A88 Merged Transcript

DIVE #: A88 (ATV 94-44-88)

Date: August 29-30, 1994

Observers ATV: Bohannen, Koski, Smith, Tormanen
Observers Wet lab:
Dive Location: Site 2; began at about 43°20.90N (corrected), 127°35.72W, bearing 325°

	Time (PDT)	Depth (ft)	Altitude (ft)	Ship's Latitude (°N)	Ship's Longitude (°W)	ATV Heading (°)/ Turbidity	Observations
	8/29/94						
L	1920						ATV in water.
V	1920						ATV in water.
L	1940						ATV begins descent.
V	1940						ATV begins descent.
N	2108.06						SOF A88.01
L	2111	7440		43° 21.00	127°35.72		In transit mode until interesting sites are found.
V	2122	8261®	21	43 21.0021	127°35.7195	346	Bottom in sight.
L	2128	8340		21.0019	35.723		ATV on bottom, heavy sediment.
V	2128	8265®	19			350	Vehicle on bottom, heavy sediment. Bioturbation and black spots (flora?)
P	2131	8274†		43° 21.99	127° 35.72	med/ low	#1 – Dark patches with lighter [...].
V	2132						Moving towards way point #2.
L	2133						Switch out of work package mode, back to transit mode (was in work package mode for only a few minutes.)
V	2135	8278®	14	21.9976	35.7164	350	Flying on, heavy sediment, some fauna.
V	2138	8257®	16	20.9994	35.7202	345	Stopped to pick a rock, smallish black rocks, slope (30°).
L	2140	8340		21.0012	35.7147		Heavy sediment - some rocks of cobble size.
V	2141						Moving on, couldn't pick a rock.
V	2142	8250®	13	20.9993	35.7182	170	Heavily sedimented slope with partly buried small round rocks (stopped to try to take a sample). Turning to work package mode.
L	2150	8350*	11.2	20.999	35.7198		Sporadic cobbles with heavy sediment. Attempting to get sample.
L	2151						Transit uphill - get a new sample.
V	2153					351	Moving on, couldn't take a sample, mud pillowing [billowing?]. Moving obliquely up a slope.
L	2155	8350*	21.2	21.0017	35.7178		Work package - get sample.
V	2156	8254®	13	21.0006	35.9210	142	Work package mode, stopped to try to pick a rock.
L	2200	8350*	16	21.0014	35.7196		Large cobbles on sed hill - rocks are well-cemented into hill.
V	2204	8199®	42	21.0003	35.7201	150	[Rock sample A88-] 1R, bin 1
V	2205					349	Moving on, transit mode.
L	2206						Transit mode up hill.
L	2208	8230		20.9964	35.7207		Possible rock outcrop on ridge side.
V	2209	8139®	20	20.9983	35.7217	355	Heavy rubble, steep slope, almost vertical in places, more angular blocks.

	(PDT)	(ft)	ude (ft)	Latitude (°N)	Longitude (°W)	Head-ing (°)/ Tur-bidity	
P	2210	8106†		21.00	35.72	med	#2 – Outcrop.
L	2212	8095*	23	21.0024	35.7221		Outcrop on ridge - will sample.
P	2214	8109†		21.01	35.72	med	#3 – Outcrop.
V	2214	8106®	14	21.0096	35.7240	124	Work package mode, scarp trying tc sample a rock. Angular block on roundish outcrop that looks like big pillow below that vein-like outcrop. [Rock sample A88-]-R2.
L	2216	8100*	13	21.0159	35.7256		Sample taken from outcrop. Possibly jointing in outcrop. Maybe a dike AZ approx. 90°.
P	2217	8106†		21.02	35.73	med	#4 – Outcrop.
L	2222						Coming back to transit mode, coming around to 000° heading of ATV.
V	2222	8131®	20	21.0640	35.7514	003	Transit mode
P	2224	8117†		21.05	35.73	low	#5 – Pillow.
L	2227	8100*	19.4	21.0469	35.7342	007	Picture of pillow?? - on slope.
V	2229	8122®	15	21.0567	35.7275	140	Stopped to take a picture of a possible pillow and then moving on.
P	2233	8146†		21.07	35.74	low	#6 – Outcrop.
P	2234	8156†		21.08	35.74	low	#7 – Slope.
L	2235	8140*	13.6	21.0761	35.7454	008	Steep/rocky slope - possibly more pillows/ moderate sediment cover.
P	2235	8161†		21.08	35.74	low	#8 – Slope.
V	2235	8142®	7	21.0704	35.7440	005	Sediment on left side (slope easy in off [?]) rubble ~~on~~ right side (steep slope).
L	2240	8170*	20	21.0901	35.7476	006	Sediment cover increase/ rocks more infrequent.
V	2240	8175®	16	21.0913	35.7460	006	Slight slope, heavy sediment, some rocks on the slope (left side).
V	2244	8175®		21.0981	35.7480	350	Turn, heavy sediment, found slope almost immediately.
L	2245	8175*	22	21.0975	35.7492	350	Heavy sediment/progressing upslope.
L	2250	8140*	14.6	21.098	35.75	347	Rock/sediment contact.
V	2250	8126®	14	21.0980	35.7185	354	Going up the slope obliquely.
L	2300	8100*	14.8	21.1002	35.7540	347	Large rocks interspersed with sediment - some rocks appear shiny.
V	2300	8081®	18	21.1011	35.7532	352	Sediment and rubble.
L	2305					346	Rocky slope changes to sediment.
V	2305						Turning to 330°
L	2311	8020*	32	21.13333	35.7854	320	Coming to 330°.
L	2313	8000*	37	21.1347	35.7835	333	
L	2315	7990*	19	21.1453	35.791	330	Blocks - Broken pillows.
P	2315	7950†		21.14	35.79	low	#9 – Rocks.
V	2315	7972®	21	21.1461	35.7948	332	Going straight up the slope, bigger rocks, no outcrop.
L	2320	7950*	14	21.1557	35.8035	330	
V	2320	7940®	12	21.1569	35.8033	325	Sediment-covered areas and rock-covered areas, sharp contacts.
L	2326	7950*	19	21.1742	35.8161	269	Shiny black rock.
V	2326	7918®	13	21.1753	35.8166	270	Turned towards ridge.
L	2330	7900*	17	21.1865	35.8287	280	Going to try changing to 330. Sediment.
L	2332					350	[Time approximate] For nav reference.
L	2335	7900*	3	21.2001	35.8430	328	

	Time (PDT)	Depth (ft)	Altitude (ft)	Ship's Latitude (°N)	Ship's Longitude (°W)	ATV Heading (°)/ Turbidity	Observations
V	2338	7906®	17	21.2105	35.8509	318	Gone over the ridge, now flying 330° down slope: loose rocks and sediment. Some was heavily sedimented.
L	2340	7920*	15.1	21.2473	35.8584	326	Still in rocky field/heavy sediment - overall size of rocks are same.
N	2341.37						EOF A88.01
N	2342.31						SOF A88.02
L	2345	7950*	23.6	21.2473	35.8838	327	Cobbles in heavy sediment.
V	1835	7895®	51	43° 22.9007	127° 36.8005	170	At bottom. Heavy sediment. Flat. Work package mode.
L	2350	8020*	30	21.272	35.9025	322	Vehicle altitude seems high even though they're on bottom because slope is so steep. Camera in work package, driving in transit mode.
V	2350	8000®	40	21.2690	35.9021	323	Small rocks, relatively heavy sediment cover.
L	2355	8060*	9	21.297	35.926	325	Bottom is 100% sediment.
V	2355	8068®	6	21.2924	35.9250	327	Relatively flat, heavily sedimented. Stopped for 1-2 minutes.
	8/30/94						
V	0000	8061®	27	21.3234	35.9532	336	Dumped one weight.
L	0004	8100*	16	21.347	35.972	327	Back in contact with bottom. 100% sediment.
V	0005	8086®	10	21.3485	35.9718	323	Back at the bottom, still heavy sediment.
L	0007	8100*	15	21.360	35.984	323	Bottom still. 100% sediment.
V	0012	8130®	6	21.3916	36.018	322	Setting vehicle on deck/let ship catch up on line out.
L	0013	8140*	10	21.389	36.014	315	ATV sitting down to decrease whip effect, let ship get into better position. ATV being pushed 150°-170°.
L	0020	8140*	9	21.4245	36.048	325	Still sitting.
V	0023					323	Off deck – begin traverse again.
L	0029	8180*	13	21.4710	36.0828	327	Moving on heavy sediment.
V	0030	8180®	12.6? 126?	21.4658	36.0776	327	Trying to catch up to downsloping seafloor.
L	0035	8260*	12.5	21.4955	36.1104	315	
V	0038	8276®	5				Pilot change, set on bottom.
V	0043	8282®		21.5362	36.1395	324	Silty bottom – downslope.
L	0045	8300*	9.4	21.4522	36.1434	323	Sediment: very heavy. Transit mode.
L	0050.59	8300*	12.6	21.5641	36.1626	316	Contact? Large rock feature - jagged. Changing from transit mode to TP. This edge is very rocky.
V	0051			21.5684	36.1701		Turn around to see what's ahead.
P	0051	8247†		21.57	36.77	low	#10 – Roll of rocks.
P	0052	8247†		21.57	36.77	low	#11 – Roll of rocks.
P	0052	8247†		21.57	36.77	low	#12 – Roll of rocks.
P	0052	8247†		21.57	36.77	low	#13 – Roll of rocks.
V	0054						Photo.
V	0054			21.57	36.17		Photo – zoom.
L	0054						Photo.

	(PDT)	(ft)	ude (ft)	Latitude (°N)	Longitude (°W)	Head-ing (°)/ Tur-bidity	
L	0055.28	8300*	9.4	21.5720	36.1778	340	Photo. Rubble with starfish - fault scarp! Slopes down - stopped at feature. Angular and rounded talus. Floc in water.
V	0059	8294®	141	21.57	36.18		Steep downslope at rocks. Fault.
L	0059	8300*	9.7				Moving down slope.
L	0100.59	8300*	9.7	21.5811	36.1942	311	Forward color camera - transit mode - changing too.
V	0101					330	Forward mode
L	0102.49	8300*	12.9			330	Now passing over ridge with pillow cross-sections. Clouds up.
V	0104	8308®		21.60	36.20	307	Photo. Forward mode.
P	0106	8314†		21.62	36.21	low	#14 – Ridge wall.
L	0107.28	8300*	16.5	21.6105	36.2044	307	Transit mode. backing into slope to sample? Photo. clouded up.
L	0109.43						Sideways to slope, transit mode 70°.
V	0111						Back off ridge – try new sample site.
P	0111	8309†		21.62	36.21	med	#15 – Ridge wall. Rock sample taken.
L	0111.26	8300*	18.0	21.6242	36.2133	266.3	Backing away from slope to get away from sediment. Lobate in-situ flows - brecciatic with pillows and some talus.
V	0114	8328®		21.63	36.22		Photo of cliff.
L	0114						Photo.
V	0120	8326®		21.6497	36.2365	317	Sample of cliff face. [Rock sample A88-] 3R, bin 3.
L	0123	8340*	17	21.6603	36.2460	318	Sample 3R, bin 3. TP mode to sample.
V	0127	8340®	7			325	Back in transit mode.
L	0127	8340*	9.3	21.6622	36.2557	326	Transit mode - reached basin - heavy sediment. 325 CS, SD = 8341.
L	0131.35						Tape 2 ends.
L	0131.39						Tape 3 starts.
V	0134	8355®	7	21.6918	36.2782	333	Transit mode, flat bottom.
L	0134.58	8380*	13.3	21.6936	36.2803	333.4	On bottom of basin and crossing heavy sediment with holothurian and mud volcanoes. Transit mode - Nav lab stated that the Frog Nav has us at sample site still.
L	0140.02	8380*	8.9	21.6967	35.3134	332.9	Still in sediment basin. Have been seeing popcorn*Brown masses associated with mud volcanoes. In this basin, they are larger and more extensive. Stopped to take photo of clusters.
V	0143			21.7146	36.3097		Unusual bottom life.
N	0143.24 8/30/94						EOF A88.02
N	0144.10						SOF A88.03
L	0146.38	8330*	8.6	21.7286	36.2996	301.7	TP mode.
V	0148						Close up of bottom life.
L	0150	8380*	9	21.727	36.303	285	
P	0151	8357†		21.72	36.30	low	#16 – Brown patch of sand.
P	0153	8257†		21.72	36.30	low	#17 – Sandy bottom.
V	0154						Back on course. Transit [mode].
L	0154	8380*	9	21.724	36.304	327	Moving up the line (just started moving). 100% sediment cover.

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L	0159	8380*	9	21.732	36.309	331	Big patch of the balls.
L	0200	8380*	9	21.734	36.309	335	
V	0204	8260®				333	Bottom of mud. Slight up grade.
V	0206	8257®	10	21.7268	36.3284	331	Rocks on bottom.
L	0207						Tiny ray.
L	0210	8300*	17	21.760	36.334	333	
L	0212	8260*	29			327	[Time approximate] Change to work package mode.
V	0213	8188®	17	21.7672	36.3432	143	Work [package] mode. Backing up rock hill.
P	0215	8197†		21.78	36.36	low	#18 – Rocky section in sandy area.
L	0215	8260*	19	21.77	36.347	331	
V	0218	8141®				151	Photo.
L	0218	8220*	22	21.781	36.358	335	Rocks.
L	0219						Stopping to take a sample.
L	0230	8220*	9	21.8123	36.3846	010	Still stopped to sample rock.
L	0235	8180*	16	21.821	36.394	010	[Time approximate] Moving forward, rock is too attached to grab.
V	0238	8126®	0	21.7903	36.3655	186	Sample attempt aborted. Stopped.
V	0240						Ginny relieves Bob [B.].
V	0243.13	8148®		26.8276	36.4012		Moving to side to find better place to sample.
V	0245	8137®	51	21.8333	36.4044		A88-4R [in] bin [...]. On slope 45°. Pillow fragment? Did it go in? Grupped on tay [last is illegible].
L	0245	8140*	12	21.8334	36.4056		Uncertain. Bin 4, sample 4R.
V	0248.46						Are sure if rock went in box. Collection another - on fly.
L	0249	same		location			Uncertain. Bin 2, sample 5R.
V	0249.50	8093®	20	21.8379	36.4083	154	[Rock sample A88-]5R – on slope – pillow fragment? Bin 5 or bin 2.
L	0254						Top of escarpment.
P	0255	8082†		21.85	36.42	low	#19 – Rocky section in sandy area.
V	0255.28	8062®	18	21.8452	36.4175	146	Upslope – on flat plateau? Crested ridge?
V	0258	8077®	10				Patchy pillows in heavy sediment. Photo.
V	0259	8086®	8			149	Setting back down to deck. Kicked up sediment.
L	0259						Pillowed flow tops.
V	0300	8094®	6	21.8532	36.4227	145	Bio. [bioturbated?] surface heavily sedimented. Mud vol [volcanoes?]
L	0304	8100		21.8590	36.4313	335	Silty bottom - flat.
V	0306	8103®	10	21.8624	36.4305	143	Series of [9] photos.
P	0306	8065†		21.80	36.43		#20 – Cliff pan.
P	0306	8065†		21.80	36.43		#21 – Cliff shot.
P	0306	8065†		21.80	36.43		#22 – Cliff shot.
P	0306	8065†		21.80	36.43		#23 – Cliff shot.
P	0306	8065†		21.80	36.43		#24 – Cliff shot.
P	0306	8065†		21.80	36.43		#25 – Cliff shot.
P	0306	8065†		21.80	36.43		#26 – Cliff shot.
P	0306	8065†		21.80	36.43		#27 – Cliff shot.
P	0306	8065†		21.80	36.43	low	#28 – Ridge pan shot.
P	0306	8065†		21.80	36.43	low	#29 – Ridge pan shot.
P	0306	8065†		21.80	36.43	low	#30 – Ridge pan shot.

	(PDT)	(ft)	ude (ft)	Latitude (°N)	Longitude (°W)	Head-ing (°)/ Tur-bidity	
P	0306	8065†		21.80	36.43	low	#31 – Ridge pan shot.
L	0306						New scarp base.
L	0308	8060					Photo sequence of scarp base.
V	0309						Approaching crest of scarp.
V	0309.51	8063®	7	21.8695	36.4287	143	Scarp contact. Photos.
L	0311	8070		21.8695	36.4340		Same scarp, 045° orientation.
V	0312	8034®		21.8730	36.4342	144	Still climbing scarp face. Brecciated rocks/pillows.
V	0314						Attempting [to] sample.
V	0314.54	8032®	11	21.8699	36.4434	172	[Rock sample A88-]6R1 [in] bin 6. Rock off scarp – pillow fragment?
P	0315	8032†		21.87	36.44	low	#32 – Ridge.
L	0315	8020		21.8700	36.4434	351	Sample 6R, bin 5.
V	0318	8032®		21.8760	36.4483	158	Switching arms to put in bin [rock sample A88-]6R2 another attempted.
V	0321	8033®	13	21.0866	36.4461	152	[Rock sample A88-] 6R2 [in] bin 5 – large angular rock sticking out of bin – mud on end. Pilot thrusting into scarp to steady ATV and sample. Doing "bottom function".
L	0321						Sampling completed.
V	0326	8024®	7				Continue on course moving. Contact with rocks and muds. Echinoderms (black circles) with bioturbated muds.
L	0328	8020*	25	21.8914	35.4614	323	Top of escarpment.
V	0329	8009®	12				ATV did a 360° to remove turn in tether.
V	0330	8015®	9	21.8997	36.4574	143	Moving – sediment/biota.
V	0332						Winds at 12 mph – sea state 2.
P	0335	7951†		21.40	36.46	low	#33 – Rocks on course 143°.
L	0337	7950		21.9075	36.4708	322	Base of new escarpment, 045° oriented.
N	0337.22						EOF A88.03
V	0337.26	7981®	12	21.9019	36.4676	144	Contact with fault scarp – going up slope with broken rocks. [Drawing of slope and sampling site 6].
N	0338.19						SOF A88.04
V	0340	7903®					SE tow is trend of scarp. 150°- 270° [sic – probably 150°-330°, from drawing.] Photo.
P	0340	7903†		21.40	36.46	low	#34 – Rocks on course 146°.
L	0340			21.9093	36.4730		Photo of scarp.
V	0343	7869®	24				Continue up scarp – rocks, broken up, heavily sedimented. Rotating pilots.
V	0344	7855®	27	21.9119	36.4786	147	Photo of contact between rocks and sediment. Cloudy again.
P	0344	7857†		21.41	36.47	low	#35 – End of rock field.
L	0344	7870*	27	21.9124	36.4781	322	Top of escarpment.
V	0346	7845®	19	21.9182	36.4809	146	Contact of sediment and rocks. Continue up slope. Rat tail [fish].
V	0350.16	7833®	9	21.9204	36.4845	145	Still on slope – coming to crest? or just extent of lights.
L	0351	7830*	10	21.9241	36.4853	327	Running over outcrop, sloped to southwest.
L	0353	7870*	13	21.9251	36.4900	323	Back on flat silt bottom.

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V	0354	7853®	8	21.9270	36.4929	147	Contact passed by. Biota/muds with another contact ahead.
V	0357	7867®	6	21.9349	36.5000	143	Rock/sediment contact. Sponge?
L	0357	7870*	13	21.9393	36.5030	329	Rocky bottom.
V	0400	7880®	11	21.9512	36.5135	146	Crest of ridge. In situ pillows.
V	0401	7897®	23			143	Transit mode now. Doing down. Same stuff – broken pillows with heavy sediment.
V	0404	7950®		21.9684	36.5234	149	Sediment! with echinoderms – mud volcanoes.
L	0405	7990		21.9706	36.5273		Flat mud bottom.
V	0406	7978®				168	Photo of fish.
P	0406	7973†		21.97	36.53	low	#36 – Fish.
L	0407	7990					Photo of fish, looks like a shark.
L	0407						More photos.
P	0408	7974†		21.98	36.54	low	#37 – Fish.
V	0408.00	7879®	8	21.9820	36.5429		Photo of fish. Rock/sediment contact.
V	0409	7977®	8				Photo of fish.
L	0409	7990*	11	21.9865	36.5547	350	Photo of pillow lavas.
V	0411	7974®	13	21.9903	36.5610	152	Getting back on course (330°). Pillows – larger going downslope.
L	0413	8020*	20	21.9989	36.5693	342	Down a hill, rocks behind.
V	0415	8019®	14	22.0191	36.5658	159	In situ pillows, with flow directions and heavy sediment.
V	0417	8030®	6				Sediment cover/rock contact.
L	0418	8070*	10	22.025	36.577	338	Waiting for ship catch-up.
V	0421	8048®	8	22.0389	36.5837	147	Stopped. Ship needs to catch up.
V	0423	8050®	8				Moving slightly. Still in sample place. Coming up.
V	0425	8051®	6	22.0558	36.6032	156	Moving sediment. Crossing contact with pillows. TP [transit?] mode.
V	0428.16	8072®	6	22.0637	36.6155	145	Fault scarp? Back into sediment.
V	0431	8079®	6	22.0793	36.6304	147	Change to transit mode.
L	0431	8060		22.08	36.62		Switch to transit mode.
V	0433	8044®	6	22.0875	36.6339	323	Fault scarp. [Drawing shows sediment on gentle slope, with pillows below on steeper slope.]
L	0438	8020*	19	22.10	36.63		Rocky bottom.
V	0441	8060®	10	22.0925	36.6590	315	Sediment covered, occasional boulders.
L	0446	8100*	12	22.09	36.64	315	Plain bottom mud.
L	0449	8100*	12				Back to work mode.
V	0451	8100®	13	22.1165	36.6600	330	Turn 180° from transit mode to work package [mode] [NB: ATV apparent heading changes, true heading remains approximately NW-NNW.]
L	0455	8100		22.11	36.67	334	Plain mud bottom, slopes down.
V	0457	8109®				150	Photo. Sediment plain with biota mounds.
P	0457	8109†		22.11	36.66	low	#38 – Mounds.
V	0500	8114®		22.1201	36.6655	155	Sediment with sparse biota.
P	0501	8116†		22.12	36.66	low	#39 – Mounds.
L	0501	8100		22.10	36.68	334	Photo.
V	0502						HMI light out on aft end.
L	0503						Turn to transit mode.

	Time (PDT)	Depth (ft)	Altitude (ft)	Ship's Latitude (°N)	Ship's Longitude (°W)	ATV Heading (°)/ Turbidity	Observations
V	0505	8125®	7				Turn 180° to transit mode.
L	0508	8140*	10.5	22.13	36.71	327	Featureless bottom.
V	0514	8149®	8	22.1749	36.7210	327	Flat sediment plain, biota mounds.
V	0529	8113®	14	22.2329	36.7675	328	Rocky surface – debris.
L	0529	8100		22.23	36.77	027	Rocky slope.
V	0531	8080®	15			326	End of rock area.
L	0531	8080*	18	22.23	36.78		Top of slope.
V	0536	8060®		43 22.554	127 36.787	1327	Sediment cover. Dive terminated for replacement of TMI light.
L	0536	8080		22.24	36.82		Way point's end.
L	0536						[Time approximate] Off bottom, no lights, can't photo or sample.
N	0633.09						EOF A88.04