HAZELWOOD SOILS (HD)

Location and Extent: Hazelwood soils occupy scattered areas on the Fraser River floodplain, mostly in Matsqui Valley. There are about 490 ha of pure map units and 230 ha of soil complexes dominated by Hazelwood soils. The complexes are mainly with Beharrel, Sim and Annis soils.

Topography and Elevation: Hazelwood soils vary in topography from level to undulating. Slope gradients are less than 3 percent and elevations lie between 3 and 7 m above sea level.

Parent Material and Texture: Moderately fine to fine-textured, vertically accreted, stone-free, Fraser River floodplain deposits, 1 m or more thick overlying sand, are the parent material of Hazelwood soils. Surface and subsurface textures are mainly silty clay, sometimes varying to silty clay loam or clay while the subsoil textures are usually silty clay loam or silt loam. Loamy sand or sand occurs below depths of 100 cm or more.

Soil Moisture Characteristics: Hazelwood soils are poorly drained. They are slowly pervious and have high water holding capacity and slow surface runoff. The watertable is near and sometimes at the surface for most of the winter but retreats to about 1 m depth during the latter part of most summers. Surface ponding commonly occurs during periods of heavy rain.

General Soil Description: Hazelwood soils have a black or very dark gray, friable, cultivated, clayey surface layer that is about 20 cm thick and contains between 20 and 30 percent organic matter. It is underlain by a gray to dark gray, clayey layer, about 40 cm thick, which has moderate prismatic structure, is very firm when moist and contains many to common, reddish mottles. This layer then grades through massive, gray, silty material containing a few yellowish mottles to loose sand below 100 cm depth. Soil reaction generally grades from very strongly or strongly acid in the upper soil to medium acid below about 50 cm depth (1:1 H_2O). Soil classification is *Orthic Humic Gleysol*.

Commonly Associated Soils: Beharrel, Annis and Hallert soils often occur closely associated with Hazelwood soils, either in soil complexes or adjacent map polygons. Beharrel soils differ from Hazelwood soils by being somewhat less poorly drained and contain less organic matter in the surface layer. They also have a well-defined clay accumulation layer in the subsurface which Hazelwood soils do not have. Annis soil differ by having an organic surface layer and Hallert soils differ by consisting of alternating organic and silty lenses to depths of 1 m or more.

Vegetation: Essentially all areas of Hazelwood soils are cleared and cultivated. A few, scattered remnants of native vegetation include black cottonwood, willow, vine maple, red alder, scattered western red cedar, salmonberry and blackberry. Rooting is mainly restricted to the upper 50 cm by the high watertables and the dense, clayey soil conditions.

General Land Use Comments: (1) Hazelwood soils are presently used mainly for forage and pasture, although some silage corn and other field crops are also grown. The main agricultural limitation is poor drainage. Artificial water control will increase productivity (and range of crops possible) by promoting improved aeration and rooting depth. Tile lines will require relatively close spacing because of low soil permeability. (2) Urban and similar uses are not suited to Hazelwood soils. Relatively low bearing strengths and high shrink-swell characteristics may lead to potential foundation instability; basements and other excavations will often contain water and septic tank effluent disposal is severely impaired by high watertables and slow soil permeability. (3) Hazelwood soils appear moderately suited for the growth of forest crops such as cottonwood. Estimated potential annual wood production by this species is 9 to 12 m^3/ha/yr.

HAZELWOOD

UNIT TYPE: SERIES

DATE OF SURVEY: 63 SURVEYOR: HAL KELOWNA: B.C.M.A. & R.A.B.
SAMPLING PURPOSE: DETAILED SURVEY

LOCATION

LATITUDE(N): 49 05 03
LONGITUDE(W): 122 16 08
PRECISION (SEC): 02
ELEVATION (M): 5

CLASSIFICATION

ORTHIC HUMIC GLEYSOL(1978)
STATUS: MODAL SOIL

SLOPE

%: 1.0
TYPE: COMPLEX

PARENT MATERIAL & LANDFORM

UPPER STRATIGRAPHIC UNIT

SPEC. CLASTIC 1: CLAYEY
GENETIC MAT.: FLUVIAL
SURFACE EXPRES.: LEVEL

DRAINAGE: POORLY DRAINED
RUNOFF: SLOW
PERVIOUSNESS: SLOW

ADDITIONAL NOTES

SITE LOCATION: 180 METERS NORTHEAST OF THE BELL-CLAYBURN RD JUNCTION.
MATSQUI.

PROFILE DESCRIPTION

HORIZON	THICKNESS DEPTH(CM)	HORIZON BOUNDARY	COLOUR 1	TEXTURE	STRUCTURE 1	STRUCTURE 2
A P	0- 22	ABRUPT	10.0YR2.5/1.0 MATRIX MOIST 10.0YR4.5/1.0 MATRIX DRY	HEAVY CLAY	WEAK MEDIUM SUBANGULAR BLOCKY	MEDIUM GRANULAR
AB	22- 35	ABRUPT	2.5Y3.5/0.0 MATRIX MOIST 2.5Y4.5/0.0 MATRIX DRY	HEAVY CLAY	STRONG MEDIUM SUBANGULAR BLOCKY	
B GTJ	35- 60	GRADUAL	10.0YR5.0/1.0 MATRIX MOIST 2.5Y7.0/0.0 MATRIX DRY	SILTY CLAY	STRONG COARSE ANGULAR BLOCKY	COARSE SUBANGULAR BLOCKY
C G	60- 73	GRADUAL	10.0YR5.5/1.0 MATRIX MOIST 7.5YR7.0/0.0 MATRIX DRY	SILT LOAM	MASSIVE	
II C G1	73- 90	GRADUAL	10.0YR5.0/1.5 MATRIX MOIST 10.0YR7.0/1.0 MATRIX DRY	VERY FINE SANDY LOAM	MASSIVE	
II C G2	90-			LOAMY SAND	SINGLE GRAIN	

HORIZON	THICKNESS DEPTH(CM)	CONSISTENCE	ROOTS 1	MOTTLES 1	CLAY FILMS 1
A P	0- 22	FRIABLE	ABUNDANT		
AB	22- 35	VERY FIRM	FEW		
B GTJ	35- 60	VERY FIRM	FEW	MANY MEDIUM DISTINCT 5.0YR4.0/4.0	COMMON THIN ON PED FACES- UNSPECIFIED
C G	60- 73	FIRM		MANY MEDIUM DISTINCT 5.0YR4.0/4.0	
II C G1	73- 90	FRIABLE		FEW MEDIUM DISTINCT 10.0YR5.0/6.0	
II C G2	90-	LOOSE		FEW MEDIUM DISTINCT	

PHYSICAL & CHEMICAL DATA

HORIZON-DEPTH(CM.)		PH 1 SAMPLE STATE	METHOD	VALUE	ORGANIC CARBON %	NITROGEN %	EXCHANGEABLE CATIONS BUFF.(ME/100G) CA	MG	NA	K	C. E. C. DETERMINED
A P	0- 22	2	1	4.8	14.67	.98	5.50	1.80	.30	.30	59.3
AB	22- 35	2	1	5.1	6.73	.32	10.10	3.60	.20	.10	39.8
B GTJ	35- 60	2	1	5.2	1.50	.10	11.80	5.20	.20	.20	30.7
C G	60- 73	2	1	5.5	.63	.06	7.10	3.80	.10	.10	17.6
II C G1	73- 90	2	1	5.7	.45	.06	4.30	2.30	.10		10.2
II C G2	90-	2	1	5.9	.63	.06	3.10	2.00	.10		7.4

HORIZON-DEPTH(CM.)		PARTICLE SIZE(%) P1 PPM.	P2 PPM.	TOTAL SAND	62-2 U SILT	2U CLAY TOTAL	.2U CLAY TOTAL
A P	0- 22	21.3	41.0	2	35	63	17
AB	22- 35	6.3	12.0		33	67	18
B GTJ	35- 60	4.4	11.0	1	46	53	14
C G	60- 73	4.1	21.0	23	52	25	7
II C G1	73- 90	5.4	23.0				
II C G2	90-	5.4	24.0				

Horizon (Depth-cm)	Clay Mineralogy									
	Coarse Clay (0.002 - 0.0002 mm)					Fine Clay (<0.0002 m)				
	>65% est.	40-65% est.	20-40% est.	<20% est.	Trace	>65% est.	40-65% est.	20-40% est.	<20% est.	Trace
Cg (60-73)			vermiculite, montmorillonite	mica, interstratified vermiculite-mica, kaolinite	plagioclase feldspars	montmorillonite			vermiculite, chlorite, mica, kaolinite, quartz	

HAZELWOOD

UNIT TYPE: SERIES

DATE OF SURVEY: 72 SURVEYOR: HAL UBC

LOCATION

LATITUDE(N): 49 05 03
LONGITUDE(W): 122 16 08
PRECISION (SEC): 05
ELEVATION (M): 5

CLASSIFICATION

ORTHIC HUMIC GLEYSOL(1978)
STATUS: MODAL SOIL

PARENT MATERIAL & LANDFORM

UPPER STRATIGRAPHIC UNIT

SPEC. CLASTIC 1: CLAYEY
GENETIC MAT.: FLUVIAL
SURFACE EXPRES.: LEVEL

PHYSICAL & CHEMICAL DATA

HORIZON-DEPTH(CM.)		PH 1 SAMPLE STATE	METHOD	VALUE	BULK DENSITY	MOISTURE STATUS 1/3 BAR.	15 BAR.	% FIELD MOISTURE	ATTERBURG LIMITS PLASTIC LIMIT	LIQUID LIMIT
A P	0- 23	2	4	4.3	.81	67.5	32.4	44.0	67.7	88.2
B TJG	23- 48	2	4	4.5	1.24	54.9	23.5	40.0	42.2	65.5
BC	48- 63	2	4	4.7	1.30	49.6	28.3	46.1	40.1	66.8
C G1	63-102	2	4	5.1	1.30	40.4	11.7	36.7	27.6	40.2
C G2	102-127	2	4	5.2	1.38	35.5	9.7	37.4	27.4	35.7

Horizon	Depth cm	Particle Density gm/cc Air Dry	Oven Dry	Max. Dry	Shrinkage Limit % Air Dry	Oven Dry	Optimum Moisture %	Particle Size % >5.1 cm	<5.1 cm	<2.5 cm	<5 mm	<1 mm	<0.074 mm	<0.05 mm	<0.002 mm
Ap	0- 23	2.28	2.48		59.5	63.0							100.0	91.0	36.0
Bgtj	23- 48	2.47	2.71		35.8	39.4							100.0	100.0	57.0
BC	48- 63	2.45	2.66		29.1	32.4							100.0	95.0	60.0
Cg_1	63-102	2.63	2.78		28.4	30.4							99.0	85.0	16.0
Cg_2	102-127	2.66	2.79		27.3	29.0						100.0	93.0	79.0	18.0