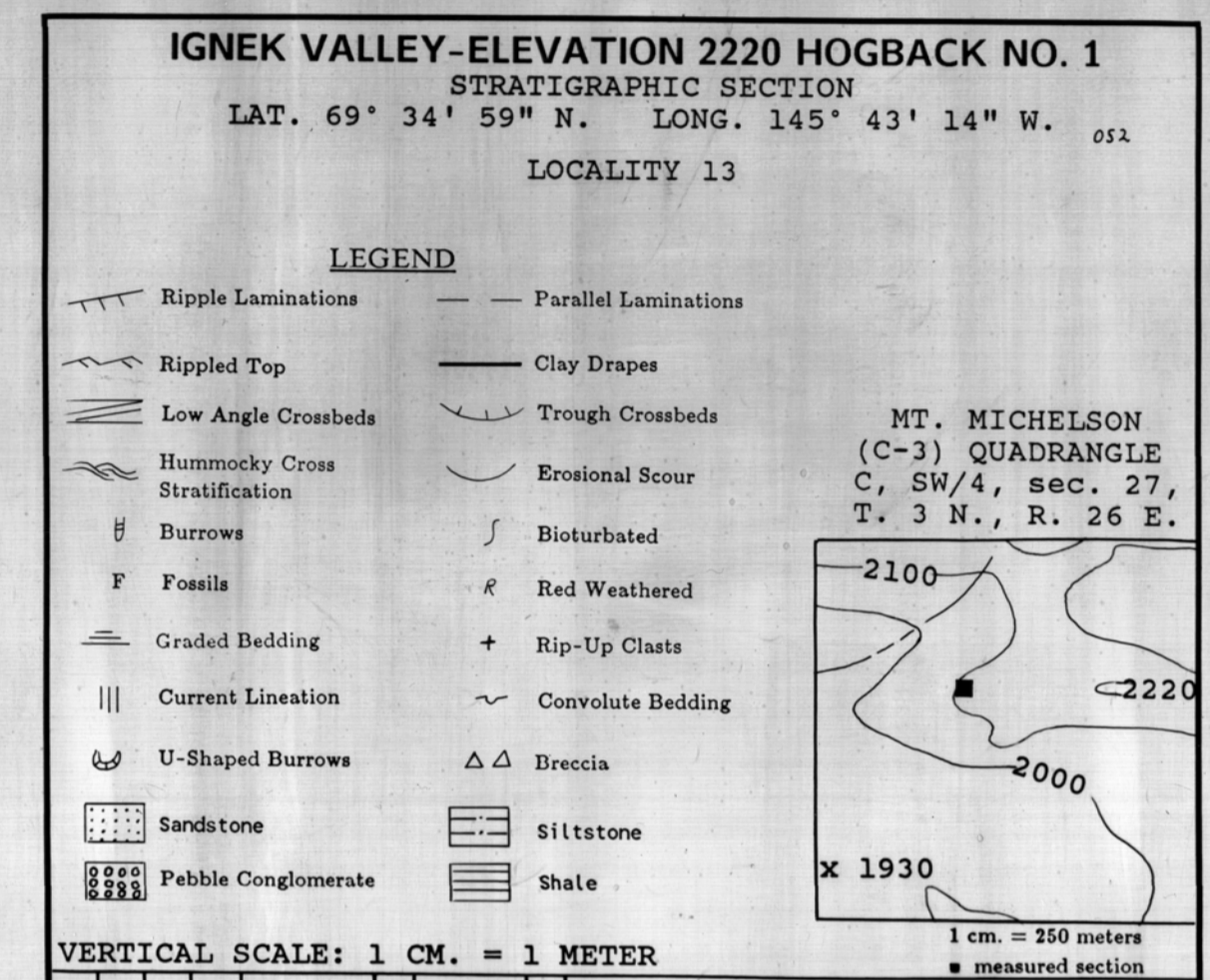


KEMIK SANDSTONE MEASURED SECTIONS  
 ARCTIC NATIONAL WILDLIFE REFUGE NORTHEASTERN ALASKA  
 UPPER KATAKTURUK RIVER AREA

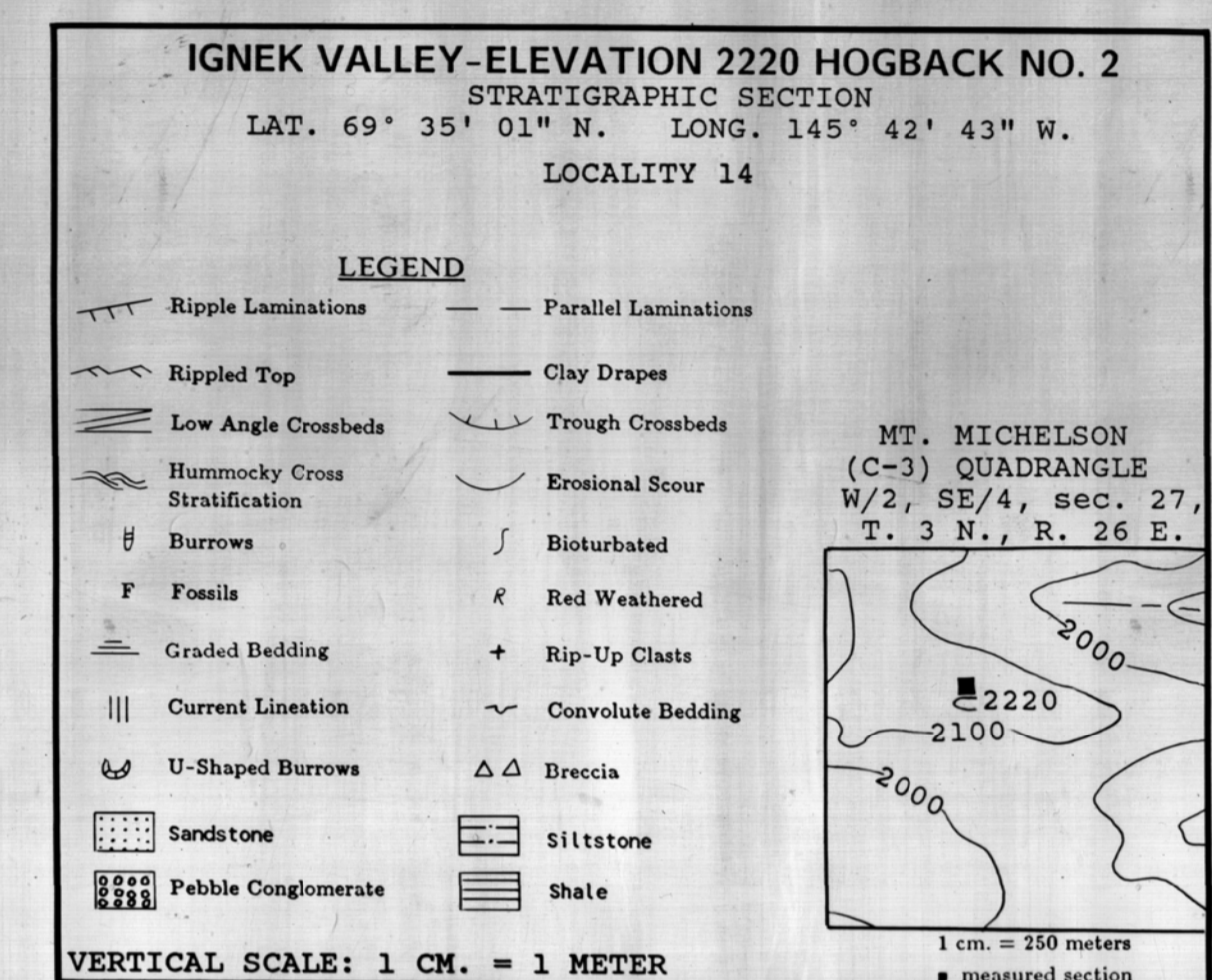
BY  
 DOUGLAS G. KNOCK



VERTICAL SCALE: 1 CM. = 1 METER

SERIES	STAGE	FORMATION	Thickness (m.)	GRAPHIC COLUMN	PALEOCURRENT	SAMPLE NO.	LITHOFACIES	LITHOLOGY DESCRIPTION	INTERPRETATION
LOWER CRETACEOUS	HAUTERIVIAN	KEMIK SANDSTONE	4	[Diagram]			4	Clean, medium to massive bedded, light-gray, VF-F sandstone. Parallel lamination and low angle (5-10°) crossbeds present. A red weathered graded bed (25 cm. thick) is present. Red weathered clam lenses mark the base of two beds. Bedding contacts are sharp. High energy deposition above fairweather wave base. High energy storm events may have produced grading.	Top eroded
			2	[Diagram]			2	Bioturbated, medium bedded, dark-gray, VF sandstone. Clay drapes common. Climbing ripples at base. Rare parallel lamination and clam lenses. Fairweather shallow marine shelf deposition punctuated by intermittent storm wave sand transport.	Covered at base of slope

STRIKE N. 71° W. DIP 20° SW.

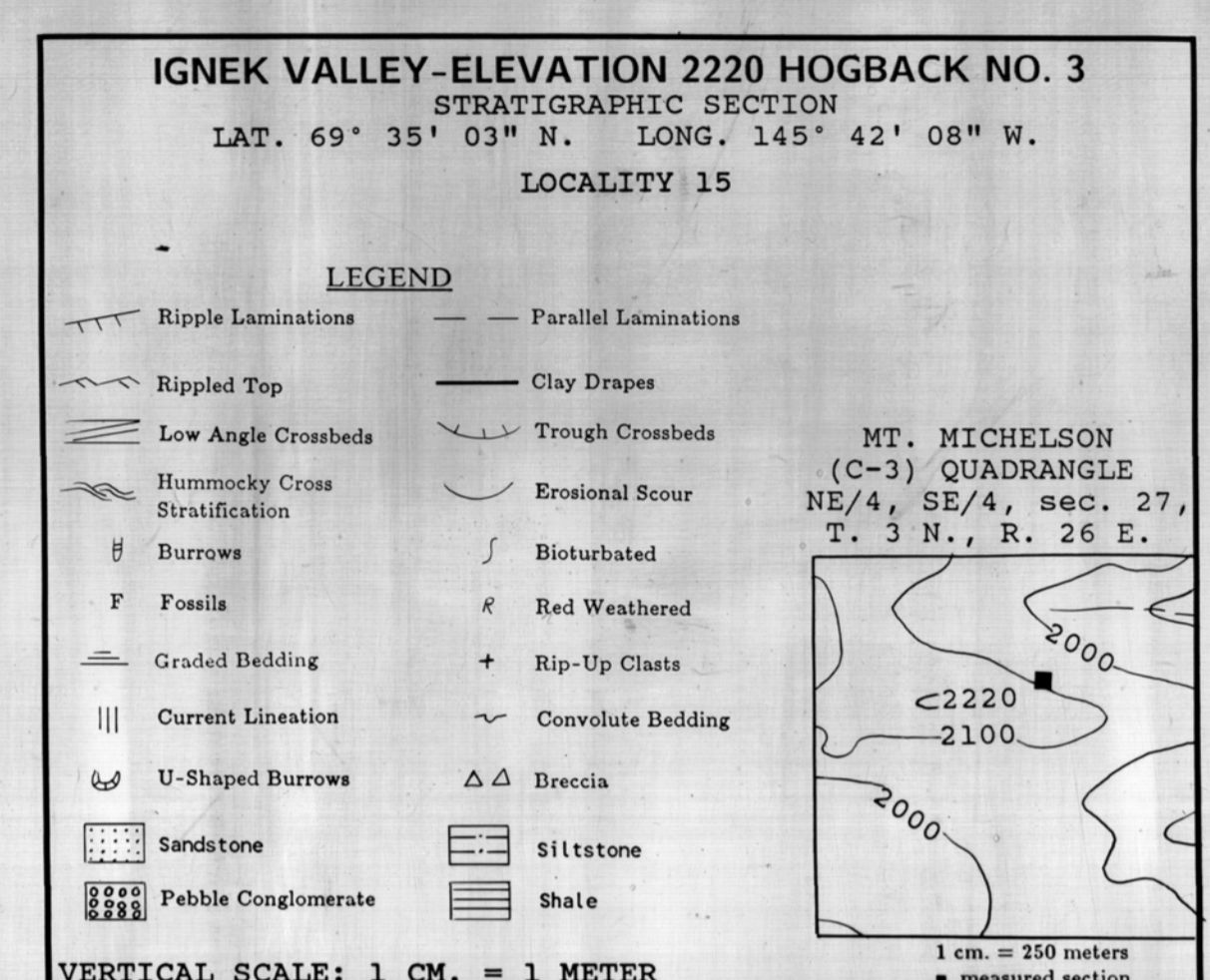


VERTICAL SCALE: 1 CM. = 1 METER

SERIES	STAGE	FORMATION	Thickness (m.)	GRAPHIC COLUMN	PALEOCURRENT	SAMPLE NO.	LITHOFACIES	LITHOLOGY DESCRIPTION	INTERPRETATION
LOWER CRETACEOUS	HAUTERIVIAN	KEMIK SANDSTONE	6	[Diagram]			4	Clean, thin to massive bedded, medium-gray, VF-F sandstone. Parallel lamination and low angle (5-10°) crossbeds present. A graded-convolute bed (30 cm. thick) fills an erosional scour. Rare red weathered clam lenses and chert pebble congl. stringers at the base of beds. High energy deposition above fairweather wave base. High energy storm events may have produced grading.	Top eroded
			2	[Diagram]			2	Bioturbated, medium bedded, dark-gray, VF sandstone. Clay drapes common. Climbing ripples at base. Rare parallel lamination and clam lenses. Fairweather shallow marine shelf deposition punctuated by intermittent storm wave sand transport.	Covered at base of slope

Fa=Ditropia cornu; Astarte ignekensis; Astarte sp.; Cucullaea dowlingi; Tancredia sp.; Yoldia cf. Y. kisumuji; T. Amaraopsis punctata; Cyclindroteuthis 7 sp.  
 Fb=Astarte n. sp. 7

STRIKE N. 62° W. DIP 22° SW.

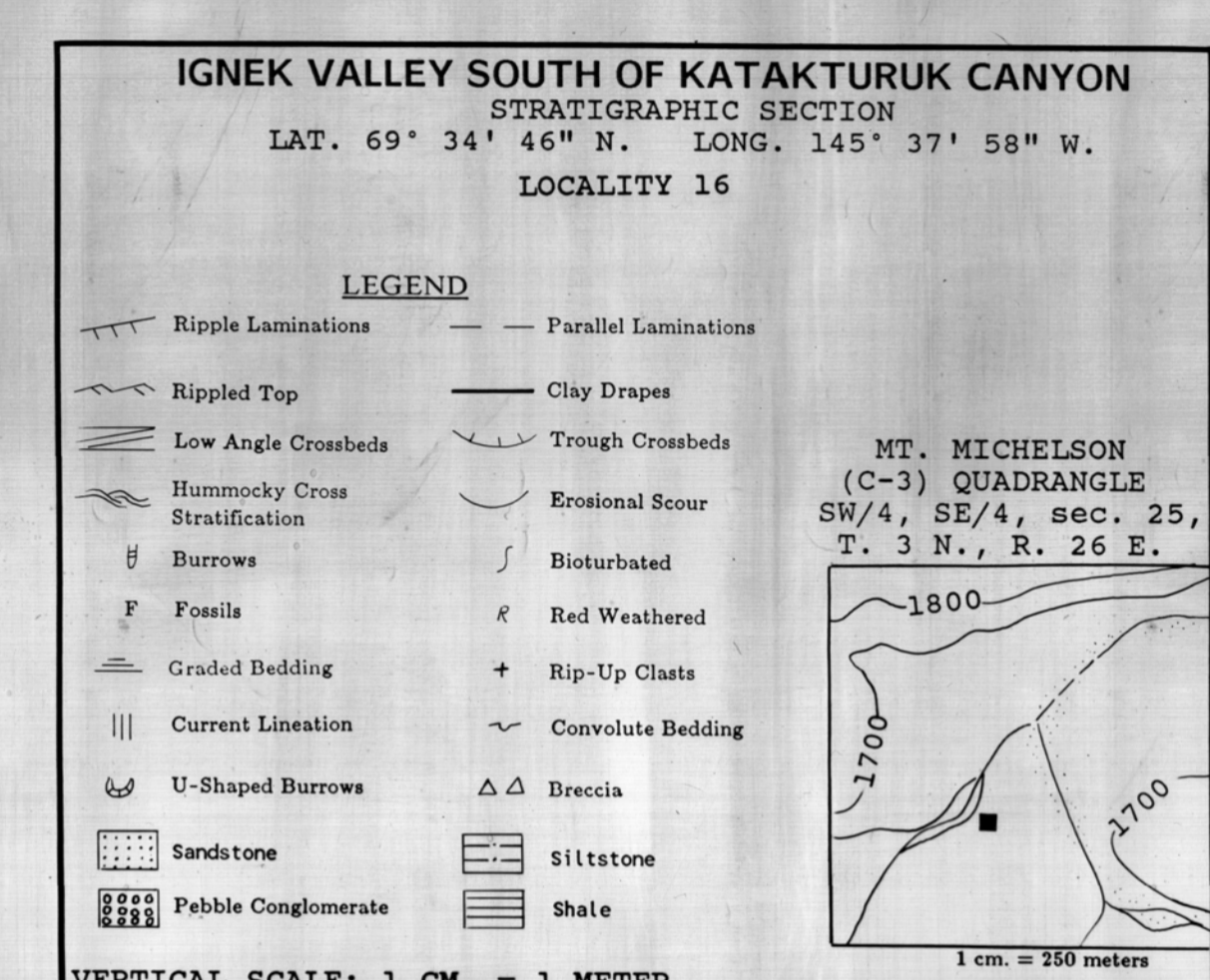


VERTICAL SCALE: 1 CM. = 1 METER

SERIES	STAGE	FORMATION	Thickness (m.)	GRAPHIC COLUMN	PALEOCURRENT	SAMPLE NO.	LITHOFACIES	LITHOLOGY DESCRIPTION	INTERPRETATION
LOWER CRETACEOUS	HAUTERIVIAN	KEMIK SANDSTONE	6	[Diagram]			4	Clean, medium bedded, medium-gray, VF sandstone. Common parallel lamination. Low angle (5-10°) crossbeds and ripple laminations present. Rare red weathered clam lenses and chert pebble congl. stringers at the base of beds. One graded bed (20 cm. thick) present. Sharp bedding contacts. High energy deposition above fairweather wave base.	Top eroded
			2	[Diagram]			2	Bioturbated, dark-gray, VF sandstone. Scattered chert pebbles present. Fairweather shallow marine shelf deposition.	Covered at base of slope.

Fa=Ditropia cornu; Astarte sp.; Tancredia sp.; Nicula athabaskensis; Tancredia kurupana

STRIKE N. 84° W. DIP 17° SW.

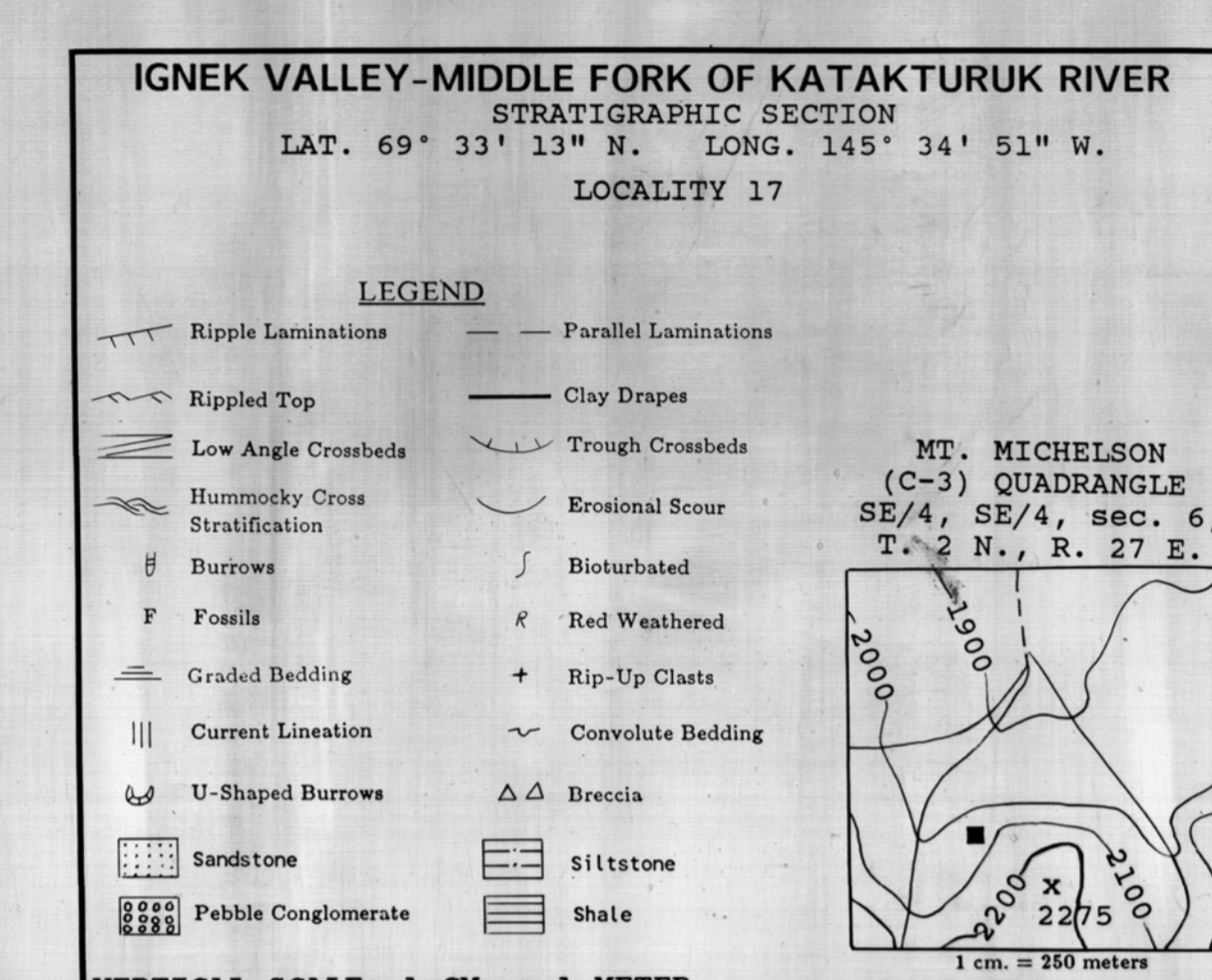


VERTICAL SCALE: 1 CM. = 1 METER

SERIES	STAGE	FORMATION	Thickness (m.)	GRAPHIC COLUMN	PALEOCURRENT	SAMPLE NO.	LITHOFACIES	LITHOLOGY DESCRIPTION	INTERPRETATION
LOWER CRETACEOUS	HAUTERIVIAN	KEMIK SANDSTONE	10	[Diagram]			4	Clean, medium to massive bedded, light-gray, VF sandstone. Common parallel lamination. One graded bed (15 cm. thick) present. Rare red weathered clam lenses and chert pebble congl. stringers. Sharp bedding contacts. Thinner bedded upsection. High energy deposition above fairweather wave base.	Covered
			2	[Diagram]			2	Parallel and ripple laminated, medium-gray, VF sandstone interbedded with bioturbated, VF sandstone. Rare hummocky cross-stratification and trough crossbeds. A graded-convolute bed with clay rip-ups fills an erosional scour. Chert pebble congl. stringers pinch and swell at the base of two beds. Fairweather shallow marine shelf deposition punctuated by intermittent storm wave sand transport. High energy storm events common. Basal chert pebble conglomerate bed. Bed thickness varies between 20 and 40 cm. Storm reworked transgressive lag deposit. Unconsolidated, light-gray clay layer (2-3 cm. thick).	
MIDDLE JURASSIC	BAJOCIAN	KINGAK SHALE		[Diagram]			1	Unconformity. Dark-gray, silty shale. Rare ironstone concretions.	

\* From Dettmerman and others (1975)

STRIKE N. 71° W. DIP 20° SW.



VERTICAL SCALE: 1 CM. = 1 METER

SERIES	STAGE	FORMATION	Thickness (m.)	GRAPHIC COLUMN	PALEOCURRENT	SAMPLE NO.	LITHOFACIES	LITHOLOGY DESCRIPTION	INTERPRETATION
LOWER CRETACEOUS	HAUTERIVIAN	KEMIK SANDSTONE	10	[Diagram]			4	Clean, thin to medium bedded, VF sandstone. Some parallel lamination, rare trough crossbeds (30 cm. thick) and rare red weathered clam lenses. High energy deposition above fairweather wave base.	Top eroded
			2	[Diagram]			2	Bioturbated, thin to medium bedded, VF sandstone and parallel and ripple laminated, VF sandstone. Chert pebble congl. marks base of coarse-tail graded sandstone bed with current lineation. Fairweather shallow marine shelf deposition punctuated by intermittent storm wave sand transport. High energy event suggested by grading and current lineation.	
			2	[Diagram]			2	Bioturbated, thin to medium bedded, VF sandstone interbedded with ripple and parallel laminated, VF sandstone. Clay drapes present. Rare clay rip-ups and rare crawling traces along bedding planes. A 10 cm. thick chert pebble congl. bed has an erosional base. Intensity of bioturbation decreases upsection. Fairweather shallow marine shelf deposition punctuated by intermittent storm wave sand transport. Increasing energy upsection.	Covered at base of slope.

STRIKE N. 89° W. DIP 31° NE.