I. ADVANTAGES AND DISADVANTAGES OF SEISMIC METHODS (REFLECTION AND REFRACTION) COMPARED TO OTHER GEOPHYSICAL METHODS

	Advantages	Disadvantages
1.	Detect lateral and vertical variations in velocity	Large quantity of data is collected
2.	Produce detailed images of the subsurface	Data is expensive to acquire
3.	Used to map stratigraphic units	Data processing is time consuming and demands expertise
4.	Response depends on variations in rock density and elastic constants	Equipment is expensive compared to other geophysical methods
5.	Sometimes, direct hydrocarbon detection is possible	Not possible to directly detect contaminants

II. COMPARISON BETWEEN SEISMIC REFLECTION AND SEISMIC REFRACTION

	REFRACTION		REFLECTION	
	Advantage	*Disadvantage*	*Advantage*	*Disadvantage*
1.	Fewer source and receiver locations-> Cheaper			Many source and receiver locations-> Expensive
2.	Little processing is needed			Processing is more extensive (need sophisticated computer hardware and expertise)
3.	Interpretation is not complicated			Interpretation requires more expertise due to the lengthy processing needed
4.		Large source – receiver distances are required	Small source – receiver distances are required	
5.		Velocity must increase with depth	Does not require an increase of velocity with depth	
6.		Interpretation is made in terms of layers	Interpretation is made in terms of complex geology	
7.		Use only the first arrivals	Use the entire reflected wave field	