E.M. 3183
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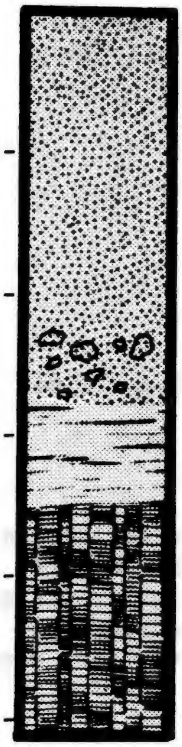
KOEHLER SOIL GUIDE SHEET

These are excessively drained, coarse-textured soils. They formed under grass, sagebrush, rabbitbrush vegetation in wind-blown sand mantling a lime-silica cemented hardpan. They occupy nearly level to moderately sloping terraces at elevations of 300 to 800 feet. These soils are associated with the Quincy soils and are found in Benton, Franklin and Grant Counties.

Representative Description: KOEHLER loamy fine sand	Water Holding Capacity[1/] In/in	Permeability In/hr	Shrink-Swell Potential	Engineering Classification Unified	AASHO
Surface layer: 0-12", dark grayish-brown loamy sand, loose; pH 7.8	.08	6.3-20.0	low	SM	A-2
Subsoil: 12-25", dark grayish brown loamy fine sand, soft, very friable, strongly calcareous, variable thickness; pH 8.2	.08	6.3-20.0	low	SM	A-2
Substratum: 25-31", dark grayish brown sandy loam, lime-silica hardpan fragments, massive, soft, very friable, strongly calcareous, variable thickness; pH 8.2	.15	6.3-20.0	low	SM	A-2
Lime-silica hardpan 31"+					



Caution: All Koehler soils are not exactly like the one shown above. Differences in characteristics will affect suitability and limitations for uses. See Capability Classification table.

ABOUT THE SOIL GUIDE SHEETS: Soil Guide Sheets are written primarily to indicate suitability for irrigation farming. In addition, some engineering properties are shown. These will serve as a preliminary guide but on-site investigation will be needed before making final decisions on non-agricultural uses. Certain terms and soil ratings may not be self explanatory. Refer to "Guide to the Use of Soil Guide Sheets".

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Capability Classification

Koehler soils	(percent slope) 0-2	2-5	5-15	15-25	25-40
1. Loamy fine sand and eroded[3]	IVs	IVs	IVs	VIe	VIe
2. Loamy fine sand, moderately deep and eroded[2]	IVs	IVs	IVe	IVe	

Determine the depth of your soil. Depth affects use and management. Total water holding capacity is less on shallower soil.

Suitability as a source of:
- Topsoil - Not suitable
- Sand - Fair
- Gravel - Not suitable
- Road Fill - Fair

Soil features affecting engineering uses:
- Highway location - Susceptible to wind erosion, extensive hardpan below 30", low shrink-swell potential, rapid permeability
- Dikes, Levees, Embankments - Susceptible to piping and wind erosion, hardpan below 30", low shearing strength, pervious when compacted, low stability
- Reservoir - Rapid permeability, faults and cracks in hardpan
- Septic disposal systems - Rapid permeability, excessively drained

Suitability for irrigation farming:
- Water holding capacity - Low
- Infiltration - Rapid
- Permeability - Rapid
- Drainage - Excessively drained
- Salinity and alkali hazard - Lime silica hardpan at 30"+
- Erosion hazard - Water erosion, slight to severe, increasing with slope; wind erosion, severe

General Evaluation: Koehler soils may become reasonably productive under irrigation with special management practices. Soils are mostly coarse textured with low water holding capacity requiring light frequent irrigations. Suitable for sprinkler irrigation only. Only slight leveling will expose soil of low fertility. Have your soil tested to determine fertilizer needs. Suitable for most crops grown in the area except grapes and tree fruit may be susceptible to "lime-induced chlorosis".

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[1] Adapted from "Water Holding Capacities of Columbia Basin Soils", Mel A. Hagood, D. E. Miller, and Eugene Larson, Ext. Circ. _____(In Press), Cooperative Extension Service, Washington State University

[2] Moderately deep or moderately shallow soils (20"-40") over hardpan, bedrock, claypan, etc.

[3] Shallow soils (10-20") over bedrock, hardpan, claypan, etc.

This Soil Guide Sheet was prepared by A. I. Dow, Extension Soils Specialist, Washington State University in cooperation with Jack J. Rasmussen, Soil Scientist, Robert F. Mitchel, State Soil Scientist, Soil Conservation Service, USDA; and Mel A. Hagood, Extension Irrigation and Water Use Specialist, Washington State University