

UPPER CRETACEOUS																																																																																									
Series	Group	Colville Group																																																																																							
		Formation	Member or tongue	Schrader Bluff Formation																																																																																					
				Sentinel Hill Member																																																																																					
Series	Group	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																																									
																	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																										
																																Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																											
47ADt346	47ADt356	47ADt355	46ASt73	46ASt72	46AWh12	46AWh13	46AWh14	46AWh6	46AWh8	46ASt80	46ASt48	46ASt47	46ASt46	46ASt44	46ASt57	46ASt42	46ASt38	46ASt37	47ADt301	47ADt325	47ADt335	46AWh4	46AWh3	46AWh2	46AWh11	46AWh10	46AWh9	46ASt78	46ASt82	46ASt83	46ASt66																46ASt64	46ASt63	46ASt62	46ASt61	46AWh1	46ASt60	46ASt59	46ASt117	46ASt49	46AFt87a	46ARy29	46AWh17a	47ADt321	46AFt83a	46AFt73a	46AWh20	46AWh18	46ASt108	46ASt111	46ASt106	46ASt105	46ASt115	46ASt91	46AWh16	46AWh15	46ARy37	49AKr12	49AKr13	46AFt61	46AFt66	46ARy123	49ABe27	49ABe28	49AKr10	49ABe7	49ABe8	46ARy132	46AFt7	49ABe40				
Series	Group	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																																									
																	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																										
																																Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																											
47AWh300	46ASt89	46ASt109	46ASt113	46ASt87	46ASt86	46ASt116	46ASt85	46ASt100	46ASt102	46ASt101	46ASt98	46ASt114	46ASt95	46ASt94	46ASt92	46ASt76	46ASt75	46ASt2	46ASt1	49ABe37	49AKr24	49ABe41	49ABe47	46ASt25	46ASt24	46ASt22	46ARy63	49AKr39	49ABe54	49AKr38	49AKr36																49AKr26	49AKr27	46ASt17	46ASt16	46ASt12	46ASt11	46ASt11B	46ASt10C-2	46ASt10C-1	46ASt15	46ASt6	46ASt5	46ASt4	49ABe51	49AKr32	49ABe57	47AWh404	47AWh402	47AWh400	47AWh398	47AWh329	47AWh339	47AWh331	47AWh395	47AWh392	49ABe56	49AKr40	47AWh408	47AWh350	47AWh333	46AFt18	46AFt51	46ARy160	46ARy125	46ARy78	46ARy88	46ARy89	46ARy91	46ARy100A,B	46ASt8	46ASt7	46ASt21	46ASt20
Series	Group	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																																									
																	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																										
																																Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																											
47AWh283	47AWh284	51AWh12	47ATr345	47AWh285	47AWh285	47AWh282																																																																																			
Series	Group	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																																									
																	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																										
																																Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																											
47AWh283	47AWh284	51AWh12	47ATr345	47AWh285	47AWh285	47AWh282																																																																																			
Series	Group	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																																									
																	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																										
																																Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																											
47AWh283	47AWh284	51AWh12	47ATr345	47AWh285	47AWh285	47AWh282																																																																																			
Series	Group	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																																									
																	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																										
																																Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																											
47AWh283	47AWh284	51AWh12	47ATr345	47AWh285	47AWh285	47AWh282																																																																																			
Series	Group	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																																									
																	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																										
																																Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																											
47AWh283	47AWh284	51AWh12	47ATr345	47AWh285	47AWh285	47AWh282																																																																																			
Series	Group	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																																									
																	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																										
																																Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																											
47AWh283	47AWh284	51AWh12	47ATr345	47AWh285	47AWh285	47AWh282																																																																																			
Series	Group	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																																									
																	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																										
																																Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																											
47AWh283	47AWh284	51AWh12	47ATr345	47AWh285	47AWh285	47AWh282																																																																																			
Series	Group	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																																									
																	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																										
																																Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																											
47AWh283	47AWh284	51AWh12	47ATr345	47AWh285	47AWh285	47AWh282																																																																																			
Series	Group	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																																									
																	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																										
																																Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																											
47AWh283	47AWh284	51AWh12	47ATr345	47AWh285	47AWh285	47AWh282																																																																																			
Series	Group	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																																									
																	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																										
																																Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																											
47AWh283	47AWh284	51AWh12	47ATr345	47AWh285	47AWh285	47AWh282																																																																																			
Series	Group	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																																									
																	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																										
																																Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																											
47AWh283	47AWh284	51AWh12	47ATr345	47AWh285	47AWh285	47AWh282																																																																																			
Series	Group	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																																									
																	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																										
																																Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																											
47AWh283	47AWh284	51AWh12	47ATr345	47AWh285	47AWh285	47AWh282																																																																																			
Series	Group	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																																									
																	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																										
																																Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																											
47AWh283	47AWh284	51AWh12	47ATr345	47AWh285	47AWh285	47AWh282																																																																																			
Series	Group	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																																									
																	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																										
																																Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																											
47AWh283	47AWh284	51AWh12	47ATr345	47AWh285	47AWh285	47AWh282																																																																																			
Series	Group	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																																									
																	Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																																										
																																Formation	Member or tongue	Sample number	Garnet	Zircon	Tourmaline	Picotite	Biotite	Muscovite	Chloritoid	Hornblende	Augite	Glauco-phane	Apatite, Andalusite	Mineral Zone																																											
47AWh283	47AWh284	51AWh12	47ATr345	47AWh285	47AWh285	47AWh282																																																																																			
Series	Group																																																																																								