

**Table 1: Table of Formations in the Fernie-Elk Valley Area
Part A: Triassic to Quaternary**

System/ Series	Formation and Thickness	Lithology
Quaternary		till, sand and gravel
unconformity		
Miocene	St.Eugene Formation (Rocky Mountain Trench only) 50 m exposed, total thickness unknown	colluvium, fanglomerate, sand, silt and gravel
Oligocene	Kishenehn Formation (Flathead Valley only) 0-5000m	varicoloured sandstone, mudstone, clay, oil shale, limestone, conglomerate and megabreccia
unconformity		
Upper Cretaceous	Belly River Formation 1370m	continental sandstones, shales, and minor amounts of coal
	Wapiabi Formation 600-700m	dark shale, siltstone, fine sandstone, calcareous shale and limestone
	Cardium Formation 100-150m	marine sandstone, siltstone and shale
	Blackstone Formation 30-250m	dark shale, fine sandstone, siltstone, limestone and calcareous shale
unconformity		
Lower Cretaceous	Crowsnest Formation 0-400m	alkaline tuff, volcanic breccia, volcanic conglomerate, and trachyte
	Ma Butte Formation 120-1875m (latter is combined thickness with Beaver Mines Formation in the Fernie Basin)	quartz-chert sandstones, grey siltstones and red mudstones, igneous and quartzite-chert pebble conglomerate
	Beaver Mines Formation 450-1875m (latter is combined thickness with Ma Butte Formation in the Fernie Basin)	grey to green feldspathic sandstone and arkose, siltstone, and grey to maroon mudstone, igneous pebble conglomerate
	Gladstone Formation 80-450m	fine quartz-chert sandstone, siltstone, and green and red mudstone; limestone and calcareous mudstone in upper part
	Cadomin Formation 15-75m	chert pebble conglomerate and sandstone, grey, green, and red mudstone
	Pocaterra Creek Member 0-90 m	sandstone, siltstone, mudstone, minor chert pebble conglomerate
	unconformity	
Jurassic	Elk Formation 0-475m	sandstone, conglomerate, siltstone, thin coal
	Mist Mountain Formation 75-665m	siltstone, sandstone, mudstone, shale, coal
	Morrissey Formation 25-65 m	fine to medium sandstone with conglomeratic beds in the upper part, and rare mudstone, siltstone and coal.
	Fernie Formation 175-400m	dark shales, sandstone, siltstone, limestone, basal coquina and phosphate pebble conglomerate
unconformity		
Triassic	Whitehorse Formation 0-10 m	calcareous and dolomitic sandstone and siltstone, sandy dolomite and solution breccia
	Sulphur Mountain Formation 0-496 m	dark shale and siltstone, calcareous and dolomitic siltstone, dolomite and sandstone
unconformity		

**Table 1: Table of Formations in the Fernie-Elk Valley Area
Part B: Devonian to Permian**

unconformity							
Permian	Rocky Mountain Supergroup	Ishbel Group 0-500m	Ranger Canyon Formation 0-36m	chert, with sandstone, siltstone, phosphatic conglomerate			
			Ross Creek Formation 0-150 m	phosphatic siltstone, chert, limestone, basal conglomerate			
			Telford Formation 0-240 m	fossiliferous limestone and dolomite, sandy and silty in part, and chert			
			Johnson Canyon Formation 0-60 m	phosphatic siltstones, chert, basal chert-phosphate conglomerate			
unconformity							
Pennsylvania	Rocky Mountain Supergroup	Spray Lakes Group 60-625m	Kananaskis Formation 0-60m	silty and sandy dolomite, siltstones and chert breccia			
			Misty Formation 60-610 m	sandstone with minor amounts of siltstone and dolomite			
unconformity							
Mississippian	Rundle Group	Mount Head Formation 200-680 m	Todhunter Mbr 15-48m	brightly coloured siltstone, dolomite and calc. sandstone			
			Etherington Formation 100-469m	dolomite, crinoidal and oolitic limestones, green and maroon shale, anhydrite, sandstone, and siltstone			
			Opal Mbr 200-240 m	Carnarvon Mbr 23-90 m	micritic and skeletal limestone with lesser amounts of calcareous shale		
			Marston Mbr 18-68 m	oolitic, micritic and arg. limestones and calc. shale			
			Loomis Mbr 30-100 m	oolitic, crinoidal, and micritic limestone, and fine to medium crystalline dolomite			
			Salter Mbr 29-67 m	silty and sandy dolomite, anhydrite with crinoidal grainstone and packstone increasing to west			
			Baril Mbr 11-39 m	oolitic, micritic and crinoidal limestone			
			Wileman Mbr 8-25m	silty dolomite and anhydrite			
			Livingstone Formation 200-450 m	fine to coarse crinoidal grainstones and packstones, and fine crystalline dolomite.			
			Banff Formation 250-850 m	dark cherty limestones and shales			
			Exshaw Formation 6-150 m	black organic shale, siltstone, chert			
			Palliser Formation 175-500? m	limestone, dolomite and anhydrite (solution breccia in outcrop)			
			Sassenach Fm 0-200 m	Alexo Formation 5-30 m	sandstone, siltstone, sandy and silty carbonate		
			Upper Devonian	Fairholme Group	Mount Hawk Fm (basinal) 0-150 m	Arcs Mbr 0-45 m	light grey coarse dolomite
						Grotto Mbr 0-60	dark grey dolomite
"Ireton" "Ireton" Formation 0-3m	arg. carbonate						
Peechee Mbr 0-250 m	grey argillaceous limestone, part silty						
Leduc Formation 200 m	light grey coarse dolomite, dolomite and anhydrite						
Perdrix Formation	Borsato Formation 15-60 m	dark calc. shale and shaly limestone					
Cooking Lake Formation 50-60 m	dark crystalline dolomite						
Hollebeke Formation 120-240 m	Beaverhill Lake Group 100 m	limestone, dolomite, and anhydrite (solution breccia in outcrop)					
Middle Devonian		Yahatinda Formation 0-30 m	sandy and silty dolomite, dolomitic siltstone and sandstone				
unconformity							

**Table 1: Table of Formations in the Fernie-Elk Valley Area
Part C: Precambrian to Cambrian**

unconformity				
Middle Cambrian		Windsor Mountain Formation 0-70 m	dolomite-mottled limestone and dolomite; calcareous silty dolomite at base	
		Elko Formation 150-160 m	dolomite, dolomite-mottled limestone at base	
		Gordon Shale 45-90 m	greyish green shale, with sandstone and limestone	
		Flathead Sandstone 2-45 m	quartz sandstone	
unconformity				
Precambrian	Purcell Supergroup	Roosville Formation 0-600 m	green and grey, argillite, dolomitic argillite, siltstone, and sandstone, and dolomite	
		Phillips Formation 120-200 m	red quartz sandstone, siltstone and argillite	
		Gateway Formation 375-715 m	upper member	green and grey argillite and dolomitic argillite, dolomitic sandstone and dolomite
			lower member	red to grey and green siltstone and argillite
		Sheppard Formation 50-275 m	dolomite, yellow, grey, and red sandstone and siltstone, light green dolomitic sandstone and argillite, locally with chloritized andesite in the lower part	
		Purcell Lava 60-150 m	chloritized andesite	
		Siyeh Formation 350-800 m	argillaceous grey limestone and dolomite, grey, green, and black argillite, dolomitic sandstone	
		Grinnell Formation 100-230m	red argillite and siltstone and white to grey sandstone	
		Appekunny Formation 230-500 m	green, grey and minor red argillite, siltstone, and green quartzitic sandstone	
		Altyn Formation 145-375m	sandy dolomite, dolomitic sandstone, dolomite, dolomitic argillite and argillite	
		Waterton Formation 250m	varicoloured to grey limestone and dolomite, thin argillite	
		Tombstone Mountain Formation 175m	dark grey argillaceous and silty limestone and dolomite, and silty calcareous argillite	
		Haig Brook Formation 145m	resistant light coloured to banded dolomite, limestone and minor argillite	
		Unit 1 107m	dark calcareous and dolomitic argillite and black argillite	
		Unit 2 314m	grey argillaceous dolomite and black argillite	
Unit 3 219m	grey, green, red and white fine dolomite and limestone			
Unit 4 170m	dark argillaceous limestone			

N.B. The data on this table are derived from the references listed in the text.