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1955 E 6th St.
Tucson, AZ 85721
https://azgs.arizona.edu/
(520) 621-2470

Drill core data for the Red Mountain porphyry copper-molybdenum system, Harshaw mining district, Patagonia Mountains, Santa Cruz County, Arizona

Arizona Geological Survey Open-File Report 25-4

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Description:

Red Mountain in Patagonia, AZ hosts a porphyry copper-molybdenum deposit with a history of substantial exploration drilling. Drill data including logs, assay results, and geologic maps, as well as skeletonized drill core, were donated to the Arizona Geological Survey in 2004. This repository includes all available original drilling data, scanned and made available as PDFs, as well as tabulated data in spreadsheets.

Tabulated digital data and other products related to this document are available at:
http://hdl.handle.net/10150/676938

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KERR-McGEE OIL INDUSTRIES, INC.

District Harshaw - Red Mtn.
Hole Number A-128
Spudded
Completed 8-20-64
Total Depth 867'
Driller Joy Mfg. Co.
Logged By RA

County Santa Cruz State Arizona
Claim Sec T. R.
Elevation 5570.5'
Hole Size
Core Size NX and BX
Hole Angle approximately 43o? - S 45° E
Collar Coords. 8112.19 N. 185,686
8962.63 E. 869,337

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu	Mo	Au. oz.	Ag. oz.	Rock Type	Rock Description	Alteration	Mineralization
0											
91		PLUGGED						TRACHYTE	yellow-white; micro-	quartz-sericite	poor capping - limonite flooding throughout
								tuff or	brecciated shear planes		
								flow SD	approx. perpendicular		
									to core		
98		8/8							black-gray	quartz-sericite-pyrite with	limonite filling vugs with hematite stringers
										intense silicification	throughout; considerable iron present both
										throughout	flooding and in vugs
									maroon-yellow		
									microbrecciation lack-		
									ing		
105	14		4266			tr.	tr.				
109		10/8.5							bright red to maroon -	"	"
119		10/9.5							minor microbrecciation	considerable former pyrite	considerable iron
120	15		4267			tr.	tr.				
								breccia	brown-yellow micro-	clays - weak silicification	
								tuff or	brecciation lacking		
								flow			
129		10/10									
135	15		4268			tr.	tr.	trachyte SD	gray-white; reddish	quartz-sericite-pyrite clays	oxidized; fair to good capping; purple
136		7/7						tuff or	mottling, minor frac-		hematite with considerable remnant dissem-
								flow	turing; no shearing or		inated hematite and some coated veinlets
									brecciation		and voids
140		4/4									fair to weak capping
147		7/6									
150	15		4269			.003	tr.				less disseminated hematite
156		6/6									
164		6/6							red-gray shear zone		
165	15		4270			.004	tr.				

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Depth	Int.	%Core Recvy	Samp. No.	Assays Cu	Mo	Au. ozs.	Ag. ozs.	Rock Type	Rock Description	Alteration	Mineralization
170		6/6						trachyte tuff or flow breccia	red-gray; some fractures and microbrecciation	quartz-sericite-pyrite clays weak silicification except in minor zones	shears well lined with purple hematite
175		?							quartz-hematite veinlet ½ inch wide at 45°		considerable remnant iron oxides
180	15	5/5	4271			.004	tr.				hairline fractures lined with purple hematite, more numerous; hematite lining voids 1/8-1/4" wide
190		10/10							microbrecciated with numerous hematite veinlets at 45°		hairline fractures lined with hematite 1/8-1/4 inchs apart
195	15		4272			tr.	.01	"	yellow-gray; massive and fine-grained noted	considerable clays	poor capping - little or no hematite or vugs
200		10/10							mostly gray or maroon some yellow mottling		purple hematite lining near-vertical fractures and remnant hematite in numerous vugs
210	15		4273			tr.	tr.	"	yellow and red with purple hematite lining voids and fractures	quartz-sericite; more silicification	considerable jarosite; generally weak capping
220		6/4							few fractures		no hematite; limonite staining throughout
225	15		4274			tr.	tr.		purple-maroon with larger, more numerous voids	intense silicification	hematite lining voids; considerable iron - dark-reddish-purple and purple-black hematite; good capping?
240	15	10/10	4275			tr.	tr.				
247		7/7									completely oxidized
255	15		4276			tr.	tr.	"	purple-maroon, mottled with yellow; no microbrecciation noted	quartz-sericite with intense silicification	hematite staining throughout, with hematite lining vugs and occasional fractures; considerable iron oxides
257		10/6.5									
268		10/8									
270	15	2/2	4277			tr.	tr.				
280		10/10							moderate microbrecciation		variable capping - poor to good
285	15		4278			tr.	tr.				

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Depth	Int.	%Core Recvy	Samp. No.	Assays Cu	Mo	Au.	Ag.	Rock Type	Rock Description	Alteration	Mineralization
290		10/10							intense microbrecciation; more yellow and yellow-brown mottling noted		good capping; purple hematite filling hairling fractures; limonite flooding
300	15	10/10	4279			tr.	tr.		purple-maroon; numerous voids; intense microbrecciation	quartz-sericite-pyrite	" "
310		10/10									extreme amount of dark hematite

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Depth	Int.	%Core Recvy	Samp. No.	Assays Cu	Mo	Au.	Ag.	Rock Type	Rock Description	Alteration	Mineralization
315	15		4280			tr.	tr.	trachyte tuff or flow	purple-gray, mottled maroon; microbrecciated with numerous voids	quartz-sericite-pyrite and intense silicification	remnant hematite lining voids and fractures; some limonite in larger veins; excellent capping
320		10/10									
330	15	10/10	4281			tr.	tr.	"	red-gray; microbrecciation less intense highly broken	"	limonite staining with some remnant hematite weaker capping
340		10/8									
343		3/3									
344	14	1/1	4282			.002	0.26				
				START BX CORE AT 345 FEET (ONE FOOT LOST IN CHANGEOVER)							
345									fractures 1/4 to 1/2" apart at 45°; from 345-350' stained red to maroon; microbrecciation present		good capping near fractures
355		10/10									
360	15		4283			.050	0.09		less fracturing; no microbreccation		good capping in 6 inch to 2 foot wide zone between similar intervals with no relict iron
365		10/10							mottled yellow-red; dense	quartz-sericite-pyrite clays; weak silicification	weak and poor capping
370								"	dark gray to red with scattered fractures and voids	same as above	weak capping with iron flooding throughout or iron absent
375	15	10/10	4284			.040	0.08		larger voids, more abundant	clay absent	good capping with remnant hematite lining fractures and voids
380		5/4									
385									light gray to yellow with minor red coatings in veinlets	quartz-sericite-pyrite clays	poor capping, minor amounts of iron staining and coating fractures.
389		9/9									
390	15		4285			.020	.06				
395		6/6									

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Depth	Int.	%Core Recvy	Samp. No.	Assays Cu	Mo	Au.	Ag.	Rock Type	Rock Description	Alteration	Mineralization
400		5/2						trachyte tuff or flow ?	gray to maroon	quartz-sericite-pyrite	good capping with dark iron lining voids, some flooding and staining
404											
405	15	4/3	4286			nil	tr.				
412		8/8								minor clays	weaker capping
418	13		4287			.020	tr.		dark gray, massive	quartz-sericite-pyrite; intense silicification	fine-grained disseminated pyrite; no chalcocite coating noted
420									dense - little or no fracturing		mixed oxidation and sulfides
422		10/10									no oxidation
425									massive, gray with quartz-pyrite 1/2" veinlets cutting	quartz-sericite-pyrite alteration completely obliterates original rock composition and texture; intense silicification	quartz-pyrite veinlets; sparse sphalerite? included in fine-grained white quartz; octahedral pyrite crystals up to 1/4" across; no
431		9/9							core at 30° to 60°		chalcocite noted
435	17		4288	.31		tr.	tr.				
439		8/8									one bornite inclusion and minor chalcocite noted; oxidation along
449		10/10									
452	17		4289	.05		tr.	tr.	"	gray-maroon with zones of large voids	quartz-sericite-pyrite well silicified	complete oxidation again at 451-452'; jarosite crystals with limonite flooding in less porous rock; vugs lined with purple
458		10/9							few or no fractures		hematite exhibiting little or no red irons
460		2/1							apparent		
465	13		4290			.110	tr.		yellow-maroon	quartz-sericite-pyrite clay; pyrite alteration very minor in intense clay zones	limonite flooding throughout voids less than 1/8"; poor capping
470		10/10									large (1") void filled with purple hematite
475									yellow-red; numerous empty voids	quartz-sericite-pyrite and minor clay	limonite flooding thoughout with very little indigenous iron; poor capping

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Depth	Int.	%Core Recvy	Samp. No.	Assays Cu	Mo	Au.	Ag.	Rock Type	Rock Description	Alteration	Mineralization
480	15	10/10	4291			.085	tr.	trachyte tuff or flow	yellow-red; numerous empty voids		
490		10/10							gray-red; no fractures		less iron; limonite flooding very light
495	15		4292			.100	tr.		or veinlets noted		
500		10/10							same - numerous large vugs		indigenous iron lining voids; capping fair to poor
510	15	10/10	4293			tr.	tr.		dark gray to black; scattered vugs	intense silicification	vugs lined by purple hematite; no transient iron noted
520		10/10							gray; interspaced zones of empty vugs and vugs lined by black iron	well silicified	lighter gray material; poor capping; darker material exhibits much indigenous iron
525	15		4294			tr.	tr.				
530		10/10									
540	15	10/10	4295			nil	tr.	trachyte breccia	yellow-gray	quartz-sericite-pyrite clays	poor capping; minor transient iron, no indigenous hematite
545								trachyte tuff or flow	gray; microbrecciated; with numerous voids, fractured lined with bright red porphyry	"	purple hematite filling many voids and lining fractures with jarosite; fair to good capping
550		10/10						"	yellow-gray; scarse small voids	same - well silicified	limonite staining fractures; poor capping
555	15		4296			nil	tr.			less clay	
560		10/10						"	gray; bright red to purple lining fractures, with purple coating in most vugs; fractures at 45° scattered throughout	quartz-sericite-pyrite, moderate silicification	indigenous hematite coating most vugs and transient iron staining fractures; fair capping
565									fewer voids, very dense	intense silicification	less iron coating voids; poor capping
570	15	10/10	4297			tr.	tr.				
580		10/10							numerous hairling fractures, microbrecciation? vugs scarce and empty		~~purple hematite lining hairline fractures~~ red iron in larger fractures; poor capping

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Depth	Int.	%Core Recvy	Samp. No.	Assays Cu	Mo	Au.	Ag.	Rock Type	Rock Description	Alteration	Mineralization
585	15		4298			.010	tr.	trachyte			
590		10/10						tuff or	rock is dense; few		
600	15	10/10	4299			nil	tr.	flow	fractures or vugs -		
									fine grained		
610		10/10									
614		4/4							near vertical fracture		
									stained bright red		
									nearly parallel to core		
									at 602 feet		
615	15		4300			nil	tr.	trachyte	light gray; scarce	quartz-sericite-pyrite	minor amounts of indigenous iron lining
								porphyry	hairline fractures and	intense silicification	vugs and fractures; red iron in major
								or breccia	vugs		fractures
622		8/8							gray; red coating on	"	very little indigenous iron; poor capping
630	15		5201			nil	tr.		larger fractures; vugs		
632		10/10							scarce and empty -		
642		10/10							rock generally dense		
645	15		5202			tr.	tr.				
652		10/10									
660	15		5203			.005	tr.				
661		9/9									
671		10/10									
675	15		5204			.010	tr.		vugs more numerous and		indigenous hematite lining most vugs
									show some coating		
681		10/10									
690	15		5205			.005	tr.		more numerous fractures		
692		10/10							shearing and micro-		
702		10/3							brecciation noted in		
705	15		5206			.010	tr.	trachyte	spots - generally very		purple to maroon lining major fractures,
								tuff or	dense - porphyry tex-		poor capping
								flow	ture absent		
712		10/10							gray-maroon; dense		capping fair to good
									shearing and fractures		
720	15		5207			.010	tr.		at 30° and parallel to		
									core		
722									generally very fine-		
									grained and dense		

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Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu	Mo	Au.	Ag.	Rock Type	Rock Description	Alteration	Mineralization
725	5		5208			tr.	tr.	trachyte tuff or flow	purplish-gray; dense, minor fractures	quartz-sericite-pyrite intensely silicified and dense	oxidized reddish-purple limonite in vugs - fair to good capping
728.5	6.5								gray - dense; minor pyrite mottling	intense silicification	mixed oxidation and sulfides; good chalcocite coating
729	.5										
732		10/10							gray - dense		no oxidation; good chalcocite mineralization; .20 inch chalcocite-pyrite cuts core at 10-20° at 729.5-730'; weaker chalcocite at 732'; less total sulfides
735	10		5209	.13					gray with mottled red along fractures		intense leaching - oxidation and iron oxide stain along fractures - weak chalcocite mineralization - no veinlets
742		10/9							gray - very few fractures		.40 inch pyrite veinlet at 742' cuts core at 45°; little or no chalcocite mineralization
745	10		5210	.08							
752		10/8									
753											
755	10		5211	.10					gray and red mottled dense - but numerous thin fractures and brecciated zones		completely oxidized from 753-761 feet
757		5/5									
761											
765	10		5212	.10					gray - dense		appears well-leached generally weak chalcocite mineralization except near fractures; two very thin pyrite-chalcocite veinlets cut core at 45° - no conspicuous veinlets
767		10/10							oxidation along several thin fractures		
769									gray - dense; minor shearing or microbrecciation noted	quartz-sericite-pyrite intense silicification	weak chalcocite mineralization thin coating on disseminated fine-grained pyrite; .20 inch hematite veinlet cuts core at 35-45° at 768.5 feet

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Depth	Int.	%Core Recvy	Samp. No.	Assays Cu	Mo	Au.	Ag.	Rock Type	Rock Description	Alteration	Mineralization
771								trachyte tuff or flow	mottled red and gray, dense; several thin fractures noted	quartz-sericite-pyrite intense silicification	80% oxidized 769-771'
775	10		5213	.11							generally very weak chalcocite mineralization - appears leached
777		10/10							gray - not as dense as previous material	more clays appear; also more and coarser pyrite	little or no chalcocite noted on disseminated pyrite or several very thin pyrite veinlets cutting core at 30-60°; sooty pyrite? noted in sheared veinlets 777-778' cut core at 50-60°; 4-5 .05 to .20 inch pyrite veinlets cut core at 45-60° between 780-787'; little or no chalcocite noted
785	10		5214	.08							
787		10/10							light gray slickensides 45° to core at 791'	clayey - no silicification; quartz in veinlets	no chalcocite; .10 inch pyrite veinlet at 50° to core at 789'; numerous thin irregular pyrite veinlets; minor disseminated pyrite; several spots of copper sulfate stain? (light green) rock appears bleached and leached; most of the thin pyrite veinlets cut core at 30° and 60°
795	10		5215	.06							
797		10/10							light gray	quartz-sericite-pyrite clay; no silicification; quartz in veinlets	no discernable chalcocite; disseminated fine-grained pyrite throughout; 1/2" pyrite veinlet cuts core at 65° exhibiting 1/8" brassy pyrite at the upper and lower boundaries with sooty pyrite? between at 701.5' and 1/4" quartz veinlet at 702'
805	10		5216	.07							
807		10/10								some clays present	
815	10		5217	.06						well silicified	1/8" pyrite veinlet cuts core at 45° at 809'
817		10/10						trachyte flow breccia	mottled gray		1/2" pyrite veinlet cuts core at 45° at 817.5', at 818', 1/4" quartz-pyrite veinlet cuts core at 60°
825	10		5218	.07				trachyte tuff or flow	"	fair clays and considerable sericite	

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Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu	Mo	Au.	Ag.	Rock Type	Rock Description	Alteration	Mineralization
827		10/10								quartz in vugs and spots as well as veinlets	chalcocite coating pyrite veinlet almost perpendicular to core; 1/8" veinlets
835	10		5219	.04							scattered throughout at 30 to 60° to core containing quartz and pyrite rarely chalcocite
837		10/10									
845	10		5220	.04							no chalcocite noted
847		10/10									
855	10		5221	.05							
857		10/10									quartz pyrite veinlet at 30° to core at 857 feet
867	12	10/10	5222	.06							
						BOTTOM OF HOLE AT 867 FEET					