

# Pierre River Mouth (Lower) Section

UTM 0462150E 6367150N

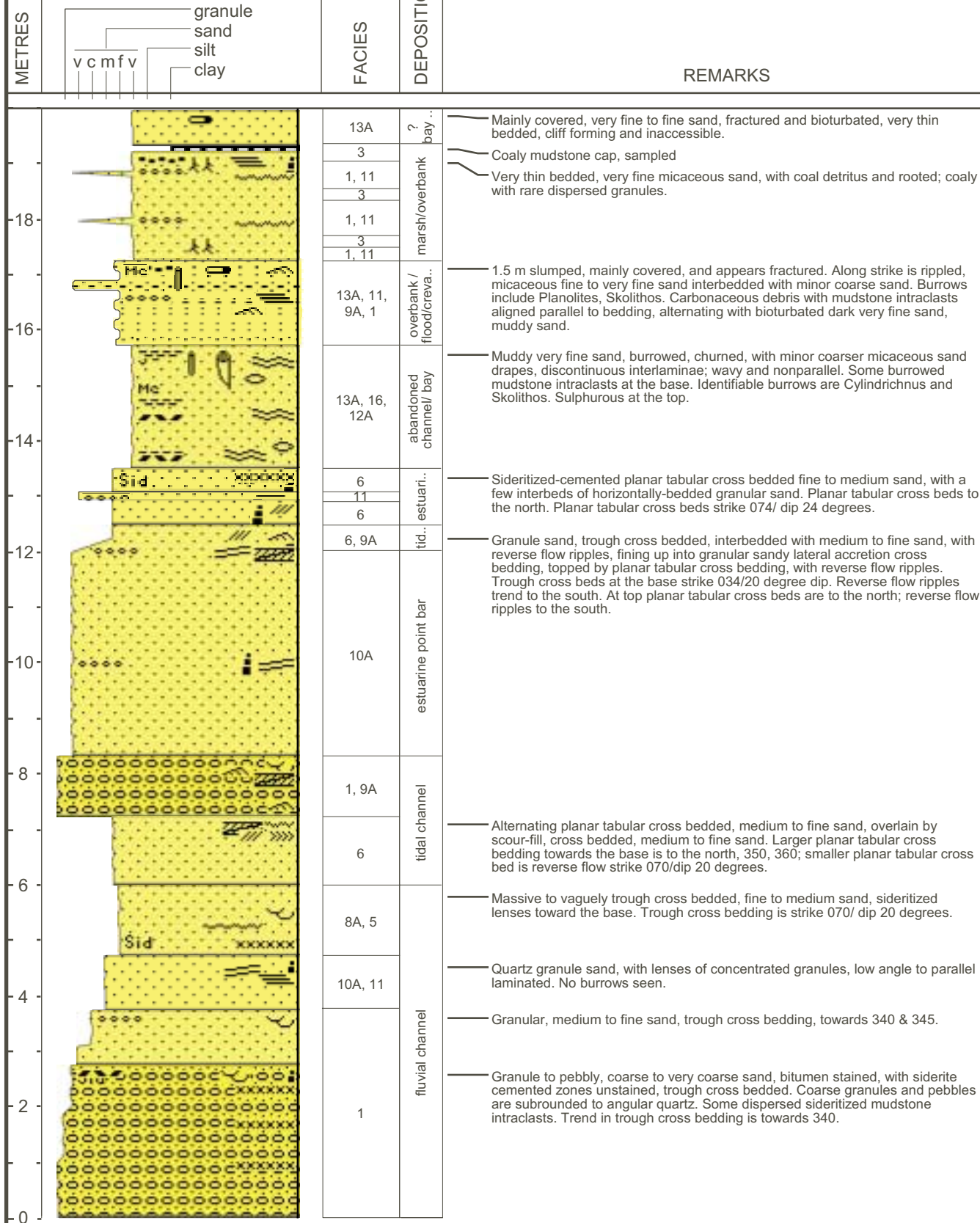


**Alberta  
Energy  
Regulator**

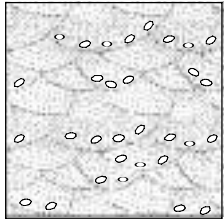


**AGS**  
ALBERTA GEOLOGICAL SURVEY

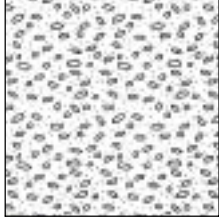
Released as part of Appendix 6 in  
AER/AGS Open File Report 2017-08



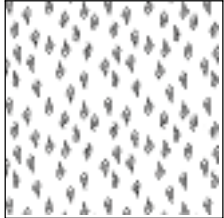
Facies 1: Coarse Grained to Pebbly, Poorly Sorted, Trough Cross-Bedded Sand



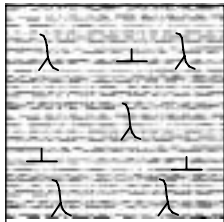
Facies 2: Very fine Grained to Pebbly, Poorly Sorted, Graded Gravel



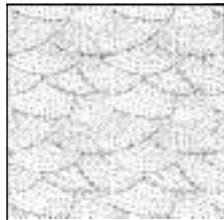
Facies 3: Carbonaceous to Coaly, Rooted Silty Mudstone



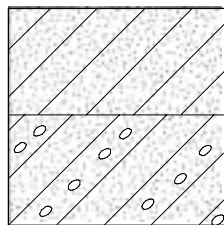
Facies 4: Mottled Argillaceous Sandy Marl



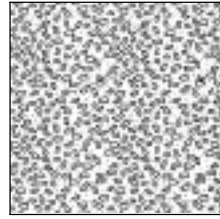
Facies 5: Fine to Medium Grained, Trough Cross-Bedded Sand



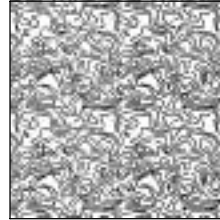
Facies 6: Fine Grained to Pebbly, Planar-Tabular Cross Bedded Sand



Facies 7A: Fine to Medium Grained, Poorly Sorted, Mudstone-Clast Breccia



Facies 7B: Slumped Sand and Mudstone



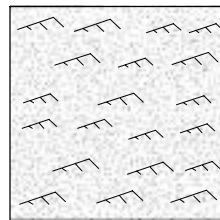
Facies 8A: Fine to Coarse Grained, Massive Sand



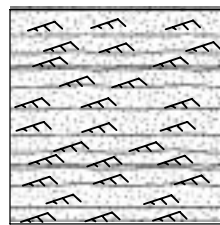
Facies 8B: Poorly to Well Sorted, Massive Sandy Silt/Silty Sand



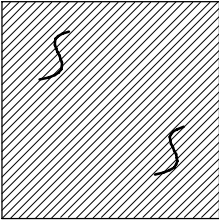
Facies 9A: Very Fine to Fine Grained, Ripple Cross-Bedded Sand



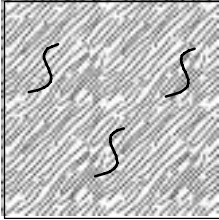
Facies 9B: Very Fine to Fine Grained, Flaser Bedded Sand and Mudstone



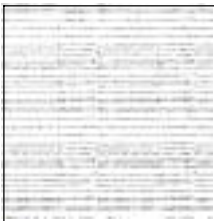
Facies 10A: Bioturbated, Inclined Heterolithic Stratified Muddy Sand



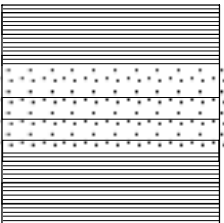
Facies 10B: Bioturbated, Inclined Heterolithic Stratified Sandy Mudstone



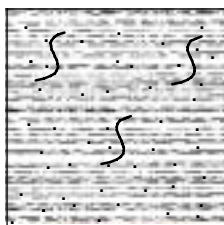
Facies 11: Very Fine to Medium Grained, Stratified Sand



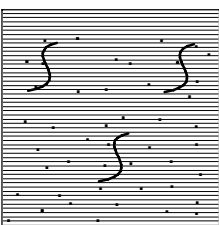
Facies 12A: Rhythmically Laminated Sand and Mudstone



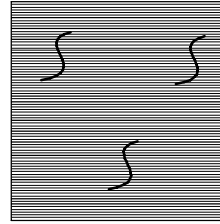
Facies 12B: Very Fine to Fine Grained, Bioturbated, Muddy Sand



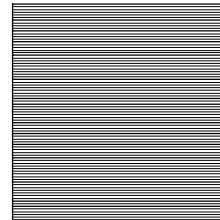
Facies 12C: Very Fine to Fine Grained, Bioturbated, Sandy Mudstone



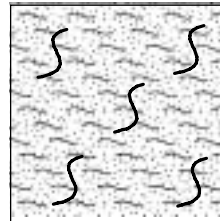
Facies 12D: Laminated to Thinly Interbedded, Bioturbated Silty mudstone



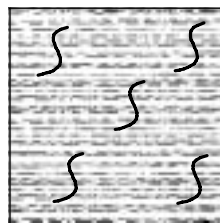
Facies 12E: Thinly Laminated Silty Mudstone/Mudstone



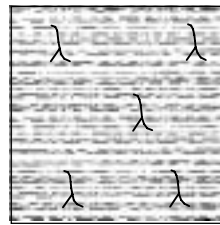
Facies 13A: Very Fine Grained, Heavily Burrowed Muddy Sand.



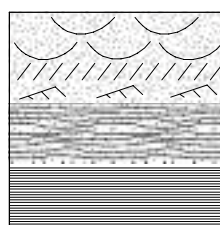
Facies 13B: Intensely Burrowed, Silty Mudstone/Muddy Silt



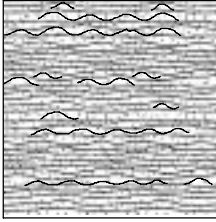
Facies 14: Coaly and/or Rooted, Sandy-Muddy Siltstone to Silty Mudstone



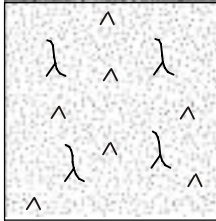
Facies 15: Coarsening-Upward Mudstone-Siltstone-Sand



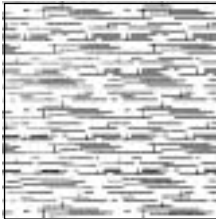
Facies 16: Very Fine to Fine Grained, Well Sorted, Wave Rippled Sand



Facies 17: Silicified Sandstone ('Beaver River Sandstone')



Facies 18: Poorly Sorted, Karstic Calci-/Siliciclastics



# Graphic Legend for Outcrop Logs

## UTM Coordinates: 1:50 000 Maps

### LEGEND

#### LITHOLOGY

	SAND/SANDSTONE		sandy silt		organic shale		LIMESTONE
	silty sand		SHALE/MUDSTONE		coal		Calcareous shale
	shaly sand		silty shale		conglomerate		Coquina
	SILT/SILTSTONE		sandy shale		breccia		

#### CONTACTS

	Scoured		Bioturbated		Undulating
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#### PHYSICAL STRUCTURES

	- Current Ripples		- Trough Cross-strat.		- Oscillatory Ripples
	- Climbing Ripples		- Planar Tabular Bedding		- High Angle Tabular Bedding
	- Low Angle Tabular Bedding		- Flaser Bedding		- Wavy Parallel Bedding
	- Lenticular Bedding		- Herringbone Cross-strat.		- Hummocky Cross-strat.
	- Convolute Bedding		- Chaotic Bedding		- Scour
	- Graded Bedding		- Reverse Graded Bedding		- Fault
	- Reactivation Surface		- Double Mud Drapes		- Load Casts
	- Tight zone				

#### LITHOLOGIC ACCESSORIES

	- Sand Lamina		- Shale Lamina		- Pebbles/Granules
	- Coal Lamina		- Organic Shale Lamina		- Calcareous
	- Siderite		- Glaucinitic		- Pyrite
	- Rip Up Clasts		- Coal Fragments		- Wood Fragments
	- Shell Fragments		- Paleosol Horizon		- Micaceous
	- Sulfur		- Feldspathic		- Iron

#### ICHTHOFOSSILS

	- Rootlets		- Skolithos		- Planolites
	- Gyrolithes		- Diplocraterion		- Arenicolites
	- Ophiomorpha		- Escape Trace		- Cylindrichnus
	- Thalassinoides		- Teichichnus		

#### BIOTURBATION

	Abundant
	Common
	Moderate
	Rare
	Barren