

COMPANY: Allegiance Mining NL
PROJECT: Stonehenge
HOLE NUMBER: S 34

Commenced:	11 October 99
Completed:	20 October 99
Logged By:	L.A.Newnham
Drilled By:	Almac Drilling

Purpose of Hole
To further drill test a substantial zinc anomaly associated with a sequence of Proterozoic black shales and siltstones in the sedimentary basin at Stonehenge, west of Zeehan;

Comments on Completion

Collar Details

Grid	Northing	Easting	Elevation	Dip	Bearing
AMG	5,359,613	359,567	2271	-50	191

Length (m)
245

Hole Size	
To (m)	Size
165	HQ
245	NQ

Significant Core Loss Zones		
From	To	%Rec.
0.0	26.0	see log
77.3	79.2	<50

Hole Condition on Completion
all casing and rods removed from hole

Summary of Results:

Depth		Recovery	Description	Assays					
From	To	%		Length	Cu	Pb	Zn	Au	Ag
					ppm	ppm	ppm	ppb	ppm
91.5	98.0	100	limestone, minor black shale and breccia zones; abundant carbonate veining	6.5	16	1719	3687	15	<2
213.0	216.6	100	massive carbonate zones in shale and siltstone; abundant pyrite;	3.6	77	1401	403	27	<2

DOWN HOLE SURVEY DATA

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Depth (m)	Dip	Bearing (AMG)	Interval		Length (D)	Vertical Distance		Horizontal Distance		Co-ordinates			
			From	To		D.sin dip	R.L.	D. cos dip (HD)	Cumulative HD	N. distance HD. cos brg.	N. co-ordinate	E. distance HD. sin brg.	E. co-ordinate
COLLAR	-50	191					2271.00		0.00		5,359,613.0		359,567.0
0	-50	191	0	14	14	10.72	2260.28	9.00	9.00	-8.83	5,359,604.2	-1.72	359,565.3
28	-50	193	14	56.5	42.5	32.56	2227.72	27.32	36.32	-26.62	5,359,577.5	-6.15	359,559.1
85	-51	193	56.5	110.5	54	41.97	2185.75	33.98	70.30	-33.11	5,359,544.4	-7.64	359,551.5
136	-51	191	110.5	160.5	50	38.86	2146.90	31.47	101.77	-30.89	5,359,513.5	-6.00	359,545.5
185	-50	191	160.5	210.5	50	38.30	2108.59	32.14	133.91	-31.55	5,359,482.0	-6.13	359,539.4
236	-50	193	210.5	240.5	30	22.98	2085.61	19.28	153.19	-18.79	5,359,463.2	-4.34	359,535.0
245	-50	193	240.5	245	4.5	3.45	2082.16	2.89	156.08	-2.82	5,359,460.4	-0.65	359,534.4
245													

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Description		Core Recovery			RQD			Assays										
From	To		From	To	%	From	To	%	From	To	Cu	Pb	Zn					
0.0	10.3	SILTSTONE, minor shale: fine-medium grained siltstone, bleached white near top, becoming darker gray down hole; interbedded with thin bands of dark gray-black well bedded shale; siltstone contains significant sericite and quartz; weakly sheared; bedding chaotic due to slumping; generally 0-40° CA; 2.0-2.5 m: abundant quartz veining; rare grain of pyrite; core extensively broken and rubbly; only sand recovered in some intervals; some core loss;	0.0	1.5	0													
			1.5	3.8	100													
			3.8	5.8	75													
			5.8	7.3	90													
			7.3	8.0	sand													
			8.0	11.0	100													
10.3	23.0	BLACK SHALE and SAND: extremely brittle, highly fissile black graphitic shale with some intervals where only shaley sand recovered; increasing component of gray siltstone towards base of unit; minor narrow quartz veins; minor fine grained euhedral pyrite in black shale;	11.0	11.6	100													
			11.6	12.5	sand													
			12.5	14.0	90													
			14.0	14.8	90													
			14.8	15.3	sand													
			15.3	23.0	sand													
23.0	31.0	SILTSTONE, minor shale: medium-coarse grained, weakly sheared, light gray siltstone-sandstone; typically sericitic/ phyllitic; narrow interbeds of black graphitic shale; bedding in top section erratic and contorted, becoming more uniform towards base of unit at 40-45° CA; thin minor quartz veins parallel to bedding; minor partings and seams pyrite in siltstone; minor fine grained disseminated pyrite in shale beds; core very broken along bedding and several joint sets; grades into unit below.....	23.0	24.5	50													
			24.5	26.0	65													
			26.0	28.9	100													
			28.9	30.5	70													
			30.5	31.4	100													
31.0	40.1	INTERBEDDED SHALE and SILTSTONE: light-medium gray siltstone interbedded with thin beds dark gray-black shale, often graphitic;	31.4	33.5	60													
			33.5	36.0	100													
			36.0	36.5	70													
			36.5	40.2	100													

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Description		Core Recovery			RQD			Assays								
From	To		From	To	%	From	To	%	From	To	Cu	Pb	Zn	Au	Ag	
												ppm	ppm	ppm	g/t	g/t
31.0	40.1	BCA variable, generally 60-70°; soft sediment deformation common; occasional thin quartz veins; pervasive trace-minor pyrite; coarse euhedral pyrite abundant on some fracture surfaces cf. 39.0 m; core soft and very broken with fracturing parallel to bedding and several joint sets; several crushed zones;														
continued.....																
40.1	44.8	BLACK SHALE: soft black graphitic shale, strongly laminated; BCA generally 70-80° but highly variable; minor siltstone interbeds increasing towards base; grades into unit below; minor fine grained disseminated pyrite in shale; more abundant coarse euhedral pyrite in siltstones near base of unit; core extremely broken and crushed in places;	40.2	41.7	80											
			41.7	43.4	100											
			43.4	44.9	90											
44.8	65.3	INTERBEDDED SILTSTONE and SHALE: light gray medium grained siltstone thinly interbedded with dark gray-black graphitic shales; BCA generally 70-80°; irregular narrow light brown-khaki carbonate veins, quartz-carbonate and quartz veins common; carbonate veins are earliest and generally discordant; quartz-carbonate and quartz veins are later and often parallel to bedding; euhedral pyrite commonly associated with quartz and quartz-carbonate veins, often as semi- massive bands; minor leaching of pyrite results in vuggy texture; 59.5-62.0 m: veining abundant and accompanied by soft sediment deformation; core generally very broken with most fractures parallel to bedding; several joint sets result in shaley sections being very broken;	44.9	57.5	100											
			57.5	58.3	65											
			58.3	59.5	85											
			59.5	62.0	100											
			62.0	63.5	90											
			63.5	64.5	85											
			64.5	65.5	90											
65.3	68.3	SHEARED QUARTZOSE BLACK SHALE: black graphitic shale, sheared and slumped...	65.5	68.3	100				65.5	67.5	9	32	87	13	<2	

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Description		Core Recovery			RQD			Assays								
From	To		From	To	%	From	To	%	From	To	Cu	Pb	Zn	Au	Ag	
												ppm	ppm	ppm	g/t	g/t
65.3	68.3	and containing high percentage of disrupted white quartz veins; suggests unit may have slumped post quartz veining; minor but pervasive fine-medium grained euhedral pyrite in shale; 1-2% medium-coarse euhedral pyrite associated with quartz veining; core moderately competent but several crushed zones and bedding plane failures common;														
68.3	77.3	SILTSTONE, minor shale, quartz veining: light gray siltstone with minor interbedded dark gray-black shale; abundant irregular white quartz veining and finer veins of light brown soft material - possibly decomposed carbonate; minor fine grained disseminated pyrite, especially in shale component; 1-2% coarse euhedral pyrite associated with quartz veins; significant leaching of core along soft thin brown carbonate (?) veins; core moderately competent but numerous fractures along bedding; broken zones associated with quartz veining;	68.3	77.3	100				75.5	76.5	23	65	79	30	<2	
77.3	84.0	GRAPHITIC SHALE: black, strongly graphitic sheared shales, with irregular thin white quartz veins; large irregular masses of white calcite near base of unit; BCA irregular, slumped in places but generally 70°; 77.3 - 79.3 m: puggy, broken and leached - possible fault zone; 2-3% fine grained disseminated pyrite pervasive in shale; minor medium grained euhedral pyrite associated with quartz veins and carbonate masses;	77.3	77.5	50											
			77.5	78.1	50				81.5	82.5	77	936	632	19	<2	
			78.1	78.5	25											
			78.5	79.2	10				84.0	85.0	18	463	1635	16	<2	
			79.2	80.7	80											
			80.7	81.5	90											
			81.5	84.5	90											
									87.5	88.5	4	50	169	12	<2	
									91.5	93.0	34	4470	7910	13	<2	
									93.0	95.0	5	315	495	7	<2	
									95.0	97.0	18	1785	4610	24	<2	
84.0	99.3	CARBONATE, calcareous breccias, extensive carbonate veining: dark gray siliceous carbonate, interbedded.....	84.5	99.5	100				97.0	98.0	8	273	1890	18	<2	
									98.0	99.3	<4	104	174	6	<2	

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Description		Core Recovery			RQD			Assays									
From	To		From	To	%	From	To	%	From	To	Cu	Pb	Zn	Au	Ag		
												ppm	ppm	ppm	g/t	g/t	
84.0 continued.....	99.3	with light brown calcareous sediment; several breccia zones with calcareous matrix; all cut by a late stage network of abundant carbonate veins; strongly pyritic in places; 84.0-84.6 m: breccia zone; soft sedimentary fragments set in light gray-cream calcareous matrix; cut by thin carbonate veins; abundant coarse pyrite in places; 84.6-87.8 m: dark gray calcareous sediment (siliceous limestone ?) with minor black shale; abundant white carbonate and quartz-carbonate veining; minor disseminated pyrite; 87.8 m: 200 mm. breccia zone as for 84.0 m. .. above; 1-2% coarse disseminated pyrite; 87.8-90.0 m: dark gray calcareous sediment cut by very dense network white carbonate veins; minor fine grained pyrite associated with calcareous sediment; 90.0-91.5 m: light gray-brown limestone and calcareous sediment brecciated in places; 91.5-93.0 m: calcareous sediment-limestone as for 87.8 m.....; 200 mm. graphitic shale band at 92.6 m; 93.0-99.3 m: dark gray limestone as for 87.8 m...; abundant carbonate veining constituting 50% of the rock; 93.4 m: 400 mm. breccia; 95.2 m: 100 mm carbonate breccia; breccia and carbonate at 93.0-93.3 m. cut by several narrow late stage black graphite veins; significant pyrite in places as coarse disseminations, veins, seams and aggregates; overall 2-3% but locally 5-10%;															
99.3	136.9	SHEARED BLACK SHALE, minor siltstone: dark gray-black shale interbedded with minor lighter gray siltstone; siltstone component increasing down hole; 99.3-112.5 m: abundant disrupted quartz and quartz-carbonate veining; irregular bedding and sedimentary breccia textures suggest late stage slumping; minor pyrite associated with shales and veining;	99.5	103.4	100				100.0	101.0	17	30	95	8	2		
			103.4	104.4	80												
			104.4	105.5	90												
			105.5	108.5	100												
			108.5	109.5	80												
			109.5	109.8	60												
			109.8	129.5	100												
			129.5	132.5	90												
			132.5	136.9	100												

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Description			Core Recovery			RGD			Assays							
From	To		From	To	%	From	To	%	From	To	Cu	Pb	Zn	Au	Ag	
												ppm	ppm	ppm	g/t	g/t
99.3	136.9	112.5-128.2 m: interbedded black shales and gray siltstone; BCA erratic but commonly 30-40°; minor thin carbonate and quartz-carbonate veining; minor fine euhedral pyrite generally in siltstone bands; black shale often graphitic; core moderately broken, principally along graphitic bedding planes and several irregular joint sets at low angles to CA; 128.2-136.9 m: light gray siltstone-quartzite component dominant with lesser interbeds of dark gray-black graphitic shale; irregular and disjointed quartz veins common; 1-2% medium-coarse euhedral pyrite associated with veining and as pervasive disseminations and aggregates in siltstone; quartzite-siltstone component moderately competent but shales very broken;														
136.9	182.7	SILTSTONE, minor carbonate, pyritic and carbonate veined: unusual sequence of mottled light brown-khaki colored siltstone with minor interbeds of lighter gray limestone/dolomite; whole unit appears altered/bleached and is extensively veined by light brown-white carbonate and quartz-carbonate veins up to 20 mm wide; and abundant large irregular masses of crystalline carbonate; some sections of siltstone appear slumped and brecciated; 136.9-144.0 m: altered/bleached siltstone with abundant carbonate and quartz-carbonate veining; fragmental texture in places; 3-5% coarse pyrite as clusters and aggregates associated with veining; BCA 40°; core moderately competent; 144.0-147.5 m: light gray dolomite/limestone; abundant carbonate and quartz-carbonate as veining and irregular masses; 2-3% coarse euhedral pyrite clusters; 147.5-162.4 m: as for 136.9 m.....; BCA erratic but generally 30-35°; pyrite as coarse...	136.9	167.0	100				137.0	139.0	5	10	85	6	<2	
			167.0	170.0	80				139.0	141.0	<4	<5	32	84	<2	
			170.0	182.7	100				141.0	143.0	4	14	32	11	<2	
									143.0	145.0	<4	<5	23	5	<2	
									145.0	147.0	<4	<5	21	4	<2	
									147.0	149.0	<4	<5	31	5	<2	
									149.0	151.0	<4	<5	18	2	<2	
									152.5	153.5	6	<5	36	<1	<2	
									157.0	159.0	<4	<5	36	<1	<2	
									159.0	161.0	<4	<5	43	<1	<2	
									170.0	171.0	8	8	40	4	<2	
									173.0	174.0	4	56	43	<1	<2	
									175.0	177.0	<4	10	44	<1	<2	
									177.0	179.0	7	11	50	<1	<2	
									179.0	181.0	8	7	53	<1	<2	
									181.0	183.0	6	9	82	<1	<2	

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Description			Core Recovery			RQD			Assays							
From	To		From	To	%	From	To	%	From	To	Cu	Pb	Zn	Au	Ag	
												ppm	ppm	ppm	g/t	g/t
136.9 continued.....	182.7	clusters, semi-massive in carbonate and quartz-carbonate veins and masses, especially towards base of unit; minor pyrite also disseminated in siltstone; core very competent except for two small broken zones; 182.4-166.9 m: similar to section above but with less veining; BCA 30°; 166.9-175.6 m: carbonate and quartz-carbonate veining and accompanying pyrite increasing, becoming abundant below 173 m; siltstones are extensively broken and disrupted by the veining; minor light gray and dark gray calcareous beds; BCA 30-40°; 3-5% coarse pyrite, locally to 10%, associated with the carbonate and quartz-carbonate veining; ground conditions very good; 175.6-179.0 m: as above but semi-massive and strongly disseminated euhedral pyrite in the large irregular masses and veins of carbonate and quartz-carbonate; BCA 30°; 179.0-182.7 m: bleached siltstone; disrupted by small microfaults; mottled appearance; pyrite common in small fractures and disseminated; becoming abundant (5-10%) towards calcareous base;														
182.7	194.6	CALCAREOUS SEDIMENT / LIMESTONE, veined and mineralised: laminated white-light green-gray limestone and calcareous sediment with stripey appearance; BCA 60-80°; 182.7-189.2 m: abundant irregular veins of white carbonate cutting well bedded/laminated unit; 3-5% pyrite disseminated throughout calcareous sediments; additional coarse euhedral pyrite associated with carbonate veining; ground conditions very good;	182.7	194.6	100				183.0	185.0	<4	<5	64	<1	<2	
									185.0	187.0	<4	5	52	<1	<2	
									187.0	189.0	<4	39	64	<1	<2	
									189.0	191.0	<4	<5	42	<1	<2	
									191.0	193.0	<4	<5	43	16	<2	
									193.0	194.0	21	95	101	9	<2	

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Description			Core Recovery			RQD			Assays							
From	To		From	To	%	From	To	%	From	To	Cu	Pb	Zn	Au	Ag	
												ppm	ppm	ppm	g/t	g/t
182.7	194.6	<p>189.2-194.6 m: similar to above but white limey beds more abundant and more intensely mineralised; 3-5% disseminated pyrite pervasive; some zones of semi-massive pyrite with minor pyrite-galena patches; arsenopyrite and magnetite common in some intervals; large patches of fine grained pyrite common in calcareous sediments; overall 10% sulfides, locally up to 20% in some zones; ground conditions very good;</p>														
194.6	209.5	<p>BLACK SHALE-SILTSTONE: black graphitic shales interbedded with minor 2-5 mm. beds of gray siltstone; both are tightly folded with gray siltstone demonstrating crenulated and pygmatic folding; bedding highly irregular; white quartz and quartz-carbonate veining and large irregular masses common; carbonate often altered to light gray sericite; pyrite pervasive as either finely disseminated grains within the black shales (1-2%) or medium-coarse euhedral grains and aggregates generally associated with carbonate in quartz-carbonate veins and carbonate veins and masses (2-3%); trace of galena associated with pyrite; ground broken especially in more graphitic sections; 205.7 m: 800 mm. white quartz vein containing a small section of brecciated siltstone, thin carbonate veining and euhedral pyrite; grades into unit below.....</p>	194.6	209.5	100											
209.5	216.6	<p>SHALE and SILTSTONE, abundant pyrite and carbonate: similar to unit above but greater component of gray siltstone and correspondingly less graphitic shale; major sections of carbonate carrying semi-massive pyrite and minor</p>	209.5	216.6	100				210.0	212.0	12	2840	479	<1	2	
									213.0	215.0	78	1330	574	<1	<2	
									215.0	216.6	75	1490	190	48	<2	

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Description			Core Recovery			RQD			Assays							
From	To		From	To	%	From	To	%	From	To	Cu	Pb	Zn	Au	Ag	
												ppm	ppm	ppm	g/t	g/t
209.5	216.6	galena, trace sphalerite; 210.0 m: 1000 mm mass cream carbonate with white quartz; fractured and stylolitic; 3-5% pyrite associated with carbonate; 213.5 m: 1000 mm carbonate zone in black shale; 10-20% pyrite, semi-massive in places; 215.0 m: 300 mm quartz-carbonate zone with semi-massive pyrite towards base; 215.9 m: 700 mm. mass of stylolitic cream carbonate carrying 10-15% pyrite; In between the above carbonate zones, shales and siltstones intensely veined by carbonate and quartz-carbonate veins; BCA 40-50°; 3-5% very fine disseminated pyrite pervasive in these sediments; core moderately competent;														
216.6	223.6	SHALE-SILTSTONE, abundant quartz and quartz-carbonate veins with pyrite: similar to unit above but less carbonate veining and more quartz veining; generally disrupted and fragmented; white quartz makes up approx. 50% of interval; shale bands highly graphitic and disaggregated in places; 2-3% pyrite, locally 5-10%, disseminated in shaley sections and more concentrated in carbonate veins; gradational with section below;	216.6	223.6	100				220.0	222.0	8	82	270	3	<2	
223.6	235.0	GRAPHITIC SHALES: black strongly graphitic contorted shales; similar to 194.6 m.....; minor gray siltstone beds; BCA generally 50-70°; quartz veining common but not abundant as in unit above; minor fine grained disseminated pyrite in black shales and associated with quartz and quartz-carbonate veinlets; unit very broken but becoming more.....	223.6	227.0	100											
			227.0	228.1	65											
			228.1	230.0	90											
			230.0	235.0	100											

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Description			Core Recovery			RQD			Assays							
From	To		From	To	%	From	To	%	From	To	Cu	Pb	Zn	Au	Ag	
											ppm	ppm	ppm	g/t	g/t	
223.6 continued.....	235.0	competent towards base; gradational with unit below;														
235.0	245.0	INTERBEDDED BLACK SHALE and GRAY SILTSTONE: dark gray and black graphitic shale interbedded with light gray siltstone; BCA's variable but generally 60-70°; Irregular quartz veining common but not abundant; ocassional late stage cream carbonate vein carrying coarse pyrite; pervasive 1-2% fine disseminated pyrite; core moderately competent except for graphitic sections which are very soft, broken and crumbly;	235.0	245.0	100											
		END OF HOLE														

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