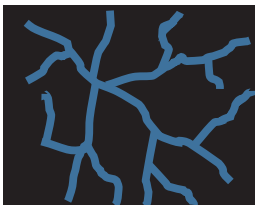
Terrane Analysis Matrix

1	2	3		4	5		6
		Lithology		Structure	Anisotropy	Heterogeneity	Hydrology
Potential Receptors (such as groundwater supply wells, surface water bodies)	Regional Physical Setting (Link to map of physiographic provinces)	Noncrystalline	Sedimentary[1]	 Horizontal Beds	Isotropic in horizontal plane. Impedes (does not prohibit) vertical migration of NAPL.	Potential heterogeneity associated with complex depositional history and environments, local-scale folding, and differential weathering. Homogeneous for uniform depositional history/environment	 Isotropic flow to dendritic drainage network.
				 Inclined Beds	Preferential fluid migration along strike (into /out of page) in saturated fractures under static equilibrium. Down-dip migration of DNAPLs. Fluctuation of LNAPL up and down dip with changes in groundwater elevation. Down-dip pumping induced flow.		 Anisotropic flow to trellis drainage network
				 Vertical Beds			
				 Folding/Faulting	Down-dip emplacement of contaminants through “vadose” zone via surface release. Down-dip infiltration and recharge. Groundwater flow will align with foliation fabric orientation on a regional scale and this orientation is likely to be reproduced in other transmissive features such as faults or shear zones.	Potential heterogeneity associated with complex structural deformation, fracturing, and depositional history and environment.	
		Crystalline	Metamorphic	 Inclined Foliation		Potential for heterogeneity due to intermingling of parent rock types (such as gneiss enveloped in schist). Strike of foliation more variable at local scales.	

Terrane Analysis Matrix

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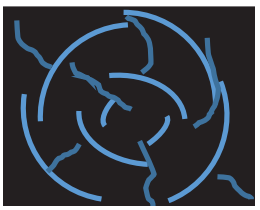
		Lithology		Structure	Anisotropy	Heterogeneity	Hydrology
Potential Receptors (such as groundwater supply wells, surface water bodies)	Regional Physical Setting (Link to map of physiographic provinces)	Crystalline	Metamorphic	 Weak/Not Foliated	Discrete fractures, variable or radial patterns.	Homogeneous crystalline matrix. Heterogeneous fractures.	Discrete fracture flow potentially aligned with regional metamorphic foliation.
			Igneous	 Intrusive Plutonic			 Discrete fracture flow to radial drainage pattern.
				 Extrusive	Horizontally stratified (flows, vesicles, weathering horizon) Quasi-isotropic in horizontal plane.	Heterogeneous due to variability of vesicles, cooling history, and undulations in flows.	Quasi-isotropic flow to local drainage features. Groundwater flow tends to follow direction of lava flows as influenced by paleotopography.

[1]Sedimentary rocks include clastic, chemical, and biological rocks that exhibit bedding. This matrix does not apply to karst or solution features associated with chemical sedimentary rocks. (See Appendix A for a more detailed description of karst features.)