



State of Idaho
DEPARTMENT OF WATER RESOURCES
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MEMORANDUM

DATE: April 14, 2008
TO: Dave Tuthill
FROM: Steve Burrell, Hydrology Section
RE: **Surface Water Coalition Call 2007 Final Injury and 2008 Predicted Injury**

This memo presents final injury values for 2007 based on the final water rights accounting and also presents the predicted injury for 2008. Use of the final 2007 accounting incorporates the approved flow and reservoir storage data of the USGS, shift-corrected canal diversions, and additional small pump diversions not included in the preliminary accounting. The 2008 predicted injury is based on the April 1 forecast for Heise issued jointly by the US Army Corps of Engineers and Bureau of Reclamation.

Final 2007 Injury

Water District 01 Final accounting was completed in February of 2008. Tabulations of the calculations of injury incorporating the final accounting are in Attachments A through E. Attachment A shows total season diversions and natural flow for each canal, Attachment B shows storage allocations and adjustments, Attachment C presents the storage use and adjustments, and Attachments D and E show the material injury calculations. Twin Falls Canal Company's (TFCC) is the only Surface Water Coalition (SWC) member that incurred in-season injury.

The final accounting for WD 01 shows that in-season injury to TFCC was 21,811 acre-feet (Attachment E). Injury calculated with preliminary accounting data was 17,345 acre-feet (see Seventh Supplemental Order of December 20, 2007). The difference of 4,476 acre-feet was due to decreases in reach gains calculated from preliminary versus final USGS gage data, reservoir levels, and diversion records. Because of a change in the methodology used to calculate the Minidoka return flow credit from preliminary to final accounting, TFCC's natural flow supply was expected to increase by 6,760 acre-feet in the final analysis. This expected increase was offset by the effect of the reduced reach gains. Table 1 below shows a summary of TFCC's injury amounts and IGWA's remaining 2007 replacement water.

Table 1. Twin Falls Canal Company 2007 in-season injury summary.

TFCC preliminary in-season injury	17,345 acre-feet
IGWA's replacement water leases for preliminary injury (7th Supplemental Order)	14,345 acre-feet
TFCC final in-season injury	21,811 acre-feet
IGWA amount still due to TFCC	7,466 acre-feet
IGWA 2007 replacement water remainder (in Aberdeen-Springfield Palisades account)	6,097 acre-feet
Difference of IGWA amount still due and IGWA remainder in A-S	1,369 acre-feet

DRAFT

Storage carryover shortfalls are 19,800 acre-feet for AFRD#2 and 38,400 acre-feet for TFCC (Attachment D). These remained essentially unchanged from the Seventh Supplemental Order. As described in the next section below, current projections are for reservoirs to fill, or nearly fill. A final determination as to the amount of carryover shortfall for 2007 that is owed by IGWA should be made after Water District 01 completes the 2008 storage allocations in late May or early June.

Predicted 2008 Injury

The joint operating forecast issued by the U.S. Army Corps of Engineers and U.S. Bureau of Reclamation for April 1 through July 31 calls for 3,650,000 acre-feet of runoff volume at the Heise Gage. This volume is slightly higher than the 2006 actual runoff volume of 3,620,000 acre-feet for April 1 through July 31.

Using the 2006 historical runoff and demand patterns in the Department's water rights accounting program, and substituting the current reservoir storage right volumes shows Jackson and Palisades will fill if the Heise April through July runoff volume is greater than 3,400,000 acre-feet. For projecting 2008 storage supplies of the SWC, allocations were assumed to be the same as 2006, where reservoirs filled except for some flood control releases.

With the 2008 Heise forecast volume, the natural flow supply projections for the SWC canals in 2008 were made using the same procedure as in the Fifth Supplemental Order (see Attachments F through I), updated with 2007 data.

Table 2 below shows the projected total supply consisting of the projected natural flow supply and 2006 storage allocations, the 1995 minimum full supply, and the estimated shortfalls for the in-season injury. Assuming normal climatic conditions for the 2008 season, no in-season injury is predicted for 2008.

Table 2. Projected supplies and in-season shortfalls for the SWC in 2008.

CANAL	2008 PREDICTED NATURAL FLOW (AF)	2008 PREDICTED STORAGE ALLOCATION (AF)	2008 NF + PREDICTED STORAGE ALLOCATION (AF)	MIN. FULL SUPPLY - 1995 (AF)	ESTIMATED IN-SEASON SHORTFALL (AF)
MINIDOKA NS	159,100	334,100	493,200	314,300	0
BID (MINIDOKA SS)	150,000	213,300	363,300	220,200	0
A & B ID	12,700	117,200	129,900	50,000	0
MILNER ID	18,100	79,000	97,100	50,800	0
AF RES. DIST #2	116,700	383,200	499,900	405,600	0
NS TWIN FALLS	531,100	782,100	1,313,200	988,200	0
TWIN FALLS SS	872,600	224,200	1,096,800	1,075,900	0

Note: TFCC and NSCC storage supplies reduced for Minidoka Credit volumes.

**2007 END OF IRRIGATION SEASON STORAGE AND NATURAL FLOW USE BASED ON FINAL ACCOUNTING.
ATTACHMENT A. TOTAL SUPPLY IN 2007 FOR SURFACE WATER COALITION CANALS.**

USGS ID	CANAL COMPANY	(1)	(2)	final (3) = (1) - (2)	(4)	(5) = (3) + (4)
		2007 TOTAL DIVERSION (AF)	2007 STORAGE USED (AF)	2007 UNADJUSTED NATURAL FLOW USED (AF)	SWID WHEELED WATER (AF)	2007 ADJUSTED NATURAL FLOW USED (AF)
13080000	MINIDOKA NS ¹	375,520	273,492.3	102,028		102,028
13080500	BID (MINIDOKA SS) ²	266,395	194,015.9	72,379	-2,700	69,679
13085500	A & B ID	60,227	57,457.7	2,769		2,769
13086000	MILNER ID	59,459	52,122.9	7,336	-2,200	5,136
13086530	AF RES. DIST #2 ⁴	429,043	386,478.4	42,564		42,564
13087000	NORTH SIDE ³	1,058,184	748,556.0	309,628		309,628
13087500	TWIN FALLS SS	1,053,835	254,257.2	799,578	-1,800	797,778

ATTACHMENT B. STORAGE SUPPLY AND ADJUSTMENTS

USGS ID	CANAL COMPANY	ALLOCATION TABLE 21, (AF)	ALLOCATION ADJUSTMENTS			DESCRIPTION OF STORAGE SUPPLY ADJUSTMENT	ADJUSTMENT SUM (AF)	ADJUSTED ALLOCATION (AF)
			MINIDOKA CREDIT ADJ (AF)	WD1 RENTAL (AF)	OTHER (AF)			
13080000	MINIDOKA NS ¹	337,202	8,370			Footnote f, pg 39, (ignore MID pumps adjustment)	8,370	345,572
13080500	BID (MINIDOKA SS) ²	215,308	5,130			Footnote g, pg 39, (ignore BID pumps adjustment)	5,130	220,438
13085500	A & B ID	120,197					0	120,197
13086000	MILNER ID	81,526					0	81,526
13086530	AF RES. DIST #2	384,941	1,000		8,500	Footnote n, pg 39 transfer per WMC letter, 8/15/2007	9,500	394,441
13087000	NORTH SIDE ³	796,113	-7,750		1,500	footnote m, pg 39 transfer per WMC letter, 8/15/2007	-6,250	789,863
13087500	TWIN FALLS SS	232,309	-6,750	40,000	554	Footnote i, pg 39 (other adjustments from footnote made below) TFCC large user rental pg 43 (underwritten by IGWA) Footnote l, pg 39, FMC adjustment	33,804	266,113

2007 END OF IRRIGATION SEASON STORAGE AND NATURAL FLOW USE BASED ON FINAL ACCOUNTING.

ATTACHMENT C. STORAGE USE AND ADJUSTMENTS.

USGS ID	CANAL COMPANY	STORAGE USE FROM COL. (2), ATT A. (AF)	STORAGE USE ADJUSTMENTS			DESCRIPTION OF STORAGE USE ADJUSTMENT	SUM OF STORAGE USE ADJUSTMENTS (AF)	ADJUSTED STORAGE USE (AF)
			WD1 RENTAL POOL LEASES	PRIVATE LEASES	OTHER			
13080000	MINIDOKA NS ¹	273,492					0	273,492
13080500	BID (MINIDOKA SS) ²	194,016	-6,099	-800		Sum of WD1 rentals for non-canal company acres (pg 42) Sum of private leases for non-canal company acres (pg 42)	-6,899	187,117
13085500	A & B ID	57,458					0	57,458
13086000	MILNER ID	52,123	-1,899	-4,000	-1,218	Sum of WD1 rentals for non-canal company acres (pg 42) Sum of private leases for non-canal company acres (pg 42) Artesian irrigation acre water wheeled (pg 33 & footnote h, pg 39)	-7,117	45,006
13086530	AF RES. DIST #2	386,478					0	386,478
13087000	NORTH SIDE ³	748,556			-34,958	Conversion acre deliveries for NSGWD (C Yenter email 2-14-08)	-34,958	713,598
13087500	TWIN FALLS SS	254,257	-2,269	-2,500	-1,564	Sum of WD1 rentals for non-canal company acres (pg 43) SWID from Snake River Valley xfer (to be documented) Storage transfer from Artesian Irrigation (footnote l, pg 39)	-6,333	247,924

2007 END OF IRRIGATION SEASON STORAGE AND NATURAL FLOW USE BASED ON FINAL ACCOUNTING.

ATTACHMENT D. CARRYOVER AND INJURY CALCULATIONS BASED ON 1995 MINIMUM FULL SUPPLY.

	(1)	(2)	(3) = (1) - (2)	(4)	(5) = (4) + (3)	(6)	(7)	(8) = (6) + (7)	(8) - (5)
	2007 ADJUSTED STORAGE ALLOCATION FROM ATT. B (AF)	2007 ADJUSTED STORAGE USE FROM ATT. C(AF)	2007 CARRYOVER (AF)	ADJUSTED TOTAL DIVERSIONS (ATT. A COL 1 + ATT. C LAST COL) (AF)	TOTAL 2007 DIVERSIONS + CARRYOVER (AF)	MIN FULL SUPPLY - 1995 (AF)	REASON. CARRYOVER (AF)	MINIMUM FULL SUPPLY NEEDED + REAS. CARRYOVE R (AF)	ESTIMATED CARRYOVER SHORTFALL (AF)
13080000 MINIDOKA NS	345,572	273,492	72,080	375,520	447,600	314,300	-	314,300	(133,300)
13080500 MINIDOKA SS (BID)	220,438	187,117	33,321	256,796	290,117	220,200	-	220,200	(69,917)
13085500 A & B ID	120,197	57,458	62,739	60,227	122,966	50,000	8,500	58,500	(64,466)
13086000 MILNER ID	81,526	45,006	36,520	50,142	86,662	50,800	7,200	58,000	(28,662)
13086530 AF RES. DIST #2	394,441	386,478	7,962	429,042	437,005	405,600	51,200	456,800	19,795
13087000 NS TWIN FALLS	789,863	713,598	76,265	1,023,226	1,099,491	988,200	83,300	1,071,500	(27,991)
13087500 TWIN FALLS SS	266,113	247,924	18,189	1,045,702	1,063,891	1,063,891	38,400	1,102,291	38,400

Note: TFCC 1995 min. supply is artificially set to adjust out 40,000 rental.

ATTACHMENT E. TFCC IN-SEASON INJURY CALCULATIONS WITH UNDERWRITING OF MINIMUM FULL SUPPLY.

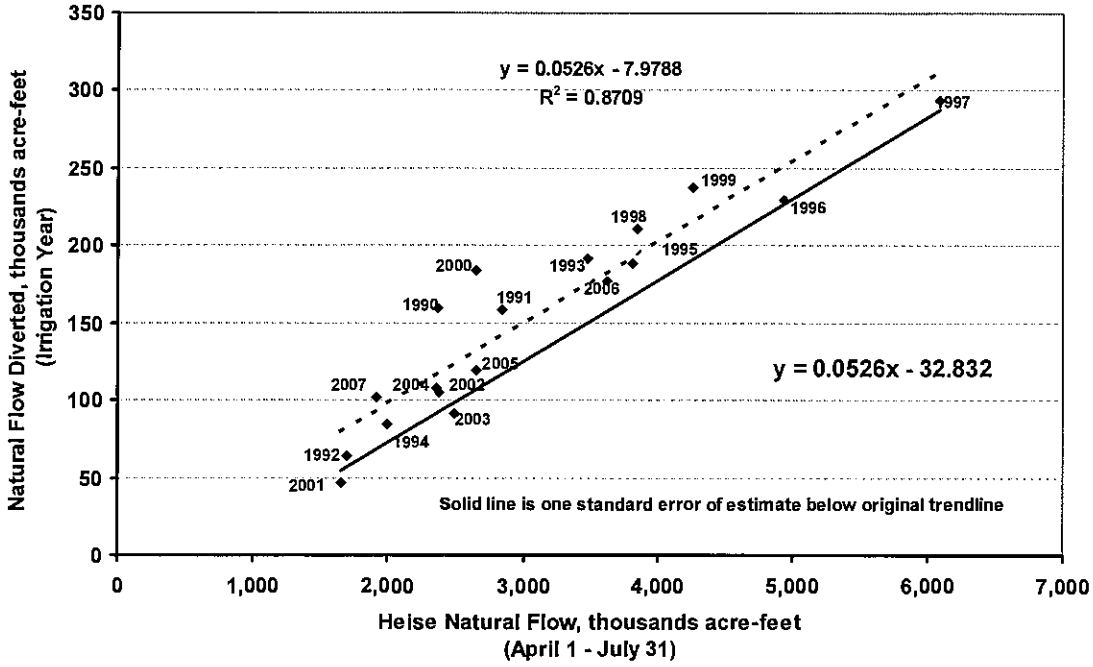
TOTAL DIVERSIONS (STORAGE USE AND NATURAL FLOW):	1,045,702	AF
TOTAL 2007 SUPPLY WITHOUT 40,000 AF RENTAL (COL 5, ATT. D - 40K):	<u>1,023,891</u>	AF
FINAL INJURY (DIFFERENCE)	21,811	AF

ALTERNATIVE CALCULATION:

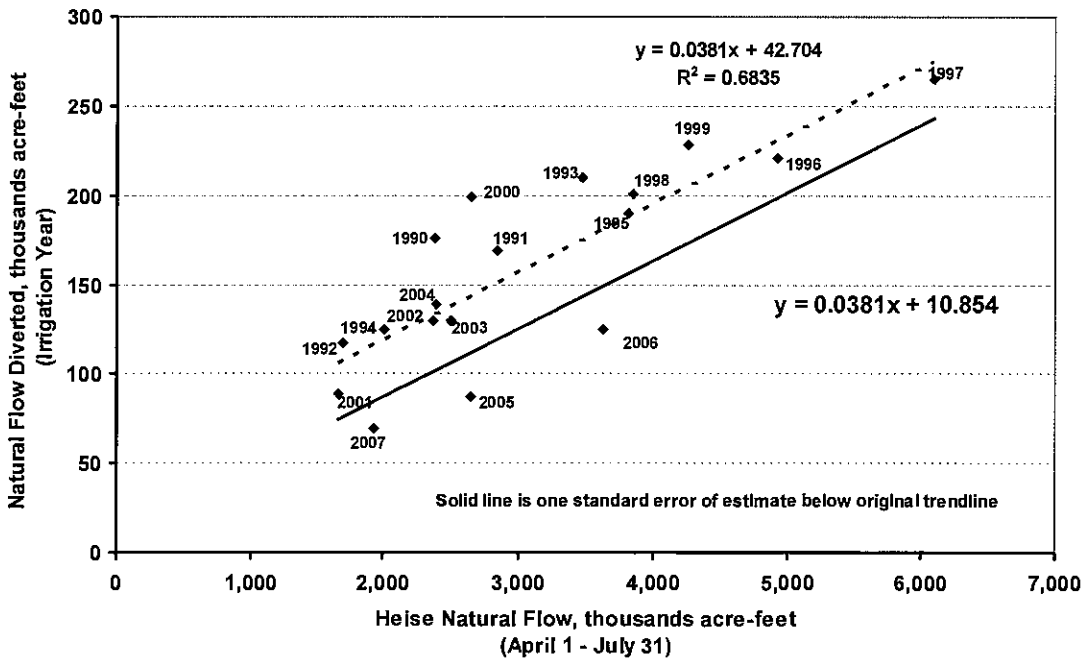
RENTAL WATER UNDERWRITTEN:	40,000	AF
TFCC LEFTOVER (CARRYOVER IN COL. (3), ATT. D):	<u>18,189</u>	AF
FINAL INJURY (DIFFERENCE)	21,811	AF

ATTACHMENT F

MINIDOKA IRRIGATION DISTRICT
Natural Flow Diversions with Heise Inflow

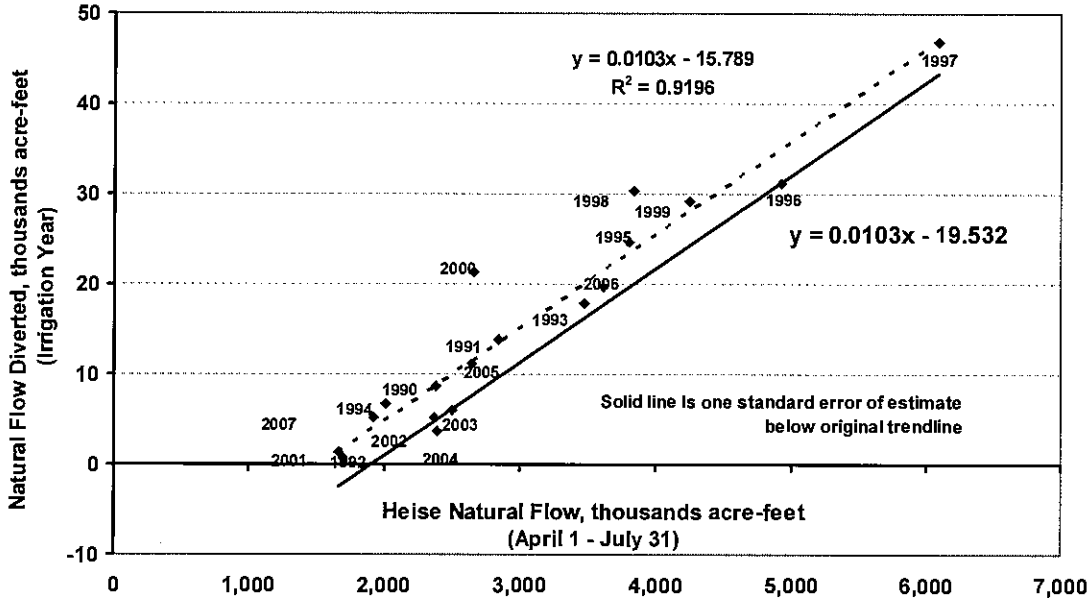


BURLEY IRRIGATION DISTRICT
Natural Flow Diversions with Heise Inflow

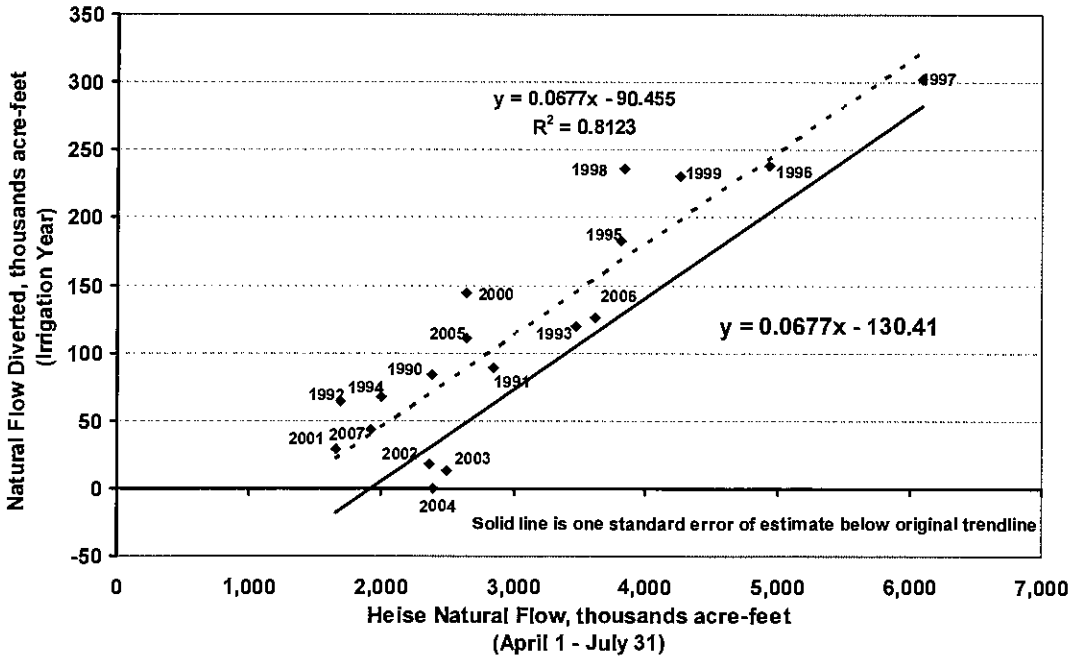


ATTACHMENT G

MILNER IRRIGATION DISTRICT
Natural Flow Diversions with Heise Inflow

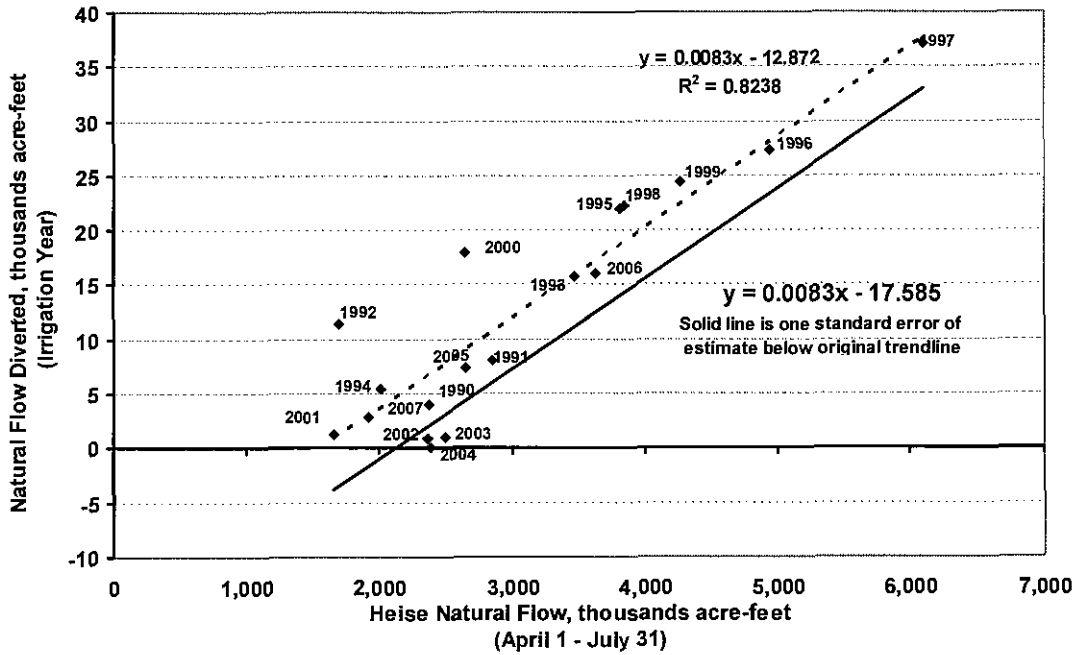


AMERICAN FALLS RESERVOIR DISTRICT #2
Natural Flow Diversions with Heise Inflow

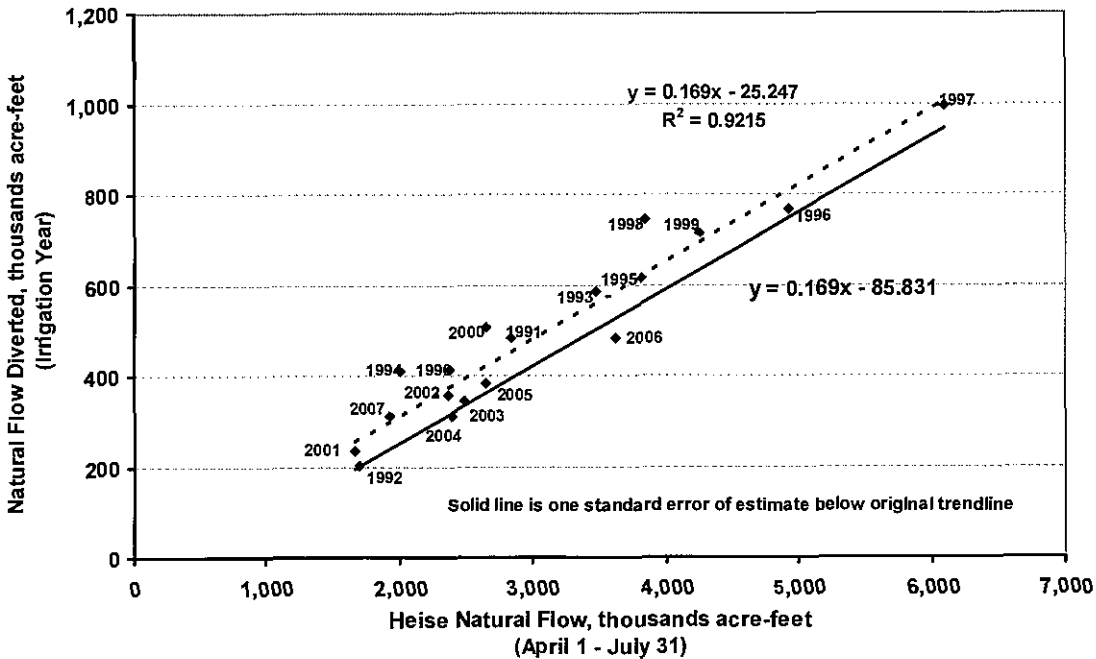


ATTACHMENT H

A & B IRRIGATION DISTRICT
Natural Flow Diversions with Heise Inflow



NORTH SIDE CANAL COMPANY
Natural Flow Diversions with Heise Inflow



TWIN FALLS CANAL COMPANY Natural Flow Diversions with Heise Inflow

