



PROJECT ZEEHAN - TAS No. A7860	ELEVATION meters	COMMENCED 68-80	BORE HOLE SURVEY Bearings m.N.			INSTRUMENT EASTMAN GRMERA		
PROSPECT OCEANA	DIP COLLAR 60°	COMPLETED 14.9.80	Depth (m)	Dip	Bearing	Depth (m)	Dip	Bearing
CO-ORDINATES 3650 mN 1350 mE	CORE SIZE HQ, NQ	TOTAL LENGTH 330 meters	50	65°	N/A	200	63.5	035
BEARING 037 TN MN GN	LOGGED BY PHIL JONES		100	64°	035	266	61.0	033
			150	64°	034	300	59.0	034

METERAGE		DESCRIPTION	MINERALIZATION %	SAMPLE NUMBER	METERAGE			ASSAYS			
From	To				From	To	Length	Cu	Pb	Zn	Ag
0.00	66.00	TRICONE Through black and grey dolomitic clays. Poor water return.		22351	66	67	1	30	590	7300	1
		<u>HQ CORING.</u>		22352	67	68	1	20	290	4200	2
				22353	68	69	1	10	4050	2200	4
66.00	68.10	SILTY DOLOMITE: Black, clayey and silty, completely weathered dolomite.		22354	69	70	1	22	2.55%	3900	10
				22355	70	71	1	10	1.20%	2400	6
				22356	71	72	1	8	8000	1950	24
68.10	71.60	SIDERITE / ANKERITE ROCK: Grey, very dense, rough in part with open space filling textures observed, weakly mineralized with platy and disseminated galena and sphalerite sideritic and ankeritic dolomite.	Weakly Pb/Zn mineralized < 1% combined.	22357	72	73	1	8	750	1250	2
				22358	73	74	1	8	200	550	1
				22359	74	75	1	8	160	570	7
				22360	75	76	1	8	630	4800	6
				22361	76	77	1	18	1450	3900	2
					77	78	1	NO	CORE	RECOVERED.	
71.60	75.40	DOLOMITIC SILTY CALCULITE: Dark grey to black, completely weathered, puggy, silty and dolomitic calcudite. Minor fine grained bedded? pyrite.	Minor fine grained pyrite.	22362	78	79	1	12	830	3400	2
				22363	79	80	1	8	610	1800	1
				22364	80	81	1	6	310	1100	35
				22365	81	82	1	5	1100	1000	5
				22366	82	83	1	6	420	1150	4
75.40	92.00	CALCULITE: Interbedded, massive, fresh, grey limestone sedimentary breccias and very weathered light grey, silty porous calcudites. Minor to moderate calcite veining with superimposed minor siderite veining. Trace of galena/sphalerite in some of the sideritic veins. Ground extensively broken with clayey intervals very prominent. Possible bedding trace 40° to s.e. at 88.70 metres.	Trace galena / sphalerite in Calcite/Siderite veins	22367	83	84	1	12	1650	2100	1
				22368	84	85	1	18	170	930	2
				22369	85	86	1	6	910	1000	<1
				22370	86	87	1	12	490	670	<1
				22371	87	88	1	6	135	750	<1
				22372	88	89	1	6	80	600	<1
				22373	89	90	1	4	115	600	<1
				22374	90	91	1	22	380	1150	<1
				22375	91	92	1	8	270	1950	<1
				22376	92	93	1	12	520	3100	2
				22377	93	94	1	12	2300	1.15%	2
92.00	100.50	DOLOMITE BRECCIA: Black, completely weathered, clayey, silty, pyritic in part, sideritic dolomite breccia. Open space filling by siderite (veins & fractures) very prevalent, minor to trace Pb/Zn as disseminations. Possible relict bedding 15° to s.e. at 99.5m	Trace / Minor Pb-Zn as disseminations	22378	94	95	1	10	1800	8100	8
				22379	95	96	1	10	5200	9200	7
				22380	96	97	1	8	3300	7300	3
				22381	97	98	1	18	1.35%	1.76%	50
				22382	98	99	1	8	1200	7400	2
				22383	99	100	1	10	2300	4500	3

649107

METERAGE		DESCRIPTION	MINERALIZATION %	SAMPLE NUMBER	METERAGE			ASSAYS					
From	To				From	To	Length	Cu	Pb	Zn	Ag		
100.5	110.0	SILTY DOLOMITE: Fine grained, very weathered, puggy, grey to dark grey, silty ankeritic dolomite. Ground moderately broken. Minor relict laminar bedding? $\approx 40^\circ$ to ca. at 105 metres. Weakly weathered sections tend to be dark, massive and dense.		22384	100	101	1	8	530	3700	1		
				22385	101	102	1	8	135	3900	1		
				22386	102	103	1	16	185	4100	1		
				22387	103	104	1	10	860	7200	3		
				22388	104	105	1	16	2900	1.82%	14		
				22389	105	106	1	8	590	6900	2		
				22390	106	107	1	8	430	6700	1		
				22391	107	108	1	12	570	5100	1		
110.0	134.5		SIDERITE/ANKERITE DOLOMITE BRECCIA: Cream, grey to black, extensively brecciated, open pore space infilled, weakly mineralized rock. Minor disseminated sphalerite (part pink in colour) and blebby to platy galena. Breccia fragments very angular, and average 1-3cm in diameter. Core shows strong preferred orientation of sideritic infilling material $\approx 30^\circ$ to ca. Core extensively fractured and broken with minor interbedded clay zones.	Minor galena	22392	108	109	1	10	980	4800	2	
					sphalerite randomly distributed throughout the breccia.	22393	109	110	1	22	1600	5400	2
					22394	110	111	1	10	4000	3300	2	
					22395	111	112	1	10	5000	6900	2	
					22396	112	113	1	14	3700	1.44%	6	
					22397	113	114	1	14	6000	1.39%	13	
					22398	114	115	1	16	2.25%	9400	7	
					22399	115	116	1	16	1.75%	1.21%	5	
					22400	116	117	1	14	2950	1.04%	2	
					22401	117	118	1	12	2750	8600	2	
					22402	118	119	1	18	310	5100	1	
					22403	119	120	1	8	3150	5600	2	
134.5	151.00	SILTY LIMESTONE: Completely weathered, weakly calcite veined, occasionally brecciated, grey to dark grey dolomitic silty limestone. Very minor siderite with calcite. Minor coralline fossil imprints.			22404	120	121	1	10	1900	1.06%	2	
				22405	121	122	1	10	1950	1.04%	2		
				22406	122	123	1	10	7300	6800	4		
				22407	123	124	1	8	870	5500	1		
				22408	124	125	1	10	4100	3600	3		
				22409	125	126	1	14	8600	2800	5		
151.0	159.5	SIDERITIC DOLOMITE: Dark grey, massive crystalline dolomite, strongly calcite/siderite veined with minor quartz?? Minor pyrite is associated with disseminated minor sphalerite and trace galena. Ground intensely brecciated and broken with numerous pugh zones present. Sections of core waxy. Disseminated sulphides at striae oriented parallel to sideritic veining.	Minor disseminated sphalerite - trace galena.	22410	126	127	1	10	2.00%	1300	8		
				22411	127	128	1	8	1.55%	670	6		
				22412	128	129	1	4	2750	960	2		
				22413	129	130	1	10	1.70%	3000	8		
				22414	130	131	1	8	3600	4700	2		
				22415	131	132	1	24	2900	4600	1		
				22416	132	133	1	10	1.05%	2600	5		
				22417	133	134	1	24	2.50%	1550	12		
				22418	134	135	1	10	2700	4900	2		
159.5	173.0	SILTY DOLOMITE: Completely weathered, dark grey to black, silty dolomite. Minor relict fine bedding at $40^\circ$ to ca. at 166 metres.		22419	135	136	1	16	2450	6600	3		
				22420	136	137	1	10	900	4900	1		
				22421	137	138	1	12	1000	4400	1		
				22422	138	139	1	10	1850	5300	2		

CONT OVER.

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METERAGE		DESCRIPTION	MINERALIZATION %	SAMPLE NUMBER	METERAGE			ASSAYS				
From	To				From	To	Length	Cu	Pb	Zn	Ag	
159.5	173.0	SILTY DOLOMITE CONT: Minor sideritic veinletted sections of core quite rough. Core broken and very puggy.		22423	139	140	1	20	630	3300	6	
				22424	140	141	1	12	550	2500	1	
				22425	141	142	1	18	360	2600	1	
				22426	142	143	1	12	50	135	2	
173.0	177.0	DOLOMITIC SILTSTONE: Light grey, massive, very well sorted, weakly calcareous and ankeritic veined, in part pelletal siltstone.		22427	143	144	1	38	65	380	<1	
				22428	144	145	1	12	370	2050	1	
				22429	145	146	1	12	80	300	<1	
				22430	146	147	1	10	48	140	<1	
177.0	180.8	CALCAREOUS SANDSTONE: Light grey, speckled, extensively siderite/ankerite veined brecciated, coarse grained sandstone. Core moderately broken, puggy in labor part. Ankerite forming gray white rosettes. Breccias composed mainly of angular fragments of country rock in a siderite/ankerite matrix.		22431	147	148	1	10	65	38	<1	
				22432	148	149	1	10	440	1950	1	
				22433	149	150	1	14	230	890	1	
				22434	150	151	1	16	2650	3000	1	
				22435	151	152	1	14	5450	4600	2	
				22436	152	153	1	14	2250	3700	2	
				22437	153	154	1	10	2350	4600	2	
				22438	154	155	1	8	540	2300	1	
180.8	195.5	SILTY DOLOMITE: Completely weathered, dark grey to grey, silty, weakly calcite/ankerite veinletted dolomite. Minor fossiliferous bed composed of oolitic & coralline debris. Minor siderite.		22439	155	156	1	18	3850	4600	3	
				22440	156	157	1	12	4350	3500	3	
					157	158	1	NO	CORE	RECOVERED		
					158	159	1	"	"	"		
				22441	159	160	1	14	1800	4500	2	
			22442	160	161	1	14	540	2800	2		
195.5	203.0	SEDIMENTARY SLUMP BRECCIA: Rounded to angular fragments of silty spartic limestone, in a dark grey to black muddy dolomitic matrix. Fragments up to 5cm in length, generally rounded (due to rolling??). Fragments are composed almost entirely of shell fragments and oolitic pieces of sparry limestone. Minor ankerite/siderite veinlets with trace sphalerite.	Trace sphalerite in veinlets.	22443	161	162	1	32	470	1850	1	
				22444	162	163	1	18	630	830	1	
				22445	163	164	1	20	330	930	1	
				22446	164	165	1	18	220	1050	<1	
				22447	165	166	1	14	160	2000	1	
				22448	166	167	1	14	165	1650	1	
				22449	167	168	1	14	270	2000	1	
				22450	168	169	1	14	490	3400	1	
				26401	169	170	1	16	760	5400	2	
				26402	170	171	1	16	610	4300	1	
203.0	219.00	ANKERITIC COLLAPSE BRECCIA?: Angular breccia fragments up to 5cm in length, of ankeritic material in a dark black/green matrix of pyritic dolomite. Rock is stained brown/yellow/green due to large amounts of very fine grained pyrite. Rock very dense, but very weathered, very clayey in part. Cavity 216-217. Minor siderite veining.		26403	171	172	1	75	180	1550	<1	
				26404	172	173	1	18	85	1150	<1	
				26405	173	174	1	8	16	320	<1	
				26406	174	175	1	10	44	390	<1	
				26407	175	176	1	8	36	310	<1	
				26408	176	177	1	8	55	630	<1	
				26409	177	178	1	8	60	195	<1	

METERAGE		DESCRIPTION	MINERALIZATION %	SAMPLE NUMBER	METERAGE			ASSAYS				
From	To				From	To	Length	Cu	Pb	Zn	Ag	
219.0	240.5	SIDERITE / ANKERITE BRECCIA: Cream/grey/white, ugly, weakly galena, sphalerite, pyrite mineralized, extremely shattered and brecciated, dolomitized rock. Concretionary growth rings of calcite, siderite and ankerite present. Pb/Zn mineralization present as disseminations and thin veinlets or blebs. Moderate pyrite veining present or as disseminations in the darker dolomitic matrix of the breccia. Minor pugh zones present. Cavity 220.5-222.0 m. Breccia fragments range in size from 0.5 cm to 4cm. Breccia matrix composed of fine grained black silty dolomite. Fragments in breccia generally angular, some sub angular. Lot of open space pore filling by ankerite and siderite. Core recovery averaged approx. 50%.	Minor Pb/Zn/Py mineralization.	26410	178	179	1	8	55	810	<1	
					26411	179	180	1	6	10	125	<1
					26412	180	181	1	8	24	195	<1
					26413	181	182	1	10	105	630	<1
					26414	182	183	1	10	65	370	<1
				Fragments of massive	26415	183	184	1	10	210	340	<1
				galena occur in sections	26416	184	185	1	8	90	300	<1
				of breccia.!! (0.5-10 cm)	26417	185	186	1	8	85	440	<1
					26418	186	187	1	10	230	630	<1
					26419	187	188	1	10	130	1500	<1
					26420	188	189	1	10	115	1500	<1
					26421	189	190	1	10	32	240	<1
					26422	190	191	1	18	48	105	<1
					26423	191	192	1	8	40	135	<1
					26424	192	193	1	8	38	150	<1
				26425	193	194	1	12	34	85	<1	
				26426	194	195	1	10	40	105	<1	
240.5	257.9	ANKERITIC COLLAPSE BRECCIA?: Grey to greeny black, very dense, massive, brecciated in part, ugly, fine grained ankeritic dolomite breccia. Angular breccia fragments up to 2cm in diam. Minor clayey zones of completely weathered material. Poor core recoveries through zone.		26427	195	196	1	8	34	80	<1	
					26428	196	197	1	8	22	28	<1
HA → NA					26429	197	198	1	8	40	90	<1
242.20m.					26430	198	199	1	8	36	44	<1
					26431	199	200	1	10	38	115	<1
					26432	200	201	1	10	37	510	<1
					26433	201	202	1	8	40	75	<1
					26434	202	203	1	8	40	85	<1
257.9	261.0	CALCLUTITE: Grey, occasionally petal (concretionary nodules up to 2cm in diam) moderately qtz/calcite veined, fine grained, massive calclutite with minor interbeds of brownish grey muddy dolomite (Beds < 5cm).		26435	203	204	1	10	40	1050	<1	
					26436	204	205	1	8	22	640	<1
					26437	205	206	1	18	310	1750	<1
					26438	206	207	1	8	95	810	<1
					26439	207	208	1	10	490	5000	<1
					26440	208	209	1	10	780	5100	<1
261.0	264.0	ANGULAR DOLOMITE BRECCIA: greeny grey to black, ugly, weakly siderite veined, clayey, angular breccia. Rock very dense, massive? possibly pyritic (very fine grained). Breccia fragments are both angular to sub-angular and of numerous lithologies - not only host material (Sedimentary breccia?).		26441	209	210	1	8	1500	9700	<1	
						210	212	2	CAVITY.			
					26442	212	213	1	14	4800	1.14%	<1
					26443	213	214	1	12	6950	1.06%	<1
					26444	214	215	1	10	5000	2.60%	<1
					26445	215	216	1	10	5500	3.50%	<1
						216	217	1	CAVITY			
				26446	217	218	1	14	7450	1.73%	1	

649160

METERAGE		DESCRIPTION	MINERALIZATION %	SAMPLE NUMBER	METERAGE			ASSAYS					
From	To				From	To	Length	Cu	Pb	Zn	Ag		
264.0	281.40	FOSSIL BRECCIA: Massive, grey, heavily calcite/ankerite veined fossil breccia. (sedimentary slump breccia!) Fossils include coralline fragments, stromatolites, nodules, shelly fragments and oolites indicating a possible shallow water environment. Fragments vary in size up to 10's of cm. Zones of pugy material indicating karsting? Calcite Ankerite (minor siderite) veining contains traces of very fine grained pink/white coloured sphalerite + fine grained galena. Breccia very dolomitized, lot of pervasive fine grained ankerite present.		26447	218	219	1	8	2850	3.00%	<1		
					26448	219	220	1	12	3800	1.09%	3	
					26449	220	221	1	16	5200	8800	3	
						221	222	1	CAVITY				
					26450	222	223	1	14	2900	8700	2	
					26451	223	224	1	20	2900	8900	2	
					26452	224	225	1	16	1700	7600	1	
					26453	225	226	1	14	7600	5700	4	
					26454	226	227	1	12	2600	8700	1	
					26455	227	228	1	14	580	4300	1	
					26456	228	229	1	12	1600	5400	1	
					26457	229	230	1	16	570	4500	1	
					26458	230	231	1	10	310	1850	<1	
						231	232	1	NO CORE RECOVERED				
281.4	289.5	CALCLUTITE: Dark grey and light grey, massive, silty dolomites and calcutites. Possibly soft sediment slumped. Minor thin interbeds of oolitic and shelly calcarenites present. (5-10 cm in width). Weak to moderate qtz/calcite veining, minor ankerite, minor stylolites present. Good core recoveries (>80%) even in pugy zones.		26459	232	233	1	26	1.45%	8000	7		
					26460	233	234	1	18	1.50%	5300	5	
					26461	234	235	1	28	5000	1.46%	4	
					26462	235	236	1	18	1600	7600	2	
					26463	236	237	1	55	2200	4200	1	
					26464	237	238	1	16	5500	3200	2	
					26465	238	239	1	18	5800	5900	2	
					26466	239	240	1	14	2000	5500	1	
					26467	240	241	1	12	1950	1.10%	<1	
					26468	241	242	1	14	1150	1.25%	<1	
289.5	291.5	DOLOMITE/CALCLUTITE BRECCIA: Silty, black, moderately qtz/calcite veined dolomite containing grey/brown, porous, weakly fossiliferous calcutite fragments or slumped calcutite interbeds. Minor siderite veining associated with calcite. Numerous clayey zones present representing CW host rock (ie Karsting).		26469	242	243	1	18	940	7200	<1		
					26470	243	244	1	18	270	3400	<1	
					26471	244	245	1	14	1850	6200	1	
					26472	245	246	1	20	1800	7000	1	
					26473	246	247	1	14	1200	1.55%	<1	
					26474	247	248	1	14	960	7800	<1	
					26475	248	249	1	12	780	1.15%	<1	
					26476	249	250	1	12	680	3000	<1	
					26477	250	251	1	10	560	4700	<1	
					26478	251	252	1	10	850	3700	<1	
291.5	297.0	TECTONIC BRECCIA: Strongly calcite/siderite/ankerite veined, brecciated, weakly fossiliferous dolomitised calcutites. The breccia contains abundant disseminated ankerite with trace amounts of yellow fine grained sphalerite and blebby fine grained galena. Core badly shattered in sections with poor recoveries.	Trace of sphalerite and galena.	26479	252	253	1	10	540	3700	<1		
					26480	253	254	1	12	2100	2200	1	
					26481	254	255	1	16	3900	3300	3	
					26482	255	256	1	10	4800	1300	2	
					26483	256	257	1	12	2600	1150	1	

METERAGE		DESCRIPTION	MINERALIZATION %	SAMPLE NUMBER	METERAGE			ASSAYS			
From	To				From	To	Length	Cu	Pb	Zn	Ag
291.5	297.0	TECTONIC BRECCIA con't: Minor fine grained, disseminated pyrite occurs in the darker dolomitic material. Fragments in the breccia are very angular and of host rock material.	Minor pyrite. (very fine grained)	26484	257	258	1	14	75	720	<1
				26485	258	259	1	14	130	630	<1
				26486	259	260	1	12	50	160	<1
				26487	260	261	1	14	310	640	<1
				26488	261	262	1	14	850	2800	<1
				26489	262	263	1	20	550	4500	<1
297.0	315.6	FOSSIL BRECCIA: Predominantly light gray stromatolitic, coralline, oolitic and laminar fragments up to 10's of cm in width, cemented in a black dolomitic matrix containing abundant fine grained pyrite. (From 297.0 to 300.) Very minor calcite veining in massive competent sequence from 300 to 315.6 the sequence is comprised of darker gray, calcite, minor coralline, potted (nodules vary from pea size to the size of a walnut) shelly fragments with numerous fragments of black dolomite or lighter gray calcutite cemented in a very black, silty dolomite matrix containing abundant syngenetic, laminar and/or bleby pyrite up to ~ 3% laminar pyrite parallel the dolomite laminations. Fragments in breccia have a rough alignment in places at 35° to the ea possibly representing crude bedding. Minor thin pugy zones due to karsting in SW breccia material.	Abundant fine grained pyrite. (Syngenetic & remobilized.)  Trace of galena and sphalerite in thin calcite veinlets.	26490	263	264	1	16	290	7600	1
				26491	264	265	1	14	32	170	<1
				26492	265	266	1	70	230	1100	1
				26493	266	267	1	12	105	300	<1
				26494	267	268	1	12	360	1000	1
				26495	268	269	1	20	260	1000	1
				26496	269	270	1	22	260	1450	1
				26497	270	271	1	10	55	2200	<1
				26498	271	272	1	12	440	5700	1
				26499	272	273	1	18	1400	9600	2
				26500	273	274	1	6	80	3000	1
				27451	274	275	1	16	50	2000	1
				27452	275	276	1	14	32	420	<1
				27453	276	277	1	16	80	1100	1
				27454	277	278	1	12	135	1250	1
				27455	278	279	1	6	32	350	<1
				27456	279	280	1	6	36	330	<1
		27457	280	281	1	12	105	1300	<1		
		27458	281	282	1	24	85	580	<1		
		27459	282	283	1	10	40	720	<1		
		27460	283	284	1	8	40	620	<1		
		27461	284	285	1	12	135	470	<1		
		27462	285	286	1	8	36	530	<1		
315.6	330.0	DOLOMITE: Black, massive to laminar, silty dolomite with minor dark gray to grey muddy calcutite interbeds and/or fragments. Very minor shelly detritus present. Tectonic breccia with associated gtz / carbonate veining occurs from 319.40 - 320.40 m. The zone was intensely shattered giving rise to v. poor recoveries (~ 30%). Vein has an attitude ~ 25° to ea. Bedding at 325m ~ 40° to ea. (interbed		27463	286	287	1	8	32	880	<1
			27464	287	288	1	8	44	400	<1	
			27465	288	289	1	6	140	640	<1	
			27466	289	290	1	8	160	1200	<1	
			27467	290	291	1	6	110	800	<1	
			27468	291	292	1	10	3100	1800	2	
			27469	292	293	1	8	740	270	1	
			27470	293	294	1	10	390	620	<1	
			27471	294	295	1	12	240	2.45%	1	
			27472	295	296	1	8	750	480	<1	

