PROPERTY: Sugarloaf Peak SHEET No. 2/3 HOLE No. SWR-8

Township:	Collar co-ordinates:	Dip Tests (true dips):	Total Depth:
Range:	Collar elevation:	At:	Core Size: to ft.
Lot:	Bearing:	At:	: to ft.
Claim No.	Inclination:	At:	Drilled by:
Date started:	Date completed:	At:	Logged by:

GEOLOGICAL LOG

FEET FROM	FEET TO	ROCK TYPE / STRUCTURE FM	DESCRIPTION	Struc	LOG	ALTERATION / MINERALIZATION LOG	DESCRIPTION	% py	Sil	Ser	Ch ep	Limon oxid	Metal blick min	% bull qtz	% sp	Arg.
100	105		quartz porphyry				chalky (allophane?)	1-3		+				20		+
5	10		sericitic schist				local bull qtz w/rare	½-1		+						+
10	15		v. light gray				pyrite	½-1		+						+
15	20							½-1		+				10		+
20	25							½-1		+						+
25	30							1-3		+						+
30	35							1-3		+						+
35	40							½-1		+				95		+
40	45							1-3	++	+						+
45	50							1-3	+	+						+
50	55							1-3	+	+						+
55	60							1-3		+						+
60	65							1-3		+						+
65	70							1-3		+						+
70	75							1-3		+						+
75	80							1-3		+						+
80	85							1-3	+	+				10		
85	90							3-5	++	+						
90	95							3-5	++	+-						
195	200							3-5	+++	+-						

ASSAY RECORD

SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH					

PROPERTY: Sugarloaf Peak SHEET No. 3/3 HOLE No. SWR-8

Township:	Collar co-ordinates:	Dip Tests (true dips):	Total Depth:
Range:	Collar elevation:	At:	Core Size: to ft.
Lot:	Bearing:	At:	: to ft.
Claim No.	Inclination:	At:	Drilled by:
Date started:	Date completed:	At:	Logged by:

FEET		GEOLOGICAL LOG															ASSAY RECORD									
		ROCK TYPE / STRUCTURE				ALTERATION / MINERALIZATION																				
FROM	TO	FM	DESCRIPTION	Struc	LOG	LOG	DESCRIPTION	% py	Sil	Ser.	ch. op.	unid. oxid. stuff	unid. black min	% bull qtz	% sp	Arg	SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH					
200	205		qtz-porphyry schist				med. to dark gray	1-3	++	++																
5	10		generally sericitic					1-3		+++																
10	15		medium gray					1-3		+++																
15	20							1-3		+++																
20	25						tr. anhydrite	½-1		+++																
25	30							1-3		+++																
30	35							1-3		+++																
35	40							1-3		+++																
40	45							1-3	+++	+++																
45	50							1-3		+++																
50	55							1-3		+++																
55	60							1-3		+++																
60	65							1-3		+++																
65	70							1-3		+++																
70	75						local strong sil.	1-3	++	+++																
75	80							1-3		+++																
80	85						light to dark gray	1-3		+++																
85	90						med. to dark gray	1-3		+++																
90	95							1-3		+++																
295	300 70							1-3		+++																

PROPERTY: Sugarloaf Peak SHEET No. 1/4 HOLE No. SWR-9

Township: Sec. 33, T4N, R20W	Collar co-ordinates:	Dip Tests (true dips):	Total Depth: 400
Range:	Collar elevation:	At:	Core Size: to ft.
Lot:	Bearing: 210°	At:	: to ft.
Claim No.	Inclination: -70°	At:	Drilled by: Drilling Services - Reverse
Date started: 11-29-84	Date completed: 11-30-84	At:	Logged by:

GEOLOGICAL LOG

FEET FROM	FEET TO	FM	ROCK TYPE / STRUCTURE DESCRIPTION	Struc	LOG	LOG	ALTERATION / MINERALIZATION DESCRIPTION	%opq	Sil	Ser.	ch. ep.	unid. black min	% py	% sp	Arg.
0	5		No sample												
5	10		quartz porphyry schist				cream-limonitic-oxidized		+	++					
10	15								+	++					
15	20									++					
20	25								+	++					
25	30									++					
30	35									++					
35	40									+++					
40	45									++					
45	50									++					
50	55						mixed oxide-sulfide	tr	+	+++					
55	60						light-medgray	½-1	+++	+++					
60	65						strong lon stain	1-3	++	+++					
65	70						minor oxidation along fracs	½-1	+	+++					
70	75							½-1	+	+++					
75	80							½-1	+	+++					
80	85							½-1	+	+++					
85	90							1-3	+	+++					
90	95							1-3	+	+++			5		
95	100							1-3	+	+++			10		

ASSAY RECORD

SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH

Water? 2-3 g.p.m. @ [illegible]

PROPERTY: Sugarloaf Peak SHEET No. 2/2 HOLE No. SWR-9

Township:	Collar co-ordinates:	Dip Tests (true dips):	Total Depth:
Range:	Collar elevation:	At:	Core Size: to ft.
Lot:	Bearing:	At:	: to ft.
Claim No.	Inclination:	At:	Drilled by:
Date started:	Date completed:	At:	Logged by:

GEOLOGICAL LOG

FEET FROM	FEET TO	F M	ROCK TYPE / STRUCTURE DESCRIPTION	Struc	LOG	LOG	ALTERATION / MINERALIZATION DESCRIPTION	% py	Sil	Ser.	Ch. ep.	Unid. b/k. min	% bull qtz	% sp.	Arg
100	105		quartz porphyry				med. gray	1-3	+	+++					
5	10		schist					1-3	+	+++					
10	15							1-3	+	+++					
15	20							1-3	+	+++					
20	25						dark gray	1-3	+++	+++					
25	30							1-3	++	+++					
30	35						med. gray	1-3	+	+++					
35	40							1-3	+	+++			TC		
40	45						dark gray	1-3	++	+++					
45	50							½-1	++	+++					
50	55							½-1	++	+++	tr.				
55	60							1-3	++	+++					
60	65							1-3	+	+++					
65	70						med. gray	1-3	+	+++					
70	75							1-3	+	+++					
75	80							1-3	+++	+++					
80	85							1-3	++	+++					
85	90							1-3	+	+++					
90	95							1-3	+	+++					
195	200							1-3	+	+++					

ASSAY RECORD

SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH

PROPERTY: Sugarloaf Peak SHEET No. 3/4 HOLE No. SWR-9

Township:	Collar co-ordinates:	Dip Tests (true dips):	Total Depth:
Range:	Collar elevation:	At:	Core Size: to ft.
Lot:	Bearing:	At:	to ft.
Claim No.	Inclination:	At:	Drilled by:
Date started:	Date completed:	At:	Logged by:

GEOLOGICAL LOG

FEET FROM	FEET TO	FM	ROCK TYPE / STRUCTURE DESCRIPTION	Struc	LOG	LOG	ALTERATION / MINERALIZATION DESCRIPTION	%py	Sil	Ser	ch. cp	unid. blk. Zinc	% bull qtz	% osp	Arg
200	205		qtz. porphyry schist				dark gray	1-3	++	+++					
5	10							1-3	+++	+++					
10	15							1-3	++	+++	wk. cp/gm				
15	20							½-1	++	+++					
20	25						med. gray	1-3	+	+++					
25	30							1-3	++	+++					
30	35							1-3	+	+++					
35	40							1-3	++	+++					
40	45						dark gray	1-3	+++	+++					
45	50						med. gray	1-3	++	+++					
50	55							1-3	++	+++					
55	60							1-3	++	+++					
60	65							1-3	++	+++					
65	70							1-3	++	+++					
70	75							1-3	++	+++					
75	80							1-3	++	+++					
80	85							1-3	++	+++					
85	90						light to med. gray	1-3	+	+++					
90	95							1-3		+++					
295	300							1-3		+++					

ASSAY RECORD

SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH

PROPERTY: Sugarloaf Peak SHEET No. 4/4 HOLE No. SWR-9

Township:	Collar co-ordinates:	Dip Tests (true dips):	Total Depth:
Range:	Collar elevation:	At:	Core Size: to ft.
Lot:	Bearing:	At:	: to ft.
Claim No.	Inclination:	At:	Drilled by:
Date started:	Date completed:	At:	Logged by:

GEOLOGICAL LOG

FEET FROM	FEET TO	F M	ROCK TYPE / STRUCTURE DESCRIPTION	Struc	LOG	LOG	ALTERATION / MINERALIZATION DESCRIPTION	%py	Sil	Ser	ch. ep.	unid. blk. min	% bull qtz	%asp	Arg
300	305		quartz porphyry				med. gray-consistent	1-3	+	+++					
5	10		schist					1-3	+	+++			10		
10	15							1-3	+	+++					
15	20							1-3	+	+++					
20	25							1/2-1	+	+++					
25	30							1-3	+	+++					
30	35							1-3	+	+++					
35	40							1-3	+	+++					
40	45							1-3	+	+++					
45	50							1-3	+	+++					
50	55							1-3	+	+++					
55	60							1-3	+	+++					
60	65							1-3	+	+++					
65	70							1-3	+	+++					
70	75							1-3	+	+++					
75	80							1-3	+	+++					
80	85							1-3	+	+++					
85	90							1-3	+	+++					
90	95							1-3	+	+++					
395	400 TD							3-5	+	+++					

ASSAY RECORD

SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH

PROPERTY: Sugarloaf Peak SHEET No. 1/4 HOLE No. SWR-10

Township: sec. 33, T4N, R20W	Collar co-ordinates:	Dip Tests (true dips):	Total Depth: 400'
Range:	Collar elevation:	At:	Core Size: to ft.
Lot:	Bearing: 170°	At:	: to ft.
Claim No.	Inclination: -70°	At:	Drilled by: Drilling Services Reverse
Date started: 11-30-84	Date completed: 12-2-84	At:	Logged by: THY 12-2-84

FEET — GEOLOGICAL LOG — ASSAY RECORD

-all rock-- quartz porphyry schist

FROM	TO	F M	ROCK TYPE / STRUCTURE DESCRIPTION	Struc	LOG	LOG	ALTERATION / MINERALIZATION DESCRIPTION	%Py	Sil	Ser	Ch Ep	unident. Oxid. sulf.	unident. Gray met.	qtz	%SP		SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH
0	5		no sample																		
5	10		bleached - oxidized				lm-jar. - mod.			++											
10	15		same -				lm-jar-tc alun.-mod			++											
15	20		same				mod. lm-jar-tc alun.			++			tc								
20	25		same				wk-lm-jar, tc. anh			++			tc								
25	30		same				same			++			tc								
30	35		v. pale green				v. wk lm			++			tc								
35	40		same				wk. lm.-jar, tc. anh			++			tc								
40	45		same				same			++			tc								
45	50		light gray				tc. jar.	1-3	+	++			tc								
50	55		greenish-gray				tc. tarn. py, tc. anh.	1-3	+	+++											
55	60		same				same	1-3	+	+++											
60	65		same				tc. anh.	1-3	++	+++											
65	70		light gray				tc. anh	1-3	+	+++											
70	75		same				tc. tarnished py	1-3	+	+++											
75	80		same				tc anh	1-3	++	++											
80	85		sil. light gray				tc. anh.	1-3	++	++			tc								
85	90		same					1-3	+++	+			tc								
90	95		med. gray					1-3	+	+++				tc							
95	100		same				Minor Cream-pink colored min/qtz		+	++				5							

water @ 28' [illegible]

PROPERTY: Sugarloaf Peak SHEET No. 2/4 HOLE No. SWR-10

Township:	Collar co-ordinates:	Dip Tests (true dips):	Total Depth:
Range:	Collar elevation:	At:	Core Size: to ft.
Lot:	Bearing:	At:	: to ft.
Claim No.	Inclination:	At:	Drilled by:
Date started:	Date completed:	At:	Logged by:

GEOLOGICAL LOG

FEET FROM	FEET TO	FM	ROCK TYPE / STRUCTURE DESCRIPTION	Struc	LOG	LOG	ALTERATION / MINERALIZATION DESCRIPTION	%py	Sil	Ser	Ch Ep	Unidnt Oxid. surf.	Unidnt. gray met. min	qtz	%sp
100	105		pale green sericitic schist				tr anh	1		+++					
05	10		Same				tr anh	1-3	+	+++					
10	15		Same				blk min-radial xtals tr anh, minor tarnished py	1-3	+	+++			tr		
15	20		Same				local strong, tarnished py	1-3	++	+++				bull 40	
20	25		medium-dark green-gray					3-5	+++	++		tr		tr	
25	30		same					1-3	+++	++		tr			
30	35		same				coarse chips qtz-py vnlts, local tar. py	3-5	+++	+		tr	tr		
35	40		Same				Same	3-5	+++	+		tr	tr		
40	45		medium green-gray				trace dk gray sphalerite?	1-3	++	++		tr	tr		tr?
45	50		mixed, med + med-dk green-gy				Coarse chips	1-3	++	++		tr+	tr		
50	55		light, green				Coarse chips	1-3		+++		tr			
55	60		med. green					1-3	+	+++		tr			
60	65		dark green				dark rimmed qtz-py vnlts - pale epidote?	3-5	++	+	ep?	tr	tr+		
65	70		med. green				dark rimmed qtz-py vnlts	3-5	++	+	ep?	tr	tr+		
70	75		light green					3-5	+++	+		tr	tr	5	
75	80		same					1-3	+++	+r		tr			
80	85		med. green					1-3	++	++		tr	tr		
85	90		med. green					3-5	+++	+++		tr		5	
90	95		med. green					1-3	+	+++		tr		bull 10	

ASSAY RECORD

SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH

PROPERTY: Sugarloaf Peak SHEET No. 3/4 HOLE No. SWR-10

Township:	Collar co-ordinates:	Dip Tests (true dips):	Total Depth:
Range:	Collar elevation:	At:	Core Size: to ft.
Lot:	Bearing:	At:	: to ft.
Claim No.	Inclination:	At:	Drilled by:
Date started:	Date completed:	At:	Logged by:

GEOLOGICAL LOG

FEET FROM	FEET TO	ROCK TYPE / STRUCTURE: F M	DESCRIPTION	Struc	LOG	ALTERATION / MINERALIZATION: LOG	DESCRIPTION	% py	Sil	Ser	Ch ep	Unidat Oxids Sulf.	Unidat black metallic	% mgtc	% sp
200	205		med-dk green-gray schist				local tarnished py	3-5	++	++		+c		w/py +c	
5	10		same				same	1-3	++	++		+c	+c		
10	15		light gray					5-10	+++	+		+c			
15	20		med. green gray					1-3	++	+++		Tc			
20	25		mixed light & med. green gray				local tarnished py	3-5	+	+++		+c			
25	30		same				qtz-py veins	3-5	+	+++		+c	+c		
30	35		light green-gray					1-3		+++		+c			
35	40		same					1-3		+++		+c		5	
40	45		same					1-3		+++		+c			
45	50		same					3-5	+	++		+c			
50	55		mixed lt. green & med. green					1-3	+	+++		+c			
55	60		med. green					1-3	+	+++		+c	+c+		
60	65		lt. green					1-3		+++		+c			
65	70		same					1-3	+++	+		+c			
70	75		same				tc. sp (green) & lin qtz	1-3	+++	+		+c		20	
75	80		same					3-5	+++	+		+c			
80	85		same					5-10	+++	+		+c			
85	90		pale green				py. prod. tarnished - cp?	5-10	++	++		+c			
90	95		same				less tarnish on py, ill	3-5	+++	+		+c			
295	300		same				py. [illegible]	3-5	+++	[illegible]		+c			

ASSAY RECORD

SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH

PROPERTY: Sugarloaf Peak SHEET No. 4/4 HOLE No. SWR-10

Township:	Collar co-ordinates:	Dip Tests (true dips):	Total Depth:
Range:	Collar elevation:	At:	Core Size: to ft.
Lot:	Bearing:	At:	: to ft.
Claim No.	Inclination:	At:	Drilled by:
Date started:	Date completed:	At:	Logged by:

GEOLOGICAL LOG

FEET FROM	FEET TO	FM	ROCK TYPE / STRUCTURE DESCRIPTION	Struc	LOG	LOG	ALTERATION / MINERALIZATION DESCRIPTION	%py	Sil	Ser	ch ep	unident oxid. suff.	unident black min	%qtz	%sp
300	305		v. light green-gray schist				heavy pyrite locally	3-5	+	++		tc			
5	10		Same					1-3	+	+++		tc			
10	15		same					1-3	++	++		tc	tc		
15	20		same					1-3	+	+++		tc			
20	25		same				heavy pyrite locally	3-5	++	++		tc			
25	30		same				v. coarse chips	3-5	++	++		tc			
30	35		same					3-5	++	++		tc			
35	40		med. green-gray					1-3	++	++		tc			
40	45		same					1-3	++	+		tc			
45	50		Same					1-3	+++	+		tc			
50	55		light-med. green-gray					1-3	+	+++		tc			
55	60		Same					1-3		+++		tc			
60	65		med-dk greenish gray				chlorite?	1-3	+	++	ch?	tc			
65	70		med greenish gray					1-3	+	+++		tc			
70	75		pale green					1-3	++	+		tc		5	
75	80		med. green-gray				minor reddish oxidized chips (sulfides?)	3-5	+++	+		tc			
80	85		pale green					1-3		+++					
85	90		mixed pale & med green-gray					1-3	++	++		tc			
90	95		med. green-gray					1-3	++	++		tc			
395	300		dk green-gray				chlorite (?)	1-3		++	tc ep, ch.	tc	tc		

ASSAY RECORD

SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH

PROPERTY: Sugarloaf Peak SHEET No. 1/4 HOLE No. SWR-11

Township: sec. 33, T4N, R20W	Collar co-ordinates:	Dip Tests (true dips):	Total Depth: 400
Range:	Collar elevation:	At:	Core Size: to ft.
Lot:	Bearing: 160°	At:	: to ft.
Claim No.	Inclination: -70°	At:	Drilled by: D.S., reverse
Date started: 12-2-84	Date completed: 12-3-84	At:	Logged by: T. Young

GEOLOGICAL LOG

FEET FROM	FEET TO	F M	ROCK TYPE / STRUCTURE DESCRIPTION	Struc	LOG	LOG	ALTERATION / MINERALIZATION DESCRIPTION	%py	Sil	Ser	Ch Ep	unid. blk. min	% Bill qtz	%sp	Arg.
0	5		No sample												
5	10		qtz-porphyry schist				bleached with local			+++					
10	15						Mod. Im stain		++	+++					
15	20									+++					
20	25									+++					
25	30									+++					
30	35									+++					
35	40									+++					
40	45									+++					
45	50						Med-dark gray-monotonous	+c	+	+++					
50	55							½-1	+	+++					
55	60							1-3	+	+++			10		
60	65							1-3	+	+++					
65	70							1-3	+	+++					
70	75							1-3	+	+++					
75	80							1-3	+	+++					
80	85							½-1	+	+++					
85	90							1-3	+	+++					
90	95							1-3	+	+++					
95	100							1-3	+	+++					

ASSAY RECORD

SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH

Minor water at 400

PROPERTY: Sugarloaf Peak SHEET No. 2/4 HOLE No. SuR-11

Township:	Collar co-ordinates:	Dip Tests (true dips):	Total Depth:
Range:	Collar elevation:	At:	Core Size: to ft.
Lot:	Bearing:	At:	: to ft.
Claim No.	Inclination:	At:	Drilled by:
Date started:	Date completed:	At:	Logged by:

GEOLOGICAL LOG

FEET FROM	FEET TO	FM	ROCK TYPE / STRUCTURE DESCRIPTION	Struc	LOG	LOG	ALTERATION / MINERALIZATION DESCRIPTION	%py	Sil	Ser	ch ep	unid. blk min	% bull qtz	% sp	Arg.
100	105		quartz porphyry schist				med. gray	1-3	+	+++					
5	10							1-3	+	+++					
10	15							1-3	+	+++					
15	20							1-3	+	+++					
20	25							1-3	+	+++					
25	30							3-5	+	+++					
30	35							1-3	+	+++					
35	40							1-3	+	+++					
40	45							1-3	+	+++					
45	50							1-3	++	+++					
50	55						med-dark gray	3-5	++	+++					
55	60							1-3	++	+++					
60	65							1-3	++	+++					
65	70						mod-light gray	1-3	+	+++					
70	75							1-3	+	+++					
75	80							3-5	+	+++					
80	85							3-5	+	+++					
85	90							1-3	+	+++			tr		
90	95							1-3	+	+++					
195	200							1-3	+	+++					

ASSAY RECORD

SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH						

PROPERTY: Sugarloaf Peak SHEET No. 3/4 HOLE No. SWR-11

Township:	Collar co-ordinates:	Dip Tests (true dips):	Total Depth:
Range:	Collar elevation:	At:	Core Size: to ft.
Lot:	Bearing:	At:	: to ft.
Claim No.	Inclination:	At:	Drilled by:
Date started:	Date completed:	At:	Logged by:

GEOLOGICAL LOG

FEET FROM	FEET TO	FM	ROCK TYPE / STRUCTURE DESCRIPTION	Struc	LOG	LOG	ALTERATION / MINERALIZATION DESCRIPTION	% Pyr	Sil	Ser	Ch ep	Carb Alk Amp	Qz bull qtz	% Sp	Arg
200	205		quartz porphyry schist				med. gray	1-3	++	+++					
5	10							1-3	++	+++					
10	15							3-5	++	+++					
15	20							1-3	++	+++					
20	25							3-5	++	+++					
25	30						med-dark gray	3-5	+++	+++					
30	35						med gray	3-5	+	+++					
35	40							3-5	+++	+++					
40	45							1-3	+++	+++					
45	50							1-3	++	+++					
50	55							1-3	+	+++					
55	60							1-3	+	+++					
60	65							1-3	+	+++					
65	70							1-3	+	+++					
70	75						greenish gray	1-3	+	+++	ep. gm				
75	80							1-3	+	+++	ep. gm				
80	85						med. gray	1-3	+	+++					
85	90							1-3	+	+++					
90	95							1-3	+	+++					
295	300							3-5	+	+++					

ASSAY RECORD

SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH

PROPERTY: Sugarloaf Peak SHEET No. 4/4 HOLE No. SWR-11

Township:	Collar co-ordinates:	Dip Tests (true dips):	Total Depth:
Range:	Collar elevation:	At:	Core Size: to ft.
Lot:	Bearing:	At:	: to ft.
Claim No.	Inclination:	At:	Drilled by:
Date started:	Date completed:	At:	Logged by:

GEOLOGICAL LOG

FEET FROM	FEET TO	F M	ROCK TYPE / STRUCTURE DESCRIPTION	Struc	LOG	LOG	ALTERATION / MINERALIZATION DESCRIPTION	%py	Sil	Ser	ch ep	unid. blk. min	% bu/q	% sp	Arg
300	305		quartz porphyry schist				med. gray	1-3	++	+++					
5	10							3-5	+++	+++					
10	15							1-3	+++	+++					
15	20							1-3	++	+++					
20	25							3-5	+	+++					
25	30							3-5	+	+++					
30	35							3-5	+	+++		tr			
35	40							3-5	+	+++					
40	45							3-5	+	+++					
45	50							3-5	+	+++					
50	55							1-3	+	+++					
55	60							3-5	+	+++					
60	65							3-5	+	+++					
65	70							1-3	+	+++					
70	75						light-med. gray	1-3	+	+++					
75	80							1-3	+	+++			tr		
80	85							3-5	+	+++			25		
85	90							3-5	+	+++					
90	95							3-5	+	+++					
395	402 TD							1-3	+	+++					

ASSAY RECORD

SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH

PROPERTY: Sugarloaf Peak SHEET No. 1/3 HOLE No. SWR-12

Township: sec. 33, T4N, R2OW	Collar co-ordinates:	Dip Tests (true dips):	Total Depth: 300'
Range:	Collar elevation:	At:	Core Size: to ft.
Lot:	Bearing: 200°	At:	: to ft.
Claim No.	Inclination: -70°	At:	Drilled by: D.S. - reverse
Date started: 12-4-84	Date completed: 12-4-84	At:	Logged by:

GEOLOGICAL LOG

FEET FROM	FEET TO	FM	ROCK TYPE / STRUCTURE DESCRIPTION	Struc	LOG	LOG	ALTERATION / MINERALIZATION DESCRIPTION	% py	Sil	Ser	Ch ep	unidt. oxid. sulf.	unid. blk min	% qtz	% sp	Arg
0	5		no sample													
5	10		no sample													
10	15		bleached sericitic qtz, por. schist				oxidized, mod. lm-jar tr. anh.			++						
15	20		same				same - wk. lm., tr. anh.			++						
20	25		same				same, tr. anh.			++						
25	30		same				same			++						
30	35		same				same			++						
35	40		same				same, wk lm-jar.			++						
40	45		same				strong lm-hm, pseud/py			++			tr?			
45	50		same, v. pale green				mod jar-lm			++						
50	55		same				strong lm-jar vnlts.			++						
55	60		same				mod lm. jar vnlts, tr anh.			++						
60	65		gray, wkly ox.				wk lm, minor reddish hm w/py	1-3		++			tr			?
65	70		same - unoxid. soft				wk. tarnish py, wk ox. rim	1-3		++			w/py 10			?
70	75		same				same, py w/ jarositic rims	3-5		++			w/py 5			?
75	80		same				same "	1-3		++			w/py 5			?
80	85		same				same "	1-3		++			w/py 5			?
85	90		same				same "	1-3		++			w/py 5			?
90	95		same				same "	3-5		++						?
95	100		dk. med. gray & 10% lt. gray					3-5	+++	++						?

ASSAY RECORD

SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH					

PROPERTY: Sugarloaf Peak SHEET No. 2/3 HOLE No. SWR-12

Township:	Collar co-ordinates:	Dip Tests (true dips):	Total Depth:
Range:	Collar elevation:	At:	Core Size: to ft.
Lot:	Bearing:	At:	: to ft.
Claim No.	Inclination:	At:	Drilled by:
Date started:	Date completed:	At:	Logged by:

FEET		GEOLOGICAL LOG															ASSAY RECORD									
		ROCK TYPE / STRUCTURE				ALTERATION / MINERALIZATION																				
FROM	TO	FM	DESCRIPTION	Struc	LOG	LOG	DESCRIPTION	% py	Sil	Ser.	Ch ep	Unid. oxid. sulf.	unid blk. min	% gal	Sp	Arg.	SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH					
100	105		med-dark gray gelist					3-5	+++	+																
5	10		same					3-5	+++	+																
10	15		same - greenish-gray				local tarnished (brassy) py	3-5	+++	+																
15	20		same - dk greenish-gray				occassial py upto 1/4" diam	3-5	+++	+	wk ch?															
20	25		med.-dk gray				tc. anh., local tarn. py	3-5	+++	+		tc														
25	30		same				occass. tarn. py	3-5	+++	+		tc			tc											
30	35		same				rare - orange vnlt. (kspar?)	3-5	++	+																
35	40		same					3-5	++	+																
40	45		med. gray - green					3-5	++	+																
45	50		same				tc. anh.	1-3		++																
50	55		same					3-5		++																
55	60		lt. green-gray				local strong py, blk min w/sil.	3-5	+	++			3-5%													
60	65		same					3-5		++																
65	70		lt + med. gray				wk ox. w/anh. strong py w/sil.	3-5	++	++																
70	75		same				wk ox. w/anh or minor frocs	3-5	++	++																
75	80		med. gray				strong py esp. w/ oxid.	5-10	+++	+			tc+													
80	85		same				" "	5-10	+++	+			1-3%													
85	90		same				local tarnished py "	5-10	+++	+			1-3%													
90	95		same				same, tc. anh. "	5-10	+++	+			1-3%													
195	200		mod + lt. gray				same, wk ox'd.	5-10	++	++																

PROPERTY: Sugarloaf Peak SHEET No. 3/3 HOLE No. SUR-12

Township:	Collar co-ordinates:	Dip Tests (true dips):	Total Depth:
Range:	Collar elevation:	At:	Core Size: to ft.
Lot:	Bearing:	At:	: to ft.
Claim No.	Inclination:	At:	Drilled by:
Date started:	Date completed:	At:	Logged by:

FEET		GEOLOGICAL LOG															ASSAY RECORD									
		ROCK TYPE / STRUCTURE				ALTERATION / MINERALIZATION																				
FROM	TO	FM	DESCRIPTION	Struc	LOG	LOG	DESCRIPTION	% py	Sil	Ser	Ch ep	Unid. oxid. sulf.	Unid. blk. min	Magt	Tsp	Arg	SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH					
200	205		med. gray, wk schistocity				tarnished py, v. wk oxid. tc. v. fine-grained, blue	3-5	+++	+																
5	10		same				same, gray, not. min. Pbs? Mos?	3-5	+++	+																
10	15		med. gray - same				tarnished py, tc. anh.	3-5	++	++				3												
15	20		dk gray, tr. white chalky				num. dk. qtz. veins, tar. py	3-5	+++	+						tc?										
20	25		dk. gray				occass. tarn. py	1-3	+++	+																
25	30		same				same	1-3	++	+		tc	tc?													
30	35		same				same	1-3	++	+		tc	tc?													
35	40		same				py pred. tarn.	1	+++	+																
40	45		med-dk gray				mod. fresh py, occas. tarn. py	1-3	++	++			?			w/fl										
45	50		same				strong tarn. on py	3-5	++	+						w/py										
50	55		green-gray schist				± tarn. py	1-3		+++						w/py tc										
55	60		same, wk schist				same	1-3	++	+		tc														
60	65		same				py pred. tarn.	3-5	++	+		tc														
65	70		same				same	3-5	+	++																
70	75		lt gr-gy wk to mod. schist				occass. tarn. py	1-3		++		tc														
75	80		same				mod. fresh py	1-3		+++			tc?													
80	85		med. gray				same	1-3	+	++		tc														
85	90		same				same	1-3	+	+++		tc														
90	95		same				same	1-3	+	+++		tc														
295	300 ft		same				same	1-3		+++																

Not logged

PROPERTY: Sugarloaf Peak SHEET No. 1/3 HOLE No. SWR-13

Township: Sec. 33, T4N, R20W	Collar co-ordinates:	Dip Tests (true dips):	Total Depth:
Range:	Collar elevation:	At:	Core Size: to ft.
Lot:	Bearing: 160°	At:	: to ft.
Claim No.	Inclination: -70°	At:	Drilled by: D.S. - reverse
Date started: 12-5-84	Date completed: 12-5-84	At:	Logged by:

FEET		GEOLOGICAL LOG						ASSAY RECORD					
		ROCK TYPE / STRUCTURE				ALTERATION / MINERALIZATION							
FROM	TO	F M	DESCRIPTION	Struc	LOG	LOG	DESCRIPTION	SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH	

Not logged

PROPERTY: Sugarloaf Peak SHEET No. 1 HOLE No. SWR-14

Township: Sec. 3, T3N, R20W	Collar co-ordinates:	Dip Tests (true dips):	Total Depth:
Range:	Collar elevation:	At:	Core Size: to ft.
Lot:	Bearing: 180°	At:	: to ft.
Claim No.	Inclination: -40°	At:	Drilled by: D.S. reverse hammer
Date started: 12-7-84	Date completed:	At:	Logged by:

FEET		GEOLOGICAL LOG						ASSAY RECORD								
		ROCK TYPE / STRUCTURE				ALTERATION / MINERALIZATION										
FROM	TO	F M	DESCRIPTION	Struc	LOG	LOG	DESCRIPTION	SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH				

PROPERTY: Sugarloaf Peak SHEET No. 1 of 3 HOLE No. SWR-15

Township:	Collar co-ordinates:	Dip Tests (true dips):	Total Depth:
Range:	Collar elevation:	At:	Core Size: to ft.
Lot:	Bearing: 290°	At:	: to ft.
Claim No.	Inclination: -50°	At:	Drilled by:
Date started: 6-17-85	Date completed: 6-17-85	At:	Logged by:

GEOLOGICAL LOG

FEET FROM	FEET TO	ROCK TYPE / STRUCTURE FM	DESCRIPTION	Struc	LOG	ALTERATION / MINERALIZATION LOG	DESCRIPTION	%Py	Sil	Pyrph	Qz bull qtz
0	5		No Sample								
5	10										
10	15										
15	20		qtz porphyry schist				Strong reddish hem. stain mixed qtz flooded & pyrophy. sch.		++	+	25
20	25		generally with strong						+	++	
25	30		pyrophyllite groundmass							+++	
30	35									+++	
35	40									+++	
40	45									+++	
45	50						minor reddish hem stain			+++	5
50	55									+++	5
55	60									+++	
60	65									+++	20
65	70									+++	
70	75									+++	
75	80									+++	
80	85						Mod. jarosite (?) veinlets			+++	
85	90						minor jarosite			+++	25
90	95									+++	
95	100									+++	5

ASSAY RECORD

SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH

of a pale blue mineral occur sparingly in the dumortierized schist and the pyrophyllite schist. Although positive identification of the mineral could not be made, it has the following properties of sapphirine ($Mg_5Al_{12}Si_2O_{27}$): High refraction, low birefringence, biaxial character, and sky-blue, blue-green, and colorless pleochroism. No cleavage or twinning are visible.

Principal unknown minerals. (a) An unknown mineral occurs rather abundantly in an aggregate of fine-grained, allotriomorphic quartz and scaly pyrohyllite, cut by small prisms and veinlets of dumortierite. It is in the form of small, colorless, apparently tetragonal prisms whose nearly square cross sections show good diagonal cleavage. Optically, it has high refringence, rather strong birefringence, parallel extinction, and uniaxial positive character.

(b) An unknown mineral occurs sparingly along fractures and occupying vugs in the dumortierized schist. It is in both amorphous and elastic, fibrous forms of peach-red to pink color. Bead tests for cobalt, manganese, and iron were negative, and not enough material was available for further qualitative analysis.

(c) Assays made upon the dumortierized rock by Prof. J. B. Cunningham, of the University of Arizona, showed traces of gold. Possibly this gold accompanies one or more of the iron minerals.

Origin

Probably a granitic magma invaded the schists at considerable depth and permeated favorable portions of them with hot, pegmatitic emanations that were high in silica and alumina but contained also some boron, iron, and titanium. The distribution of the resultant minerals, which appear to have replaced metasomatically the schist, indicates these emanations to have been very fluid and possibly under great pressure. Microscopic study indicates the following sequence of deposition for the principal minerals: vein quartz; cyanite and andalusite; sillimanite; rutile and primary iron minerals; dumortierite; latest quartz and pyrophyllite. Probably these minerals were deposited at temperatures below 575°C., within the range given by Wright and Larsen[6] for vein and geode quartz.

The temperature and pressure probably dropped considerably before the development of the pyrophyllite, for this mineral commonly forms under moderate conditions of temperature and pressure. As already pointed point, a large part, at least, of the pyrophyllite was developed through alteration of the anhydrous aluminum silicates. Such a reaction appears to be relatively simple and to require merely the introduction of silica and water:

Andalusite, cyanite, or sillimanite — Pyrophyllite

$$Al_2SiO_5 + 3SiO_2 + H_2O = H_2Al_2Si_4O_{12}$$

The possibility of pyrophyllite being derived from andalusite has been suggested by Knopf[7] but, so far as the writer is aware, pyrophyllitization of cyanite and sillimanite has not previously been described.

[6] *Am. Jour. Sci.*, 4th ser., vol. **27**, pp. 446–447. 1909.

Acknowledgments

Acknowledgments are due the Department of Geology at the University of Arizona for the use of certain laboratory equipment. Professors F. N. Guild, B. S. Butler, and R. J. Leonard gave valuable suggestions. Mr. Robt. E. S. Heineman, of the Arizona Bureau of Mines, made the photomicrographs and many chemical tests.

[7] *U. S. Geol. Survey, Bull.* **762**, p. 19, 1924.

of contrasting metamorphic, structural and plutonic styles. The central, core zone of high grade metamorphic and plutonic rocks is characterized by gently dipping ductile fabrics and large sheet-like plutons. The western zone of metamorphic and plutonic rocks has east dipping, west to northwest directed ductile to brittle fabrics and structures. The eastern zone is characterized by unmetamorphosed to low grade strata and by mainly east to northeast verging brittle to ductile shear zones. Superimposed on these pervasive and relatively gentle structures in all three belts are discrete, steep shear zones that trend northwest to north. Plutons in the central and western zones have been affected by both ductile and brittle deformation; pluton shape may have been controlled by emplacement into a dynamic regime. This style of structure and plutonism appears to indicate a component of longitudinal motion during development of the orogen. Collectively, the structures indicate that the CPC at this latitude is a two-sided, perhaps wrench-related, orogen which straddles the western edge of Stikinia and the eastern edge of Alexander terrane.

MULTI-STAGE SERPENTINITE MATRIX MELANGE DEVELOPMENT: RATTLESNAKE CREEK TERRANE, SOUTHWESTERN KLAMATH MTNS. | № 60677

WRIGHT, J.E., Geology Dept., Stanford Univ. 94305, and WYLD, S.J., Geology Dept., U.C. Berkeley 94720

The Rattlesnake Creek Terrane (RCT) consists of a complex multi-stage serpentinite matrix melange basement that is depositionally(?) overlain by Late Triassic-Early Jurassic(?) metavolcanic and metasedimentary arc related strata. Both the melange and cover rocks are intruded by 192-212my-old (U/Pb, zircon) plutons. The serpentinite melange contains blocks of harzburgite, mafic volcanics, altered plutonic rocks, chert and argillite, and amphibolite incorporated into a low temperature serpentinite matrix. The overlying strata are regionally divisible into two units. The oldest rocks are composed of vesicular aphyric to ol+plag±cpx phyric basaltic pillow lavas and breccias, interlayered with terrigenously derived clastic rocks as well as hemipelagic chert, argillite and minor limestone. Conformably overlying this unit is a metavolcanic sequence composed of monolithologic cpx+plag phenocrystic basaltic breccias and tuffs, with minor quartz keratophyre flows and breccias and intercalated hemipelagic and terrigenous epiclastic strata. Initial melange development occured prior to accumulation of the cover rocks as follows: 1)terrigenous epiclastic strata contain clasts of harzburgite, altered plutonic rocks and amphibolite that are typical melange components, as well as beds of detrital serpentinite,2)aphyric basaltic feeder dikes cut both the melange serpentine matrix and overlying volcanics,and 3)the melange contains numerous blocks that have no counterparts within the overlying strata. Compressive deformation/metamorphism of the entire RCT occured 165-170mybp when it was structurally juxtaposed against an active Middle Jurassic arc. During this second major deformational event that affected both melange basement and cover the serpentinite matrix was mobilized and blocks of the cover rocks were locally completely entrained within serpentinite matrix.

THE LATE JURASSIC GALICE BASIN AND ITS OPHIOLITIC AND SERPENTINE MELANGE BASEMENT, KLAMATH MTNS., CALIFORNIA | № 60746

WYLD, S.J., Dept. of Geology, U.C. Berkeley, CA 94720, and WRIGHT, J.E., Geology Dept., Stanford Univ., CA 94305.

In the southernmost exposures of the Western Jurassic Belt (WJB) the upper levels of a disrupted Late Jurassic ophiolite (Josephine Ophiolite?) in complex structural/stratigraphic relationship with a serpentine matrix melange (SMM) form the basement for the overlying Late Jurassic Galice Formation. The ophiolite remnant consists of a well-developed sheeted dike complex and overlying pillow lava and breccia. Overlying the ophiolite is an unsorted, matrix-free breccia containing clasts derived solely from ophiolitic rocks: these include dike, volcanic, plagiogranite and plutonic clasts. The breccia is inferred to represent submarine talus deposits formed at the base of ocean floor fault scarps. Large-scale (transform?) faulting is indicated by abundant cumulate ultramafic clasts within the breccia. The SMM consists of a chaotic mixture of gabbroic-to-dioritic rocks, mafic volcanics, harzburgite, chert and clastic rocks engulfed in a serpentine matrix. This unit appears identical to melange of the Rattlesnake Creek Terrane (RCT) which structurally overlies the WJB along a low-angle Nevadan thrust. The Galice consists of interlayered metagraywackes and slates showing primary structures indicative of turbidite deposition. Metagraywackes are composed predominately of chert, monocrystalline quartz, plagioclase and volcanic clasts. Interlayered within the metasediments is a thick volcaniclastic unit ranging from boulder agglomerate and volcanic sandstone to subaqueous ash flow tuff. Compositions vary from andesitic to dacitic. The above relations indicate that the ophiolite-Galice basin formed in proximity to an active volcanic arc and an epiclastic terrigenous source. Opening of this ophiolitic basin apparently rifted apart previously accreted pre-Late Jurassic basement (RCT) of the Klamath Mountains.

CONFIRMATION FROM ELLESMERE AND AXEL HEIBERG ISLANDS OF CRETACEOUS AND PERMIAN PALEOLATITUDES FOR CRATONIC NORTH AMERICA AND TERTIARY ANTICLOCKWISE ROTATIONS | № 70898

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The latitudes determined from paleomagnetic inclinations in Permian and Cretaceous volcanics from Ellesmere and Axel Heiberg Islands are consistent with those from cratonic North America, a matter of fundamental importance for determining displacement in the western cordillera.

The declinations are not consistent with the cratonic reference field and indicate anticlockwise rotations of 40° or more. We suggest that these rotations are signatures of motions between overthrust sheets and the underlying basement, the detachment surface being a mid-Paleozoic salt horizon.

These observations support the idea that strain associated with the Tertiary opening of Baffin Bay is not restricted to Nares Strait, but is distributed across the entire Eurekan fold belt.

STRUCTURAL GEOLOGY OF A TECTONIC BOUNDARY WHICH JUXTAPOSES CRATONIC NORTH AMERICA AND A MESOZOIC SEDIMENTARY TERRANE, NORTHERN DOME ROCK MOUNTAINS, WESTERN ARIZONA | № 55282

YEATS, Kenneth J., Department of Geosciences, University of Arizona, Tucson, Arizona 85721

A major tectonic boundary runs through western Arizona and southeastern California, marking the southwestern limit of unequivocal North American cratonic stratigraphy. This boundary places crystalline basement and Phanerozoic rocks of cratonic affinity over Mesozoic rocks of the McCoy Basin; a terrane largely composed of Jurassic volcanics and the overlying McCoy Mountains Fm., a 7km thick clastic sequence whose age is probably Jurassic, but is considered by some to be as young as Paleocene. The basin has been variously interpreted as adjacent to the Mojave-Sonora megashear or an Eocene terrane suture.

The boundary is best exposed along the Boyer Gap fault, a north-dipping mylonitic reverse fault zone in the northern Dome Rock Mtns. Here, a large (λ=1km) south-facing synclinorium of intensely folded Paleozoic (Grand Canyon correlative) strata and sheared Precambrian and Mesozoic granites overlie Mesozoic(?) metaplutonic rocks and a thick transposed section of quartzofeldspathic schists and impure quartzites that are likely derived in part from the McCoy Mountains Fm. This section clearly was intruded (synkinematically?) by the Jurassic Middle Camp pluton. Amphibolite-grade rocks occur just under the Boyer Gap fault. Fold geometries, mineral foliations, and tectonite petrofabrics are sympathetic to the fault and indicate south and westsouthwestward tectonic transport. Structurally high in the range, these fabrics and a post-kinematic granite are overprinted by a mid-Tertiary(?) low-angle mylonitic fabric colinear to the NNE slip line on the overlying Moon Mountains detachment fault, exposed 8km to the north. The major pre-Tertiary tectonism recorded in this study area appears to have been deep-seated south- and westsouthwest-vergent thrusting of cratonic rocks over McCoy Basin rocks in middle to late(?) Mesozoic time.

CENOZOIC STRUCTURE OF THE VAL VERDE AND SOUTH HALF OF THE WHITAKER PEAK 7½-MINUTE QUADRANGLES, EASTERN VENTURA BASIN, CALIFORNIA | № 60057

YEATS, Robert S., MCDOUGALL, James W., Dept. of Geology, Oregon State University, Corvallis, OR 97331, and STITT, Leonard T., Conoco Inc., 290 Maple Court, Suite 284, Ventura, CA 93003.

Eocene to early Miocene strata were strongly folded along NW-trending axes prior to deposition of late Miocene (Mohnian) strata of the Modelo Formation. Granodiorite is faulted against Eocene along a faulted and overturned unconformity. The Canton fault separating Mendenhall(?) Gneiss on the east from granodiorite on the west cuts the basal conglomerate member of the Modelo and is overlain unconformably by younger Modelo strata. This fault, probably a pre-Mohnian strand of the San Gabriel fault, continues for more than 7 km SE of its surface termination to a subsurface intersection with the San Gabriel fault.

Strata of Miocene and Pliocene age decrease in thickness northeast against a submarine ridge of basement parallel to the San Gabriel fault. Locally, the Hasley conglomerate member of the Miocene-Pliocene Towsley Formation is absent over structural highs.

Post-Saugus structures formed in late Quaternary time based on extrapolation upsection of sedimentation rates derived from paleomagnetic stratigraphy. These structures consist of a fold belt cut by the Del Valle, Holser, Hasley, Oak Canyon, and Santa Felicia south-dipping reverse faults. These faults do not steepen with depth. The Santa Felicia fault overrides the youngest strand of the San Gabriel fault.

Tectonic landforms are less apparent in the east Ventura basin fold belt than along the Oak Ridge and San Cayetano faults which die out eastward in the Val Verde quadrangle. However, widespread river terraces north of Potrero Canyon may be controlled by downwarping along the Santa Clara syncline. The Del Valle and Holser faults locally control drainage which flows parallel to the faults on the downthrown side. No evidence of Holocene movement has been found.

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415-323-8111

DICK TOSDAL

Early April

Middle Camp Mtns.

LITHOLOGIC ASSOCIATIONS OF GOLD DEPOSITS, SOUTHEASTERN CALIFORNIA AND SOUTHWESTERN ARIZONA

№ 61296

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Disseminated gold deposits in the Chocolate and Cargo Muchacho Mountains, southeastern California, and other historically important lode and related placer districts in the Dome Rock Mountains, southwestern Arizona, share several lithologic associations. All are hosted largely or entirely by gneiss. For most of these deposits, the protolith of the gneiss was one or both of two regionally extensive lithologic units of known or probable Jurassic age. These are 1) silicic volcanic and volcaniclastic rocks and hypabyssal quartz porphyry, intruded by 2) dioritic, granodioritic, and granitic plutonic rocks(the slightly different gneiss at the Picacho Mine could be a higher grade equivalent of the metamorphosed Jurassic granitoids or an older gneiss).

Metasomatic rocks, now kyanite-quartz-white mica gneiss, are commonly, but not invariably, spatially associated with mineralization. These rocks are exposed along contacts between and derived from both the metavolcanic rocks and the granodioritic to granitic plutons. Field and mineralogic evidence indicates metasomatism was related to granitic plutonism and probably synchronous with amphibolite facies regional metamorphism.

These observations suggest that the gold deposits are, at least in part, genetically related to Jurassic igneous rocks. Although gold may well have been remobilized or further concentrated during late Mesozoic and(or) Tertiary deformations and magmatism, it probably was initially introduced or concentrated during Jurassic plutonism and regional metamorphism.

PROVENANCE OF THE LATE PRECAMBRIAN KINGSTON PEAK FORMATION, SOUTHEASTERN DEATH VALLEY REGION, CALIFORNIA

№ 65623

TROXEL, B. W., Dept. of Geology, University of California, Davis, CA 95616; WRIGHT, L. A., WILLIAMS, E. G., and MCMACKIN, M. R., Dept. of Geosciences, Pennsylvania State University, University Park, PA 16802

The Kingston Peak Formation, in southeastern Death Valley, was deposited in a rapidly-subsiding WNW-trending basin accompanied by faulting along the NNE margin of the basin. The source area was to the north. The facies of the formation deposited along the NNE margin consists of a lower siltstone, a middle diamictite, and an upper mixed member. The upper member contains conglomerate, siltstone, sandstone, diamictite, and megabreccia.

In general, all members are thickest in the central trough of the basin and thin or wedge out northward. The lower and middle members are each about 300 m thick in the trough and taper out or buttress on the margin. Both are moderately uniform in grain and clast size. The upper member consists, in the trough, of distal parts of turbidite beds, sandstone, siltstone, diamictite, and breccia beds. It is as much as 3,000 m thick within a few km of the basin margin. At the margin, it is generally 100 to 200 m thick and contains coarse fanglomerate, proximal turbidite beds, siltstone, sandstone, diamictite, and very coarse breccia beds. The breccia beds are about 1,500 m thick within about 3 km of the margin and contain gigantic clasts one being about 1 km long and 300 m in stratigraphic thickness. The breccia beds show a progressive denudation of the source region.

Precambrian faults were active along the basin margin before, during, and briefly following deposition of the Kingston Peak Formation. Volcanism accompanied deposition of the upper member. Bedrock irregularities existed near shore.

A LATE DEVONIAN STRATIFORM PB-ZN AND STRATIFORM BARITE METALLOGENIC EVENT IN THE NORTH AMERICAN CORDILLERA: MARGIN-LONG EXTENSION AND IMPLICATIONS FOR THE ANTLER OROGENY.

№ 63914

TURNER, R.J., Stanford University, Stanford, CA., 94305

Over 100 stratiform barite and 20 stratiform Pb-Zn deposits of syn-diagenetic origin occur from the Yukon to Mexico within late Devonian age carbonaceous shale +/- chert, turbidite basinal marine rocks. These deposits define a single genetically related metallogenic event and a major Pb-Zn-Ag-Ba province, distinctive for the high ratio of stratiform barite/stratiform Pb-Zn deposits. Sedimentological evidence for late Devonian submarine extension (synsedimentary faults, locally derived debris flow and turbidite deposits, rapid lateral facies change) has been documented on a regional scale in the Selwyn Basin area. Stratiform Pb-Zn and stratiform barite deposits in the Selwyn Basin area occur together as clusters associated with loci of submarine synsedimentary faulting. By analogy, the presence of similar coeval stratiform deposits in the U.S. and Mexico within equivalent but more deformed strata is interpreted to reflect exhalative activity related to centers of extensional faulting. From Yukon to Nevada there is a fining of the coarsest clastics within the late Devonian sediments concurrent with a decrease in the ratio of sulphide to barite deposits. This may reflect a decreasing amount of extension southwards. Biostratigraphic control indicates this late Devonian extensional event occurred along 4500 km of Cordilleran continental margin within a time interval of less than 14 m.y. This event reflects either a margin-parallel rift, transform or transtensional enviroment. In Nevada and Idaho, this event immediately preceded movement on the Roberts Mountains thrust. The occurence of time-equivalent late Devonian age stratiform deposits in both autochthonous miogeoclinal rocks (Yukon, B.C., Washington) and the Roberts Mountains allochthon (Nevada, Idaho) suggest the latter is a displaced fragment of the edge of the continent and not an exotic terrane.

CHARACTER AND EVOLUTION OF STRATIFORM PB-ZN-BARITE MINERALIZATION, SOUTH ZONE, JASON PROPERTY, YUKON.

№ 64078

TURNER, Robert J., and EINAUDI, Marco T., Geology Dept., Stanford University, Stanford CA, 94305.

The South zone contains two stratigraphically distinct, stratiform Pb-Zn-barite bodies hosted in late Devonian siltstone turbidite, organic shale and debris flow deposits adjacent to a synsedimentary normal fault. Both stratiform bodies are mineralogically and texturally zoned away from a breccia body above the fault. Stratiform mineralization is divided into the following mineral/textural facies: (1)massive py; (2) banded py-po; (3) massive ankerite-gl; (4) banded siderite-po; (5) banded sl-gl; (6) disseminated ankerite-sl-gl; (7)laminated qtz-sl; (8) laminated barite-qtz-sl-gl; (9) qtz-celsian laminae and (10) silicification. Zoning of these facies from proximal to distal is: upper body (1-3-5-7-8-9-10); lower body (2-4-6-8-9-10). Textural evidence suggests the stratiform bodies are composites of several processes: sedimentation with minor diagenetic recrystallization (1,5,7,8); sedimentation (?) with major diagenetic change (9,10); lateral hydrothermal infiltration of uncompacted sediment (2,4,6); and fracture controlled mineralization/alteration of earlier stratiform mineralization (1,2,3,4). The breccia body is composed of silicified fragments in a siderite-po matrix at depth grading upwards to py-po. The interpreted evolution of the South zone is: (a) venting of hydrothermal fluid to form the distal facies (8, ?9,?10)of the lower stratiform body; (b) formation of a fault scarp debris flow apron; (c)brecciation; lateral infiltration by hydrothermal fluids forming the proximal part of the lower stratiform body (2,4,6); venting of hydrothermal fluids forming the upper stratiform body (1,5,7,8,?9?10) and fracture controlled mineralization/alteration of early formed hydrothermal sediments of the upper stratiform body (1,3); (d) renewed fault scarp debris flows and (e) diagenetic recrystallization of the hydrothermal sediments.

MAGMA MIXING AND FRACTIONAL CRYSTALLIZATION OF MIOCENE VOLCANIC ROCKS IN THE CASTLE MOUNTAINS NORTHEASTERN MOJAVE DESERT

№ 71221

TURNER, Ryan D., Department of Geology, University of North Carolina, Chapel Hill, NC 27514

Three compositionally distinct groups of Miocene volcanic rocks in the Castle Mountains display evidence for both fractional crystallization and magma mixing or assimilation. From oldest to youngest this section contains: I) 100-150m of hbl-cpx-plag andesite flows and flow breccias with minor rhyolite ash-flow tuffs; II) 250-350m of mafic and silicic volcanic and hypabyssal intrusive rocks including basalt flows, rhyolite pyroclastic rocks and flows, and both diabase and rhyolite intrusions; III) voluminous andesitic flows and flow breccias in the adjacent Piute Range. K-Ar ages constrain eruption of group I and II rocks to between 18.0 and 12.8 Ma. Group III rocks are inferred to be younger based on field relations.

Major and trace element, Sr isotope, and petrographic data provide convincing evidence for magma mixing or assimilation in group II rocks, and fractional crystallization of group II basalt to produce group III andesites. Evidence for magma mixing or bulk assimilation includes: 1) mixing lines connecting end-member compositions on element-element and ratio-element plots; 2) resorbed quartz mantled by clinopyroxene in andesites; 3) Sr 87/86 values which correlate positively with silica. The geochemistry of group III rocks is consistent with evolution by fractional crystallization of ol+plag$\pm$cpx from group II basalt.

TEMPORAL TRENDS IN THE CHEMICAL EVOLUTION OF MEGACRYST-BEARING, SUBALKALINE-ALKALINE BASALTIC LAVAS FROM THE LUNAR CRATER VOLCANIC FIELD, NYE COUNTY, NEVADA

№ 64254

TURRIN, Brent D., U. S. Geological Survey, Menlo Park, CA 94025; RENNE, Paul R., Dept. of Geology and Geophysics, University of California, Berkeley, CA 94720; and DOHRENWEND, John C., U. S. Geological Survey, Menlo Park, CA 94025

New studies, including 19 whole-rock K-Ar dates and supporting paleomagnetic polarity measurements, on chemically analyzed samples permit a quantitative evaluation of chemical evolution in the Lunar Crater volcanic field (LCVF), a subalkaline-alkaline mafic magmatic system. The LCVF, approximately 65 km long by 15 km wide, extends northeastward across the Pancake and Reveille Ranges in Nye County, Nevada. Previous studies indicate spatial and temporal trends in the composition of LCVF basaltic lavas: older, more silica-rich lavas occur in the southern part of the field, and younger, relatively undersaturated lavas dominate the northern part. A detailed chronology for the LCVF indicates that the field has been active from at least 5.8 Ma to less than 0.13 Ma. During this period, a regular and continuous compositional evolution has occurred from subalkaline basalt containing approximately 8% normative hypersthene to basanite containing as much as 13% normative nepheline. In addition, the following components also increase through time: MgO (4 to 9%), CaO (8 to 10.5%), Cr (75 to 150 ppm), and Ni (30 to 160 ppm). Components that decrease with time are SiO_2 (48.5 to 44.5%), Al_2O_3 (17 to 14.5%), and Zr (260 to 160 ppm). K_2O, MnO, Na_2O, and P_2O_5 show no systematic variations throughout the eruptive history of the field. FeO^* appears to reach a maximum (13.5 %) in lavas that are intermediate in age (3-4 Ma). These compositional variations demonstrate a continuity of petrogenetic processes in the LCVF magmatic system over the past 6 Ma.

GSA Cordill

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WINSLOW, A. The disseminated lead ores of southeastern Missouri. Bulletin 132. 31 pp. 1896. 5c.

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Bull 430

RARE METALS.

NOTES ON THE OCCURRENCE OF CINNABAR IN CENTRAL WESTERN ARIZONA.

By HOWLAND BANCROFT.

During the spring of 1909 the writer made a reconnaissance of the economic geology of central western Arizona, examining, among other deposits, the well-known[a] cinnabar prospects near Quartzite. Because of the scarcity of this mineral in Arizona and the lack of any scientific literature on these occurrences, it has been thought advisable to publish a brief preliminary description of this district. Development work has not been very extensive in the vicinity, and the results of the investigation are interesting mainly from the standpoint of the mineralogist and geologist.

The deposit is located in the Plomosa mining district, Yuma County, Ariz., in the southern part of the Dome Rock Mountains, some 8 miles due southwest of Quartzite, at a place locally known as Cinnabar. Vicksburg, on the Arizona and California Railroad, is the most accessible station, and in an air line is just 28 miles a little north of west of Quartzite, the stage road between the two places being a few miles longer.

During the summer months the heat is more intense in this vicinity along Colorado River than in any other part of the United States. Timber for use as fuel and water for domestic purposes are obtained in the vicinity, though neither is found in great abundance.

The topography is characterized by broad, flat valleys with mountain ranges rising abruptly from the deserts. The Dome Rock Mountains have an average elevation of 1,500 feet, being approximately 1,000 feet above the surrounding country. The spur in which the cinnabar occurs forms the highest branch of the mountains, one of its peaks rising to an elevation of over 2,700 feet. The dip of

[a] These deposits, according to H. W. Turner, have been known for over thirty years. See The mineral industry during 1908, Quicksilver, p. 743.

the strata in the vicinity of the deposits is in general between 15° and 45° NE., and the strike is to the northwest, but there are many pronounced local changes in both dip and strike.

The rocks in this locality are arenaceous shales, presumably of pre-Cambrian age, which have been metamorphosed into quartz-mica schists. To the unaided eye most of them appear fine grained, with a satiny sheen, ranging in color from light silver-white through gray, brown, and red to a dark, almost black tone. The colors are due in general to the kind of mica and the amount of chlorite and epidote present and in part to the degree of oxidation of the contained iron. Mica is prominent, and although the crystals are not large they are conspicuous enough to be recognized without the use of a strong lens. Because of their abundance, the rocks are fairly soft, feel greasy, and are readily scratched with a knife blade. On microscopic examination of thin sections it is found that the general composition of the schists is the same; all of them contain much quartz, feldspar, and mica, part of the mica probably resulting from the decomposition of the feldspars. Epidote is present in almost all the schists, and some of them are highly chloritic. Near the veins the wall rocks show calcite and epidote in abundance, with some zoisite.

The country rock in which the deposit worked by the Colonial Mining Company occurs is unlike most of the schists in the vicinity in that it contains small crystals of magnetite scattered throughout the rock in large quantities.

In a prospect owned by the French American Mining Company, located a short distance from the one just mentioned and in a similar series of rocks, there are, associated with pure white quartz, small quantities of tourmaline, gold, and copper glance, all except the last apparently of primary origin. Siderite associated with gold was noted, and cinnabar is said to occur with the tourmaline in the quartz, although none was to be seen at the time of the writer's visit to the property. The vein strikes N. 55° W. and dips about 15° SE., cutting directly across the schists, which dip 20° to 30° N. 60° E. A variety of the schist next to the vein is highly impregnated with tourmaline; another schist in the vicinity is extremely silicified, and very impure limestones occur near by. The association in this vein of primary quartz, tourmaline, and gold is indicative of deposition under great heat and pressure.

The vein worked by the Colonial Mining Company strikes S. 55° E. and is practically perpendicular. It occupies a fault zone which shows intense brecciation of the country rock. The gangue is highly siliceous and is cut by small stringers of calcite and siderite, the former occurring in places in conspicuous quantities, but being entirely absent in the croppings of the vein, where silica with a little black oxide of manganese forms the ledge. In width the vein varies from a few

inches to several feet; parallel breccia planes of small magnitude, which accompany the main fault in places, tend to widen the deposit. The ore shoot in the property is said to pitch to the southeast.

Cinnabar is very sparsely distributed throughout the gangue and is supposed to be found mainly on the northeast side of a very plastic, iron-stained gouge which has resulted from the extreme movement in the fault zone. The ore in places is conspicuously marked by the green carbonate of copper, and Turner[a] has reported gold and silver in ores from this deposit. The presence of magnetite near the vein is a feature worthy of note; its alteration has probably formed the red and yellow stains so common in the brecciated vein material and gouge.

Considering the facts that late eruptions are absent in the vicinity, that the deposit is entirely oxidized, that copper stains are prominent, and that values of gold and silver occur in the vein, it seems highly probable that the cinnabar has been derived from mercurial tetrahedrite.[b]

The Colonial Mining Company has a vertical shaft about 300 feet deep with three levels, constituting in all some 1,500 feet of development work.[c] During parts of 1908 a 30-ton Scott tile furnace was operated on the property, and the recovery of a small amount of mercury was reported.[d] High absorption of the metal by the bricks of local manufacture used in the condensers is reported by the management to have so lowered the percentage extracted that metallurgical operations have not proved profitable.

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[a] Turner, H. W., The mineral industry during 1908, Quicksilver, p. 743.

[b] For this suggestion pertaining to the origin of the cinnabar the writer is indebted to Mr. Waldemar Lindgren, who has noted the occurrence of this mineral in gold-quartz veins of the Granite district, Blue Mountains, Oregon, containing also pyrite, chalcopyrite, and arsenopyrite. See The gold-belt of the Blue Mountains of Oregon: Twenty-second Ann. Rept. U. S. Geol. Survey, pt. 2, 1901, p. 683.

[c] These figures are only approximate.

[d] McCaskey, H. D., The production of quicksilver: Mineral Resources U. S. for 1908, pt. 1, U. S. Geol. Survey, 1909, p. 692.

USBM IC 8252

TABLE 16. - Arizona mercury properties

Reported property name	County	Reported location	Production, flasks	Development	Mode of occurrence (mineralization, cinnabar unless otherwise noted)	Reported owners	References in bibliography
MAZATZAL MOUNTAINS DISTRICT							
Blue Bird (Red Bird, Tonto).	Gila....	Sec 12, T 7 N, R 9 E.	Occurrence.	200-foot adit and surface pits.	Quartz veinlets in schist.	C. O. Carlson..	4
Gold Creek group (Northern Light, Bernice No. 1, Big Tunnel).	do....	Sec 3, T 7 N, R 9 E.	do....	Short adits and shallow open cuts.	Quartz stringers in schist.	Robert McGhee..	4
Irl group (Bowman, Robbins, Cornucopia).	Maricopa	Sec 7, T 7 N, R 9 E.	Small.....	1,500 feet of underground workings.	Quartz veins in schist.	Irl Conway.....	4
Mercuria group.....	Gila....	Sec 3, T 7 N, R 9 E.	Occurrence.	Short adit.....	do.....	Dick Robbins...	4
National (Arizona Sunflower, Arizona Quicksilver, Sunnyside).	Maricopa	Sec 12, 13, T 7 N, R 8 E.	1,278	Extensive workings.	Veinlets in altered schist.	Allen, Allen, and Ross.	4, 5, 7
Oneida group (Ward, L & N).	Gila....	Sec 18, T 7 N, R 9 E.	Small.....	1,700 feet of underground workings.	In quartz veins in quartzite.	Tom Bolick.....	4
Ord group.....	do....	Sec 3, T 7 N, R 9 E.	2,901	Extensive underground workings.	Cinnabar, native mercury, and termatite along shear zones in altered phyllites.	Vance Thornburg	2, 4, 7
Pine Mountain group (Turnbull).	Maricopa	Sec 4, T 7 N, R 9 E.	2,341	Small open pit and 28-foot shaft.	As disseminations in brown schist.	George Cline...	4
Rattlesnake group..	Gila....	Sec 10, T 7 N, R 9 E.	Occurrence.	Test pits and trenches.	Veinlets in silicified zones in schist.	Ed and Irl Conway.	4
DOME ROCK MOUNTAINS DISTRICT							
Cinnabar group.....	Yuma....	Sec 4, T 2 N, R 20 W.	Over 150...	640-foot shaft, seven levels, inaccessible.	Filling in fault breccia in schist.	Jack Fisher....	4
Carlson claims.....	do....	Sec 31, T 3 N, R 20 W.	Occurrence.	Unknown.....	Unknown.....	C. O. Carlson..	-
French-American group.	do....	Sec 6, T 3 N, R 20 W.	do....	do.....	In association with tourmaline and quartz.	Unknown.....	4
[illegible] prospect.	Maricopa	[illegible] R 3 E.	[illegible]	Test pits.....	In foliations of schist.	Unknown.....	-
Eureka.....	do....	Sec [illegible] T [illegible] N					

Copperstone - La Paz County

Mile #795 T 6N R 19W Sec 6, 7, 18, 19, 21
T 6N R 20W Sec 1, 2, 11, 12, 13, 14, 15,
(NE on T6NR20W) 22, 23, 24, 25, 26

AMOCO (Std. of Indiana) - owes Charles Ellis claims

Mr. Don Patch owns the claims.
Graham Kelsey is project geologist

7/13/84 - AMOCO has 10 M/M Tons @ .06 opt Au
blacked out.

TO: Mines files, & JES

FROM: John W. Welty

RE: Copperstone Property, Moon Mountains

The following notes are the result of a phone conversation with Mr. Bill Burton of AMOCO Minerals Co., Englewood, CO (303-740-5638).

The property is on the block for sale as of July, 1985. Established reservese are set at 4 million tons of 0.08 oz/T Au. AMOCO feels that the orebody is too small for exploitation and therefore attempting to sell the reserves. Bureau personnel have been invited to attend the field trip to the property in July,1985 conducted for the benefit of potential buyers.

The deposit consists of a tabular ore zone dipping 30o averaging 30' in thickness, locally as thin as 20' and as thick as 130'. The ore zone is brecciated, fractured and well quartz veined. The ore zone has the same dip as hosting Mesozoic ash-flows. The brecciated zone is also spatially associated with listric normal fault structures. 1.5 to 2 miles to the south of the property a detachment fault(?) is visible at Copper Peak at the north end of the Dome Rock Mountains. NE-trending high-angle structures cut the orebody and displace it locally; they are thought to be Basin and Range structures. Specular hematite is found along the listric faults, but not occurring with the ore. A moderatley well-developed seritic alteration envelope is associated with the ore zone. Adualria is also found in some of the quartz veining (see dates below).

AMOCO drilling consisted mostly of rotary holes, so that lithologic identification was difficult. The drilling never encountered identifiable lower plate lithologies, although the deepest hole (no depth given) encountered a 300-400' thick section of carbonates beneath the ore zone. No intrusive rocks were recognized in the drilling or surficial mapping.

Two dates by Geochron give equivocable results. An adularia K-Ar date gave 48 mybp, and a K-Ar sericite date yielded a 52 mybp age.

Several modes of genesis are possible: 1) gold ores developed in response to detachment faulting; 2) gold-rich breccia pipe occurrence of early Tertiary age possibly related to a pluton at depth; or 3) a Jurrassic hot springs occurrence given the conformable nature of the ore zone. Possibility two seems most likely at present considering the age dates.

No. 22225 • Legal Ruled • Canary

Copperstone

4 million tons @ 0.086 @ 7:1 stripping ratio
2 " " @ 0.08 @ 3:1 " "

70% leachable

Existing deal is a 5% NSR toward a $7MM payout

The two people that are working on it are

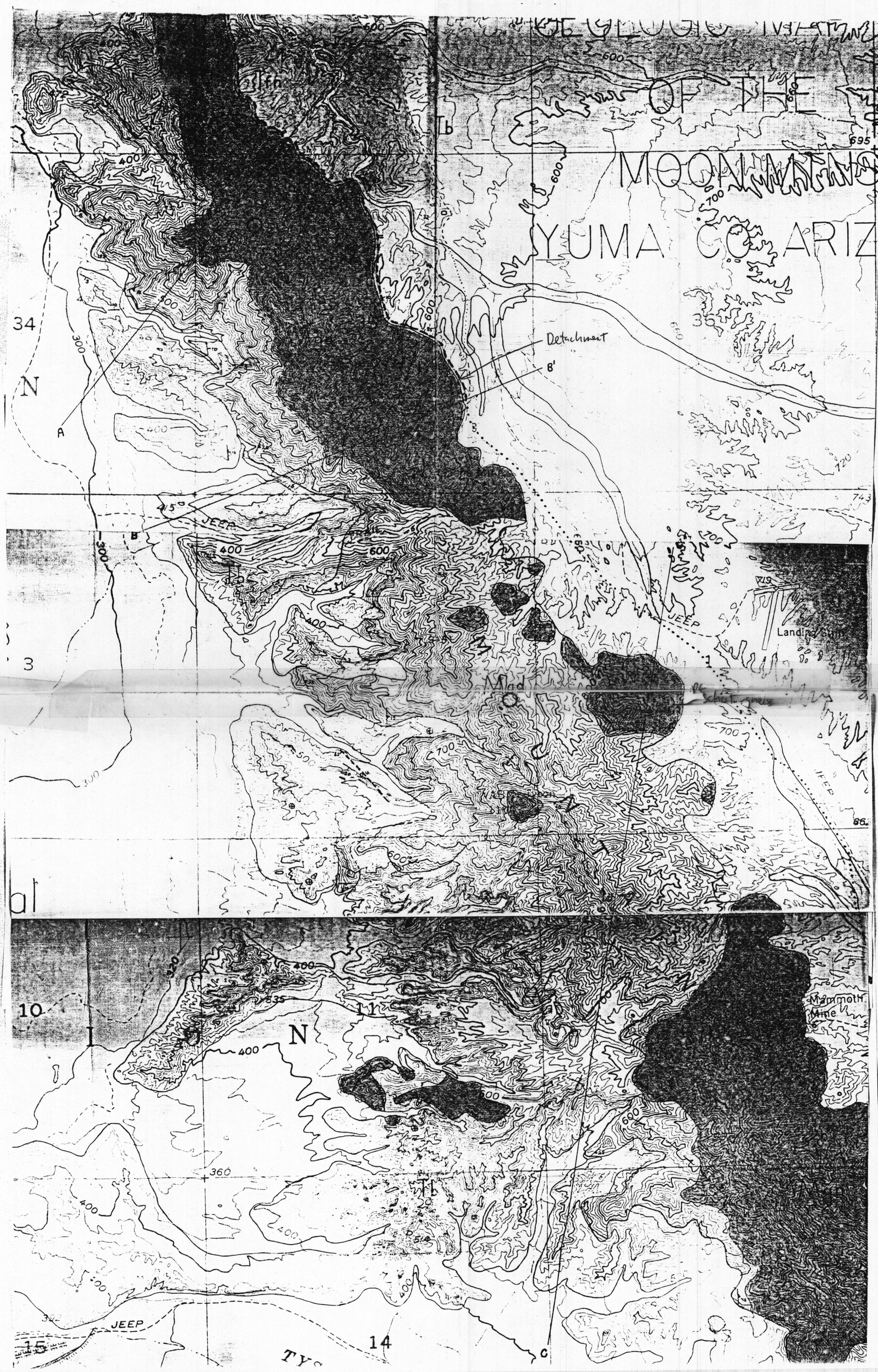
Jim Matlock + Bill Burton - They are also

working on an area SE of Mesquite across the river in

the Dome Rocks Due east of Yuma. - This is Maynard's ground they just staked over, N. end of Gila Vistas.

They wanted $5MM over three years then elect

to dilute to a 10% Net Profits.



Moon Path 7½'
T6N R21W
Senior Thesis by James Baker
SDSU
Spring '81
-all on Indian Res

Mgd - Mes. adamellite
Tfn - Tert fanglomerate
Tb - Tert Basalt

NICOR MINERAL VENTURES

One of the NICOR basic energy companies

2659-G Pan American Freeway, N.E. Albuquerque, New Mexico 87107 Phone 505 344 7803

April 26, 1984

Mr. Don French
Westworld Inc.
4044 One Shell Plaza
Houston, Texas 77002

Dear Mr. French,

I wish to thank you for giving NICOR Mineral Ventures the opportunity to evaluate your Sugarloaf Peak and Hillside prospects. At this time these two prospects do not meet the requirements of NICOR, although both properties do show some promise and should be more fully evaluated. Please keep us informed as to the significant results from your further exploration of these prospects.

Again, I want to thank you and your staff for their assistance. If Westworld has now or in the future any additional properties which you feel may be of interest to NICOR please let us know.

Sincerely yours,

Gary A. Parkison

Gary A. Parkison
District Geologist

P.S. I have forwarded our copy of the Sugarloaf prospect report to Mr. David Spatz with Rio Algam in Golden, Colorado.

Don French
Westwoods
Houston

(713) 237-0401

- Bob Holt - in Houston
- Jim Allen - Tucson -

Bob Holt - 3/14/84

Jim Aller - Harrison Mattson now in Quartzsite
stay in Blythe - Tropic Inn

Jim Aller - Tucson - (602) 825-9681

At Hillside - go north - SE side of road
big shear zone ~~5,00~~.
.6 WT, .4 oz Au
lots of .04 - .08

~~northeast~~
NW - SE trend

- Ark
- Mr Sweet
- Westworld

H.

Wed Morn. - Jan Krason - 9AM.

(Tues the 20th)

$5000/mo + expenses

=Pincock Allen, Holt=

- Bob Holt - West world

- Jim Allen - Geologist

{ - Hillside - Bagdad Area -
Mine
- Shear Zone -
- hi soil, rock chip -
- }

Offering property at tons &

10,000 K

2½-3% NSR

Work Commitment - $30,000

Expired 1984, prior to Sept. 1

While letter shows senior intent to consummate agreement bet. Nicor ~ ~ ~
subject to approval by management, & agreeable and contract.

OCTOBER 1983

PHASE I DRILL PROGRAM

AND

EVALUATION OF GOLD-SILVER POTENTIAL

SUGARLOAF PEAK PROJECT

QUARTZSITE, ARIZONA

Prepared for:

WESTWORLD INC.
4044 One Shell Plaza
Houston, Texas 77002

NORMAN E. DAUSINGER, JR.

9331 E. Magdalena Street
Tucson, Arizona 85710
(602) 296-5993

December, 1983

SUGARLOAF PEAK PROJECT, QUARTZSITE, AZ

TERMS - WESTWORLD GENERALLY IS SEEKING PARTNER THAT WILL SPEND SUFFICIENT FUNDS TO EXPLORE, DEVELOP AND BRING PROPERTY INTO PRODUCTION IN AS SHORT A PERIOD OF TIME AS POSSIBLE WITH A TARGET OF 5 YEARS MAXIMUM.

1. THREE YEAR OPTION TO EARN A 25% INTEREST BY EXPENDING THE FOLLOWING MINIMUM AMOUNTS:

   YEAR ONE - $500,000
   YEAR TWO - $1,000,000
   YEAR THREE - $1,500,000

2. PARTNER MAY TERMINATE INTEREST IN VENTURE AT END OF YEAR ONE AND MINIMAL EXPENDITURE OF $500,000. THE 25% INTEREST IS ONLY EARNED BY FULL EXPENDITURE OF $3,000,000 WITHIN THE 3-YEAR INITIAL PERIOD.

3. ADDITIONAL 25% INTEREST MAY BE EARNED BY BRINGING PROPERTY INTO PRODUCTION AT NO ADDITIONAL OUT-OF-POCKET EXPENDITURE BY WESTWORLD.

4. DURING INITIAL PRODUCTION, WESTWORLD WILL CONTRIBUTE 80% OF ITS 50% EARNINGS FROM THE PROPERTY TOWARD PAYMENT OF 50% OF THE COST REQUIRED TO BRING THE PROPERTY INTO PRODUCTION IN EXCESS OF THE $3,000,000 EXPENDITURE IN ITEM 1.

5. PARTNER CAN BE OPERATOR.

6. COMMITTEE COMPOSED OF REPRESENTATIVES FROM EACH COMPANY WOULD BE SET UP TO GUIDE THE OPERATION.

NED.

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5	ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-5
6	ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-6
7	ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-7
8	ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-8
9	ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-9
10	ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-10

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2 SUGARLOAF PEAK FROM VICINITY OF WW-1

3 VIEW OF DRILL SITE WW-3

4 DRILL SITES WW-2 AND WW-9

5 SUGARLOAF PEAK FROM DRILL SITE WW-3

6 DRILL SITE WW-10

7 GRAPHIC GOLD ASSAY LOGS, WW-2, WW-9, AND WW-4

8 GRAPHIC GOLD ASSAY LOGS, WW-8, WW-1, WW-5, AND WW-6

9 GRAPHIC GOLD ASSAY LOGS, WW-3, WW-7, AND WW-10

10 GRAPHIC SILVER ASSAY LOGS, WW-8, WW-1, WW-5, AND WW-6

11 GRAPHIC SILVER ASSAY LOGS, WW-2, WW-9, AND WW-4

12 GRAPHIC SILVER ASSAY LOGS, WW-3, WW-7, AND WW-10

13 NORTHWEST-SOUTHEAST CROSS SECTION, SUGARLOAF PEAK AREA

14 SOUTHWEST-NORTHEAST CROSS SECTION, SUGARLOAF PEAK AREA

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Appendix

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B PULP CHECK ASSAY CERTIFICATES

C FLOTATION TEST LOG SHEET

D MINERALOGICAL REPORT

E BASE METAL DISTRIBUTION REPORT, KERR-McGEE CORPORATION (1971)

F EXPLORATION POTENTIAL REPORT, KERR-McGEE CORPORATION (1973)

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Appendix

G DRILL HOLE LOGS, KERR-McGEE CORPORATION (1971-1973)

H MAPS - KERR-McGEE CORPORATION (1973):
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- Lead Geochemical Map
- Molybdenum/Lead Ratio Map

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Plates

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2* RELATIONSHIP OF MAJOR GEOCHEMICAL ANOMALIES, SUGARLOAF PEAK PROJECT

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4* GOLD GEOCHEMICAL MAP, SUGARLOAF PEAK PROJECT

(*in pocket)

PHASE I DRILL PROGRAM
AND
EVALUATION OF GOLD-SILVER POTENTIAL

SUGARLOAF PEAK PROJECT
QUARTZSITE, ARIZONA

CONCLUSIONS AND RECOMMENDATIONS

Review of recent data and interpretation of previous accumulated data with regards to precious metal potential at the Sugarloaf Peak Project permits the following conclusions:

1. The Phase I drilling program, consisting of 10 drill holes spaced 700 to 2,000 feet apart, to depths of 250 feet, indicates widespread, disseminated gold-silver mineralization associated with a phyllic alteration zone that is coincident to the surface gold geochemical anomaly and possibly with a third dimensional zinc anomaly to depths of 500 plus feet, as defined by older drill hole information. The target area of interest also appears to be associated with a structural feature consisting of an elongate dome trending northeasterly through the phyllic alteration zone (Plates 1, 2, 3, and 4; Figures 13 and 14; and Appendices A through H).

TABLES

2. The drilling program indicated about 100 million tons containing 1.5 million ounces of gold and 25 million ounces of silver within this zone. At present metal prices, this translates into a gross value per ton that is equivalent to, or in excess of, the value per ton of material currently being processed in most of the porphyry copper mines in the southwestern United States.

3. At this early stage of exploration, results are inconclusive as to the economic potential of the project. Future exploration efforts will probably require 30 to 50 additional drill holes to greater depths for preliminary evaluation of economic potential.

4. Holes WW-1, WW-2, and WW-5 suggest a gradual increase in gold values with depth. Holes WW-2, WW-4, and WW-9 suggest a modest enrichment of silver at and below the oxide-sulfide zone (Figures 7, 8, and 11).

5. In the vicinity of holes WW-2 and WW-9, a near surface zone of gold-silver mineralization is indicated with a gold grade of about 0.03 ounce/ton. Closer spaced drilling in this area may develop sufficient tonnage that could be amenable to heap/leach processes. Similar ore grades are currently being treated at the Zortman and Landusky properties in Montana (Engineering & Mining Journal, August 1983, p. 21) and at Tenneco's Manhattan Project in Nevada (Engineering & Mining Journal, September 1983, p. 184).

6. Considering present day modeling concepts, that is, argillic-bleached alteration zones that form a halo around and a cap above precious metal zones, the inference is

that additional potential may exist below the argillic alteration zone and, in particular, to the north and southwest of Sugarloaf Peak **(Plate 3)**.

7. Logs of older holes S-1, SL-4, and SL-6 indicate favorable alteration up to depths of about 1,200 feet in the phyllic alteration zone **(Plate 1 and Appendix G)**.

8. Holes WW-3, WW-7, WW-10, and SL-15 appear to limit the area of interest to the north and northwest. Propylitic alteration was penetrated at shallow depths in these holes **(Plate 1)**.

9. Considering the extent of the area of interest and apparent widespread precious metal content, if future drilling continues to indicate relatively low-grade mineralization, in-situ mining methods should be given consideration.

Future exploration efforts should focus on the southern two-thirds of the phyllic alteration zone **(Plate 3)**. The following recommendations are made:

1. Detailed geological mapping, scale 1 inch = 200 feet, within the phyllic zone of alteration and peripheral areas.

2. Deepen holes WW-1, WW-2, and WW-5 to at least 500 feet.

3. Drill a series of approximately 10 holes to 500-foot depths, 400-foot spacing in the east one-half of SP claims 63, 64, and 65 **(Plate 1)**.

4. Evaluate the results for subsequent exploration planning.

5. Continue to collect basic groundwater data during drilling.

Using similar drilling methods as in the Phase I drilling program, this secondary phase would cost on the order of $120,000, including roadwork, drill site preparation, supervision, drilling, assaying, and field expenses.

PHASE I DRILL PROGRAM
AND
EVALUATION OF GOLD-SILVER POTENTIAL

SUGARLOAF PEAK PROJECT
QUARTZSITE, ARIZONA

INTRODUCTION

The Sugarloaf Peak project is located in west-central Arizona approximately six miles west of Quartzsite, Arizona. Westworld Inc.'s (Westworld) holdings consist of 84 lode claims within T. 4 N., R. 20 W., S½ of sections 33 and 34, T. 3 N., R. 20 W., sections 3 and 4, La Paz County, Arizona. Access to the claim area is less than 0.5 miles southeast of the Dome Rock Interchange, Interstate 10 **(Plate 1)**.

The area is part of the Middle Camp - Oro Fino Mining District where past activity has mainly been confined to sporadic and generally unsuccessful dry-washing of alluvial materials for placer gold (Keith, 1978).

In the past, the area has drawn the attention of a number of companies as a potential deep porphyry copper deposit. During 1962 through 1971, Congdon & Carey drilled more than 14,500 feet of rotary and diamond drill holes in the general area, including 19 holes within the present claim block **(Plate 1; Appendices E, F, and G)**. During 1971-1973, Kerr-McGee Corporation (Kerr-McGee), Oklahoma City, Oklahoma, obtained holdings in the area, compiled the available Congdon & Carey data and undertook extensive geological mapping and geochemical sampling. Precious metal potential in

the area was virtually ignored during this interval, apparently due to market conditions at the time.

Subsequent review of Kerr-McGee's voluminous data on the area by the author, along with occurrences of placer gold and the characteristics of the alteration patterns, clearly suggested precious metal potential in the form of a "porphyry gold deposit". Review of the land status indicated that the area was generally open for staking and the claims were staked on behalf of Westworld in November 1981.

Initial field investigations were undertaken in January-February 1982, and consisted of geological mapping, geochemical sampling and analysis, and radiometric geophysical readings (Lundin, 1982a).

Beginning with Gold Fields Mining Corporation in March 1982, the project has drawn the attention of numerous mining companies. Most of these firms have collected rock chip geochemical samples for analysis. The data, totaling nearly 1,000 samples, are summarized on **Plates 2** and **4** and indicate an anomalous gold zone approximately 7,000 feet by 3,500 feet trending northwest across the claim block.

In April 1983, Westworld undertook a Phase I drilling program consisting of 10 widespread percussion holes to 250-foot depths for the purpose of obtaining subsurface precious metal data at shallow depths within the anomalous gold zone. The drilling program indicated disseminated gold-silver values throughout the target zone, but was inconclusive with respect to economic potential.

Areas of existing lode conflicts within the claim block are shown on **Plate 4**.

This report is an attempt to summarize and incorporate all previous available data into an evaluation of precious metal potential within the project area.

PHASE I DRILLING PROGRAM

Phase I drill site selection was based upon reinterpretation of accumulated data, including material from Congdon & Carey and Kerr-McGee during the period 1962-1973 when the Sugarloaf Peak area was tested as a potential deep porphyry copper target **(Appendices E, F, G, and H)**. Emphasis in selecting sites was placed upon alteration patterns in relation to possible disseminated gold mineralization, descriptive core logs by Kerr-McGee of Congdon & Carey drill holes S-1, SL-4, S-2, S-3, SL-5, and SL-15, and surface geochemical rock chip sampling.

The original intent was to drill 10 to 15 holes to 500-foot depths. Budget limitations curtailed the program to 10 holes to 250-foot depths spaced 700 to 2,000 feet apart **(Plate 1)**.

Ventures Drilling Company (Ventures), Tucson, Arizona, was contracted to undertake the drilling program using percussion methods. Hole diameter was 6-1/2 inches and two 10-pound samples were collected at five-foot intervals using Ventures' sample splitting procedures on site. One sample was sent to Jacobs Assay Office (Jacobs) in Tucson for gold-silver analysis; duplicates are in storage at Westworld's facilities at Old Tucson. In addition, character samples for each five-foot interval were collected in plastic vials for megascopic examination.

The drilling rig was mobilized on April 18, 1983 and drilling was completed by May 1, 1983.

By mid-May, assay results had been received for all the holes from Jacobs. Rejects from the samples are in storage at Jacobs' facilities. Subsequently, 51 pulp samples were selected for check assays at Skyline Labs, Inc. (Skyline), Tucson, Arizona. Assay results, including check assays for drill holes WW-1 through WW-10 are given in **Tables 1 through 10**.

Assay certificates from Jacobs and Skyline are incorporated in **Appendices A** and **B**.

In general terms, the gold assays by Jacobs and Skyline compared favorably; however, silver assays were completely divergent. Jacobs detected an average of about 0.30 ounces/ton silver while Skyline's comparitive assays were less than 0.01 ounces/ton silver. As a result, Jacobs volunteered to run a flotation test on a composite sample from hole WW-10 to check the silver content. The check assay confirmed a silver content of about 0.25 ounces/ton **(Appendix C)**.

Using Jacobs' assay results and a cutoff of 0.01 ounce gold/ton, a brief statistical analysis of the drilling-assay results reveal the following:

HOLE NUMBER	GOLD CONTENT (ounce/ton)	SILVER CONTENT (ounce/ton)	THICKNESS (feet)
WW-2	0.0198	0.221	105
WW-9	0.0195	0.338	145
WW-8	0.0155	0.301	205
WW-1	0.0146	0.281	105
WW-4	0.0129	0.225	60
WW-5	0.0125	0.267	130
WW-7	0.0109	0.256	40
WW-3	0.0107	0.225	30
WW-10	0.0105	0.547	75

While the precious metal contents above do not translate into ore, the superficial, wide-spaced initial drilling program does indicate a gold-silver enriched system containing about 1.5 million ounces of gold and 25 million ounces of silver in a volume of about 100 million tons. The gross value per ton is equivalent, or in excess of, the present day per-ton value of most porphyry copper mines in the southwestern United States.

Holes WW-2 and WW-9 suggest that closer spaced drilling in the general area may indicate a near-surface zone of moderate tonnage amenable to heap-leaching. In addition, holes WW-2, WW-5, and WW-1 show increasing gold values with depth and should be deepened (all holes were adequately plugged so that future re-entry could be facilitated).

Due to budget restraints, assays were obtained from "one-assay ton" samples. In the future, because of the spottiness of gold in nature, assays should be done in the range of up to "five-assay ton" samples.

GEOLOGY

In general, the rocks exposed within the area of interest are relatively homogeneous and are field-identified as meta-rhyolites/meta-quartz porphyry with various textural, structural, and alteration overprints. Preliminary mineralogic studies confirm this conclusion (Dudas, 1981; **Appendix D**).

Kerr-McGee's core logs of the holes within the area generally classify the rocks as schist and they correlate the metamorphosed volcanic rocks with Precambrian Yavapai schist. Previous work in the area by the Arizona Bureau of Mines considered the schist to be of Cretaceous age **(Appendices E and F)**.

Gulf Mineral Resources Co.'s work in the area classifies the rocks in the Sugarloaf Peak area as schist of Tertiary-Cretaceous age that are cataclastically derived from older units, and locally underlain by an annealed low-angle fault surface.

Lundin (1982b) classifies the bedrock units as part of an intermediate-felsic extrusive volcanic system and identifies an arc-shaped zone of vent or moat breccias southwest of Sugarloaf Peak **(Plate 3)**.

The siliceous cap rocks that generally occur at higher elevations in the Sugarloaf Peak area may be remnants of hot spring activity (siliceous sinter) that were subsequently recrystallized during metamorphism.

The sequence of geologic events is tentatively proposed as follows:

- Volcanism, possibly with associated hot spring activity.
- Low-grade metamorphism-cataclasis.
- Doming; fracturing.
- Alteration and mineralization.
- Partial collapse of the domal feature.
- Regional faulting.

Locally, the units are partially covered by Quaternary alluvial materials.

The Sugarloaf Peak area represents a rather unique geologic setting in comparison to the surrounding area and literally stands out like a "sore thumb" on aerial photography.

ALTERATION - STRUCTURE

Previous work by Kerr-McGee (Ahern, 1973; **Appendix F**) proposed that the Hancock Wash area (potassic alteration zone with copper mineralization located in the center of section 31, T. 4 N., R. 20 W., about 2.5 miles west of Sugarloaf Peak) is the lower portion of a once-vertical porphyry copper system now rotated 90 degrees to the east, thus making the Sugarloaf Peak area the upper part of a horizontal porphyry system. Recent interpretations tend to discount this hypothesis. The two areas are considered to be two separate systems with the Hancock Wash area being a porphyry copper type occurrence and the Sugarloaf Peak area being a "porphyry" gold type occurrence.

Fault interpretations as developed by Kerr-McGee are considered to be essentially valid with the exception being that the Sugarloaf Peak block (NW¼ section 3) is interpreted as being elevated in respect to the block to the northwest. This is a reversal of Kerr-McGee's earlier interpretation **(Plate 3; Appendix H)**. These post-alteration/mineralization faults appear, in part at least, to have developed near or coincident to alteration boundaries and may be a rejuvenation of older, structurally weak zones that existed during volcanism and doming **(Plate 3)**.

The most significant structure within the zone of interest is a northeast-southwest elongate dome produced by vertical or near-vertical tectonics. Tension fractures, now filled with quartz, developed during up-arching, one set being longitudinal (parallel to the northeast-southwest axis of uplift) with a weaker set of cross-joints developed normal to the axis **(Plate 3; Figures 13 and 14)**.

Regional foliation strikes northwest, generally dipping to the north, and is considered to be parallel to original bedding. A reversal of the dip is present in the northern part of the area and foliation is variable

within the phyllic zone of alteration (in essence, the central part of the dome) and generally is relatively flat or dips gently. This is attributed to the apparent passive nature of the doming and subsequent partial collapse of the dome. Foliation is frequently reported to be normal to the core axis in many of the prior holes within the domal structure **(Appendix G)**.

Recent shallow holes drilled by Westworld (WW-3, WW-7, and WW-10) and review of Kerr-McGee's logs of prior holes, S-2, S-3, SL-4, SL-5, SL-6, and SL-15, indicate a plunge of the favorable phyllic alteration zone to the south-southeast in the general direction of Sugarloaf Peak. The surface alteration patterns suggest a similar structural trend in that the argillic zones are relatively narrow to the north and wide in the apparent "hanging wall" zone to the south **(Plate 3)**.

The vent-breccia feature southwest of Sugarloaf Peak is coincidental to several geochemical samples high in gold and perhaps reflects leakage from the gold-rich system at depth **(Plates 2 and 3)**.

The overall gold geochemical anomaly coincides with the phyllic alteration zone. Kerr-McGee logs of prior holes within the phyllic alteration zone indicate favorable alteration in hole S-1 to 1,200 feet, in S-2 to about 300 feet, in S-3 to about 600 feet, in SL-4 to perhaps total depth of 790 feet, and in SL-6 to total depth of 696 feet, although SL-6 is considered to have been collared in phyllic alteration and subsequently penetrated a fault zone and argillic alteration below the fault **(Plates 1, 2, and 3; Appendix G)**.

MINERALIZATION

The nature of precious metal mineralization at Sugarloaf Peak is presently unknown but is assumed to be associated with pyritic mineralization and silicification within the phyllic zone of alteration **(Plate 3)**. Previous work by Kerr-McGee, including analysis of older drill holes, define a zone within the phyllic alteration that contains in excess of 1,000 ppm (parts per million) zinc from the surface to at least a depth of 500 feet that may be associated with precious metal mineralization (logs S-1, SL-4, SL-6; **Appendix G**). Pyrite occurs along schistosity planes, in quartz veins and veinlets, and as disseminations.

The Arizona Bureau of Mines reports that the Leadville Mine, located in the southeast corner of Sugarloaf Peak Claim 64, produced 360 tons of ore during 1947-1948 averaging about 17 percent lead, 0.7 percent zinc, 0.5 ounce silver/ton, and 0.06 ounce gold/ton. Minor occurrences of bismuth, antimony, mercury, and molybdenum are also reported in the area (Keith, 1978).

GEOCHEMISTRY

Geochemical sampling data are illustrated on **Plates 2** and **4**. In addition, copies of Kerr-McGee's geochemical maps (1973) are included in **Appendix H**.

The mercury anomalies shown on **Plate 2** are approximately located based on a verbal description by Gulf Minerals personnel in late 1982.

The following tabulation summarizes the geochemical surface sampling results since recognition and acquisition of the area as a possible precious metal target in November 1981:

FIRM	TOTAL SAMPLES	ROCK CHIP SAMPLES	SOIL SAMPLES	REMARKS
				Samples analyzed for:
Westworld	226	96	130	Au - range <.02 to 3.33 ppm; 5 samples of 1.40, 1.75, 1.90, 2.80, and 3.33 ppm. Ag - range <.20 to 24 ppm. As - range <10 to 110 ppm. Zn - range <5 to 1,800 ppm.
Felmont	59	59	---	Au - range .005 to 3.50 ppm; 5 samples of 1.05, 1.55, 2.70, 3.10, and 3.50 ppm. Ag - range 0.2 to 12.0 ppm. As - range 2 to 50 ppm. Hg - range 0.010 to 1.44 ppm.

FIRM	TOTAL SAMPLES	ROCK CHIP SAMPLES	SOIL SAMPLES	REMARKS
Newmont	164	164	---	Au - range 0.01 to 10.0 ppm; 12 samples of 1.10, 1.10, 1.20, 1.30, 1.40, 1.90, 2.00, 2.30, 2.30, 2.60, 6.60, and 10.0 ppm. Cu - range 2 to 990 ppm (one sample).
AMAX	58	43	15	Au - range <.01 to 5.92 ppm; 6 samples of 1.97, 2.15, 3.48, 3.65, 4.90, and 5.92 ppm. Ag - range <.2 to 5.5 ppm. Hg - range 0.1 to 1.6 ppm. Sb - range <0.5 to 6.0 ppm. As - range <2 to 178 ppm.
Utah	286	286	---	Au - range <.01 to 6.44 ppm; 9 samples of 1.36, 1.52, 1.68, 2.19, 2.23, 2.43, 3.50, 3.74, and 6.44 ppm. Ag - Range <.2 to 9.4 ppm. As - range <1 to 175 ppm. Sb - range <1 to 25 ppm. Bo - range <10 to 30 ppm. Bi - range 1 to 14 ppm.
Atlas	36	36	---	Au - range <.02 to 3.70 ppm; 3 samples of 1.10, 1.30, and 3.70 ppm.
AMOCO	168	168	---	Au - range 5 ppb to 3,860 ppb; 5 samples of 1,100, 1,100, 1,650, 1,730, and 3,860 ppb.

FIRM	TOTAL SAMPLES	ROCK CHIP SAMPLES	SOIL SAMPLES	REMARKS
AMSELCO	26	26	---	Au - range TR to 0.227 ounce/ton; 3 samples of .025, .055, and 0.227 ounce/ton. Ag - range <.05 to 0.50 ounce/ton.

The most significant anomalies in order of importance are:

1. An extensive gold anomaly trending northwesterly across the claim block from the vicinity of Sugarloaf Peak. Values in excess of 1.0 ppm tend to generally cluster in the southern, western, and eastern portions of the overall anomaly and also coincide with the phyllic zone of alteration **(Plates 2, 3, and 4)**.

2. A third dimensional zinc anomaly in excess of 1,000 ppm to a depth of at least 500 feet, as defined by Kerr-McGee's logs of prior holes S-1, SL-4, and S-6 **(Plate 1; Appendix G)**. This is coincident to both the zone of higher gold geochemical values and the zone of phyllic alteration **(Plates 2, 3, and 4)** and suggests a possible gold-zinc association.

3. A lead anomaly in excess of 500 ppm on the southern and southwestern flank of Sugarloaf Peak, as determined by Kerr-McGee in 1973 **(Plate 2; Appendix H)**. This may represent lateral and/or vertical metal zoning.

4. A molybdenum anomaly in excess of 100 ppm located along the northern rim of the broad gold anomaly **(Plate 2)**.

GROUNDWATER DATA

A Soiltest Sounder was utilized to measure depth to water below land surface in several of the exploration holes upon completion to planned depths of 250 feet. Measurements obtained were as follows:

HOLE NO.	DEPTH TO WATER (feet)
WW-3	107.0 - 113.0
WW-10	119.5 - 120.0

During drilling, the drill operator estimated that holes WW-4, WW-7, and WW-10 were making water in the range of 10 to 30 gallons per minute. Holes that were "wet" included WW-1, WW-3, WW-4, WW-7, and WW-10.

Basic water data in the vicinity of the project were found to be negligible in the Arizona Department of Water Resources files. Most existing wells are shallow, of small diameter, and are used for stock or domestic purposes. Data obtained are briefly summarized as follows:

TOWNSHIP	RANGE	SECTION	REMARKS
3	19	9	
(B-3-19)9ccc			Drilled to depth of 152.5 feet; 6-inch casing; reported dry in 1974.
3	19	19	
(B-3-19)19acc			Four wells reported in this section; 3 reported dry in 1974. Fourth well 155.5 feet deep; 8-inch casing; approximately one gpm discharge. Depth to water in 1974 - 133 feet.
(B-3-19)19acd			
(B-3-19)19daa			
(B-3-19)19dad - Beamer Well			

TOWNSHIP	RANGE	SECTION	REMARKS
3	19	20	
(B-3-19)20cbb - Kuehn Well			Depth drilled, casing size - unreported. Depth to water in 1974 - 111 feet.
3	19	29	
(B-3-19)29aab$_1$			Six wells reported in this section. Depths drilled reported as 180 feet; 8-inch casing. Depths to water in 1974 reported from 116 to 152 feet.
(B-3-19)29aab$_2$			
(B-3-19)29aba			
(B-3-19)29bcc$_1$			
(B-3-19)29bcc$_2$			
3	20	16	
(B-3-20)16dba			Drilled to 265 feet. Depth to water in 1971 reported as 120 feet.

As a precaution and step toward future water supply, it may be useful to run a corridor of mine claims from the southeastern corner of the claim block parallel to the pipeline road in a southeasterly direction to the vicinity of Tyson Wash in sections 17 and 20, T. 3 N., R. 19 W. This would entail a distance of approximately 3.5 miles or 12 to 13 lode claims oriented lengthwise in the southeasterly direction. A land status check and legal opinion should be sought prior to staking of the claims. The motive is for the purpose of avoiding right-of-way access conflicts for future water supply.

Basic water data should be collected during future exploration drilling efforts at Sugarloaf Peak.

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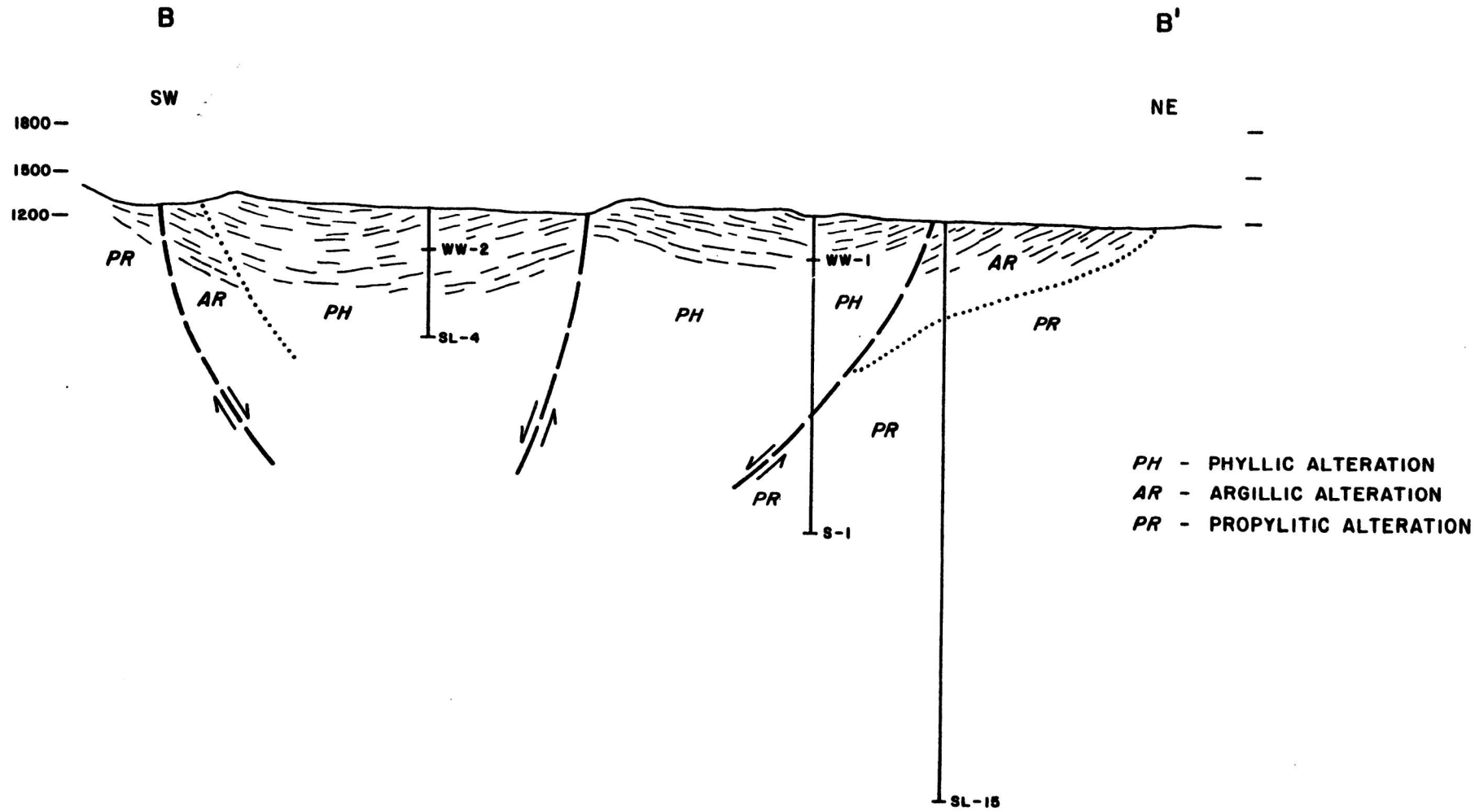

FIGURE 14. SOUTHWEST - NORTHEAST CROSS SECTION, SUGARLOAF PEAK AREA

SCALE: 1 INCH = 1000 FEET

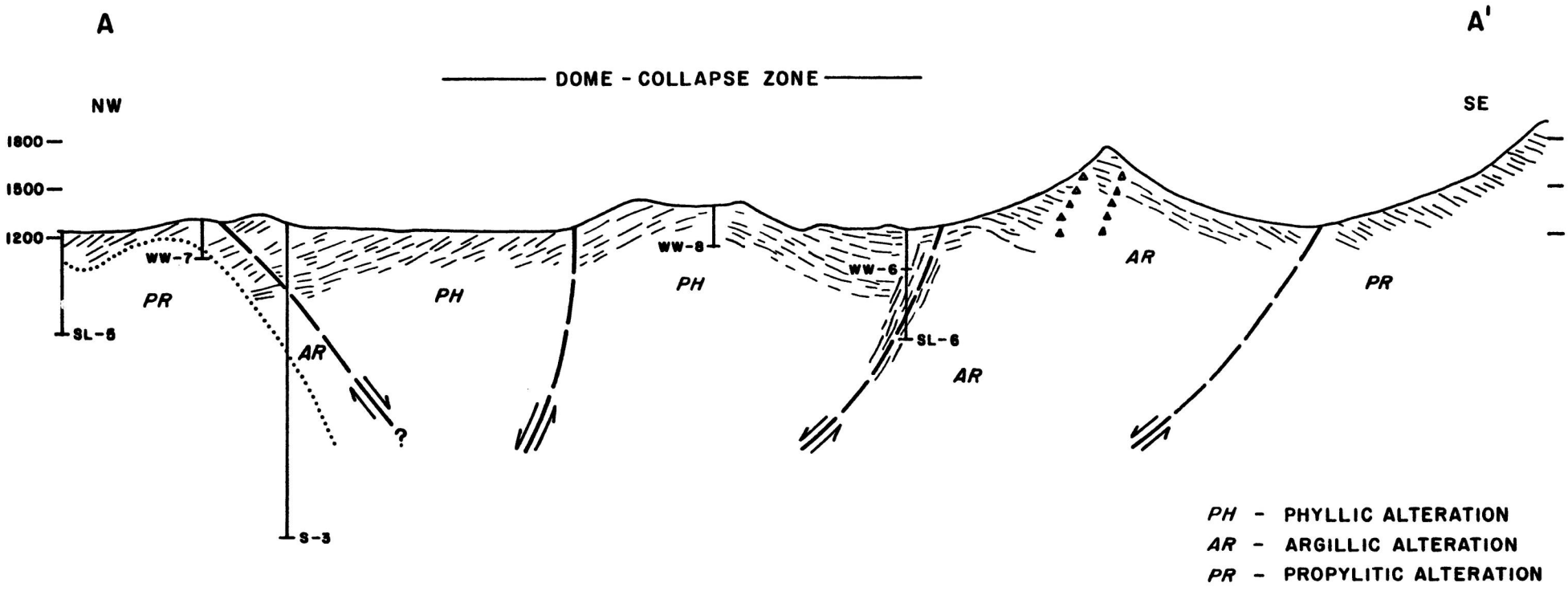

FIGURE 13. NORTHWEST - SOUTHEAST CROSS SECTION THROUGH SUGARLOAF PEAK AREA

SCALE: 1 INCH = 1000 FEET

TABLE 1. ASSAY RESULTS AND DRILL LOGS - DRILL HOLE WW-1

Claim - W½ of SP-38
SE¼, SE¼, Section 33,
T. 4 N., R. 20 W.

Elevation - 1,235 feet (approximate)

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag (oz/ton)	ALTERATION	REMARKS
0-5	.006	.10	Weathered	Leached zone, Fe Ox, jarositic staining, flow banding, schistic - platy. Light gray.
5-10	.010	.10	Arg-Sil	
10-15	.001	.05		
15-20	Tr	.20		
20-25	.006	.25		
25-30	.006	.25		
30-35	.007	.60		
35-40	.009	.35	Arg-Sil	Transitional zone, mixed ox-sul.
40-45	.010	.30		Sulfide zone, 2-3% diss. py.
45-50	.012	.45		
50-55	.010	.35		
55-60	.005	.15		
60-65	.021	.30	Ph	Skyline check, .010 Au, <.01 Ag.
65-70	.010	.10		
70-75	.004	.05		
75-80	.004	.50		
80-85	.010	.30		
85-90	.015	.40		Notable gypsum.
90-95	.010	.20		
95-100	.004	.05		
100-105	.005	.30		
105-110	.005	.30		
110-115	.005	.90		
115-120	.005	.30		

TABLE 1. ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-1

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag (oz/ton)	ALTERATION	REMARKS
120-125	.005	.30		
125-130	.023	.35	Ph	
130-135	.017	.30		
135-140	.020	.40		Skyline, .010 Au, <.01 Ag.
140-145	.010	.40		
145-150	.015	.40	Ph	Increased sil?
150-155	.010	.30		
155-160	.015	.35		
160-165	Tr	.30		
165-170	.005	.20		
170-175	.001	.30		
175-180	.005	.30		
180-185	.002	.35		
185-190	.005	.50		Influx of water from 180 feet.
190-195	.005	.10	Ph	Strong sil, sericite to total depth. Fragments finer.
195-200	.005	.10		
200-205	.020	.10		Skyline, .005 Au, <.01 Ag.
205-210	.003	.10		
210-215	.004	.30		
215-220	.001	.05		
220-225	.020	.10		Skyline, .015 Au, <.01 Ag.
225-230	.010	.10		
230-235	.005	.05		
235-240	.002	.55		
240-245	.025	.45		Skyline, .005 Au, <.01 Ag.
245-250	.014	.15		See Appendices; Kerr-McGee core log, S-1, same location. Qz-sericite-alunite-clay alteration reported to 1,200 feet. Probable propylitic alteration below.

TABLE 2. ASSAY RESULTS AND DRILL LOGS - DRILL HOLE WW-2

Claim - SE¼ of SP 64
NE¼, NW¼, Section 4,
T. 3 N., R. 20 W.

Elevation - 1,260 feet (approximate)

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag (oz/ton)	ALTERATION	REMARKS
0-5	.007	.35	Weathered	Leached zone, Fe Ox, jarosite staining, abundant clay-Qz, yellow-orange color.
5-10	.004	.30	Arg-Sil	
10-15	.007	.15		
15-20	.013	.20		
20-25	.012	.15		
25-30	.034	.30		Skyline, .010 Au, <.01 Ag.
30-35	.011	.10		
35-40	.039	.30		Skyline, .040 Au, <.01 Ag.
40-45	.026	.30		Skyline, .015 Au, <.01 Ag.
45-50	.007	.30	Arg-Sil	Transitional zone, ox - diss. py. 1-2%, abund. clay, Whitish-gray.
50-55	.013	<.05	Ph	Sulfide zone, 1-2% diss. py.
55-60	.012	.45		
60-65	.009	.40		
65-70	.014	.30		
70-75	.007	.30		
75-80	.006	.40		Less clay alteration.
80-85	.007	.30		Increasing Argillic alteration.
85-90	.021	.30		Skyline, .020 Au, <.01 Ag.
90-95	.013	.25		
95-100	.004	.30		
100-105	.004	.30		
105-110	.008	.35		
110-115	.027	.45		Skyline, .005 Au, <.01 Ag.
115-120	.004	.15		

TABLE 2. ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-2

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag	ALTERATION		
120-125	.006	.20	Ph		Sulfide, light gray
125-130	.003	.15			
130-135	.001	.25			
135-140	.002	.35			
140-145	.004	.20			
145-150	.002	.10			
150-155	.008	.10			
155-160	.003	.15			
160-165	.013	.15			
165-170	.017	.20			Increase in sulfide, 4-5% py.
170-175	.002	.05			1-2% diss. py.
175-180	.003	.10			
180-185	.005	.05			
185-190	.005	<.05			
190-195	.001	<.05			
195-200	Tr	.05			Minimal moisture from 205 feet to total depth.
200-205	.001	.10			
205-210	.005	.10			
210-215	.015	.05			
215-220	.020	.25			Skyline, .010 Au, <.01 Ag.
220-225	.010	.25	Ph		Increasing sil, minor epidote?
225-230	.010	.25			
230-235	.008	.10			
235-240	.010	.15	.015	<.01 Skey	Schistic fabric noticeable.
240-245	.050	.10	.020	<.01	Skyline, .030 Au, <.01 Ag.
245-250	.035	.15	.030	<.01	Skyline, .035 Au, <.01 Ag.

See Appendices; Kerr-McGee core log, SL-4 located 500 feet to north. Strong Qz-sericite-alunite alteration to 560 feet, silification to 700 feet.

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. UGJ 028
October 25, 1984
WW-2 235-240
BILLING NO. 09569

AMSELCO EXPLORATION INC.
Attn: Mr. George Moakley
17602 N. Black Canyon Hwy, Suite 105
Phoenix, Arizona 85023

Analysis of 16 Pulp Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY Au (oz/t)	Ag (oz/t)	Sb (ppm)	As (ppm)
1	WW-2 235-240	.015	<.01	<2.	<10.
2	WW-2 240-245	.020	<.01	<2.	20.
3	WW-2 245-250	.030	<.01	<2.	20.
4	WW-8 110-115	.020	.18	<2.	10.
5	WW-8 115-120	.040	.16	<2.	10.
6	WW-8 120-125	.020	<.01	<2.	30.
7	WW-8 125-130	.015	<.01	<2.	20.
8	WW-9 0-5	.010	.01	<2.	10.
9	WW-9 5-10	.020	.02	<2.	<10.
10	WW-9 10-15	.015	<.01	<2.	<10.
11	WW-9 15-20	<.005	<.01	<2.	10.
12	WW-9 20-25	.015	.01	<2.	10.
13	WW-9 195-200	<.005	<.01	<2.	<10.
14	WW-9 200-205	<.005	<.01	<2.	10.
15	WW-9 205-210	<.005	.02	<2.	10.
16	WW-9 210-215	<.005	<.01	<2.	10.

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

ITEM	SAMPLE NUMBER	Hg (ppm)	Te (ppm)	Tl (ppm)
1	WW-2 235-240	.07	.090	2.
2	WW-2 240-245	.19	.120	3.
3	WW-2 245-250	.09	.090	2.
4	WW-8 110-115	.20	.090	2.
5	WW-8 115-120	.10	.100	2.
6	WW-8 120-125	.05	.050	2.
7	WW-8 125-130	.11	.110	2.
8	WW-9 0-5	.13	.090	1.
9	WW-9 5-10	.09	.090	1.
10	WW-9 10-15	.12	.090	2.
11	WW-9 15-20	.08	.080	2.
12	WW-9 20-25	.15	.025	4.
13	WW-9 195-200	.08	.020	3.
14	WW-9 200-205	.07	.050	3.
15	WW-9 205-210	.08	.075	3.
16	WW-9 210-215	.09	.200	3.

cc: Amselco Exploration
Attn.: Mr. Tom Young
P.O. Box 427
Yuma, Arizona 85364

cc: Mr. N.E. Dausinger
9331 N. Magdalena Street
Tucson, Arizona 85710

REGISTERED ASSAYER CERTIFICATE NO. 9425 WILLIAM L. LEHMBECK DATE SIGNED Arizona U.S.A.

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

JOB NO. UGJ 028
PAGE 2

ITEM NO.	SAMPLE NO.
1	= WW-2 235-240
2	= WW-2 240-245
3	= WW-2 245-250
4	= WW-8 110-115
5	= WW-8 115-120
6	= WW-8 120-125
7	= WW-8 125-130
8	= WW-9 0-5

ITEM	1	2	3	4	5	6	7	8
ELEMENT								
Fe	20%	20%	20%	20%	20%	15%	20%	15%
Ca	3%	3%	3%	2%	2%	3%	3%	3%
Mg	3%	2%	2%	2%	2%	2%	2%	2%
Ag	<1	<1	<1	10	30	<1	<1	<1
As	<500	<500	<500	<500	<500	<500	<500	<500
B	100	70	20	50	30	<10	<10	20
Ba	200	200	200	300	300	300	300	300
Be	<2	<2	<2	<2	<2	<2	<2	<2
Bi	<10	<10	<10	<10	<10	<10	<10	<10
Cd	<50	<50	<50	<50	<50	<50	<50	<50
Co	50	30	20	20	30	30	50	<5
Cr	20	10	10	<10	10	<10	10	<10
Cu	100	100	70	100	70	150	200	100
Ga	10	10	<10	10	10	10	10	<10
Ge	<20	<20	<20	<20	<20	<20	<20	<20
La	<20	<20	<20	<20	<20	<20	<20	<20
Mn	1500	1500	2000	1500	1500	1500	2000	1000
Mo	30	70	5	100	50	30	200	10
Nb	<20	<20	<20	<20	<20	<20	<20	<20
Ni	50	20	20	5	15	10	15	<5
Pb	700	700	700	700	1000	500	500	1000
Sb	<100	<100	<100	<100	<100	<100	<100	<100
Sc	10	<10	<10	<10	<10	<10	<10	<10
Sn	20	20	10	15	15	10	10	<10
Sr	<100	<100	<100	<100	100	200	300	200
Ti	7000	7000	7000	10000	10000	7000	10000	7000
V	300	200	300	300	300	300	300	300
W	<50	<50	<50	<50	<50	<50	<50	<50
Y	15	10	10	10	10	<10	10	<10
Zn	300	300	300	700	1000	1000	2000	300
Zr	100	100	50	100	100	200	100	100

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

TABLE 3. ASSAY RESULTS AND DRILL LOGS - DRILL HOLE WW-3

Claim - NE corner of SP-61
NE¼, SW¼, Section 33,
T. 4 N., R. 20 W.

Elevation - 1,200 (approximate)

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag (oz/ton)	ALTERATION	REMARKS
0-5	.010	.25	Weathered	Leached zone, Fe Ox, jarositic staining, yellow-orange to rust color.
5-10	.003	.20	Arg-Sil	
10-15	.001	.20		
15-20	.004	.20		
20-25	.002	.35		
25-30	.002	.30		
30-35	.006	.25		
35-40	.003	.25		
40-45	Tr	.20		
45-50	Tr	.30		
50-55	.003	.30		
55-60	.002	.25		
60-65	.002	.35		
65-70	.002	.40	Arg-Sil	Transitional zone, 1-2% py, strong clay, medium gray color.
70-75	.003	.50		
75-80	.002	.25	Prop	Sulfide zone, 1-2% py, moderate clay, dark gray
80-85	.003	.30		
85-90	.001	.35		Increased py.
90-95	.010	.20		
95-100	.010	.25		Strong epidote.
100-105	.004	.50		
105-110	.007	.30		
110-115	.008	.30		
115-120	.006	.20		
120-125	.007	.25		

TABLE 3. ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-3

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag (oz/ton)	ALTERATION	REMARKS
125-130	.006	.30		
130-135	.005	.35	Prop.	Water encountered.
135-140	.010	.40		
140-145	.001	.20		Notable epidote.
145-150	.002	.30		
150-155	.004	.30		
155-160	.002	.05		
160-165	.003	.35		
165-170	.002	.45		
170-175	.005	.35		
175-180	.005	.40		Qz veining.
180-185	.010	.40		
185-190	.003	.35		
190-195	.004	.30		
195-200	.010	.15		
200-205	.003	.30		
205-210	.004	.20		
210-215	.005	.25		
215-220	.005	.30		
220-225	.005	.20		
225-230	.005	.25		
230-235	.006	.15		
235-240	.014	.10		
240-245	.002	.05		
245-250	.004	.30		Nearest prior hole is S-2, 400 feet to SW. See Kerr-McGee log; Appendices. Water level measurement, 113 feet below land surface.

TABLE 4. ASSAY RESULTS AND DRILL LOGS - DRILL HOLE WW-4

Claim - SE corner of SP-80
SW¼, SW¼, Section 33
T. 4 N., R. 20 W.

Elevation - 1,260 feet (approximate)

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag	ALTERATION	REMARKS
0-5	.010	.15	Weathered	Leached zone, Fe Ox, jarositic staining, yellow-orange color, Schistose.
5-10	.002	.15	Arg-Sil	
10-15	.001	.25		
15-20	.002	.25		
20-25	.003	.20		
25-30	.002	.20	Arg-Sil	Strong clay, pale yellow-orange to 50 foot depth.
30-35	.005	.30		
35-40	.010	.15		
40-45	.010	.15		
45-50	.006	.25		Transitional zone, diss. py., whitish color.
50-55	.019	.35		
55-60	.004	.40	Ph	Sulfide zone, 1-2%, diss. py., strong clay, white-gray color.
60-65	.004	.35		
65-70	.009	.35		
70-75	.014	.35		
75-80	.002	.30		Less clay, increasing sil., medium gray color to 140 feet.
80-85	.004	.15		
85-90	.003	.10		
90-95	.011	.20		
95-100	.008	.25		
100-105	.004	.30		
105-110	.003	.25		
110-115	.011	.10		
115-120	.014	.25	Ph	2-4% py, general increase in sulfides to 150 feet.
120-125	.006	.15		

TABLE 4. ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-4

INTERVAL (feet	...JACOBS... Au (oz/ton)	Ag	ALTERATION	REMARKS
125-130	.003	.25		
130-135	.012	.20		
135-140	.006	.65		
140-145	.007	.10		
145-150	.005	.15		
150-155	.008	.15		
155-160	.012	.30	Ph	1-2% diss. py., clay, black opaque diss. mineral, light gray color.
160-165	.017	.30		
165-170	.005	.20	Prop.	Increased py., 2-4%, dark gray.
170-175	.009	.05	Ph	1-2% py., medium gray.
175-180	.004	.10		
180-185	.003	.30		
185-190	.004	.25		
190-195	.005	.15		
195-200	.015	.20		Siliceous felsitic tuff; water encountered; medium gray color.
200-205	.007	.05		
205-210	.003	.10		
210-215	.005	.30	Ph	Increase in clay.
215-220	.007	.20	Ph	
220-225	.004	<.05		
225-230	.006	<.05		
230-235	.002	.10		
235-240	.001	.15		1-2% py., minor clay, schistose; medium-gray color.
240-245	.003	.20		
245-250	.004	.10		

TABLE 5. ASSAY RESULTS AND DRILL LOGS - DRILL HOLE WW-5

CLAIM - SW corner of SP-40
NE¼, NE¼, Section 4
T. 3 N., R. 20 W.

ELEVATION - 1,280 feet (approximate)

INVERVAL (feet)	...JACOBS... Au (oz/ton)	Ag	ALTERATION	REMARKS
0-5	.008	.45	Weathered	Leached zone, Fe Ox, jarositic staining, yellowish-orange color.
5-10	.005	.45	Sil-Arg	
10-15	.003	.45		
15-20	.014	.35		Skyline, .005 Au, <.01 Ag, .02% Zn, .06% Pb.
20-25	.020	.30		
25-30	.009	.55		Transitional zone, diss. py., Fe Ox.
30-35	.010	.40		
35-40	.012	.35		Sulfide zone, 1-2% diss. py., black opaque mineral, light gray.
40-45	Tr	.30	Ph	
45-50	.010	.35		Notable sericite.
50-55	.015	.10		Skyline, .020 Au, <.01 Ag, .08% Zn, .36% Pb.
55-60	.019	.40		Notable gypsum.
60-65	.010	.20		
65-70	.006	.15	Ph	
70-75	.006	.15		
75-80	.011	.20		Gypsum veinlets.
80-85	.004	.25		
85-90	.006	.35		1-2% diss. py., black opaque, gypsum, strong clay, whitish.
90-95	.010	.20		
95-100	.003	.20		
100-105	.004	.40		
105-110	.004	.35		
110-115	.003	.40		
115-120	.004	.05		Strong clay, black opaque mineral.
120-125	.005	.10		

TABLE 6. ASSAY RESULTS AND DRILL LOGS - DRILL HOLE WW-6

CLAIM - NE part of SP-40
NW¼, NW¼, Section 3
T. 3 N., R. 20 W.

ELEVATION - 1,230 feet (approximate)

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag (oz/ton)	ALTERATION	REMARKS
0-5	.001	.35	Weathered	Leached zone, Fe Ox, jarositic staining, yellowish color.
5-10	Tr	.45	Arg-Sil	
10-15	.001	.35		
15-20	.001	.30		
20-25	Tr	.20		
25-30	Tr	.20		
30-35	Tr	.20		
35-40	.006	.20		
40-45	.001	.30		
45-50	.002	.10		
50-55	.002	.20		
55-60	Tr	<.05		
60-65	.002	.20		
65-70	.002	.15		Transitional zone, diss. py., abundant Qz, light-gray color.
70-75	.002	.35		
75-80	.002	.50	Ph	Sulfide zone, abundant Qz, clay, light-gray.
80-85	.002	.25		
85-90	.002	.40		1-2% diss. py., black opaque mineral.
90-95	.002	.20		
95-100	.003	.20		Increased Sil.
100-105	.002	.20		Clay zone.
105-110	.003	.20		1-2% diss. py., black opaque mineral.
110-115	.003	.25		
115-120	.003	.25		Strong clay alteration.
120-125	.003	.35		

TABLE 6. ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-6

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag	ALTERATION	REMARKS
125-130	.002	.30		
130-135	.003	.30	Ph	1-2% diss. py., black opaque to 160 feet.
135-140	.001	.25		
140-145	.002	.30		
145-150	.003	.20		
150-155	.006	.20		
155-160	.005	.40		
160-165	.005	.25		
165-170	.008	.25	Ph	Skyline, .010 Au, <.01 Ag, .05% Zn, .27% Pb.
170-175	.008	.35		Skyline, .010 Au, <.01 Ag, .06% Zn, .31% Pb.
175-180	.005	.30		No black opaque mineral to total depth.
180-185	.004	.30		
185-190	.004	.35	Arg-Ph?	Fault zone?
190-195	Tr	.50		
195-200	Tr	.30		
200-205	.003	.35		
205-210	.001	.35		
210-215	.003	.30		
215-220	.006	.35		
220-225	.008	.25		Skyline, .010 Au, <.01 Ag, .05% Zn, .14% Pb.
225-230	.009	.50		Skyline, .005 Au, <.01 Ag, .01% Zn, .21% Pb.
230-235	.002	.15		Abundant clay 225-230 feet.
235-240	Tr	.35		
240-245	Tr	.05		Abundant clay.
245-250	.002	.35		Dry hole. Kerr-McGee core log, SL-6, same location as WW-6 shows generally strong argillic alteration to total depth of 696 feet, see Appendices.

TABLE 7. ASSAY RESULTS AND DRILL LOGS - DRILL HOLE WW-7

CLAIM - SE part of SP-82
SW¼, Section 33
T. 4 N., R. 20 W.

ELEVATION - 1,280 feet (approximate)

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag (oz/ton)	ALTERATION	REMARKS
0-5	.006	.30	Weathered	Leached zone, Fe Ox staining yellow-orange color.
5-10	.005	.35	Arg-Sil	
10-15	.007	.20		
15-20	.006	.25		
20-25	.006	.10		
25-30	.006	.25		Moderate clay zone - fault?
30-35	.007	.40		
35-40	.005	.30	Prop.	Sulfide zone, dark gray.
40-45	.006	.35		
45-50	.006	.20	Arg	Leached zone with clay, schistic.
50-55	.007	.35		
55-60	.005	.35	Prop.	Sulfide zone, dark gray.
60-65	.004	.30		
65-70	.005	.25		Abundant sulfides, py.
70-75	.005	.35		
75-80	.006	.35		
80-85	.004	.30		
85-90	.003	.25		Silicic, decreased py.
90-95	.010	.15		
95-100	.012	.10		Qz veining?
100-105	.010	.20		
105-110	.008	.20		
110-115	.012	.25		
115-120	.010	.20		
120-125	.006	.35		

TABLE 7. ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-7

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag (oz/ton)	ALTERATION	REMARKS
125-130	.007	.30		
130-135	.010	.30	Prop.	Dark gray.
135-140	.006	.10		Clay zone, fault?
140-145	.003	.30		
145-150	.003	.25		
150-155	.002	.30		
155-160	Tr	<.05		Abundant Qz, veins?; light gray to 190 feet.
160-165	.002	.30		
165-170	.002	.30		
170-175	.006	.40		
175-180	.003	.40		
180-185	.003	.50		
185-190	.010	.55		
190-195	.001	.35		Dark gray.
195-200	.006	.25		Water encountered.
200-205	.005	.25		
205-210	.002	.25		
210-215	.008	.35		
215-220	.010	.30		Clay, fault zone?
220-225	.006	.25		
225-230	Tr	.35		
230-235	Tr	.30		
235-240	.001	.40		
240-245	.002	.20		
245-250	.009	.55		Epidote.

TABLE 8. ASSAY RESULTS AND DRILL LOGS - DRILL HOLE WW-8

CLAIM - SE part of SP-56
SE¼, SE¼, Section 33
T. 4 N., R. 20 W.

ELEVATION - 1,350 feet (approximate)

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag	ALTERATION	REMARKS
0-5	.001	.50	Weathered	Leached zone, Fe Ox, platy fragments, flow structure.
5-10	.001	.05	Sil-Arg	
10-15	Tr	.15		
15-20	Tr	.50		Transitional zone, some py.
20-25	.002	<.05	Arg-Sil	Leached zone to 65 feet.
25-30	.004	.25		
30-35	.004	.35		
35-40	.010	.05		
40-45	.012	.10		
45-50	.014	.25		
50-55	.010	.35		Transitional zone.
55-60	.012	.15		
60-65	.010	.25		
65-70	.015	<.05	Ph	Sulfide zone, 1-3% diss. py. flow structures, medium to light-gray to total depth.
70-75	.012	.10		
75-80	.015	.55		
80-85	.011	.30		
85-90	.014	.30		
90-95	.015	.20		
95-100	.018	.30		
100-105	.015	.10		
105-110	.016	.15		
110-115	.026	.35	Ph .020 .18 Sky	Skyline, .025 Au, <.01 Ag.
115-120	.020	.60	.040 .16 Sky	Skyline, .040 Au, .04 Ag.

TABLE 8. ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-8

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag	ALTERATION	REMARKS
120-125	.026	.25	.020 <.01 Sky	Skyline, .010 Au, <.01 Ag.
125-130	.020	.35	Ph .015 <.01 Sky	Skyline, .025 Au, <.01 Ag.
130-135	.015	.20		
135-140	.004	.30		
140-145	.015	.35		
145-150	.014	.30		
150-155	.015	.15		
155-160	.020	.05		Skyline, .030 Au, <.01 Ag.
160-165	.021	.30		Skyline, .015 Au, <.01 Ag.
165-170	.020	.35		Skyline, .020 Au, <.01 Ag.
170-175	.022	.45		Skyline, .010 Au, <.01 Ag.
175-180	.021	.50		Skyline, .030 Au, <.01 Ag.
180-185	.022	.25		Skyline, .020 Au, <.01 Ag.
185-190	.012	.35	Ph	Increasing sil, decreasing sulfides to total depth.
190-195	.012	.35		
195-200	.028	.35		
200-205	.014	.45		
205-210	.013	.40		
210-215	.011	.45		
215-220	.010	.50		
220-225	.014	.35		
225-230	.010	.45		
230-235	.013	.40		
235-240	.012	.30		
240-245	.010	.40		
245-250	.009	.45		Dry hole.

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. UGJ 028
October 25, 1984
WW-2 235-240
BILLING NO. 09569

AMSELCO EXPLORATION INC.
Attn: Mr. George Moakley
17602 N. Black Canyon Hwy, Suite 105
Phoenix, Arizona 85023

Analysis of 16 Pulp Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY Au (oz/t)	Ag (oz/t)	Sb (ppm)	As (ppm)
1	WW-2 235-240	.015	<.01	<2.	<10.
2	WW-2 240-245	.020	<.01	<2.	20.
3	WW-2 245-250	.030	<.01	<2.	20.
4	WW-8 110-115	.020	.18	<2.	10.
5	WW-8 115-120	.040	.16	<2.	10.
6	WW-8 120-125	.020	<.01	<2.	30.
7	WW-8 125-130	.015	<.01	<2.	20.
8	WW-9 0-5	.010	.01	<2.	10.
9	WW-9 5-10	.020	.02	<2.	<10.
10	WW-9 10-15	.015	<.01	<2.	<10.
11	WW-9 15-20	<.005	<.01	<2.	10.
12	WW-9 20-25	.015	.01	<2.	10.
13	WW-9 195-200	<.005	<.01	<2.	<10.
14	WW-9 200-205	<.005	<.01	<2.	10.
15	WW-9 205-210	<.005	.02	<2.	10.
16	WW-9 210-215	<.005	<.01	<2.	10.

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

JOB NO. UGJ 028
October 25, 1984

ITEM	SAMPLE NUMBER	Hg (ppm)	Te (ppm)	Tl (ppm)
1	WW-2 235-240	.07	.090	2.
2	WW-2 240-245	.19	.120	3.
3	WW-2 245-250	.09	.090	2.
4	WW-8 110-115	.20	.090	2.
5	WW-8 115-120	.10	.100	2.
6	WW-8 120-125	.05	.050	2.
7	WW-8 125-130	.11	.110	2.
8	WW-9 0-5	.13	.090	1.
9	WW-9 5-10	.09	.090	1.
10	WW-9 10-15	.12	.090	2.
11	WW-9 15-20	.08	.080	2.
12	WW-9 20-25	.15	.025	4.
13	WW-9 195-200	.08	.020	3.
14	WW-9 200-205	.07	.050	3.
15	WW-9 205-210	.08	.075	3.
16	WW-9 210-215	.09	.200	3.

cc: Amselco Exploration
Attn.: Mr. Tom Young
P.O. Box 427
Yuma, Arizona 85364

cc: Mr. N.E. Dausinger
9331 N. Magdalena Street
Tucson, Arizona 85710

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
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SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

JOB NO. UGJ 028
PAGE 2

ITEM NO.	SAMPLE NO.
1	WW-2 235-240
2	WW-2 240-245
3	WW-2 245-250
4	WW-8 110-115
5	WW-8 115-120
6	WW-8 120-125
7	WW-8 125-130
8	WW-9 0-5

ITEM	1	2	3	4	5	6	7	8
ELEMENT								
Fe	20%	20%	20%	20%	20%	15%	20%	15%
Ca	3%	3%	3%	2%	2%	3%	3%	3%
Mg	3%	2%	2%	2%	2%	2%	2%	2%
Ag	<1	<1	<1	10	30	<1	<1	<1
As	<500	<500	<500	<500	<500	<500	<500	<500
B	100	70	20	50	30	<10	<10	20
Ba	200	200	200	300	300	300	300	300
Be	<2	<2	<2	<2	<2	<2	<2	<2
Bi	<10	<10	<10	<10	<10	<10	<10	<10
Cd	<50	<50	<50	<50	<50	<50	<50	<50
Co	50	30	20	20	30	30	50	<5
Cr	20	10	10	<10	10	<10	10	<10
Cu	100	100	70	100	70	150	200	100
Ga	10	10	<10	10	10	10	10	<10
Ge	<20	<20	<20	<20	<20	<20	<20	<20
La	<20	<20	<20	<20	<20	<20	<20	<20
Mn	1500	1500	2000	1500	1500	1500	2000	1000
Mo	30	70	5	100	50	30	200	10
Nb	<20	<20	<20	<20	<20	<20	<20	<20
Ni	50	20	20	5	15	10	15	<5
Pb	700	700	700	700	1000	500	500	1000
Sb	<100	<100	<100	<100	<100	<100	<100	<100
Sc	10	<10	<10	<10	<10	<10	<10	<10
Sn	20	20	10	15	15	10	10	<10
Sr	<100	<100	<100	<100	100	200	300	200
Ti	7000	7000	7000	10000	10000	7000	10000	7000
V	300	200	300	300	300	300	300	300
W	<50	<50	<50	<50	<50	<50	<50	<50
Y	15	10	10	10	10	<10	10	<10
Zn	300	300	300	700	1000	1000	2000	300
Zr	100	100	50	100	100	200	100	100

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

TABLE 9. ASSAY RESULTS AND DRILL LOGS - DRILL HOLE WW-9

CLAIM - South-center of SP-63
SE¼, SW¼, Section 33
T. 4 N., R. 20 W.

ELEVATION - 1,280 feet (approximate)

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag	ALTERATION	REMARKS
0-5	.024	.30	Weathered .010 .01 SKY	Skyline, .015 Au, <.01 Ag.
5-10	.032	.15	Sil-Arg .020 .02 SKY	Skyline, .010 Au, <.01 Ag.
10-15	.022	.25	.015 <.01 SKY	Skyline, .020 Au, <.01 Ag.
15-20	.006	.20	<.005 <.01 SKY	
20-25	.028	.25	.015 .01 SKY	Skyline, .030 Au, <.01 Ag.
25-30	.013	.25		Leached zone, 0-45 feet, Fe Ox.
30-35	.008	.15		
35-40	.041/.038	.25/.20		Skyline, .045 Au, <.01 Ag.
40-45	.015	.50		Transitional zone.
45-50	.017	.45	Ph	Sulfide zone, 1-3% diss. py., grayish-white color, 45-85 feet.
50-55	.016	.50		
55-60	.016	.50		Slight increase in py., 85-125 feet, schistose, medium-gray color.
60-65	.007	.40		
65-70	.007	.40		
70-75	.013	.55		
75-80	.020	.55		Skyline, .015 Au, <.01 Ag.
80-85	.031	.55		Skyline, .030 Au, <.01 Ag.
85-90	.005	.30		
90-95	.028	.45		Skyline, .005 Au, <.01 Ag.
95-100	.011	.35		
100-105	.016	.30		
105-110	.033	.30		Skyline, .045 Au, <.01 Ag.
110-115	.020/.014	.20/.15		Skyline, .010 Au, <.01 Ag.
115-120	.007	.15		
120-125	.015	.15	Sil-Ph	Finely diss. py., 125-145 feet, local sil tuff, medium-gray color.
125-130	.010	.25		

TABLE 9. ASSAY RESULTS AND DRILL LOGS; DRILL HOLE WW-9

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag	ALTERATION		REMARKS
130-135	.021	.20	Ph		Skyline, .005 Au, <.01 Ag.
135-140	.010	.30			
140-145	.016	.25			
145-150	.004	.20			From 145-200 feet, finely diss. py. and black opaque mineral, platy fragments, flow structures around Qz eyes, light-gray.
150-155	.013	.30			
155-160	.010	.25			
160-165	.009	.25			
165-170	.006	.30			
170-175	.010	.35			
175-180	.019	.30			Moisture, 175-210 feet.
180-185	.005	.10			
185-190	.003	.15			
190-195	.003	.30			
195-200	.001	.15	<.005	<.01 Sky	
200-205	.002	.30	<.005	<.01 Sky	200-210 feet, diss. py., medium-gray.
205-210	.034	.45	<.005	.02 Sky	Skyline, <.005 Au, <.01 Ag.
210-215	.009	.40	<.005	<.01 Sky	210-250 feet, diss. py., platy fragments, light-gray color.
215-220	.005	.25			
220-225	.004	.30			
225-230	.010	.35			
230-235	.003	.30			
235-240	.001	.30			
240-245	Tr	.40			
245-250	Tr	.10			

SKYLINE LABS, INC.
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Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. UGJ 028
October 25, 1984
WW-2 235-240
BILLING NO. 09569

AMSELCO EXPLORATION INC.
Attn: Mr. George Moakley
17602 N. Black Canyon Hwy, Suite 105
Phoenix, Arizona 85023

Analysis of 16 Pulp Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY Au (oz/t)	Ag (oz/t)	Sb (ppm)	As (ppm)
1	WW-2 235-240	.015	<.01	<2.	<10.
2	WW-2 240-245	.020	<.01	<2.	20.
3	WW-2 245-250	.030	<.01	<2.	20.
4	WW-8 110-115	.020	.18	<2.	10.
5	WW-8 115-120	.040	.16	<2.	10.
6	WW-8 120-125	.020	<.01	<2.	30.
7	WW-8 125-130	.015	<.01	<2.	20.
8	WW-9 0-5	.010	.01	<2.	10.
9	WW-9 5-10	.020	.02	<2.	<10.
10	WW-9 10-15	.015	<.01	<2.	<10.
11	WW-9 15-20	<.005	<.01	<2.	10.
12	WW-9 20-25	.015	.01	<2.	10.
13	WW-9 195-200	<.005	<.01	<2.	<10.
14	WW-9 200-205	<.005	<.01	<2.	10.
15	WW-9 205-210	<.005	.02	<2.	10.
16	WW-9 210-215	<.005	<.01	<2.	10.

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

JOB NO. UGJ 028
October 25, 1984

ITEM	SAMPLE NUMBER	Hg (ppm)	Te (ppm)	Tl (ppm)
1	WW-2 235-240	.07	.090	2.
2	WW-2 240-245	.19	.120	3.
3	WW-2 245-250	.09	.090	2.
4	WW-8 110-115	.20	.090	2.
5	WW-8 115-120	.10	.100	2.
6	WW-8 120-125	.05	.050	2.
7	WW-8 125-130	.11	.110	2.
8	WW-9 0-5	.13	.090	1.
9	WW-9 5-10	.09	.090	1.
10	WW-9 10-15	.12	.090	2.
11	WW-9 15-20	.08	.080	2.
12	WW-9 20-25	.15	.025	4.
13	WW-9 195-200	.08	.020	3.
14	WW-9 200-205	.07	.050	3.
15	WW-9 205-210	.08	.075	3.
16	WW-9 210-215	.09	.200	3.

cc: Amselco Exploration
Attn.: Mr. Tom Young
P.O. Box 427
Yuma, Arizona 85364

cc: Mr. N.E. Dausinger
9331 N. Magdalena Street
Tucson, Arizona 85710

REGISTERED CERTIFICATE NO. 9425 WILLIAM L. LEHMBECK DATE SIGNED Oct. 25 84 Arizona U.S.A.

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

JOB NO. UGJ 028

ITEM NO.	SAMPLE NO.
1	= WW-2 235-240
2	= WW-2 240-245
3	= WW-2 245-250
4	= WW-8 110-115
5	= WW-8 115-120
6	= WW-8 120-125
7	= WW-8 125-130
8	= WW-9 0-5

ITEM	1	2	3	4	5	6	7	8
ELEMENT								
Fe	20%	20%	20%	20%	20%	15%	20%	15%
Ca	3%	3%	3%	2%	2%	3%	3%	3%
Mg	3%	2%	2%	2%	2%	2%	2%	2%
Ag	<1	<1	<1	10	30	<1	<1	<1
As	<500	<500	<500	<500	<500	<500	<500	<500
B	100	70	20	50	30	<10	<10	20
Ba	200	200	200	300	300	300	300	300
Be	<2	<2	<2	<2	<2	<2	<2	<2
Bi	<10	<10	<10	<10	<10	<10	<10	<10
Cd	<50	<50	<50	<50	<50	<50	<50	<50
Co	50	30	20	20	30	30	50	<5
Cr	20	10	10	<10	10	<10	10	<10
Cu	100	100	70	100	70	150	200	100
Ga	10	10	<10	10	10	10	10	<10
Ge	<20	<20	<20	<20	<20	<20	<20	<20
La	<20	<20	<20	<20	<20	<20	<20	<20
Mn	1500	1500	2000	1500	1500	1500	2000	1000
Mo	30	70	5	100	50	30	200	10
Nb	<20	<20	<20	<20	<20	<20	<20	<20
Ni	50	20	20	5	15	10	15	<5
Pb	700	700	700	700	1000	500	500	1000
Sb	<100	<100	<100	<100	<100	<100	<100	<100
Sc	10	<10	<10	<10	<10	<10	<10	<10
Sn	20	20	10	15	15	10	10	<10
Sr	<100	<100	<100	<100	100	200	300	200
Ti	7000	7000	7000	10000	10000	7000	10000	7000
V	300	200	300	300	300	300	300	300
W	<50	<50	<50	<50	<50	<50	<50	<50
Y	15	10	10	10	10	<10	10	<10
Zn	300	300	300	700	1000	1000	2000	300
Zr	100	100	50	100	100	200	100	100

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

TABLE 10. ASSAY RESULTS AND DRILL LOGS - DRILL HOLE WW-10

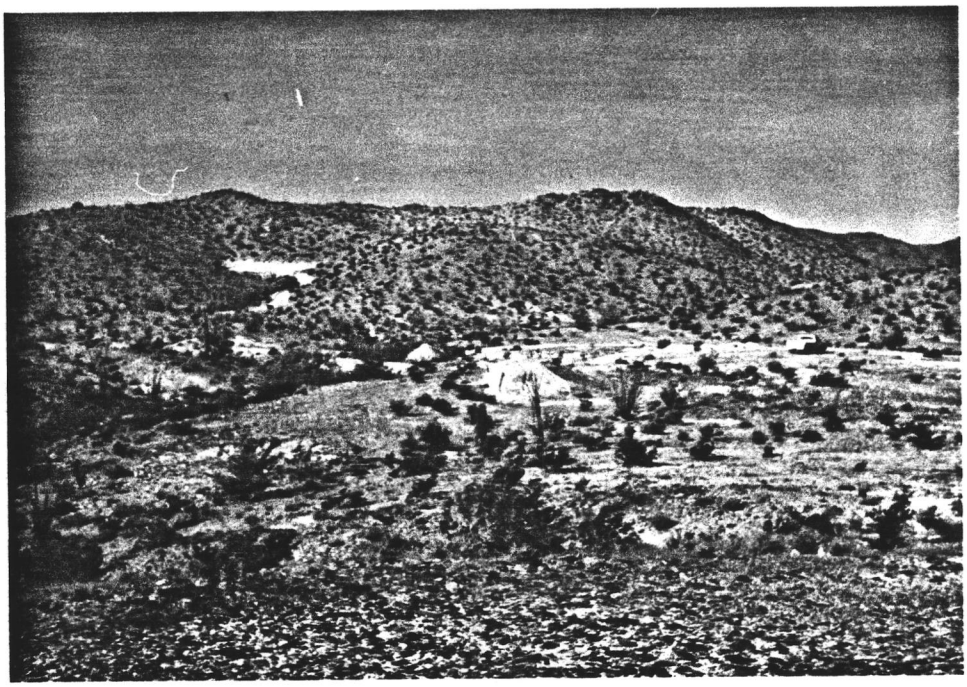
CLAIM - Center of SP-61
SW¼, Section 33
T. 4 N., R. 20 W.

ELEVATION - 1,220 feet (approximate)

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag	ALTERATION	REMARKS
0-5	.006	.30	Weathered	Leached zone, Fe Ox staining, clay
5-10	.005	.50	Prop?	
10-15	.005	.40		
15-20	.010	.35		
20-25	.010/.006	.60/.20		Skyline, <.005 Au, <.01 Ag, .01% Zn, .10% Pb.
25-30	.010	.50		Qz chips, veins or veinlets.
30-35	.010	.55		
35-40	.012	.45		
40-45	.010	.45		
45-50	.009/.009	.60/.20		Skyline, .005 Au, <.01 Ag, <.01% Zn, .22% Pb.
50-55	.008	.60	Prop	Transitional zone, schistose, medium gray-brown.
55-60	.010	.10		Sulfide zone, diss. py., schistose, dark gray.
60-65	.005	.35		
65-70	.006	.25		3-5% py.
70-75	.006	.30		
75-80	.010	.50		
80-85	.002	.40		
85-90	.002	.25		
90-95	.001	.35		
95-100	.003	.30		
100-105	.006	.50		Little moisture, increase to 145 feet.
105-110	.005	.20		Bleb of MoS_2, cuttings fine.
110-115	.005	.30		
115-120	.010	1.50		Skyline, .005 Au, <.01 Ag, .05% Zn, .11% Pb.

TABLE 10. ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-10

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag (oz/ton)	ALTERATION	REMARKS
120-125	.002	<.05		Rock fabric, gneissic-like- to total depth.
125-130	.002	.20		
130-135	.012	.20		
135-140	.005	.10		
140-145	.006	.30		Influx of water.
145-150	.006	.90		
150-155	.009	.10		
155-160	.010	.20		Clay zone, fault?
160-165	.012	.20		
165-170	.010	1.00		Skyline, .005 Au, <.01 Ag, .01% Zn, .07% Pb.
170-175	.002	<.05		3-5% py., occasional Qz chips.
175-180	.002	.20		
180-185	.002	1.15		Skyline, <.005 Au, <.01 Ag, .02% Zn, .09% Pb.
185-190	.001	<.05		
190-195	.011	1.30		Skyline, <.005 Au, <.01 Ag, .01% Zn, .03% Pb.
195-200	.001	<.05		Increasing epidote to total depth.
200-205	.010	.30		
205-210	.001	.35		
210-215	.004	.35		
215-220	.004	.20		
220-225	.006	.40		
225-230	.004	.50		
230-235	.005	.25		
235-240	.001	.05		
240-245	.006	.20		
245-250	.005	.35		



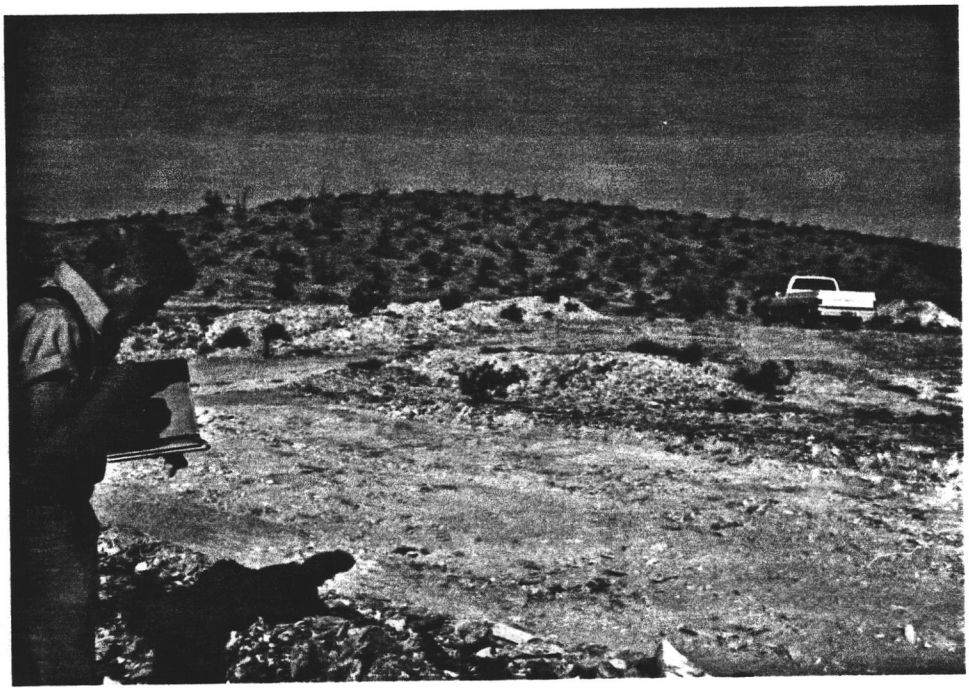


FIGURE 1. TOP PHOTOGRAPH SHOWS VIEW OF DRILL SITES WW-1 AND WW-8 (left background) LOOKING SOUTHWEST. LOWER PHOTOGRAPH IS SITE WW-1. PIPE IN LEFT BACKGROUND IS SITE OF CONGDON & CAREY DIAMOND DRILLHOLE S-1, DRILLED IN 1967-1968 TO APPROXIMATELY 2,000-FOOT DEPTH.

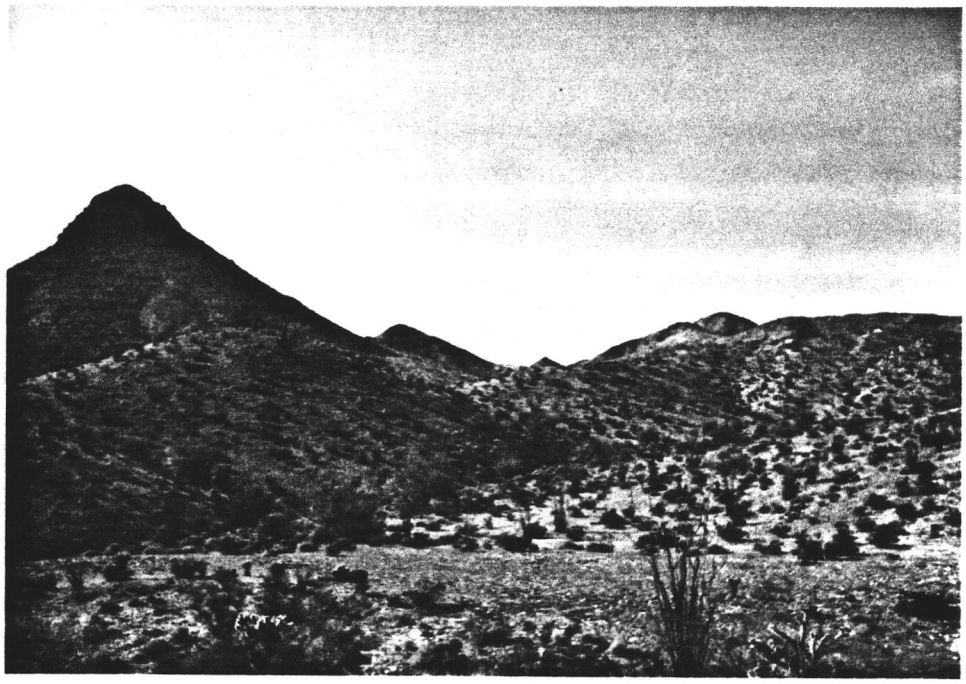


FIGURE 2. SUGARLOAF PEAK AS VIEWED FROM THE VICINITY OF SITE WW-1 LOOKING SOUTH.

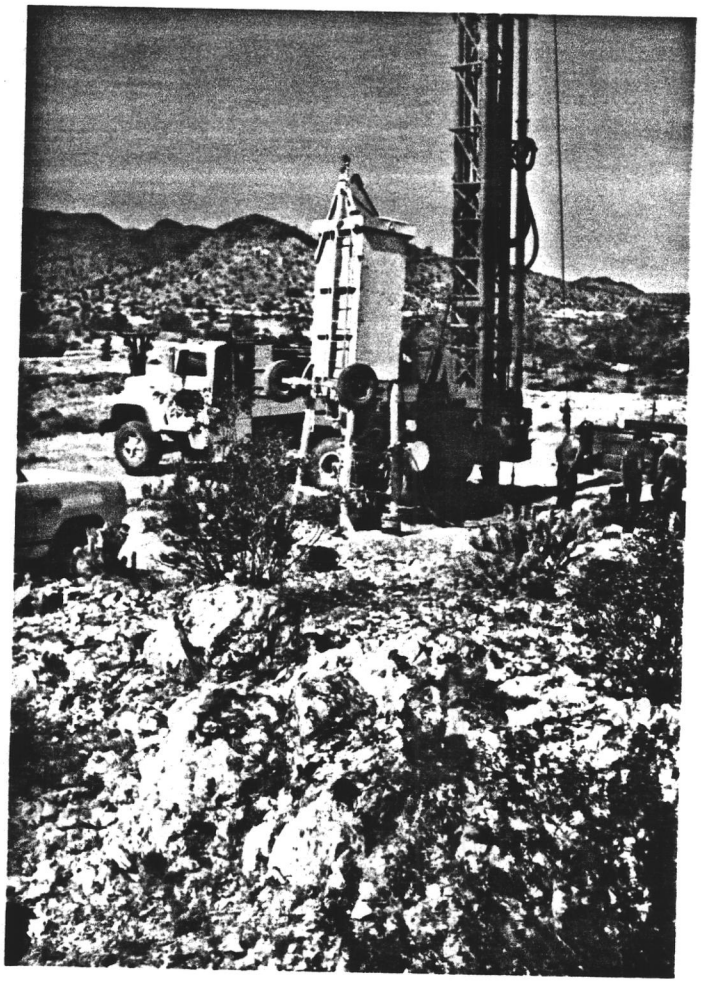
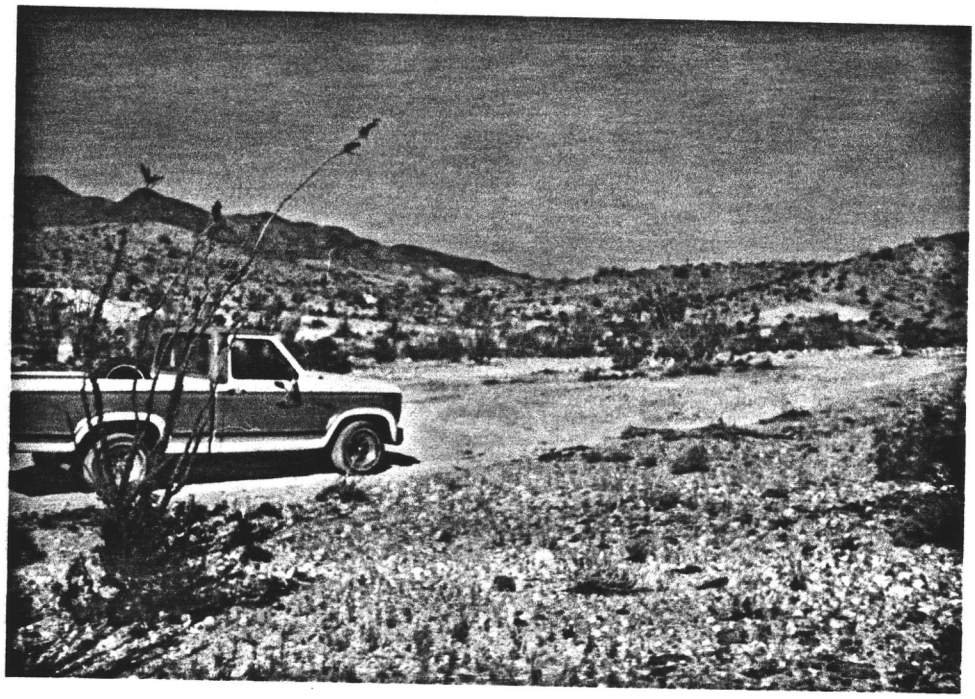


FIGURE 3. VENTURES DRILLING COMPANY RIG SET-UP AT SITE WW-3, VIEW LOOKING SOUTHWEST. PROPYLITIC ALTERATION ENCOUNTERED HERE AT SHALLOW DEPTH.



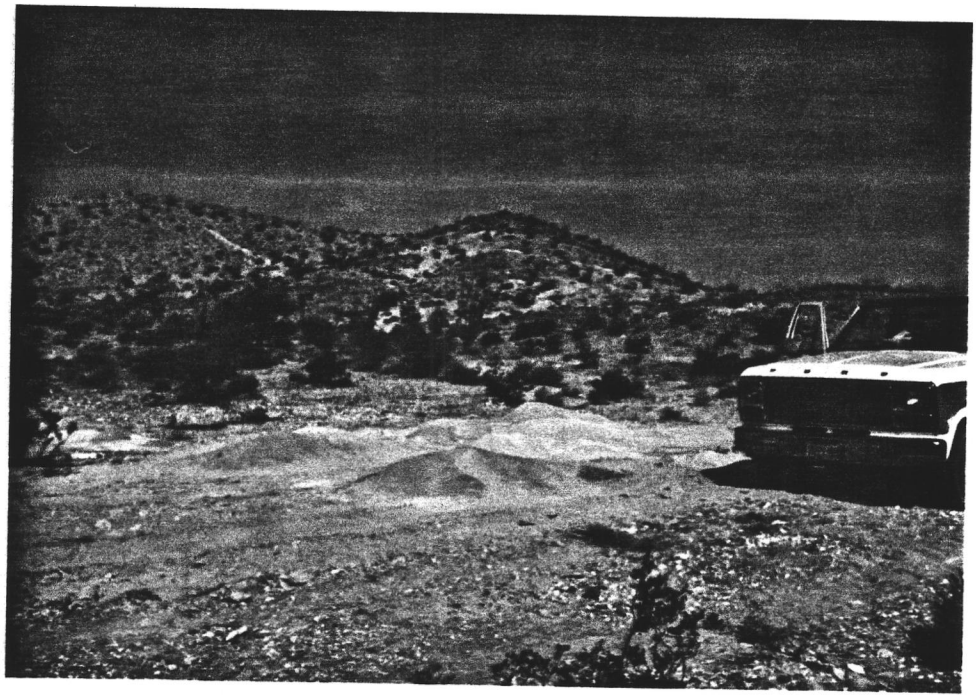


FIGURE 4. TRUCK IS AT SITE WW-2. SITE WW-9 IS IN RIGHT BACKGROUND, TOP PHOTOGRAPH

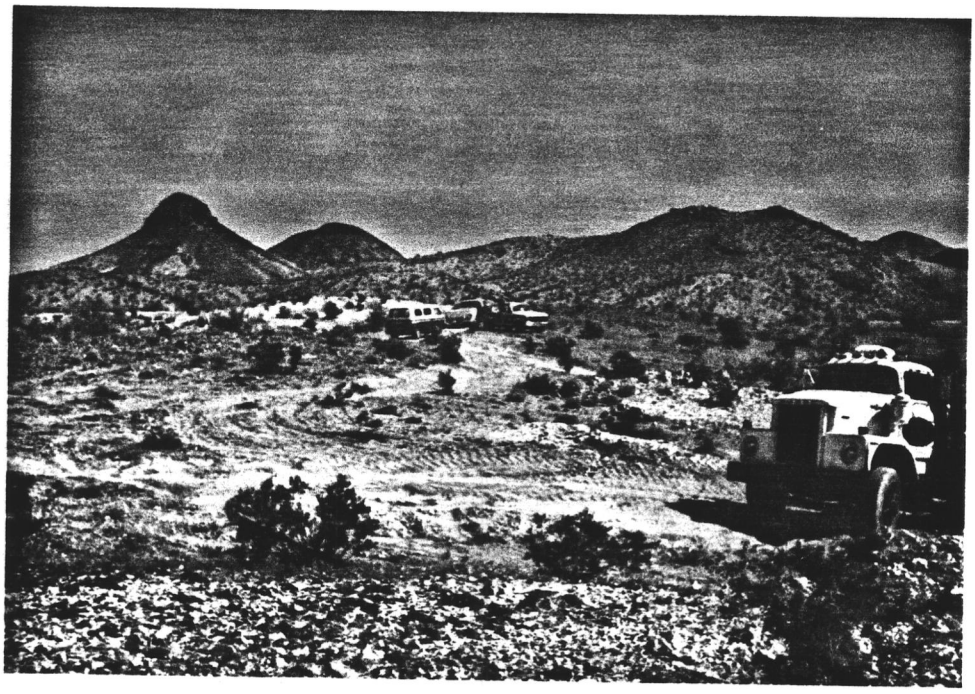
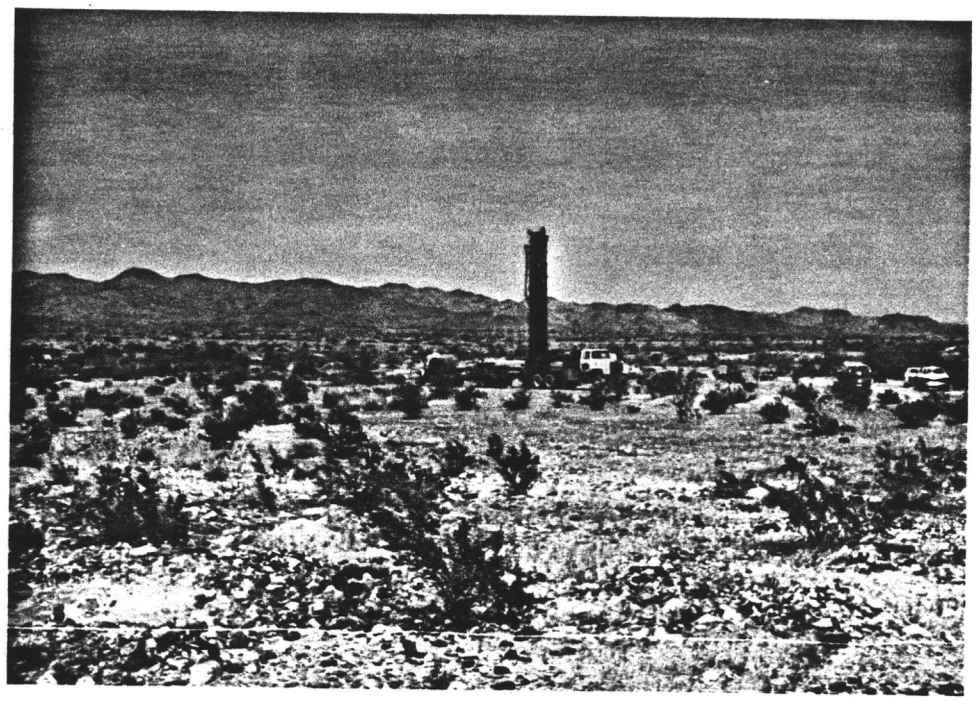


FIGURE 5. SUGARLOAF PEAK AS VIEWED FROM THE VICINITY OF SITE WW-3 LOOKING SOUTHEAST.



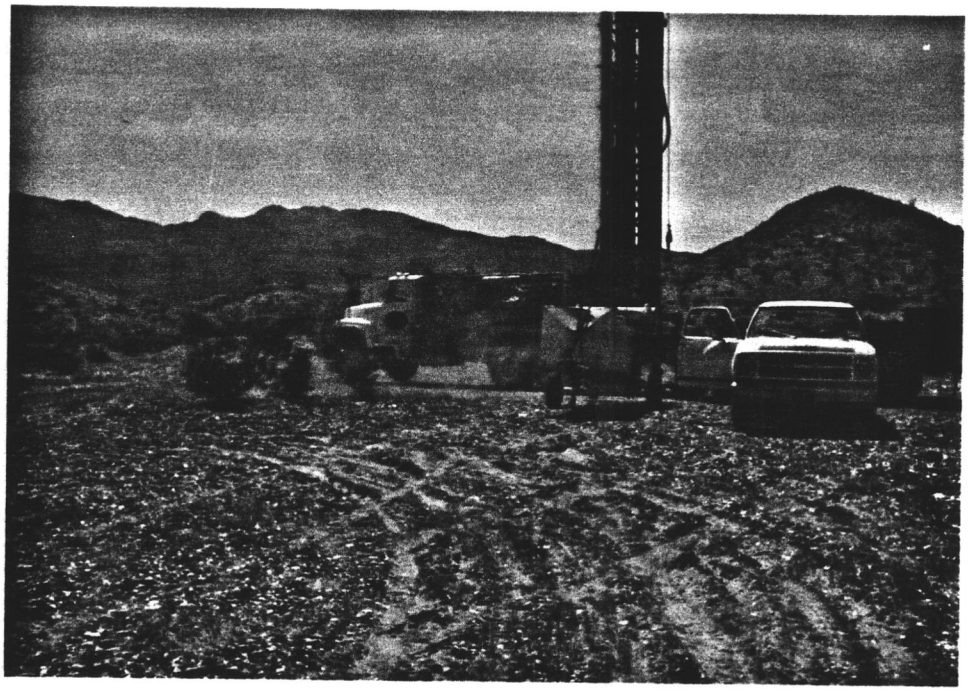


FIGURE 6. DRILL RIG SET-UP AT SITE WW-10. TOP PHOTOGRAPH LOOKING NORTHEAST, LOWER PHOTOGRAPH LOOKING SOUTHWEST.

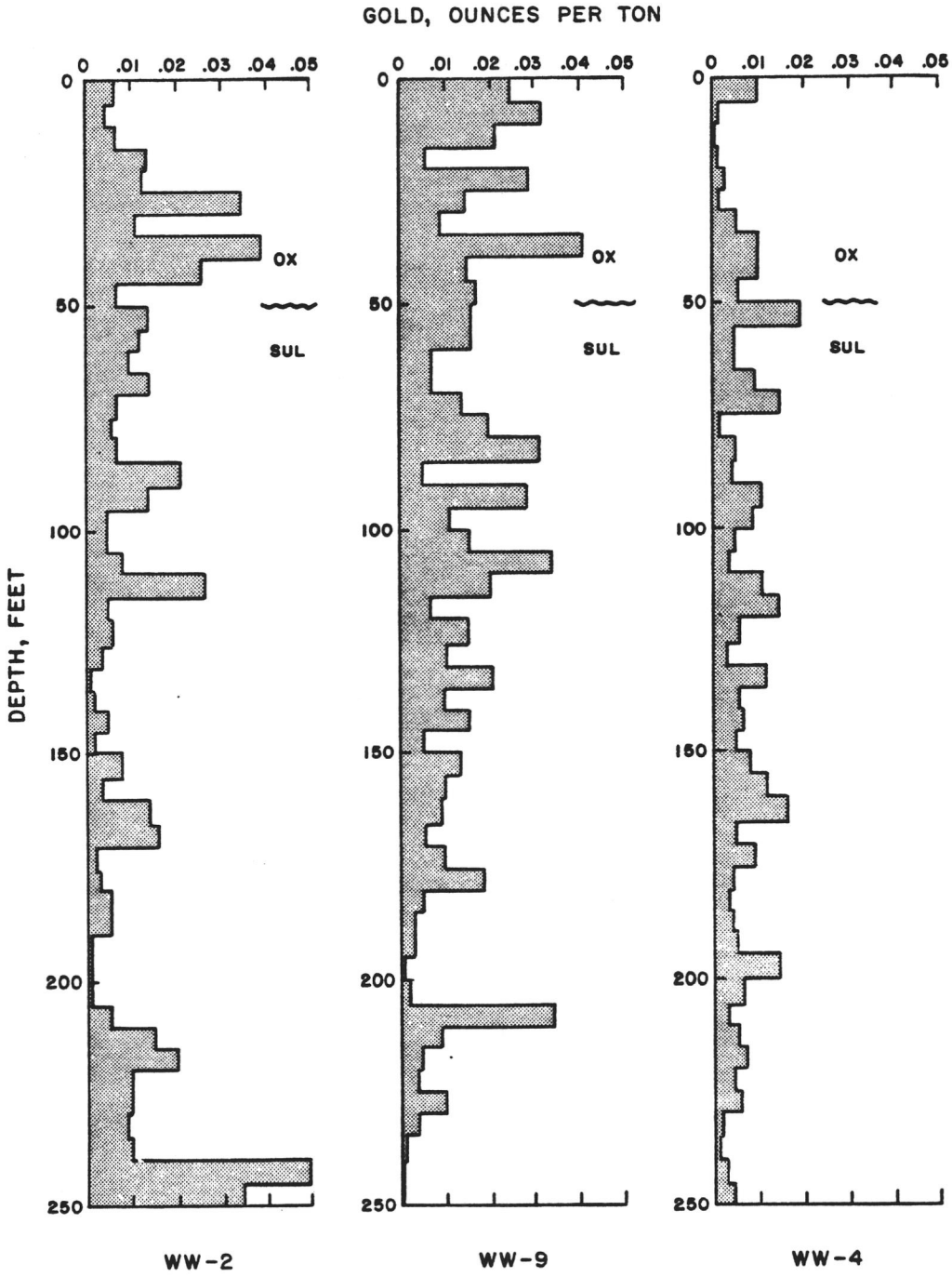


FIGURE 7. GRAPHIC GOLD ASSAY LOGS, HOLES WW-2, WW-9, AND WW-4

FIGURE 8. GRAPHIC GOLD ASSAY LOGS, HOLES WW-8, WW-1, WW-5, AND WW-6

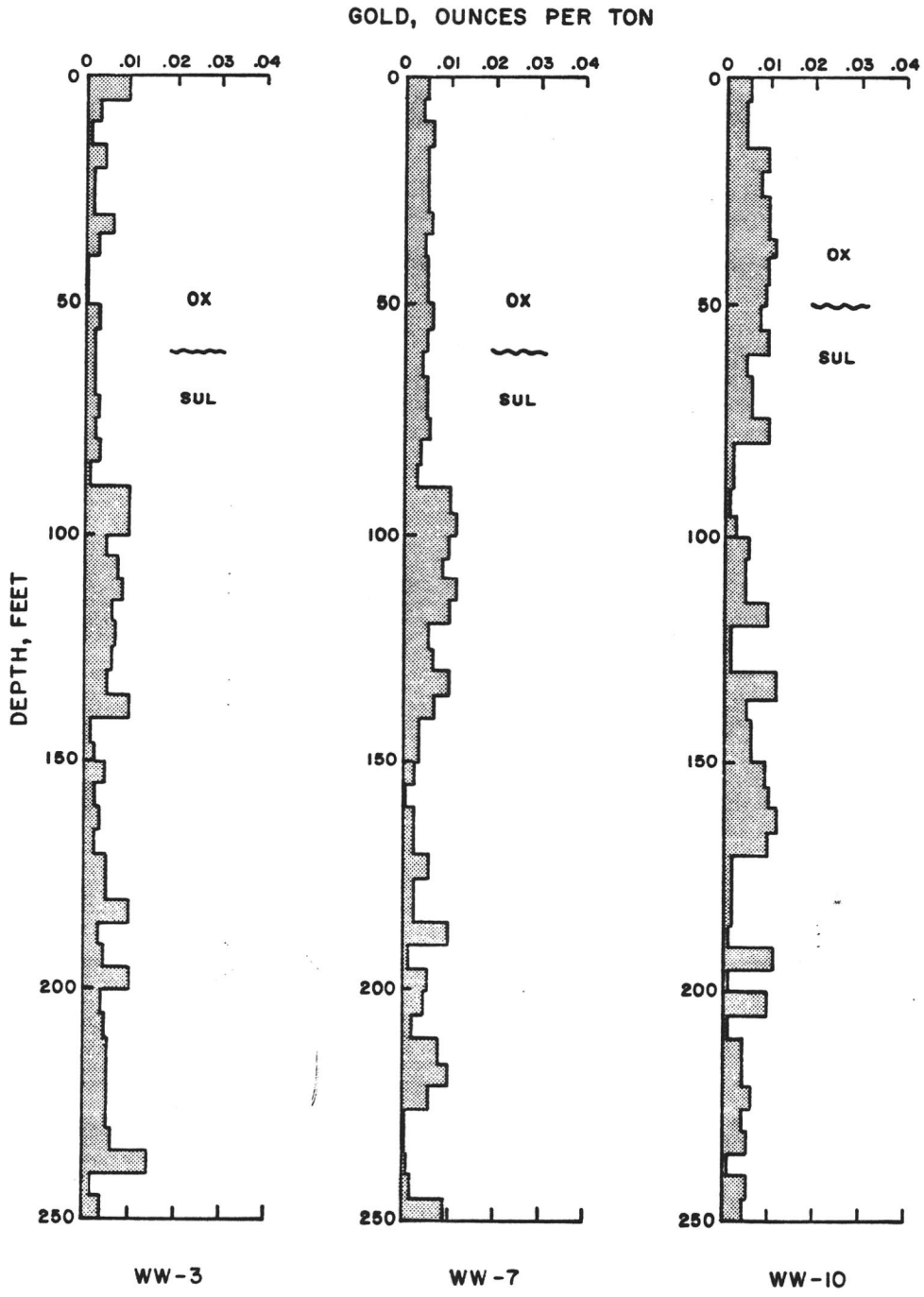


FIGURE 9. GRAPHIC GOLD ASSAY LOGS, HOLES WW-3, WW-7, AND WW-10

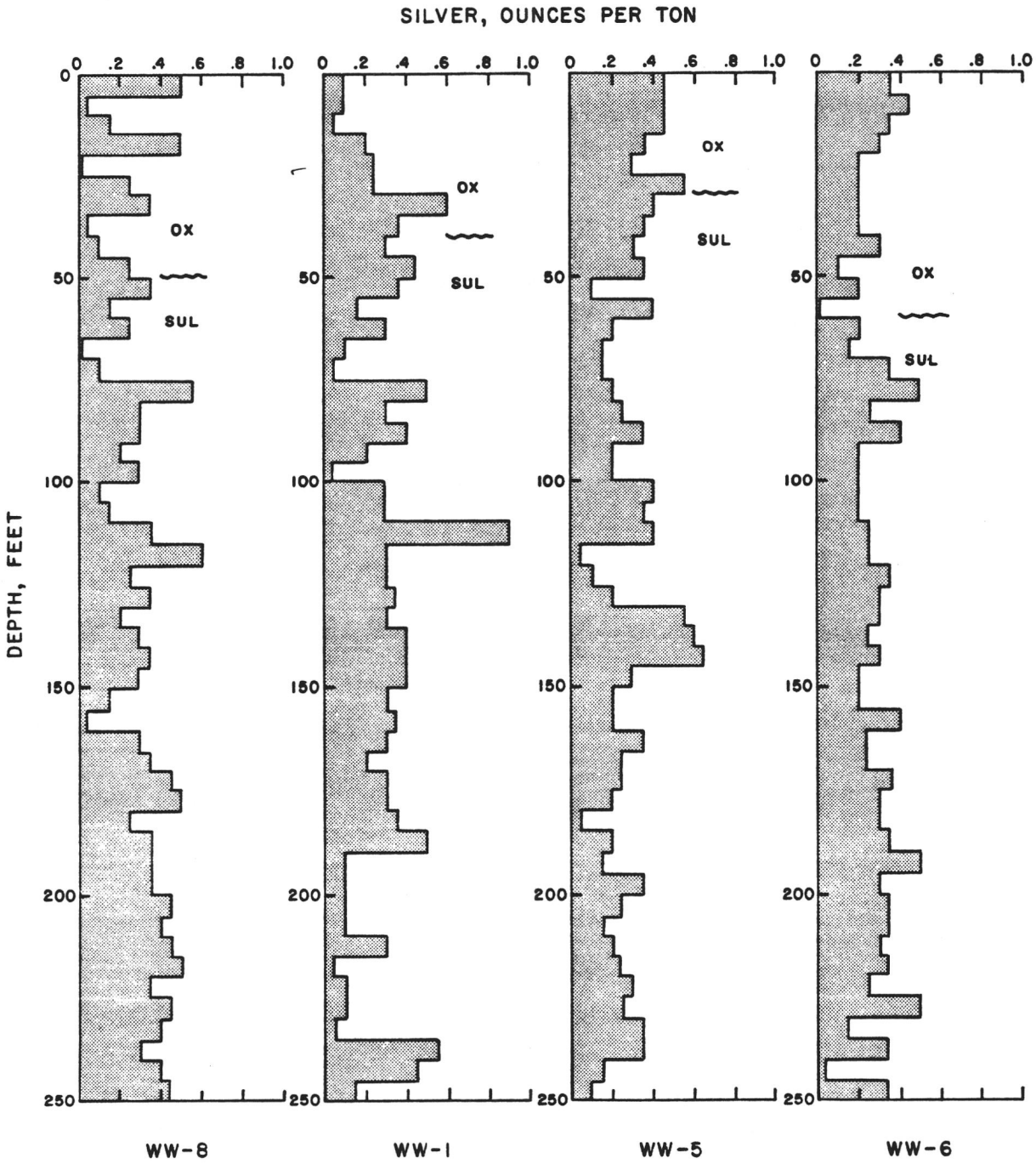


FIGURE 10. GRAPHIC SILVER ASSAY LOGS, HOLES WW-8, WW-1, WW-5, AND WW-6

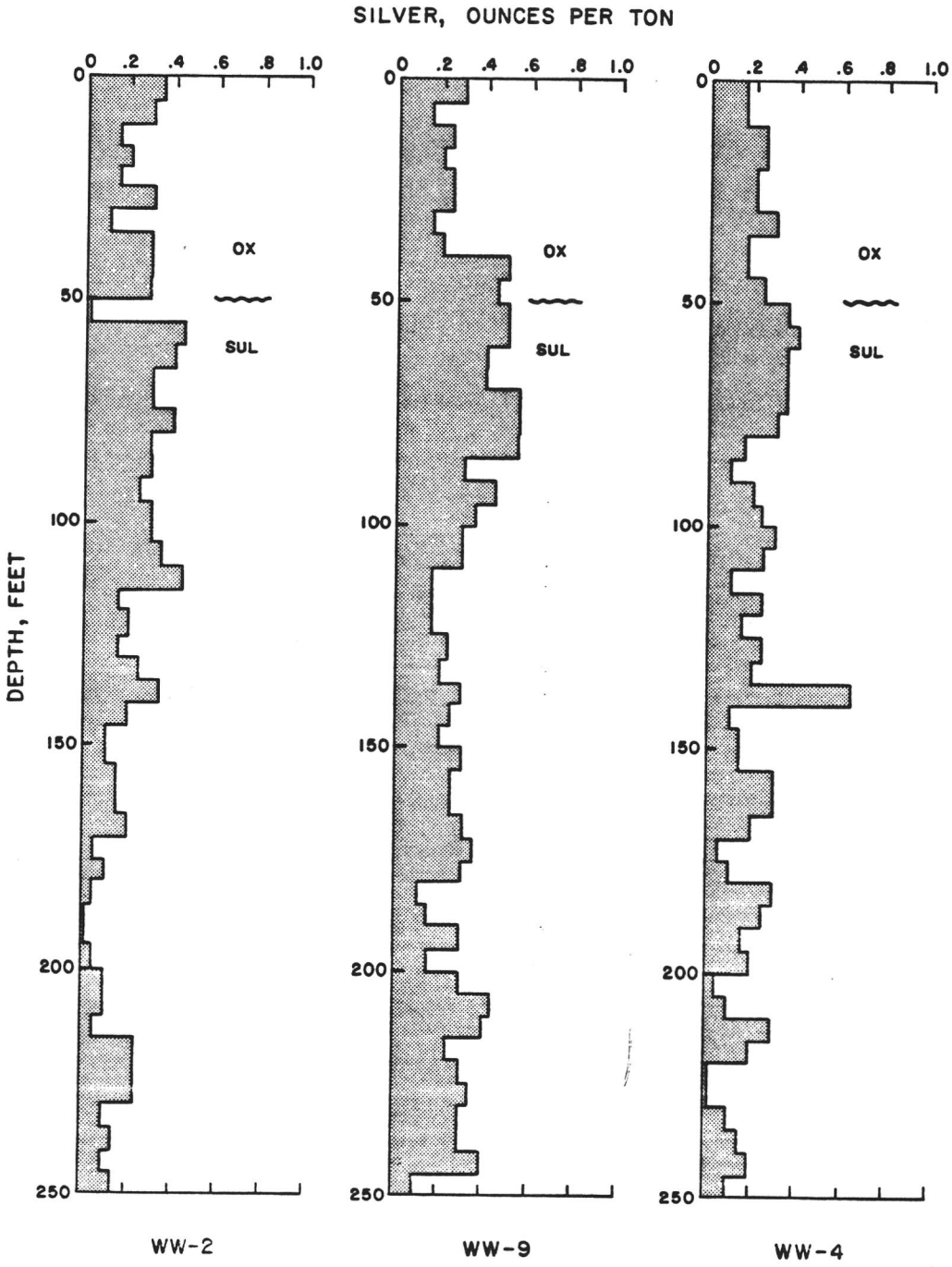


FIGURE II. GRAPHIC SILVER ASSAY LOGS, HOLES WW-2, WW-9, AND WW-4

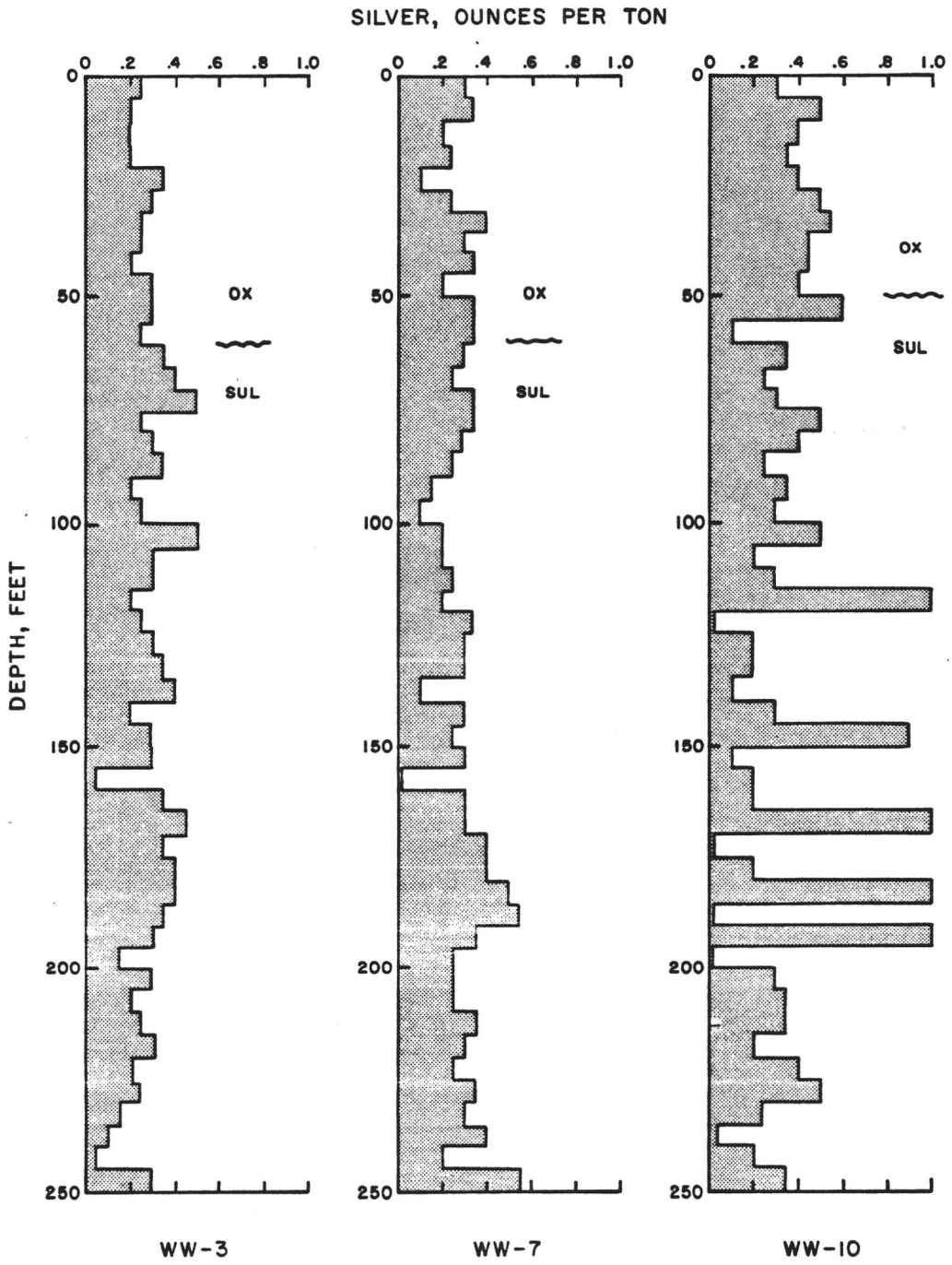


FIGURE 12. GRAPHIC SILVER ASSAY LOGS, HOLES WW-3, WW-7, AND WW-10

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May 1987

SUGARLOAF PEAK PROJECT
La Paz County, Arizona

General

Located approximately 6 miles west of Quartzsite, Arizona and 0.5 miles south of I-10. Holdings consist of 132 lode claims (2640 acres) controlled by N. E. Dausinger, Jr. and Westworld Inc. within the S½ of sections 33, 34, 35, T4N, R20W and sections 2, 3, 4, T3N, R20W (Middle Camp Mtn. Quadrangle, 7.5 minute series). During 1962-73, the area was unsuccessfully evaluated for deep porphyry copper potential by Congdon and Carey and Kerr McGee.

Recent test drilling (28 holes, 9075 total footage) within a broad surface gold anomaly (4000 by 6000 feet, 0.10 ppm-10.0 ppm), apparently diffused to the north and northwest from a suspected vent feature southwest of Sugarloaf Peak, indicates about 60 million tons, grade of 0.02 ounces gold, 0.30-0.50 ounces silver and possible lead/zinc credits. Accumulated data suggest that the grade, thickness and continuity of mineralization increases to the southeast as does the thickness of the upper clay zone.

Three inclined drill holes, drilled on a bismuth/lead anomaly southeast of Sugarloaf, spaced approximately 1500 feet apart, drilled to 250-foot depths, indicate a pyrophyllite resource zone of at least 50 million tons. This zone is interpreted as being within the thicker, overlying clay zone. These drill holes were essentially devoid of precious metal values (Figure 1 and 2).

The property is currently available on flexible terms.

Geologic Description

Regionally, the area is located within a structurally active zone reflecting plate tectonics, and includes the recently developed gold deposits at Mesquite, Picacho and American Girl in southeastern California and Copperstone in Arizona.

The project area is located within a metavolcanic complex with strong northwest trending structural fabrics. Host rocks are field classified as quartz porphyry schists, whose original characteristics are now masked by post-mineralization, low grade metamorphism, including regional shearing.

The large ovoid feature, interpreted from aerial photos and topography, may reflect broad doming with attendant ring/radial fracturing due to intrusive activity from the east or southeast along a major low angle structure at depth. Accumulated data suggest that the ovoid feature has a central zone of argillic

alteration (clay cap) that thickens to the east-southeast and thins to the northwest due to structure and recent erosion. The outer rim of the ovoid feature is a broad ring of propylitic alteration (Figure 1).

From the surface to depth, the area presents a reasonable interpretive model for a "porphyry" precious metal deposit (Figure 2):

1. Remnant metasilicic residue from original hot spring activity. Generally contains anomalous Hg, Au, Te and As. Several zones have been unsuccessfully drill tested for underlying roots.

2. A thick, upper clay zone with extensive bleaching, alunite stockwork/veining, pyrophyllite, sericite, jarosite and limonite derived from pyrite, specularite, "bull" quartz veins, generally anomalous Bi, Pb.

3. A thinning clay zone to the north-northwest from the vicinity of the suspected vent feature, with sericite, quartz-pyrite veinlets, alunite, limonite, jarosite and "bull" quartz veins and anomalous Au. In the northwest corner of the claim block, propylitic alteration was penetrated at shallow depths. The vent feature is considered to have been subject to deeper erosion, thus revealing the broad, diffused gold anomaly north-northwest of the vent.

4. The vent feature may be the plumbing system and principle host for precious metal deposition. A Kerr McGee log of a Congdon and Carey diamond drill hole, located in the northwest corner of section 3, drilled to 700 feet, describes open breccias and increasing silicification with depth. A recent hole, drilled at the same site, indicated increasing gold values (.001 to .01) with depth. A log of another Congdon and Carey hole, drilled to 790 feet depth, located just to the north of the 0.02 contour, Figure 1, indicates increasing silicification with depth. A recent hole located on the 0.02 contour, is bottomed at 250 feet in 0.05 O/T Au.

Future exploration, with an eye to higher grade gold values, should focus on the following:

1. Deeper drilling to the south and east of the trend developed by recent efforts. To the south, the northwest trending lineament may be an important structural control for localizing higher grade precious metal mineralization.

2. Due to thickening of the clay cap to the southeast, testing of the vent feature to at least 500 foot depths.

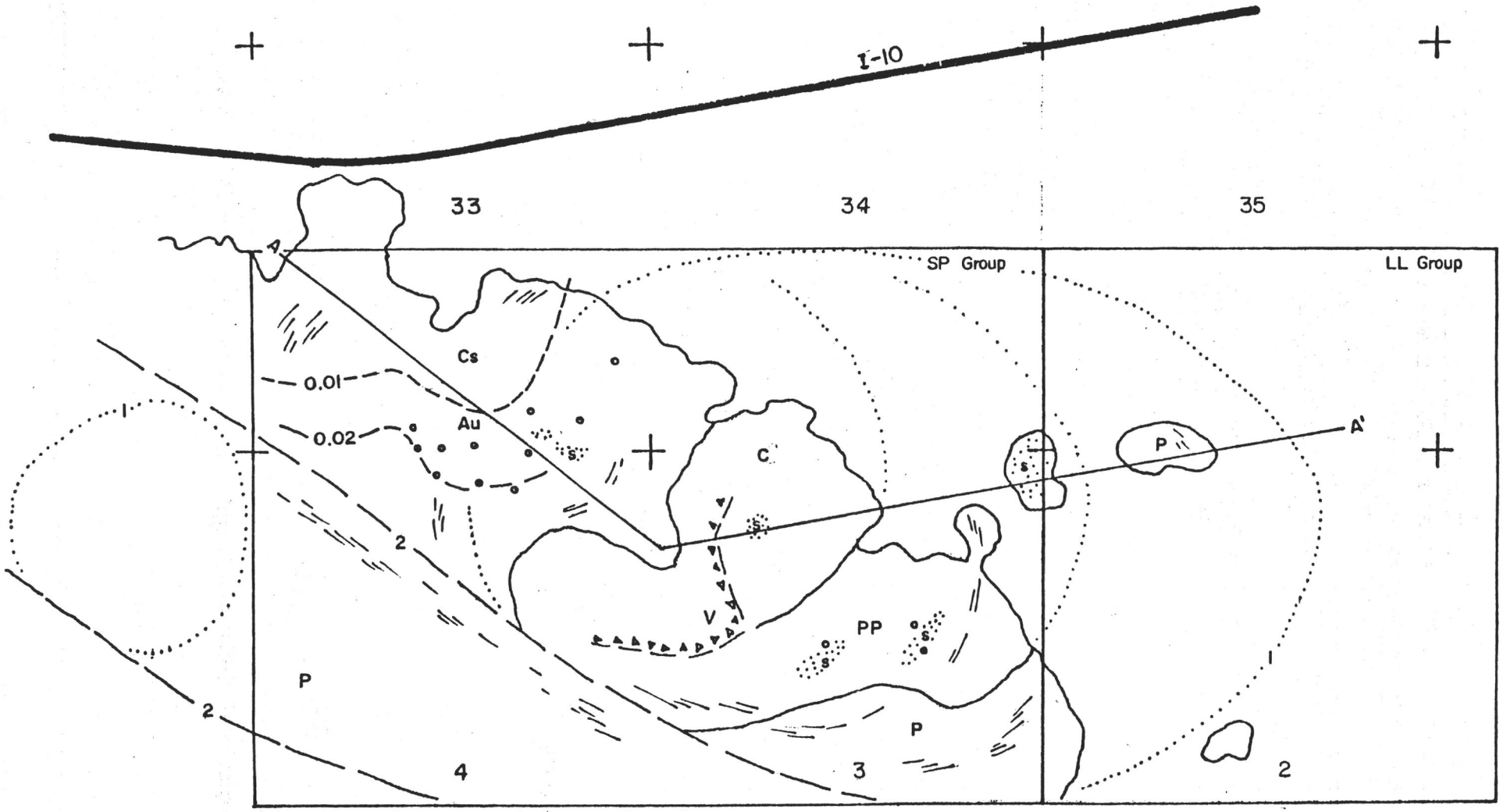

Figure 1.- Generalized plan of Sugarloaf Peak area. 1- Photo/topo ovoid features. 2 - Strong NW photo lineaments. s- Metasilicic remnants of hot spring activity. C- Thick upper clay zone. Cs- Thinning clay zone. V- Vent feature. P- Propylitic zone. Au- Partially drilled anomalous gold zone. Holes plotted have values between 0.015-0.026 O/T Au, cumulative drill intervals of 85 to 205 feet from surface to 250-300 foot depths as defined by contours. PP- Pyrophyllite zone. Holes plotted drilled almost entirely in pyrophyllite, gold values nil. Scale 1:24,000.

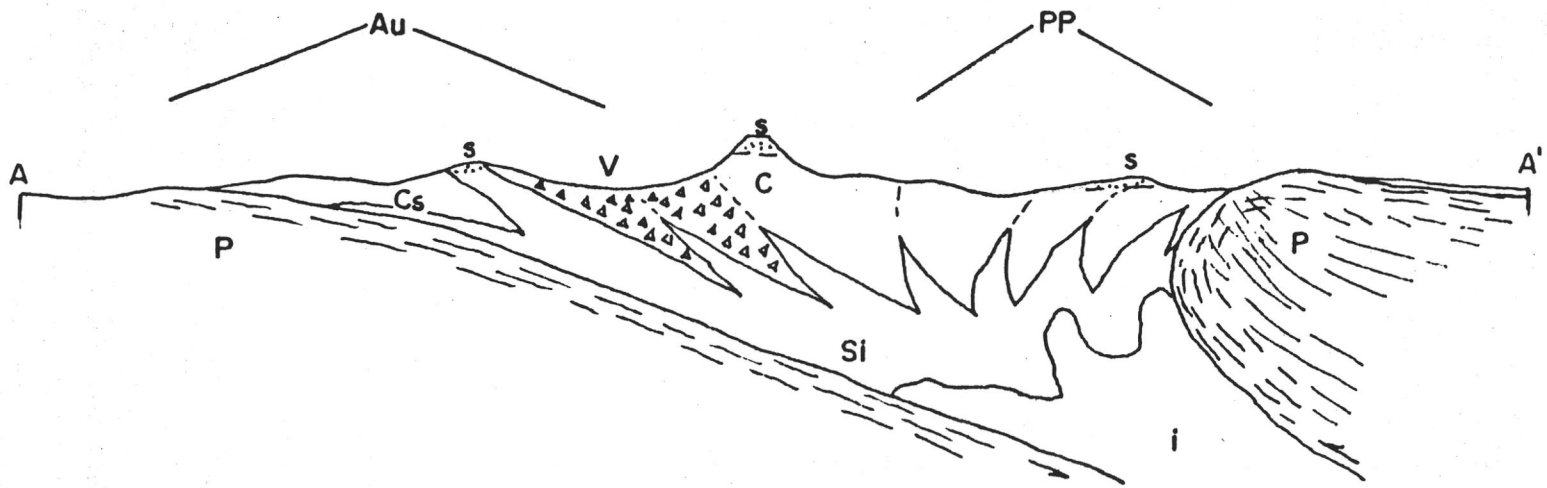

Figure 2.- Interpretive cross section through Sugarloaf Peak area. s- Metasilicic remnants of hot spring activity. C- Thick upper clay zone. Cs- Thinning clay zone. V- Vent feature. Si- Silicic zone, potentially higher grade precious metals. P- Propylitic zone. i- Hypothesized intrusive. Au- Extent of anomalous gold zone. PP- Pyrophyllite resource zone. Scale 1:24,000, vertical scale exaggerated.

PROPERTY: Sugarloaf Peak SHEET No. 1/4 HOLE No. SWR-5

Sec. 4 T 3N R 20W ; Date Started 11-19-84, completed 11-19-84 Bearing 0° Inclination -60°, Drilling Services - Reverse hammer TD 340' log TH 11-20-84

FEET FROM	FEET TO	FM	ROCK TYPE / STRUCTURE DESCRIPTION	Struc	LOG	LOG	ALTERATION / MINERALIZATION DESCRIPTION	FeOx	%py	%sp	Sil	Ser	Ch Ep	Arg	% qtz		SAMPLE No.	FROM	TO	REC FT. / %	SAMPLE LENGTH					
0	5		greenish-gray, sericitized				no sample																			
5	10		quartz porphyry schist				oxidized - bleached, mod lm ≤ for.	++				++														
10	15						same - tc anhy.	++				++														
15	20						same	+				+														
20	25						same - minor unoxid, silic. schist	+				+														
25	30						same	+				+														
30	35						largely unoxid. gray, pyritic		1-3		+?	+														
35	40						same, maybe arg. alt.?		1/2-1		+?	+														
40	45						same - gray		1-3		++	+														
45	50						same		1-3		++	+														
50	55						same - non sil. (arg.?)		1-3			+ ?org														
55	60						gray 1-2% unid. blk min		1-3		++	+?	tc. op													
60	65						same ?		3-5		+	+?	tc op.													
65	70						same ? tc. anh.		1-3		+	+?														
70	75						same tc. anhy		1-3			+?														
75	80						greenish-gray, sericitic		3-5			++														
80	85						same		1-3			++														
85	90						gray, 3-5% blk min.		3-5		+	++														
90	95						same 1-3% blk. min.		1-3			++			5											
95	100						same		1-3			++														

Water - trickle. @ 340 ft

PROPERTY: Sugarloaf Peak SHEET No. 2/c HOLE No. SWR-5

FEET		GEOLOGICAL LOG														ASSAY RECORD								
		ROCK TYPE / STRUCTURE					ALTERATION / MINERALIZATION																	
FROM	TO	FM	DESCRIPTION	Struc	LOG	LOG	DESCRIPTION	FeOx	% py	% sp	Sil	Ser	Ch Ep	Arg	% qtz		SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH					
100	105		greenish-gray, sericitized				gray, 1-2% unid. gray min. tr. only.		1-3		+	+?														
05	10		quartz porphyry				same		1-3		+	+?														
10	15		schist				same		5-10		++	+?														
15	20						same - tr. black min		5-10		++	+?														
20	25						same tr to minor blk min		3-5		+	+?														
25	30						same		1-3			+?														
30	35						chips comp. w/ clays s+bar? same - black min - radial xtals		1-3					++?													
35	40						py tarnished - brassy, tr. arb. sea-lt-green - no blk min.		3-5			++														
40	45						same		1-3			++														
45	50						same		1-3			++														
50	55						same		1-3			++														
55	60						same		1-3			++														
60	65						same - strong ser.		1-3			+++														
65	70						same - py not as brassy		1-3			++														
70	75						same		1-3			++														
75	80						mixed rock, clays cement chips strong sulfy.		1-3			++			10											
80	85						same		1-3	tr?		++														
85	90						gray		1-3		+	++			5											
90	95						same		1-3	tr?	+	++														
195	200						greenish gray		1		+?	++														

PROPERTY: Sugarloaf Peak SHEET No. 3/4 HOLE No. SWR-5

FEET		GEOLOGICAL LOG														ASSAY RECORD									
		ROCK TYPE / STRUCTURE				ALTERATION / MINERALIZATION																			
FROM	TO	FM	DESCRIPTION	Struc	LOG	LOG	DESCRIPTION	FeOx	% py	% sp	Sil	Ser	Ch Ep	Arg	% qtz	SAMPLE No.	FROM	TO	REC FT / %	SAMPLE LENGTH					
200	205		greenish gray				strong sericit, pyrite conc, min qtz-unalt		1-3			++			5										
05	10		sericitic quartz				same		1-3			++													
10	15		porphyry schist				Same		1-3			++													
15	20						same		1-3			++													
20	25						Same		1-3			++													
25	30						mod. green color		1-3			++	tc ch												
30	35						tc. red. hm.?, med. green		1			+	mod ±ch												
35	40						minor ep, stch, blotchy py		1-3				ch +++												
40	45						Same		1				ch +++												
45	50						Same - minor ser.		1			+	++												
50	55						Sericitic - light green		5-10			+++													
55	60						same		3-5			+++													
60	65						chloritic		3-5			++	++												
65	70						Sericitic		3-5			+++													
70	75						same		3-5			+++													
75	80						same		1-3			+++													
80	85						Same - reddish stain?		1-3			+++													
85	90						sericitic - 1% unind. blk. min		1-3			+++													
90	95						lighter color - 1% blk min		3-5	tc?	++	+++													
295	300						same		1-3		++	+++													

PROPERTY: Sugarloaf Peak SHEET No. 4/4 HOLE No. SWR-5

FEET		GEOLOGICAL LOG															ASSAY RECORD									
		ROCK TYPE / STRUCTURE				ALTERATION / MINERALIZATION																				
FROM	TO	FM	DESCRIPTION	Struc	LOG	LOG	DESCRIPTION	FeOx	%Py	%Sp	Sil	Ser	Ch Ep	Arg	%Qtz		SAMPLE No.	FROM	TO	REC FT. / %	SAMPLE LENGTH					
300	305		greenish-gray sericitic				v. light green mod. blk min wk schist		3-5		+++	+++														
05	10		quartz porphyry schist				same		3-5		+++	+++														
10	15						same		1-3		+++	+++														
15	20						same		3-5	tr?	+++	+++														
20	25						same		3-5		+++	+++														
25	30						same		1-3		+++	+++														
30	35						same		1-3	tr?	++	+++														
335	340						same		1-3		+++	+++														
	TD																									

PROPERTY: Sugarloaf Peak SHEET No. 1/4 HOLE No. SWR-6

Sec. 33 T4N R20W; Date Started 11-19-84 completed 11-84 Bearing Inclination -60°, Drilling Services - Reverse hammer 0-280 tricone 280-400, TD 400' 7 HR 11-21-84

FEET FROM	FEET TO	FM	ROCK TYPE / STRUCTURE DESCRIPTION	Struc	LOG	LOG	ALTERATION / MINERALIZATION DESCRIPTION	FeOx	% Py	% Sp	Sil	Ser	Ch Ep	Arg	% Qtz	SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH
0	5		greenish-gray, sericitized				No Sample													
5	10		quartz porphyry schist				bleached, mod. jar.-lm	+++				++								
10	15						same - strong lm	+++				++								
15	20						same - less lm	+++				++								
20	25						bleached - unident. platey blk min	+				++								
25	30						same - mod. lm	++				++								
30	35						same - tr. anh.	+				++								
35	40						same	+				++								
40	45						same	++				++								
45	50						mixed oxide - sulfide white - gray	+	1-3			++								
50	55						v. pale green - unident. blk min. pyrite in qtz veins		1-3			++			5					
55	60						same - blk min absent		1-3			++			5					
60	65						same		1			++								
65	70						same		1-3	tr?		++								
70	75						same		1			+++			5					
75	80						same tr blk min?		1			+++								
80	85						same - stronger ser.		1-3			+++								
85	90						same		3-5			+++								
90	95						same		3-5			+++								
95	100						same tr. blk min?		1-3			+++								

water: trickle at 280', 20-25 g.p.m. @ 395°

PROPERTY: Sugarloaf Peak SHEET No. 2/4 HOLE No. SuR-6

FEET FROM	FEET TO	FM	ROCK TYPE / STRUCTURE DESCRIPTION	Struc	LOG	LOG	ALTERATION / MINERALIZATION DESCRIPTION	FeOx	% Py	% Sp	Sil	Ser	cc Ep	Arg	% Qtz	ASSAY RECORD SAMPLE No.	FROM	TO	REC FT. / %	SAMPLE LENGTH
100	105		greenish-gray, sericitized				tr. anh. Med. gray, minor bk min?		3-5		+	+++								
05	10		quartz porphyry				Same tr. bk min?		1-5		++	+++								
10	15		schist				Same		1-3			+++								
15	20						Same		1-3		++	+++								
20	25						Same strong sil.		1-3		+++	+++								
25	30						Same		1-3		+++	+++								
30	35						Same		1-3		+++	+++								
35	40						Same - tr. blk. min?		3-5		+++	+++								
40	45						Same		1-3		+++	+++								
45	50						Med. gray, intense sil		3-5		+++	+++								
50	55						green-gray		3-5		+	+++								
55	60						Same - tr. blk min.?		1-3	tr?	+	+++								
60	65						Med. green - tr. bk min?		1-5	tr?	++	+++								
65	70						Same		1-3		++	+++								
70	75						Same		3-5	tr.?	++	+++								
75	80						lt. green		1		+	+++								
80	85						Same - 1½% cp? tr. bk min: radial xtals		1-3	tr.?	++	+++								
85	90						light green - tr. cp? tr. blk min -		1-3	tr?	++	+++								
90	95						Same - tr. brassy, blk. min radiating (cp?)		1-3	tr?	+++	+++	tr cp							
195	200						Same tr. "cp? blk min?		1-3	tr?	++	+++								

PROPERTY: Sugarloaf Peak SHEET No. 3/4 HOLE No. SWR-6

Township:	Collar co-ordinates:	Dip Tests (true dips):	Total Depth:
Range:	Collar elevation:	At:	Core Size: to ft.
Lot:	Bearing:	At:	: to ft.
Claim No.	Inclination:	At:	Drilled by:
Date started:	Date completed:	At:	Logged by:

GEOLOGICAL LOG

FEET FROM	FEET TO	ROCK TYPE / STRUCTURE: FM	DESCRIPTION	Struc	LOG	ALTERATION / MINERALIZATION: LOG	DESCRIPTION	FeOx	% Py	% Sp	Sil	Ser	Cl Ep	Arg	% Qtz
200	205		Greenish-gray, sericitized				med-dk green, tr. cp?, blk min?		1-3	tr+?	+++	++			
5	10		quartz porphyry schist				Same - tr. blk min?		1-3	tr?	+++	++			
10	15						Same - tr. blk min?		1-3	tr?	+++	++			
15	20						Same - tr. blk. min, cp?		1-3	tr?	+++	++			
20	25						Same, tr. blk. min, cp?		1-3	tr?	+++	++			
25	30						v. light green, tr. anh.		1-3			+++			
30	35						bluish-gray ser. sheen, brassy py? cp?		1-3		+	+++			
35	40						Same, brassy py? cp? tr. blk min?		1-3		+	+++			
40	45						Same - same - same		1-3		+	+++			
45	50						mixed sil. + ser. chips. tr blk min + dk		1-3	tr?	++	++			
50	55						gen. ser., pale green, tr. blk min		1-3		+	+++			
55	60						med. gray-green, brassy py?, blk min		1-3	tr?	++	++			
60	65						Same.		1-3	tr+?	+++	+++			
65	70						Same, brassy py? blk. min		1-3	tr+?	+++	++			
70	75						Same, brassy py? blk min		1-3	tr+?	+++	++	tr cp		
75	80						Same, brassy py? blk min		1-3	tr+?	+++	++	tr cp		
80	85						Same, brassy py? blk min		1-3	tr?	++	++			
85	90						Same / /		1-3	tr?	+++	++			
90	95						pale green, tr. MoS_2? in qtz		1-3	tr?	+++	++			10%
295	300						no sample								

ASSAY RECORD

SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH

PROPERTY: Sugarloaf Peak SHEET No. 4/4 HOLE No. SWR-6

Township:	Collar co-ordinates:	Dip Tests (true dips):	Total Depth:
Range:	Collar elevation:	At:	Core Size: to ft.
Lot:	Bearing:	At:	: to ft.
Claim No.	Inclination:	At:	Drilled by:
Date started:	Date completed:	At:	Logged by:

GEOLOGICAL LOG

FEET FROM	FEET TO	ROCK TYPE / STRUCTURE: F M	DESCRIPTION	Struc	LOG	LOG	ALTERATION / MINERALIZATION: DESCRIPTION	Fe_2O_3	py/mpy	sp	Sil	Ser	Ch cp	Arg	Qtz
300	305		greenish-gray, sericitized,				med. green-tarnished py? cp?		1-3	tc?	+++	++			
5	10		quartz porphyry schist				Same-tc, blk min?		1-3	tc?	++	++			
10	15						same-tc blk min? most py fresh access. tarnished		1-3	tc?	++	++			
15	20						same-tc blk min? Minor tar. py?		1-3	tc?	++	++			
20	25						same-tc, blk min?		1-3	tc?	++	++			
25	30						pale green, tc, blk min?		1-3	tc?	++	++			
30	35						Same, tc, blk min?		1-3	tc+?	+++	++			
35	40						same, tc, tarnished py? cp?		1-3	tc+?	++	++			
40	45						same,		1-3	tc+?	++	++			
45	50						Same tc. blk min?		3-5	tc+?	++	++			
50	55						same, tc, blk min?		3-5	tc+?	++	++			
55	60						v. pale green, tc, pale green sp		3-5	tc	+++	+			
60	65						same,		3-5	tc?	+++	+			
65	70						pale green		1-3	tc?	++	++			
70	75						Same, honey & pale green sp. v. v. blue-gray mngl?		3-5	1	+++	+			
75	80						Same, same		3-5	½	+++	+			
80	85						pale green,		1-3	tc?	++	+++			
85	90						Same		3-5	tc	++	++			
390	395						Same, tc tarn. py? Au?		1-3	tc?	+++	++			
	TD														

ASSAY RECORD

SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH

PROPERTY: Sugarloaf Peak SHEET No. 1/4 HOLE No. SWR-7

Township: Sec. 33, T4N, R20W	Collar co-ordinates:	Dip Tests (true dips):	Total Depth: 400'
Range: La Paz Co., Arizona	Collar elevation:	At:	Core Size: to ft.
Lot:	Bearing: 170°	At:	: to ft.
Claim No.	Inclination: -60°	At:	Drilled by: D.S.
Date started: 11-26-84	Date completed: 11-27-84	At:	Logged by: TKV

GEOLOGICAL LOG

FEET FROM	FEET TO	ROCK TYPE / STRUCTURE: FM	DESCRIPTION	Struc	LOG	ALTERATION / MINERALIZATION: LOG	DESCRIPTION	FeOx	%py	%sp	Sil	Ser	Chl Ep	Arg	%qtz
0	5						no sample								
5	10		bleached to gremish-gray,				med. green, pyrite, ser. (heavy lin on oxides)	25%	1-3		+++	++			
10	15		sericitized quartz				same, tc anhi	80%	1		+++	++			
15	20		porphyry schist				same, tc. anh.	15%	3-5		+++	++			
20	25						same, tr anh.	30%	1-3		++	++			
25	30						bleached, tc. blk. min.?	50%	1		+	++			
30	35						green-gray -	15%	1-3		++	++			
35	40						same, tc. gray.	30%	1-3		++	++			
40	45						low oxide, tc. blk. min	5%	1-3		++	+++			
45	50						same, no blk. mine	10%	3-5		++	+++			
50	55						mixed, bleached & gray	25%	3-5		+++	++		?	
55	60						bleached, tc. anh.	1-2%	1-3					++?	
60	65						med. gray,	tc.	1-3		+	++			tc.
65	70						same		3-5		++	++			
70	75						greenish-gray		3-5		+++	++	tc ep.		tc.
75	80						same		5-10		+++	++			tc pink
80	85						light. greenish-gray		3-5		++	++	tc. ep.		tc.
85	90						same		3-5		++	++			
90	95						same, tc, v. fine py (blk)		3-5		++	++			tc
95	100						dk. green		5-10		+++	+	tc chl		tc

ASSAY RECORD

SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH

water. 5 g.p.m. @ 400'

PROPERTY: Sugarloof Peak SHEET No. 2/4 HOLE No. SWR-7

FEET FROM	FEET TO	FM	ROCK TYPE / STRUCTURE DESCRIPTION	Struc	LOG	LOG	ALTERATION / MINERALIZATION DESCRIPTION	FeOx	% py	% sp	Sil	Ser	ch Ep	Arg	% qtz	ASSAY RECORD SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH
100	105		Medium green-gray,				med. to dk. green		3-5		+++	++			tc					
5	10		sericitized, quartz				same		5-10		+++	++	tc. chl.							
10	15		porphyry schist				light green		3-5		++	++								
15	20						slightly bleached		5-10		+++	++								
20	25						Same		5-10		+++	++								
25	30						light. green		3-5		++	++								
30	35						med. green		5-10		+++	+								
35	40						Same		5-10		+++	+			tc					
40	45						Same		5-10		+++	+								
45	50						Same		10-20		+++	+			tc.					
50	55						Same		5-10		++	+			tc					
55	60						med. green - tc. anh. 5% purple fl.		3-5		+	+++								
60	65						same - no fl.		3-5			+++	tc. ep.							
65	70						same		3-5		+	++	tc. ep.							
70	75						Same, wk. tarnish on py		3-5		++	++								
75	80						Same - ± tc. anh. tarnished py		5-10		++	++	mod. ep.							
80	85						med-dk green		3-5		+++	+								
85	90						same - v. fine, brown sp.(?)	tc.	3-5		+++	+	mod. ep.							
90	95						lt. to dk. green mix, tc. anh.		3-5		+	++	mod. ep.							
195	200						Same		3-5		+	+++			tc.					

PROPERTY: Sugarloaf Peak SHEET No. 3/4 HOLE No. SWR-7

FEET FROM	FEET TO	F M	ROCK TYPE / STRUCTURE DESCRIPTION	Struc	LOG	LOG	ALTERATION / MINERALIZATION DESCRIPTION	FeOx	%py	%sp	Sil	Ser	Cb Ep	Arg	%xts
200	205		Medium green-gray				light-green-gray		3-5		+	++			
5	10		sericitized quartz				med. gray		3-5		++	+			
10	15		porphyry schist				light, green-gray		1-3			+++			ball 30%
15	20						same		1-3	tc?		+++			tc
20	25						same, minor pink rhodochrosite (?)		1-3	tc?		+++			ball 30%
25	30						same - 20% pink min (?) barite-alt.!		1-3			+++			ball 30%
30	35						same - 5% pink min		3-5	tc?	++	++			ball 30%
35	40						same - 5% pink min coats qtz		3-5		+	++			ball 30%
40	45						same - no pink min		1-3		++	+			ball 60%
45	50						same - tc. radial blk min "feather ore" (?)		1-3		++	++			ball 75%
50	55						mottled - buff/green, chips bx?		3-5		++	++			5%
55	60						med. gray, strong sil. wk tarnish on some py		5-10	tc? +	+++	+			
60	65						same		5-10	tc? +	+++	+			
65	70						same - tarnished py (?)		3-5	tc? +	+++	+			10%
70	75						med. green; schist,		1-3		+	+++			25%
75	80						same.		3-5	tc?	++	+			
80	85						light; tarnished py		3-5		++	++			
85	90						med. green, ± tarnished py		1-3	tc?	+++	+			
90	95						Alt green		1-3	tc?	+++	+			
295	300						same		1-3	tc?	+++	+			ball 10%

ASSAY RECORD

SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH

PROPERTY: Sugarloaf Peak SHEET No. 4/4 HOLE No. SWR-7

FEET FROM	FEET TO	F M	ROCK TYPE / STRUCTURE DESCRIPTION	Struc	LOG	LOG	ALTERATION / MINERALIZATION DESCRIPTION	FeOx	% Py	% sp	Sil	Ser.	Ch Ep	Arg	% qtz	ASSAY RECORD SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH
300	305		Medium green-gray				dk. green gray (wkl. chl.??)		3-5		+++	+++								
5	10		sericitized, quartz				same		3-5		+++	+++								
10	15		porphyry schist				Same		3-5		+++	+++			10					
15	20						same		3-5	tc?	+++	+++								
20	25						med. green-gray		3-5	tc?	+++	++								
25	30						same		3-5	tc?	+++	++								
30	35						Same		3-5	tc?	+++	++								
35	40						Same		3-5		++	+++								
40	45						lt. green · white qtz w. fine grained MoS_2(?)		3-5	tc?	+	+++			50%					
45	50						lt. green		3-5	tc?	+	+++								
50	55						Same		1-3	tc?	+	+++								
55	60						Same - stronger Sil		3-5	tc?	++	+++								
60	65						Same		1-3	tc	+	+++								
65	70						Same		3-5	tc	+	+++								
70	75						Same		1-3	tc	+	+++								
75	80						lighter green		1-3	tc		+++			5					
80	85						Med. green		3-5	tc	++	++								
85	90						Med-dk green		1-3		++	++								
90	95						same		3-5		++	++								
395	400						Med. green		1-3	tc?	+	+++								
	TD																			

PROPERTY: Sugarloaf Peak SHEET No. 1/3 HOLE No. SWR-8

Township: Sec. 33, T 4N, R 20W	Collar co-ordinates:	Dip Tests (true dips): water at 280 to 300 TD	Total Depth: 300'
Range:	Collar elevation:	At: 1-2 g.p.m.	Core Size: to ft.
Lot:	Bearing:	At:	: to ft.
Claim No.	Inclination:	At:	Drilled by: D.S. - reverse circulation
Date started: 11-27-84	Date completed: 11-27-84	At:	Logged by: T.H.Y.

GEOLOGICAL LOG

FEET FROM	FEET TO	F M	ROCK TYPE / STRUCTURE DESCRIPTION	Struc	LOG	LOG	ALTERATION / MINERALIZATION DESCRIPTION	% py	Sil	Ser.	chl op.	unid. oxid. sulf.	unid. black min.	% bulgite	Tosp	Arg.
0	5		No sample													
5	10		quartz-porphyry				cream-limonitic, oxidized									+
10	15		schist													+
15	20															+
20	25															+
25	30															+
30	35															+
35	40											++				+
40	45											++				+
45	50															+
50	55															+
55	60						chalky, local sericitic	tr/2	+	+	tr op.					+
60	65						allophane overprint (?)	1-3	+	+				5		+
65	70							1-5		+						+
70	75							1-3		+						+
75	80							1-3		+						+
80	85							1-3		+				20		+
85	90							1-3		+				5		+
90	95							1-3		+				5		+
95	100							1-3		+				25		+

ASSAY RECORD

SAMPLE No.	FROM	TO	REC. FT. / %	SAMPLE LENGTH					

Water trickle 2[illegible]