0.0	0.0	0.0
	2005	87.1	87.1	0.0	78.2	78.2	-0.0	82.5	82.5	0.0	0.0	0.0	0.0
SYS	1991	69.7	69.8	0.1	52.3	52.3	-0.0	72.7	72.8	0.1	50.6	50.7	0.0
	1993	70.0	70.0	0.0	52.3	52.3	-0.0	72.9	73.0	0.1	50.9	50.9	0.0
	1995	73.6	73.7	0.0	58.5	58.5	-0.1	76.7	76.7	0.0	59.4	59.4	0.0
	1997	74.5	74.6	0.1	58.0	58.0	0.0	77.2	77.3	0.1	59.3	59.3	0.0
	2001	73.8	73.9	0.1	57.9	58.0	0.1	77.1	77.2	0.1	59.4	59.4	0.1
	2005	73.9	74.0	0.1	57.4	57.4	-0.0	77.1	77.1	0.0	59.3	59.3	0.0

LEGEND
MB = MEAN SURVIVAL WITH BASE CASE CONDITIONS (%) (BASE CASE)
MA = MEAN SURVIVAL WITH ALTERNATIVE CONDITIONS (%) (ALTERNATIVE)
RM = RELATIVE CHANGE IN MEAN SURVIVAL (%)
(ALTERNATIVE SURVIVAL - BASE CASE SURVIVAL) / (BASE CASE SURVIVAL)

DATE RUN= 07DEC89:09:41:47

FREQUENCY OF RELATIVE SURVIVAL CHANGES
EXCEEDING ONE AND FIVE PERCENT

PROGRAM = DSN=PJI.PF400.RNR.SAS.REPORTS(FSUM)
FILE: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG
FILE: PJI.PF400.RNR.FISH.PASS.DATA.MIDCOLFG

	YEARLING		SUBYEARLING		STEELHEAD		SOCKEYE	
POOL	FI1/FI5	FD1/FD5	FI1/FI5	FD1/FD5	FI1/FI5	FD1/FD5	FI1/FI5	FD1/FD5
WELLS	18/ 3	8/ 0	20/ 0	28/ 8	13/ 3	5/ 0	10/ 3	5/ 0
	18/ 0	5/ 0	38/ 3	23/ 0	18/ 0	3/ 0	10/ 3	5/ 0
	25/ 0	13/ 0	13/ 3	15/ 0	20/ 0	5/ 0	10/ 0	5/ 0
	18/ 3	0/ 0	28/ 3	30/ 0	20/ 0	0/ 0	8/ 0	5/ 0
	13/ 0	0/ 0	35/ 10	18/ 0	15/ 0	0/ 0	13/ 0	0/ 0
	10/ 0	3/ 0	3/ 0	3/ 0	8/ 0	0/ 0	0/ 0	0/ 0
RRECH	23/ 8	10/ 3	25/ 0	23/ 0	10/ 3	3/ 0	0/ 0	0/ 0
	23/ 3	13/ 0	28/ 5	25/ 5	5/ 0	0/ 0	0/ 0	0/ 0
	38/ 5	13/ 3	8/ 0	10/ 0	15/ 0	5/ 0	0/ 0	0/ 0
	28/ 3	13/ 0	8/ 0	5/ 0	3/ 0	3/ 0	0/ 0	0/ 0
	18/ 0	8/ 0	18/ 8	3/ 0	13/ 0	0/ 0	0/ 0	0/ 0
	8/ 3	5/ 0	0/ 0	5/ 0	3/ 0	0/ 0	0/ 0	0/ 0
RISL	15/ 3	8/ 3	18/ 0	33/ 0	20/ 5	10/ 3	15/ 3	10/ 3
	18/ 3	8/ 0	35/ 0	30/ 0	18/ 3	5/ 0	10/ 3	5/ 0
	33/ 3	13/ 0	10/ 0	10/ 0	20/ 0	15/ 0	13/ 0	15/ 0
	28/ 0	3/ 0	20/ 0	20/ 0	15/ 0	8/ 0	8/ 0	3/ 0
	15/ 0	5/ 0	30/ 5	10/ 0	18/ 0	5/ 0	23/ 0	3/ 0
	13/ 3	0/ 0	3/ 0	3/ 0	3/ 0	3/ 0	3/ 0	0/ 0
LWG	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
LWM	18/ 3	10/ 0	20/ 0	30/ 0	13/ 3	8/ 0	0/ 0	0/ 0
	15/ 0	8/ 0	20/ 0	18/ 3	13/ 0	3/ 0	0/ 0	0/ 0
	35/ 0	5/ 0	8/ 0	10/ 0	28/ 0	5/ 0	0/ 0	0/ 0
	30/ 3	3/ 0	5/ 0	20/ 5	23/ 0	0/ 0	0/ 0	0/ 0
	15/ 0	0/ 0	13/ 3	8/ 0	13/ 0	0/ 0	0/ 0	0/ 0
	13/ 3	3/ 0	0/ 0	13/ 0	10/ 0	3/ 0	0/ 0	0/ 0
MCN	13/ 0	8/ 3	10/ 0	15/ 0	8/ 0	3/ 0	0/ 0	0/ 0
	15/ 3	10/ 5	18/ 0	15/ 0	10/ 0	3/ 0	0/ 0	0/ 0
	13/ 3	18/ 8	8/ 0	5/ 0	20/ 0	5/ 0	0/ 0	0/ 0
	20/ 5	5/ 3	13/ 0	0/ 0	10/ 0	0/ 0	0/ 0	0/ 0
	13/ 3	8/ 5	10/ 0	0/ 0	13/ 0	0/ 0	0/ 0	0/ 0
	13/ 3	0/ 0	0/ 0	3/ 0	8/ 0	0/ 0	0/ 0	0/ 0
JDAY	18/ 5	8/ 3	25/ 5	35/ 3	8/ 3	8/ 0	0/ 0	0/ 0
	20/ 3	5/ 3	18/ 3	33/ 3	3/ 0	10/ 0	0/ 0	0/ 0
	10/ 0	20/ 5	5/ 3	23/ 0	3/ 0	3/ 0	0/ 0	0/ 0
	15/ 0	20/ 0	10/ 0	20/ 3	5/ 0	5/ 0	0/ 0	0/ 0
	5/ 0	10/ 0	15/ 3	0/ 0	13/ 0	0/ 0	0/ 0	0/ 0
	3/ 0	8/ 0	0/ 0	5/ 0	0/ 0	0/ 0	0/ 0	0/ 0
DALS	8/ 3	13/ 0	5/ 0	13/ 0	15/ 0	3/ 0	0/ 0	0/ 0
	15/ 0	10/ 3	20/ 0	13/ 0	10/ 0	3/ 0	0/ 0	0/ 0
	8/ 0	20/ 3	8/ 0	8/ 0	3/ 0	10/ 0	0/ 0	0/ 0
	5/ 0	8/ 0	8/ 0	13/ 0	3/ 0	3/ 0	0/ 0	0/ 0
	13/ 0	8/ 0	15/ 0	8/ 0	5/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	3/ 0	0/ 0	3/ 0	0/ 0	0/ 0	0/ 0	0/ 0
BONN	8/ 0	0/ 0	8/ 0	0/ 0	13/ 0	5/ 0	0/ 0	0/ 0
	0/ 0	3/ 0	3/ 0	3/ 0	3/ 0	3/ 0	0/ 0	0/ 0
	0/ 0	3/ 0	3/ 0	5/ 0	3/ 0	8/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	3/ 0	0/ 0	3/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
SYS	5/ 0	3/ 0	8/ 0	8/ 0	3/ 0	3/ 0	3/ 0	3/ 0
	3/ 0	3/ 0	5/ 0	3/ 0	3/ 0	0/ 0	3/ 0	0/ 0
	0/ 0	5/ 0	5/ 0	3/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	0/ 0	0/ 0	5/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0
	3/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0

LEGEND
FI1 = PERCENT OF RELATIVE SURVIVAL INCREASES EXCEEDING ONE PERCENT
FI5 = PERCENT OF RELATIVE SURVIVAL INCREASES EXCEEDING FIVE PERCENT
FD1 = PERCENT OF RELATIVE SURVIVAL DECREASES EXCEEDING ONE PERCENT
FD5 = PERCENT OF RELATIVE SURVIVAL DECREASES EXCEEDING FIVE PERCENT

DATE RUN= 07DEC89:11:33:31