

Memorandum

RECEIVED

OCT 06 2006

DEPARTMENT OF
WATER RESOURCES

To: Don Shaff

From: Marci Pape, P.E.

Date: 10/6/06

Re: Diversion Rate Analysis for BP Bar Ranch Right No. 73-04098A

I have completed the diversion rate analysis for Water Right 73-04098A. The claim is for 6.41 cfs and 316 acres. There is another water right claim that appears to have a partially overlapping place of use, A73-1011A, claimed for 306 acres and 7.0 cfs. Below are a summary of the information on which I based my analysis, any assumptions that were made, and the results of my analysis. For the recommended 306.1 acres, the total field irrigation requirement was found to be **20.52 cfs**, or 0.067 cfs/ac.

CALCULATIONS

For the place of use, I used a POU shapefile supplied by IDWR, consisting of three fields covering a total of 306.1 acres. The fields are flood irrigated, based on the questionnaire received from the claimant, and no information was provided as to other historical irrigation methods for these fields. The Department generally considers wild flooding to be an unacceptable irrigation practice due to the lack of control on the water and the very low field application efficiencies. The standard method of analysis adopted by IDWR is based on using existing slopes, appropriate intake family and design application, and corrugations with reasonable corrugation spacing (2 ft. for pasture).

All of the fields were analyzed using pasture, based on the information provided in the questionnaire. The rooting depth and percent available moisture I used were those suggested in Figure A-6 of the "Guidelines for the Evaluation of Irrigation Diversion Rates", prepared in October of 1991 by Hubble Engineering, Inc. and Associated Earth Sciences, Inc.

Furrow slope was found using 1:24000 digital topographic maps in ArcView. It was assumed that the corrugations would run in the same general direction as the water currently runs with the flood irrigation system, approximately northeast to southwest. The range of slopes was measured to be between 1.3% and 2.7%. In their questionnaire, BP Bar Ranch listed a field slope of 2-3%. Since the slopes I measured were consistent with those given in the questionnaire, I used the values I measured for each individual field.

The weather station nearest to this site is the May station. The 80th percentile monthly ET values from that weather station were used for my analysis.

The soil types were determined using the soils information from the USDA, NRCS for the Custer-Lemhi area, Soil Survey Area 752. The six dominant soils on the property are Bigrant-Thosand-Dickeypeak complex, Fezip-Lemroi-Redfish complex, Kadletz very gravelly loam, Pahsimeroi extremely gravelly loam, Thosand-Wiskisprings complex, and Wiskisprings-Biglost complex. Four

of these soils, the “complex” soils, have more than one soil component making up the general soil type. For two of the soils, the most dominant component within the soil type was not the one chosen for the analysis. Each of these dominant soils had a surface layer consisting of decomposed plant material (peat) and also had extremely high percentages of organic matter and low pH levels. For those two soil types, Bigrant-Thosand-Dickeypeak complex and Thosand-Wiskisprings complex, I used the second most dominant component within the soil type for the analysis, assuming that the irrigated fields would not contain peaty soils.

Soil intake family must be determined for each soil within the analysis area. Soil intake family relates the cumulative depth of water infiltration to the time water is in contact with the soil surface. The intake family for a soil is found by looking at the texture of the soil’s surface layer. There are two tables in the Hubble Report that may be used in this process, Appendixes A-2 and A-3, with Appendix A-3 being preferred since it contains further refinements. The large amounts of gravel present in several of these soils made it difficult to determine an appropriate intake family. For those soils, Figure A-2 in the Hubble Report was used, and the intake family was adjusted by one level. For instance, if a soil was described as “very gravelly loam” or “extremely gravelly loam”, it was assigned a furrow intake family of 0.70 instead of the value of 0.55, which is the value recommended for gravelly loam. Appendix A-3 was not useful for gravelly soils, since that table does not address gravelly soils when recommending intake families based on soil textures.

For a variety of reasons, the existing fields were further divided, creating nine individual fields for the purpose of this analysis. In some cases, there are multiple soil types within a single field, with the boundary between two dissimilar soil types running somewhat parallel to the flow of water down the field. In those cases, the fields were split along the soil boundary. Fields A and B, and fields F and G are examples of this. In other fields, extreme furrow lengths resulted in an incomplete irrigation so the fields were split perpendicular to the flow, creating shorter furrow lengths. The division of Field A into A1 and A2 and the division of Field B into Field B1 and B2 are examples of this. The fields D, E, F, and G are all fields described by the claimant as being sub-irrigated. It was unclear to me whether those fields are actively irrigated or are simply kept green as a result of a water table high enough in those areas to grow pasture without irrigation. I analyzed the fields with the assumption that they require irrigation, although I did notice that the claimant did not show any ditches delivering water to those fields, nor did they show any flood ditches on the fields themselves in the questionnaire that they returned to IDWR.

RESULTS

The following table summarizes the field application efficiency, management allowed deficit (MAD), equivalent to the net irrigation application, resulting flow rate per acre, and total flow rate for each of the fields included in this claim.

Field ID	Field Efficiency	MAD (in.)	Flow Rate/Acre (cfs/ac)	Total Flow Rate (cfs)
A1	16%	0.93	0.073	4.25
A2	16%	0.93	0.073	3.44
B1	15%	0.68	0.078	2.47
B2	15%	0.68	0.078	2.58
C	15%	0.68	0.078	2.38
D	25%	1.46	0.047	0.84
E	24%	1.46	0.049	0.71
F	25%	1.46	0.047	2.40
G	18%	0.93	0.065	1.45

The **Total On-Farm Irrigation Requirement** for A73-04098A was determined to be **20.52 cfs for 306.1 acres**. This is strictly the on-farm diversion requirement, with no allowance made for conveyance loss. This diversion rate far exceeds the claimed diversion rate, so a conveyance loss calculation was not made.

IRRIGATION DIVERSION RATE ANALYSIS

CLAIM NO(S): 73-04098A
FIELD ID NO: A1
TOTAL ACRES: 57.9 AC
FIELD SLOPE: 2.6 %
FURROW LENGTH: 900 FT

ANALYSIS COMPLETED BY: MARCI PAPE
DATE OF ANALYSIS: 10/02/06

Qmax PER FURROW:	Qmin PER FURROW:
For corrugates: 10.0 gpm	For both: 3.0 gpm
For furrows: 3.8 gpm	

[illegible]

TOTAL AC	TOTAL %	CFS/AC FOR
57.9	100	EACH CROP: 0.073

TOTAL CFS FOR FIELD: 4.25

FIELD ID NO: A2
TOTAL ACRES: 46.8 AC
FIELD SLOPE: 2.6 %
FURROW LENGTH: 900 FT

DATE OF ANALYSIS: 10/02/06

Qmax PER FURROW:	Qmin PER FURROW:
For corrugates: 10.0 gpm	For both: 3.0 gpm
For furrows: 3.8 gpm	

[illegible]

TOTAL AC	TOTAL %	CFS/AC FOR
46.8	100	EACH CROP: 0.073

TOTAL CFS FOR FIELD: 3.44

DATE OF ANALYSIS:	10/2/06
Qmax PER FURROW:	Qmin PER FURROW:
For corrugates: 10.0 gpm	For both: 3.0 gpm
For furrows: 3.7 gpm	

[illegible]

TOTAL CFS FOR FIELD :

Q.47

DATE OF ANALYSIS:		10/2/06	
Qmax PER FURROW:		Qmin PER FURROW:	
For corrugates:	10.0 gpm	For both:	3.0 gpm
For furrows:	3.7 gpm		

[illegible]

TOTAL CFS FOR FIELD :

2.58

2.40

FIELD ID NO: G
 TOTAL ACRES: 22.2 AC
 FIELD SLOPE: 2.1 %
 FURROW LENGTH: 400 FT

DATE OF ANALYSIS: 10/2/06
 Qmax PER FURROW:
 For corrugates: 10.0 gpm
 For furrows: 4.8 gpm
 Qmin PER FURROW:
 For both: 3.0 gpm

SOIL TYPE	ACRES	% OF TOTAL AC	INTAKE FAMILY	CROP = MAD	pasture EFFICIENCY	CROP = MAD	EFFICIENCY	CROP = MAD	EFFICIENCY	CROP = MAD	EFFICIENCY	CROP = MAD	EFFICIENCY
14	4.7	21	0.4	3.18	49%								
217	8.2	37	0.55	3.24	75%								
99	9.3	42	0.7	0.93	18%								

TOTAL AC 22.2 TOTAL % 100 CFS/AC FOR EACH CROP: 0.065

TOTAL CFS FOR FIELD : 1.45

FIELD ID NO:
 TOTAL ACRES: AC
 FIELD SLOPE: %
 FURROW LENGTH: FT

DATE OF ANALYSIS: 10/2/06
 Qmax PER FURROW:
 For corrugates: #VALUE! gpm
 For furrows: #VALUE! gpm
 Qmin PER FURROW:
 For both: 3.0 gpm

SOIL TYPE	ACRES	% OF TOTAL AC	INTAKE FAMILY	CROP = MAD	EFFICIENCY	CROP = MAD	EFFICIENCY	CROP = MAD	EFFICIENCY	CROP = MAD	EFFICIENCY	CROP = MAD	EFFICIENCY

TOTAL AC 0.0 TOTAL % 0 CFS/AC FOR EACH CROP:

TOTAL CFS FOR FIELD :

FIELD IRRIGATION REQUIREMENT

initials: MP Claimant = BP Bar Ranch - Field A1
 date: 10/02/06 Weather Station = May

crop	acres	irrig. system	eff. (%)	Monthly ET (mm/day)												AVE IR		net irrig. app. (in)	ET ratio	irrig. freq. (days)	Gross Irrigation Application (peak period ET/eff. in mm/day)												season
				cor	16	1.54	4.22	5.81	6.23	5.04	3.76	2.35	0.93	1.14	3.3	10.97	30.07				41.40	44.39	35.91	26.79	16.74								
crop	57.9	cor	16	1.54	4.22	5.81	6.23	5.04	3.76	2.35	0.93	1.14	3.3	10.97	30.07	41.40	44.39	35.91	26.79	16.74	oct												

Summary 57.9

Peak Gross Irrigation Application (mm/day) = 44.39
 On-Farm Irrigation Requirement (cfs/acre) = 0.073
 Total On-Farm Irrigation Requirement (cfs) = 4.25
 Irrigation Diversion Volume (ft/yr) = 0.00
 Total Irrigation Diversion Volume (ac-ft/yr) = 0

FIELD IRRIGATION REQUIREMENT

initials: MP Claimant = BP Bar Ranch - Field A2

date: 10/02/06 Weather Station = May

crop	acres	irrig. system	eff. (%)	Monthly ET (mm/day)												AVE IR		net irrig. app. (in)	ET ratio	irrig. freq. (days)	Gross Irrigation Application (peak period ET/eff. in mm/day)												season (mm/yr)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
				mar	apr	may	jun	jul	aug	sep	oct	oct	sep	aug	jul	jun	may				apr	mar	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg		avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg

Summary 46.8

10.97 30.07 41.40 44.39 35.91 26.79 16.74

Peak Gross Irrigation Application (mm/day) = 44.39
 On-Farm Irrigation Requirement (cfs/acre) = 0.073
 Total On-Farm Irrigation Requirement (cfs) = 3.44
 Irrigation Diversion Volume (ft/yr) = 0.00
 Total Irrigation Diversion Volume (ac-ft/yr) = 0

FIELD IRRIGATION REQUIREMENT

initials: MP Claimant = BP Bar Ranch - Field B1

date: 10/02/06 Weather Station = May

crop	acres	irrig. system	irrig. eff. (%)	Monthly ET (mm/day)												AVE IR season (mm/yr)	net irrig. app. (in)	ET ratio (days)	irrig. freq. (days)	Gross Irrigation Application (peak period ET/eff. in mm/day)												season (mm/yr)
				mar	apr	may	jun	jul	aug	sep	oct	mar	apr	may	jun					jul	aug	sep	oct									
past	31.6	cor	15	1.54	4.22	5.81	6.23	5.04	3.76	2.35		0.68	1.14	2.4				11.70	32.07	44.16	47.35	38.30	28.58	17.86								

Summary 31.6

11.70 32.07 44.16 47.35 38.30 28.58 17.86

Peak Gross Irrigation Application (mm/day) = 47.35
 On-Farm Irrigation Requirement (cfs/acre) = 0.078
 Total On-Farm Irrigation Requirement (cfs) = 2.47
 , Irrigation Diversion Volume (ft/yr) = 0.00
 Total Irrigation Diversion Volume (ac-ft/yr) = 0

FIELD IRRIGATION REQUIREMENT

initials: MP Claimant = BP Bar Ranch - Field B2

date: 10/02/06 Weather Station = May

crop	acres	irrig. system	eff. (%)	Monthly ET (mm/day)												net irrig. app. (in)	ET ratio	irrig. freq. (days)	Gross Irrigation Application (peak period ET/eff. in mm/day)												season (mm/yr)
				mar	apr	may	jun	jul	aug	sep	oct	ave season (mm/yr)	mar	apr	may				jun	jul	aug	sep	oct								
past	32.9	cor	15	1.54	4.22	5.81	6.23	5.04	3.76	2.35	0.68	1.14	2.4	11.70	32.07	44.16	47.35	38.30	28.58	17.86											

Summary 32.9

11.70 32.07 44.16 47.35 38.30 28.58 17.86

Peak Gross Irrigation Application (mm/day) = 47.35
 On-Farm Irrigation Requirement (cfs/acre) = 0.078
 Total On-Farm Irrigation Requirement (cfs) = 2.58
 Irrigation Diversion Volume (ft/yr) = 0.00
 Total Irrigation Diversion Volume (ac-ft/yr) = 0

FIELD IRRIGATION REQUIREMENT

initials: MP Claimant = BP Bar Ranch - Field C

date: 10/02/06 Weather Station = May

crop	acres	irrig. system	eff. (%)	Monthly ET (mm/day)												AVE IR		net irrig. app. (in)	ET ratio	irrig. freq. (days)	Gross Irrigation Application (peak period ET/eff. in mm/day)												season (mm/yr)
				mar	apr	may	jun	jul	aug	sep	oct	season	ave	ave	mar	apr	may				jun	jul	aug	sep	oct	season							
past	30.4	cor	15		1.54	4.22	5.81	6.23	5.04	3.76	2.35	0.68	1.14	2.4				11.70	32.07	44.16	47.35	38.30	28.58	17.86									

Summary 30.4

11.70 32.07 44.16 47.35 38.30 28.58 17.86

Peak Gross Irrigation Application (mm/day) = 47.35
 On-Farm Irrigation Requirement (cfs/acre) = 0.078
 Total On-Farm Irrigation Requirement (cfs) = 2.38
 Irrigation Diversion Volume (ft/yr) = 0.00
 Total Irrigation Diversion Volume (ac-ft/yr) = 0

FIELD IRRIGATION REQUIREMENT

initials: MP Claimant = BP Bar Ranch - Field D
 date: 10/02/06 Weather Station = May

crop	acres	irrig. system	eff. (%)	Monthly ET (mm/day)					AVE IR season (mm/yr)		net irrig. app. (in)	ET ratio (days)	irrig. freq. (days)	Gross Irrigation Application (peak period ET/eff. in mm/day)					season (mm/yr)	
				mar	apr	may	jun	jul	aug	sep				oct	mar	apr	may	jun		jul
past	18.1	cor	25	1.54	4.22	5.81	6.23	5.04	3.76	2.35	1.46	1.13	5.3	6.96	19.07	26.26	28.16	22.78	17.00	10.62

Summary 18.1

6.96 19.07 26.26 28.16 22.78 17.00 10.62

Peak Gross Irrigation Application (mm/day) = 28.16
 On-Farm Irrigation Requirement (cfs/acre) = 0.047
 Total On-Farm Irrigation Requirement (cfs) = 0.84
 Irrigation Diversion Volume (ft/yr) = 0.00
 Total Irrigation Diversion Volume (ac-ft/yr) = 0

FIELD IRRIGATION REQUIREMENT

initials: MP Claimant = BP Bar Ranch - Field E
 date: 10/02/06 Weather Station = May

crop	acres	irrig. system	eff. (%)	Monthly ET (mm/day)												net irrig. app. season (in)	ET ratio (days)	irrig. freq. (days)	Gross Irrigation Application (peak period ET/eff. in mm/day)												season (mm/yr)
				mar	apr	may	jun	jul	aug	sep	oct	nov	dec	jan	feb				mar	apr	may	jun	jul	aug	sep	oct	nov	dec			
past	14.6	cor	24		1.54	4.22	5.81	6.23	5.04	3.76	2.35					1.46	1.13	5.3	7.25	19.87	27.36	29.33	23.73	17.70	11.06						

Summary 14.6

Peak Gross Irrigation Application (mm/day) = 29.33
 On-Farm Irrigation Requirement (cfs/acre) = 0.049
 Total On-Farm Irrigation Requirement (cfs) = 0.71
 Irrigation Diversion Volume (ft/yr) = 0.00
 Total Irrigation Diversion Volume (ac-ft/yr) = 0

7.25 19.87 27.36 29.33 23.73 17.70 11.06

FIELD IRRIGATION REQUIREMENT

initials: MP Claimant = BP Bar Ranch - Field G

date: 10/02/06 Weather Station = May

crop	acres	irrig. system	eff. (%)	Monthly ET (mm/day)												net irrig. app. (in)		ET ratio (days)	irrig. freq. (days)	Gross Irrigation Application (peak period ET/eff. in mm/day)												season (mm/yr)						
				mar	apr	may	jun	jul	aug	sep	oct	AVE IR season (mm/yr)	oct	sep	aug	jul	jun			may	apr	mar	oct	sep	aug	jul	jun	may	apr	mar								
past	22.2	cor	18		1.54	4.22	5.81	6.23	5.04	3.76	2.35		0.93	1.14	3.3																	9.75	26.73	36.80	39.46	31.92	23.81	14.88

Summary 22.2

Peak Gross Irrigation Application (mm/day) = 39.46
 On-Farm Irrigation Requirement (cfs/acre) = 0.065
 Total On-Farm Irrigation Requirement (cfs) = 1.45
 Irrigation Diversion Volume (ft/yr) = 0.00
 Total Irrigation Diversion Volume (ac-ft/yr) = 0

9.75 26.73 36.80 39.46 31.92 23.81 14.88

Field A1: Soil 14, pasture, corrugations

FURROW

Auto

INTAKE FAMILY <If> = 0.40
 DESIGN APPLICATION <Fn> = 3.18 INCHES
 FURROW SLOPE <S> = 0.026 FEET/FOOT
 FURROW SPACING <W> = 2.00 FEET
 FURROW LENGTH <L> = 900 FEET
 INFLOW RATE <Q> = 7.0 GPM/FURROW
 APPLICATION TIME <Ti> = 12 HOURS

 ADVANCE TIME <Tt> = 83.1 MINUTES; OR 1.4 HOURS
 GROSS APPLICATION <FG> = 4.49 INCHES
 NET APPLICATION <F< = 3.19 INCHES
 RUNOFF <RO> = 1.13 INCHES
 DEEP PERCOLATION <DP> = 0.19 INCHES
 EFFICIENCY <E> = 70.80 %

TO CHANGE: PRESS (EXISTING)
 Design Application <1> 3.18 in
 Furrow Slope <2> 0.026 ft/ft
 Furrow Spacing <3> 2.00 ft
 Furrow Length <4> 900 ft
 Furrow Intake Family <5> 0.40
 Inflow Rate <6> 7.0 gpm/furrow
 Inflow Time <7> 12 hours <ANALYSIS MODE>

TO PRINT: DATA/WITH HEADING PRESS:<8/9>
 NEW DESIGN PRESS <10>, NEW ANALYSIS PRESS <11>, QUIT PRESS <12>?

Field A1: Soil 99, pasture, corrugations

FURROW

Auto

INTAKE FAMILY <If> = 0.70
 DESIGN APPLICATION <Fn> = 0.93 INCHES
 FURROW SLOPE <S> = 0.026 FEET/FOOT
 FURROW SPACING <W> = 2.00 FEET
 FURROW LENGTH <L> = 900 FEET
 INFLOW RATE <Q> = 9.0 GPM/FURROW
 APPLICATION TIME <Ti> = 12 HOURS

 ADVANCE TIME <Tt> = 86.2 MINUTES; OR 1.4 HOURS
 GROSS APPLICATION <FG> = 5.77 INCHES
 NET APPLICATION <F< = 5.35 INCHES
 RUNOFF <RO> = 0.09 INCHES
 DEEP PERCOLATION <DP> = 4.76 INCHES
 EFFICIENCY <E> = 16.10 %

TO CHANGE: PRESS (EXISTING)
 Design Application <1> 0.93 in
 Furrow Slope <2> 0.026 ft/ft
 Furrow Spacing <3> 2.00 ft
 Furrow Length <4> 900 ft
 Furrow Intake Family <5> 0.70
 Inflow Rate <6> 9.0 gpm/furrow
 Inflow Time <7> 12 hours <ANALYSIS MODE>

TO PRINT: DATA/WITH HEADING PRESS:<8/9>
 NEW DESIGN PRESS <10>, NEW ANALYSIS PRESS <11>, QUIT PRESS <12>?

Field A2: Soil 99, pasture, corrugations

FURROW

Auto

INTAKE FAMILY <If> = 0.70
 DESIGN APPLICATION <Fn> = 0.93 INCHES
 FURROW SLOPE <S> = 0.026 FEET/FOOT
 FURROW SPACING <W> = 2.00 FEET
 FURROW LENGTH <L> = 900 FEET
 INFLOW RATE <Q> = 9.0 GPM/FURROW
 APPLICATION TIME <Ti> = 12 HOURS

 ADVANCE TIME <Tt> = 86.2 MINUTES; OR 1.4 HOURS
 GROSS APPLICATION <FG> = 5.77 INCHES
 NET APPLICATION <F< = 5.35 INCHES
 RUNOFF <RO> = 0.09 INCHES
 DEEP PERCOLATION <DP> = 4.76 INCHES
 EFFICIENCY <E> = 16.10 %

TO CHANGE: PRESS (EXISTING)
 Design Application <1> 0.93 in
 Furrow Slope <2> 0.026 ft/ft
 Furrow Spacing <3> 2.00 ft
 Furrow Length <4> 900 ft
 Furrow Intake Family <5> 0.70
 Inflow Rate <6> 9.0 gpm/furrow
 Inflow Time <7> 12 hours <ANALYSIS MODE>

TO PRINT: DATA/WITH HEADING PRESS:<8/9>
 NEW DESIGN PRESS <10>, NEW ANALYSIS PRESS <11>, QUIT PRESS <12>?

Field B1: Soil 14, pasture, corrugations

FURROW

Auto

INTAKE FAMILY <If> = 0.40
 DESIGN APPLICATION <Fn> = 3.18 INCHES
 FURROW SLOPE <S> = 0.027 FEET/FOOT
 FURROW SPACING <W> = 2.00 FEET
 FURROW LENGTH <L> = 850 FEET
 INFLOW RATE <Q> = 7.0 GPM/FURROW
 APPLICATION TIME <Ti> = 12 HOURS

 ADVANCE TIME <Tt> = 73.7 MINUTES; OR 1.2 HOURS
 GROSS APPLICATION <Fg> = 4.76 INCHES
 NET APPLICATION <F<= > = 3.21 INCHES
 RUNOFF <Ro> = 1.39 INCHES
 DEEP PERCOLATION <Dp> = 0.19 INCHES
 EFFICIENCY <E> = 66.07 %
 TO CHANGE: PRESS (EXISTING)
 Design Application <1> 3.18 in
 Furrow Slope <2> 0.027 ft/ft
 Furrow Spacing <3> 2.00 ft
 Furrow Length <4> 850 ft
 Furrow Intake Family <5> 0.40
 Inflow Rate <6> 7.0 gpm/furrow
 Inflow Time <7> 12 hours <ANALYSIS MODE>
 TO PRINT: DATA/WITH HEADING PRESS:<0/9>
 NEW DESIGN PRESS <10>, NEW ANALYSIS PRESS <11>, QUIT PRESS <12>? _

Field B1: Soil 154, pasture, corrugations

FURROW

Auto

INTAKE FAMILY <If> = 0.70
 DESIGN APPLICATION <Fn> = 0.68 INCHES
 FURROW SLOPE <S> = 0.027 FEET/FOOT
 FURROW SPACING <W> = 2.00 FEET
 FURROW LENGTH <L> = 850 FEET
 INFLOW RATE <Q> = 0.5 GPM/FURROW
 APPLICATION TIME <Ti> = 12 HOURS

 ADVANCE TIME <Tt> = 79.9 MINUTES; OR 1.3 HOURS
 GROSS APPLICATION <Fg> = 5.77 INCHES
 NET APPLICATION <F<= > = 5.32 INCHES
 RUNOFF <Ro> = 0.15 INCHES
 DEEP PERCOLATION <Dp> = 4.94 INCHES
 EFFICIENCY <E> = 11.78 %
 TO CHANGE: PRESS (EXISTING)
 Design Application <1> 0.68 in
 Furrow Slope <2> 0.027 ft/ft
 Furrow Spacing <3> 2.00 ft
 Furrow Length <4> 850 ft
 Furrow Intake Family <5> 0.70
 Inflow Rate <6> 0.5 gpm/furrow
 Inflow Time <7> 12 hours <ANALYSIS MODE>
 TO PRINT: DATA/WITH HEADING PRESS:<0/9>
 NEW DESIGN PRESS <10>, NEW ANALYSIS PRESS <11>, QUIT PRESS <12>?

Field B1: Soil 70, pasture, corrugations

FURROW

Auto

INTAKE FAMILY <If> = 0.70
 DESIGN APPLICATION <Fn> = 1.46 INCHES
 FURROW SLOPE <S> = 0.027 FEET/FOOT
 FURROW SPACING <W> = 2.00 FEET
 FURROW LENGTH <L> = 850 FEET
 INFLOW RATE <Q> = 0.5 GPM/FURROW
 APPLICATION TIME <Ti> = 12 HOURS

 ADVANCE TIME <Tt> = 79.9 MINUTES; OR 1.3 HOURS
 GROSS APPLICATION <Fg> = 5.77 INCHES
 NET APPLICATION <F<= > = 5.32 INCHES
 RUNOFF <Ro> = 0.15 INCHES
 DEEP PERCOLATION <Dp> = 4.16 INCHES
 EFFICIENCY <E> = 25.28 %
 TO CHANGE: PRESS (EXISTING)
 Design Application <1> 1.46 in
 Furrow Slope <2> 0.027 ft/ft
 Furrow Spacing <3> 2.00 ft
 Furrow Length <4> 850 ft
 Furrow Intake Family <5> 0.70
 Inflow Rate <6> 0.5 gpm/furrow
 Inflow Time <7> 12 hours <ANALYSIS MODE>
 TO PRINT: DATA/WITH HEADING PRESS:<0/9>
 NEW DESIGN PRESS <10>, NEW ANALYSIS PRESS <11>, QUIT PRESS <12>? _

Field B2: Soil 154, pasture, corrugations

FURROW

Auto

INTAKE FAMILY <If> = 0.70
 DESIGN APPLICATION <Fn> = 0.60 INCHES
 FURROW SLOPE <S> = 0.027 FEET/FOOT
 FURROW SPACING <W> = 2.00 FEET
 FURROW LENGTH <L> = 750 FEET
 INFLOW RATE <Q> = 7.5 GPM/FURROW
 APPLICATION TIME <Ti> = 12 HOURS

 ADVANCE TIME <Tt> = 70.5 MINUTES; OR 1.2 HOURS
 GROSS APPLICATION <FG> = 5.77 INCHES
 NET APPLICATION <F_n> = 5.26 INCHES
 RUNOFF <RO> = 0.25 INCHES
 DEEP PERCOLATION <DP> = 4.84 INCHES
 EFFICIENCY <E> = 11.78 %

TO CHANGE: PRESS (EXISTING)
 Design Application <1> 0.60 in
 Furrow Slope <2> 0.027 ft/ft
 Furrow Spacing <3> 2.00 ft
 Furrow Length <4> 750 ft
 Furrow Intake Family <5> 0.70
 Inflow Rate <6> 7.5 gpm/furrow
 Inflow Time <7> 12 hours <ANALYSIS MODE>

TO PRINT: DATA/WITH HEADING PRESS <0/9>
 NEW DESIGN PRESS <10>, NEW ANALYSIS PRESS <11>, QUIT PRESS <12>? _

Field C: Soil 154, pasture, corrugations

FURROW

Auto

INTAKE FAMILY <If> = 0.70
 DESIGN APPLICATION <Fn> = 0.60 INCHES
 FURROW SLOPE <S> = 0.024 FEET/FOOT
 FURROW SPACING <W> = 2.00 FEET
 FURROW LENGTH <L> = 950 FEET
 INFLOW RATE <Q> = 9.5 GPM/FURROW
 APPLICATION TIME <Ti> = 12 HOURS

 ADVANCE TIME <Tt> = 94.6 MINUTES; OR 1.6 HOURS
 GROSS APPLICATION <FG> = 5.77 INCHES
 NET APPLICATION <F_n> = 5.39 INCHES
 RUNOFF <RO> = 0.01 INCHES
 DEEP PERCOLATION <DP> = 5.09 INCHES
 EFFICIENCY <E> = 11.78 %

TO CHANGE: PRESS (EXISTING)
 Design Application <1> 0.60 in
 Furrow Slope <2> 0.024 ft/ft
 Furrow Spacing <3> 2.00 ft
 Furrow Length <4> 950 ft
 Furrow Intake Family <5> 0.70
 Inflow Rate <6> 9.5 gpm/furrow
 Inflow Time <7> 12 hours <ANALYSIS MODE>

TO PRINT: DATA/WITH HEADING PRESS <0/9>
 NEW DESIGN PRESS <10>, NEW ANALYSIS PRESS <11>, QUIT PRESS <12>?

Field C: Soil 238, pasture, corrugations

FURROW

Auto

INTAKE FAMILY <If> = 0.55
 DESIGN APPLICATION <Fn> = 3.24 INCHES
 FURROW SLOPE <S> = 0.024 FEET/FOOT
 FURROW SPACING <W> = 2.00 FEET
 FURROW LENGTH <L> = 950 FEET
 INFLOW RATE <Q> = 7.5 GPM/FURROW
 APPLICATION TIME <Ti> = 12 HOURS

 ADVANCE TIME <Tt> = 105.2 MINUTES; OR 1.8 HOURS
 GROSS APPLICATION <FG> = 4.56 INCHES
 NET APPLICATION <F_n> = 4.13 INCHES
 RUNOFF <RO> = 0.41 INCHES
 DEEP PERCOLATION <DP> = 1.21 INCHES
 EFFICIENCY <E> = 71.07 %

TO CHANGE: PRESS (EXISTING)
 Design Application <1> 3.24 in
 Furrow Slope <2> 0.024 ft/ft
 Furrow Spacing <3> 2.00 ft
 Furrow Length <4> 950 ft
 Furrow Intake Family <5> 0.55
 Inflow Rate <6> 7.5 gpm/furrow
 Inflow Time <7> 12 hours <ANALYSIS MODE>

TO PRINT: DATA/WITH HEADING PRESS <0/9>
 NEW DESIGN PRESS <10>, NEW ANALYSIS PRESS <11>, QUIT PRESS <12>?

Field D: Soil 238, pasture, corrugations

FURROW

Auto

INTAKE FAMILY <If> = 0.55
 DESIGN APPLICATION <Fn> = 3.24 INCHES
 FURROW SLOPE <S> = 0.018 FEET/FOOT
 FURROW SPACING <W> = 2.00 FEET
 FURROW LENGTH <L> = 650 FEET
 INFLOW RATE <Q> = 5.0 GPM/FURROW
 APPLICATION TIME <Ti> = 12 HOURS

 ADVANCE TIME <Tt> = 87.8 MINUTES; OR 1.5 HOURS
 GROSS APPLICATION <FG> = 4.44 INCHES
 NET APPLICATION <Fn> = 4.03 INCHES
 RUNOFF <RO> = 0.15 INCHES
 DEEP PERCOLATION <DP> = 1.05 INCHES
 EFFICIENCY <E> = 72.94 %

TO CHANGE: PRESS (EXISTING)
 Design Application <1> 3.24 in
 Furrow Slope <2> 0.018 ft/ft
 Furrow Spacing <3> 2.00 ft
 Furrow Length <4> 650 ft
 Furrow Intake Family <5> 0.55
 Inflow Rate <6> 5.0 gpm/furrow
 Inflow Time <7> 12 hours <ANALYSIS MODE>

TO PRINT: DATA/WITH HEADING PRESS:<8/9>
 NEW DESIGN PRESS <10>, NEW ANALYSIS PRESS <11>, QUIT PRESS <12>?

Field D: Soil 70, pasture, corrugations

FURROW

Auto

INTAKE FAMILY <If> = 0.70
 DESIGN APPLICATION <Fn> = 1.46 INCHES
 FURROW SLOPE <S> = 0.018 FEET/FOOT
 FURROW SPACING <W> = 2.00 FEET
 FURROW LENGTH <L> = 650 FEET
 INFLOW RATE <Q> = 6.5 GPM/FURROW
 APPLICATION TIME <Ti> = 12 HOURS

 ADVANCE TIME <Tt> = 75.6 MINUTES; OR 1.3 HOURS
 GROSS APPLICATION <FG> = 5.77 INCHES
 NET APPLICATION <Fn> = 5.28 INCHES
 RUNOFF <RO> = 0.20 INCHES
 DEEP PERCOLATION <DP> = 4.12 INCHES
 EFFICIENCY <E> = 25.28 %

TO CHANGE: PRESS (EXISTING)
 Design Application <1> 1.46 in
 Furrow Slope <2> 0.018 ft/ft
 Furrow Spacing <3> 2.00 ft
 Furrow Length <4> 650 ft
 Furrow Intake Family <5> 0.70
 Inflow Rate <6> 6.5 gpm/furrow
 Inflow Time <7> 12 hours <ANALYSIS MODE>

TO PRINT: DATA/WITH HEADING PRESS:<8/9>
 NEW DESIGN PRESS <10>, NEW ANALYSIS PRESS <11>, QUIT PRESS <12>? _

Field E: Soil 70, pasture, corrugations

FURROW

Auto

INTAKE FAMILY <If> = 0.70
 DESIGN APPLICATION <Fn> = 1.46 INCHES
 FURROW SLOPE <S> = 0.013 FEET/FOOT
 FURROW SPACING <W> = 2.00 FEET
 FURROW LENGTH <L> = 750 FEET
 INFLOW RATE <Q> = 8.0 GPM/FURROW
 APPLICATION TIME <Ti> = 12 HOURS

 ADVANCE TIME <Tt> = 98.2 MINUTES; OR 1.6 HOURS
 GROSS APPLICATION <FG> = 6.16 INCHES
 NET APPLICATION <Fn> = 5.51 INCHES
 RUNOFF <RO> = 0.24 INCHES
 DEEP PERCOLATION <DP> = 4.46 INCHES
 EFFICIENCY <E> = 23.70 %

TO CHANGE: PRESS (EXISTING)
 Design Application <1> 1.46 in
 Furrow Slope <2> 0.013 ft/ft
 Furrow Spacing <3> 2.00 ft
 Furrow Length <4> 750 ft
 Furrow Intake Family <5> 0.70
 Inflow Rate <6> 8.0 gpm/furrow
 Inflow Time <7> 12 hours <ANALYSIS MODE>

TO PRINT: DATA/WITH HEADING PRESS:<8/9>
 NEW DESIGN PRESS <10>, NEW ANALYSIS PRESS <11>, QUIT PRESS <12>?

Field E: Soil 238, pasture, corrugations

```

5 FURROW
Auto
INTAKE FAMILY <If> = 0.55
DESIGN APPLICATION <Fn> = 3.24 INCHES
FURROW SLOPE <S> = 0.013 FEET/FOOT
FURROW SPACING <W> = 2.00 FEET
FURROW LENGTH <L> = 750 FEET
INFLOW RATE <Q> = 6.0 GPM/FURROW
APPLICATION TIME <Ti> = 12 HOURS
*****
ADVANCE TIME <Tt> = 119.8 MINUTES; OR 2.0 HOURS
GROSS APPLICATION <FG> = 4.62 INCHES
NET APPLICATION <Fn> = 4.12 INCHES
RUNOFF <RO> = 0.11 INCHES
DEEP PERCOLATION <DP> = 1.27 INCHES
EFFICIENCY <E> = 70.13 %
TO CHANGE: PRESS (EXISTING)
  Design Application <1> 3.24 in
  Furrow Slope <2> 0.013 ft/ft
  Furrow Spacing <3> 2.00 ft
  Furrow Length <4> 750 ft
  Furrow Intake Family <5> 0.55
  Inflow Rate <6> 6.0 gpm/furrow
  Inflow Time <7> 12 hours <ANALYSIS MODE>
TO PRINT: DATA/WITH HEADING PRESS:<8/9>
NEW DESIGN PRESS <10>, NEW ANALYSIS PRESS <11>, QUIT PRESS <12>?

```

Field F: Soil 14, pasture, corrugations

```

5 FURROW
Auto
INTAKE FAMILY <If> = 0.40
DESIGN APPLICATION <Fn> = 3.18 INCHES
FURROW SLOPE <S> = 0.019 FEET/FOOT
FURROW SPACING <W> = 2.00 FEET
FURROW LENGTH <L> = 600 FEET
INFLOW RATE <Q> = 5.5 GPM/FURROW
APPLICATION TIME <Ti> = 12 HOURS
*****
ADVANCE TIME <Tt> = 55.1 MINUTES; OR 0.9 HOURS
GROSS APPLICATION <FG> = 5.29 INCHES
NET APPLICATION <Fn> = 3.24 INCHES
RUNOFF <RO> = 1.94 INCHES
DEEP PERCOLATION <DP> = 0.17 INCHES
EFFICIENCY <E> = 60.07 %
TO CHANGE: PRESS (EXISTING)
  Design Application <1> 3.18 in
  Furrow Slope <2> 0.019 ft/ft
  Furrow Spacing <3> 2.00 ft
  Furrow Length <4> 600 ft
  Furrow Intake Family <5> 0.40
  Inflow Rate <6> 5.5 gpm/furrow
  Inflow Time <7> 12 hours <ANALYSIS MODE>
TO PRINT: DATA/WITH HEADING PRESS:<8/9>
NEW DESIGN PRESS <10>, NEW ANALYSIS PRESS <11>, QUIT PRESS <12>? _

```

Field F: Soil 70, pasture, corrugations

```

5 FURROW
Auto
INTAKE FAMILY <If> = 0.70
DESIGN APPLICATION <Fn> = 1.46 INCHES
FURROW SLOPE <S> = 0.019 FEET/FOOT
FURROW SPACING <W> = 2.00 FEET
FURROW LENGTH <L> = 600 FEET
INFLOW RATE <Q> = 6.0 GPM/FURROW
APPLICATION TIME <Ti> = 12 HOURS
*****
ADVANCE TIME <Tt> = 67.6 MINUTES; OR 1.1 HOURS
GROSS APPLICATION <FG> = 5.77 INCHES
NET APPLICATION <Fn> = 5.23 INCHES
RUNOFF <RO> = 0.29 INCHES
DEEP PERCOLATION <DP> = 4.03 INCHES
EFFICIENCY <E> = 25.20 %
TO CHANGE: PRESS (EXISTING)
  Design Application <1> 1.46 in
  Furrow Slope <2> 0.019 ft/ft
  Furrow Spacing <3> 2.00 ft
  Furrow Length <4> 600 ft
  Furrow Intake Family <5> 0.70
  Inflow Rate <6> 6.0 gpm/furrow
  Inflow Time <7> 12 hours <ANALYSIS MODE>
TO PRINT: DATA/WITH HEADING PRESS:<8/9>
NEW DESIGN PRESS <10>, NEW ANALYSIS PRESS <11>, QUIT PRESS <12>? _

```

Field G: Soil 14, pasture, corrugations

FURROW

Auto

INTAKE FAMILY <If> = 0.40
 DESIGN APPLICATION <Fn> = 3.18 INCHES
 FURROW SLOPE <S> = 0.021 FEET/FOOT
 FURROW SPACING <W> = 2.00 FEET
 FURROW LENGTH <L> = 400 FEET
 INFLOW RATE <Q> = 4.5 GPM/FURROW
 APPLICATION TIME <Ti> = 12 HOURS

 ADVANCE TIME <Tt> = 30.3 MINUTES; OR 0.5 HOURS
 GROSS APPLICATION <FG> = 6.50 INCHES
 NET APPLICATION <Fx> = 3.19 INCHES
 RUNOFF <RO> = 3.25 INCHES
 DEEP PERCOLATION <DP> = 0.07 INCHES
 EFFICIENCY <E> = 98.95 %

TO CHANGE: PRESS (EXISTING)
 Design Application <1> 3.18 in
 Furrow Slope <2> 0.021 ft/ft
 Furrow Spacing <3> 2.00 ft
 Furrow Length <4> 400 ft
 Furrow Intake Family <5> 0.40
 Inflow Rate <6> 4.5 gpm/furrow
 Inflow Time <7> 12 hours <ANALYSIS MODE>

TO PRINT: DATA/WITH HEADING PRESS:<8/9>
 NEW DESIGN PRESS <10>, NEW ANALYSIS PRESS <11>, QUIT PRESS <12>? _

Field G: Soil 217, pasture, corrugations

FURROW

Auto

INTAKE FAMILY <If> = 0.55
 DESIGN APPLICATION <Fn> = 3.24 INCHES
 FURROW SLOPE <S> = 0.021 FEET/FOOT
 FURROW SPACING <W> = 2.00 FEET
 FURROW LENGTH <L> = 400 FEET
 INFLOW RATE <Q> = 3.0 GPM/FURROW
 APPLICATION TIME <Ti> = 12 HOURS

 ADVANCE TIME <Tt> = 50.7 MINUTES; OR 0.8 HOURS
 GROSS APPLICATION <FG> = 4.33 INCHES
 NET APPLICATION <Fx> = 3.84 INCHES
 RUNOFF <RO> = 0.35 INCHES
 DEEP PERCOLATION <DP> = 0.74 INCHES
 EFFICIENCY <E> = 74.81 %

TO CHANGE: PRESS (EXISTING)
 Design Application <1> 3.24 in
 Furrow Slope <2> 0.021 ft/ft
 Furrow Spacing <3> 2.00 ft
 Furrow Length <4> 400 ft
 Furrow Intake Family <5> 0.55
 Inflow Rate <6> 3.0 gpm/furrow
 Inflow Time <7> 12 hours <ANALYSIS MODE>

TO PRINT: DATA/WITH HEADING PRESS:<8/9>
 NEW DESIGN PRESS <10>, NEW ANALYSIS PRESS <11>, QUIT PRESS <12>? _

Field G: Soil 99, pasture, corrugations

FURROW

Auto

INTAKE FAMILY <If> = 0.70
 DESIGN APPLICATION <Fn> = 0.93 INCHES
 FURROW SLOPE <S> = 0.021 FEET/FOOT
 FURROW SPACING <W> = 2.00 FEET
 FURROW LENGTH <L> = 400 FEET
 INFLOW RATE <Q> = 3.5 GPM/FURROW
 APPLICATION TIME <Ti> = 12 HOURS

 ADVANCE TIME <Tt> = 49.7 MINUTES; OR 0.8 HOURS
 GROSS APPLICATION <FG> = 5.05 INCHES
 NET APPLICATION <Fx> = 4.86 INCHES
 RUNOFF <RO> = 0.02 INCHES
 DEEP PERCOLATION <DP> = 4.11 INCHES
 EFFICIENCY <E> = 10.41 %

TO CHANGE: PRESS (EXISTING)
 Design Application <1> 0.93 in
 Furrow Slope <2> 0.021 ft/ft
 Furrow Spacing <3> 2.00 ft
 Furrow Length <4> 400 ft
 Furrow Intake Family <5> 0.70
 Inflow Rate <6> 3.5 gpm/furrow
 Inflow Time <7> 12 hours <ANALYSIS MODE>

TO PRINT: DATA/WITH HEADING PRESS:<8/9>
 NEW DESIGN PRESS <10>, NEW ANALYSIS PRESS <11>, QUIT PRESS <12>? _

SOIL CHARACTERISTICS initials: mp date: 09/29/06

Soil Type = Dickeypeak (14)
 Source of Soils Data = NRCS website

soil depth (inches)		AWC (in/in)		PH		organic (%)		soil depth (ft)	AWC (inches)	intake family
lower	upper	lower	upper	lower	upper	lower	upper			
0	3	0.17	0.19	7.9	9	1	2	1	2.16	flood
3	32	0.17	0.19					2	4.32	furrow
32	52	0.13	0.17					3	6.36	
52	60	0.07	0.08					4	8.16	alternate
60	65	0.04	0.07					5	9.36	method
										1 0.4

Management Allowed Deficit (MAD)

crop	root depth (ft)		stress point		MAD (inches)	
	lower	upper	lower	upper	lower	upper
alfalfa (hay or seed)	5		0.5		4.68	
corn (field or silage)	4		0.5		4.08	
grain (winter or spring)	4		0.5		4.08	
pasture (or grass hay)	3		0.5		3.18	
other (enter below)						

SOIL CHARACTERISTICS

initials: mp date: 09/29/06

Soil Type = Fezip (70)
Source of Soils Data = NRCS website

soil depth (inches)		AWC (in/in)		PH		organic (%)		soil depth (ft)	AWC (inches)	intake family	
lower	upper	lower	upper	lower	upper	lower	upper			flood	furrow
0	6	0.1	0.14	6.1	7.3	2	3	1	1.17	3	0.7
6	16	0.06	0.09					2	2.43		
16	26	0.1	0.14					3	2.92		
26	60	0.01	0.04					4	3.22	alternate	
								5	3.52	method	
										3	0.7

Management Allowed Deficit (MAD)

crop	root depth (ft)		stress point		MAD (inches)	
	lower	upper	lower	upper	lower	upper
alfalfa (hay or seed)	5		0.5		1.76	
corn (field or silage)	4		0.5		1.61	
grain (winter or spring)	4		0.5		1.61	
pasture (or grass hay)	3		0.5		1.46	
other (enter below)						

SOIL CHARACTERISTICS

initials: mp date: 09/29/06

Soil Type = Kadletz (99)
Source of Soils Data = NRCS website

soil depth (inches)	AWC (in/in)		PH		organic (%)		soil depth (ft)	AWC (inches)	intake family	
	lower	upper	lower	upper	lower	upper			flood	furrow
0	2	0.08	0.11	7.4	0.5	1	1	1.03	3	0.7
2	5	0.11	0.14				2	1.45		
5	8	0.08	0.11				3	1.87		
8	12	0.04	0.05				4	2.29	alternate	
12	60	0.03	0.04				5	2.71	method	
									#N/A	#N/A

Management Allowed Deficit (MAD)

crop	root depth (ft)	stress point	MAD (inches)
alfalfa (hay or seed)	5	0.5	1.36
corn (field or silage)	4	0.5	1.15
grain (winter or spring)	4	0.5	1.15
pasture (or grass hay)	3	0.5	0.93
other (enter below)			

SOIL CHARACTERISTICS

initials: mp date: 09/29/06

Soil Type = Pahsimeroi (154)
Source of Soils Data = NRCS website

soil depth (inches)		AWC (in/in)		PH		organic (%)		soil depth (ft)		AWC (inches)		intake family	
lower	upper	lower	upper	lower	upper	lower	upper					flood	furrow
0	5	0.04	0.06	7.4	7.8	1	2	1	0.67			3	0.7
5	12	0.04	0.08					2	1.15				
12	25	0.03	0.05					3	1.36				
25	60	0.01	0.02					4	1.54			alternate	
								5	1.72			method	
												#N/A	#N/A

Management Allowed Deficit (MAD)

crop	root depth (ft)	stress point	MAD (inches)
alfalfa (hay or seed)	5	0.5	0.86
corn (field or silage)	4	0.5	0.77
grain (winter or spring)	4	0.5	0.77
pasture (or grass hay)	3	0.5	0.68
other (enter below)			

SOIL CHARACTERISTICS

initials: mp date: 10/02/06

Soil Type = Wiskisprings (217)
Source of Soils Data = NRCS website

soil depth (inches)		AWC (in/in)		PH		organic (%)		soil depth (ft)	AWC (inches)	intake family
lower	upper	lower	upper	lower	upper	lower	upper			
0	8	0.17	0.19	6.6	7.3	2	3	1	2.16	flood furrow
8	49	0.17	0.19					2	4.32	2 0.55
49	54	0.13	0.14					3	6.48	
54	60	0.03	0.04					4	8.64	alternate
								5	9.70	method
										2 0.55

Management Allowed Deficit (MAD)

crop	root depth (ft)	stress point	MAD (inches)	
			lower	upper
alfalfa (hay or seed)	5	0.5	4.85	
corn (field or silage)	4	0.5	4.32	
grain (winter or spring)	4	0.5	4.32	
pasture (or grass hay)	3	0.5	3.24	
other (enter below)				

SOIL CHARACTERISTICS initials: mp date: 09/29/06

Soil Type = Wiskisprings (238)
Source of Soils Data = NRCS website

soil depth (inches)		AWC (in/in)		PH		organic (%)		soil depth (ft)	AWC (inches)	intake family
lower	upper	lower	upper	lower	upper	lower	upper			
0	8	0.17	0.19	6.6	7.3	2	3	1	2.16	flood
8	49	0.17	0.19					2	4.32	furrow
49	54	0.13	0.14					3	6.48	
54	60	0.03	0.04					4	8.64	alternate
								5	9.70	method
										2 0.55
										2 0.55

Management Allowed Deficit (MAD)

crop	root depth (ft)	stress point	MAD (inches)
alfalfa (hay or seed)	5	0.5	4.85
corn (field or silage)	4	0.5	4.32
grain (winter or spring)	4	0.5	4.32
pasture (or grass hay)	3	0.5	3.24
other (enter below)			

Physical Soil Properties

Custer-Lemhi Area, Idaho, Parts of Blaine, Custer, and Lemhi Counties

Map symbol and soil name	Depth In	Sand Pct	Silt Pct	Clay Pct	Moist bulk density g/cc	Saturated hydraulic conductivity micro m/sec	Available water capacity in/in	Linear extensi- bility Pct	Organic matter Pct	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
7: Bartonflat	0-5	---	---	4-12	1.45-1.60	14.11-42.34	0.05-0.08	0.0-2.9	1.0-2.0	.10	.28	5	5	56
	5-9	---	---	5-12	1.45-1.60	42.00-141.14	0.02-0.05	0.0-2.9	0.5-2.0	.05	.20			
	9-60	---	---	1-5	1.45-1.60	141.00-141.14	0.02-0.05	0.0-2.9	0.0-0.5	.05	.15			
14: Bigrant	0-4	---	---	0-25	0.10-0.30	42.00-705.00	0.30-0.60	---	60-95	---	---	5	8	0
	4-23	---	---	20-27	1.10-1.25	4.00-14.11	0.19-0.21	0.0-2.9	2.0-4.0	.37	.37			
	23-29	---	---	30-38	1.25-1.40	1.41-4.23	0.18-0.21	3.0-5.9	0.0-0.5	.32	.32			
	29-33	---	---	40-50	1.25-1.40	1.41-4.23	0.18-0.21	3.0-5.9	0.0-0.5	.32	.32			
	33-64	---	---	20-26	1.25-1.40	1.41-4.23	0.18-0.21	3.0-5.9	0.0-0.5	.32	.32			
Dickeypeak	0-3	---	---	30-33	1.20-1.35	4.00-14.11	0.17-0.19	0.0-2.9	1.0-2.0	.43	.43	5	4L	86
	3-32	---	---	25-34	1.25-1.40	4.00-14.11	0.17-0.19	0.0-2.9	0.5-1.0	.32	.32			
	32-52	---	---	16-24	1.25-1.40	4.00-42.34	0.13-0.17	0.0-2.9	0.0-0.5	.37	.37			
	52-60	---	---	10-18	1.30-1.45	14.11-42.34	0.07-0.08	0.0-2.9	0.0-0.5	.15	.28			
	60-65	---	---	0-6	1.50-1.60	141.00-141.14	0.04-0.07	0.0-2.9	0.0-0.5	.05	.17			
Thosand	0-5	---	---	15-26	1.20-1.35	4.00-14.11	0.18-0.20	0.0-2.9	2.0-3.0	.49	.55	4	8	0
	5-22	---	---	18-26	1.20-1.35	4.00-14.11	0.14-0.20	0.0-2.9	1.0-2.0	.37	.37			
	22-39	---	---	18-27	1.20-1.35	4.00-14.11	0.09-0.17	0.0-2.9	0.5-1.0	.17	.32			
	39-44	---	---	14-20	1.25-1.45	4.00-14.11	0.07-0.12	0.0-2.9	0.0-0.5	.17	.32			
	44-60	---	---	2-8	1.35-1.50	141.00-141.14	0.03-0.04	0.0-2.9	0.0-0.5	.05	.20			

Physical Soil Properties

Custer-Lemhi Area, Idaho, Parts of Blaine, Custer, and Lemhi Counties

Map symbol and soil name	Depth In	Sand Pct	Silt Pct	Clay Pct	Moist bulk density g/cc	Saturated hydraulic conductivity micro m/sec	Available water capacity In/in	Linear extensi- bility Pct	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
28: Bursteadt	0-5	---	---	10-17	1.15-1.30	4.00-14.11	0.14-0.18	0.0-2.9	1.0-2.0	.37	.37	3	86
	5-20	---	---	8-18	1.20-1.40	14.11-42.34	0.13-0.17	0.0-2.9	1.0-2.0	.37	.37		
	20-31	---	---	8-18	1.20-1.40	14.11-42.34	0.13-0.17	0.0-2.9	1.0-2.0	.37	.37		
	31-60	---	---	0-5	1.35-1.55	141. 00-141.14	0.02-0.06	0.0-2.9	0.5-1.0	.10	.17		
Tohobit	0-9	---	---	12-22	1.10-1.25	4.00-14.11	0.16-0.20	0.0-2.9	1.0-2.0	.37	.37	3	8
	9-21	---	---	10-18	1.10-1.25	4.00-14.11	0.14-0.19	0.0-2.9	0.5-1.0	.20	.32		
	21-60	---	---	0-10	1.35-1.55	141. 00-141.14	0.01-0.14	0.0-2.9	0.0-0.5	.05	.20		
48: Dawtonia	0-4	---	---	15-25	1.40-1.55	4.00-14.11	0.06-0.12	0.0-2.9	1.0-2.0	.10	.37	5	7
	4-12	---	---	25-33	1.40-1.55	1.41-4.23	0.09-0.11	3.0-5.9	0.5-1.0	.10	.43		
	12-24	---	---	22-27	1.40-1.55	4.00-14.11	0.09-0.11	0.0-2.9	0.5-1.0	.10	.43		
	24-60	---	---	8-12	1.45-1.60	4.00-14.11	0.06-0.08	0.0-2.9	0.0-0.5	.05	.32		
70: Fezip	0-6	---	---	8-12	1.40-1.55	14.11-42.34	0.10-0.14	0.0-2.9	2.0-3.0	.24	.24	3	8
	6-16	---	---	2-10	1.40-1.55	14.11-42.34	0.06-0.09	0.0-2.9	1.0-3.0	.20	.20		
	16-26	---	---	8-12	1.40-1.55	14.11-42.34	0.10-0.14	0.0-2.9	1.0-3.0	.20	.28		
	26-60	---	---	0-5	1.45-1.60	141. 00-141.14	0.01-0.04	0.0-2.9	0.5-1.0	.05	.20		

Physical Soil Properties

Custer-Lemhi Area, Idaho, Parts of Blaine, Custer, and Lemhi Counties

Map symbol and soil name	Depth In	Sand Pct	Silt Pct	Clay Pct	Moist bulk density g/cc	Saturated hydraulic conductivity micro m/sec	Available water capacity In/in	Linear extensi- bility Pct	Organic matter Pct	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
70: Lemroi	0-3	---	---	0-25	0.10-0.30	42.00-705.00	0.30-0.60	---	60-95	---	---	3	8	0
	3-11	---	---	8-15	1.10-1.20	4.00-14.11	0.19-0.21	0.0-2.9	4.0-6.0	.28	.32			
	11-18	---	---	5-18	1.15-1.30	4.00-14.11	0.16-0.19	0.0-2.9	2.0-3.0	.32	.37			
	18-26	---	---	5-18	1.25-1.40	14.11-42.34	0.04-0.05	0.0-2.9	1.0-2.0	.10	.43			
	26-63	---	---	2-10	1.30-1.45	141.14	0.02-0.03	0.0-2.9	0.0-1.0	.10	.43			
Redfish	0-5	---	---	8-15	1.40-1.55	14.11-42.34	0.11-0.13	0.0-2.9	2.0-3.0	.24	.28	2	8	0
	5-10	---	---	8-16	1.35-1.50	14.11-42.34	0.07-0.12	0.0-2.9	1.0-2.0	.10	.24			
	10-60	---	---	0-5	1.45-1.60	141.14 00-141.14	0.02-0.03	0.0-2.9	0.5-1.0	.05	.20			
99: Kadletz	0-2	---	---	12-19	1.60-1.65	4.00-14.11	0.08-0.11	0.0-2.9	0.5-1.0	.10	.37	5	7	38
	2-5	---	---	12-19	1.60-1.65	4.00-14.11	0.11-0.14	0.0-2.9	0.5-1.0	.24	.37			
	5-8	---	---	12-19	1.60-1.65	4.00-14.11	0.08-0.11	0.0-2.9	0.0-0.5	.15	.37			
	8-12	---	---	1-7	1.55-1.60	42.00-141.14	0.04-0.05	0.0-2.9	0.0-0.5	.05	.20			
	12-60	---	---	1-7	1.55-1.60	42.00-141.14	0.03-0.04	0.0-2.9	0.0-0.5	.02	.15			
105: Klug	0-4	---	---	12-20	1.20-1.35	4.00-14.11	0.11-0.14	0.0-2.9	2.0-3.0	.15	.32	5	6	48
	4-20	---	---	12-20	1.35-1.50	4.00-42.34	0.06-0.11	0.0-2.9	1.0-2.0	.10	.37			
	20-60	---	---	12-20	1.40-1.55	4.00-42.34	0.03-0.08	0.0-2.9	0.5-1.0	.05	.43			
Gaciba	0-3	---	---	12-18	1.20-1.35	4.00-14.11	0.11-0.14	0.0-2.9	1.0-2.0	.24	.37	1	6	48
	3-18	---	---	16-24	1.50-1.60	4.00-14.11	0.09-0.11	0.0-2.9	0.5-2.0	.15	.37			
	18-28	---	---	---	---	---	---	---	---	---	---			

Physical Soil Properties

Custer-Lemhi Area, Idaho, Parts of Blaine, Custer, and Lemhi Counties

Map symbol and soil name	Depth In	Sand Pct	Silt Pct	Clay Pct	Moist bulk density g/cc	Saturated hydraulic conductivity micro m/sec	Available water capacity In/In	Linear extensi- bility Pct	Organic matter Pct	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
105: Dacont	0-3 3-28 28-41 41-60	-- -- -- --	-- -- -- --	-- -- -- --	15-20 20-32 16-22 15-22	1.35-1.45 1.35-1.45 1.35-1.45 1.40-1.50	4.00-14.11 4.00-14.11 4.00-14.11 4.00-14.11	0.11-0.14 0.08-0.11 0.07-0.08 0.02-0.05	0.0-2.9 3.0-5.9 0.0-2.9 0.0-2.9	1.0-2.0 0.5-2.0 0.0-0.5 0.0-0.5	.17 .15 .10 .10	.37 .37 .32 .32	5 6 6 6	48
154: Pahsimeroi	0-5 5-12 12-25 25-60	-- -- -- --	-- -- -- --	-- -- -- --	12-19 14-20 4-10 0-8	1.60-1.65 1.60-1.65 1.55-1.60 1.55-1.60	4.00-14.11 14.11-42.34 141 00-141.14	0.04-0.06 0.04-0.08 0.03-0.05 0.01-0.02	0.0-2.9 0.0-2.9 0.0-2.9 0.0-2.9	1.0-2.0 0.5-1.0 0.0-0.5 0.0-0.5	.05 .05 .02 .02	.32 .24 .17 .15	2 8 8 8	0
182: Ringle	0-4 4-9 9-16 16-60	-- -- -- --	-- -- -- --	-- -- -- --	12-19 12-19 4-12 1-7	1.60-1.65 1.60-1.65 1.45-1.50 1.55-1.60	4.00-14.11 4.00-14.11 14.11-42.34 42.00-141.14	0.11-0.14 0.08-0.11 0.05-0.07 0.03-0.04	0.0-2.9 0.0-2.9 0.0-2.9 0.0-2.9	0.5-1.0 0.5-1.0 0.0-0.5 0.0-0.5	.24 .15 .10 .05	.37 .37 .28 .20	2 5 5 5	56
197: Snowslide	0-7 7-45 45-60	-- -- --	-- -- --	-- -- --	12-18 11-15 5-18	1.60-1.65 1.60-1.65 1.55-1.60	4.00-14.11 4.00-14.11 4.00-14.11	0.11-0.14 0.09-0.11 0.01-0.05	0.0-2.9 0.0-2.9 0.0-2.9	0.5-1.0 0.5-1.0 0.5-1.0	.24 .17 .05	.37 .37 .28	6 6 6	48

This report shows only the major soils in each map unit. Others may exist.

Physical Soil Properties

Custer-Lemhi Area, Idaho, Parts of Blaine, Custer, and Lemhi Counties

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	micro m/sec	In/in	Pct	Pct					
209:														
Sprabot	0-5	---	---	8-15	1.50-1.60	14.11-42.34	0.09-0.12	0.0-2.9	0.5-1.0	.17	.28	5	4	86
	5-7	---	---	8-15	1.55-1.65	14.11-42.34	0.11-0.13	0.0-2.9	0.0-0.5	.24	.28			
	7-41	---	---	8-15	1.55-1.65	14.11-42.34	0.09-0.12	0.0-2.9	0.0-0.5	.17	.28			
	41-53	---	---	3-8	1.40-1.50	141. 00-141.14	0.04-0.06	0.0-2.9	0.0-0.5	.10	.15			
	53-60	---	---	8-15	1.55-1.65	14.11-42.34	0.09-0.13	0.0-2.9	0.0-0.5	.17	.28			
Snowslide	0-7	---	---	12-18	1.60-1.65	4.00-14.11	0.11-0.14	0.0-2.9	0.5-1.0	.24	.37	5	6	48
	7-45	---	---	11-15	1.60-1.65	4.00-14.11	0.09-0.11	0.0-2.9	0.5-1.0	.17	.37			
	45-60	---	---	5-18	1.55-1.60	4.00-14.11	0.01-0.05	0.0-2.9	0.5-1.0	.05	.28			
217:														
Thosand	0-5	---	---	0-25	0.10-0.30	42.00-705.00	0.30-0.60	---	60-95	---	---	4	8	0
	5-10	---	---	15-26	1.20-1.35	4.00-14.11	0.18-0.20	0.0-2.9	2.0-3.0	.49	.55			
	10-27	---	---	18-26	1.20-1.35	4.00-14.11	0.14-0.20	0.0-2.9	1.0-2.0	.37	.37			
	27-44	---	---	18-27	1.20-1.35	4.00-14.11	0.09-0.17	0.0-2.9	0.5-1.0	.17	.32			
	44-49	---	---	14-20	1.25-1.45	4.00-14.11	0.07-0.12	0.0-2.9	0.0-0.5	.17	.32			
	49-65	---	---	2-8	1.35-1.50	141. 00-141.14	0.03-0.04	0.0-2.9	0.0-0.5	.05	.20			
Wiskisprings	0-8	---	---	16-25	1.20-1.35	4.00-14.11	0.17-0.19	0.0-2.9	2.0-3.0	.49	.55	4	8	0
	8-49	---	---	18-25	1.20-1.35	4.00-14.11	0.17-0.19	0.0-2.9	1.0-2.0	.43	.43			
	49-54	---	---	16-25	1.25-1.40	4.00-14.11	0.13-0.14	0.0-2.9	0.5-1.0	.24	.43			
	54-60	---	---	2-10	1.40-1.60	141. 00-141.14	0.03-0.04	0.0-2.9	0.0-0.5	.05	.20			

This report shows only the major soils in each map unit. Others may exist.

Physical Soil Properties

Custer-Lemhi Area, Idaho, Parts of Blaine, Custer, and Lemhi Counties

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
238:	In	Pct	Pct	Pct	g/cc	micro m/sec	In/in	Pct	Pct					
Wiskisprings	0-8	---	---	16-25	1.20-1.35	4.00-14.11	0.17-0.19	0.0-2.9	2.0-3.0	.49	.55	4	8	0
	8-49	---	---	18-25	1.20-1.35	4.00-14.11	0.17-0.19	0.0-2.9	1.0-2.0	.43	.43			
	49-54	---	---	16-25	1.25-1.40	4.00-14.11	0.13-0.14	0.0-2.9	0.5-1.0	.24	.43			
	54-60	---	---	2-10	1.40-1.60	141. 00-141.14	0.03-0.04	0.0-2.9	0.0-0.5	.05	.20			
Biglost	0-5	---	---	12-17	1.30-1.45	4.00-14.11	0.18-0.20	0.0-2.9	2.0-3.0	.37	.43	3	5	56
	5-26	---	---	12-17	1.30-1.45	4.00-14.11	0.18-0.20	0.0-2.9	1.0-3.0	.37	.43			
	26-60	---	---	0-5	1.50-1.65	141. 00-141.14	0.02-0.03	0.0-2.9	0.0-1.0	.05	.20			
241:														
Yearlan	0-2	---	---	12-20	1.10-1.20	4.00-14.11	0.11-0.14	0.0-2.9	3.0-4.0	.15	.43	5	8	0
	2-12	---	---	18-25	1.15-1.35	4.00-14.11	0.07-0.11	0.0-2.9	1.0-3.0	.10	.32			
	12-60	---	---	10-20	1.20-1.40	4.00-14.11	0.06-0.11	0.0-2.9	0.5-1.0	.10	.32			

Chemical Soil Properties

Custer-Lemhi Area, Idaho, Parts of Blaine, Custer, and Lemhi Counties

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorption ratio
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>	<i>Pct</i>	<i>mmhos/cm</i>	
7:								
Bartonflat	0-5	5.0-12	---	7.4-8.4	0	0	0.0	0
	5-9	3.0-10	---	7.4-8.4	5-15	0	0.0	0
	9-60	0.0-3.0	---	7.4-8.4	5-15	0	0.0	0
14:								
Bigrant	0-4	---	20-30	4.5-5.5	0	0	0.0	0
	4-23	15-30	---	7.4-8.4	15-30	0	4.0-8.0	0-5
	23-29	20-25	---	7.4-8.4	20-35	0	0.0-4.0	0-5
	29-33	30-40	---	7.4-8.4	20-35	0	0.0-4.0	0-5
	33-64	20-25	---	7.4-8.4	0-5	0	0.0-4.0	0-5
Dickeypeak	0-3	15-20	---	7.9-9.0	20-40	0	8.0-16.0	15-25
	3-32	20-25	---	7.9-8.4	20-50	0	0.0-2.0	3-10
	32-52	10-20	---	7.9-8.4	20-50	0	0.0-2.0	3-5
	52-60	8.0-15	---	7.9-8.4	0-20	0	0.0-2.0	3-5
	60-65	0.0-4.0	---	7.9-8.4	0-10	0	0.0-2.0	0
Thosand	0-5	15-25	---	7.4-7.8	40-70	0	4.0-8.0	0
	5-22	13-20	---	7.4-8.4	55-70	0	0.0-4.0	0-2
	22-39	13-20	---	7.4-8.4	10-15	0	0.0	0-2
	39-44	10-14	---	7.4-8.4	5-15	0	0.0	0-2
	44-60	1.0-6.0	---	7.4-8.4	5-15	0	0.0	0-2
28:								
Bursteadt	0-5	9.0-15	---	7.4-8.4	1-5	0	0.0-2.0	0
	5-20	6.0-15	---	7.4-8.4	15-25	0	0.0-2.0	0
	20-31	6.0-15	---	7.4-8.4	0-5	0	0.0-2.0	0
	31-60	1.0-4.0	---	7.4-8.4	0	0	0.0	0
Tohobit	0-9	15-20	---	7.4-8.4	15-20	0	0.0-2.0	0-5
	9-21	7.0-15	---	7.4-7.8	0-5	0	0.0-2.0	0
	21-60	1.0-5.0	---	7.4-7.8	0-5	0	0.0	0
48:								
Dawtonia	0-4	11-20	---	6.6-7.8	0	0	0.0-2.0	0
	4-12	15-25	---	7.4-7.8	15-25	0	0.0-2.0	0
	12-24	15-20	---	7.4-8.4	15-30	0	0.0-2.0	0
	24-60	6.0-10	---	7.4-8.4	15-20	0	0.0-2.0	0

Chemical Soil Properties

Custer-Lemhi Area, Idaho, Parts of Blaine, Custer, and Lemhi Counties

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorption ratio
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>	<i>Pct</i>	<i>mmhos/cm</i>	
70:								
Fezip	0-6	8.0-13	---	6.1-7.3	0	0	0.0	0
	6-16	5.0-12	---	6.1-7.3	0	0	0.0	0
	16-26	8.0-13	---	6.1-7.3	0	0	0.0	0
	26-60	0.0-5.0	---	6.1-7.3	0	0	0.0	0
Lemroi	0-3	---	20-30	4.5-5.5	0	0	0.0	0
	3-11	13-25	---	7.9-8.4	0-10	0	0.0	0-5
	11-18	5.0-20	---	7.4-7.8	5-25	0	0.0	0
	18-26	3.0-15	---	7.4-8.4	5-25	0	0.0	0-5
	26-63	1.0-9.0	---	7.4-8.4	5-15	0	0.0	0-5
Redfish	0-5	10-17	---	6.1-7.3	0	0	0.0	0
	5-10	8.0-15	---	5.6-7.3	0	0	0.0	0
	10-60	1.0-6.0	---	5.6-7.3	0	0	0.0	0
99:								
Kadletz	0-2	7.0-15	---	7.4-7.8	0	0	0.0-2.0	0
	2-5	7.0-15	---	7.4-7.8	0	0	0.0-2.0	0
	5-8	5.0-10	---	6.6-7.3	0	0	0.0	0
	8-12	1.0-2.0	---	6.6-7.3	0	0	0.0	0
	12-60	1.0-2.0	---	7.9-9.0	0-5	0	0.0-4.0	0-5
105:								
Klug	0-4	12-20	---	6.6-7.3	0	0	0.0	0
	4-20	10-15	---	6.6-7.8	0	0	0.0	0
	20-60	10-15	---	6.6-7.8	0	0	0.0	0
Gaciba	0-3	11-20	---	7.4-7.8	0	0	0.0	0
	3-18	12-20	---	6.6-7.8	0-5	0	0.0	0
	18-28	---	---	---	---	---	---	---
Dacont	0-3	12-20	---	6.6-7.3	0	0	0.0	0
	3-28	15-30	---	7.4-8.4	0-30	0	0.0	0-5
	28-41	10-25	---	7.4-8.4	15-30	0	0.0-2.0	0-5
	41-60	10-25	---	7.4-8.4	5-15	0	0.0-2.0	0-5
154:								
Pahsimeroi	0-5	10-15	---	7.4-7.8	0	0	0.0	0
	5-12	10-15	---	6.6-7.3	0	0	0.0	0
	12-25	3.0-7.0	---	6.6-7.3	0	0	0.0	0
	25-60	1.0-5.0	---	7.9-8.4	0-5	0	0.0-2.0	0

Chemical Soil Properties

Custer-Lemhi Area, Idaho, Parts of Blaine, Custer, and Lemhi Counties

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorption ratio
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>	<i>Pct</i>	<i>mmhos/cm</i>	
182:								
Ringle	0-4	9.0-15	---	7.4-7.8	5-15	0	0.0-2.0	0
	4-9	8.0-12	---	7.4-7.8	50-65	0	2.0-4.0	0
	9-16	3.0-8.0	---	7.4-7.8	65-75	0	4.0-8.0	0
	16-60	1.0-5.0	---	7.4-8.4	70-80	0	4.0-16.0	0
197:								
Snowslide	0-7	9.0-15	---	7.4-8.4	0-10	0	0.0-4.0	0-2
	7-45	5.0-10	---	7.9-8.4	15-35	0	4.0-8.0	5-10
	45-60	8.0-14	---	7.4-8.4	15-35	0	8.0-16.0	5-10
209:								
Sprabat	0-5	5.0-12	---	7.9-8.4	2-5	0	0.0-4.0	2-8
	5-7	5.0-10	---	7.9-8.4	2-5	0	0.0-4.0	2-8
	7-41	5.0-10	---	7.9-9.0	5-15	0	4.0-8.0	2-13
	41-53	2.0-6.0	---	7.9-8.4	5-15	0	0.0-4.0	2-8
	53-60	5.0-10	---	8.5-9.0	2-10	0	0.0-4.0	2-13
Snowslide	0-7	9.0-15	---	7.4-8.4	0-10	0	0.0-4.0	0-2
	7-45	5.0-10	---	7.9-8.4	15-35	0	4.0-8.0	5-10
	45-60	8.0-14	---	7.4-8.4	15-35	0	8.0-16.0	5-10
217:								
Thosand	0-5	---	20-30	4.5-5.5	0	0	0.0	0
	5-10	15-25	---	7.4-7.8	40-70	0	4.0-8.0	0
	10-27	13-20	---	7.4-8.4	55-70	0	0.0-4.0	0-2
	27-44	13-20	---	7.4-8.4	10-15	0	0.0	0-2
	44-49	10-14	---	7.4-8.4	5-15	0	0.0	0-2
	49-65	1.0-6.0	---	7.4-8.4	5-15	0	0.0	0-2
Wiskisprings	0-8	15-25	---	6.6-7.3	0	0	0.0	0
	8-49	13-20	---	6.6-7.8	0	0	0.0	0
	49-54	11-20	---	6.6-7.8	0	0	0.0	0
	54-60	1.0-7.0	---	6.6-7.8	0	0	0.0	0
238:								
Wiskisprings	0-8	15-25	---	6.6-7.3	0	0	0.0	0
	8-49	13-20	---	6.6-7.8	0	0	0.0	0
	49-54	11-20	---	6.6-7.8	0	0	0.0	0
	54-60	1.0-7.0	---	6.6-7.8	0	0	0.0	0
Biglost	0-5	13-20	---	6.6-7.8	0	0	0.0	0
	5-26	13-20	---	6.6-7.8	0	0	0.0	0
	26-60	0.0-3.0	---	6.6-7.8	0	0	0.0	0

Chemical Soil Properties

Custer-Lemhi Area, Idaho, Parts of Blaine, Custer, and Lemhi Counties

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorption ratio
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>	<i>Pct</i>	<i>mmhos/cm</i>	
241:								
Yearian	0-2	14-25	---	6.6-7.3	0	0	0.0	0
	2-12	10-20	---	6.6-7.8	0	0	0.0	0
	12-60	2.0-15	---	6.6-7.8	0	0	0.0	0

Engineering Properties

Custer-Lemhi Area, Idaho, Parts of Blaine, Custer, and Lemhi Counties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percent passing sieve number--					Liquid limit	Plasticity index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200			
<i>In</i>													
<i>Pct</i>													
7: Bartonflat	0-5	Very gravelly sandy loam	GM	A-1, A-2	0	0-10	30-55	25-50	20-45	10-30	17-28	1-7	
	5-9	Extremely gravelly sandy loam	GM, GP-GM	A-1	0	5-25	15-35	5-25	5-20	0-15	17-28	2-7	
	9-60	Extremely gravelly loamy coarse sand, Stratified extremely gravelly loamy coarse sand to extremely gravelly loamy sand	GP	A-1	0	15-65	25-45	20-40	10-30	0-5	0-19	NP-2	
14: Bigrant	0-4	Highly decomposed plant material	PT	A-8	0	0	100	100	60-100	50-90	---	---	
	4-23	Silt loam	ML	A-6	0	0	95-100	95-100	80-95	75-90	33-45	13-18	
	23-29	Clay loam, Silty clay loam	CL	A-6	0	0	95-100	95-100	75-100	75-100	39-49	21-27	
	29-33	Clay	CL	A-7	0	0	95-100	95-100	75-100	75-100	48-59	28-36	
	33-64	Loam	CL	A-6	0	0-10	90-100	85-100	75-100	75-100	31-38	13-18	
Dickeypeak	0-3	Silty clay loam	CL	A-7	0	0	95-100	90-100	60-95	50-80	39-46	20-23	
	3-32	Clay loam, Loam	CL	A-6	0	0	90-100	85-100	55-90	50-80	34-45	17-24	
	32-52	Fine sandy loam, Loam	CL	A-6	0	0	90-100	85-100	55-90	50-65	25-35	10-16	
	52-60	Gravelly fine sandy loam	GC-GM	A-2, A-4	0	0-10	55-80	50-75	45-70	25-45	20-30	6-12	
	60-65	Very gravelly loamy coarse sand	GM	A-1	0	0-10	30-55	25-50	15-30	5-15	0-20	NP-3	

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Engineering Properties

Custer-Lemhi Area, Idaho, Parts of Blaine, Custer, and Lemhi Counties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percent passing sieve number--					Liquid limit	Plasticity index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200			
In													Pct
													Pct
14:													
Thosand	0-5	Silt loam	CL	A-4, A-6	0	0	90-100	85-100	75-95	50-90	29-42	9-18	
	5-22	Fine sandy loam, Loam, Silt loam	CL	A-6	0	0	90-100	85-100	60-95	50-80	29-40	12-18	
	22-39	Gravelly silt loam	GC	A-6	0	0	60-75	55-75	45-75	40-60	28-39	12-19	
	39-44	Gravelly very fine sandy loam, Very gravelly silt loam, Very gravelly sandy loam	GC	A-2	0	0	30-65	25-60	20-55	10-45	24-32	9-13	
	44-60	Extremely gravelly loamy sand	GM, GP, GP-GM	A-1	0	0	15-30	10-25	5-20	0-15	0-21	NP-4	
28:													
Bursteadt	0-5	Very fine sandy loam	CL	A-4	0	0	90-100	85-100	75-90	40-65	22-32	6-11	
	5-20	Fine sandy loam, Sandy loam, Very fine sandy loam	CL	A-4	0	0	90-100	85-100	60-80	55-80	21-33	4-12	
	20-31	Fine sandy loam, Sandy loam	CL	A-4	0	0	95-100	90-100	60-80	55-80	21-33	4-12	
	31-60	Stratified extremely cobbly coarse sand to loamy coarse sand	GP	A-1	0	5-75	25-80	20-75	10-25	0-5	0-14	NP	
Tohobit	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	95-100	90-100	24-36	7-15	
	9-21	Fine sandy loam, Gravelly silt loam, Silt loam	SC	A-4	0	0	70-100	65-100	60-80	40-60	21-31	6-12	
	21-60	Stratified extremely gravelly coarse sand to loamy fine sand	GP, SM, SP, SP-SM	A-1, A-2, A-3	0	0-10	25-95	20-85	10-80	0-45	0-20	NP-5	

Engineering Properties

Custer-Lemhi Area, Idaho, Parts of Blaine, Custer, and Lemhi Counties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percent passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200		
<i>In</i>												
<i>Pct</i>												
48: Dawtonia	0-4	Very gravelly loam	GC	A-2, A-4	0-5	0-25	30-55	25-50	20-50	15-40	27-39	9-17
	4-12	Very gravelly clay loam, Very gravelly loam, Extremely gravelly clay loam	GC, GC-GM	A-2	0-10	0-15	25-50	20-45	15-45	10-40	36-45	17-23
	12-24	Very gravelly loam	GC	A-2	0-10	0-10	25-50	20-45	15-45	10-40	32-39	15-19
	24-60	Extremely gravelly loam, Extremely gravelly sandy loam	GC-GM	A-1	0-10	5-20	25-35	15-25	10-25	5-15	18-25	4-7
70: Fezip	0-6	Fine sandy loam	ML, SM	A-4	0	0	100	95-100	70-85	40-55	23-30	4-7
	6-16	Loamy sand	SM	A-2	0	0-5	100	95-100	75-90	20-35	0-29	NP-6
	16-26	Fine sandy loam, Gravelly sandy loam, Loamy fine sand	SM	A-2	0	0-5	75-100	60-100	55-80	20-35	21-30	4-7
	26-60	Extremely gravelly coarse sand, Extremely gravelly loamy coarse sand	GP	A-1	0-15	5-30	20-30	10-20	5-10	0-5	0-20	NP-2

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Engineering Properties

Custer-Lemhi Area, Idaho, Parts of Blaine, Custer, and Lemhi Counties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percent passing sieve number--					Liquid limit	Plasticity index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200			
			<i>In</i> <i>Pct</i>										
70: Lemroi	0-3	Moderately decomposed plant material	PT	A-8	0	0	100	100	60-100	50-90	---	---	
	3-11	Silt loam	ML	A-4	0	0	90-100	80-100	75-95	55-85	27-39	4-9	
	11-18	Gravelly silt loam, Silt loam	CL-ML, GM, ML, SC-SM	A-2, A-4	0	0	60-100	50-100	40-85	30-75	20-35	2-12	
	18-26	Extremely gravelly loam, Extremely gravelly sandy loam	GC-GM, GM	A-1	0	4-10	25-35	15-25	10-20	8-15	18-33	2-12	
	26-63	Extremely gravelly loamy coarse sand, Extremely gravelly loamy sand	GM	A-1	0	10-20	25-35	10-20	10-20	5-15	0-24	NP-6	
Redfish	0-5	Fine sandy loam	SC-SM	A-4	0	0-5	100	85-100	70-85	40-55	23-33	4-10	
	5-10	Gravelly fine sandy loam, Very gravelly sandy loam	GC-GM	A-1, A-2, A-4	0	0-10	50-75	40-70	30-60	15-40	21-31	4-10	
	10-60	Extremely gravelly coarse sand, Extremely gravelly loamy coarse sand	GP	A-1	0	25-45	20-40	10-35	5-15	0-5	0-20	NP-2	
99: Kadletz	0-2	Very gravelly loam	GC-GM	A-2	0	0-10	30-55	25-50	20-45	15-35	23-32	7-13	
	2-5	Gravelly loam	GC-GM, SC-SM	A-4	0	0-10	55-80	50-75	45-65	35-50	23-32	7-13	
	5-8	Very gravelly loam	GC-GM	A-2	0-10	0-10	30-55	25-50	20-45	15-35	22-31	7-13	
	8-12	Very gravelly loamy sand	GM, GP-GM	A-1	0-10	0-10	30-55	25-50	10-40	5-25	0-20	NP-4	
	12-60	Extremely gravelly coarse sand, Extremely gravelly loamy coarse sand	GP, GP-GM	A-1	0-10	5-15	15-35	15-30	5-20	0-10	0-20	NP-4	

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Engineering Properties

Custer-Lemhi Area, Idaho, Parts of Blaine, Custer, and Lemhi Counties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percent passing sieve number--					Liquid limit	Plasticity index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200			
<i>In</i> <i>Pct</i>													
105: Klug	0-4	Gravelly loam	GC	A-2, A-4	0-5	0-5	55-80	50-75	40-70	30-55	26-37	7-13	
	4-20	Very gravelly loam, Very gravelly sandy loam	GC	A-2	0	0-10	30-50	25-45	20-40	10-35	24-35	7-13	
	20-60	Extremely gravelly loam, Extremely gravelly sandy loam	GC	A-2	0-5	15-50	15-45	10-40	10-30	5-25	23-33	7-13	
Gaciba	0-3	Cobbly loam	CL-ML, GC-GM	A-4	0-10	25-35	70-95	70-90	45-75	45-75	24-33	7-12	
	3-18	Very gravelly loam	GC-GM	A-2, A-4	0-10	0-15	30-55	25-50	20-45	15-40	26-38	10-16	
	18-28	Unweathered bedrock											
Dacot	0-3	Gravelly loam	GC-GM, SC-SM	A-4	0-1	0-10	55-80	50-75	45-65	35-50	27-35	9-13	
	3-28	Very gravelly clay loam, Very gravelly loam	GC	A-2	0-1	0-15	35-55	30-50	25-40	20-35	32-47	13-23	
	28-41	Very gravelly loam, Very gravelly sandy loam, Extremely gravelly loam	GC-GM	A-2	0-1	10-40	25-50	20-45	15-35	10-30	25-33	10-15	
	41-60	Extremely cobbly loam, Very gravelly sandy loam	GC-GM, GP-GC	A-2	0-1	45-60	15-30	10-25	10-25	5-20	24-33	9-15	

Engineering Properties

Custer-Lemhi Area, Idaho, Parts of Blaine, Custer, and Lemhi Counties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percent passing sieve number--					Liquid limit	Plasticity index	
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200				
In			Pct										Pct	
154:														
Pahsimeroi	0-5	Extremely gravelly loam	GC	A-2	0	15-35	30-55	15-35	10-30	10-25	24-34	7-13		
	5-12	Very gravelly coarse sandy loam, Extremely gravelly coarse sandy loam	GC	A-2	0	0-35	20-55	15-50	10-35	5-30	25-33	9-13		
	12-25	Extremely cobbly loamy coarse sand, Extremely cobbly loamy sand	GM, SM	A-1	0-10	55-80	55-80	50-75	20-35	10-25	15-23	1-6		
	25-60	Extremely cobbly coarse sand, Extremely cobbly sand, Extremely gravelly sand	GP, GP-GM, SP, SP-SM	A-1, A-3	0-20	30-80	30-80	25-75	15-60	0-10	0-21	NP-4		
182:														
Ringle	0-4	Gravelly loam	GC-GM, SC-SM	A-4	0	0-10	55-80	50-75	45-65	35-50	23-32	7-13		
	4-9	Gravelly loam, Very gravelly loam	GC-GM, SC-SM	A-2, A-4	0	0-10	40-75	35-70	25-50	25-45	23-32	7-13		
	9-16	Very gravelly sandy loam	GM	A-1, A-2	0	0-10	30-55	25-50	20-45	10-30	15-25	1-7		
	16-60	Extremely gravelly loamy sand	GP-GM	A-1	0	0-10	15-30	15-25	10-20	5-10	0-20	NP-4		
197:														
Snowslide	0-7	Gravelly loam	GC	A-2, A-4	0-3	0-5	55-75	50-75	30-60	30-55	23-31	7-12		
	7-45	Extremely cobbly loam, Very gravelly loam	GC	A-1, A-2	0-3	10-55	30-45	30-40	25-40	20-35	22-28	6-10		
	45-60	Very gravelly sandy loam, Extremely gravelly loam, Extremely gravelly sandy loam	GM, GP-GM	A-1	0-3	0-20	15-40	15-35	10-30	5-15	17-31	2-12		

Engineering Properties

Custer-Lemhi Area, Idaho, Parts of Blaine, Custer, and Lemhi Counties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percent passing sieve number--					Liquid limit	Plasticity index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200			
<i>In</i>													
<i>Pct</i>													
209: Sprabat	0-5	Gravelly sandy loam	SC-SM	A-2, A-4	0	0	80-95	55-75	40-60	30-50	20-28	4-10	
	5-7	Sandy loam	SC-SM	A-4	0	0	90-100	85-100	60-90	35-55	18-27	4-10	
	7-41	Gravelly sandy loam	SC-SM	A-2, A-4	0	0	80-95	55-75	40-60	30-50	18-27	4-10	
	41-53	Gravelly loamy coarse sand	SM, SP-SM	A-1	0	0	80-95	55-75	20-45	5-25	0-21	NP-4	
	53-60	Gravelly sandy loam	SC-SM	A-2, A-4	0	0	80-95	55-75	40-60	30-50	18-27	4-10	
Snowslide	0-7	Gravelly loam	GC	A-2, A-4	0-3	0-5	55-75	50-75	30-60	30-55	23-31	7-12	
	7-45	Extremely cobbly loam, Very gravelly loam	GC	A-1, A-2	0-3	10-55	30-45	30-40	25-40	20-35	22-28	6-10	
	45-60	Very gravelly sandy loam, Extremely gravelly loam, Extremely gravelly sandy loam	GM, GP-GM	A-1	0-3	0-20	15-40	15-35	10-30	5-15	17-31	2-12	

This report shows only the major soils in each map unit. Others may exist.

Engineering Properties

Custer-Lemhi Area, Idaho, Parts of Blaine, Custer, and Lemhi Counties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percent passing sieve number--					Liquid limit	Plasticity index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200			
<i>In</i> <i>Pct</i>													
217: Thosand	0-5	Slightly decomposed plant material	PT	A-8	0	0	100	100	60-100	50-90	---	---	
	5-10	Silt loam	CL	A-4, A-6	0	0	90-100	85-100	75-95	50-90	29-42	9-18	
	10-27	Fine sandy loam, Loam, Silt loam	CL	A-6	0	0	90-100	85-100	60-95	50-80	29-40	12-18	
	27-44	Gravelly silt loam	GC	A-6	0	0	60-75	55-75	45-75	40-60	28-39	12-19	
	44-49	Gravelly very fine sandy loam, Very gravelly silt loam, Very gravelly sandy loam	GC	A-2	0	0	30-65	25-60	20-55	10-45	24-32	9-13	
	49-65	Extremely gravelly loamy sand	GM, GP, GP-GM	A-1	0	0	15-30	10-25	5-20	0-15	0-21	NP-4	
Wiskisprings	0-8	Silt loam	CL	A-4, A-6	0	0	90-100	85-100	50-95	45-85	30-41	10-17	
	8-49	Silt loam	CL	A-6	0	0	90-100	85-100	50-100	45-85	29-39	12-17	
	49-54	Gravelly loam, Gravelly silt loam, Sandy clay loam	CL	A-4, A-6	0	0	65-85	55-80	45-70	40-65	26-37	10-17	
	54-60	Extremely gravelly loamy coarse sand	GP, GP-GM	A-1	0	0-15	10-30	5-25	5-20	0-10	0-23	NP-6	
238: Wiskisprings	0-8	Silt loam	CL	A-4, A-6	0	0	90-100	85-100	50-95	45-85	30-41	10-17	
	8-49	Silt loam	CL	A-6	0	0	90-100	85-100	50-100	45-85	29-39	12-17	
	49-54	Gravelly loam, Gravelly silt loam, Sandy clay loam	CL	A-4, A-6	0	0	65-85	55-80	45-70	40-65	26-37	10-17	
	54-60	Extremely gravelly loamy coarse sand	GP, GP-GM	A-1	0	0-15	10-30	5-25	5-20	0-10	0-23	NP-6	

Engineering Properties

Custer-Lemhi Area, Idaho, Parts of Blaine, Custer, and Lemhi Counties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percent passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200		
<i>In</i>												
238:					<i>Pct</i>	<i>Pct</i>					<i>Pct</i>	
Biglost	0-5	Silt loam	CL-ML	A-4	0	0	90-100	85-100	60-95	50-85	26-34	7-11
	5-26	Silt loam	CL-ML	A-4	0	0	90-100	85-100	60-90	50-80	24-34	7-11
	26-60	Extremely gravelly loamy coarse sand, Extremely gravelly loamy fine sand	GP, GP-GM	A-1	0-10	0-30	20-30	10-20	5-15	0-10	0-20	NP-2
241:												
Yearlan	0-2	Very stony loam	GC-GM, SC-SM	A-2, A-4	5-10	10-30	50-85	45-80	35-55	25-45	28-39	7-13
	2-12	Very cobbly loam	GC, GC-GM	A-2	0-5	10-50	50-80	45-75	40-60	30-50	29-41	12-17
	12-60	Stratified extremely gravelly sandy loam to very gravelly loam	GC-GM	A-2	0-10	0-25	20-55	15-50	5-40	0-35	20-30	5-10

80th Percentile Values of Monthly ET (mm/day)

Station: May		ETR	ALFH	ALFS	BEANS	F CRN	SILGE	S CRN	PEAS	POTAT	SBEET	SGRAN	WGRAN	PAST	ORCHD	VEGES	ONION	HOPS
March	AVE ET	1.15		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
March	STDD ET	0.41		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
March	80PCT ET	1.50	U	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
April	AVE ET	4.14	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
April	STDD ET	0.46	E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41	0.00	0.00	0.00	0.00
April	80PCT ET	4.53		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00
May	AVE ET	5.68	E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54	0.00	0.00	0.00	0.00
May	STDD ET	0.47	T	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00
May	80PCT ET	6.08	R	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.00
June	AVE ET	7.15	F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.22	0.00	0.00	0.00	0.00
June	STDD ET	0.48	O	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.00	0.00	0.00	0.00
June	80PCT ET	7.55	R	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00
July	AVE ET	7.81		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.81	0.00	0.00	0.00	0.00
July	STDD ET	0.32	A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.02	0.00	0.00	0.00	0.00
July	80PCT ET	8.08	L	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00
August	AVE ET	6.26	F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.23	0.00	0.00	0.00	0.00
August	STDD ET	0.34	A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.82	0.00	0.00	0.00	0.00
August	80PCT ET	6.55	L	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00
September	AVE ET	4.54	A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.04	0.00	0.00	0.00	0.00
September	STDD ET	0.41		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	0.00	0.00	0.00	0.00
September	80PCT ET	4.89	H	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.00	0.00	0.00	0.00
October	AVE ET	2.79	A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.76	0.00	0.00	0.00	0.00
October	STDD ET	0.31	Y	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.15	0.00	0.00	0.00	0.00
October	80PCT ET	3.05		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00

ET and standard deviation data (AVE ET and STDD ET) taken from Appendix E (unpublished) of Brockway, C.E., and R.G. Allen, 1983, Estimating Consumptive Irrigation Requirements for Crops in Idaho, Idaho Water and Energy Resources Research Institute.

80th Percentile ET values (80PCT ET) calculated based on Walpole, R.E., and R.H. Meyers, 1985, third edition, PROBABILITY AND STATISTICS FOR ENGINEERS AND SCIENTISTS, New York: Macmillan Publishing Company, pp. 132-144 and 574.