

Figure 1
REAP Schematic

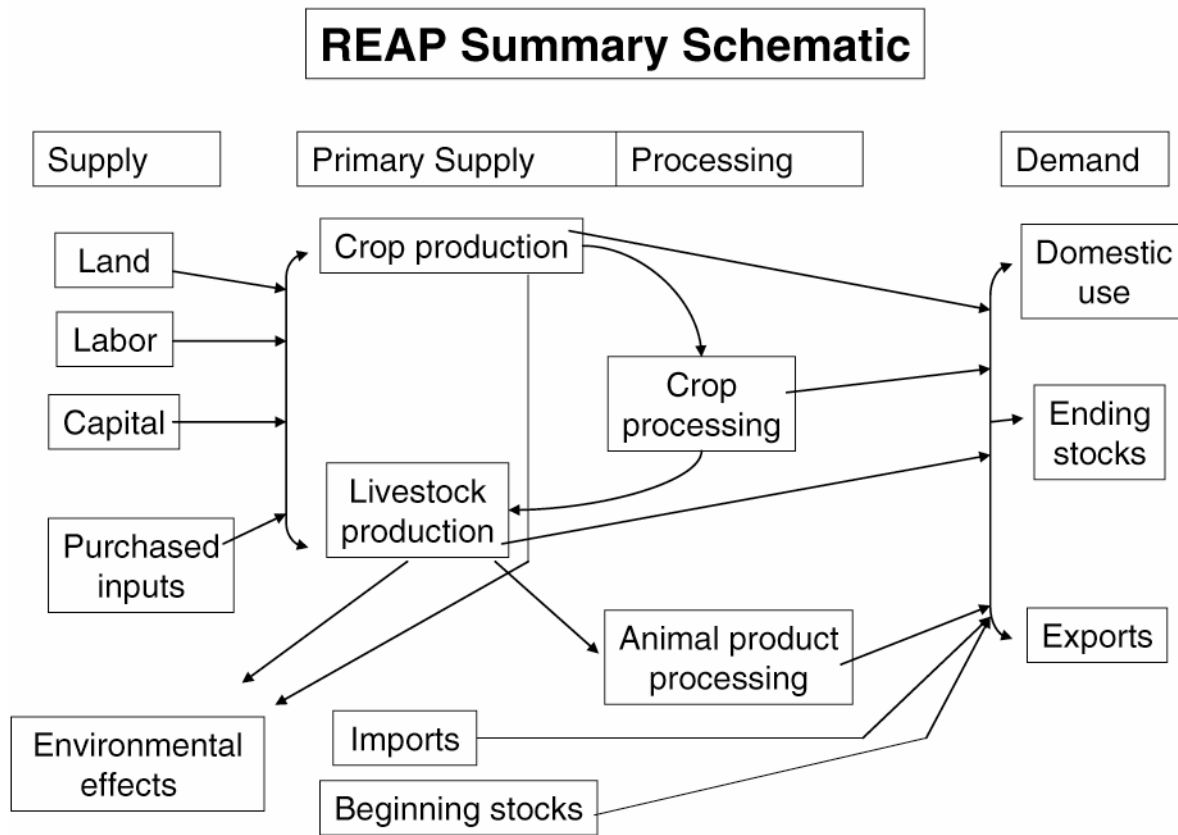
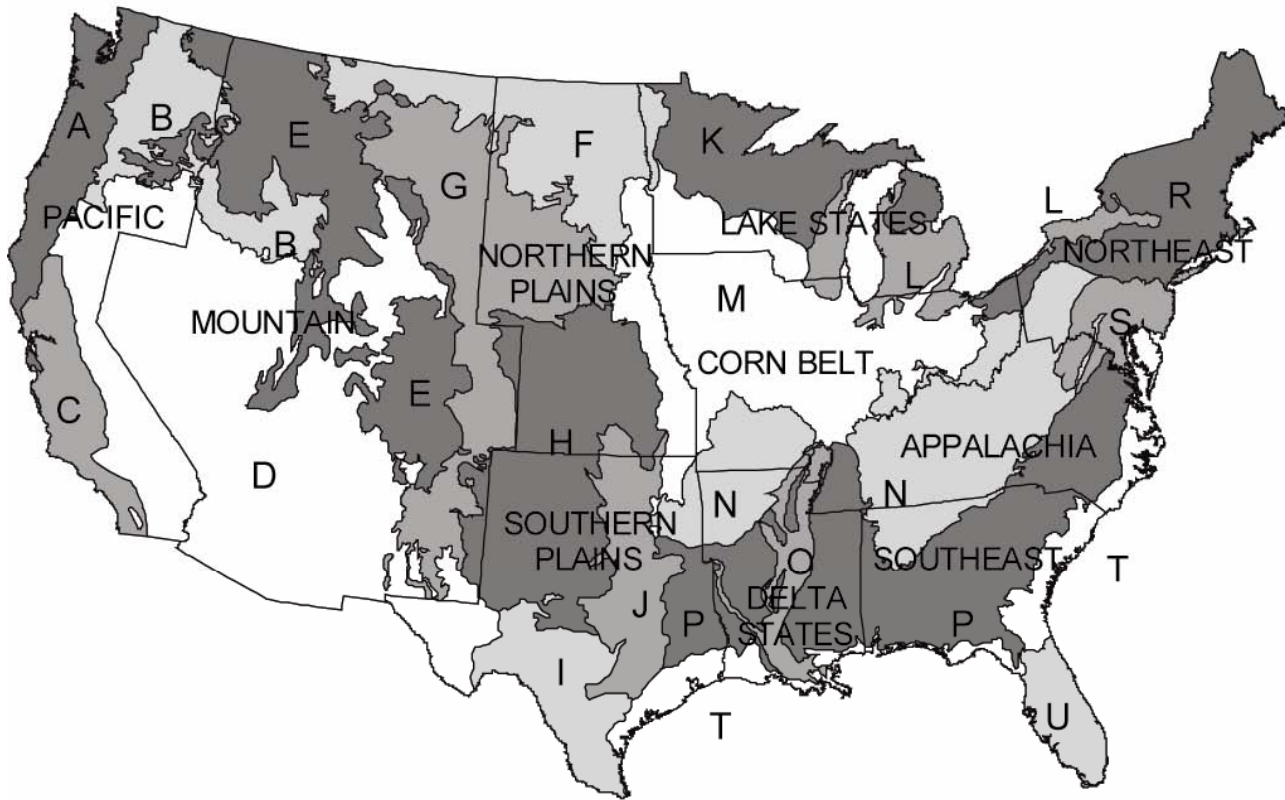


Figure 2

REAP Model Regions



Farm Production and Land Resource Regions

NT - Northeast	A - NW Forest, Forage, and Spec. Crops	K - N. Lake States Forest and Range
LA - Lake States	B - NW Wheat and Range	L - Lake States Fruit, Truck, and Dairy
CB - Corn Belt	C - Cal. Subtop. Fruit, Truck, and Spec. Crops	M - Central Feed Grains and Livestock
NP - Northern Plains	D - Western Range and Irrigated	N - East and Central Farming and Forest
AP - Appalachia	E - Rocky Mountain Range and Forest	O - Mississippi Delta Cotton and Feed Grains
SE - Southeast	F - N. Great Plains Spring Wheat	P - S. Atl. & Gulf Slope Cash Crops, Forest, Lvst.
DL - Delta States	G - W. Great Plains Range and Irrigated	R - Northeast Forage and Forest
SP - Southern Plains	H - W. Great Plains Winter Wheat and Range	S - North Atlantic Slope Diversified Farming
MN - Mountain	I - SW. Plateaus and Plains Range and Cotton	T - Atlantic & Gulf Coast Lowland Forest and Crop
PA - Pacific	J - SW. Prairies Cotton and Forage	U - Fla. Subtropical Fruit, Truck Crop, Range

USMP model region nomenclature is the concatenation of abbreviations for farm production and land resource region, e.g. CBM is the intersection of FPR Corn Belt and LR Region M.

Figure 3

Depiction of transformation curves as used in REAP

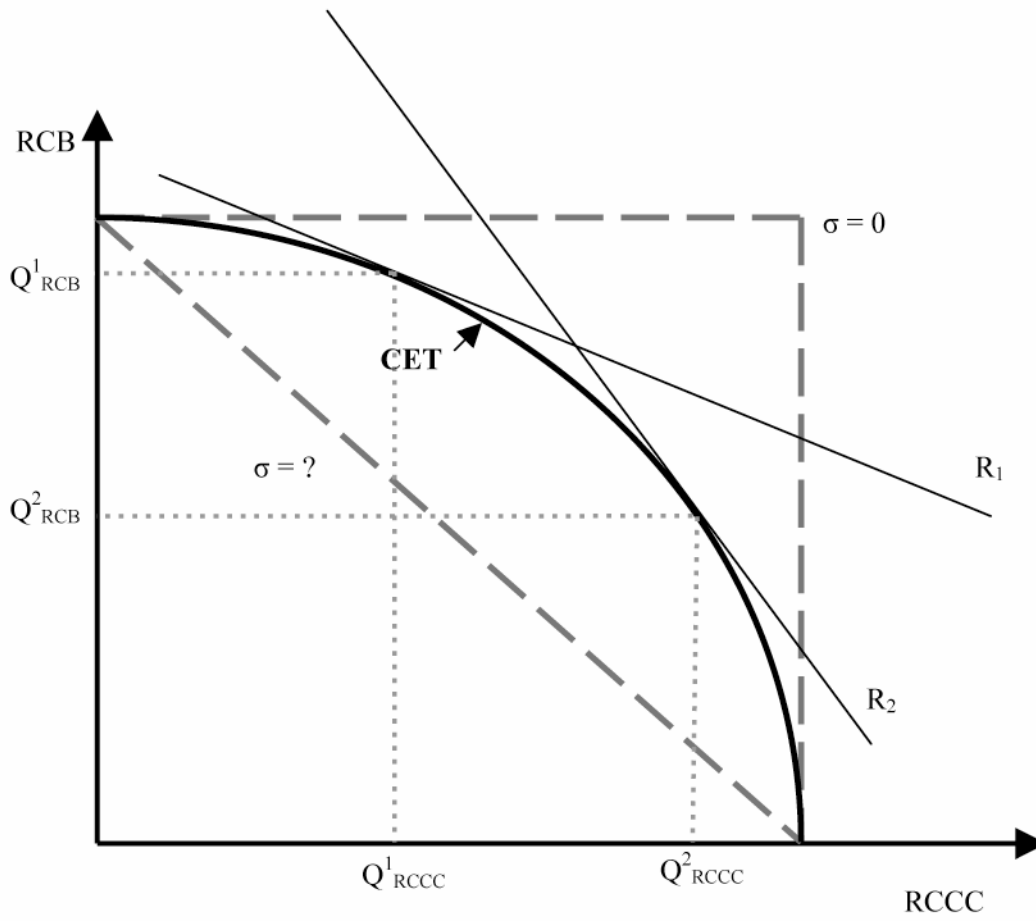


Figure 4

Comparison of flexibility constraints to CET curve

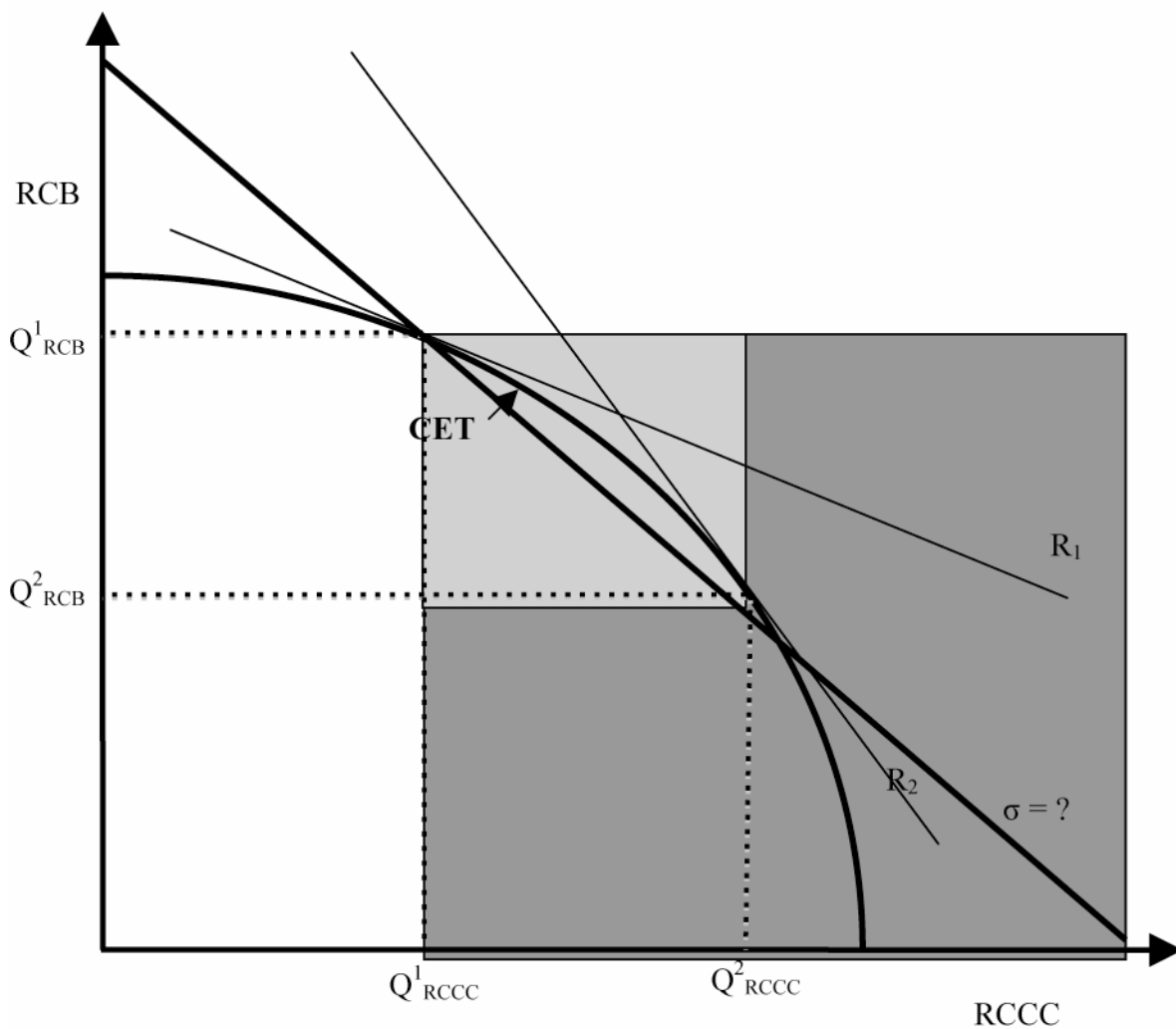


Table 1

REAP Inputs and Outputs

Inputs		Outputs		
<u>Regional</u>	<u>National</u>	<u>Livestock</u>	<u>Crops</u>	<u>Processed</u>
cropland	nitrogen fertilizer	fed beef for slaughter	corn	soybean meal
pasture land	potassium fertilizer	nonfed beef for slaughter	soybeans	soybean oil
	potash fertilizer	beef calves for slaughter	sorghum	livestock feed mixes
	lime	beef feeder yearlings	barley	dairy feed supplements
	other variable costs	beef feeder calves	oats	swine feed supplements
	public grazing land	cull beef cows	wheat	fed beef
	custom farming operations	cull dairy cows	cotton	nonfed beef
	chemicals	cull dairy calves	rice	veal
	seed	milk	silage	pork
	interest on operating capital	hogs for slaughter	hay	broilers
	machinery and equipment repair	cull sows for slaughter		turkeys
	veterinary and medical costs	feeder pigs		eggs
	marketing and storage	other livestock		butter
	ownership costs			american cheese
	labor and management costs			other cheese
	land taxes and rent			ice cream
	general farm overhead			nonfat dry milk
	irrigation water application			manufacturing milk
	energy costs			ethanol
	insurance			corn syrup

Table 2

List of tables contained in ENVACTGA

* PARAMETER DEFINITIONS FOR ENVACTGB. GMS *

PARAMETER BTIL(B, T, R, CAS) SUM OF TILLAGE ACREAGE BY MDR;
PARAMETER BTIL_N(B, T, CAS) SUM OF TILACRES NATIONALLY;
PARAMETER TIL_CPSR(T, R, CAS) REG. SUM OF TIL ACRES LIKE CROPPING PRACTICES SURVEY;
PARAMETER TIL_CPSN(T, CAS) NAT. SUM OF TIL ACRES LIKE CROPPING PRACTICES SURVEY;
PARAMETER TCROP(RL, R, CAS) TOTAL PROGRAM AND FLEX AND ARP ACREAGE, BY MDR;
PARAMETER TCROP_P(R, CAS) TOTAL PROGRAM AND FLEX AND ARP ACREAGE, BY FPR;

PARAMETER SACPP1(B, G, H, Y, T, U, UR) PP ACTIVITY SHARE OF TOTAL CROP ACRES BY MDR;
PARAMETER CHGCROPAC(B, G, H, Y, T, U, UR, *) PP CHANGE IN CROP ACRES PLANTED;
PARAMETER RCHGCROPAC(U, UR, *) REGIONAL CHANGE IN CROP ACRES PLANTED;

PARAMETER ACRES059(RL, R) 0-92 AND 50-92 ACREAGE WEIGHTED BY MDR CROP ACREAGE;
PARAMETER OLUADJ(RL, R, OTHRLAND, CAS) OTHER LAND USE - ADJUSTED TO CURRENT YEAR;
PARAMETER OLUTD(RL, R, CAS) DIFFERENCE BETWEEN ACTUAL AND CALCULATED LANDUSE TOTALS;
PARAMETER PR_ER_RTS(RL, PRLAND) PASTURE AND RANGE WATER EROSION RATES;
PARAMETER PR_WR_RTS(RL, PRLAND) PASTURE AND RANGE WIND EROSION RATES;
PARAMETER CL_ERSN(RL, R, CAS) CROP LAND SOIL EROSION TOTAL IN TONS MDR;
PARAMETER ARP_ERSN(RL, R, CAS) ARP EROSION TOTAL IN TONS BY MDR;
PARAMETER DIV_ERSN(RL, R) 50-92 AND 0-92 EROSION BY MDR;
PARAMETER CRP_ERSN_L(RL, R) CONS. RESERVE PROGRAM SOIL EROSION TOTAL IN TONS BY PRODUCTION REGION;
PARAMETER DIV_WERSN(RL, R) 50-92 AND 0-92 WIND EROSION BY MDR;
PARAMETER CRP_WRSN_L(RL, R) CONS. RESERVE PROGRAM WIND EROSION TOTAL IN TONS BY PRODUCTION REGION;
PARAMETER PR_EROSN(PRLAND, RL, R, CAS) PASTURE AND RANGE LAND SOIL EROSION TOTAL IN TONS BY LAND RESOURCE REGION;

PARAMETER TEROSN_L(RL, R, CAS) TOTAL SOIL EROSION IN TONS BY LR IN MILLIONS OF TONS;
PARAMETER TEROSN_P(R, CAS) TOTAL SOIL EROSION IN TONS BY PRODUCTION REGION IN MILLIONS OF TONS;
PARAMETER TEROSN_N(CAS) TOTAL NATIONAL SOIL EROSION IN TONS IN MILLIONS OF TONS;

PARAMETER SEROSN_L(RL, R, CAS) SHEET AND RILL SOIL EROSION IN TONS BY LR IN MILLIONS OF TONS;
PARAMETER SEROSN_P(R, CAS) SHEET AND RILL SOIL EROSION IN TONS BY PRODUCTION REGION IN MILLIONS OF TONS;
PARAMETER SEROSN_N(CAS) SHEET AND RILL NATIONAL SOIL EROSION IN TONS IN MILLIONS OF TONS;

PARAMETER WINDERSN_L(RL, R, CAS) TOTAL WIND EROSION IN TONS BY LR IN MILLIONS OF TONS;
PARAMETER WINDERSN_P(R, CAS) TOTAL WIND EROSION IN TONS BY PRODUCTION REGION IN MILLIONS OF TONS;
PARAMETER WINDERSN_N(CAS) TOTAL NATIONAL WIND EROSION IN TONS IN MILLIONS OF TONS;

PARAMETER AVGCLERSN(RL, R, CAS) AVERAGE CROPLAND (WATER) EROSION RATE IN TONS PER ACRE;
PARAMETER AVGCLECST(RL, R, CAS) AVERAGE CROPLAND (WATER) EROSION COST IN DOLLARS PER ACRE;

PARAMETER ERSNCST_L(RL, R, CAS) OFF-SITE SOIL EROSION DAMAGES BY RESOURCE REGION IN MILLIONS OF DOLLARS;
PARAMETER ERSNCST_P(R, CAS) OFF-SITE SOIL EROSION DAMAGES BY PRODUCTION REGION IN MILLIONS OF DOLLARS;
PARAMETER ERSNCST_N(CAS) TOTAL NATIONAL OFF-SITE SOIL EROSION DAMAGES IN BILLIONS OF DOLLARS;
PARAMETER EMENERGY_L(RL, R, CAS) EMBODIED ENERGY USE BY MDR IN MILLIONS OF BARRELS DIESEL EQUIV;
PARAMETER EMENERGY_P(R, CAS) EMBODIED ENERGY USE BY PRODUCTION REGION IN MILLIONS OF BARRELS DIESEL EQUIV;
PARAMETER EMENERGY_N(CAS) NATIONAL EMBODIED ENERGY USE IN MILLIONS OF BARRELS DIESEL FUEL EQUIV;
PARAMETER EMCARBON_L(RL, R, CAS) EMBODIED CARBON IN PRODUCTION ACTIVITY INPUTS BY LR IN MILLIONS OF METRIC TONS;
PARAMETER EMCARBON_P(R, CAS) EMBODIED CARBON IN PRODUCTION ACTIVITY INPUTS BY FPR IN MILLIONS OF METRIC TONS;
PARAMETER EMCARBON_N(CAS) EMBODIED CARBON IN PRODUCTION ACTIVITY INPUTS NATIONAL TOTOAL IN MILLIONS METRIC OF TONS;
PARAMETER PR_C_RTS(U, UR, PRLAND) PASTURE AND RANGE CARBON SEQ RATES;
PARAMETER CRP_CRBN(U, UR) LAND CARBON SEQ TOTAL IN METRIC TONS;
PARAMETER ARP_CRBN(U, UR) ARP CARBON SEQ TOTAL IN METRIC TONS BY MDR;
PARAMETER DIV_CRBN(U, UR) 50-92 AND 0-92 CARBON SEQUESTERED BY MDR;

PARAMETER PPCFLUX(B, G, H, Y, T, U, UR) C SEQ ESTIMATE FOR PRODUCTION ACTIVITIES BASED OFF OF ARS TOFROM ESTIMATES;
PARAMETER RCFLUX(U, UR) CARBON SEQUESTERED BY REGION;
PARAMETER RACRES(U, UR) CROPLAND ACRES BY REGION;
PARAMETER RAVGFLUX(U, UR) AVERAGE CARBON SEQUESTERED ON CROPLAND BY REGION;
PARAMETER PMTBASE(B, G, H, Y, T, U, UR) CARBON PAYMENT BASE;
PARAMETER CRP_NLOS_L(RL, R) CONS. RESERVE PROGRAM TOTAL NI TORGEN LOSS IN TONS BY RESOURCE REGION;

Table 2

List of tables contained in ENVACTGA—continued

PARAMETER	GHG_L(RL, R, CAS) GREENHOUSE GAS EMISSIONS BY MDR IN MM TONS C EQUIV;
PARAMETER	GHG_P(R, CAS) GREENHOUSE GAS EMISSIONS BY PR IN MM TONS C EQUIV;
PARAMETER	GHG_N(CAS) TOTAL GREENHOUSE GAS EMISSIONS IN MM OF TONS C EQUIV;
PARAMETER	NLOSS_L(RL, R, CAS) NITRATE LOSSES BY MDR IN MILLION TONS;
PARAMETER	NLOSS_P(R, CAS) NITRATE LOSSES BY PRODUCTION REGION IN MILLION TONS;
PARAMETER	NLOSS_N(CAS) NATIONAL NITRATE LOSSES IN MILLION TONS;
PARAMETER	ANLOSS(RL, R, CAS) AVERAGE N LOSS IN POUNDS PER ACRE FOR CROPPED ACRES;
PARAMETER	PNLOSS_L(RL, R, CAS) PERCENT N LOSSES PER ACRE FOR CROPPED ACRES;
PARAMETER	NLEACH_L(RL, R, CAS) TOTAL NITROGEN LEACHED TO GROUNDWATER BY MDR;
PARAMETER	NLEACH_P(R, CAS) TOTAL NITROGEN LEACHED TO GROUNDWATER BY PR;
PARAMETER	NLEACH_N(CAS) TOTAL NITROGEN LEACHED TO GROUNDWATER;
PARAMETER	ANLEACH(RL, R, CAS) AVERAGE N LEACHED TO GROUNDWATER BY MDR;
PARAMETER	CRP_NLCH_L(RL, R) CONS. RESERVE PROGRAM NITROGEN LEACHED TO GROUNDWATER IN TONS BY RESOURCE REGION;
PARAMETER	NSOLN_L(RL, R, CAS) TOTAL NITROGEN LOST IN SOLUTION BY MDR;
PARAMETER	NSOLN_P(R, CAS) TOTAL NITROGEN LOST IN SOLUTION BY PR;
PARAMETER	NSOLN_N(CAS) TOTAL NITROGEN LOST IN SOLUTION;
PARAMETER	ANSOLN(RL, R, CAS) AVERAGE N LOST IN SOLUTION BY MDR;
PARAMETER	CRP_NSOL_L(RL, R) CONS. RESERVE PROGRAM TOTAL NITROGEN LOST IN SOLUTION IN TONS BY RESOURCE REGION;
PARAMETER	NSEDMNT_L(RL, R, CAS) TOTAL NITROGEN LOST IN SEDIMENT BY MDR;
PARAMETER	NSEDMNT_P(R, CAS) TOTAL NITROGEN LOST IN SEDIMENT BY PR;
PARAMETER	NSEDMNT_N(CAS) TOTAL NITROGEN LOST IN SEDIMENT;
PARAMETER	ANSEDMNT(RL, R, CAS) AVERAGE N LOST IN SEDIMENT BY MDR;
PARAMETER	CRP_NSDM_L(RL, R) CONS. RESERVE PROGRAM TOTAL NITROGEN LOST IN SEDIMENT IN TONS BY RESOURCE REGION;
PARAMETER	NDENITE_L(RL, R, CAS) TOTAL NITROGEN LOST IN ATMOSPHERE BY MDR;
PARAMETER	NDENITE_P(R, CAS) TOTAL NITROGEN LOST IN ATMOSPHERE BY PR;
PARAMETER	NDENITE_N(CAS) TOTAL NITROGEN LOST IN ATMOSPHERE;
PARAMETER	ANDENITE(RL, R, CAS) AVERAGE N LOST IN ATMOSPHERE BY MDR;
PARAMETER	CRP_NDNI_L(RL, R) CONS. RESERVE PROGRAM TOTAL NITROGEN LOST IN ATMOSPHERE IN TONS BY RESOURCE REGION;
PARAMETER	NVOL_L(RL, R, CAS) TOTAL NITROGEN LOST IN ATMOSPHERE BY MDR;
PARAMETER	NVOL_P(R, CAS) TOTAL NITROGEN LOST IN ATMOSPHERE BY PR;
PARAMETER	NVOL_N(CAS) TOTAL NITROGEN LOST IN ATMOSPHERE;
PARAMETER	ANVOL(RL, R, CAS) AVERAGE N LOST IN ATMOSPHERE BY MDR;
PARAMETER	CRP_NVOL_L(RL, R) CONS. RESERVE PROGRAM TOTAL NITROGEN LOST IN ATMOSPHERE IN TONS BY RESOURCE REGION;
PARAMETER	NLOSSGS_N(CAS) NATIONAL NITRATE LOSSES TO GROUND AND SURFACE WATER IN MILLION TONS;
PARAMETER	NLOSSGS_L(RL, R, CAS) NITRATE LOSSES TO GROUND AND SURFACE WATER BY MDR IN MILLION TONS;
PARAMETER	NLOSSGS_P(R, CAS) NITRATE LOSSES TO GROUND AND SURFACE WATER BY PRODUCTION REGION IN MILLION TONS;
PARAMETER	NWATCST_L(RL, R, CAS) OFF-SITE VALUE OF REDUCTION IN NITROGEN LOSS TO WATER BY RESOURCE REGION IN MILLIONS OF DOLLARS;
PARAMETER	NWATCST_P(R, CAS) OFF-SITE VALUE OF REDUCTION IN NITROGEN LOSS TO WATER BY PRODUCTION REGION IN MILLIONS OF DOLLARS;
PARAMETER	NWATCST_N(CAS) OFF-SITE VALUE OF REDUCTION IN NITROGEN LOSS TO WATER IN MILLIONS OF DOLLARS;
*NOTE MAY WANT TO PUT IN AN AVERAGE HERE	
PARAMETER	PLOSS_L(RL, R, CAS) PHOSPHATE LOSSES BY MDR IN MILLION TONS;
PARAMETER	PLOSS_P(R, CAS) PHOSPHATE LOSSES BY PRODUCTION REGION IN MILLION TONS;
PARAMETER	PLOSS_N(CAS) NATIONAL NITRATE LOSSES IN MILLION TONS;
PARAMETER	APLOSS(RL, R, CAS) AVERAGE N LOSS IN POUNDS PER ACRE FOR CROPPED ACRES;
PARAMETER	PLEACH_L(RL, R, CAS) TOTAL PHOSPHATE LEACHED TO GROUNDWATER BY MDR;
PARAMETER	PLEACH_P(R, CAS) TOTAL PHOSPHATE LEACHED TO GROUNDWATER BY PR;
PARAMETER	PLEACH_N(CAS) TOTAL PHOSPHATE LEACHED TO GROUNDWATER;
PARAMETER	APLEACH(RL, R, CAS) AVERAGE P LEACHED TO GROUNDWATER BY MDR;
PARAMETER	PSOLN_L(RL, R, CAS) TOTAL PHOSPHATE LOST IN SOLUTION BY MDR;
PARAMETER	PSOLN_P(R, CAS) TOTAL PHOSPHATE LOST IN SOLUTION BY PR;
PARAMETER	PSOLN_N(CAS) TOTAL PHOSPHATE LOST IN SOLUTION;
PARAMETER	APSOLN(RL, R, CAS) AVERAGE P LOST IN SOLUTION BY MDR;
PARAMETER	PSEDMNT_L(RL, R, CAS) TOTAL PHOSPHATE LOST IN SEDIMENT BY MDR;
PARAMETER	PSEDMNT_P(R, CAS) TOTAL PHOSPHATE LOST IN SEDIMENT BY PR;
PARAMETER	PSEDMNT_N(CAS) TOTAL PHOSPHATE LOST IN SEDIMENT;
PARAMETER	APSEDMNT(RL, R, CAS) AVERAGE P LOST IN SEDIMENT BY MDR;

Table 2

List of tables contained in ENVACTGA—continued

PARAMETER	NUSED_L(RL, R, CAS) NITRATE USED BY MDR IN MILLION TONS;
PARAMETER	NUSED_P(R, CAS) NITRATE USED BY PRODUCTION REGION IN MILLION TONS;
PARAMETER	NUSED_N(CAS) NATIONAL NITRATE USED IN MILLION TONS;
PARAMETER	ANUSE_L(RL, R, CAS) AVERAGE N USE POUNDS PER ACRE MDR CROPPED ACRES;
PARAMETER	ANUSE_P(R, CAS) AVERAGE N USE POUNDS PER ACRE FPR CROPPED ACRES;
PARAMETER	PUSED_L(RL, R, CAS) PHOSPHATE USED BY MDR IN MILLION TONS;
PARAMETER	PUSED_P(R, CAS) PHOSPHATE USED BY PRODUCTION REGION IN MILLION TONS;
PARAMETER	PUSED_N(CAS) NATIONAL PHOSPHATE USED IN MILLION TONS;
PARAMETER	APUSE_L(RL, R, CAS) AVERAGE P USE POUNDS PER ACRE MDR CROPPED ACRES;
PARAMETER	APUSE_P(R, CAS) AVERAGE P USE POUNDS PER ACRE FPR CROPPED ACRES;
PARAMETER	KUSED_L(RL, R, CAS) POTASH USED BY MDR IN MILLION TONS;
PARAMETER	KUSED_P(R, CAS) POTASH USED BY PRODUCTION REGION IN MILLION TONS;
PARAMETER	KUSED_N(CAS) NATIONAL POTASH USED IN MILLION TONS;
PARAMETER	AKUSE_L(RL, R, CAS) AVERAGE K USE POUNDS PER ACRE MDR CROPPED ACRES;
PARAMETER	AKUSE_P(R, CAS) AVERAGE K USE POUNDS PER ACRE FPR CROPPED ACRES;
*PARAMETER	PKLOSS_L(RL, R, CAS) PERCENT K LOSSES PER ACRE FOR CROPPED ACRES;
PARAMETER	R_SDA(R, CAS) regional soil depreciation allowances ;
PARAMETER	N_SDA(CAS) national soil depreciation allowance ;
PARAMETER	ROTACRES_L(B, RL, R, CAS) SUM OF ROTATION ACREAGE BY MDR;
PARAMETER	ROTACRES_P(B, R, CAS) SUM OF ROTACRES BY PRODUCTION REGION;
PARAMETER	ROTACRES_N(B, CAS) SUM OF ROTACRES NATIONALLY;
PARAMETER	ROTACRET_L(B, T, RL, R, CAS) ROT_TIL ACREAGE BY MDR;
PARAMETER	ROTACRET_P(B, T, R, CAS) ROT_TIL ACRES BY PRODUCTION REGION;
PARAMETER	ROTACRET_N(B, T, CAS) ROT_TIL ACRES NATIONALLY;
PARAMETER	ROTACRE_P(T, R, CAS) SUM OF ROT_TIL ACRES BY PRODUCTION REGION;
PARAMETER	ROTACRE_N(T, CAS) SUM OF ROT_TIL ACRES NATIONALLY;
PARAMETER	ALTACRES_L(Y, RL, R, CAS) SUM OF ACREAGE BY MDR AND ALTERNATIVE;
PARAMETER	ALTACRES_P(Y, R, CAS) SUM OF ACRES BY PRODUCTION REGION AND ALTERNATIVE;
PARAMETER	ALTACRES_N(Y, CAS) SUM OF ACRES NATIONALLY AND BY ALTERNATIVE;
PARAMETER	CHEMCOSTP(R, CAS) TOTAL CHEMICAL COSTS BY PR;
PARAMETER	CHEMCOSTN(CAS) TOTAL NATIONAL CHEMICAL COSTS;
PARAMETER	NITCOSTP(R, CAS) TOTAL NITROGEN COSTS BY PR;
PARAMETER	NITCOSTN(CAS) TOTAL NATIONAL NITROGEN COSTS;
PARAMETER	PHOSCOSTP(R, CAS) TOTAL PHOSPHATE COSTS BY PR;
PARAMETER	PHOSCOSTN(CAS) TOTAL NATIONAL PHOSPHATE COSTS;
PARAMETER	POTCOSTP(R, CAS) TOTAL POTASH COSTS BY PR;
PARAMETER	POTCOSTN(CAS) TOTAL POTASH CHEMICAL COSTS;
**NITROGEN	
*INPUTS	
PARAMETER	BTN_L(RL, R, CAS) BEGINNING TOTAL NITROGEN BY MDR;
PARAMETER	BTN_P(R, CAS) BEGINNING TOTAL NITROGEN BY PR;
PARAMETER	BTN_N(CAS) BEGINNING TOTAL NITROGEN;
PARAMETER	BTN_LA(RL, R, CAS) BEGINNING TOTAL NITROGEN PER ACRE BY MDR;
PARAMETER	BTN_PA(R, CAS) BEGINNING TOTAL NITROGEN PER ACRE BY FPR;
PARAMETER	FNH3_L(RL, R, CAS) AMMONIA FERT BY MDR IN MILLION TONS;
PARAMETER	FNH3_P(R, CAS) AMMONIA FERT BY PRODUCTION REGION IN MILLION TONS;
PARAMETER	FNH3_N(CAS) NATIONAL AMMONIA FERT IN MILLION TONS;
PARAMETER	FNH3_LA(RL, R, CAS) AMMONIA FERT PER ACRE BY MDR;
PARAMETER	FNH3_PA(R, CAS) AMMONIA FERT PER ACRE BY FPR;
PARAMETER	FNO3_L(RL, R, CAS) NITRATE FERT BY MDR IN MILLION TONS;
PARAMETER	FNO3_P(R, CAS) NITRATE FERT BY PRODUCTION REGION IN MILLION TONS;
PARAMETER	FNO3_N(CAS) NATIONAL NITRATE FERT IN MILLION TONS;
PARAMETER	FNO3_LA(RL, R, CAS) NITRATE FERT PER ACRE BY MDR;
PARAMETER	FNO3_PA(R, CAS) NITRATE FERT PER ACRE BY FPR;
PARAMETER	FNTOT_L(RL, R, CAS) TOTAL N FERT BY MDR IN MILLION TONS;
PARAMETER	FNTOT_P(R, CAS) TOTAL N FERT BY PRODUCTION REGION IN MILLION TONS;
PARAMETER	FNTOT_N(CAS) NATIONAL TOTAL N FERT IN MILLION TONS;
PARAMETER	FNTOT_LA(RL, R, CAS) TOTAL N FERT PER ACRE BY MDR;
PARAMETER	FNTOT_PA(R, CAS) TOTAL N FERT PER ACRE BY FPR;

Table 2

List of tables contained in ENVACTGA—continued

PARAMETER	FX_L(RL, R, CAS) NITROGEN FIXED BY MDR IN MILLION TONS;
PARAMETER	FX_P(R, CAS) NITROGEN FIXED BY PRODUCTION REGION IN MILLION TONS;
PARAMETER	FX_N(CAS) NATIONAL NITROGEN FIXED IN MILLION TONS;
PARAMETER	FX_LA(RL, R, CAS) NITROGEN FIXED PER ACRE BY MDR;
PARAMETER	FX_PA(R, CAS) NITROGEN FIXED PER ACRE BY FPR;
PARAMETER	RN_L(RL, R, CAS) NITROGEN IN RAIN BY MDR;
PARAMETER	RN_P(R, CAS) NITROGEN IN RAIN BY PR;
PARAMETER	RN_N(CAS) NITROGEN IN RAIN;
PARAMETER	RN_LA(RL, R, CAS) NITROGEN IN RAIN PER ACRE BY MDR;
PARAMETER	RN_PA(R, CAS) NITROGEN IN RAIN PER ACRE BY FPR;
*OUTPUTS	
PARAMETER	YLN_L(RL, R, CAS) NITROGEN IN CROP YIELD BY MDR;
PARAMETER	YLN_P(R, CAS) NITROGEN IN CROP YIELD BY PR;
PARAMETER	YLN_N(CAS) NITROGEN IN CROP YIELD;
PARAMETER	YLN_LA(RL, R, CAS) NITROGEN IN CROP YIELD PER ACRE BY MDR;
PARAMETER	YLN_PA(R, CAS) NITROGEN IN CROP YIELD PER ACRE BY FPR;
PARAMETER	TFO_L(RL, R, CAS) NITROGEN IN CROP RESIDUE BY MDR;
PARAMETER	TFO_P(R, CAS) NITROGEN IN CROP RESIDUE BY PR;
PARAMETER	TFO_N(CAS) NITROGEN IN CROP RESIDUE;
PARAMETER	TFO_LA(RL, R, CAS) NITROGEN IN CROP RESIDUE PER ACRE BY MDR;
PARAMETER	TFO_PA(R, CAS) NITROGEN IN CROP RESIDUE PER ACRE BY FPR;
PARAMETER	PRKN_L(RL, R, CAS) NITROGEN LEACHED BY MDR;
PARAMETER	PRKN_P(R, CAS) NITROGEN LEACHED BY PR;
PARAMETER	PRKN_N(CAS) NITROGEN LEACHED;
PARAMETER	PRKN_LA(RL, R, CAS) NITROGEN LEACHED PER ACRE BY MDR;
PARAMETER	PRKN_PA(R, CAS) NITROGEN LEACHED PER ACRE BY FPR;
PARAMETER	YNO3_L(RL, R, CAS) NITRATE IN SOLUTION BY MDR;
PARAMETER	YNO3_P(R, CAS) NITRATE IN SOLUTION BY PR;
PARAMETER	YNO3_N(CAS) NITRATE IN SOLUTION;
PARAMETER	YNO3_LA(RL, R, CAS) NITRATE IN SOLUTION PER ACRE BY MDR;
PARAMETER	YNO3_PA(R, CAS) NITRATE IN SOLUTION PER ACRE BY FPR;
PARAMETER	YON_L(RL, R, CAS) ORGANIC NITROGEN IN SEDIMENT BY MDR;
PARAMETER	YON_P(R, CAS) ORGANIC NITROGEN IN SEDIMENT BY PR;
PARAMETER	YON_N(CAS) ORGANIC NITROGEN IN SEDIMENT;
PARAMETER	YON_LA(RL, R, CAS) ORGANIC NITROGEN IN SEDIMENT PER ACRE BY MDR;
PARAMETER	YON_PA(R, CAS) ORGANIC NITROGEN IN SEDIMENT PER ACRE BY FPR;
PARAMETER	SSFN_L(RL, R, CAS) NITRATE IN SUBSURFACE FLOW BY MDR;
PARAMETER	SSFN_P(R, CAS) NITRATE IN SUBSURFACE FLOW BY PR;
PARAMETER	SSFN_N(CAS) NITRATE IN SUBSURFACE FLOW;
PARAMETER	SSFN_LA(RL, R, CAS) NITRATE IN SUBSURFACE FLOW PER ACRE BY MDR;
PARAMETER	SSFN_PA(R, CAS) NITRATE IN SUBSURFACE FLOW PER ACRE BY FPR;
PARAMETER	DN_L(RL, R, CAS) DENITRIFICATION BY MDR;
PARAMETER	DN_P(R, CAS) DENITRIFICATION BY PR;
PARAMETER	DN_N(CAS) DENITRIFICATION NATIONAL;
PARAMETER	DN_LA(RL, R, CAS) DENITRIFICATION PER ACRE BY MDR;
PARAMETER	DN_PA(R, CAS) DENITRIFICATION PER ACRE BY FPR;
PARAMETER	AVOL_L(RL, R, CAS) NITROGEN VOLITILIZATION BY MDR;
PARAMETER	AVOL_P(R, CAS) NITROGEN VOLITILIZATION BY PR;
PARAMETER	AVOL_N(CAS) NITROGEN VOLITILIZATION;
PARAMETER	AVOL_LA(RL, R, CAS) NITROGEN VOLITILIZATION PER ACRE BY MDR;
PARAMETER	AVOL_PA(R, CAS) NITROGEN VOLITILIZATION PER ACRE BY FPR;
PARAMETER	AIRN_L(RL, R, CAS) NITROGEN LOST TO ATMOSPHERE BY MDR;
PARAMETER	AIRN_P(R, CAS) NITROGEN LOST TO ATMOSPHERE BY PR;
PARAMETER	AIRN_N(CAS) NITROGEN LOST TO ATMOSPHERE;
PARAMETER	AIRN_LA(RL, R, CAS) NITROGEN LOST TO ATMOSPHERE PER ACRE BY MDR;
PARAMETER	AIRN_PA(R, CAS) NITROGEN LOST TO ATMOSPHERE PER ACRE BY FPR;
PARAMETER	WATN_L(RL, R, CAS) NITROGEN LOST TO WATER BY MDR;
PARAMETER	WATN_P(R, CAS) NITROGEN LOST TO WATER BY PR;
PARAMETER	WATN_N(CAS) NITROGEN LOST TO WATER;
PARAMETER	WATN_LA(RL, R, CAS) NITROGEN LOST TO WATER PER ACRE BY MDR;
PARAMETER	WATN_PA(R, CAS) NITROGEN LOST TO WATER PER ACRE BY FPR;
PARAMETER	FTN_L(RL, R, CAS) FINAL TOTAL NITROGEN BY MDR;
PARAMETER	FTN_P(R, CAS) FINAL TOTAL NITROGEN BY PR;
PARAMETER	FTN_N(CAS) FINAL TOTAL NITROGEN;
PARAMETER	FTN_LA(RL, R, CAS) FINAL TOTAL NITROGEN PER ACRE BY MDR;
PARAMETER	FTN_PA(R, CAS) FINAL TOTAL NITROGEN PER ACRE BY FPR;

Table 2

List of tables contained in ENVACTGA—continued***BALANCES**

PARAMETER NBAL_L(RL, R, CAS) EPIC NITROGEN BALANCE BY MDR;
 PARAMETER NBAL_P(R, CAS) EPIC NITROGEN BALANCE BY PR;
 PARAMETER NBAL_N(CAS) EPIC NITROGEN BALANCE;
 PARAMETER NBAL_LA(RL, R, CAS) EPIC NITROGEN BALANCE PER ACRE BY MDR;
 PARAMETER NBAL_PA(R, CAS) EPIC NITROGEN BALANCE PER ACRE BY FPR;

PARAMETER XNBAL_L(RL, R, CAS) EXCESS NITROGEN BALANCE BY MDR;
 PARAMETER XNBAL_P(R, CAS) EXCESS NITROGEN BALANCE BY PR;
 PARAMETER XNBAL_N(CAS) EXCESS NITROGEN BALANCE;
 PARAMETER XNBAL_LA(RL, R, CAS) EXCESS NITROGEN BALANCE PER ACRE BY MDR;
 PARAMETER XNBAL_PA(R, CAS) EXCESS NITROGEN BALANCE PER ACRE BY FPR;

****PHOSPHOROUS*****INPUT**

PARAMETER BTP_L(RL, R, CAS) BEGINNING TOTAL PHOSPHOROUS BY MDR;
 PARAMETER BTP_P(R, CAS) BEGINNING TOTAL PHOSPHOROUS BY PR;
 PARAMETER BTP_N(CAS) BEGINNING TOTAL PHOSPHOROUS;
 PARAMETER BTP_LA(RL, R, CAS) BEGINNING TOTAL PHOSPHOROUS PER ACRE BY MDR;
 PARAMETER BTP_PA(R, CAS) BEGINNING TOTAL PHOSPHOROUS PER ACRE BY FPR;

PARAMETER PLAB_L(RL, R, CAS) LABILE PHOSPHORUS BY MDR IN MILLION TONS;
 PARAMETER PLAB_P(R, CAS) LABILE PHOSPHORUS BY PRODUCTION REGION IN MILLION TONS;
 PARAMETER PLAB_N(CAS) LABILE PHOSPHORUS IN MILLION TONS;
 PARAMETER PLAB_LA(RL, R, CAS) LABILE PHOSPHORUS PER ACRE BY MDR;
 PARAMETER PLAB_PA(R, CAS) LABILE PHOSPHORUS PER ACRE BY FPR;

***OUTPUTS**

PARAMETER YLP_L(RL, R, CAS) PHOSPHOROUS IN CROP YIELD BY MDR;
 PARAMETER YLP_P(R, CAS) PHOSPHOROUS IN CROP YIELD BY PR;
 PARAMETER YLP_N(CAS) PHOSPHOROUS IN CROP YIELD;
 PARAMETER YLP_LA(RL, R, CAS) PHOSPHOROUS IN CROP YIELD PER ACRE BY MDR;
 PARAMETER YLP_PA(R, CAS) PHOSPHOROUS IN CROP YIELD PER ACRE BY FPR;

PARAMETER PRKP_L(RL, R, CAS) PHOSPHOROUS LEACHED BY MDR;
 PARAMETER PRKP_P(R, CAS) PHOSPHOROUS LEACHED BY PR;
 PARAMETER PRKP_N(CAS) PHOSPHOROUS LEACHED;
 PARAMETER PRKP_LA(RL, R, CAS) PHOSPHOROUS LEACHED PER ACRE BY MDR;
 PARAMETER PRKP_PA(R, CAS) PHOSPHOROUS LEACHED PER ACRE BY FPR;

PARAMETER YAP_L(RL, R, CAS) PHOSPHOROUS IN SOLUTION BY MDR;
 PARAMETER YAP_P(R, CAS) PHOSPHOROUS IN SOLUTION BY PR;
 PARAMETER YAP_N(CAS) PHOSPHOROUS IN SOLUTION;
 PARAMETER YAP_LA(RL, R, CAS) PHOSPHOROUS IN SOLUTION PER ACRE BY MDR;
 PARAMETER YAP_PA(R, CAS) PHOSPHOROUS IN SOLUTION PER ACRE BY FPR;

PARAMETER YP_L(RL, R, CAS) PHOSPHOROUS IN SEDIMENT BY MDR;
 PARAMETER YP_P(R, CAS) PHOSPHOROUS IN SEDIMENT BY PR;
 PARAMETER YP_N(CAS) PHOSPHOROUS IN SEDIMENT;
 PARAMETER YP_LA(RL, R, CAS) PHOSPHOROUS IN SEDIMENT PER ACRE BY MDR;
 PARAMETER YP_PA(R, CAS) PHOSPHOROUS IN SEDIMENT PER ACRE BY FPR;

PARAMETER WATP_L(RL, R, CAS) PHOSPHOROUS LOST TO WATER BY MDR;
 PARAMETER WATP_P(R, CAS) PHOSPHOROUS LOST TO WATER BY PR;
 PARAMETER WATP_N(CAS) PHOSPHOROUS LOST TO WATER;
 PARAMETER WATP_LA(RL, R, CAS) PHOSPHOROUS LOST TO WATER PER ACRE BY MDR;
 PARAMETER WATP_PA(R, CAS) PHOSPHOROUS LOST TO WATER PER ACRE BY FPR;

PARAMETER FTP_L(RL, R, CAS) FINAL TOTAL PHOSPHOROUS BY MDR;
 PARAMETER FTP_P(R, CAS) FINAL TOTAL PHOSPHOROUS BY PR;
 PARAMETER FTP_N(CAS) FINAL TOTAL PHOSPHOROUS;
 PARAMETER FTP_LA(RL, R, CAS) FINAL TOTAL PHOSPHOROUS PER ACRE BY MDR;
 PARAMETER FTP_PA(R, CAS) FINAL TOTAL PHOSPHOROUS PER ACRE BY FPR;

***BALANCES**

PARAMETER PBAL_L(RL, R, CAS) EPIC PHOSPHOROUS BALANCE BY MDR;
 PARAMETER PBAL_P(R, CAS) EPIC PHOSPHOROUS BALANCE BY PR;
 PARAMETER PBAL_N(CAS) EPIC PHOSPHOROUS BALANCE;
 PARAMETER PBAL_LA(RL, R, CAS) EPIC PHOSPHOROUS BALANCE PER ACRE BY MDR;
 PARAMETER PBAL_PA(R, CAS) EPIC PHOSPHOROUS BALANCE PER ACRE BY FPR;

PARAMETER XPLBAL_L(RL, R, CAS) EXCESS LABILE PHOSPHOROUS BALANCE BY MDR;
 PARAMETER XPLBAL_P(R, CAS) EXCESS LABILE PHOSPHOROUS BALANCE BY PR;
 PARAMETER XPLBAL_N(CAS) EXCESS LABILE PHOSPHOROUS BALANCE;
 PARAMETER XPLBAL_LA(RL, R, CAS) EXCESS LABILE PHOSPHOROUS BALANCE PER ACRE BY MDR;
 PARAMETER XPLBAL_PA(R, CAS) EXCESS LABILE PHOSPHOROUS BALANCE PER ACRE BY FPR;

Table 2

List of tables contained in ENVACTGA—continued

PARAMETER	XPFBAL_L(RL, R, CAS)	EXCESS FERT. PHOSPHOROUS BALANCE BY MDR;
PARAMETER	XPFBAL_P(R, CAS)	EXCESS FERT. PHOSPHOROUS BALANCE BY PR;
PARAMETER	XPFBAL_N(CAS)	EXCESS FERT. PHOSPHOROUS BALANCE;
PARAMETER	XPFBAL_LA(RL, R, CAS)	EXCESS FERT. PHOSPHOROUS BALANCE PER ACRE BY MDR;
PARAMETER	XPFBAL_PA(R, CAS)	EXCESS FERT. PHOSPHOROUS BALANCE PER ACRE BY FPR;

Table 3

DEMSUP: commodity demand and supply data

PARAMETER	DEMSUP	COMMODITY DEMAND AND SUPPLY DATA				
		PBASE	QBASE	ELAS	MI N	MAX
CORN	. SCB	2. 600	917. 000			
CORN	. PRDN	2. 600	11235. 000			
CORN	. I MP	2. 600	10. 000	0. 201		
CORN	. DOM	2. 600	1715. 800	-0. 070		
CORN	. PRPC		6904. 200			
CORN	. EXP	2. 600	2675. 000	-0. 530		
CORN	. SGE	1. 890				
CORN	. SCE	2. 600	867. 000	-0. 800		
SORGHUM	. SCB	2. 350	71. 000			
SORGHUM	. PRDN	2. 350	670. 000			
SORGHUM	. I MP	2. 350				
SORGHUM	. DOM	2. 350	80. 000	-0. 840		
SORGHUM	. PRPC		280. 000			
SORGHUM	. EXP	2. 350	315. 000	-1. 170		
SORGHUM	. SGE	1. 660				
SORGHUM	. SCE	2. 350	66. 000	-0. 440		
BARLEY	. SCB	2. 400	107. 000			
BARLEY	. PRDN	2. 400	365. 000			
BARLEY	. I MP	2. 400	55. 000	0. 201		
BARLEY	. DOM	2. 400	172. 000	-0. 260		
BARLEY	. PRPC		175. 000			
BARLEY	. EXP	2. 400	14. 000	-0. 650		
BARLEY	. EEP	0. 859	56. 000	-0. 650		
BARLEY	. SGE	1. 570				
BARLEY	. SCE	2. 400	110. 000	-0. 810		
OATS	. SCB	1. 450	56. 000			
OATS	. PRDN	1. 450	150. 000			
OATS	. I MP	1. 450	125. 000	0. 201		
OATS	. DOM	1. 450	78. 000	-0. 100		
OATS	. PRPC		195. 000			
OATS	. EXP	1. 450	2. 000	-0. 650		
OATS	. SGE	1. 090				
OATS	. SCE	1. 450	56. 000	-1. 530		
WHEAT	. SCB	3. 700	591. 000			
WHEAT	. PRDN	3. 700	2545. 000			
WHEAT	. I MP	3. 700	115. 000	0. 201		
WHEAT	. DOM	3. 700	1131. 000	-0. 090		
WHEAT	. PRPC		225. 000			
WHEAT	. EXP	3. 700	491. 362	-1. 440		
WHEAT	. EEP	2. 816	833. 638	-1. 440		
WHEAT	. SGE	2. 580				
WHEAT	. SCE	3. 700	570. 000	-0. 370		
RI CE	. SCB	7. 710	27. 160			
RI CE	. PRDN	7. 710	194. 200			
RI CE	. I MP	7. 710	13. 120	0. 201		
RI CE	. DOM	7. 710	153. 100	-0. 330		
RI CE	. PRPC		0. 000			
RI CE	. EXP	7. 710	52. 202	-2. 410		
RI CE	. EEP	5. 344	2. 298	-2. 410		
RI CE	. SGE	6. 500				
RI CE	. SCE	7. 710	26. 880	-0. 630		
SOYBEANS	. SCB	6. 300	225. 000			
SOYBEANS	. PRDN	6. 300	3245. 000			
SOYBEANS	. I MP	6. 300	10. 000	0. 201		
SOYBEANS	. DOM	6. 300	189. 600	-0. 380		

Table 3

DEMSUP: commodity demand and supply data—continued

PARAMETER	DEMSUP	COMMODITY DEMAND AND SUPPLY DATA			
		PBASE	QBASE	ELAS	MI N MAX
SOYBEANS	. PRPC		1995. 000		
SOYBEANS	. EXP	6. 300	1070. 000	-0. 730	
SOYBEANS	. SGE	5. 070			
SOYBEANS	. SCE	6. 300	225. 400	-6. 670	
COTTON	. SGB		2. 500		
COTTON	. SCB	312. 000	1. 759		
COTTON	. PRDN	312. 000	17. 500		
COTTON	. I MP	312. 000	0. 025	0. 201	
COTTON	. DOM	312. 000	9. 300	-1. 020	
COTTON	. PRPC		0. 005		
COTTON	. EXP	312. 000	8. 300	-1. 260	
COTTON	. SGE	249. 600	2. 500		
COTTON	. SCE	312. 000	1. 679	-0. 890	
SI LAGE	. PRDN	20. 000	51. 771		
SI LAGE	. DOM	20. 000	51. 771	-5. 000	517. 713
HAY	. PRDN	59. 600	160. 190		
HAY	. DOM	59. 600	84. 533	-5. 000	845. 330
OTHLVSTK	. PRDN	209. 720	9. 000		
OTHLVSTK	. DOM	209. 720	9. 000	-0. 201	
EGGS	. SCB	0. 684	5. 000		
EGGS	. PRDN	0. 684	7586. 570		
EGGS	. I MP	0. 684	5. 000	0. 201	
EGGS	. DOM	0. 684	7401. 570	-0. 720	
EGGS	. EXP	0. 684	190. 000	-0. 601	
EGGS	. SCE	0. 684	5. 000	-0. 201	
BROI LERS	. SCB	0. 356	880. 000		
BROI LERS	. PRDN	0. 356	34942. 970		
BROI LERS	. DOM	0. 356	29246. 970	-0. 020	
BROI LERS	. EXP	0. 356	5700. 000	-0. 601	
BROI LERS	. SCE	0. 356	880. 000	-0. 201	
TURKEY	. SCB	0. 385	275. 000		
TURKEY	. PRDN	0. 385	5950. 010		
TURKEY	. DOM	0. 385	5456. 010	-0. 030	
TURKEY	. EXP	0. 385	495. 000	-0. 601	
TURKEY	. SCE	0. 385	275. 000	-0. 201	
FLUI DMLK	. PRDN	0. 135	93462. 600		
FLUI DMLK	. DOM	0. 135	93462. 600	-0. 260	
MFGMI LK	. PRDN	11. 980	884. 600		
MFGMI LK	. DOM	11. 980			
MFGMI LK	. PRPC	11. 980	884. 600		
BUTTER	. SCB	1. 072	58. 250		
BUTTER	. PRDN	1. 072	1360. 300		
BUTTER	. I MP	1. 072	6. 180	0. 201	
BUTTER	. DOM	1. 072	1349. 220	-0. 470	
BUTTER	. EXP	1. 072	0. 010	-0. 601	
BUTTER	. SGE	1. 072			
BUTTER	. SCE	1. 072	75. 500	-0. 201	
BUTTER	. SGV	1. 072	442. 800		
BUTTER	. SGD	1. 072			
BUTTER	. SGX	1. 072			
NFDMI LK	. SCB	1. 014	114. 600		
NFDMI LK	. PRDN	1. 014	879. 000		
NFDMI LK	. I MP	1. 014	1. 150	0. 201	
NFDMI LK	. DOM	1. 014	933. 740	-1. 490	
NFDMI LK	. EXP	1. 014	0. 010	-0. 601	

Table 3

DEMSUP: commodity demand and supply data—continued

PARAMETER	DEMSUP	COMMODITY DEMAND AND SUPPLY DATA				
		PBASE	QBASE	ELAS	MI N	MAX
NFDMLK	.SGE	1.014				
NFDMLK	.SCE	1.014	61.000	-0.201		
NFDMLK	.SGV	1.014	279.000			
NFDMLK	.SGD	1.014				
NFDMLK	.SGX	1.014				
AMCHEESE	.SCB	1.343	435.100			
AMCHEESE	.PRDN	1.343	2776.900			
AMCHEESE	.IMP	1.343	21.060	0.201		
AMCHEESE	.DOM	1.343	2837.550	-0.390		
AMCHEESE	.EXP	1.343	0.010	-0.601		
AMCHEESE	.SGE	1.343				
AMCHEESE	.SCE	1.343	395.500	-0.201		
AMCHEESE	.SGV	1.343	81.600			
AMCHEESE	.SGD	1.343				
AMCHEESE	.SGX	1.343				
OTCHEESE	.SCB	1.608	107.500			
OTCHEESE	.PRDN	1.608	3229.300			
OTCHEESE	.IMP	1.608	200.200	0.201		
OTCHEESE	.DOM	1.608	3438.090	-0.390		
OTCHEESE	.EXP	1.608	0.010	-0.601		
OTCHEESE	.SCE	1.608	98.900	-0.201		
ICECREAM	.PRDN	1.381	1193.100			
ICECREAM	.IMP	1.381	5.710	0.201		
ICECREAM	.DOM	1.381	1198.800	-0.330		
EVDRYMLK	.SCB	0.615	70.000			
EVDRYMLK	.PRDN	0.615	671.100			
EVDRYMLK	.IMP	0.615	5.270	0.201		
EVDRYMLK	.DOM	0.615	643.060	-1.490		
EVDRYMLK	.EXP	0.615	0.010	-0.601		
EVDRYMLK	.SCE	0.615	103.300	-0.201		
ETHSOA	.PRDN	1.760				
ETHSOA	.DOM	1.760				
CLDARYCF	.PRDN	58.880				
CLDARYCF	.DOM	58.880				
CLDARYCW	.PRDN	518.400				
CLDARYCW	.DOM	518.400				
MI LK	.PRDN	14.300	1794.900			
MI LK	.IMP	14.300	26.000	0.201		
MI LK	.DOM	14.300	20.000		20.000	20.000
MI LK	.PRPC	14.300	1800.900			
FEEDERPIG	.PRDN	72.042				
FEEDERPIG	.DOM	72.042				
CULLSOW	.PRDN	36.023				
CULLSOW	.DOM	36.023				
HOGSLAUGH	.PRDN	41.300				
HOGSLAUGH	.IMP	41.300	2.297	0.201		
HOGSLAUGH	.DOM	41.300				
HOGSLAUGH	.EXP	41.300	0.557	-0.201		
LI VCALF	.PRDN	99.340				
LI VCALF	.IMP	99.340	4.358	0.201		
LI VCALF	.DOM	99.340				
BFYRLI NGS	.PRDN	84.410				
BFYRLI NGS	.IMP	84.410	10.256	0.201		
BFYRLI NGS	.DOM	84.410				

Table 3

DEMSUP: commodity demand and supply data—continued

PARAMETER	DEMSUP	COMMODITY DEMAND AND SUPPLY DATA				
		PBASE	QBASE	ELAS	MI N	MAX
BFYRLI NGS	. EXP	84. 410	0. 896	-0. 201		
CALFSLA	. PRDN	85. 392				
CALFSLA	. DOM	85. 392				
CLBFCOW	. PRDN	53. 262				
CLBFCOW	. DOM	53. 262				
CLBULLSTAG	. PRDN	53. 262				
CLBULLSTAG	. DOM	53. 262				
NONFDSL	. PRDN	53. 262				
NONFDSL	. I MP	53. 262	0. 420	0. 201		
NONFDSL	. DOM	53. 262				
FEDSLA	. PRDN	77. 650				
FEDSLA	. I MP	77. 650	0. 050	0. 201		
FEDSLA	. DOM	77. 650				
FEDSLA	. EXP	77. 650	0. 050	-0. 201		
FEDSLACF	. PRDN	77. 650				
FEDSLACF	. DOM	77. 650				
BEANMEAL	. SCB	9. 360	5. 000			
BEANMEAL	. PRDN	8. 140	947. 000			
BEANMEAL	. I MP	8. 250	2. 000	0. 201		
BEANMEAL	. DOM	8. 250				
BEANMEAL	. PRPC		768. 000			
BEANMEAL	. EXP	8. 140	181. 000	-1. 020		
BEANMEAL	. SCE	8. 140	5. 000	-0. 210		
BEANOI L	. SCB	15. 400	16. 150			
BEANOI L	. PRDN	15. 400	228. 400			
BEANOI L	. I MP	19. 000	1. 150	0. 201		
BEANOI L	. DOM	15. 400	206. 426	-0. 460		
BEANOI L	. PRPC		-6. 426			
BEANOI L	. EXP	15. 400	29. 000	-1. 340		
BEANOI L	. SCE	15. 400	16. 700	-0. 260		
OOSMEAL	. PRDN	8. 250	40. 120	0. 801	30. 000	50. 000
OOSMEAL	. PRPC		40. 120			
ANPROTEI N	. PRDN	8. 250	72. 280	0. 801	65. 000	100. 000
ANPROTEI N	. PRPC		72. 280			
HI PROFEED	. DOM	8. 250				
FEDBEEF	. SCB	334. 000	1. 889			
FEDBEEF	. PRDN	334. 000	152. 219			
FEDBEEF	. I MP	334. 000	0. 010	0. 201		
FEDBEEF	. DOM	334. 000	133. 944	-0. 480		
FEDBEEF	. EXP	334. 000	18. 295	-0. 601		
FEDBEEF	. SCE	334. 000	1. 889	-0. 201		
NONFDBEEF	. SCB	243. 820	0. 630			
NONFDBEEF	. PRDN	243. 820	21. 470			
NONFDBEEF	. I MP	243. 820	20. 182	0. 201		
NONFDBEEF	. DOM	243. 820	41. 652	-0. 480		
NONFDBEEF	. SCE	243. 820	0. 630	-0. 201		
VEAL	. SCB	484. 300	0. 033			
VEAL	. PRDN	484. 300	1. 527			
VEAL	. I MP	484. 300	0. 000	0. 201		
VEAL	. DOM	484. 300	1. 527	-3. 120		
VEAL	. EXP	484. 300	0. 060	-0. 601		
VEAL	. SCE	484. 300	0. 033	-0. 201		
PORK	. SCB	263. 000	5. 225			
PORK	. PRDN	263. 000	189. 817			

Table 3

DEMSUP: commodity demand and supply data—continued

PARAMETER	DEMSUP	COMMODITY DEMAND AND SUPPLY DATA				
		PBASE	QBASE	ELAS	MI N	MAX
PORK	. I MP	263. 000	10. 450	0. 201		
PORK	. DOM	263. 000	185. 780	-0. 070		
PORK	. EXP	263. 000	14. 487	-0. 601		
PORK	. SCE	263. 000	5. 225	-0. 201		
CORNOI L	. PRDN	20. 180				
CORNOI L	. DOM	20. 180T				
GLUTMEAL	. SGB	12. 830	25. 035			
GLUTMEAL	. PRDN	12. 829	8. 997			
GLUTMEAL	. I MP	12. 829	0. 049	0. 201		0. 050
GLUTMEAL	. DOM	12. 829				
GLUTMEAL	. PRPC		6. 681			
GLUTMEAL	. EXP	12. 829	27. 400	-2. 500		90. 000
GLUTFEED	. SGB	5. 040	127. 537			
GLUTFEED	. PRDN	5. 041	45. 832			
GLUTFEED	. I MP	5. 041	0. 462	0. 201		0. 470
GLUTFEED	. DOM	5. 041				
GLUTFEED	. EXP	5. 041	173. 828	-3. 500		300. 000
DDG	. SGB	6. 220	7. 157			
DDG	. PRDN	6. 218	24. 483			
DDG	. DOM	6. 218				
DDG	. PRPC		14. 364			
DDG	. EXP	9. 370	17. 276	-3. 500		300. 000
ETHANOL	. PRDN	1. 760	1212. 500			
ETHANOL	. DOM	1. 760	1212. 500		1212. 000	1212. 500
CARBON	. DOM	0. 010	1000. 000			

Table 4

Regional production input supply data

	PBASE	QBASE	ELAS	MAXI MUM
NT. CROPLAND	38.000	14.704	0.300	17.000
NT. PASTURE	21.830	2.144	0.600	6.800
LA. CROPLAND	51.000	39.253	0.300	45.000
LA. PASTURE	21.410	3.858	0.600	11.800
CB. CROPLAND	82.000	101.700	0.300	100.400
CB. PASTURE	27.860	17.391	0.600	30.800
CB. AUM		17.391		30.800
NP. CROPLAND	36.000	69.603	0.300	106.900
NP. PASTURE	10.190		5.000	
NP. AUM		132.550		132.550
AP. CROPLAND	46.000	19.690	0.300	30.400
AP. PASTURE	22.650	13.547	0.600	20.600
SE. CROPLAND	43.000	8.408	0.300	20.400
SE. PASTURE	20.300	10.807	0.600	24.600
DL. CROPLAND	43.000	18.419	0.300	24.900
DL. PASTURE	16.960	7.953	0.600	28.600
SP. CROPLAND	24.000	33.162	0.300	54.600
SP. PASTURE	7.380		5.000	
SP. AUM		216.580		216.580
MN. CROPLAND	40.000	24.614	0.300	43.900
MN. PASTURE	11.020		5.000	
MN. AUM		288.760		288.760
PA. CROPLAND	94.000	8.619	0.300	25.400
PA. PASTURE	29.360		5.000	
PA. AUM		73.000		73.000

Table 5

Supply elasticities for crops used in REAP

TABLE PES(B, *) DIRECT PRICE ELASTICITY OF SUPPLY

	PLNT	HARV	PRDN
CORN	.38	.37	.33
SORGHUM	.51	.48	.50
BARLEY	.34	.32	.32
OATS	.15	.16	.24
WHEAT	.29	.29	.23
RICE	.40	.37	.35
SOYBEANS	.25	.25	.27
COTTON	.56	.54	.73
SILAGE	.2	.2	.17
HAY	.2	.2	.17
;			

Table 6

Supply elasticities for livestock used in REAP

TABLE PESL(B, P, *) PRICE ELASTICITY OF SUPPLY

	PRDN	NAAF	
FEEDLOT . FEDSLA	.32	.7271	<<4/
CFEEDLOT. FEDSLA	.32	.7271	<<1/
*UFEEDLOT. FEDSLA	.32	.7271	
BFCOWEN . BFYRLINGS	.32	.7271	<<1/
BFCOWCF . BFYRLINGS	.32	.7271	
FAROFIN . HOGSLAUGH	.38	.4019	<<2/
FEEDRPI G. FEEDERPI G	.38	.4019	
PI GFIN . HOGSLAUGH	.38	.4019	
DAIRY . MILK	.11	.9936	<<3/
EGGS . EGGS	.11	1.0	<<5/
BROILERS. BROILERS	.10	1.0	
TURKEY . TURKEY	.10	1.0	
;			

Table 7

Demand and supply function active combo map

	SGB	SCB	PRDN	IMP	RESS	DOM	PRPC	EXP	EEP	SGE	SCE	RESD
CORN		YES		YES	YES	YES		YES		YES	YES	YES
SORGHUM		YES			YES	YES		YES		YES	YES	YES
BARLEY		YES		YES	YES	YES		YES	YES	YES	YES	YES
OATS		YES		YES	YES	YES		YES		YES	YES	YES
WHEAT		YES		YES	YES	YES		YES	YES	YES	YES	YES
RICE		YES		YES	YES	YES		YES	YES	YES	YES	YES
SOYBEANS		YES		YES	YES	YES		YES		YES	YES	YES
COTTON		YES		YES	YES	YES		YES		YES	YES	YES
SILAGE						YES						
HAY						YES						
OTHLVSTK						YES						
EGGS		YES		YES		YES		YES			YES	
BROILERS		YES				YES		YES			YES	
TURKEY		YES				YES		YES			YES	
FLUIDMLK						YES						
MFGMLK							YES					
BUTTER		YES		YES		YES		YES		YES	YES	
NFDMILK		YES		YES		YES		YES		YES	YES	
AMCHEESE		YES		YES		YES		YES		YES	YES	
OTCHEESE		YES		YES		YES		YES			YES	
ICECREAM				YES		YES						
EVDRYMLK		YES		YES		YES		YES			YES	
MILK				YES		YES	YES					
HOGSLAUGH				YES				YES				
LIVCALF				YES								
BFYRLINGS				YES				YES				

Table 7

Demand and supply function active combo map—continued

	SGB	SCB	PRDN	IMP	RESS	DOM	PRPC	EXP	EEP	SGE	SCE	RESD
NONFDSL				YES								
FEDSLA				YES				YES				
BEANMEAL		YES		YES	YES			YES			YES	YES
BEANOIL		YES		YES		YES		YES			YES	
OOSMEAL			YES									
ANPROTEIN			YES									
FEDBEEF		YES		YES		YES		YES			YES	
NONFDBEEF		YES		YES		YES					YES	
VEAL		YES		YES		YES		YES			YES	
PORK		YES		YES		YES		YES			YES	
GLUTMEAL	YES			YES				YES				
GLUTFEED	YES			YES				YES				
DDG	YES							YES				
ETHANOL						YES						

Table 8

List of tables contained in A1A0RPT00.GMS

\$STITLE REAP REPORT MODULE: DECLARATIONS AND HST SPECS

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* REPORT MODULE DECLARATIONS AND HST SPECS
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* -----
PARAMETER SUPC(P, CAS, *)          CROP PRODUCT SUPPLY AND USE: BASE DATA AND SOLUTION
          SUPL(P, CAS, *)          LIVESTOCK PRODUCT SUPPLY AND USE: BASE DATA AND SOLUTION
          SUPX(P, CAS, *)          PROCESSED PRODUCT SUPPLY AND USE: BASE DATA AND SOLUTION

          XACTL(B, G, H, Y, T, U, UR, CAS)  OPTIMAL PRODUCTION ACTIVITY USE LEVELS: UNSCALED
          XFCTL(B, G, H, Y, T, U, UR, CAS)  SUM OF XACTL & FACTL & AACTL
          XACTM(B, G, H, Y, T, U, UR, CAS)  SHADOW PRICES (MARGINALS) ON PRODUCTION ACTIVITIES
          XACTSL(B, G, H, Y, T, U, UR, CAS)  OPTIMAL PRODUCTION ACTIVITY SUPPLY LEVELS: UNSCALED
          YACTL(C, CAS)              OPTIMAL PROCESSING ACTIVITY LEVELS: UNSCALED
          RIR(IR, *, *, U)          REGIONAL INPUT PRICE AND USE: BASE DATA AND SOLUTION

          PROCI NC(*, *, C)         REVENUE COST INCOME PER UNIT OF AN ACTIVITY - PROCESSING
          FEEDU(FCCAT, CAS, *, IO)    FEED AND COPRODUCT USE BY ANIMAL TYPE OR INDUSTRY
          INCOME(INCI TEMS, *, UR)    INCOME ACCOUNTING TABLE

          CRPVALUES(*, *, R)        ENDOGENOUS AND EXOGENOUS CRP VALUES
          EEPVALUES(P, *, *)       ENDOGENOUS AND EXOGENOUS EEP VALUES

          EXPEN(P, CAS, Q)         GOVERNMENT PROGRAM EXPENDITURES

          SRPC(P, *, U)            CROP PRODUCTION BY REGION
          SRPL(P, *, U)            LIVESTOCK PRODUCTION BY REGION

          ACPNP(P, UR)            TEMPORARY ARRAY
          PPMK(IO)              COMMODITY MARKET PRICES FOR PART & NONPARTIC.
    
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* -----
* ACREAGE TABLES AND DEFICIENCY PAYMENTS, HISTORICAL DATA
* -----
    
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PARAMETER ACTOTPC( P, *, U)      TOTAL ACRES PLANTED BY CROP AND REGION (MIL. AC.)
          YIELDTPC( P, *, U)      YIELD PER ACRE BY CROP AND REGION
          PFCPMT( P, *, U)        PRODUCTION FLEXIBILITY CONTRACT PAYMENTS BY CROP AND REGION
          (MIL. DOL.)
          ACIRRPC( P, *, U)       IRRIGATED ACRES PLANTED BY CROP AND REGION (MIL. AC.)
          ACDRYPC( P, *, U)       DRYLAND ACRES PLANTED BY CROP AND REGION (MIL. AC.)
          ACSADPC( P, *, U)       ACRES SET-ASIDE AND DIVERTED BY CROP AND REGION (MIL. AC.)
          NCHG                    PERCENTAGE INCREASE IN NITROGEN FERT PRICE
          PCHG                    PERCENTAGE INCREASE IN PHOSPHAT FERT PRICE
          KCHG                    PERCENTAGE INCREASE IN POTASH FERT PRICE
          CSVPMT(B, G, H, Y, T, U, UR)  CONSERVATION PAYMENT TO PRODUCTION ACTIVITY PER ACRE
          GGRPMT( P, *, U)        GOVERNMENT ENVIRONMENTAL PAYMENTS (MIL DOL)
          GPR(U, CAS)            TOTAL GOVERNMENT GREEN PAYMENTS RECEIVED BY FARMERS BY REGION
          (MIL DOL)
          DAMAGE(U)              ENVIRONMENTAL DAMAGE (DOLLARS)
          LANDR                  LAND RETIREMENT SWITCH
          TEEROS                 TRADE AND ENVIRONMENT EROSION SCENARIOS
          TPRAC                  TURN TILLAGE PRACTICE OPTION ON
    
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Table 8

List of tables contained in A1A0RPT00.GMS—continued

LANDREDER(U)	REDUCTION IN CROPLAND BY ECONOMIC REGION
LANDREDRR(U)	REDUCTION IN CROPLAND BY RESOURCE REGION
NBUFFER(+)	NITROGEN BUFFERRING RATE FROM RETIRED LAND (TONS PER AC)
LR2REAPR	LAND RETIREMENT PROGRAM TO REAP ACRE RATIO
ETBALM(EC, U, UR, CAS)	ENVIRONMENTAL TARGET BALANCE EQUATION SHADOW VALUE
CSTSHRPM(T, *, *, U)	COST SHARE PAYMENTS BY CROP AND REGION (MIL. DOLLARS)
ACTOTLR(P, *, U)	TOTAL ACRES PLANTED BY CROP AND LAND RESOURCE SUB-REGION
(MIL. AC.)	
YLDTPCLR(P, *, U)	YIELD PER ACRE BY CROP AND LAND RESOURCE SUB-REGION
SRPCLR(P, *, U)	CROP PRODUCTION BY LAND RESOURCE SUB-REGION

Table 9
ARPT20 report fragment

TABLE 2 --CROP PRODUCT SUPPLY AND USE: BASE DATA AND SOLUTION

PRODUCT	UNI TS	PRI CE	SUPPLY						USE				
			BEG I N N I N G STOCKS						E N D I N G STOCKS				
			GOVERN- MENT	COMMER- CI AL	PRODUC- TI ON	IM PORTS	DOMES- TI C	FEED AND RESI DUAL	EX PORTS COM MRCL	EX PORT EN HANCE	GOVERN- MENT	COMMER- CI AL	
		\$/UNI T	-- MI LL I ON UNI TS --										
CORN	BU	BASE	2.60	0.0	917.0	11234.4	10.0	1715.8	6903.6	2675.0	0.0	0.0	867.0
		SHOCK	3.11	0.0	917.0	10693.2	10.4	1692.4	6798.1	2398.4	0.0	0.0	731.7
		CHANGE	0.51	0.0	0.0	-541.3	0.4	-23.4	-105.5	-276.6	0.0	0.0	-135.3
		%CHANGE	19.51	0.0	0.0	-4.8	3.9	-1.4	-1.5	-10.3	0.0	0.0	-15.6
SORGHUM	BU	BASE	2.35	0.0	71.0	670.2	0.0	79.9	280.7	314.6	0.0	0.0	66.0
		SHOCK	2.78	0.0	71.0	553.7	0.0	67.8	248.0	248.1	0.0	0.0	60.7
		CHANGE	0.42	0.0	0.0	-116.5	0.0	-12.1	-32.7	-66.5	0.0	0.0	-5.2
		%CHANGE	18.02	0.0	0.0	-17.4	0.0	-15.2	-11.6	-21.1	0.0	0.0	-7.9
BARLEY	BU	BASE	2.40	0.0	107.0	365.0	55.0	172.0	175.0	14.0	56.0	0.0	110.0
		SHOCK	2.56	0.0	107.0	334.8	55.7	169.0	161.8	13.4	49.2	0.0	104.1
		CHANGE	0.16	0.0	0.0	-30.2	0.7	-3.0	-13.2	-0.6	-6.8	0.0	-5.9
		%CHANGE	6.64	0.0	0.0	-8.3	1.3	-1.7	-7.6	-4.3	-12.1	0.0	-5.4
OATS	BU	BASE	1.45	0.0	56.0	150.0	125.0	78.0	195.0	2.0	0.0	0.0	56.0
		SHOCK	1.98	0.0	56.0	90.5	134.1	75.2	178.9	1.5	0.0	0.0	25.0
		CHANGE	0.53	0.0	0.0	-59.5	9.1	-2.8	-16.1	-0.5	0.0	0.0	-31.0
		%CHANGE	36.22	0.0	0.0	-39.7	7.3	-3.6	-8.2	-23.5	0.0	0.0	-55.4
WHEAT	BU	BASE	3.70	0.0	591.0	2545.3	115.0	1131.0	225.3	491.4	833.6	0.0	570.0
		SHOCK	4.09	0.0	591.0	2269.1	117.4	1120.3	225.3	416.8	667.4	0.0	547.8
		CHANGE	0.39	0.0	0.0	-276.2	2.4	-10.7	0.0	-74.6	-166.2	0.0	-22.2
		%CHANGE	10.54	0.0	0.0	-10.9	2.1	-0.9	0.0	-15.2	-19.9	0.0	-3.9
RI CE	CWT	BASE	7.71	0.0	27.2	194.2	13.1	153.1	0.0	52.2	2.3	0.0	26.9
		SHOCK	8.70	0.0	27.2	168.0	13.5	146.6	0.0	36.1	1.3	0.0	24.7
		CHANGE	0.99	0.0	0.0	-26.2	0.3	-6.5	0.0	-16.1	-1.0	0.0	-2.2
		%CHANGE	12.83	0.0	0.0	-13.5	2.6	-4.2	0.0	-30.9	-44.6	0.0	-8.1
SOYBEANS	BU	BASE	6.30	0.0	225.0	3245.0	10.0	189.6	1995.0	1070.0	0.0	0.0	225.4
		SHOCK	6.96	0.0	225.0	2885.9	10.2	182.1	1882.8	988.2	0.0	0.0	68.0
		CHANGE	0.66	0.0	0.0	-359.1	0.2	-7.5	-112.2	-81.8	0.0	0.0	-157.4
		%CHANGE	10.47	0.0	0.0	-11.1	2.1	-4.0	-5.6	-7.6	0.0	0.0	-69.8

Table 9

ARPT20 report fragment—continued

TABLE 2 --CROP PRODUCT SUPPLY AND USE: BASE DATA AND SOLUTION

PRODUCT	UNITS	PRICE	SUPPLY					USE					
			BEGINNING STOCKS					ENDING STOCKS					
			GOVERN- MENT	COMMER- CIAL	PRODUC- TION	IMPORTS	DOMES- TIC	FEED AND RESI DUAL	EXPORTS COMMRCL	EXPORT ENHANCE	GOVERN- MENT	COMMER- CIAL	
		\$/UNIT	-- MILLION UNITS --										
COTTON	BALE	BASE	312.00	2.5	1.8	17.5	0.0	9.3	0.0	8.3	0.0	2.5	1.7
		SHOCK	336.10	2.5	1.8	15.8	0.0	8.6	0.0	7.5	0.0	2.5	1.6
		CHANGE	24.10	0.0	0.0	-1.7	0.0	-0.7	0.0	-0.8	0.0	0.0	-0.1
		%CHANGE	7.72	0.0	0.0	-9.5	1.6	-7.9	0.0	-9.7	0.0	0.0	-6.9
SILAGE	TON	BASE	21.68	0.0	0.0	95.6	0.0	30.1	65.5	0.0	0.0	0.0	0.0
		SHOCK	22.50	0.0	0.0	84.9	0.0	19.4	65.5	0.0	0.0	0.0	0.0
		CHANGE	0.82	0.0	0.0	-10.7	0.0	-10.7	-0.1	0.0	0.0	0.0	0.0
		%CHANGE	3.80	0.0	0.0	-11.2	0.0	-35.4	-0.1	0.0	0.0	0.0	0.0
HAY	TON	BASE	60.58	0.0	0.0	155.6	0.0	77.5	78.0	0.0	0.0	0.0	0.0
		SHOCK	62.77	0.0	0.0	136.8	0.0	62.1	74.7	0.0	0.0	0.0	0.0
		CHANGE	2.18	0.0	0.0	-18.8	0.0	-15.5	-3.3	0.0	0.0	0.0	0.0
		%CHANGE	3.60	0.0	0.0	-12.1	0.0	-20.0	-4.2	0.0	0.0	0.0	0.0