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TO: Ben F. Dickerson, III; Carole A. O'Brien

FROM: Don White

DATE: October 4, 1985

SUBJECT: Meetings, society field trips and sharing of U.V.X. information

Having just returned from the workshop on early Proterozoic geology of Arizona, held at the U.S.G.S., Flagstaff, I have some news and some questions.

Paul Lindberg gave an excellent presentation on his work around Jerome, incorporating U.V., U.V.X., Copper Chief and other data, and synthesizing the structure and mineralization. I hope that I may emulate his talent for patient, accurate compilation of details which, in aggregate, reveal so much. There is plenty of need for that in further compilation of the vault data at the U.V.X. and, perhaps more critical, at the Vulture before any designation of deep drilling targets. Paul's work includes cross sections and block diagrams as well as schematic sections showing the sequence of events thru geologic time. Much of his work is going to appear in an Economic Geology article soon (early '86 --?).

One Northern Arizona University student is doing her Ph.D. dissertation on a subject of interest to us. She is Mae Gustin, being advised, I believe, by Professor Karl Karlstrom. She has only begun the last few months, but hopes to do a comprehensive study of the U.V. geochemistry. She expects to map the alteration in the Cleopatra Formation, do major and trace element analyses, thin section and microprobe work, oxygen, carbon, and sulfur isotope studies, and ultimately draw conclusions about the physico-chemical conditions of the ore-forming fluids. She is interested in obtaining samples for study from our U.V.X. underground. I indicated that this would probably be no problem as we may provide her with core and drift specimens of various volcanic lithologies which we have no interest in assaying. Your approval of this would be appreicated.

Another matter came up when I chatted with Dale Armstrong. He is coordinator for the Jerome portion of an AGS field trip planned for about March 22, 1986. He and I see the need for input on the gold potential at the camp and I would like to be able to present some of our U.V.X. findings. At least initially, all AGS needs is knowledge of the subjects to be covered in order to put out announcements in a few weeks. Following that, I guess written materials for the guidebooks are submitted. Then an oral presentation would be in order

on-site, during the trip. This will dovetail with material on the Copper Chief area just released by P.D., and presumably similar sharing by COCA Mines. I shall be happy to take care of all of our inputs, written and oral, and of course would submit everything to you for editing before submittal to A.G.S. All I need now is your approval of our participation.

On top of the A.G.S., the G.S.A. also plans a trip in the Flagstaff and Jerome area. Their plans are for April, 1986 and I will pass on any details as I hear them.

By way of news, I guess the biggest item is Santa Fe's decision, effective October 1, to lay off all the miners (AMS crew) at the McCabe. They can't find the main zone on the 1450 level. Of course they have it at the 1050 level and confirmed by drilling at the 1150 but all the crosscutting during the last couple months on the 1450 has failed to find any but thin and discontinuous mineralization. Santa Fe is very nervous, what with their ambitions to scale up production with larger reserves and pressure to make financial committments soon. So Longyear is under the gun to find the mineralization by drilling from the 1250 shaft station with two rigs.

Other Santa Fe drilling soon will focus on deep and southerly extensions of the Iron King system which, in that area, is polymetallic and over 0.1 oz/t gold. Rich Dixon is in charge of that portion of their project.

DMEA

Don White
521 East Willis St.
Prescott, AZ 86301

September 25, 1985

Mr. Paul A Handverger
2160 Old Jerome Hwy.
Clarkdale, AZ 86324

Dear Paul,

Attached are many of the items we talked about on Monday when I presented you a set of UVX level plans with geology. Thus you now have, on behalf of Verde Exploration, the following items from me on behalf of DMEA, Ltd.:

1. UVX level plans with geology, 1" = 40', compiled by Don White, June, 1985. (NOTE: They are an east and west sheet for levels 550, 600, 700, 800, 903, 950, 1100, 1200, 1300, and 1400, excepting no 600 east, 1300 west, or 1400 west).

2. Gold Stope longitudinal and cross sections and overlay with gold to silver ratios, 1" = 10', compiled by Don White, April, 1985.

3. Set of three cross sections, PH-1, PH-2 and PH-3, all 1" = 40', compiled by Don White, September, 1985.

4. Chart summarizing "U.V.X. precious metal assays by stope", compiled by Karl Budge and Don White, May, 1985.

5. Summary sheet on "Gold Stope Tonnage and Grade", compiled by Don White, May, 1985.

6. Bibliography of published references pertinent to the U.V.X. gold project.

7. Memorandum by Don White, May 29, 1985, on the compilation of the UVX vault data.

8. Memorandum by Don White and Robert Hodder, August 2, 1985 on the UVX map compilation and target definition.

9. Memorandum by Don White, August 14, 1985, on the vent fan noise issue.

10. Log of D.D.H. 1104-1 with assays, 1" = 20', compiled by Don White, September, 1985.

11. Several miscellaneous papers and newspaper article copies of interest to you.

We will be producing more drill logs in the next couple months and providing you with copies. Also, I shall produce some revised cross sections which we shall get to you.

I look forward to meeting Mr. Menke next week and hope that I shall have the privelege of giving him and you a mine tour.

Sincerely,

Don White
Geologist, C.P.G.

cc: B.F. Dickerson, III

M E M O

TO: Ben F. Dickerson, III, Carole A. O'Brien

FROM: Don White

DATE: December 3, 1985

SUBJECT: Visitors to the United Verde Extension

Following, for your information, is a listing of visitors to the U.V.X. mine:

Toured by Don White

1. Bob Rivera, V.P., Coca Mines, Denver
2. Glenn Davis, Project Geologist, Coca Mines, Hawthorne, NV
3. Allan St. James, Geologist, now with Santa Fe Minerals, Prescott
4. Wendy Feuer, Geologist, Long Lac, Prescott & Reno
5. Gary Eaton, Geologist, Long Lac, Prescott & Reno
6. Cindy Walck, Geologist, Long Lac, Reno
7. Paul Handverger, Geologist, Verde Explor, Clarkdale
8. John Menke, Chairman, Verde Explor, New York City
9. Clancy Wendt, District Mgr., Nicor, Tucson
10. William Wilkinson, Jr., Sr. Geologist, Nicor, Tucson
11. Mike Dennis, Geologist, Nicor, Tucson
12. Chris Eastoe, Asst. Prof., U. of A., Tucson
13. Nancy Johnson, Grad. student U. of A., Tucson
14. Larry James, Geologist, James Geo. Assoc., Golden, CO
15. Three members of Egyptian Geological Survey, Cairo
16. Paul Lindberg, Geologist, Independent, Sedona
17. Nancy Smith, Curator, Jerome Historical Society, Jerome

Toured by Brooks Minerals staff

1. Couple members of Jerome police force
2. Couple members of Jerome fire dept.
3. Luis Martinez, Mayor of Jerome
4. Andy Peterson, Phelps Dodge resident agent, Jerome
5. John Sherman, State Museum employee, Jerome
6. Nina Antonelli, State Museum employee, Jerome
7. George Hocum, Geologist (?), Draco Mines, Tucson

Persons invited or requesting visits but not yet visited

1. Stan Holmes, Principal (geologist), Stan West Corp., Phoenix
2. Berl Wehrle, Board member (geologist), Stan West Corp., Humboldt & Grand Junction
3. Richard Pape, Mine geologist, McCabe Mine, Santa Fe, Phoenix
4. Rick Lawrence, Geologist, Santa Fe, Prescott
5. Radu Ciocanelea, Geologist, Santa Fe, Prescott
6. Bruce Bouley, Chief Geologist, Callahan, Phoenix
7. Brad Margeson, Geologist, Callahan, Scottsdale
8. Larry Kennedy, Geologist, Callahan, Scottsdale
9. Peter Price, Geologist, retired, ?
10. Clay Conway, Geologist, U.S. Geological Survey, Flagstaff
11. Norm Duke, Geologist, retired, Sedona
12. Nyal Niemuth, Geologist, AZ DMR, Phoenix
13. Ken Phillips, Geologist, AZ DMR, Phoenix
14. Paul Strobel, Geologist & Principal, REDCO, Reno
15. Joe Sandberg, Geologist, REDCO, Reno
16. Beth Boyd, Geology instructor, Yavapai College, Prescott.

Also attached are copies of business cards or my address file cards for some of those persons above.

REDCO

P.O. Box 21088
Reno, Nevada 89515
(702) 329-0666

PAUL S. STROBEL
Home 702-356-5656
RESOURCE EXPLORATION AND DEVELOPMENT COMPANY
1755 E. Plumb Lane • Suite 118 • Reno, NV 89502

PAUL A. HANDVERGER
Registered Consulting Geologist

13 OLD JEROME HIGHWAY
CLARKDALE, ARIZONA 86324
(602) 634-8466

Andy
Andrew Dominic Peterson
Agent

phelps dodge Corporation
United Verde Branch, P.O. Box 215
Jerome, AZ 86331 • (602) 634-2622

J
G
A

LAURENCE P. JAMES, Ph.D.
Geologist and Geochemist

JAMES GEO ASSOCIATES
Golden (DENVER)
Salt Lake City
Folsom, Calif.

(303) 279-0493
P.O. Box 226
Golden, Colorado
80402 U.S.A.

Santa Fe Mining, Inc.

1054 Willow Creek Rd.
Prescott, Arizona 86301
602/445-2987

Rick
J.R. Lawrence
Exploration Geologist

Home: 778-6522

A Santa Fe Southern Pacific Company

The University of Arizona

CHRISTOPHER J. EASTOE, Ph.D.
Assistant Professor
Ore-deposit Geology
Department of Geosciences

Tucson, Arizona 85721
(602) 621-6029

William H. Wilkinson, Jr.
Senior Geologist

NICOR MINERAL VENTURES

One of the NICOR basic energy companies

2341 South Friebus Ave.
Suite 12
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Phone 602-881-8871

Clancy J. Wendt
District Manager

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CoCa Mines

Glenn D. Davis
Project Geologist

CoCa Mines Inc.
P.O. Box 2497 — 166 E street
Hawthorne NV 84945 • (702) 945-2221

Rivera — Robert A. (Bob)

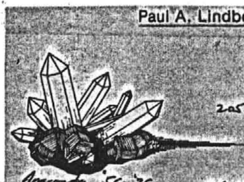
CoCa Mines

Robert A. Rivera
Vice President

1100 Denver Center Building/1776 Lincoln Street
Denver, Colorado 80203/(303) 861-5400 Office
(303) 666-9230 Home

Don Metzler
Pete Miller
Bobbie Coombs
Paul Lindberg
Glen Davis

Lindberg, Paul



Paul A. Lindberg

Consulting Geologist

RR #4,
205 Paramount Drive
Sedona, Arizona 86336

Tel. (602) 282-1247

Anaconda 56-76
[illegible] 177-78
Consulting - 179-
Old [illegible] of Barwell, Paul [illegible] ([illegible]) + Bob [illegible] [illegible]

LAC

WENDY JO FEUER (pronounced "Foyer")
EXPLORATION GEOLOGIST, U.S.A.

LONG LAC MINERAL EXPLORATION (TEXAS), INC.
P.O. BOX 21390
RENO, NEVADA 89515

1475 GREG ST.
SPARKS, NEVADA 89431
(702) 356-8058

691 Robinson Dr. - Prescott 778-0315
Peter Kirwin
Ron Long
Gary Eaton
Cindy Welck ex Amselco-thr Rolla, Mo.
P.O. Box 26545
Prescott Valley, AZ 86319

BFD

Don White
521 East Willis St.
Prescott, AZ 86301
(602) 778-3140

December 2, 1985

Chris Eastoe
Dept. of Geosciences
THE UNIVERSITY OF ARIZONA
Tucson, AZ 85721

Dear Chris,

Thanks again for your visit to the U.V.X. and speaking to our local geological society. I hope your visit with the Boyds was pleasant. I regret not having the night with you to compare notes on Kashmir -- but next time our little boy won't be sick. You're welcome, always.

I shall be most curious to hear what is learned from the core samples you have from the U.V.X. The issue of intrusive versus extrusive nature of the so-called diorite may be more pivotal to our gold study than we previously realized. Any evidence of rock type by composition and mode of emplacement by texture will be helpful. Any conclusions regarding the other underground samples will be interesting too.

I have enclosed another sample you and Mae Gustin may be interested in. It is core from 430 feet in our D.D.H. 1104-3 According to the old mapping (1920's mine geology) it should be the upper Cleopatra Formation (quartz porphyry rhyolite).* That should be the immediate footwall to the massive sulfide and indeed, this sample comes from the 1200-level, just about 200 feet NNW of the main orebody.

It you are able to do any work on this additional sample, or if it fits into Mae's interests, I would be interested to know whether it appears to be the quartz porphyry rhyolite in thin section and what other information you can discern from it. The sample is yours to keep, use, and dispose of as you wish.

We commence our last planned underground drill hole in another couple weeks and should finish that some time in later January. Please pass on the word to Mae that if she cares to catch me in Jerome or has any other questions about U.V.X. geology that we could help with, to not hesitate to stop by before then. I expect to be tied up on work elsewhere thereafter.

Best Regards,

Don

Don White
Geologist, C.P.G.

* But doesn't look like it to me.

DW:sk

Enclosure

cc: Ben F. Dickerson, III

BFD

Don White
521 East Willis St.
Prescott, AZ 86301
602/778-3140

December 6, 1985

Paul A. Lindberg
205 Paramount Drive
Sedona, AZ 86336

Dear Paul,

Thank you for the offer to include me and the U.V.X. gold project in the G.S.A. symposium on Proterozoic mineralization in the southwestern U.S.

As I mentioned on the phone, I have prepared a small paper on our UVX gold exploration for the A.G.S. symposium in late March. The same material would be easily presented to G.S.A. if indeed the audience is mostly different than that of the A.G.S. as you suggested. Accordingly, I have enclosed a copy of that same abstract for your use.

We are learning much more about the U.V.X. gold with each successive hole. I believe that our understanding of the big picture may be much better by the time of the G.S.A. symposium.

I hope that you shall be able to get the time to map the 1100-level of the U.V.X. I am most curious as to your structural interpretation that will result. I offer my help providing a base map/level plan of workings, rock specimens that we have cut with a saw and lacquered to display megascopic textures quite nicely, and any assistance I can underground. We do have water lines to much of the 1100 level and connectors are available every 200 feet. Thus with a 100 foot hose one could wash walls continuously and improve the exposures. As I mentioned, however, we may be completing our last planned drillhole by mid-January and could lose our hoistman at that time. Give me a call when you're ready to commence.

Best Regards,

Don

Don White
Geologist, C.P.G.

DW:sk

Enclosure

cc: Ben Dickerson, III

GOLD EXPLORATION AT THE UNITED VERDE EXTENSION MINE
JEROME, ARIZONA

Don White, Geologist, C.P.G.
521 East Willis St.
Prescott, Arizona 86301

ABSTRACT

The United Verde Extension Mine operated from 1915 through 1938, principally as a high grade copper mine. By the 1930's however, it was a significant gold producer. The gold accompanied high silica flux containing virtually no base metals and was mined within a few hundred feet of the main base metal orebody. Overall production was 3.9 million tons grading 10.2% Cu, 0.04 oz/t Au and 1.7 oz/t Ag. Silica flux was produced from one area more notable than others, the "gold stope," containing 35,000 tons of 0.4 oz/t Au and 2.0 oz/t Ag. There is a clear segregation between massive sulfide and silicious precious metal mineralization.

The gold is meta-chert hosted. Cherts form wedges, thinning laterally from the stratigraphic top of the massive sulfide. These chert wedges are the demarcation between the footwall, flow-dominated volcanics and massive sulfide deposits, and the hanging wall pyroclastic-dominated sequence. The more proximal cherts have greater thicknesses of hydrothermal breccia accumulated on the vent slope. The more distal cherts also contain breccias but are more hydraulic fractured in origin or unbrecciated, massive, exhaltive chert. Matrix material is iron stained, comminuted chert of nearly the same composition as the clasts. Gold probably occurs in very fine silica-healed fractures within clasts and possibly in some of the silicious matrix. It probably occurs as fine disseminated native metal and/or electrum.

The hydrothermal alteration is dominated by argillization of hanging wall and footwall volcanics and a more distant hanging wall carbonate impregnation and veining. Gold is associated with a trace metal assemblage of Ag, As, Sb, Bi, Sn, Mo, V, and trace levels of base metals. Of these, only silver offers much help as an exploration aid. The silver zone is broader than the gold zone. All the other trace metals trail off across stratigraphy at least as rapidly as the gold.

The present exploration, mainly by underground diamond core drilling, is an effort to find other "gold stope" - like bodies. These are probably small vent deposits, deposited in a more quiescent environment than that of the base metal orebodies, and contain higher gold grades and higher gold to silver ratios. They are expected to be lens shaped with a near vertical dip, and a few hundred feet long.

Don White
521 East Willis St.
Prescott, AZ 86301
602-778-3140

December 27, 1985

Ben F. Dickerson, III
DMEA, Ltd.
5341 East Shoeman Ln.
Suite 111-B-(E)
Scottsdale, AZ 85251

Dear Ben,

The enclosed items are all finds I'm sure you'll be curious to see. I got to wondering what record there might be in the corporate minutes of the U.V.X. related to the Vulture. Getting access to the corporate data in the vault within Coca Mines' office last Friday, I found the following:

1) Corporate minutes, book 7, contained a complete record of the options and agreements related to the 1930-31 effort.

2) A file drawer contained about a ten-inch-thick pile of legal size papers related to title guarantees and abstracts on the Vulture properties.

I copied all the pages from the minutes that had anything to do with the Vulture program and I copied the front page from each abstract-of-deed bundle. These copied items are enclosed, as is a miscellaneous letter, dated 1960, from Robert J. Searls and relating to the effors of Fred Searls, Jr. from whom we have the letter report to James S. Douglas, July 22, 1931. The maps referred to therein are not anything I can locate or identify.

After studying the memo from Hodder and myself regarding the prioritization of targets at the Vulture, let me know if and when you would like any more detailed work plan or suggestions to pursue the block 1 or 2 seismic work, VLF, magnetics, and/or drilling.

Here's hoping that 1986 is a successful year for us all.

Best Regards,

Don

Don White
Geologist, C.P.G.

DW:sk

Enclosures

Don White
521 East Willis
Prescott, AZ 86301
602-778-3140

October 23, 1985

Ben F. Dickerson, III
DMEA Ltd.
7340 East Shoeman Ln.
Suite 111-B-(E)
Scottsdale, AZ 85251

Dear Ben,

The enclosed miscellaneous items are just things I thought you'd be curious to see. The 1913 and 1915 letters regard early U.V.X. U.G. exploration. More fascinating, however, is the exchange of correspondence I found in some very poorly kept old files (mildewed and letterheads disintegrated).

The latter are mainly between Jimmie Douglas (Sr.) and Arthur Perry Thompson. You will recall that Thompson was author of that highly promotional report on the Vulture, dated 1930, that we found in the U.V.X. files. It led to Douglas' sinking the abortive 500-foot shaft and some considerable drifting east of the Schoolhouse fault, all for naught. This correspondence must all be late 1920's. It seems that old Jimmie was taken in by Thompson's style and way with words despite the cautions of Douglas' friends and business associates. Sounds like a 55-year old "geo-fraud" to me!

Sincerely,

Don

Don White

DW:sk

Enclosure

10-21-85

B.F.D. —

A fascinating exchange of correspondence between Jimmie Douglas and Arthur Perry Thompson, author of the 1930 Vultoure report we have. Note particularly the references obtained.

Don.

Mr. J. S. Douglas, President
United Verde Extension Mining Co.,
Box C
Jerome, Arizona

Dear Mr. Douglas:

I want to thank you very much for your courteous letter of the 14th inst., which has been forwarded to me. I am surprised to learn that Dr. Lindgren has been among those who have opened the geological book for you.

Indeed, my knowledge of the facts is meagre, and maybe erronious, but itis sound enough to make the criticisms I did of work done. I may be wrong about deep ore in the Columbia area, but neither the magic of Dr. Lindgren's name nor your cold-blooded dare to produce the goods, convinces me that the possibilities and the faulting do not exist as my belittled investigations indicate.

I have a profound admiration for Waldemar Lindgren's knowledge of the science of geology. No man writing the English language has ever approached his original contributions to the literature of ore deposits. I don't know how much ore Dr. Lindgren has found in his career; but I don't mind saying to you that, if I wanted important fault problems solved, I would not call in an editor or a professor. I would get a tougher underground technician and man of the hills; one who has cracked the rocks and fought the faults in Butte. The divine spark that can produce a classic for the posterity of geology might notbe the one to light the way to your lost ore bodies.

My appreciation of your success at the United Verde Extension kept me silent and confident for years even while I watched some ill-fated work done. When, as and if you ever wish me to map the faults and rocks and determine the existence of the possibilities I have written of, I will be glad, other engagements permitting, to do the work for a fee of $50.00 per diem and my expenses.

Thanking you again for your letter I am, with kind personal regards,

Sincerely yours,

A. P. Thompson

Please return after use.

[illegible]

[illegible]

[illegible]

Dear Mr. [illegible]:

In reply to your letter of February 23rd. I think you have got a good deal of nerve in talking about $50.00 a day when you should be willing to give us at least half the satisfaction of a study which we might ask you to make regarding this fault that you talk about to the south of the Columbia Shaft country.

If you are willing to come down and make a study lasting not over twenty days for $25.00 a day and expenses we would be glad to consider a visit from you, but $50.00 a day is out of line under the circumstances.

You wrote me that you were a stockholder in the U.V.X. and also in the J.V., and you might properly enough figure that you will get some personal satisfaction out of an opportunity to study on the ground and ascertain for yourself the mistakes that we have made.

Please let me hear from you and oblige.

Yours very truly,

C. G. W. P.

Douglas, Arizona

Dear Mr. Douglas:

Your forceful letter of the 28th ult. is at hand and I note you might consider a 20 day study at the mine by myself at the rate of $25.00 a day and expenses.

You have been rawhiding with 10 day miners for so many years that you place geologists in the same category. I have little faith in 20 day geologists. A study of the U.V.X.-J.V. situation would require at least two to three months time. There is nothing to be gained by rushing the geologist even if he is practically stealing $50.00 per diem.

I doubt if there are many stockholders of the U.V.X or J. V. who would wish to limit the fee of a geologist, who could find ore for them, to $500. As a Jerome Verde stockholder, I dont mind going on record with the statement that the company could, in the beginning, have very well afforded to pay $100,000 to any geologist who could find ore for them. The fallacy of spending thousands and hundreds of thousands of dollars on absurd explorations, while parsimony inhibits paying the fee of talent competent to direct profitable explorations, is still rampant among a few mining operators. If I undertake a study of the situation I am going to be well paid for that great service as sure as you are a Scotchman.

If you desire me to share in the satisfaction flowing from my successful study of the ground suppose your companies pay me $700 for the expenses of a two to three months geologic study, but no cash fee. Suppose also that we enter an agreement whereby the companies contract to do the development I recommend during and after my study and that they place in escrow 100,000 shares of J.V. and 1000 shares of U.V.X. to become my property when the development encounters commercial ore in either or both properties to the gross value of $100,000 or more.

It seems to me some such an arrangement would divide the satisfaction of a successful study as mentioned in your letter. The risks would also be shared alike.

[illegible] of $25.00 [illegible] I don't like to think that I am slipping now.

Hoping this finds you the same,

With kind regards,

R. T. Thompson

25 [illegible] 35th
New Y[illegible], N.Y.

Dear [illegible]ir:

Will you please let me know who Mr. Arthur Perry Thompson is, and what his reputation is, and whether he is a competent geologist or not and greatly oblige.

Youre truly,

C [illegible]

Mr. J. S. Douglas,
P. O. Box 1060,
Douglas, Arizona.

Dear Sir:

In reply to your inquiry of February 28, I am sorry to say that Mr. Arthur Perry Thompson is not a member of this Institute, never has been, and we therefore have no record of him. Sorry!

(AIME)

Very truly yours,

H. Foster Bain

H. FOSTER BAIN
Secretary

HFB:C

Noted Prof. of Geology & Ch. Geol. of Anaconda

Mr. Paul Billings...
1027 Continental Bank Bldg.,
Salt Lake City, Utah.

Dear Sir:

I am having a rather strange correspondence with Mr. Arthur Perry Thompson of Box 10, Trona, California. He is an old stockholder of the United Verde Extension Mining Co. and of the Jerome Verde Company, and talks of coming down to show us some things that we don't know about, and which we would like to have him do provided he is not quite "nutty". He writes a little like a "nut". Would you be kind enough to tell me what you know about him and oblige.

Yours truly,

C

G.W.P.

Mr. J. S. Douglas

Box 1060

Douglas, Arizona

Dear Sir:

My acquaintance with Mr. Arthur Perry Thompson dates from about 1914, when he joined our department at Butte as a junior geologist. He developed many peculiar traits and was dismissed after about a year's trial.

Since that time he has worked for George Graham Rice and has become involved in a number of unsavory promotions. I doubt very much whether he could be of help to you and would certainly not care to recommend him either as a geologist or as an individual.

Yours truly,

Paul Billingsley

M. K.
Le

He...

tions.

We all ... ...
orebody which might have cut off some
our ore also I think we know as much ab...
the movement of that fault (after ten or
twelve years study of same) as Mr Thompson
does after seeing it once and dreaming about it
for like period.

We could not work this out till we had
the Florentia Now we can and I think the
work now starting in 1602 will give us
valuble data on same

Darcy

Engineer at UVX

Mr. Arthur Perry Thompson,
21 Lake Avenue, Oakland,
Piedmont, California.

Dear Mr. Thompson:

Your interesting letter of January 13th was read by me yesterday here.

I can sympathize with you. I have often thought that those who dug were not digging in the right place and perhaps my criticism was based upon about as much knowledge of the facts as yours is with regard to this company. Nevertheless, if you are in the business and will hire out to us to come and make a study of the geological situation here, which you state in your letter you have already a knowledge of, we would be glad to have you write and tell us what your charges will be.

As a matter of fact, we have had a very thorough study of our geology made by Dr. Lundgren less than a year ago and he gives us no indications of the ideas which you have on the subject of deeper set ore to the south of the Columbia shaft country.

With kindest regards, I am

Yours sincerely,

J. S. Douglas.

JSD/DJ

Mr.
Do

Dear Mr.

For the past ten years I have been a stockholder of Jerome Verde and have never sold a share until a few months ago when the price dropped to 50¢ per share. I have had confidence enough in the property to place $13,000 in purchases of its stock and that shows a good deal of confidence, for, at my age 10 years ago, the sum of $13,000 is liable to be a large part of the capital of any young man, particularly if he has had to make it all himself, as I had to. I have watched the stock prices drop during these ten years with a good deal of disgust, despair and impatience while numerous noted and verbose mining engineers, geologists and "what have you's" directed and misdirected development.

My wife is also a stockholder of United Verde Ext. on my advice, and the continual downward motion of these two stocks and unsuccessful exploration of both properties leads me to speak my mind on the geological situation which led me to speculate in the ground. I am going to ask your personal reply, for I do not wish to be shunted off on the New York officials of the companies. I would rather have a postcard from youshowing modern Douglas, as your reply, than a New York letter, as the growth of Douglas since I worked in the Copper Queen smelter there more than 20 years ago would be more interesting.

The geological situation which led me to buy Jerome Verde shares was suggested to me from my observations in the United Verde Extension mine during an inspection with you and George Hull; from my observations of faulting on the surface and from a study of maps, photographs and published data on which I have spent a good deal of time. The Jerome Verde exploration so far, to my knowledge has not tested the ground I expected to show ore, altho I have waited ten years for someone to do the work.

I saw underground that the U.V.X. ore body had been apparently severed by faults. Chauncey Berrien, supt. of mines for the Anaconda at Butte, who was trained as a geologist in the same department at Butte as I was, also made the same observations after my visit to the mine. I recall that you showed me his letter and sketch of the faulting as he interpreted it. My observations on the surface and study of published maps also have placed the position of several faults for me. As I have little exact data on the position and character of the different formations under-

b[illegible] drop [illegible] gr[illegible] horizontal [illegible] which threw the hanging [illegible] y to the southeast. I know that these hanging-wall faults are present and have cut off some of your ore.

(2) The northeast fault passing along the north sideline of the Columbia claim and the south side of the Extension ore body, I am led to believe, cuts not only the ore but also the main Jerome Fault and its branches. I have not the proof of this at the mine, but have noted a similar fault near Mescal Gulch which cuts the main Jerome Fault and throws it hundreds of feet.

According to my studies the resultant of these two systems of faults would throw any faulted portion of the Extension ore body into a region south and east of the northerly and easterly lines of the Columbia claim. The downward throw of both systems of faults and the dip of the ore body would sink any signs of ore hundreds of feet below your present development.

I have waited ten years for vertical diamond drill holes to be sunk deep enough and numerous enough in this territory to prove or disprove this possibility. I believe such development would be far superior to that done on the northeast fault along the Columbia claim which has no justification at all in my opinion, excepting as an avenue to prospect distant portions of the property.

Now, I realize the limitations of my information, but also am a keen judge of some of the development that has been done, and think that I am howling in a righteous cause. I have had faith enough in Jerome Verde to expect it to be selling for $39 instead of 39¢. I dont like to see United Verde Extension also on its way down to 39¢, either. After ten years of agony, I want as a stockholder, to ask you whether you are satisfied to ignore these possibilities and whether you are certain no ore lies in the area indicated.

Dont let your "rawhide" proclivities deny me a statement for I wish it only for myself as a "Swan Song" to an unsuccessful and tragic speculation!

With kind regards,

Yours very truly,

R Thompson

Mr. Secretary

Douglas

In a letter dated today, which I posted in San Francisco this afternoon, I referred to exploration of Jerome Verde ground south and east of the northerly and easterly lines of the Columbia claim. (pg. 2, paragraph 3)

This location should have been described as the region south and east of the northerly and WESTERLY lines of the Columbia claim. I hope that you accept this correction of my error and can answer my queries.

With kind regards,

Yours sincerely,

A. P. Thompson

co.

Mr. J. S. Douglas,
c/o Henry Selden Bacon,
59 Rue de Chatesudun,
Place de la Trinite,
Paris, France.

Chateaudun

UNITED VERDE EXTENSION MINING CO.

INTERDEPARTMENT CORRESPONDENCE

EFFICIENCY DEPARTMENT

Jerome, Arizona,
November 20, 1920.

Memo. To the General Manager:

You will find below a distribution of the mine labor for the months of September and October. This comes from the Time Office books and if it is of interest arrangement could be made with the time office to furnish it monthly. Among other things you will note that tramming and spreading waste is costing from 49¢ to 58¢ per ton of ore produced.

	COST PER TON.	
	Sept.	Oct.
Development	$ .51	$ .30
Extraction	1.50	1.47
Tramming waste from Edith	.25	.27
" " Waste Pit	.09	,09
" ore	.32	.33
Repairs Extraction	.24	.22
" Ventilation	.10	.08
" Old Workings	.08	.22
Track and Pipe, Extraction	.07	.05
" " " Development	.02	.05
Timber rustlers and Nippers	.19	.18
Spreading Waste	.15	.22
Cleaning and Sanitation	.09	.09
Hoisting:		
Hoistmen, Cagers, Landers and Helpers	.18	.17
Tunnel Haulage	.04	.03
Foremen and Shifters	.19	.20
	$ 4.02	3.97
Tonnage	14,737	14,726

Submitted by

R. D. Leisk.

Efficiency Engineer.

Jerome, Ariz.
Oct 30, 1915

My dear Major:

Everything splendid — 615 W clearing 6ft total 219' formation an oxidized schist.
1102 Lateral clearing 6ft total 55ft formation a white porphory carrying considerable red stain much more favorable formation.
1105 West x cut clearing 5ft total 359 almost to the point of raising, a blue gauge schist formation, very encouraging formation.
1109 W x cut clearing 5ft total 33' oxidized porphory
1218 E clearing 5ft total 34' formation white porphory, have not seen native copper yet.
1205 clearing 2ft total 229, not as much water formation all quartz.
Still shaping 1106 E raise lining chute and carrying Manway. 1205 slope strong plenty N. grade — 1205 N slope all of which is North of #1 Chute splendid 2 clay ore 2 sets wide
Still timbering towards 1207 northerly on 1205 will raise on good ore as soon as we get there.
New Twist & Motor all connected and doing the detail work. Mr Collins rushing tramway as hard as possible.

Yours
Sandberger

Mr Minly says that they buy all their rope from the Plymouth Cordage Company and is without exception the best piece of goods on the American Market to-day; and that they dont care to endanger the lives of the workmen compelled to use a rope in such places where their lives may depend on the strength of the article.— This may be all "Penny not because a sample of what we have bought sent to you for investigation by some rope expert would easily solve the problem. Summing up, he swears to the fact that the price charged us allows them less than 5% net profit, and says that he feels sure that we will not ask him to do better than that. He said he is very sorry that it is impossible to allow us any rebate or credit on the ropes bought and would be too glad to furnish us with a cheaper rope if we so desire in the future. What I should have done, I should have written you for prices and then compared— Anything ~~or large~~ bought on large scale in the future shall take it up with you before buying.

No change - 806 raise certainly a bad hole to work in, about or almost 200', a garnet lime. 1000 level about 90 ft, schist; some fault seams through it- perfectly dry. New or Douglas shaft- a lime-stone, about 187-188 Expect to have new rig running Tuesday evening some time. Regards.

Yours truly
D Mena

Jerome, Arizona
Sunday Oct 12, 1913.

Dear Mr. Ickes:

Think it advisable to order a carload of 8x8 for Douglas shaft as follows, 2 pc of 8x8-22 ft long to 1 pc 8x8-18' long 2 pc of 8x8-22 cuts two wall plates and two end plates — 1-8x8-18 cutting 4 posts. Please order 2 more cases German fuse. Kindly send over tomorrow if possible by Parcels Post 300 ft of #14 wire, also 100 #2 Knobs, or rather porcelain Knobs. Using new shaft. Shall take 2 ap Candles D. J. Miller Co in the morning with Mr Minty — Plummer is away on vacation. Difference of $5.00 worth going after.

Replying to yours, dated Oct 7, in reference to Manilla rope — Sisal rope is the cheapest rope made. Mr Minty says the next grade is known as "Hardware Manilla" which is sold in all Grocery stores being sold to the public for various purposes. Next to this Mr Minty maintains comes the pure Manilla which you will not be likely to find in any store except where it is used for some special purpose as the 3/4" and 1" is used for some special purpose as the 3/4" and 1" is entirely used in this locality for windlass rope or derrick used

M E M O

TO: Ben F. Dickerson, III; Carole A. O'Brien

FROM: Don White

DATE: October 23, 1985

SUBJECT: U.V.X. drilling and drill rigs

There is good news and bad news. The good news is that our drilling is going two to four times faster than Connors did for Phelps Dodge and that our core recovery is also better. The bad news is that we could still be doing better.

Connor's drilled UVX-1 and -2 for P.D. in 1982 and 1983. Their total of nearly 1100 feet over six months worked out to about six feet per shift. That compares to our 1104-1 average of 21 ft/shift (despite break-in problems with equipment, bits, etc.) and 1104-2 average of 22 ft/shift to date. Furthermore, our recovery of core has been quite good, averaging over 90 percent. So our Longyear 34 rig with Jack Hayslip and Bill Mills has drilled more footage in two months than Connors did in six months, and our core recovery is superior.

Our LM-37 rig averaged 36 ft/shift for the first nine shifts (to 327' in 901-1 D.D.H). That was with 98% core recovery. That was as of September 25th. The subsequent 23 shifts have seen only a 30-foot advance through very difficult ground. It is alternating soft fault gouge and exceedingly hard, blocky (fractured) and cave-prone chert. The latter is causing bit costs to be unacceptable. The caving chert is also not amenable to cementing. Five attempts (two at 335', three at 350') have all failed. I have talked to two very experienced drillers and several others about this and offer the following observations.

Jack Hayslip is repeatedly encountering equally bad broken chert zones, often at greater hole depths (600'+) and over greater intervals (40') compared to 5' on the 901-1 hole. The difference is Jack's more powerful Longyear 34 rig. Its low rpm, high torque capability allows him to push thru the caves without chewing up bits. The LM-37 does just the opposite. It spins like hell with too little pressure behind it and the bit is shot before it reaches the bottom of the hole! That was graphically displayed this morning when three bits were burned out in succession, each getting only one foot of new chert core, from 355' to 358'. The wear was mostly in the yet

uncemented cave from 349' to 355'.

Everyone who knows the LM-37 has said it performs poorly in broken rock or hard rock. We have an aggravated combination of faulting, fracturing, workings, and chert so hard the Longyear 34 is collapsing rod couplings into themselves in an attempt to put adequate pressure on the bit to drill more than one foot per hour. That's hard. And the LM-37 can't take it.

What we need is another powerful rig. If we want to stay electric I recommend the underground electric version of the Longyear 38. I would also go for the 70 hp version rather than the 50 hp model. It should be able to give us HQ core thru our targets within 400 feet and reach our targets at 900+ feet. The LM-37 can't handle HQ more than very short holes (<100'-?) and can't even push NQ more than 300 feet we've learned. Furthermore, it can't seem to push anything thru chert at 350'. So its chances of sampling the Verde zone, all in chert, from 650' to 930' in the originally planned 901-1 hole are near nil. The Longyear 38 ought to be able to do it.

While the 901-2 hole is being drilled, and if it has trouble as I expect it will, we ought to be investigating a trade possibility for the Longyear 38 I understand is now available in Spokane. Chances are good it will fit down the Edith shaft. And I'm convinced it will serve us much better.

Given the inadequacy of the LM-37 despite Russ Beddow's visit to the U.V.X., his inspection of the chert, and his knowledge of the ground conditions, Longyear ought to be willing to make the trade at minimal expense to us.

M E M O

RECEIVED DEC 9 1985

TO: Ben F. Dickerson, III, Carole A. O'Brien

FROM: Don White

DATE: December 7, 1985

SUBJECT: D.D.H. 901-3 status

Diamond drill hole 901-3 will probably be terminated Monday, December 9th. Following 272 feet of hanging wall tuffs and pyroclastics, it penetrated chert breccia from 272 to 326 feet and is now in clay-altered footwall at 343 feet.

The 54 feet of chert is fairly typical, including the 2 foot (272-274) capping of silica grit. The overall 54 foot thickness is not much less than expected. The surprise is that even though our intercept is at least 60 feet above the recorded top of the Gold stope, we hit voids from 316 to 326 feet and cored about 2 inches of wood at the footwall, 326'. The final mining in 1938 apparently was not recorded on the stope sheets. It never is!

We have good core return for most of the chert excepting 316 to 326 feet (20% there). The 22 samples from hanging wall to footwall were split Friday, delivered to Bob Crook this morning (Saturday) and assays should be reported by phone Monday evening. My suspicion is that we have no bonanza grades in the hanging wall and that the key zone of cherts adjacent to the footwall is where the mining was and our core return is poor.

While we should drill a little further into the footwall, I do not expect that to take all of Monday's shift. We will also do an acid etch dip test before abandoning the hole. By afternoon we should be ready to start preparing for the move to the 800 level.

The excavation of the 806 drill station looks like it will be in good shape by late Tuesday. The drill platform can be constructed as Jack Hayslip makes his move off the 901 station.

A separate memo discusses the proposed drilling from 806 station and I look forward to your feedback on that in order to finalize our plans for the 806-1 hole.

DW:sk

Hole No. 901-3

Preliminary — No assays. Hole still drilling, 12-7-85

Collar location: U.V.X. Mine - 950-Level Mine grid 11,690N 7750E

Inclination: +18° at collar

Azimuth: S65°W at collar

Length:

Driller: Longyear Co. - Phoenix, AZ Jack Hayslip-driller, Bill Mills-helper

Core recovery:

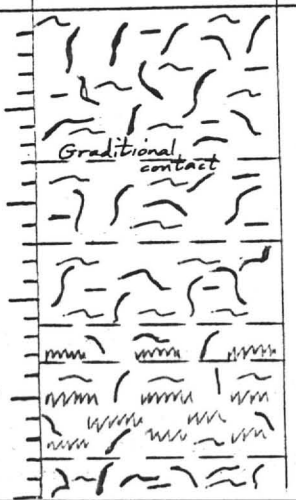
Dates: Nov. 20 thru

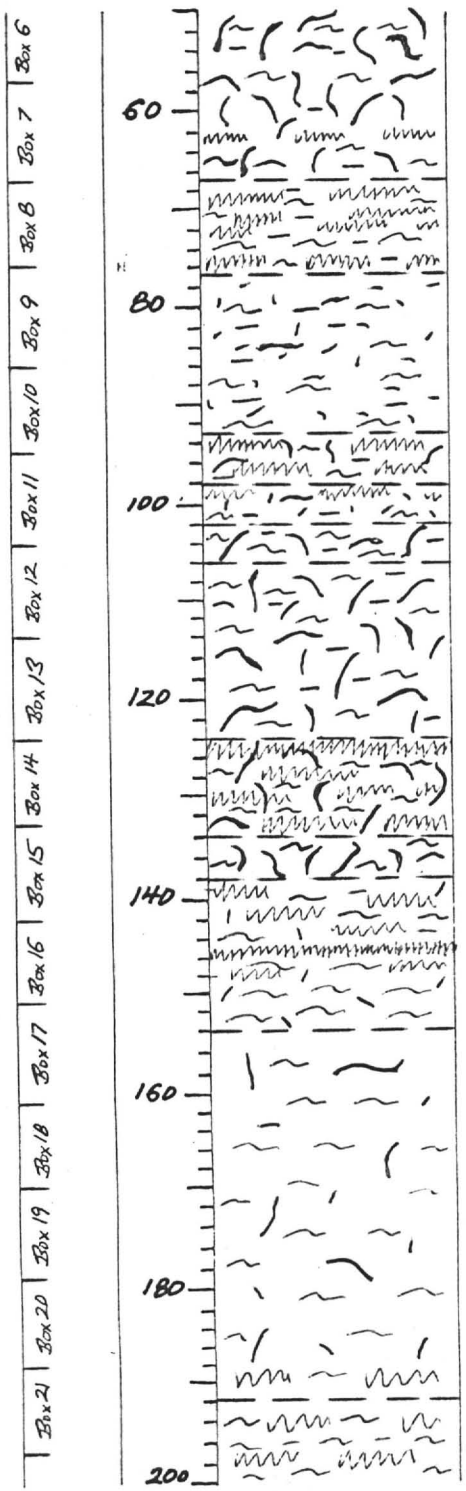
Assayer: Iron King Assay, Inc. Humboldt, AZ using Fire/AA and one assay ton

Logger: DON WHITE

Remarks: Drilled with a Longyear 34, compressed air powered rig

HQ core to 291', NQ core to E.O.H.

Core size	Runs & recovery	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type (Protolith)	Lithology
HQ 2.5" dia.	Box 1 Box 2 Box 3 Box 4 Box 5 ~100% core recovery thru 257'	20 40							0-16' Gray and dark green, blotchy, very fine grained, massive to faintly banded qtz-chlorite-carbonate ± sericite sch. ~3% $CaCO_3$ veinlets ≤5mm thick, plus trace disseminated CO_3 Foliation ~70° to core axis H~7.0 16'-24' Dark green & purple red. Same as above plus admixed purple red jasper(?) fragments yielding speckled colors 24-33 Pale to dk green, blotchy, vfgr., massive to banded, qtz-chl-carb-ser schist. Carbonate is both calcite and siderite (≤~3%) Foliation ~60° to C.A. 33-37 Same as 16'-24' 37-46 Similar to 33-37 but more massive and less CO_3 ~1% $CaCO_3$ from calcite veinlets. ~2% qtz veins ≤mm thick (separate ~5% pink orthoclase phenocrysts. ≤5mm



Carbonate and chlorite altered intermediate tuffs, flows, and pyroclastics

46-67 Same as 0-16' but more carbonate ~5% $CaCO_3$ veinlets, discontinuous, randomly oriented. H ~ 6.5

67-77 Green, v.f.gr. thin banded, well foliated, qtz-chl-ser sch. with no carbonate. Foliation ~ X° to C.A. H ~ 6.5

77-93 Similar to 16-24' but more carbonate; not as veinlets but ~5% disseminated. H ~ 6.5

93-98 Like 67-77 plus trace $CaCO_3$ veinlets

98-102 Same as 77-93

102-106 Same as 16-24

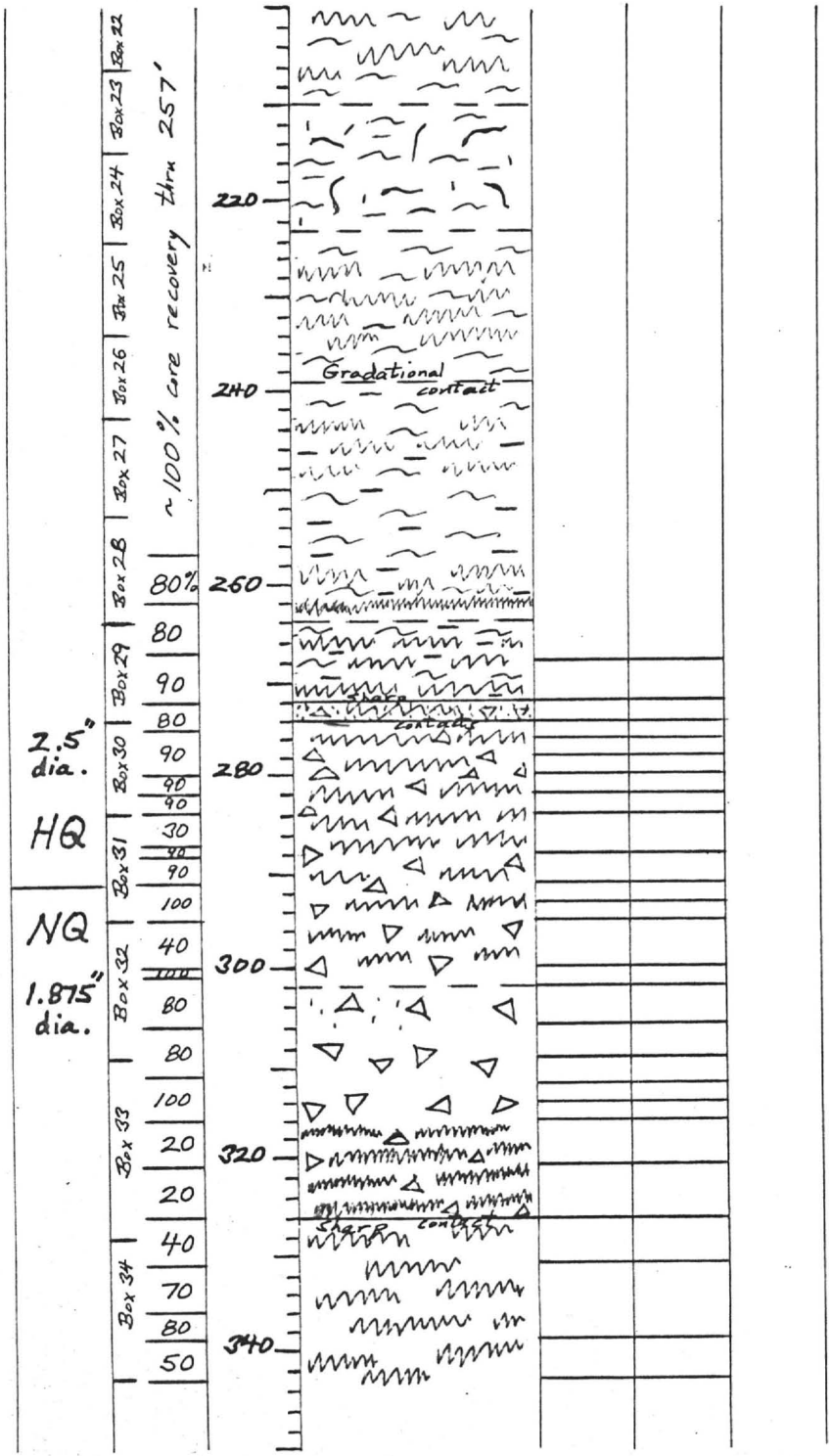
106-124 Alternating bands of 0'-16' lithology and 16'-24' lithology and combined qtz-calcite veins H ~ 6.5

124-134 Gray green, f. to m. gr., massive qtz-feld-chl. schist plus qtz-calcite-siderite veinlets H ~ 7.5

134-138 Dark green, v.f. gr., faintly banded, qtz-feld-chl-carb. sch. Fol. ~60° to C.A.

138-154 Pinkish green, f.-m.gr., massive, qtz-feld-chl sch with feld porphyroblasts ≤ 4mm Partly clay altered. Trace carbonate H ~ 7.5

154-192 Lt. + dk green, blotchy, v.f.gr., massive to faintly banded, qtz-feld-chl carbonate sch. Carbonate is ~1% as veinlets and dissemination



192-239 Gray green, v.f.gr., massive to faintly banded, qtz-feld-chl rch with feldspar phenocrysts ≤ 4mm, clay altered and iron stained
H ~ 6.5 Foliation ~ 80° to C.A.
~3% non-carbonate (limonite?) veinlets (dk brown, Fe-stained)
192-210 No carbonate
210-223 Trace calcite veinlets
223 - E.O.H. No carbonate

239-264 Brick red (hematite-stained) vf.gr., clay alt'd qtz-feld-ser rch. No carbonate
H ~ 6.5 Foliation ~ 70° to C.A.

264-272 Purple and white, blotchy, f.gr. qtz-ser rch. Well foliated. H ~ 6.5 No carbonate. Much clay alt'n.

272-274 Red brown f.gr. massive, hematite-cemented si grit

274-302 Chert; variously light to dark gray, red brown, yellow brown, banded and massive, matrix or clast supported ± lithic fragments (banded rhyolite) Vugs ≤ 5% and ≤ 1" No magnetite, no carbonate, H > 7.5

302-326 Mostly yellow brown, matrix supported chert breccia. Light gray, chert clasts, angular, 1/4"-4" (x̄ ~ 1") exhibiting abundant fine, healed fractures, floating in limonite stained (?) si grit matrix.
Note 316-326 series of voids, only 20% core return, 2" of wood cored at 326'; must be the top of the Gold stope; ≥ 60' higher workings than reported on stope sheets in Vande Exploration's vault.

326-EOH Pale purple and light gray, vf.gr., heavily clay altered. Feldspar phenos (all clay alt'd) ≤ 5 mm, in f.gr. groundmass Trace malachite. H ~ 6.5

BFD

From vault files

U.V.X.

ORE RESERVES

PROBABLE ORE

8-31-38 (MINE CLOSED MAY 1938 CAH)

Florencia	10,000 Tons	@ 10% to 6% Cu.
800 Level (826, 829, 803, etc.)	10,000 Tons	@ 6% to 4% Cu.
Gold Ore	6,000 Tons 4,000 Tons	@ .40 oz. Au. @ .15 oz. Au.
Conglomerate Ore	8,000 Tons	@ 8% to 6% (Country Abandoned)

In addition probably 100,000 Tons low-grade silicious material in the quartz zone on the 950 and 800 levels. Some of this will be gold ore (.10 oz) with no copper, and the balance low-grade copper ore (1% to 2%.)

TO: Ben F. Dickerson, III; Carole A. O'Brien

FROM: Don White

DATE: October 4, 1985

SUBJECT: Drilling problems in D.D.H. 901-1, UVX Mine

Underground D.D.H. 901-1 encountered difficulty on Thursday, September 26, 1985. Prior to that, drilling was advancing 20 to 70 feet per shift. On Sept. 26 only two feet were drilled and caved several times. That was at about 334 feet. On Sept. 27th the bad ground was fought some more, by which time a pretty large void had probably been opened by the high pressure water and agitation. On Saturday, Sept. 28th the Longyear driller decided to try cementing the void but did not have a packer to keep the cement from flowing back down the +11° hole. He spent the day going to Phoenix to get one.

On Monday, September 30th, the hole was packed and cemented in the morning and the driller and helper were away before noon since they could do nothing until the cement set overnight. Upon drilling out on Tuesday, October 1st, it was found that the cement had not adequately sealed the voids and caving continued. No drilling was possible. Since only the one packer had been brought on Saturday, the driller had to spend Tuesday evening and late night travelling to Phoenix to get another packer. It was emplaced at 307 feet and the hole beyond (to 334' - ?) was pumped with cement again on Wednesday a.m., Oct. 2 and left to set overnight. Finally, upon drilling out the packer and cement on Thursday, Oct. 3, seven days after the initial problem, normal drilling was able to resume.

I feel some comments on this situation are in order so that Longyear billing can be checked for fairness. I believe Longyear has some problems with equipment, personnel, and internal communications which contributed to this drilling problem.

First, the LM-37 rig was having a power problem prior to and during the caving problem. A spring inside the head was worn out and rendered the rig incapable of providing the necessary torque on the drill string. While it is impossible to say for sure, it is possible that with the normal power, the bad ground may have been drilled out fast enough to avoid the problem altogether. Repeated pulling of the rods for greasing has slowed drilling and contributed to the risk of caving.

Secondly, Longyear is in a bad way for underground drillers, particularly for ones familiar with the LM-37. We started out with a foreman from Washington state, Terry Schroeder, who knows the LM-37 and handles it well. He was pulled off our job to fill a position at the McCabe where Longyear also has two underground rigs. The same thing happened with our first helper, Tom Fischer. We were given, in their place, the younger brother, Pat Schroeder, with no experience on the LM-37 and much less drilling experience overall. As his helper is Jerry Rosenberg, a totally inexperienced helper. Longyear apparently could find no one better with U.G. safety training, etc. So we had green operators on an underpowered machine at the time of the caving situation. These circumstances probably aggravated the problem a lot.

Thirdly, Longyear employees don't seem to coordinate very well. I believe much of the problem there is with Joe Reedy, the foreman in Verde who is suppossed to oversee the McCabe and U.V.X. contracts and a similar number of surface rigs elsewhere. He apparently has little U.G. experience. In fact, he can hardly be dragged U.G. He shows up unannounced at the U.V.X., in the middle of the shift, and asks the hoistman if the drillers have any messages. Then he's off elsewhere and real needs or probelms are not solved. We're lucky Jack Hayslip is so experienced as to be self sufficient on the Longyear 34. But even he has trouble when he needs company support such as in the supply of bits. Longyear sends the wrong bits, or too few, or sends them late.

In a more general way, I am unimpressed with Longyear's preparation. I could not believe they did not have tubes and acid for a simple dip test when we needed it. A special trip to Phoenix was necessary. The same for the packers necessary in the 901-1 hole recently. Here we have two rigs drilling up - holes in a faulted terrain. The need for cementing is inevitable and they aren't prepared. Then when they do need a packer they make a special trip and get only one! Next day, another trip for another packer! It's just like core boxes, they wait until they're out before they make a panicked call for more.

This is only the beginning. Far more difficult ground conditions will prevail in the deeper portions of both the present drill holes. I have pointed this out to Joe Reedy and was promised that Jerry Schroeder would be returned from the McCabe. That was on October 1 and it has yet to happen. I don't know whether we can afford to let other problems develop before squawking loud enough

to get things improved. A slightly more serious problem could mean loss of a hole.

One particular caution: I hear from Richard Pope at McCabe that they (Santa Fe) are trying to get our Jack Hayslip. They've already robbed us of Jerry Schroeder and there is no way we can spare Jack Hayslip. Maybe a talk with Russ Beddow by Carole will get us some guarantees of keeping Jack Hayslip and perhaps getting Jerry Schroeder back again.

BFD

Don White
521 East Willis St.
Prescott, AZ 86301

Paul A. Handverger
2160 Old Jerome Hwy.
Clarkdale, AZ 86324

December 20, 1985

Dear Paul,

This note accompanies the following items to update you and Verde Exploration on the work conducted by DMEA, Ltd. on behalf of A.F. Budge (Mining) Ltd. at the U.V.X.:

1) Revised cross sections
   a) A-A' with drillholes 1104-1,2,3
   b) C-C' with drillholes 901-1,2
   c) C(2)-C' with drillhole 901-3
   d) E-E' with currently drilling hole 806-1
2) Drill logs with assays for all six holes completed to date, as abov
3) Memo by R.W. Hodder and D.C. White, Nov.2, 1985
4) Revised draft of the paper by D.C. White for the A.G.S., with graph

I hope you and yours have a very happy holiday and new year, 1986.

Sincerely,

Don

Don White
Geologist

cc B.F. Dickerson, III

Sample Translation – U.V.X. Check Arrays

BFD

Skyline/Tucson Job #	Sample #	Original DMEA Sample #	Skyline/Wheat Ridge Job #	Sample #	Resubmittal DMEA Sample #	
UQX 029	7	1104-1 205-210	K1H 002	1	R-1	
	8	210-215		2	R-2	
	13	235-240		3	R-3	
	14	240-245		4	R-4	
	15	245-250		5	R-5	Batch
UQX 030	1	1104-1 250-255		6	R-6	
	2	255-260		7	R-7	
	5	270-275		8	R-8	
	6	275-280		9	R-9	
	7	280-285		10	R-10	
UQX032	6	1104-2 214 220	K1H 003	1	R-11	
	7	220 222		2	R-12	
	8	222 224		3	R-13	
UQX 033	1	1104-2 236 238		4	R-14	
	2	238 240		5	R-15	Batch
	6	246 248		6	R-16	
	8	250 252		7	R-17	
	9	252 254		8	R-18	
	10	254 258		9	R-19	
	35	326 328		10	R-20	
			I.K. Sample #			
UQX 035	12	901-1 332 335	11-29-	1	R-21	
	13	335 338		2	22	
	14	338 341		3	23	
	15	341 344		4	24	
UQX 036	8	1104-2 578 581		5	25	Batch
	9	581 584		6	26	
	10	584 587		7	27	
UQX 037	4	598 601		8	28	
	5	601 604		9	29	
	6	604 608		10	R-30	

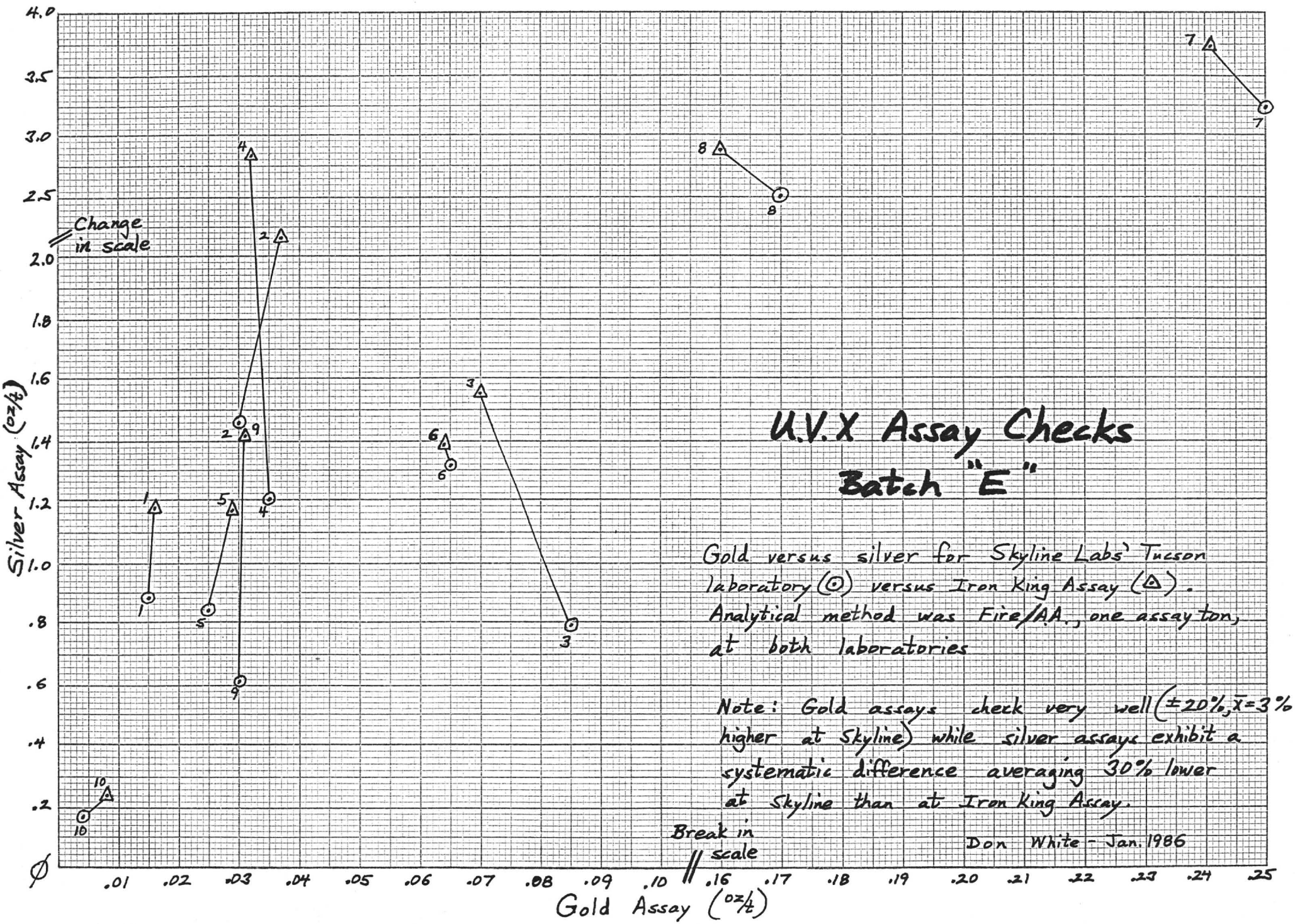
Iron King Job #	Sample #	DMEA Sample #	Skyline/Tucson #		Resubmittal #	
11-08	17	11043 222 227	UQX 040	1	R-31	Batch "D"
	18	227 229		2	32	
	21	236 238		3	33	
	24	244 246		4	34	
	25	246 248		5	35	
	33	266 269		6	36	
11-08	7	292 298		7	37	
	8	298 300		8	38	
11-15	1	901-2 367 369		9	39	
	5	417 420		10	R-40	

NATIONAL
42-383
Made in U. S. A.

Surveys of D.D.H. 806-1

Type	Depth	Incl.	Azimuth	Remarks
Planned collar	0'	-3°	S 34°W	
Camera	15'	-3.7°	S 33.5°W	
Acid	255'	-7		
Camera	300'	-6.8	S 33.5°W	
Camera	350'	-7.5	S 33.5°W	
Acid	~360	-8		
Acid	~380'	-10		
Camera	400'	-8.7	S 33°W	

∑	d	Δd	Δh	∑Δh					
-4	0-100	100	7	7					
-5	100-200	100	8	15					
-6	200-250	50	5	20					
-7	250-350	100	12	32					
-8	350-370	20	3	35					
-9	370-390	20	3	38					
-10	390-410	20	3	41					
-11	410-430	20	4	45					
-12	430-450	20	4	49					
-13	450-500	50	11	60	-13	450-470	20	5	54
-14	500-550	50	12	72	-14	470-500	30	7	61
				! in Hope!	-15	500-530	30	8	69
					-16	530-560	30	8	77 — in Hope



NATIONAL
42-383
Made in U. S. A.

UVX Assay Checks

Batch "E"

	Sample # Hole		Footage			Gold Skyline	Gold IK	Gold Δ (S-IK)	Silver Skyline	Silver IK	Silver Δ (S-IK)
1	901-	3 -	293 -	295		.015	.016	-.001	.88	1.18	-.30
2	901-	3 -	300 -	302		.030	.037	-.007	1.46	2.06	-.60
3	901-	3 -	302 -	306		.085	.070	.015	.79	1.55	-.76
4			306 -	309		.035	.032	.003	1.20	2.82	-1.62
5			309 -	312		.025	.029	-.004	.84	1.17	-.33
6			312 -	314		.065	.064	.001	1.32	1.39	-.07
7			314 -	316		.250	.241	.009	3.24	3.74	-.50
8			316 -	321		.170	.160	.010	2.50	2.88	-.38
9			321 -	326		.030	.031	-.001	.61	1.42	-.81
10	901-	3 -	326 -	331		<.005	.008	≃.004	.17	.24	-.07
					$\bar{X}$ =	.071	.069	+.002	1.30	1.85	-.55

Meaning... assays in this batch checked very closely for gold (Skyline was only an average 3% higher in gold with the differences ranging from Skyline being 19% lower than IK to 21 higher than IK) but showed a fairly strong and consistent difference with respect to silver assays (Skyline's silver assays always lower than IK; averaging 30% lower)

NATIONAL 42-383 Made in U.S.A

Surveys of D.D.H. 806-1

Type	Depth	Incl.	Azimuth	Remarks
Planned collar	0′	−3°	S34°W	
Camera	15′	−3.7°	S33.5°W	
Acid	255′	−7		
Camera	300′	−6.8	S33.5°W	
Camera	350′	−7.5	S33.5°W	
Acid	~360	−8		
Acid	~380′	−10		
Camera	400′	−8.7	S33°W	
Acid	495′	−12		
Acid	590′	−12		

∠	d	Δd	Δh	ΣΔh
−4	0-100	100	7	7
−5	100-200	100	8	15
−6	200-250	50	5	20
−7	250-350	100	12	32
−8	350-370	20	3	35
−9	370-390	20	3	38
−10	390-410	20	3	41
−11	410-460	50	10	51
−12	460-510	50	10	61
−12	510-600	90	19	80 — 00

Collar of DDH 806-1 is on 800-level elev. 4333′.
903-Int level is elev. 4252′, 81′ lower than 800-level

Workings at 594-601′ in DDH 806-1 are 903 Int. level. Distance corresponds to Wedge of 928-1 stope on 903-N drift

Lateral drift of DDH 806-1 was minimal but important! ½ degree error at collar to ~350′ and additional ½ degree left drift combine to make hole ~ 7.5′ left (SE) of an ore pass/raise on the E-E′ X-sec, immediately above the 903-N/928-1 stope.

UVX Project
Analytical Services Log

Status 1-27-86

Batch #	Date shipped	# Boxes	# Samples	Carrier	Destination	Job #	Date Results Rec'd	Pulps + Rejects	Assay Turnaround	Remarks
						UQX	Phone 9-10			
1	8-29-85	2	15	Greyhound	Skyline Tucson	029	Mail Phone 9-17	Pulps rec'd 10-1-85	12	
2	9-6	2	13	"	"	030	Mail 9-20		13	
3	9-11	2	13	"	"	031	Phone 9-17 Mail 9-20		9	
4	9-24	1	14	"	"	032	Phone 10-2 Mail 10-7	Pulps rec'd 10-4-85	13	
5	10-1	2	38	"	"	033	Phone 10-9 Mail 10-12	Pulps rec'd 10-16	11	
6	10-2	1	9	"	"	034	Mail 10-15	Pulps 12-5	13	Bulk rejects returned via John Boyd 1-26-86
7	10-10	2	22	"	"	035	Mail 11-1	Pulps rec'd 11-9	21	
8	10-16	1	18	"	"	036	Mail 11-1		15	
Checks — A	10-4	1	10 pulps	USPS	Skyline Wheatridge CO.	K1H 002	Mail 10-21	Pulps rec'd 11-1	17	
Checks — B	10-22	1	10 pulps	USPS	"	K1H 003	Mail 11-2		11	
9	10-21	1	14	Greyhound	Skyline Tucson	UQX 037	Mail 11-2	Pulps 11-9	12	
10	10-25	2	35	"	"	038	Phone 11-14 Mail 11-15	Pulps 12-5	20	
11	10-29	1	14	"	"	039	Mail 11-18		20	
12	11-8	3	37	Personal Delivery	I.K.		Phone 11-10		2	
13	11-9	1	13	"	"		Phone 11-15		6	
14	11-15	1	21	"	"		Phone 11-19		4	
Checks — C	11-27	1	10 pulps	"	"		Mail 12-16	Pulp + Rej 1-2-86	19	
Checks - D	12-2	1	10 pulps	USPS	Skyline Tucson	UQX 040	Mail 12-16		14	
15	12-7	1	22	Personal delivery	I.K.		Phone 12-9 Mail 12-16	Pulps + Rejects 1-2-86	2	
16	12-21-85	3	20	"	IK		Phone 12-27 Mail 1-14		6	
17	1-15-86	1	11	"	IK		Phone 1-20 Mail 1-22	Pulps + rejects 1-27-86	5	
18	1-21	2	24	"	IK		Phone 1-24 Mail		4	
Checks & tracers E	1-3	1	16	USPS	Skyline Tucson	UQX 041	Mail 1-24		21	
19	1-24	1	20	Personal delivery	IK		Phone 1-25		2	
20	1-27	1	9	"	"					

Sample # Translation – U.V.X. Check Assays

Skyline/Tucson Job #	Sample #	Original DMEA Sample #	Skyline/Wheat Ridge Job #	Sample #	Resubmittal DMEA Sample #	
UQX 029	7	1104-1 205-210	K1H 002	1	R-1	Batch "A"
	8	210-215		2	R-2	
	13	235-240		3	R-3	
	14	240-245		4	R-4	
	15	245-250		5	R-5	
UQX 030	1	1104-1 250-255		6	R-6	
	2	255-260		7	R-7	
	5	270-275		8	R-8	
	6	275-280		9	R-9	
	7	280-285		10	R-10	
UQX032	6	1104-2 214 220	K1H 003	1	R-11	Batch "B"
	7	220 222		2	R-12	
	8	222 224		3	R-13	
UQX 033	1	1104-2 236 238		4	R-14	
	2	238 240		5	R-15	
	6	246 248		6	R-16	
	8	250 252		7	R-17	
	9	252 254		8	R-18	
	10	254 258		9	R-19	
	35	326 328		10	R-20	
			IK. Sample #			
UQX 035	12	901-1 332 335	11-29-	1	R-21	Batch "C"
	13	335 338		2	22	
	14	338 341		3	23	
	15	341 344		4	24	
UQX 036	8	1104-2 578 581		5	25	
	9	581 584		6	26	
	10	584 587		7	27	
UQX 037	4	598 601		8	28	
	5	601 604		9	29	
	6	604 608		10	R-30	

Iron King Job #	Sample #	DMEA Sample #	Skyline/Tucson #		Resubmittal #	
11-08	17	1104-3 222 227	UQX 040	1	R-31	Batch "D"
	18	227 229		2	32	
	21	236 238		3	33	
	24	244 246		4	34	
	25	246 248		5	35	
	33	266 269		6	36	
11-08	7	292 298		7	37	
	8	1104-3 298 300		8	38	
11-15	1	901-2 367 369		9	39	
	5	901-2 417 420		10	R-40	
12-07	20	901-3 293 295	UQX 041	5	Same as DMEA #	Batch "E"
	22	300 302		6		
	23	302 306		7		
	24	306 309		8		
	25	309 312		9		
	26	312 314		10		
	27	314 316		11		
	28	316 321		12		
	29	321 326		13		
	30	901-3 326 331		14		

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GOLD EXPLORATION AT THE UNITED VERDE EXTENSION MINE, JEROME, ARIZONA

№ 100174

WHITE, Don, Geol., C.P.G., 521 E. Willis St., Prescott, AZ 86301

The United Verde Extension Mine operated from 1915 to 1938, principally as a high grade copper mine. By the 1930's, however, it was a significant gold producer. The gold accompanied high silica flux containing almost no base metals and was mined within a few hundred feet of the main base metal orebody. Overall production was 3.9 million tons grading 10.2% Cu, 0.04 oz/t Au and 1.7 oz/t Ag. The "gold stope" contained 35,000 tons of 0.4 oz/t Au and 2.0 oz/t Ag and was clearly a separate orebody from the massive sulfide mineralization.

The gold is meta-chert hosted. Cherts form wedges, thinning laterally from the stratigraphic top of the massive sulfide. These chert wedges are the demarcation between the footwall, flow-dominated volcanics and massive sulfide deposits, and the hangingwall pyroclastic-dominated succession. The more proximal cherts have greater thicknesses of hydrothermal breccia accumulated on the vent slope. The more distal cherts are either unbrecciated, massive, exhalitive cherts or are hydraulically fractured breccias. Matrix material is iron stained, comminuted chert of nearly the same composition as the clasts. Gold probably occurs as fine disseminated native metal and/or electrum in very fine silica-healed fractures within clasts and possibly in the siliceous matrix.

Hydrothermal alteration is dominated by argillization of hanging wall and footwall volcanics and a more distant hanging wall carbonate impregnation and veining. Gold is associated with traces of Ag, As, Sb, Bi, Sn, Mo, and V. Of these, only silver offers much help as an exploration aid. The silver zone is broader than the gold zone and other trace metals trail off stratigraphically as rapidly as the gold.

The present underground drilling program is an effort to discover other lens shaped gold deposits expected to be a few hundred feet long and dipping vertically. These small vent deposits were probably formed in a more quiescent environment than that of the base metal deposits.

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- ☐ 4 engineering geology
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- ☐ 8 geology education
- ☐ 9 geomorphology
- ☐ 10 geophysics
- ☐ 11 geoscience information
- ☐ 12 glacial geology
- ☐ 13 history of geology
- ☐ 14 hydrogeology
- ☐ 15 marine geology
- ☐ 16 mathematical geology
- ☐ 17 micropaleontology
- ☐ 18 mineralogy/crystallography
- ☐ 19 oceanography
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- ☐ 25 petrology, sedimentary
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- ☐ 27 Precambrian geology
- ☐ 28 Quaternary geology
- ☐ 29 remote sensing
- ☐ 30 sedimentology
- ☐ 31 stratigraphy
- ☐ 32 structural geology
- ☐ 33 tectonics
- ☐ 34 volcanology

[3] SESSION TYPE: April 30 - May 2, 1986

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Dates we can reach you: Leave message anytime

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GEOCHEMISTRY OF EXHALITES, COPPER CHIEF MINE, JEROME, AZ

JOHNSON, Nancy A., University of Arizona, Dept. of Geosciences, Tucson, Arizona 85721

№ 100172

Several exhalite horizons, associated with Proterozoic massive sulfide mineralization at the Copper Chief mine, are being studied to identify spatial and temporal geochemical changes. The host rocks to the ore are a succession of mafic to felsic flows, breccias and tuffs with exhalites occurring throughout the stratigraphic section. Two types of exhalite are distinguished at the Copper Chief mine; beds, and finely brecciated pods. They are mineralogically similar, being composed of fine grained quartz with hematite speherules, magnetite, chlorite and pyrite cubes. The 'acme' horizon, which occurs at the top of the volcanic succession, is continuous in outcrop for several hundred yards and is being used to identify lateral geochemical changes. This horizon is composed of two 4-6 inch thick exhalites (chemical component) within a package of mafic tuffaceous sediment.

Initial examination of concentration versus distance plots for some whole rock, trace and rare earth elements, as determined by neutron activation analysis, shows that elemental concentration changes occur along the 'acme' horizon. With respect to the other 'acme' sites, 'acme' site no.1 is enriched in Hg, Mo, Ta, As and Au; 'acme' site no.2 is enriched in Ti, Ba, Sb, Ca and Co; and 'acme' site no. 3 is enriched in Fe, Zn, Th, U, Sc, Na, K and rare earth elements. A plot of residence time versus seawater-upper crust partition coefficient (Taylor and McLennan, 1985) shows that those elements with the lowest partition coefficient and shortest residence time correspond to the 'acme' 3 site, and those elements with the largest partition coefficient and longest residence time correspond with the 'acme' 1 site. The elemental concentration patterns observed may be reflecting proximity to a submarine hydrothermal vent site. The 'acme' 3 site appears to be near a vent which is not the vent that was responsible for the deposition of the Copper Chief massive sulfide body.

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GENESIS OF PROTEROZOIC MASSIVE SULFIDE DEPOSITS AND STRUCTURAL GEOLOGY OF THE JEROME DISTRICT, ARIZONA

Nº 103802

LINDBERG, Paul A., 205 Paramount Drive, Sedona, Arizona 86336

The Proterozoic rocks of the Jerome District hosted world-class massive sulfide ore deposits which were mined from 1893-1953 with minor production before and after. The United Verde deposit was the largest, while the supergene-enriched United Verde Extension (UVX) was concealed by cover rocks and not discovered until 1915. At present all mines are inactive, but exploration continues for new deposits. Since 1958, when the U.S.G.S. Prof. Paper 308 was published, the cumulative results of many exploration programs have added a wealth of new information regarding the tectonic and genetic history of the district. For at least a decade and a half the volcanogenic massive sulfide model and studies of folding have been key mineral exploration guides.

A current evolutionary model for the Jerome volcanic pile begins with methodical, domal build-up of submarine rhyolite flows and breccias overlying basaltic crust. The culmination of dome development came with cauldron subsidence of the broad apex, accompanied by commensurate and rapid extrusion of the Cleopatra crystal tuff (submarine ignimbrite?) in a voluminous sheet that buried the cauldron scarps. Renewed cauldron subsidence faulting cut the welded tuff sheet and permitted hydrothermal solutions to vent onto the sea floor and form the massive sulfide ore deposits. Pervasive sericite, silica, and Mg-chlorite alteration formed in the footwall rocks, and sulfide-poor jasper lenses cap the sulfide bodies. Renewed bimodal, submarine volcanism buried the deposits and shallow gabbro sills intruded the post-ore succession. All units were deformed into steep folds trending N.N.W. with plunge reversals forming during the late, ductile stage of compression. The folded rocks were deeply eroded and subsequently covered by Paleozoic strata. Laramide uplift and high-angle reverse faulting on the Ancestral Verde Fault system triggered the events that led to the deep Tertiary supergene enrichment of UVX ores long before Verde normal faulting took place.

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GENERATION OF THE VERDE GRABEN, CENTRAL ARIZONA; THE LEADING EDGE OF CRUSTAL EXTENSION

№ 103803

LINDBERG, Paul A., 205 Paramount Drive, Sedona, Arizona 86336

Located in the "Transition Zone" of Central Arizona, the Verde Graben is a N.W.-trending, closed depression with a long axis of 60 km. The Verde Fault forms the S.W. graben boundary and the N.E. edge may extend beyond the Cathedral Rock Fault system. Deep drilling S.W. of the town of Cottonwood shows that the Verde Fault accounts for only ¼ of the 1860 meters of known cumulative displacement, and the graben is expected to be even deeper toward the east. Numerous staircase-like graben faults are hidden from view by Verde Formation lake beds within the depression.

Normal faulting on the Verde, Bessie, Valley, and other faults near Jerome took place after the Hickey Basalt was extruded 10 M.Y. ago. The Hickey rests conformably on "Rim Gravels" derived from the Laramide Uplift of S.W. Arizona where Precambrian rocks were unroofed in Oligocene time. On the plateau side of the graben, above Oak Creek Canyon, a similar gravel-filled channel, with Hickey-type clasts near the top, is overlain by the 8 M.Y. old Slide Rock Basalt. It is inferred, therefore, that the Verde Graben could not have formed before 8 M.Y. ago. Until that time debris was being carried to the N.E. onto the plateau. Outcrops of Hickey Basalt overlying "Rim Gravels," south of Sedona along Interstate 17, are in down-faulted blocks within the graben.

Many of the Miocene normal faults near Jerome were re-activated Laramide high-angle reverse faults which initially formed sub-parallel to the structural grain of the Precambrian basement. Crustal extension in Late Miocene time appears to have "rafted" the Mingus Mountain block (including the Jerome Mining District) toward the N.W. and away from the plateau, with movement inferred to occur along a deep-seated, flat-lying extensional fault. The Verde Graben was formed by subsidence of a portion of the plateau near the leading edge of crustal extension that is slowly advancing into the continent. Subsidence of the crust at Mormon Lake to the east may be an early phase of graben generation.

DETACH FOR MAILING

[2] **ALL ABSTRACTS — INCLUDING SYMPOSIA ABSTRACTS — MUST** be categorized into ONLY ONE of the 34 disciplines below. Do *not* add to the list. Choose the ONE discipline in which peer reviewers would be *best* qualified to evaluate your abstract. This does not necessarily determine the final technical session assigned.

- ☐ 1 archaeological geology
- ☐ 2 coal geology
- ☐ 3 economic geology
- ☐ 4 engineering geology
- ☐ 5 environmental geology
- ☐ 6 general geology
- ☐ 7 geochemistry
- ☐ 8 geology education
- ☐ 9 geomorphology
- ☐ 10 geophysics
- ☐ 11 geoscience information
- ☐ 12 glacial geology
- ☐ 13 history of geology
- ☐ 14 hydrogeology
- ☐ 15 marine geology
- ☐ 16 mathematical geology
- ☐ 17 micropaleontology
- ☐ 18 mineralogy/crystallography
- ☐ 19 oceanography
- ☐ 20 paleontology/paleobotany
- ☐ 21 petroleum geology
- ☐ 22 petrology, experimental
- ☐ 23 petrology, igneous
- ☐ 24 petrology, metamorphic
- ☐ 25 petrology, sedimentary
- ☐ 26 planetary geology
- ☐ 27 Precambrian geology
- ☐ 28 Quaternary geology
- ☐ 29 remote sensing
- ☐ 30 sedimentology
- ☐ 31 stratigraphy
- ☐ 32 structural geology
- ☒ 33 tectonics
- ☐ 34 volcanology

[3] SESSION TYPE: Thurs. AM, Black Bart

☒ This abstract was invited for the symposium titled
Tertiary Extensional Tectonism - Part A

If you checked "symposium" above, skip the rest of this item and go on to item (4).

☐ Poster Session ☒ Oral session ☐ Either type

If you checked "Oral" or "Poster" above, the Program Committee may have to change the type of presentation due to time/space limits; therefore, check one of the following:

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[5] CAN YOU BE A SESSION CHAIRMAN? ☐ Yes
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[6] SPEAKER'S IDENTITY AND MAILING ADDRESS:

Speaker's status (check one):
1 ☒ GSA Mem or Fel
2 ☐ GSA Student Assoc
3 ☐ Professional geologist (but not GSA mbr)
4 ☐ Student (not GSA Assoc)

Speaker's name Paul A. Lindberg
Address 205 Paramount Drive
Address
City State Zip Sedona, Arizona 86336
Country USA
Office Telephone: (602) 282-1247
Home Telephone: ( ) _____
Dates we can reach you: Any time

[7] SEND ORIGINAL + FIVE COPIES OF ABSTRACT TO APPROPRIATE ADDRESS SHOWN ON INSTRUCTIONS SHEET AND ON BACK OF THIS FORM. ALL ABSTRACTS MUST ARRIVE ON OR BEFORE DEADLINE SHOWN FOR EACH MEETING.

BFD

Sharlot Hall Museum

415 West Gurley Street
Prescott, Arizona 86301

January 10, 1986

Verde Exploration, Ltd.
c/o Paul A. Handverger
2160 Old Jerome Hwy.
Clarkdale, AZ 86324

Dear Sirs:

Thank you very much for the loan of the United Verde Extension Mining Company personnel cards. We have duplicated them for our archives.

The duplicating was done by volunteers from the Prescott Genealogical Society and by the Sharlot Hall staff. The copies will reside in the Museum's archives for use by the public, including those users who wish to research the wealth of genealogical information or historical data they contain. We might add that the security of the data is now enhanced by there being two sets in existence;one in a secured museum setting.

Should you be willing to part with the originals at any time in the future, or to have any other documents copied and left in our archives, Sharlot Hall Museum would be more than willing to give them a good home.

The original personnel cards are now being returned to your vault by Don White, who brought them to our attention.

Sincerely,

Sue Abbey, Archivist

RFD

More about

Mine fraud

Continued from Page A-1

[redacted]

U.S. says prominent Americans sank $20 million in mine fraud

[redacted]

Massive fraud is linked to depleted mine claims

By ALBERT J. SITTER

[redacted]

June 1985. MISCELLANEOUS CONTENTS OF U.V.X. VAULT.

1. Map showing underground workings of Vulture Mine. 1916. 1"=40'
Drill hole locations. Claims.

1 2. Lost Mine and Vicinity ~ Owens, Co. 1"=100'. Claims. Underground workings. Veins. Sample locations (?).

3. Claim map of Vulture area ~ 1932 (?) D.H. locations. 1"=200

4. Claim map of Pioneer mining district - Superior Pinal County, Az. 3"/4=2000'. 1921

5. Plan of Golden Anchor Mine. (x2) 1933. 1"=50'. Stopes. Workings. Sample locations.

6. Map of Sheldon Superior Mining Co., Hassayampa Mining district, Yavapai Co. Az. Claims. Tunnels. Veins. Shafts. 1"=300.

1 7. Map of Cowboy Mine. 1926. 1"=20'.

8. Map of Vulture. 1"=100'. Workings. D.H. locations. Claims.

9. Map of Sheldon Superior Mining Co. 1"=600'. Info. as before.

10. Several Golden Anchor sample location sheets.

11. Mutual Coal Co. and Gallup Southwestern Coal Co. maps (several) Gallup, New Mexico. Workings, street plan.

→ 12. Map of Oak Mountain Properties, San Bernardino County. 1"=200'. Surface. Several small workings.

Shelf Top 13. Map of Claims in Morenci, Metcalf, Clifton area. 1903. 1"=100'

→ 14. Report on Electrical Prospecting carried out near Okiep, Namaqualand, S.A. (1929)

Filing cabinet → 15. South African Copper Co. Nababeep + Flat Mine maps.

16. Many other S.A.C.C. maps.

Filing Chest. → 17. Small report on Aubry prospect, Co. 35 Assay values (gold >.1 oz/ton average) Map of mine + assays. America Group. (1935).

→ 18. Gold Prince, Dos Cabezas District, mine map + ore calculations.

19. Silver King (?) mine map + sample locations (?).

20. Mabie's Workings map, Chloride District. Workings, samples. (Near Goat Mountain) 1"=600'. 1925

21. Emerald Isle Group. 1925. 1"=600'. Shows ore area, sample locations, Chloride District.

22. Geological map of Chloride District.

June 1985 U.V.X. Vault Misc. (cont)

23 Gold Prince Mining + Milling Co. Plan of Underground Workings - Dos Cabezas District, Az. 1923 1"=40'

24 Claim map of Sunbeam Group, Pinal Co. 1921. 1"=250'.

25 Geologic map of Irene + Pittsburg group, Globe. 1"=200'.

26 Bouton survey of Irene workings. 1925. 1"=40'

27 Aragon Chemical Co., Camp Verde, Az. Mine progress map 1931. 1"=20'.

28 Underground map of Adams Gold Mining Co., Katherine District, Mohave Co. 1922. 1"=20'

29 Underground map of Queen mine, N.Y. Mining District, San Bernardino Co. 1929. 1"=50'

30 Map of Snowflake Consolidated, Eagle Valley Mining District, Lincoln Co., Nev. 1"=300'. Gold values. Workings

31 Dresser Mining Co. Milling + Working map. Various scales. Gold, Ag, Cu values. Hundred group. Gang Queen group.

32 Leviathan Mine, Alpine Co., Ca. 1932. Workings, sample locations. 1"=50'.

33 Osisko Lake Mines Ltd., Edith Gamble claim. Gold values in dth. Surface. 1"=40'

34 U.V.X. Mining Co., Murray Option, Rouyn, Quebec. (Near Osisko Lake) Underground working. 1927. 1"=50'

35 Map of Underground Workings of Odeans Mine, Hamilton District, Esmeralda Co., Nev. 1922. 1"=40'

36. Stope Assay plan for Odeans Mine. See 35.

37. Copper Hill Group, Copper Basin District, Yavapai Co. 1"=200'. Workings, Claims. Assays. (1936) Locations

38. Geologic map of Copper Hill. See 37.

39 Sketch map of America Group, near Amboy, Ca. 1935. 1"=30'. Workings, assay locations

40 Claim map of Pioneer Mining District, Supior. 1921. 3/4"=2000'

41 Gold Bar Group, Hillside, Az. 1"=100'. 1935. Workings, sample locations + assays.

42 Map of America Lode. 1"=100'. See 39.

43 Claim map of Principal Mining District, Yavapai Co. See 37.

44. Plan of Claims - Golden Anchor, Kimberly group. 1"=500'. 1936.

45 Sketch of Plan of Golden Anchor Mine. Workings. Faults. 1"=50'. 1933.

46 Golden Anchor map. 1936. Sample locations, workings.

47 Hercules Mine Assay Map., Alpine Co., Ca. 1925

48 Map of Old Mountain Properties, San Bernardino Co., Ca. 1"=200'. claims. Workings

49 Leviathan Claims, Alpine Co., Ca. 1"=200'.

June 1985 V.V.X. Vault Misc. (cont.)

1 50. ~~Map of Copper Basin, Ariz.~~ 1"=20'. Surface. Workings. Claims.
Also Bonny Jerome Verde, Hanging, Vulture, Green Monster, Verde Central, A+A, C+S, maps.

MEMO

TO: Ben F. Dickerson, III; Carole A. O'Brien

FROM: Don White

DATE: September 25, 1985

SUBJECT: Water in the U.V.X. Mine

Various information related to water in the UVX mine has been collected during the last couple month's experiences. It is worth recording for later reference in the event of future mining or deeper exploration.

The UV and UVX mines both have flooded approximately up to their haulage tunnels. Those are the Hopewell Tunnel (U.V. 1000-level) and the Josephine Tunnel (UVX 1300-level). Water levels fluctuate, however, slightly above and below the sills of these two tunnels. Measurements made with a floating weight on a line from the UVX 1100-level at the Edith Shaft reveal the following:

Late July, 1985 -- Water 3 feet above 1300 sill
Late August -- Water 7 feet below 1300 sill
Late September -- Water 8 feet below 1300 sill

Even though the mine water level is below the haulage level, the Josephine tunnel continues to make water at its portal. This is no doubt explained by water percolating along the many shears intersected in the 2¼ mile length of the Josephine. Water falling below the 1300 sill in late summer of a particularly dry season is apparently normal.

Water accumulating above the 1300 sill is explained by ponding behind the partial caves known to have occurred along the Josephine. One concern for future work at the UVX is the effect of a more serious cave in the Josephine. It is possible that a more complete blockage could force the accumulation of water to higher levels in the mine. In fact this may have occurred in the past. One observes an old water line about 3 feet up from the sill on the 1200 level. Since there is no cave between the water line marks and the Edith shaft, the suggestion is that the shaft and all were flooded at one time to that point 3 feet above the 1200 sill. That could only be explained by a severe blockage of the Josephine which could have reopened in part as a result of the pressure buildup from the accumulated water (about 3 atmospheres).

Another evidence of changing water conditions is the silt on the 550 level. It is bone dry now but has about 4 inches of fine silt deposited along the open drift. The silt is deepest in the center of the drift and tapers to

nearly nil next to the ribs. This may be a relict of previous, probably seasonal, flowing water on that level.

Water in the mine levels we now use is restricted to those areas driven upgrade to the Edith from the Little Daisy or main orebody areas. That is the case with the 1202 and 806 drifts (1200-level and 800-level respectively) both heading west from the Edith toward the older Little Daisy shaft. Partial caving on those drifts has forced the ponding of water originating closer to the Edith. Were it not for the caving, that water would flow to the first transfer point and run to lower levels in the mine.

Copy for BFD + CAO'B
Don White
— Sure sounds like the UVX to me — Don

Economic Geology
Vol. 80, 1985, pp. 1633–1639

Hydrothermal Eruption Mechanisms and Hot Spring Gold Deposits

CARL E. NELSON AND DAVID L. GILES

Cimarron Exploration, Inc., 66 South Van Gordon, Suite 140, Lakewood, Colorado 80228

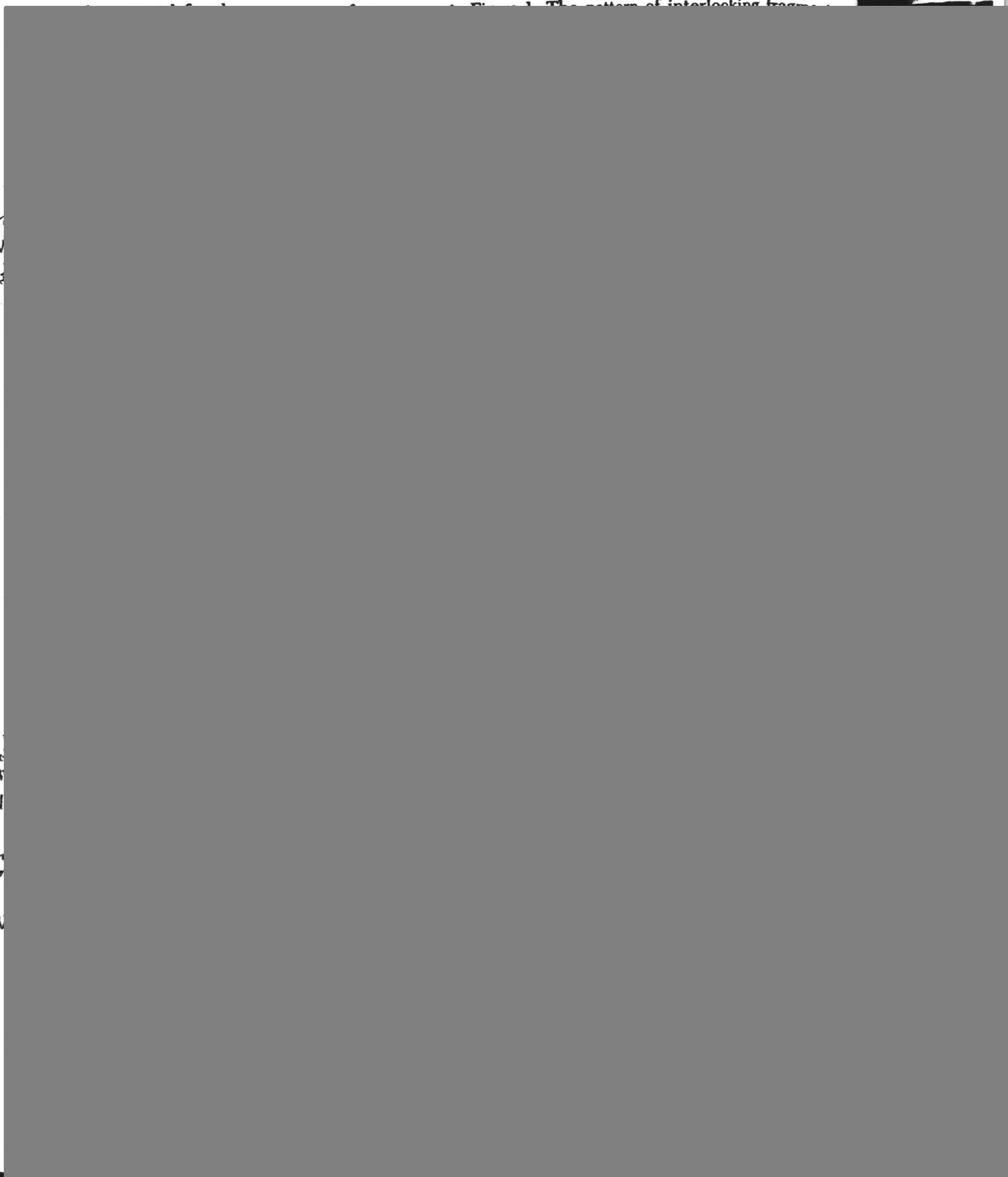
Abstract

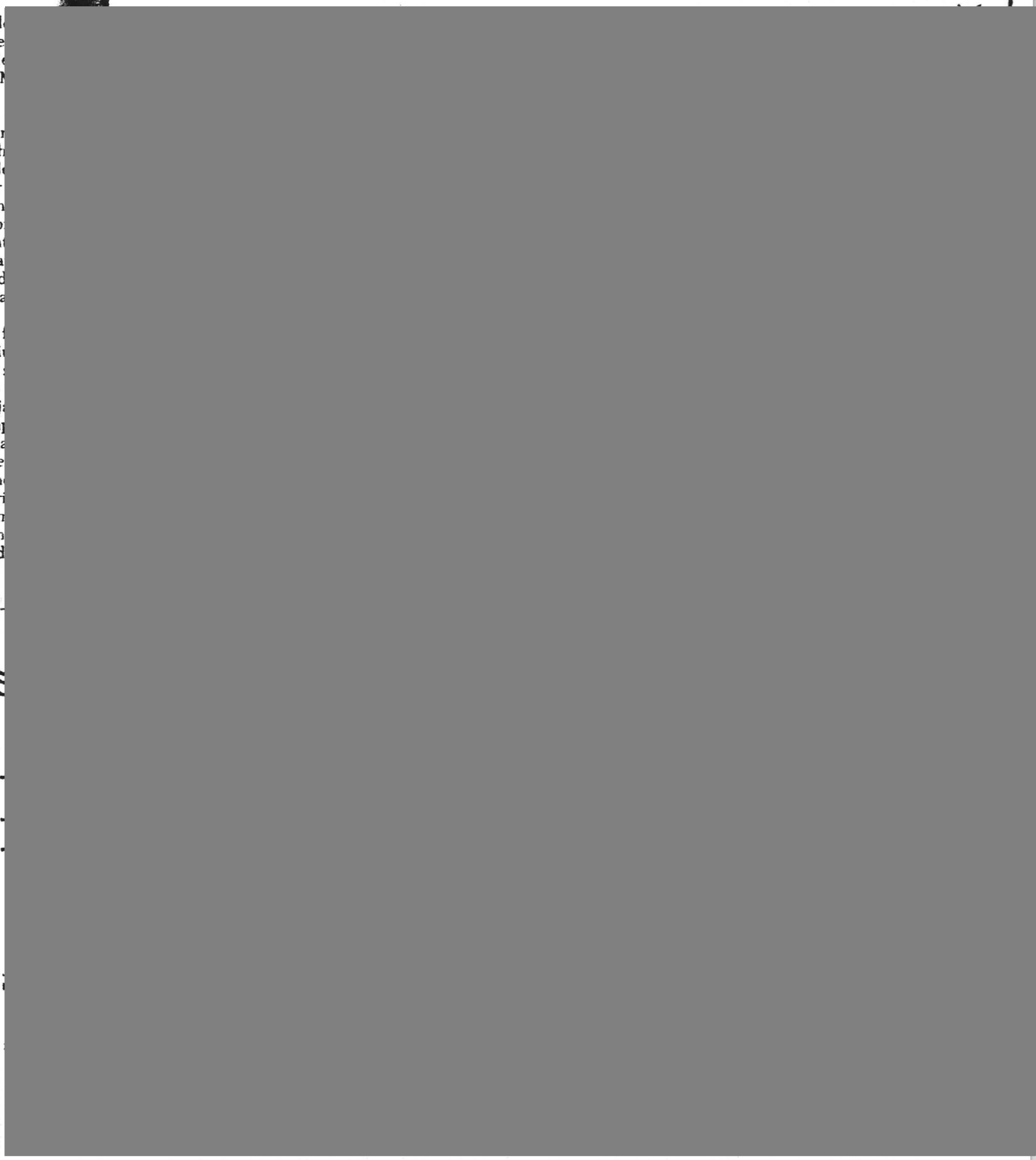
Episodes of gold mineralization in the shallow hot spring environment are related in time to hydrothermal eruption events and in space to the resulting vent breccias and peripheral stockwork zones. It is proposed that large but short-lived overpressures in a geothermal reservoir, probably triggered by sudden magmatic heat fluxes, induce hydraulic fracturing which then evolves into hydrothermal eruptions if driven through to the surface. The maximum available energy in hot, shallow reservoirs appears easily sufficient to drive such eruptions, particularly if CO_2-rich fluids are involved. In mineralized systems, gold-bearing fluids are subsequently channeled into the outflow conduit where they flood the permeable vent breccia and peripheral stockwork. Gold is lifted into this hot spring environment above a boiling level that is elevated by high flow rates to within several hundred meters of the surface and is precipitated with abundant quartz, pyrite, and adularia, along with a distinctive and steeply zoned trace element suite. These sequential events probably occur as a continuum, which if repeated cyclically in a single vent zone, can result in ore-grade mineralization.

Introduction

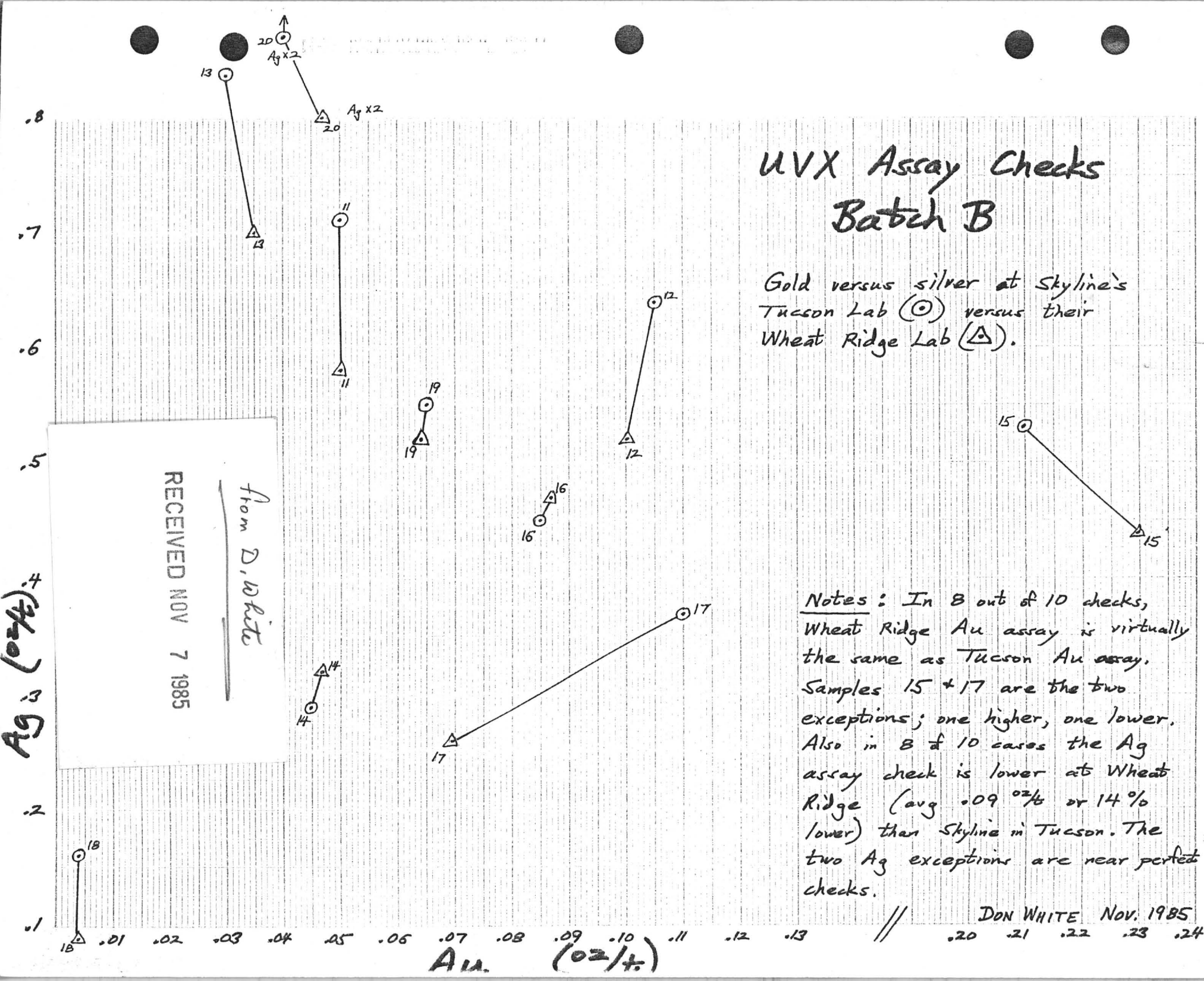
deposits in hot springs environments. Recent articles

0361-0128/85/446/1633-7$2.50





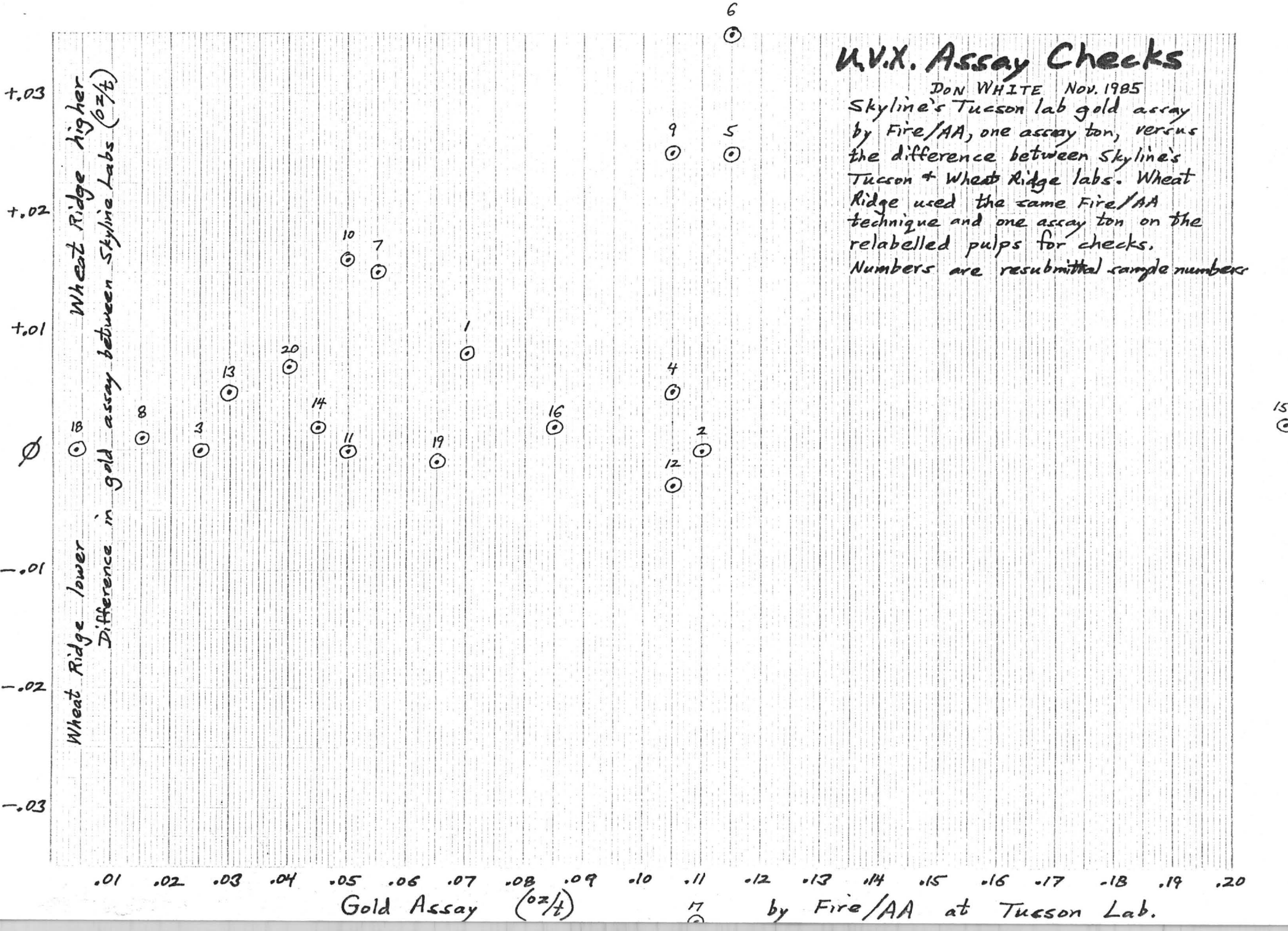
Rapid and near-instantaneous channeling of fluids ... volume results in ore-grade mineralization. Micron- ... Energy Miner


UVX Assay Checks
Batch B
Gold versus silver at Skyline's Tucson Lab (⊙) versus their Wheat Ridge Lab (△).
Notes: In 8 out of 10 checks, Wheat Ridge Au assay is virtually the same as Tucson Au assay. Samples 15 & 17 are the two exceptions; one higher, one lower. Also in 8 of 10 cases the Ag assay check is lower at Wheat Ridge (avg .09 oz/t or 14% lower) than Skyline in Tucson. The two Ag exceptions are near perfect checks.
DON WHITE NOV. 1985
RECEIVED NOV 7 1985
from D. White
Ag (oz/t)
Au (oz/t)
.8
.7
.6
.5
.4
.3
.2
.1
.01 .02 .03 .04 .05 .06 .07 .08 .09 .10 .11 .12 .13 .20 .21 .22 .23 .24
Ag x2
Ag x2

U.V.X. Assay Checks

DON WHITE NOV. 1985

Skyline's Tucson lab gold assay by Fire/AA, one assay ton, versus the difference between Skyline's Tucson + Wheat Ridge labs. Wheat Ridge used the same Fire/AA technique and one assay ton on the relabelled pulps for checks. Numbers are resubmittal sample numbers



SKYLINE LABS, INC.
SPECIALISTS IN EXPLORATION GEOCHEMISTRY
12090 WEST 50TH PLACE • WHEAT RIDGE, COLORADO 80033 • TEL.: (303) 424-7718

REPORT OF ANALYSIS

JOB NO. KIH 003
October 29, 1985

Check Assays

Batch B

Don White
521 East Willis Street
Prescott, Arizona 86301

Analysis of 10 Pulps

Wheat Ridge

ITEM	SAMPLE NO.	Au ΔAu Tucson	FIRE ASSAY Au* (ppm) ↓	Ag (ppm) ↓	Ag oz/t	Ag Tucson	ΔAg
1	R-11 ϕ	.050 .050	1.70	20.0	.58	.71	-.13
2	R-12 -.003	.105 .102	3.50	18.0	.52	.64	-.12
3	R-13 +.005	.030 .035	1.20	24.0	.70	.83	-.13
4	R-14 +.002	.045 .047	1.60	11.0	.32	.29	+.03
5	R-15 +.020	.210 .230	7.90	15.0	.44	.53	-.09
6	R-16 +.002	.085 .087	3.00	16.0	.47	.45	+.02
7	R-17 -.040	.110 .070	2.40	8.9	.26	.37	-.11
8	R-18 ϕ	<.005 .004	.13	3.2	.09	.16	-.07
9	R-19 -.001	.065 .064	2.20	18.0	.52	.55	-.03
10	R-20 +.007	.040 .047	1.60	55.0	1.60	1.87	-.27

$\bar{x} = -.001$

Wheat Ridge (checks) lower by avg. 1%

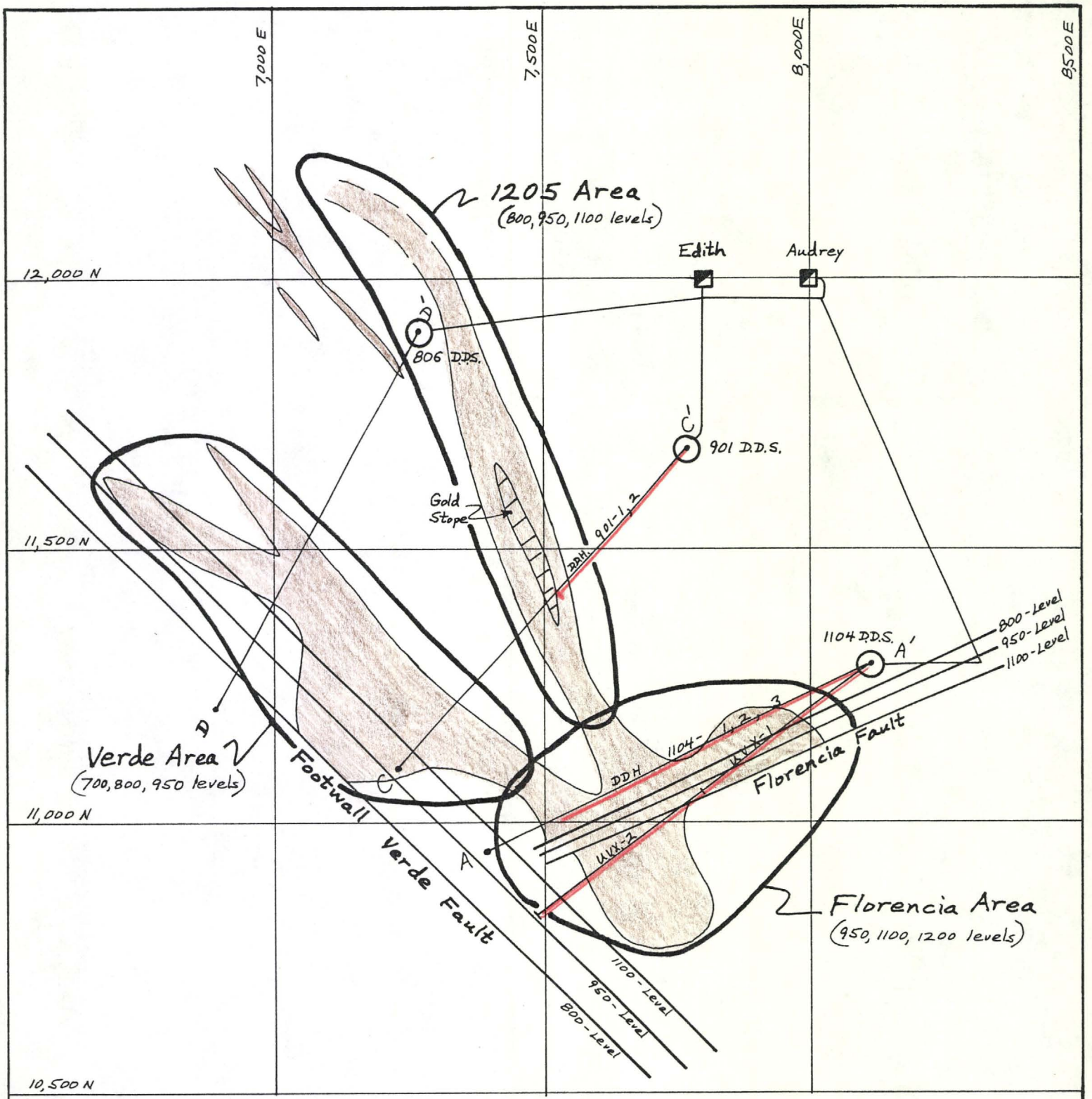
$\bar{x} = -.09$

Wheat Ridge (checks) lower by avg. 14%

Gordon H. VanSickle
Manager

NOTE: * = A.A.Finish

cc: Ben F. Dickerson, DMEA Ltd, Scottsdale AZ



U.V.X. GOLD PROJECT

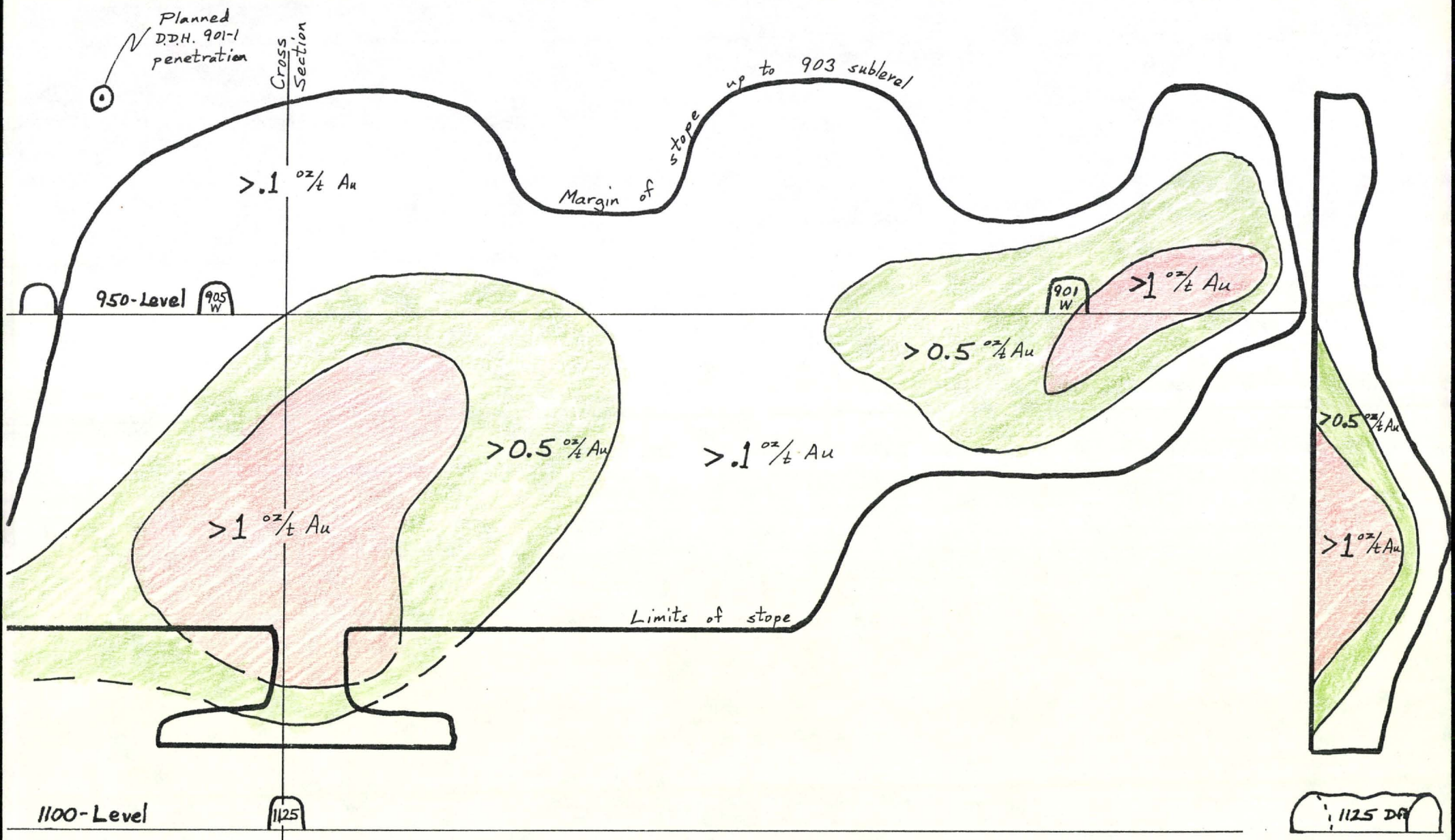
Sketch map showing:
chert bodies/target areas, key cross sections, diamond drill stations.

N

1" = 250'

Figure 1

D.C. White & R.W. Hodder - Nov. 1985



1" = 40'

Looking ~250°

U.V.X. GOLD PROJECT

GOLD STOPE Sketch longitudinal & cross section showing dimensions, geometry, & gold grade distribution.

Figure 2

D.C. White & R.W. Hodder - Nov. 1985

BFD, III

Don White
521 East Willis St.
Prescott, AZ 86301

October 4, 1985

Mr. Robert W. Hodder
20 Mayfair Drive
London, Ontario
Canada N6A 2M6

Dear Bob,

Thanks so much for the surprise package in the mail. I'm a convert; it really does a great job.

I'm afraid the remodelling of my office is not advancing as fast as I would like. I have not had any time to do the chores that are needed preparatory to the professional plasterer's work. And I'm too cheap to have them do things I can do myself. So not much has happened on that front as I try to keep up with two rigs at the U.V.X. and another client's needs.

Carole tells me we may be able to have you here later this month. That will be useful on the U.V.X. I'm glad the Vulture work is put off to December or so because I feel there is much needed preparation and organization on that before we can best utilize your time. I hope to have that time in November and then I think you'll be real intrigued by the potential at the Vulture. It, like the U.V.X., is an exciting project on which I know I'll enjoy your collaboration.

Hope to see you in just a few weeks.

Best Regards,

Don White

DW:sk

bcc BFD, III

DMEA

Second and Final Notice

WORKSHOP ON EARLY PROTEROZOIC GEOLOGY OF ARIZONA

U.S. Geological Survey
Conference Room, Building 3
2255 N. Gemini Drive
Flagstaff, Arizona
October 3-5, 1985

Purpose:

Much important research of the past few decades on the Early Proterozoic of Arizona is yet unpublished and several vigorous research programs have been initiated in the past few years. There is a host of new data, ideas, controversies, and directions of investigation. It is clear that the next few years will bring a cascade of publications on the Proterozoic orogenic belts of Arizona, and that these will be important for understanding the Early Proterozic crustal growth and metallogeny of the southern North American Precambrian craton. Several summary papers are now in preparation for the Arizona Geological Society's forthcoming book on the geology of Arizona. The workshop is planned to meet the urgent need for communication, cooperation, and collaboration amongst the various active research groups.

Program:

A tentative program based on responses to date includes the following presentations:

Thursday, October 5, 8:00 am: Introductory Session

L. Silver	Overview and selected perspectives
C. Conway	Geologic history of younger Early Proterozoic rocks in central Arizona
K. Karlstrom	Deformation styles and structural history of selected areas in central Arizona
P. Anderson	Stratigraphic and structural synthesis

Thursday, late am and pm: Older Early Proterozoic terrane in central to northwestern Arizona

P. Lindberg	Stratigraphy and structure, Jerome area
M. Gustin	Geochemistry, Jerome
P. O'Hara	Metamorphism, metasomatism, Bradshaw Mtns.
G. Swann	Shear zones, central Arizona
S. Beard	Deformation, Texas Gulch Formation; Cottonwood Mtns.
Agenbright	Deformation adjacent to Crazy Basin pluton
M. Darrack	Structure of the Shylock fault zone
B. Bryant	Plutonic rocks in the Poachie Range
T. Connelly	Stratified rocks and massive sulfide deposits, Bagdad

Thursday after dinner: Open Discussion
Get acquainted, talk over maps, etc.

Friday, October 5, 8:00 am: Younger Early Proterozoic terrane in central to southeastern Arizona

K. Condie/students	Geology, geochemistry, Dos Cabezos, Pinal Mtns, Mazatzal Mountains
P. Swift	Pinal schist
R. Erickson	Dos Cabezas Mtns.
W. Kortemeir	Topaz, beryllium mineralization, Alder Group, Tonto Basin
J. Roller	Structures in upper Alder Group, Mazatzal Mountains
D. Puls	Thrusting in Mazatzal Mountains
L. Middleton	Mazatzal quartzite, Del Rio area
S. Maynard	Strata and ore deposits, New River Mtns.

Friday afternoon: Regional geochemistry, geochronology

D. DePaolo	Nd isotopes in igneous rocks of central Arizona
S. Bowring	U-Pb zircon geochronology, central Arizona
J. Wooden	Pb isotopes, western U.S. Proterozoic crustal provinces
K. Condie	Geochemistry and crustal evolution

The presentations will not be formal slide talks. We encourage utilization of chalkboard, overhead projector, slide projector, charts, tables, and maps, in giving informal presentations. There will be discussions at any time they seem appropriate. Participants are welcome to discuss projects at any stage of progress. We welcome further additions to the program at any time.

The workshop will emphasize geologic observations, mapping, and analytical data, with less emphasis on models. We intend to concentrate on the Early Proterozoic, but may include discussion of the Middle Proterozoic (1,400 m.y.) plutonic rocks. We do not intend to consider the Grand Canyon Supergroup or the Apache Group. Discussion of Early Proterozoic terranes adjacent to Arizona will be appropriate in so far as it sheds insight on Arizona geology. Indeed, we invite researchers of other areas to attend, and hope for profitable exchange. There is preliminary discussion of a similar workshop in New Mexico at a later date.

Field Trip:

Early Saturday morning the group will depart Flagstaff for central Arizona. Precise field sites to be visited will be determined by the interest of the participants. If there is enough interest the field portion of the conference will be extended through Sunday. These things will be determined by Friday noon.

TO: Ben F. Dickerson, III; Carole A. O'Brien

FROM: Don White

DATE: October 4, 1985

SUBJECT: Need for microscipic and mineralogic study of the U.V.X. gold-in-chert occurrence.

Many of the issues we face now and in the future on the U.V.X. gold project, could be aided by an understanding of how the gold occurs. We don't know its grain size, its distribution, its mineralogic associates, its volumetric percentage, or even whether it is really free gold or not. Hence we don't know how much nugget effect to expect in the assays, what explains the gold's variation in grade thruout the chert, or the logic of why some cherts are barren altogether, and others are mineralized. The work I propose we contract to Mountain States Mineral Enterprise in Tucson probably won't answer all questions but it sure may help.

I have just talked to Rick Boehme, senior processing engineer at Mountain States, to find out what they can do and how much it costs. If we supply them with a core sample that assays well (i.e., Phelps Dodge's UVX-1 hole, intervals 240-245, and 245-250) and the derived pulp (which should be locatable in the core shack) they can do several things. First, they will concentrate the gold in the pulp, possibly just by screening the plus 200 mesh fraction, possibly by further grinding and gravity concentrating using a "superpanner" (which will only work if gold is truly "free"). Than Lazlo Dudas (ex Anaconda mineralogist) will perform a mineralogic, volumetric, and size study including photographs and a report. A head assay and a post-concentrating assay are possible. Costs are approximately:

Concentrating	$ 200
Assays	50
Photos and reports	750
TOTAL	$ 1,000

I would like to see this attempted. We may be thwarted by the inability to concentrate the gold (as with Skyline's inability to separate chert clasts from matrix using heavy liquids) but that in itself is revealing. And of course no study or charges beyond the concentrating would be incurred in that case.

I look forward to your reaction to this proposal. In view of its import to the project at this point, I hope that I may pursue it promptly.

A related matter is check assays which I have submitted today. Skyline's Lab in Tucson is returning the pulps from UVX core samples to me. I have selected ten out of the first forty-one samples, all from D.D.H. 1104-1. They are being resubmitted, this time to Skyline's Wheat Ridge, Colorado laboratory. The pulps were relabelled with new sample numbers. The sample submittal and translation back to original sample numbers is attached. I will report on those results as soon as we receive them.

ORDER FOR ANALYTICAL SERVICES

Samples Sent to:

SKYLINE LABS, INC.
12090 W. 50TH PLACE
WHEAT RIDGE, COLORADO 80033
TEL.: (303) 424-7718

(Report and invoice in duplicate will be sent to address below unless otherwise instructed)

Address Report To:
Don White
521 East Willis St.
Prescott, AZ 86301
Tel. 602-778-3140

P.O. NO.:
SHIPMENT NO.:
DATE SHIPPED: Friday, October 4, 1985
SHIPPED VIA: U.S. Postal Service - insured
NO. OF CARTONS: One (1)
NO. OF SAMPLES: Ten (10)
(Information above helps us trace lost shipments)

Send Invoice To: Ben F. Dickerson, III
DMEA Ltd.
7340 East Shoeman Ln.
Suite 111 - R-(E)
Scottsdale, AZ 85251

Send Copy of Report To: BFD III

LIST SAMPLE NOS.	DESCRIBE MATERIAL	LIST ELEMENTS TO BE DETERMINED (Give anticipated range of values, if possible) Describe any special sample preparation procedures desired.	INDICATE METHOD OF ANALYSIS*	✓ IF 31 – ELEMENT EMISSION SPEC SCAN DESIRED
R-1 R-2 R-3 4 5 6 7 8 9 R-10	Pulps	Gold and Silver by Fire Assay/Atomic Absorption using one assay ton and being sure to homogenize ~~each~~ pulp prior to taking split for assay.	Fire/AA	

PAYMENT FOR SERVICES REQUESTED MUST ACCOMPANY ORDER UNLESS CREDIT ARRANGED

Signature of person authorizing work: Don White
(Use Continuation Sheet If Necessary)

INSTRUCTIONS

*METHOD OF ANALYSIS: G-Geochem, Q-Quantitative or Routine Assay
W-Wet Assay, F-Fire Assay

†SAMPLE STORAGE: Pulps stored 90 days pending instructions, bulk rejects stored 30 days pending instructions.
Please return ~5 days after sending report.

Enclose yellow original with samples, send white copy by mail, retain pink copy. White copy will be returned to shipper as an acknowledgement that shipment has been received.

INDICATE DESIRED DISPOSITION OF SAMPLES AFTER ANALYSIS	Bulk Rejects	Pulp
Return at customer's expense via: U.P.S.	None	✓
Store temporarily pending instructions†		
Discard immediately		

SENDER COPY

Sample # Translation – U.V.X. Check Arrays

Skyline/Tucson Job #	Skyline/Tucson Sample #	Original DMEA Sample #	Skyline/Wheat Ridge Job #	Skyline/Wheat Ridge Sample #	
UQX 029	7	1104-1 205-210			R-1
	8	210-215			R-2
	13	235-240			R-3
	14	240-245			R-4
	15	245-250			R-5
UQX 030	1	1104-1 250-255			R-6
	2	255-260			R-7
	5	270-275			R-8
	6	275-280			R-9
	7	280-285			R-10

1" = 100

S24°W - N24°E

Looking WNW

Paul Handverger Oct. 1985

UVX X-section

11400N
7575E

4900'

Ben + Candle,
A copy of PH's
X-section "demonstrating
feasibility of drilling my
target" (PH) which I
improved upon with
section PH-4 sent
to you a week ago
Don
10-16-85

Conglo

Conglo

Cgl/LS

-550

4500'

Conglo

-800

QPorph

Si

Diorite

Qf

Diorite

Si

?

Rhy

-950

Gold Prosp

Qf

Diorite

-1100

4000'

Qf

Diorite

-1200

-1300

-1700

-1500

-3500 1609

-3400 1700

TARGET

-1650 TD

DMEA

Don White
521 East Willis St.
Prescott, AZ 86301
778-3140

Jack Allan
Skyline Labs, Inc
P.O. Box 50106
Tucson, AZ 85745

Sept. 24, 1985

Dear Jack,

This note accompanies my latest sample submittal on behalf of Ben F. Dickerson III of DMEA, Ltd. We appreciate your prompt turnaround and reliable service. However, I would like to ascertain a couple changes.

First, please send the confirmation of arrival notices (copy of submittal form with your job #) to me. As the submitter I am the one who needs to know that samples have arrived. A copy to DMEA is fine but don't omit my copy as has been done.

Secondly, all pulps and rejects should come back to me in Prescott, not DMEA in Scottsdale.

And lastly, on this particular project, until further notice, please return the pulps to me right away as we want to send them out for other checks promptly. Thus I could use pulps for UQX-029, 030, and 031 now, and others as soon as possible. Please send those by U.P.S.

Also a few more blank submittal forms and shipping labels would be handy —

Sincerely
Don White, Geologist

c.c. B.F.D., III

JMEA

UQX029
8/30/85

ORDER FOR ANALYTICAL SERVICES

Samples Sent to:

SKYLINE LABS
P.O. BOX 50106 • 170(
TUCSON, ARIZONA 85
(602) 622-4836

JOB NO. UQX029

SAMPLES RECEIVED 8-30-85

PLEASE USE THE ABOVE NUMBER
ON ALL CORRESPONDENCE
THANK YOU!

(Report and invoice in duplica
below unless otherwise inst

Robah #

Address Report To:
Don White
New → 521 East Willis St.
Prescott, AZ 86301

Tel. 778-3140

P.O. NO.:
SHIPMENT NO.:
DATE SHIPPED: Aug. 29, 1985
SHIPPED VIA: Greyhound Bus
NO. OF CARTONS: Two (2)
NO. OF SAMPLES: Fifteen (15)
(Information above helps us trace lost shipments)

Send Invoice To: Ben F. Dickerson, III
DMEA Ltd.
7340 East Shoeman Ln.
Suite 111-B-E
Scottsdale, AZ 85251

Send Copy of Report To: B.F.D., III

	LIST SAMPLE NOS.	DESCRIBE MATERIAL	LIST ELEMENTS TO BE DETERMINED (Give anticipated range of values, if possible) Describe any special sample preparation procedures desired.	INDICATE METHOD OF ANALYSIS*	✓ IF 31-ELEMENT EMISSION SPEC SCAN DESIRED
1	1104-E	Rock chips	Probably <.005 oz/t Au + Ag Gold + Silver using Fire Assay/AA and one assay for ~~Au, g, terms~~	Fire/AA	
2	1103				
3	1104-1-14	Broken core			
4	1104-1-148				
5	1104-1-193-200	Split core	Probably ~ 0.02		
6	1104-1-200-205				
7	205-210				
8	210-215				
9	215-220				
10	220-225				
11	225-230				
12	230-235				
13	235-240				
14	240-245		Maybe up to 0.5 oz/t		
15	1104-1-245-250				

PAYMENT FOR SERVICES REQUESTED MUST ACCOMPANY ORDER UNLESS CREDIT ARRANGED

Signature of person authorizing work: Don White

(Use Continuation Sheet If Necessary)

INSTRUCTIONS

*METHOD OF ANALYSIS: G-Geochem, Q-Quantitative or Routine Assay
W-Wet Assay, F-Fire Assay

†SAMPLE STORAGE: Pulps stored 90 days pending instructions, bulk rejects stored 30 days pending instructions.

Enclose yellow original with samples, send white copy by mail, retain pink copy. White copy will be returned to shipper as an acknowledgement that shipment has been received.

INDICATE DESIRED DISPOSITION OF SAMPLES AFTER ANALYSIS	Bulk Rejects	Pulp
Return at customer's expense via: U.P.S.	✓	✓
Store temporarily pending instructions†		
Discard immediately		

ACKNOWLEDGEMENT

MEMO

To: B.F. Dickerson, III, C.A. O'Brien
From: Don White
Date: Nov. 8, 1985
Subject: Aussie visitors to the Bell property

Five hours Thursday evening (11-7-85) and five hours Friday morning (11-8-85) were spent in discussions and tour with:

Dr. Doug Dunnett

Aurex Pty Ltd.
(Geological Consultants)
Suite 6
42 Ardross St
Applecross 6135
Western Australia
Ph: (09) 364-8355 (W)

(Principal of:)
Ranger Exploration, N.L.
5 Doongalla Rd.
Attadale 6156
Western Australia
(09) 330-5109 (H)

and Alistair R. Turner
Denver, CO.

Both are ex-Anaconda geologists. Thus they were familiar with the Bell property which they came to inspect and update themselves on. As it was, they were rather unimpressed with the findings of the last few years (Newmont, Superior, Eyder/Sunshine and DMEA/Budge). They probably will not pursue the Bell property any further.

Ranger is, however, considering establishing a U.S. branch or subsidiary and will likely continue looking. One particular area of interest on their part is precious metal tailings, their Western Australia expertise. They were very interested in the Iron King tailings (5 million tons @ .055 oz/t Au, .7 oz/t Ag, 1.0% Zn) and may be in touch concerning the Vulture tails which I quoted as about 200 thousand tons @ .4 oz/t

Prescott —
11-19-85

Dear Ben + Carole,

This is a first draft of the paper for the A.G.S. symposium in March. I have had it double-spaced to allow for editing and comments, etc. Please review it yourselves and send a marked up copy back to me. Also, if at all possible, telex it to Bob Hodder with a request for his comments on content — errors of commission or omission.

I must make any revisions by this weekend in order to get a revised draft to Dale Armstrong of A.G.S. by Monday, Nov. 25th.

Please note that none of the five figures are done yet and hence not attached. I shall get them to you soon. Also, some thoughts have come out of this effort that could affect our own program and I shall write about that soon too.

Thanks for your help —

Don

CENTRAL ARIZONA GEOLOGIC SOCIETY

MEETING ANNOUNCEMENT
7:30 PM, NOVEMBER 21, 1985

The Central Arizona Geologic Society will convene at 7:30 PM, November 21, 1985 at the Bashford House, Sharlott Hall Museum, Prescott. A slide show and talk will be presented by Dr. Chris Eastoe, entitled:

Who is visiting U.V.X. Thursday

"Massive Sulfide Mineralization Associated with the Mount Read Volcanics, Tazmania"

Dr. Eastoe is Professor of Geology at University of Arizona. We hope for a good turn-out for this most interesting topic.

Please note time change from regularly scheduled meetings. We decided to hold the meeting November 21st. to prevent conflict with the Thanksgiving holiday. Also, please be reminded there is a 50-cent donation for use of the Bashford Hall facility.

We ask those who have not as yet paid their annual dues for 1985-1986 to please forward a $5.00 check made payable to CAGS at the earliest possible date to:

CAGS

ATTN: Wendy Feuer

1054 Willow Creek Road

Prescott, Az. 86301

M E M O

TO: Ben F. Dickerson, III; Carole A. O'Brien

FROM: Don White

DATE: October 10, 1985

SUBJECT: Addendum to Oct. 4, 1985 memo on drilling problems in D.D.H. 901-1 and Longyear troubles

The previous memo on the 901-1 drilling problems reported that normal drilling resumed on Thursday, October 3 after seven days of cementing, etc. That was premature. Normal drilling was expected that day but drilling out the packers and cement (expected to be a brief operation) ended up taking two full days, thru Saturday, Oct. 6.

Again normal drilling was expected to be resumed on Monday, Oct. 7. Indeed, drilling proceeded beyond the end packer a mighty two feet all day. The driller, Pat Schroeder, reported that the LM-37 was lacking sufficient power to turn the rods at that depth (335') with that rod size (N). He consulted with his brother Jerry at the McCabe and they unilaterally decided to reduce rod, bit, and core size. One Tuesday, Oct. 8 they spent all day changing the rods and working on their mud mixer and plumbing hookups. No coring was done. It was on my visit underground at the end of that shift that I was informed a core size reduction had been made. Imagine my surprise that we had cased off the hole and reduced core size after spending twelve days on other alternatives so as to avoid reducing right at the start of our target zone! And that after it was announced that the second cementing job was just fine.

The chert zone commenced at 329' and was drilled to about 334' before the initial coring trouble. It is expected to be about a 100' thick zone just up-dip and south of the Gold Stope. It will provide the only samples in existence of the Gold Stope lithology. After nearly two weeks of ascertaining that we are able to get at least NQ core, Longyear is telling us we will get BQ.

Also note that we reduced to BQ and not BW. Our initial acquiescence to commence the hole NQ rather than HQ was based upon an assurance from our first driller/foreman, Jerry Schroeder. The inevitability of having to case off in at least one of the several faults was disucssed. Given that BQ was too small for our needs, starting with NQ was no good for one reduction would put us into too small a core size. Hence I pushed for HQ. Jerry said no, a new BW-44 core barrel was available and yielded core closer to NQ than BQ size. It passes thru N rods and is compatible with B rods. The bit and barrel have

the same outside diameter as regular B rods but the thinner wall allows for larger core than BQ. Fine, on that basis we agreed to commence the hole with NQ core.

Sure enough, fault is encountered, reduction is made, but not to BW-44, to BQ. No BW-44 was on site! It had to be ordered, after it was needed, from Salt Lake City! This is three and one half weeks after the discussion just mentioned. Net result: Longyear personnel changes (shifting of crews from U.V.X. to McCabe), lack of planning and preparation (Foreman's overseeing and Phoenix supervision), and mechanical trouble (LM-37 power problems) have not only created a two week delay for our project, and incurred substantial Longyear changes, but severely compromised our ability to sample our target.

Maybe Longyear, in their apparent naivity to our needs and callousness to customer relations, isn't aware of what core size means to gold exploration. I recommend they be provided this memo (and the Oct. 4 memo) and the accompanying graph.

Drilling for gold is nothing more than an expensive sampling procedure. Sampling for gold which may be ore in the range of just a few parts per million is no task for a poor contractor, driller,or drill. Core recovery is of the essence. And sample size is all critical.

The exponential relationship between core diameter and core (sample) volume is shown on the accompanying graph.

Some further comments on Longyears continued lack of support for their drillers is in order. Jack Hayslip requested additional N rods on Monday, September 30. By Friday he was having to cannibalize rods from the LM-37 on the 950 level. That slowed him down, tied up our cage, and required helping time from the Brooks crew which had better things to do. By Saturday October 1 the rods were reportedly delivered but not to us, they had gone to the McCabe Mine. It was not until Tuesday morning, October 8 that they were being unloaded at the UVX and moved to the 1100-level. The simple order for more rods which Russ Beddow says is "no problem, we have thousands of feet of them here in Phoenix" took eight days, many phone calls, and special trips.

Consider too the BW core barrel we were presumed to have on site nearly a month ago. In a phone conversation Tuesday, Oct. 8 with Russ Beddow (Longyear S.W. Regional Manager) I was assured that it would "be in tomorrow."

One could assume that it would be delivered promptly to the job site. Wrong. Coming off shift Wednesday, Pat Schroeder did not have it (had drilled BQ all day) and couldn't reach anyone at Longyear to find out what had happened. Of course no one at Longyear thought to phone and leave word with us. As of this writing, Thursday, October 10 we still do not have the BW core barrel and it is still "tomorrow." What's more, Pat fully expects that after working hard all day, he will have to spend his night going to Phoenix to pick up the core barrel. He'a a more patient man than I.

In summary, the drawn out display of Longyears personnel, equipment, supply and communications problems that we have witnessed is continuing now. The thirteen days delay on the 901-1 hole was all for naught as the driller reduced core size anyway. And we are still drilling BQ and waiting for the BW core barrel.

Longyear will no doubt try to attribute the 901-1 problem to rock conditions. There is fault gauge in the tuffs and the chert is shattered adjacent to the tuffs, but it is worth noting that Jack Hayslip, Bill Mills, and the Longyear 34 rig penetrated exactly the same zone with two holes and handled it both times with drill mud only.

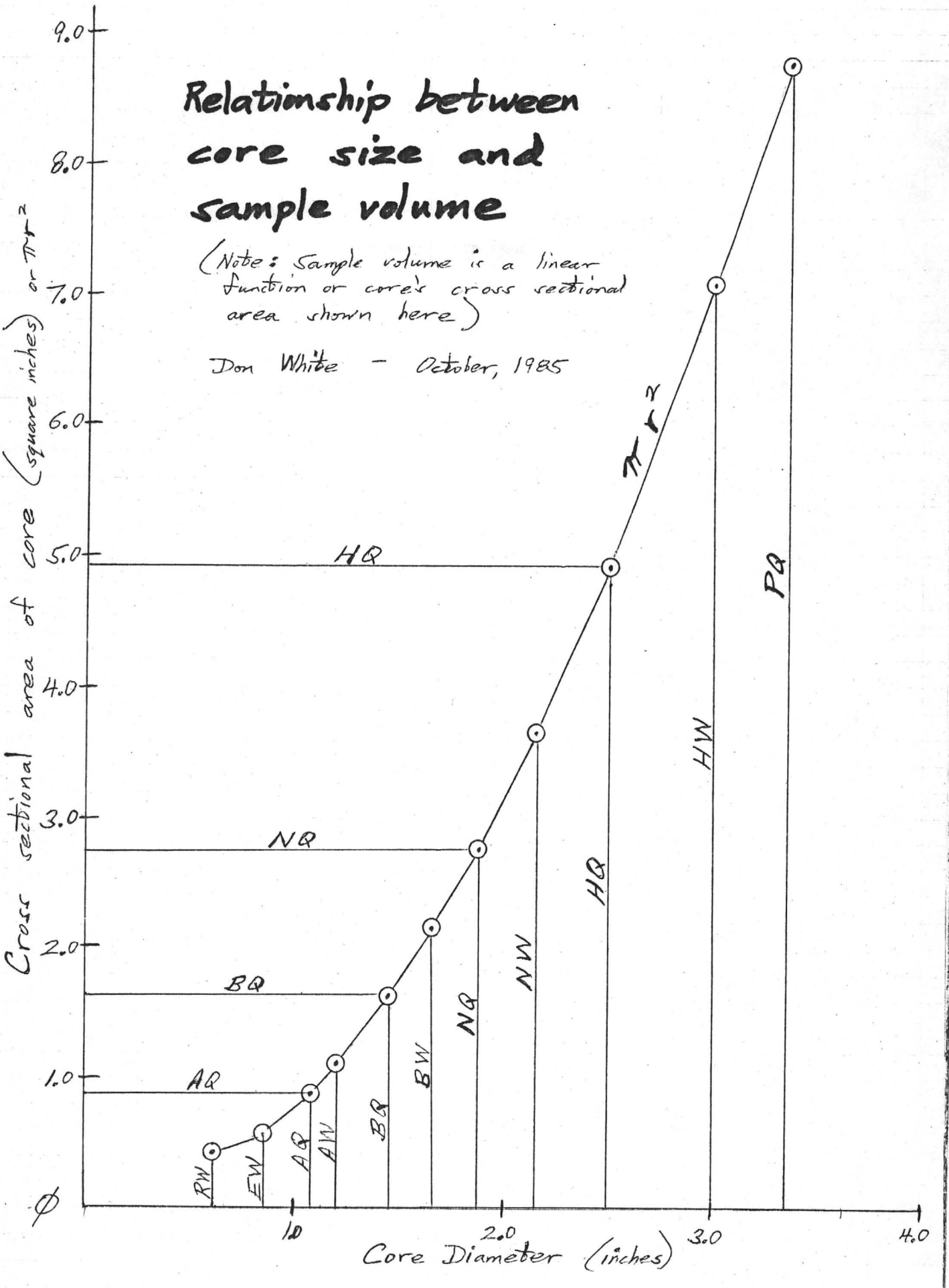
A key reason for providing Longyear management a copy of this memo is that we have only begun and we need improvements. The 901-1 hole is intended to go over 900 feet in length. It is hoped that we may penetrate the hanging wall of the Verde fault at 800 feet and continue over 100 feet beyond. That end zone is likely to be our highest grade intercept.

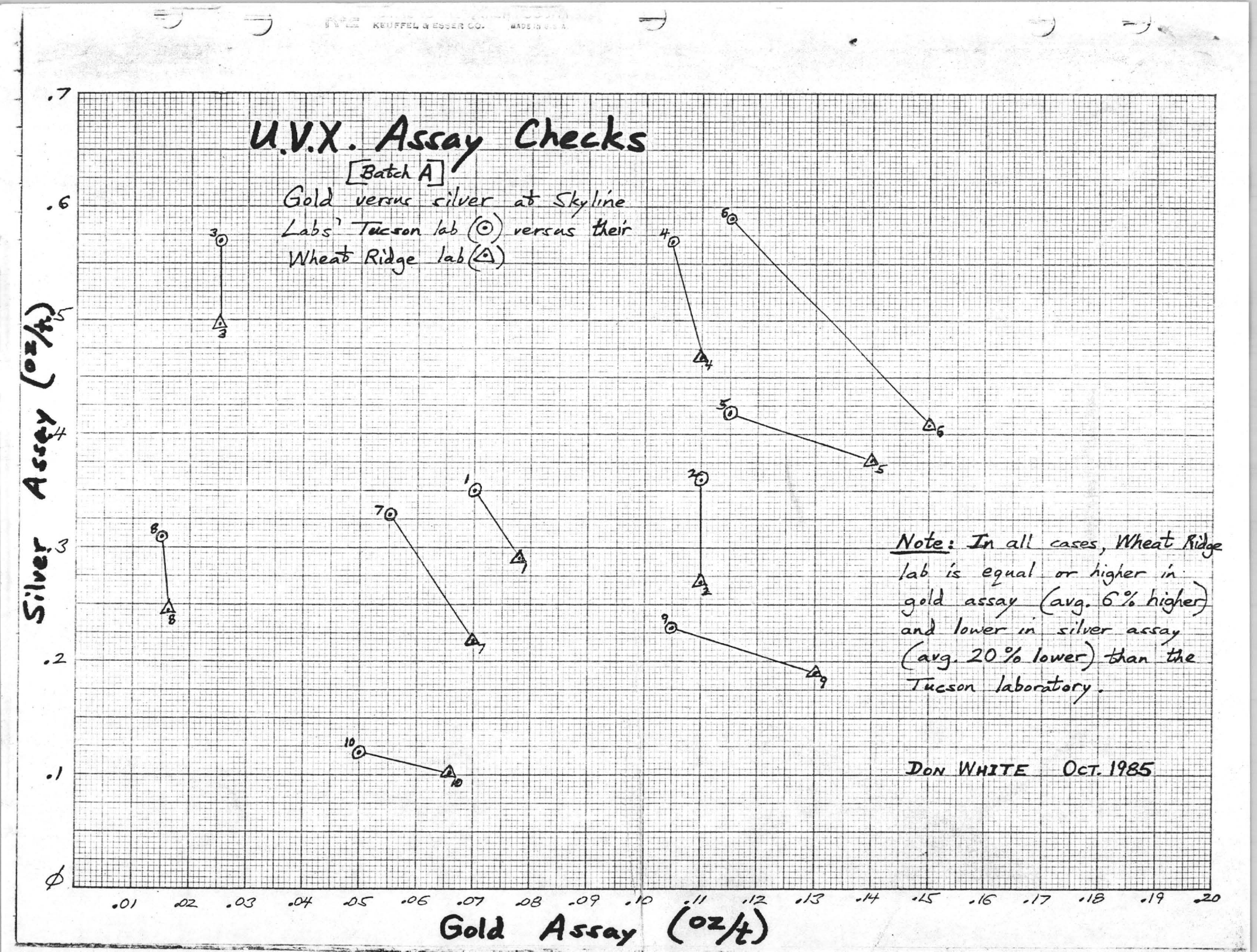
I know we have nowhere near enough rods, nor the rods to reduce to the next time that is necessary. We need the BW core barrel and matching bits. We shall inevitably need B packers, a full complement of AQ equipment, acid and tubes for more acid etch dip tests thru various size rods, and related supplies that Longyear ought to be able to anticipate. If these things aren't on site and Longyear isn't making money, they have no one to look at but themselves.

Relationship between core size and sample volume

(Note: Sample volume is a linear function of core's cross sectional area shown here)

Don White - October, 1985




U.V.X. Assay Checks
[Batch A]
Gold versus silver at Skyline Labs' Tucson lab (⊙) versus their Wheat Ridge lab (△)
Note: In all cases, Wheat Ridge lab is equal or higher in gold assay (avg. 6% higher) and lower in silver assay (avg. 20% lower) than the Tucson laboratory.
DON WHITE OCT. 1985
Silver Assay (oz/t)
Gold Assay (oz/t)
.7
.6
.5
.4
.3
.2
.1
Ø
.01 .02 .03 .04 .05 .06 .07 .08 .09 .10 .11 .12 .13 .14 .15 .16 .17 .18 .19 .20

SKYLINE LABS, INC.
SPECIALISTS IN EXPLORATION GEOCHEMISTRY
12090 WEST 50TH PLACE • WHEAT RIDGE, COLORADO 80033 • TEL.: (303) 424-7718

REPORT OF ANALYSIS

JOB NO.: KIH 002
October 18, 1985

Check Assays
Batch A

Don White
521 East Willis Street
Prescott, Arizona 86301

Analysis of 10 Pulp Samples

Original Sample#	ITEM	SAMPLE NO.	FIRE ASSAY Au (oz/T) ΔAu	Au (oz/T) Thacon	Au (oz/T) Wheat Ridge	Ag (ppm) Wheat Ridge	Ag (oz/T) Wheat Ridge	Ag (oz/T) Thacon	ΔAg
1104-1-205-210	1	R-01	+.008	.070	.078	10.0	.292	.35	-.058
1104-1-210-215	2	R-02	Ø	.110	.110	9.3	.271	.36	-.089
1104-1-235-240	3	R-03	Ø	.025	.025	17.0	.496	.57	-.074
240-245	4	R-04	+.005	.105	.110	16.0	.467	.57	-.103
245-250	5	R-05	+.025	.115	.140	13.0	.379	.42	-.041
250-255	6	R-06	+.035	.115	.150	14.0	.408	.59	-.182
255-260	7	R-07	+.015	.055	.070	7.4	.216	.33	-.114
270-275	8	R-08	+.001	.015	.016	8.4	.245	.31	-.065
275-280	9	R-09	+.025	.105	.130	6.5	.190	.23	-.040
1104-1-280-285	10	R-10	+.016	.050	.066	3.5	.102	.12	-.018

$\bar{X}$ = +.013
Wheat Ridge (checks) higher by avg. 6%

$\bar{X}$ = -.078
Wheat Ridge (checks) lower by avg. 20%

Gordon H. VanSickle
Manager

cc: Ben F. Dickerson, III, Scottsdale

Sample # Translation – U.V.X. Check Assays

Skyline/Tucson Job #	Sample #	Original DMEA Sample #	Skyline/Wheat Ridge Job #	Sample #	Resubmittal DMEA Sample #
UQX 029	7	1104-1 205-210	K1H 002	1	R-1
	8	210-215		2	R-2
	13	235-240		3	R-3
	14	240-245		4	R-4
	15	245-250		5	R-5
UQX 030	1	1104-1 250-255		6	R-6
	2	255-260		7	R-7
	5	270-275		8	R-8
	6	275-280		9	R-9
	7	280-285		10	R-10
UQX032	6	1104-2 214 220			R-11
	7	220 222			R-12
	8	222 224			R-13
UQX 033	1	1104-2 236 238			R-14
	2	238 240			R-15
	6	246 248			R-16
	8	250 252			R-17
	9	252 254			R-18
	10	254 258			R-19
	35	326 328			R-20

ORDER FOR ANALYTICAL SERVICES

KIH-002

Arrived at lab 10-7-85
Results in mail 10-21-85
Δ 14 days

Samples Sent to:

SKYLINE LABS, INC.
12090 W. 50TH PLACE
WHEAT RIDGE, COLORADO 80033
TEL.: (303) 424-7718

Checks
Batch A

(Report and invoice in duplicate will be sent to address below unless otherwise instructed)

Address Report To:
Don White
521 East Willis St.
Prescott, AZ 86301

Tel. 602-778-3140

P.O. NO.:
SHIPMENT NO.:
DATE SHIPPED: Friday, October 4, 1985
SHIPPED VIA: U.S. Postal Service - insure
NO. OF CARTONS: One (1)
NO. OF SAMPLES: Ten (10)
(Information above helps us trace lost shipments)

Send Invoice To: Ben F. Dickerson, III
DMEA Ltd.
7340 East Shoeman Ln.
Suite 111 - R - (E)
Scottsdale, AZ 85251

Send Copy of Report To: BFD III

LIST SAMPLE NOS.	DESCRIBE MATERIAL	LIST ELEMENTS TO BE DETERMINED (Give anticipated range of values, if possible) Describe any special sample preparation procedures desired.	INDICATE METHOD OF ANALYSIS*	✓ IF 31 – ELEMENT EMISSION SPEC SCAN DESIRED
R-1 R-2 R-3 4 5 6 7 8 9 R-10	Pulps	Gold and Silver by Fire Assay / Atomic Absorption using one assay ton and being sure to homogenize ~~each~~ pulp prior to taking split for assay.	Fire/AA	

PAYMENT FOR SERVICES REQUESTED MUST ACCOMPANY ORDER UNLESS CREDIT ARRANGED

Signature of person authorizing work: Don White

(Use Continuation Sheet If Necessary)

INSTRUCTIONS

*METHOD OF ANALYSIS: G-Geochem, Q-Quantitative or Routine Assay
W-Wet Assay, F-Fire Assay

†SAMPLE STORAGE: Pulps stored 90 days pending instructions, bulk rejects stored 30 days pending instructions.
→ Please return ~5 days after sending reports.

Enclose yellow original with samples, send white copy by mail, retain pink copy. White copy will be returned to shipper as an acknowledgement that shipment has been received.

INDICATE DESIRED DISPOSITION OF SAMPLES AFTER ANALYSIS	Bulk Rejects	Pulp
Return at customer's expense via: U.P.S.	None	✓
Store temporarily pending instructions†		
Discard immediately		

ORDER FOR ANALYTICAL SERVICES

Samples Sent to:

SKYLINE LABS, INC.
12090 W. 50TH PLACE
WHEAT RIDGE, COLORADO 80033
TEL.: (303) 424-7718

Please also mail me some more sample submittal forms and freight labels - Thanks - D.C.W.

Check Assays Batch B

(Report and invoice in duplicate will be sent to address below unless otherwise instructed)

Address Report To:

Don White
521 East Willis St.
Prescott, AZ
86301

Tel. (602) - 778-3140

P.O. NO.:
SHIPMENT NO.:
DATE SHIPPED: Tuesday, Oct 22, 1985
SHIPPED VIA: U.S. Postal Service - Insured
NO. OF CARTONS: One (1)
NO. OF SAMPLES: Ten (10)
(Information above helps us trace lost shipments)

Send Invoice To: Ben F. Dickerson, III
DMEA, Ltd.
7340 East Shoeman Ln.
Suite 111 - B-(E)
Scottsdale, AZ 85251

Send Copy of Report To: B.F.D., III

LIST SAMPLE NOS.	DESCRIBE MATERIAL	LIST ELEMENTS TO BE DETERMINED (Give anticipated range of values, if possible) Describe any special sample preparation procedures desired.	INDICATE METHOD OF ANALYSIS*	✓ IF 31 – ELEMENT EMISSION SPEC SCAN DESIRED
~~A-10~~				
R-11	Pulps	Gold + Silver by Fire Assay / Atomic Absorption using one assay ton and being sure to homogenize each pulp before taking split for assay	Fire/AA	
R-12				
R-13				
14				
15				
16				
17				
18				
19				
R-20				

PAYMENT FOR SERVICES REQUESTED MUST ACCOMPANY ORDER UNLESS CREDIT ARRANGED

Signature of person authorizing work: Don White

(Use Continuation Sheet If Necessary)

INSTRUCTIONS

*METHOD OF ANALYSIS: G-Geochem, Q-Quantitative or Routine Assay
W-Wet Assay, F-Fire Assay

†SAMPLE STORAGE: Pulps stored 90 days pending instructions, bulk rejects stored 30 days pending instructions.
Please return ~10 days after sending reports

Enclose yellow original with samples, send white copy by mail, retain pink copy. White copy will be returned to shipper as an acknowledgement that shipment has been received.

INDICATE DESIRED DISPOSITION OF SAMPLES AFTER ANALYSIS	Bulk Rejects	Pulp
Return at customer's expense via: UPS. or USPS	None	✓
Store temporarily pending instructions†		
Discard immediately		

BFD

Don White
319 South Mt. Vernon Av.
Prescott, AZ 86301
602-778-3140

Stanley B. Keith
MagmaChem Exploration, Inc.
Ahwatukee Professional Bldg.
10827 South 51st St. - Suite 202
Phoenix, AZ 85044

July 15, 1985

Dear Stan,

Regarding your offer to give free advice on the genesis of the Vulture gold and the significance of the quartz porphyry stock and sill to the mineralization, I have collected some information for you.

Enclosed is a copy of the writeup I did for the A.G.S. field trip. Also enclosed is the only assay data including silver assays. All recent work by Pegasus, Dickerson, and so forth has produced gold assays only. This old data from 1931 includes surface, underground, and mill samples as noted. It appears to be about a two to one gold to silver ratio wherever grades are good.

Any thoughts you have on the meaning of the gold to silver ratio and its relationship to the peraluminous stock to the west would be appreciated. And please do send the results of the analyses you performed on samples from the Vulture.

I have alerted Ben Dickerson to your interest in the Vulture and your offer to help with exploration there. I'm sure he will be in touch if he wishes your services.

Best Regards,

Don White

Don White
Geologist, C.P.G.

cc. B.F.Dickerson, III

A 150 2-M 2-18-..

MINE ASSAY REPORT

UNITED VERDE EXTENSION MINING CO.

Vulture Mine Assays — Jerome, Ariz.

DESCRIPTION	Au Oz.	Ag Oz.	Cu %	Insol %	Fe %	S %
Dickie #1	1.20	0.56				
2	Tr.	Tr.				
3	.03	0.09				
4	1.78	0.78				
5	.16	0.30				
6	1.14	0.20				
7	.11	0.16				
2/10 A Mill-head Cooke Ore	.05	.04				
B Table-head Cooke Ore	.07	.15				
C Middlings Cooke	.10	.29				
D Tailings	Nil	Tr.				
#1 350 Level 10" streak hanging wall vein	.65	.35				
#2 12" streak hanging wall vein 450' level	.62	.30				
#3 24" top of Campbell Raise 450 level	.88	.37				
#4 Top of Cooke Raise 500 level 8' wide	.05	.23				
#5 500 Cooke Vein 6½'	.01	0.09				
#6 East end Cooke vein 500 level	0.05	0.15				
#7 Cook winze 3' cut north side	0.01	0.09				
#8 Ore pile from surface ledge	0.40	0.52				

M E M O

TO: Ben F. Dickerson, III, Carole A. O'Brien

FROM: Don White

DATE: August 14, 1985

SUBJECT: Vent fan noise issue at UVX Mine

As a function of the state and federal mine inspections at the UVX on August 7, 1985, ventilation of the UVX was required. My understanding is that we had low oxygen, high carbon dioxide, and high radon, all from "dead air." A sheet metal 90-degree elbow was fabricated and installed by Friday, August 9th. The fan was turned on before the crew went off shift at 3pm on Friday, and before Maurice Brady left for Denver for the week. It was meant to run continuously over the weekend to introduce fresh air before the inspector's return on Monday, August 12th.

Apparently over the weekend the noise aggravated the townspeople in Jerome. The mayor, manager/clerk, police, and state museum personnel were all plagued by phone calls. Someone successfully climbed the fence and shut off the fan on Saturday night. Pete Flores was contacted by the Jerome police and it was restarted. One trailer was reported broken into but I believe damage was negligible. Andy Peterson, the Phelps Dodge resident agent, and the Jerome Police both patrolled the area despite its being out of their jurisdiction. (They deserve our sincere thanks for their assistance.)

On Monday morning we were flooded with visits and phone calls by aggravated Jerome citizens. Most were quite civil in their concerns but some preferred to holler epithets and threats. With most personnel underground, the upset people people had no one authoritative to talk to. I talked to those I could. The state mine inspector, Dave Hamm, talked to some, others got little satisfaction from Pete Flores or hoistman, Gordon Gunderson. The latter was disturbed from

this is illegal & we could sue the law onem!

his duties at hoisting on several occasions.

One of Monday's visitors mentioned the monthly town council meeting the following evening and the inevitability of grievances being expressed. Hence I attended that meeting Tuesday, August 13th, with the approval of Carole O'Brien, and the advice from Ben Dickerson to say as little as possible and make it as placating as possible.

The council members are:

Mayor - Luis Martinez

Vice Mayor - Richard Flagg

Manager-Clerk - Doyle Vines

Councilman - Roderick Segretti
Councilman - Anne Bassett
Councilman - Valerie Fekete

About thirty others attended at various times, including Andy Peterson, reporting police and fire chiefs, etc.

The UVX noise problem was not a published agenda item and hence got discussed at the very end of the meeting. During a recess I was not only collared by one key critic, Mike Park, but came to realize that other critics intended to speak out. Hence I approached the mayor and asked his advice on making a statement. He agreed it was wise and I was thus able to get the first say on the issue with an excellent introduction to the problem by the mayor.

After identifying myself and offering apologies to everyone for the weekend noise, I explained why the vent fan had to be installed (with no mention of radon) and the unfortunate timing of the inspections and installation. Our concerns to quiet the fan, particularly the high frequency whine, were made clear. The options we're pursueing with regard to moving it underground, installing a muffler, and constructing an acoustical box were all mentioned. The already

instituted plan to operate the fan only during crew operating hours (with MSHA approval Monday) was also pointed out. Lastly, the fact that a preliminary plywood box has been constructed around the fan was mentioned.

Mike Park was recognized next and called upon the council to take action to condemn the noise and seek its immediate halt. Councilman Anne Basset, who had visited the mine Monday morning to complain about the noise, stated that without the issue being an agenda item and more public comment solicited, the council could not take official action. Mike Park stated his dissatisfaction and his intention to circulate a petition and enlist the aid of Jerome's city attorney, Mr. Peckeridge, in seeking an immediate injunction to "stop the mining," later acknowledged to mean "cease the noise."

I believe my preemptive statement calmed enough other critics to explain why no others spoke up. The only other questions revolved around the issue of how long it would take to install the muffler, suggestion that a sand bag sound barrier be built, and so forth. The mayor and two councilman thanked me for explaining the situation.

It appears that Mike Park and his wife will circulate a petition and seek other remedies. Overheard at dinner when I fortuitously sat at a table next to Mike Park, was some of his strategizing including calling the EPA, filing a claim against our insurance carrier for audio damage, and the like. But his most likely strategy remains the petition followed by legal help.

I believe it is incumbent upon us to remedy the noise situation as rapidly and effectively as possible. A good record on this issue may be influential on our stand in future dealings, especially in the event of a discovery and planned mining.

My recommendations are several:

1) Immediately cut the fan operating hours back to 8am to 3pm (i.e., delay the 7am startup).

2) Try to install the fan on a level station of the Audrey or suspend it down from the collar. This should not change its effectiveness but will very effectively thwart the problem and also do so cheaply.

3) Only if recommendation 2 is impossible, should surface muffling alternatives be used. These should include installation of a muffler and construction of a good sound insulating box.

4) If any of the above are delayed more than 48 hours, it is probably wise to consult our own attorney regarding preventive actions or precautions we can take in case Mike Park and friends are successful in their plans. (Note: The city attorney is very unlikely to act for Mike Park at least for a few days, given the Mayor's and council's sentiment that we should have time to remedy the situation.)

So, to reiterate, our first priority should be to move the fan underground. That is the single most rapid and effective option I see.

Don White

M E M O

TO: Ben F. Dickerson, III, Carole A. O'Brien

FROM: Don White

DATE: April 29, 1985

SUBJECT: Findings from U.V.X. data search

Now that two weeks have been spent reviewing information in the UVX vault, Verde Exploration files, and meeting with Bob Hodder, it seems an appropriate time to report what we're learning and how it can aid our program. Also included are some comments on our plans for the next few weeks.

The U.V.X. data, of several forms, is all of utmost import to our cost-efficient and successful exploration. It includes the following sorts of information:

1) Level plans (1"=30', 40', 100')
2) Cross sections (1"=40', 100', 200')
3) Geologic mapping (many scales)
4) Stope sheets - with some precious metal assays.
5) Lists of thousands of assays including many precious metal assays identified by stope number, etc.
6) Report texts (e.g., Ransome, 1928, and Lindgren, 1926).
7) Sample suites with notes and locations.
8) Drill core (e.g., PD's UVX-1-2; Copper Range's CM-1).

The U.V.X. maps, files, and even samples have been very poorly kept. Information was rarely kept under any one system for more than a few years. Scales vary so that, for instance, engineering data, geology, and assays, are all on different scales for the same area. Almost no work contains proper titles, authors, or legends, not to mention scales or north arrows. Dates are notably absent on any work, so that one has difficulty ascertaining whether, for example, a stope map or level plan was up-to-date, complete, or only some early version. In general Karl and I find much more data from 1915 to 1928 than we do from 1929 to 1938. It appears that exploration-oriented record keeping was minimal after Ransome and Lindgren's efforts in the late twenties. That includes geologic mapping, assays, even stope maps and level plans. The last 12 years of UVX operations were production oriented only.

A further problem with the old data is its poor care since 1938. We have no index to a chaotic mess of folios, files, map rolls, stacks and piles of notes and notebooks. I know that if I had worked for Verde Exploration any portion of the last 47 years, I would have spent a week or two catalogueing their holdings. Paul Handverger has promised to do just that. We have seen him only a few hours one day organizing rolled maps and about two hours answering questions we formulated with Bob Hodder. Since he hasn't organized that data in his last 20 years there I have no expectation that he means to now. We will muddle through ourselves.

What we have done so far is:

1) Familiarize ourselves with what is available
2) Start compiling precious metal assays on level plan at 1"=30'

3) Compile "gold stope" cross sections and longitudinal section with assays.
4) Plot sample suite locations on level plans.
5) Start compiling geology on level plans.
6) Get an initial look at the P.D. cores.
7) Duplicate much data as work sheets for Karl and me and copies for DMEA.
8) Plot gold to silver ratios in the gold stope and gold and silver profiles along Phelps Dodge's two drillholes.

Bob Hodder's visit was very useful. He has that professorial knack for directing one's efforts in the optimal direction. We agreed that goals of the data study and early underground work should be:

1) Ascertain the nature of the gold occurrences; e.g., hypogene versus supergene, conformable vs. cross-cutting, syn-volcanogenic vs. contact phenomenon of diorite.
2) Understand the ore controls, such as proximity to intrusive, folds, veins, secondary enrichment, etc.
3) Come to grips with the gold stope, its uniqueness (?) or significance.
4) Refine our estimates of grade and tonnage potential as we narrow in on the lateral, height, and depth limits of our target and its likely richness.
5) Formulate specific exploration ideas, plans, and targets.

The latter will inevitably include much recommended underground sampling of sills, walls, backs, and faces in an attempt to better answer the other questions and best direct any drilling effort. Thus we had better plan the necessary time and expenditures for a major sampling program.

The near-term tasks that Karl and I will pursue are to compile all the data we can on 1"=30' maps of the 800-level through 1300-level, log the P.D. and Copper Range cores (three holes) and sample them for assay where appropriate. We will also see about cutting other samples from the underground rock suites and assaying portions of them. I believe these activities will position us to best take advantage of Bob Hodder's return visit in May and to embark us on an exciting underground exploration program.

Please convey any other suggestions or comments you may have any time.

DW:sk

Don White
319 South Mt. Vernon Ave.
Prescott, AZ 86301
778-3140

April 30, 1985

Ben F. Dickerson III
D.M.E.A., LTD.
7340 East Shoeman Ln.
Suite 111-B-(E)
Scottsdale, AZ 85251

RECEIVED MAY 1 1985

Dear Ben,

I have enclosed:

1) April Statement
2) A memo on the U.V.X. findings and plans.
3) Vulture Mine info. turned up in the UVX files.
4) A memo on new thoughts concerning the Vulture mineralization, as prompted by the AGS trip and the UVX data.
5) Folded plates with UVX Gold stope grades, longitudinal and cross sections, and gold to silver ratio overlay.
6) Gold and silver profiles for PD drill holes UVX-1 and 2.

Coming separately are a series of Vulture underground level plans (1"=40") which are now being reproduced. They too were found by detective Karl Budge in the UVX vault.

Regarding my April statement, I have included the same fee and expense information by project (Bell, Vulture, UVX) as before but on a new form for my convenience. Please let me know whether there are any problems with this system.

I plan to increase the fee I charge you, effective June 1 (not May) to $165.00 per day as I now charge other clients.

My impression of where we stand now is very positive. I feel we have some excellent opportunities for finds at the UVX. We also have some good chances of interesting some party in the Vulture, either the fault extension or otherwise, with some new reasons for encouragement. And finally, the Bell property (Ranch section 35) will probably be available for leasing May 3rd (the last day Bauer Metals can make their payment, including the 10-day grace period). So, if you choose to pursue exploration at the Bell or to attract any joint ventures here, we could consolidate our holdings. Let me know whether you would like me to see Gary Bell about any aspect of that.

Very Best Regards,

Don White

Don White
Geologist, C.P.G.

DW:sk
Enclosures

M E M O

TO: Ben F. Dickerson, III and Carole A. O'Brien

FROM: Don White

DATE: April 30, 1985

SUBJECT: Findings and news on the Vulture Mine

Between the U.V.X. files and the A.G.S. field trip, a number of new things have been learned about or thought about concerning the Vulture. The U.V.X. files were found to include:

1) Report by Arthur Perry Thompson, Sept. 11, 1930, for the Vulture Mining and Milling Co. It is a highly promotional report expounding their drill findings of the faulted extension east of the Schoolhouse fault. It probably led to the U.V.X. involvement a few months later.

2) A letter report to J.S. Douglas of U.V.X. by Fred Searles, Jr., geologist, July 22, 1931. It reports on the poor findings of the UVX underground exploration work from their 500-foot shaft east of the Schoolhouse fault. It is pessimistic and likely led to the UVX abandonment of that project.

3) Six level plans for all the major deep workings from the old east incline, all at 1"=40', with some exploration holes and geologic notes.

4) Sketches showing faults in section and plan.

5) Miscellaneous sections through winzes, crosscuts, etc.

6) Claim map, 1"=1000', with the UVX shaft and VMM Co. drillhole locations.

Having studied the above items, they contain information useful to us for two main reasons. First, they provide much documentation of the old mining methods, underground workings, and production records. Secondly, they provide many important aids to any further exploration for the faulted extension, in case we become involved in that search in any way (joint venture or otherwise). For instance, the fault nomenclature is straightened out by the Searles letter, and both the Searles and Thompson works contain fault orientation and offset information.

Some new ideas developed out of the Arizona Geological Society field trip to the Vulture on April 20th. Much emphasis was put on the Tertiary listric normal faulting and detachment faults in the Vulture area. The shallow dip of the Vulture lode, its abundant wall brecias and the new finding of a cross section showing a "flat fault" subparallel to the old workings and mineralization, all combine to give substance to believers in that theory. It would imply Tertiary age structural preparation for the later Tertiary emplacement of the quartz porphyry stock and sill and, presumably, the mineralization.

While all that may be the case, the mineralization need not be solely epigenetic. It could be that the qpi apophysis served to remobilize primary, syngenetic gold and base metals in what some of the A.G.S. folks felt were felsic volcanic host rocks. One important ramification of this thinking is that one could logically expect a metallogenic zonation to base metal along strike toward the volcanic source. Hence Cu-Pb-Zn exploration would be possible by tracing the Vulture sequence, particularly to the east under cover. Mapping and sampling of the exposed Precambrian coupled with deep penetration geophysics through the Tertiary volcanics might be considered by us or others. This would probably lead us east of the present claim block.

I am happy to hear of the healthy interest generated by the trip and my talk. If any of the various parties need more information that I can help provide or generate, do let me know.

DW:sk

PHELPS DODGE ASSAY DATA FROM UVX MINE DRILL HOLES, 1983 PROGRAM

DH UVX-1 FOOTAGE	AU O/T	AG O/T
150-155	.006	.26
155-160	.006	.22
160-165	.012	.16
165-170	.055	.16
170-175	.038	.25
175-180	.050	.21
180-185	.038	.20
185-190	.053	.08
190-195	.093	.88
195-200	.058	.17
200-205	.026	.17
205-210	.032	.14
210-215	.018	.23
215-220	.006	.20
220-225	.070	.72
225-230	.020	.65
230-235	.012	.52
235-240	.009	.40
240-245	.160	.14
245-250	.540	1.89
250-255	.029	2.32
255-260	.055	1.79
260-265	.012	1.38
265-270	.009	.59
270-275	.006	.31
275-280	<.006	.38
280-285	<.006	.39
285-290	<.006	.20
290-295	<.006	.30
295-300	<.006	.40
300-305	<.006	.26
305-310	<.006	.41
310-315	<.006	.26
315-320	<.006	.28
320-325	<.006	.26
325-330	<.006	.22
330-335	<.006	.26
335-340	<.006	.29
340-345	<.006	.34
345-350	<.006	.26
350-355	<.006	.23
355-360	<.006	.40
360-365	<.006	.19
365-370	<.006	.17
370-375	<.006	.17
375-380	.009	.07
380-385	<.006	.06
385-390	<.006	.08
390-393	<.006	.06

DH UVX-2 FOOTAGE	AU O/T	AG O/T	SN PPM
0-10	<.006	ND	
10-20	<.006	.19	
20-30	<.006	.13	
30-40	<.006	.06	
40-50	<.006	.07	
50-60	<.006	.07	
60-70	<.006	.17	
70-80	<.006	.05	
80-90	<.006	.05	
90-100	<.006	ND	
100-110	<.006	.07	
110-120	<.006	.21	
120-130	<.006	.19	
130-140	<.006	.15	
140-150	<.006	.21	
150-160	<.006	.23	
160-170	.006	.42	
170-180	.035	.20	16
180-190	.044	.26	23
190-200	.032	.20	19
200-210	.040	.18	27
210-220	.050	.13	19
220-230	.038	.13	15
230-240	.026	.14	19
240-250	.038	.14	
250-255	.012	.23	28
255-261	.044	.28	44
261-265	.038	.46	25
265-268	.015	.42	21
268-271	.070	.87	520
271-277	.200	.48	800
277-279	.520	.52	2200
279-282	.200	.33	1450
282-288	.140	.36	240
288-295	.226	.29	480
295-303	.079	.26	19
303-320	.015	.25	ND
320-325	.003	.26	ND
325-335	ND	.31	ND
335-346	.012	ND	ND
346-356	ND	ND	ND
356-365	ND	ND	ND
365-372	ND	.15	ND
372-382	ND	.16	ND
382-392	ND	.08	ND
392-396	ND	ND	ND
396-400	ND	ND	ND
400-410	ND	.28	ND
410-424	.003	ND	

DH UVX-2 FOOTAGE	AU O/T	AG O/T
424-434	ND	.07
434-445	ND	.06
445-462		
462-467	.01	.08
467-472	.008	.12
472-482	.016	.16
482-497	.06	3.5
497-498	.146	.68
498-502	.098	1.12
502-507	.144	1.05
507-512	.032	.98
512-516	.082	1.27
516-520	.018	.91
520-525	.146	1.42
525-530	.018	1.43
530-536	.071	1.96
536-538	.024	1.01
538-542	.012	.97
542-545	.014	.92
545-550	.064	
550-555	.03	
555-560	.025	
560-565	.215	
565-567	.013	
567-572	.005	2.08
572-581	<.005	1.62
581-583	.02	1.28
583-588	.01	1.13
588-595	<.005	.56
595-602	<.005	.7
602-607	.01	.71
607-615	.04	.64
615-617	.065	.62
617-626	.08	.52
626-628	.09	.55
628-632	.03	.63
632-639	.16	.52
639-642	.085	.9
642-647	.09	.17
647-657	<.005	.68
657-667	<.005	.24
667-679	<.005	.01
679-686	<.005	<.01

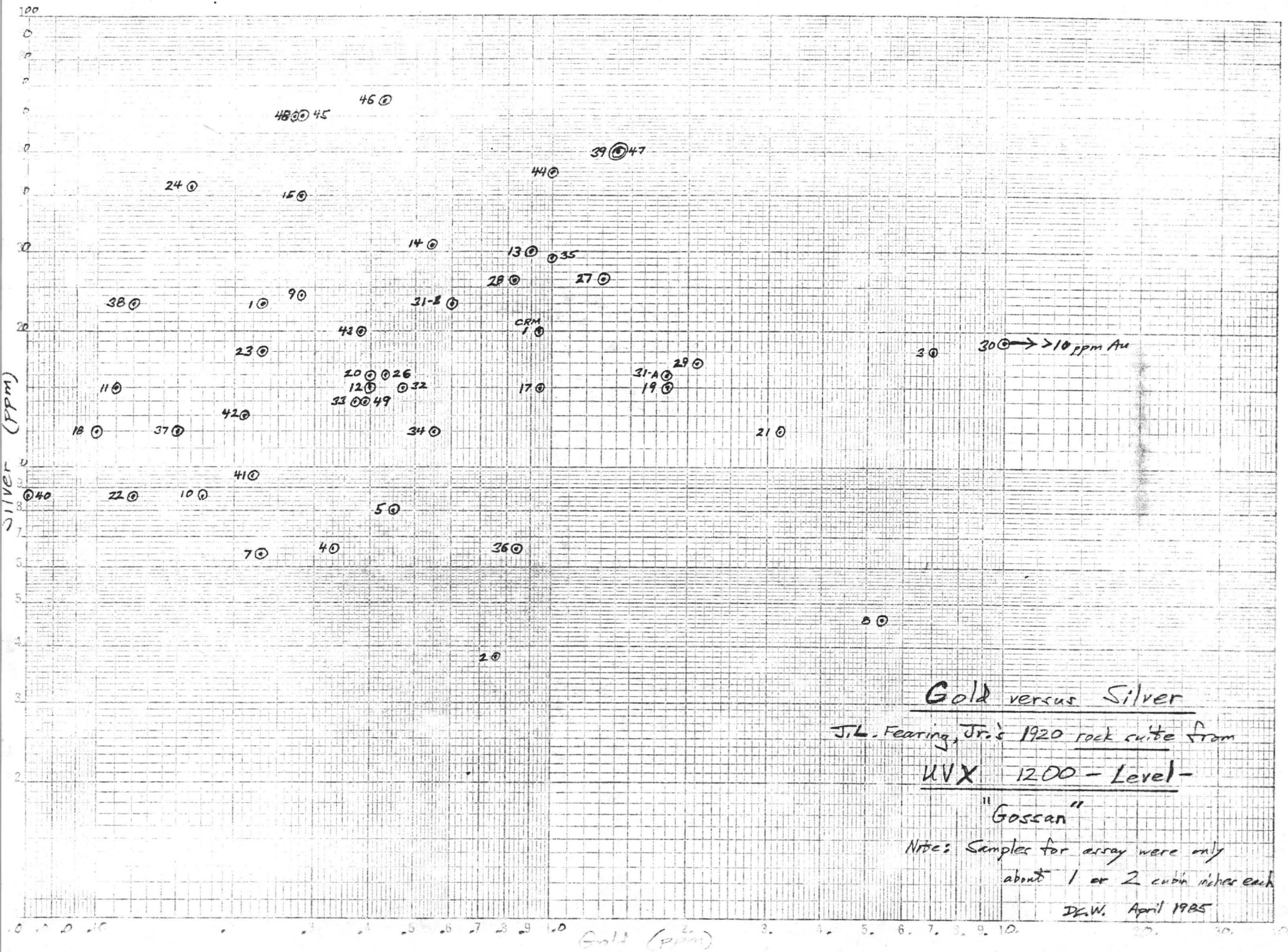

Silver (ppm)
Gold (ppm)
46
48 45
39 47
44
24
15
14
13 35
28
27
38
1
90
31-B
CRM
42
23
30 → >10 ppm Au
3
29
20 26
31-A
11
12
32
17
19
33 49
42
18
37
34
21
41
40
22
10
5
7
4
36
8
2
Gold versus Silver
J.L. Fearing, Jr.'s 1920 rock suite from
UVX 1200 - Level -
"Gossan"
Note: Samples for assay were only
about 1 or 2 cubic inches each
D.G.W. April 1985

TABLE 1.

GEOCHEMICAL ANALYSES FROM THE UVX 1200 LEVEL
1920 "GOSSAN" SUITE, JEROME, ARIZONA

SAMPLE NO.	GOLD (ppm)	GOLD (O/T)	SILVER (ppm)	SILVER (O/T)	ARSENIC (ppm)	COPPER (ppm)	Bi (ppm)	Mn (ppm)
UVX 1	.23	.007	23.0	.67	13000		ND	
UVX 2	.73	.021	3.8	.11	300		ND	
UVX 3	7.00	.204	18.0	.53	230		ND	
UVX 4	.33	.010	6.8	.20	220		ND	
UVX 5	.45	.013	8.0	.23	90		ND	
UVX 6	.04	.001	8.6	.25	300		ND	
UVX 7	.23	.007	6.4	.19	50		17	
UVX 8	5.40	.158	4.6	.13	120		26	
UVX 9	2.80	.082	24.0	.70	150		ND	
UVX 10	.17	.005	8.6	.25	320		DN	
UVX 11	.11	.003	15.0	.44	350		DN	
UVX 12	.40	.012	15.0	.44	120		ND	
UVX 13	.90	.026	30.0	.88	1250		ND	
UVX 14	.54	.016	31.0	.90	50		ND	
UVX 15	.28	.008	40.0	1.17	580		ND	
UVX 16	.04	.001	13.0	.38	2100		ND	
UVX 17	.94	.027	15.0	.44	1100		ND	
UVX 18	.10	.003	12.0	.35	920		ND	
UVX 19	1.80	.053	15.0	.44	1400		7	
UVX 20	.40	.012	16.0	.47	130		ND	
UVX 21	3.20	.093	12.0	.35			ND	
UVX 22	.12	.004	8.6	.25			ND	
UVX 23	.23	.007	18.0	.53	340		ND	
UVX 24	.16	.005	42.0	1.23	550		ND	
UVX 25	ND	.000	8.6	.25	180		ND	
UVX 26	.43	.013	16.0	.47	1300		ND	
UVX 27	1.30	.038	26.0	.76	80		ND	
UVX 28	.83	.024	26.0	.76	350		ND	
UVX 29	2.10	.061	17.0	.50	30		ND	
UVX 30	10.00*	.292	19.0	.55	210		ND	
UVX 31A	1.80	.053	16.0	.47	120	295	ND	ND
UVX 31B	.60	.018	23.0	.67	470	379	57	960
UVX 32	.47	.014	15.0	.44	1450	2200	ND	ND
UVX 33	.37	.011	14.0	.41	50	2400	ND	ND
UVX 34	.55	.016	12.0	.35	100	199	ND	ND
UVX 35	1.00	.029	29.0	.85	180	1800	41	ND
UVX 36	.84	.025	6.6	.19	250	301	39	ND
UVX 37	.15	.004	12.0	.35	210	2700	50	4400
UVX 38	.12	.004	23.0	.67	600	631	ND	1700
UVX 39	1.40	.041	50.0	1.46	190	342	ND	ND
UVX 40	.07	.002	8.6	.25	420	400	ND	ND
UVX 41	.22	.006	9.6	.28	70	2400	ND	ND
UVX 42	.21	.006	13.0	.38	20	210	ND	759
UVX 43	.38	.011	20.0	.58	220	1300	ND	ND
UVX 44	1.00	.029	45.0	1.31	160	128	ND	ND
UVX 45	.28	.008	60.0	1.75	170	2900	ND	ND
UVX 46	.43	.013	65.0	1.90	7000	746	26	585
UVX 47	1.40	.041	50.0	1.46	1150	320	ND	ND
UVX 48	.27	.008	60.0	1.75	2000	627	ND	1100
UVX 49	.39	.011	14.0	.41	50	2300	ND	ND
CRM 1	.94	.027	20.0	.58	450	2000	ND	ND
AVERAGES	1.06	.032	21.0	.61	840	1170	5	453

*= >10 ppm

DMEA copy

Attachment to Paul Handverger's report 9-15-84

PHELPS DODGE ASSAY DATA FROM UVX MINE DRILL HOLES, 1983 PROGRAM

DH UVX-1 FOOTAGE	AU O/T	AG O/T	DH UVX-2 FOOTAGE	AU O/T	AG O/T	SN PPM	DH UVX-2 FOOTAGE	AU O/T	AG O/T
150-155	.006	.26	0-10	<.006	ND		424-434	ND	.07
155-160	.006	.22	10-20	<.006	.19		434-445	ND	.06
160-165	.012	.16	20-30	<.006	.13		445-462		
165-170	.055	.16	30-40	<.006	.06		462-467	.010	.08
170-175	.038	.25	40-50	<.006	.07		467-472	.008	.12
175-180	.050	.21	50-60	<.006	.07		472-482	.016	.16
180-185	.038	.20	60-70	<.006	.17		482-497	.060	3.50
185-190	.053	.08	70-80	<.006	.05		497-498	.146	.68
190-195	.093	.88	80-90	<.006	.05		498-502	.098	1.12
195-200	.058	.17	90-100	<.006	ND		502-507	.044	1.05
200-205	.026	.17	100-110	<.006	.07		507-512	.032	.98
205-210	.032	.14	110-120	<.006	.21		512-516	.082	1.27
210-215	.018	.23	120-130	<.006	.19		516-520	.018	.92
215-220	.006	.20	130-140	<.006	.15		520-525	.046	1.42
220-225	.070	.72	140-150	<.006	.21		525-530	.018	1.43
225-230	.020	.65	150-160	<.006	.23		530-536	.071	1.96
230-235	.012	.52	160-170	.006	.42		536-538	.024	1.01
235-240	.009	.40	170-180	.035	.20	16	538-542	.012	.97
240-245	.160	.14	180-190	.044	.26	23	542-545	.014	.92
245-250	.540	1.89	190-200	.032	.20	19	545-550	.060	2.12
250-255	.029	2.32	200-210	.040	.18	27	550-555	.030	1.47
255-260	.055	1.79	210-220	.050	.13	19	555-560	.025	.69
260-265	.012	1.38	220-230	.038	.13	15	560-565	.205	2.82
265-270	.009	.59	230-240	.026	.14	19	565-567	.015	1.67
270-275	.006	.31	240-250	.038	.14		567-572	.005	2.08
275-280	<.006	.38	250-255	.012	.23	28	572-581	<.005	1.62
280-285	<.006	.39	255-261	.044	.28	44	581-583	.020	1.28
285-290	<.006	.20	261-265	.038	.46	25	583-588	.010	1.13
290-295	<.006	.30	265-268	.015	.42	21	588-595	<.005	.56
295-300	<.006	.40	268-271	.070	.87	520	595-602	<.005	.70
300-305	<.006	.26	271-277	.200	.48	800	602-607	.010	.71
305-310	<.006	.41	277-279	.520	.52	2200	607-615	.040	.64
310-315	<.006	.26	279-282	.200	.33	1450	615-617	.065	.62
315-320	<.006	.28	282-288	.140	.36	240	617-626	.080	.52
320-325	<.006	.26	288-295.5	.226	.29	480	626-628	.090	.55
325-330	<.006	.22	295.5-303	.079	.26	19	628-632	.030	.63
330-335	<.006	.26	303-320	.015	.25	ND	632-639	.160	.52
335-340	<.006	.29	320-325	.003	.26	ND	639-642	.085	.90
340-345	<.006	.34	325-335	ND	.31	ND	642-647	.09	.17
345-350	<.006	.26	335-346	.012	ND	ND	647-657	<.005	.68
350-355	<.006	.23	346-356	ND	ND	ND	657-667	<.005	.24
355-360	<.006	.40	356-365	ND	ND	ND	667-679	<.005	.01
360-365	<.006	.19	365-372	ND	.15	ND	679-686	<.005	<.01
365-370	<.006	.17	372-382	ND	.16	ND			
370-375	<.006	.17	382-392	ND	.08	ND			
375-380	.009	.07	392-396	ND	ND	ND			
380-385	<.006	.06	396-400	ND	ND	ND			
385-390	<.006	.08	400-410	ND	.28	ND			
390-393	<.006	.06	410-424	.003	ND				

Au 1/4 split ≥ .30 .10

Ag 1/4 split 1.90 .64

470-472 .008 .03

Note: Only red-circled data could be checked against original assay reports; other data subject to error

Note poor reproducibility of UVX-1 Au+Ag analyses at 240'-250' using 1/2 and 1/4 splits

Also available are sludge analyses for Au+Ag for entire hole UVX-1 (but nothing new or useful, except that Au was not escaping in the sludge)

Hole No. UVX-1

Footage	Graphic Log	Au (oz/t)	Ag (oz/t)			Rock Type
140						
150'	Fault ? Contact (?)					
		.006	.26		150.5' SS 151 T.S.	
		.006	.22			
160		.012	.16			
		.055	.16			
		.038	.25		171 SS.	
		.050	.21		177 SS. 178 T.S. 179 SS.	
180		.038	.20		183 SS.	
		.053	.08		187 SS. 188 SS.	
		.093	.88		192 SS.	
		.058	.17			
200		.026	.17		200 T.S.	
		.032	.14			
		.018	.23		210 SS.	
		.006	.20		214 SS.	
220		.070	.72			
		.020	.65		224 SS. 225 T.S. 226 SS.	
		.012	.52			
		.009	.40			
240	Au Au	.160 / ≥.30	.14 / 1.90	Second assay on ½ splits	242 SS.	Fragmental chert
	Au Au	.540 / .10	1.89 / .64		245 SS.	
		.029	2.32		250 SS.	
		.055	1.79		255 SS. 256 SS.	
260		.012	1.38			
		.009	.59			
		.006	.31		270 SS	
274					276 SS	

Remarks

Thin section: - from 138'
67% qtz, 22% sericite, 6% kaolinite
2% leucoxene, 3% hematite, Trace agatite, ⇒dacite tuff
Tuff is highly sheared from 138' to 150'

150-152 — Pale red, fine to coarse grained fragmental chert and acid tuff fragments/clasts in qtz-pphy matrix.

152-168 — White to biege kaolinized, sericitized qtz pphy. Qtz porphyroblasts ~20% of rock, up to 2mm dia. ~7%
Fine tuff texture (banded ~70° to core axis)
Probably an intermediate composition, altered + sheared tuff.

150-274 — In general, reddish fragmental chert

Chert + acid vdc. fragments often floating in reddish, hematite-stained acid tuff matrix. Clasts are biege aphanitic, extremely hard, massive chert. May also be jasper or rhyolite (banded) fragments. Clasts exhibit angular corners unless tumbled or partially melted to rebounded. Some clasts definitely broken in-place, as by high pressure shock and healed with reddish material without displacing fragments far from each other.

Thin section - from 200' - 98% qtz. - fine to coarse, angular chert breccia - frag. exhalite-? or hydrothermally fractured chert - traces hematite & sericite
Thin section from 225' almost the same —

168-250 — Biege to light gray with Fe Ox + jarosite stain, fragmental or breccia texture v extreme,

240-250 — Best mineralized (most auriferous) zone — Ghost bx fragments in silica-flooded matrix. Intensely silicified fragmental chert. No visible sulfides or gold

250-255 — Maroon to gray-black, massive, siliceous, hematitic jasper. Dense, hard, well healed fragmental. Non-magnetic. Manganiferous, looks like silicified, fragmental, oxide-facies Fe fm. ~60%

255-274 — Return to the typical chert clasts (angular, fragmental) in hematite-stained matrix.

Core runs/recovery	
40%	150'
100	157'
~7%	172' NX / BX
100	197'
100	237'
90	247'
~60%	276'

Hole No. UVX-1

Footage	Graphic Log	Au (oz/t)	Ag (oz/t)		Rock Type	Remarks	Core runs/recovery
280		<.006	.39	283 T.S.	Intermediate and acid tuffs, now sheared and brecciated in Florencia fault zone	Thin section - from 283' — 48% qtz, 44% clay, 7% hematite. Interpreted as sericitic altered rhyolite tuff.	30%
290		<.006	.20				290'
		<.006	.30			290-onward to EOH — Much gouge, kaolinitic alteration, sericitization, probably attributable to shearing on the Verde fault. Much lost core, all core severely broken.	50
300		<.006	.40				302'
		<.006	.26			274-393 (E.O.H.) — Pinkish gray (hematite stained) fine grained, thin banded, kaolinized, sericitized rhyolite and dacite tuffs. Now mainly gouge (especially beyond 290)	100
		<.006	.41	310 SS.			313'
		<.006	.26				
320		<.006	.28				80
		<.006	.26	325 T.S.		Thin section - from 325' — 42% qtz, 49% sericite, 1% kaolinite, 3% hematite, trace jarosite. — rhyodacite tuff.	
		<.006	.22				332'
		<.006	.26				
		<.006	.29				
340		<.006	.34	343 SS.			100
		<.006	.26				
		<.006	.23				
		<.006	.40				357
360		<.006	.19				
		<.006	.17	364 T.S.		366-393 — Talc + kaolin development in gouge zone (at Florencia fault) is nearly 100%. Rare fragments of less altered quartzite/chert	
		<.006	N.D.	373 SS.			70%
		.009	.07				
380		<.006	.06				
		<.006	.08			Thin section - from 388' — mostly kaolin, some beta qtz xls, hematite	
		<.006	.06	388' T.S.			
E.O.H. 393'							EOH 393'

Note:
SS. = Skeleton Sample
T.S. = Thin Section

Don White May 20, 1985

Collar UVX Mine 1190-Level, 11,310 N 8,110 E
Inclination +6° Bearing 552°W
Total length 686'
Overall core recovery ~85%

Hole No. UVX-2

Drilled by Connors using HQ (to 200') NX (to 447') and BX bit size reductions, Feb 24 – June 9, 1983

Footage	Graphic Log	Au (oz/t)	Ag (oz/t)		Rock Type	Remarks (Logged by John DuHamel of FR – Relogged by D. Wood (also incorporating notes by Dale Armstrong)	Core runs/recovery
		<.006					
		<.006	.19	11' T.S.		Ø–104 – Light greenish gray, aphanitic to very fine grained, very hard (H>7.5) silicious, quartzite.	96%
20		<.006	.13			Thin section – from 11': 42% sericite, 34% plag., 18% qtz, 3% chlorite; dacite tuff.	21' 70%
		<.006	.06			12'–21' FeOx staining and pyrolusite on fracture, trace CuO. Much broken core.	32'
40		<.006	.07	44' T.S.	tuff	Thin section – from 44': Tuffaceous dacite porphyry	
		<.006	.07			Foliation ~60° to core axis	
60		<.006	.17				100%
		<.006	.05	75' T.S.	Intermediate	Thin section – from 75': Dacite tuff (as above) glassy matrix has altered to sericite + chlorite. Some goethite lining fractures.	
80		<.006	.05				
		<.006	ND				
100							
104		<.006	.07	104		104–126 Red-gray fragments in red-gray + green-gray matrix. Frag composition is varied but includes abundant large (1–2 cm) red jasper fragments. Tuffy, chloritic matrix. Hematite veins, + limonite	
		<.006	.21	108 T.S.	Fragmental Int. to acid tuff	Thin section – from 108': 59% Qtz, 32% sericite 4% chlorite; rhyodacite vitrophyric tuff	111' 90%
120				122' T.S.		Thin section – from 122': 45% Qtz, 31% sericite ... Lithic tuff	121'
126		<.006	.19	126			
		<.006	.15	132 T.S.	Int. tuff	Thin section – from 132': 62% Qtz, 18% sericite 15% hematite – Dacite tuff – reworked (?)	100%

Hole No. UVX-2

Footage	Graphic Log	Au (oz/t)	Ag (oz/t)	Sn (ppm)		Rock Type
160		<.006	.21		149 T.S.	Int. tuff
		<.006	.23			
		.006	.42		SS	
176	Fault contact (?)	.035	.20	16	176	
180		.044	.26	23	SS	Fragmental cherts
		.032	.20	19	SS	
200		.040	.16	27		
		.050	.13	19		
220		.038	.13	15		
		.026	.14	19		
240		.038	.14	—		
		.012	.23	28	250 T.S. 255	
260		.044	.28	44	261	
		.038	.16	25	265	
268	Gradational contact	.015	.42	21	268	
		.070	.07	520	271 T.S.	
	Au	.200	.48	800	455 T.S. 277 T.S.	

126–176 – Pink and gray, mottled, v.fg., heavily altered (to kaolinite + sericite) dacite tuffs; some talc, relict qtz phenocrysts 1–3 mm dia.

Thin section – from 149': 57% sericite – dacite tuff.

171–177.5 Much fault gouge, talc; poor core recovery.

176–268 – Biége or tan siliceous breccia.

Massive to very faintly banded, aphanitic, chalcedonic chert clasts, generally very angular, fractured or brecciated as by shock or hydrothermal pressure (ie, angular fragments minimally separated from each other or original position). Matrix is dark red, hematitic silica flour. Local open space between fragments; where matrix did not fill interstices.

This is the rock identified as "gossan quartz" in the old UVX records.

199–201 – Trace CuO in matrix

Thin section – from 251' – Exclusively quartz; anhedral grains with coarse qtz veins healing fractures. Veins are stained with hematite along hairline fractures. Probably hydrothermally shattered and healed.

257' = End of core; only recuttered skeleton or character samples available beyond here; entire core used for assay –

271–295 = 24' (21.5' true thickness) averaging 0.22 oz/t Au, 0.38 oz/t Ag, and 800 ppm Sn

Thin section – from 269', 272', 277' – Amber, very finely brecciated, gritty healed/silicified rhyolite or chert. 95–98% qtz. Trace of hematite, goethite, pyrite, calcite, malachite.

Core runs/recovery	
100%	161'
60%	166'
100%	171'
10%	176'
~60%	191'
100%	266'
60%	271'
100%	

Hole No. UVX-2

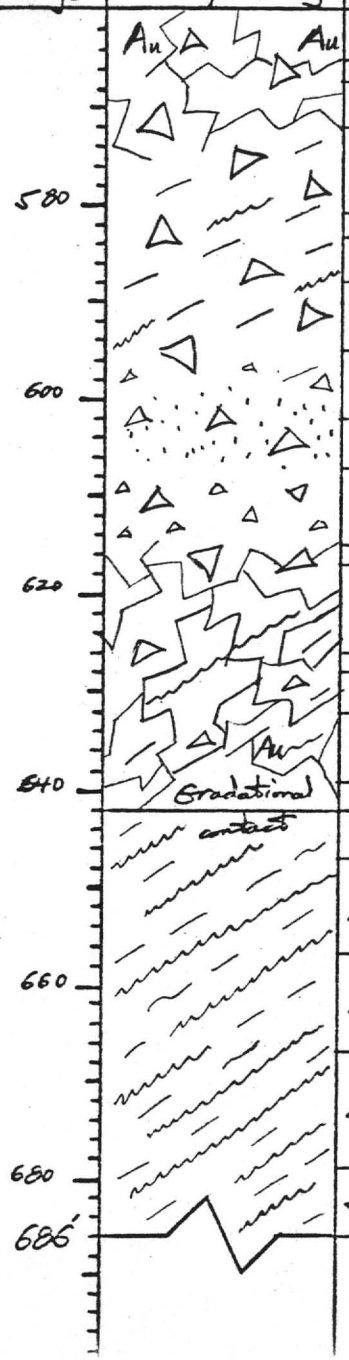
Footage	Graphic Log	Au (oz/t)	Ag (oz/t)	Sn (ppm)		Rock Type	Remarks	Core runs/recovery%
		.200	.33	1450	279	Silica-healed fragmental chert	266–321 — Variable lithology including some fragmental chert as above but better healed (silicified), also more heterogeneous clast types from beige chert to white, brown, and red jasper fragments. Locally jaspery matrix to in-place (hydrothermally?) fractured chert &/or rhyolite fragments. 277–279 is exceptional for being loosely cemented &/or weathered/oxidized to a gritty sandstone-like texture. Qtz grains are bound in a dark red/maroon FeO_x and MnO_2-rich cement. Very auriferous! Thin section – from 314' – 66% Qtz, 31% FeO_x, 3% alunite Completely silicified with qtz phenocrysts set in micro-xln qtz and hematite. Thin section – from 327' – 59% Qtz, 34% kaolinite, 6% hematite 1% leucoxene; kaolinite has visible feldspar phenocrysts preserved	100%
	Au Au Au	.140	.36	240	282			55%
		.226	.29	480	288			100%
300		.079	.26	19	295.6 TS. 303			
		.015	.25	ND	T.S. 320			~40%
320	Gradational contact							
321		.003	.26	ND	325	Intr. + acid tuffs; sheared	321–351 — Light gray to pale purple, fragmental, rhyolitic tuff, Lt. gray qtz phenocrysts with pale purple stringer-like, sinuous rhyolite matrix. Heavily sheared &/or altered. Thin section – from 336' – 83% kaolinite, 6% qtz, 7% hematite, 3% sericite, trace rutile. Pale pink fault gouge Thin section – from 355' – All kaolinite with hematite stain.	80%
		ND	.31	ND	TS 335 TS			
340		.012	ND	ND	346			
351	Gradational contact	ND	ND	ND	T.S. 356	Intr. + acid tuffs; heavily sheared. Florencia fault zone	351–482 — Rhyolite — biege, pale purple, or brick red, often hematite stained, variously altered chemically + structurally. Sheared, sericitized, kaolinized, brecciated, silicified, oxidized, etc. Varies from possible siliceous exhalite to tuff/fragmental, to water-lain or reworked volcani-sediments. Much fault gouge. Thin section – from 375, 386, 397, 408' – Typically ⅔ Qtz, ⅓ sericite &/or kaolinite ± chlorite, with hematite impregnation and coloring.	
		ND	ND	ND	365			
360		ND	.15	ND	372			
		ND	.16	ND	T.S. 382			100%
380		ND	.08	ND	T.S. 392			
		ND	ND	ND	396			
		ND	ND	ND	T.S. 400			
400		ND	.28	ND	T.S. 410			
		.003	ND					

283'
288'
296'
317'
331'

Hole No. UVX-2

Footage	Graphic Log	Au (oz/t)	Ag (oz/t)		Rock Type	Remarks	Core runs/recovery
420				424'	Int. & acid tuffs, heavily sheared.	424-459 – Dominantly pale purple, pale green, and white kaolinite + sericite rich, hematite +/or chlorite stained, sheared fault gouge. Trace CuO.	100%
		ND	.07	434'			
440		ND	.06	445			436' 33% 442' 100 447' 60 452' 100 462' 175 470' 100 472' ∅ 477' 25 486' 100 512' 55 522' 80 536' 100 547' 66 550 100
		No assays					NX / BX
460				462		459-462 – White sericite with trace hematite-stained frac.	
		.010	.08	467		462-472 – Purple clay gouge – excess core recovery	Excessive ret. of clay goug.
		.008	.12	470			
		.008	.03	472			
		.016	.16	482		477-482 – Purple clay gouge	
480							
482					Silica – healed fragmental chert	482-642 – Alternately brown, amber, or brick red, poorly to very well healed chert and rhyolite breccia. Looks more like a hydrothermal in-place brecciation than a primary or fragmental rock type. Locally drusy qtz in vugs which were not fully healed. Various short intervals extra limonitic +/or manganiferous.	
		.060	3.50				
		.146	.68	497 498		497-498 – Light chocolate brown silica matrix with pale gray qtz phenocrysts (not jasper as previously logged – rather a silicified qtz porphyry)	
500		.098	1.12	502		498-536 – Angular + rounded (remelted edges) pale gray quartz fragments as ghost breccia frags in a red-gray, siliceous (qtzite) matrix.	
		.044	1.05	507			
		.032	.98	512			
		.082	1.27	516			
		.018	.92	520			
520		.046	1.42	525			
		.018	1.43	530			
		.071	1.96	536			
		.024	1.01	538			
540		.012	.97	542			
		.014	.92	545			
		.060	2.12	550			
		.030	1.47	555			
		.025	0.69				

Hole No. UVX-2



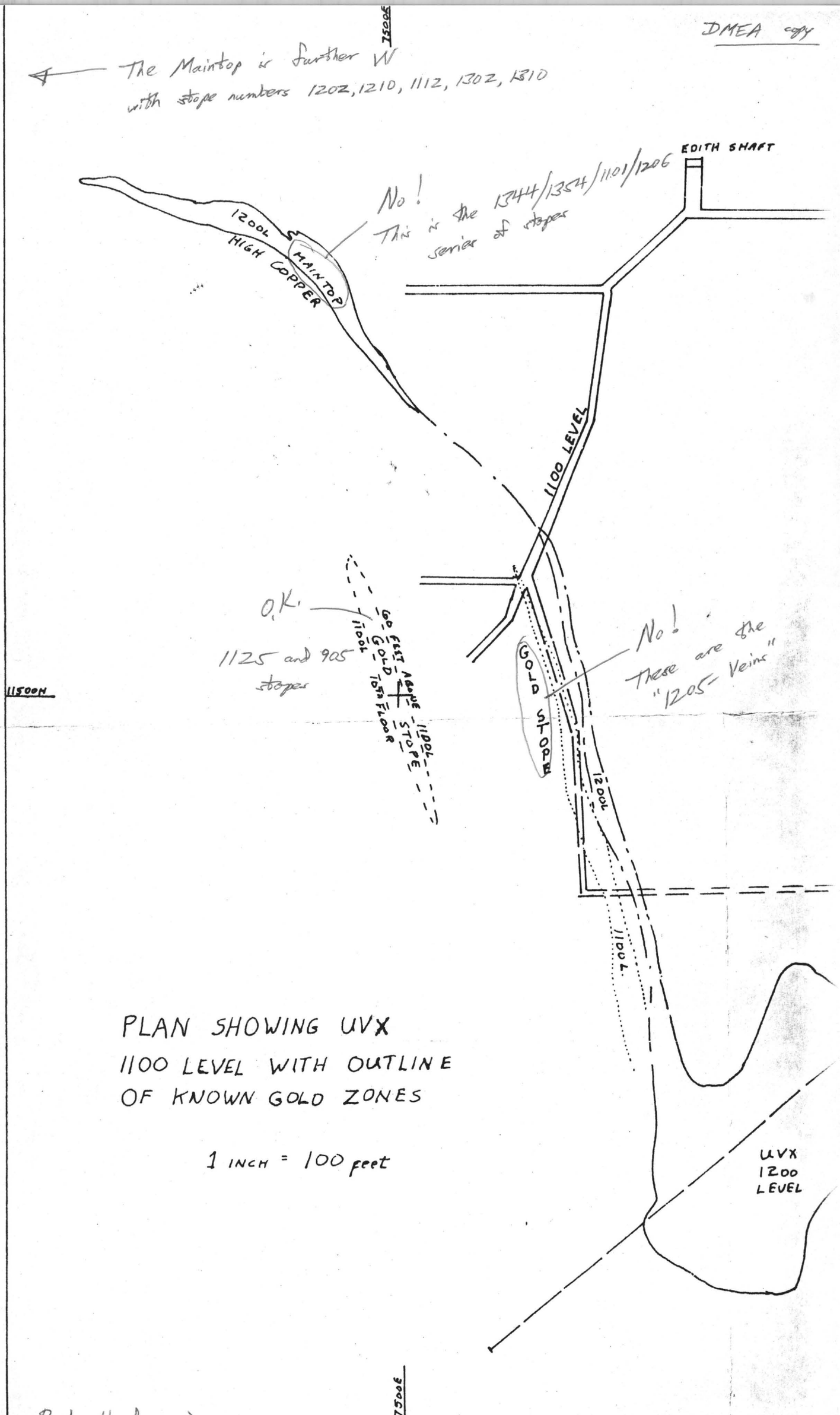
Footage	Au (oz/t)	Ag (oz/t)			Rock Type	Remarks	Core runs/recover
	.215	2.82	565		Silica – leached fragmental chert	563.5 – Trace CuO + MnO_2 560-565 – Notably more obvious hydrothermal brecciation with multiple fracture orientations. 572-573.5 – Malachite on fractures	75% 567'
	.015	1.67	567				
	.005	2.08	572				100 577'
	<.005	1.62	581				
	.020	1.28	583				62 588'
	.010	1.13	588			588-595 – ~30% white kaolinized feldspar and gray quartz (chert-?) fragments (angular) in ~70% brick red (hematite stained) silica flour matrix.	
	<.005	.56	595				100 602'
	<.005	.70	602			595-602 – Very gouge – clay, sericite, FeOx, some relict bx fragments (chert-?)	
	.010	.71	607				80 607'
	.040	.64	615	SS		602-607 – Sandy textured; result from finer brecciation, and looser FeOx cementation.	20 612'
	.065	.62	617			607-615 – Small bx fragr, abundant hematite cement and trace malachite.	100 617'
	.080	.52	626			615-617 – Same but more limonite than hematite,	50 628'
	.090	.55	628			617-642 – Intensely shattered; hematitic cement, some limonite, traces jarosite and malachite.	
	.030	.63	632				100 639'
	.160	.52	639				
	.085	.90	642				80 647'
	.090	.17	647		Fault gouge Verde fault	642-686 Fault gouge – Verde Fault White kaolinite with up to 5% relict silicious (chert-?, rhyolite-?) fragments, some pale gray quartz phenocrysts.	10 652'
	<.005	.68	657'				40 662'
	<.005	.24	667				60 667'
	<.005	<.01	679				10 672'
	<.005	<.01	686'	SS			70 686'
							EOH

Notes:
SS = Skeleton sample
TS = Thin section

Don White May 24, 1985

DMEA copy

← The Maintop is further W with stope numbers 1202, 1210, 1112, 1302, 1310



PLAN SHOWING UVX
1100 LEVEL WITH OUTLINE
OF KNOWN GOLD ZONES

1 INCH = 100 feet

Paul Handverger's

PLATE 10

Collar: UVX Mine 1100-Level, 11,310 N 8,110 E

Inclination +14° Bearing 552° W

Total length 393'

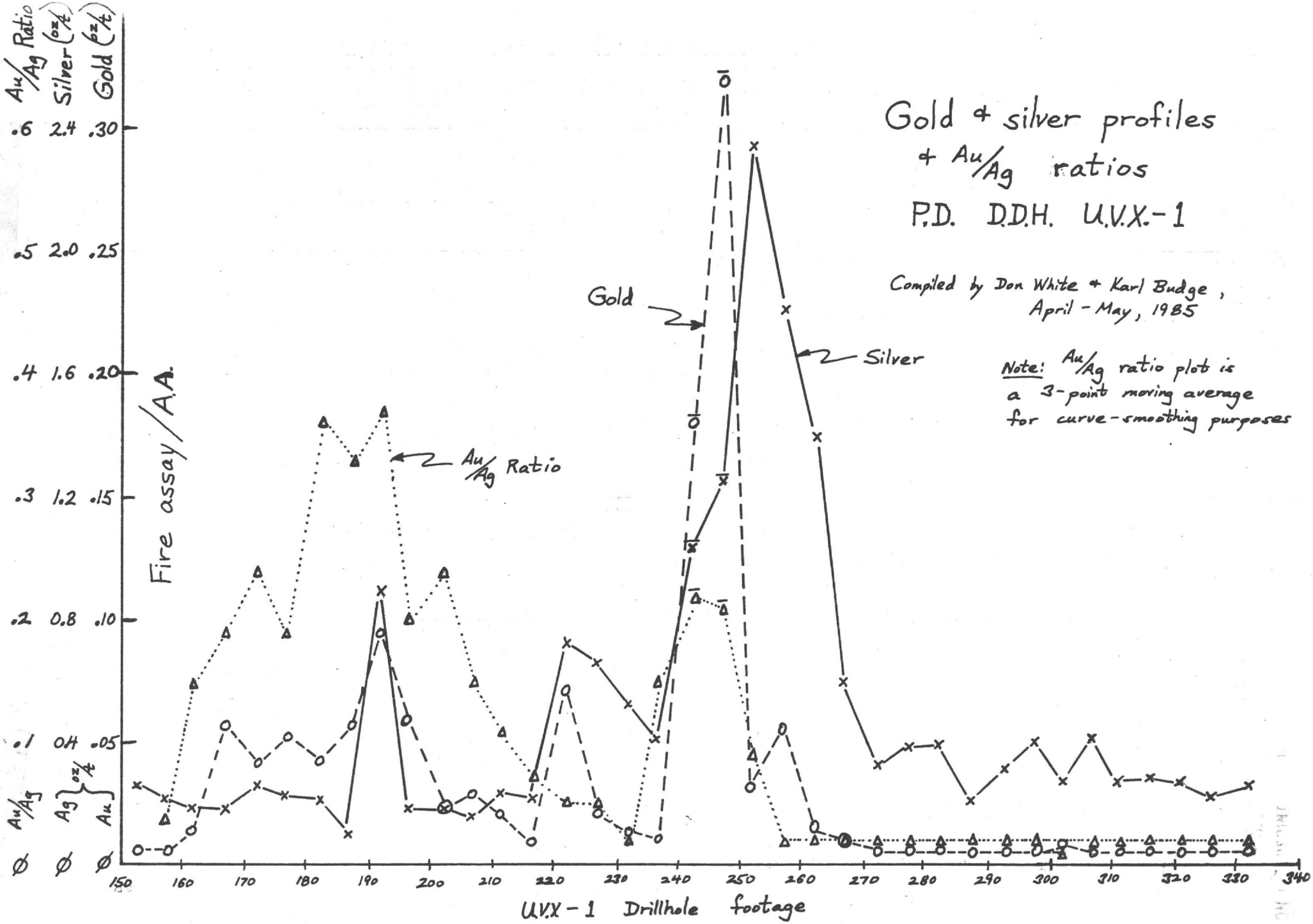
Overall core recovery ~ 81%

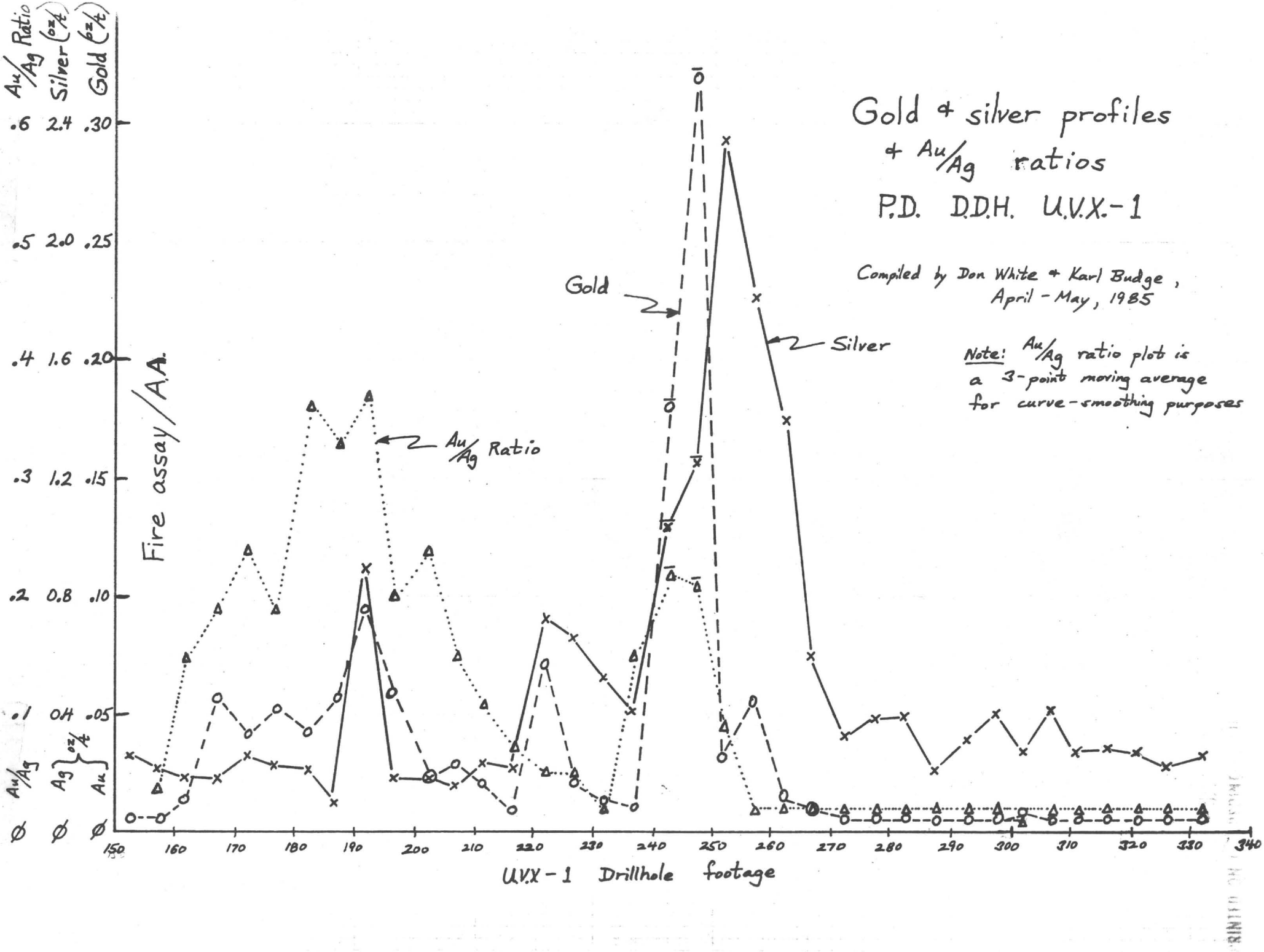
Hole No. UVX-1

Drilled by Connors, using NX, BX, AX bit size reductions, Dec. 18, 1982 to Feb. 18, 1983, for Phelps Dodge Corp.

Footage	Graphic Log	Au (oz/t)	Ag (oz/t)			Rock Type	Remarks (Logged by John Duttamel of P.D. – Relogged by Don White (Also incorporating notes by Dale Armstrong)	Core runs/recovery
1"=20'					5' S.S. 10' T.S.		Ø–90 – Light greenish gray, aphanitic to very fine grained, very hard, silicious, quartzite. ~3% quartz(?) eyes or phenocrysts in non-xln qtz matrix. Rare feldspar phenocrysts (relicts?). Local knots and pockets of chlorite (≤10 mm). Trace py, cpy, CuO. Iron oxide stain on fractures at irregular orientations. No carbonate (anywhere in entire hole). Foliation ~ 60° to core axis. Very hard (H>7.5)	100% 20'
20								70% 27'
				35				100 30'
40		<.005	.08		39' S.S.	Intermediate tuff		88 37'
				45				100%
		<.005	.12					
				55				55'
60		<.005	.02	60	63' S.S.			
					75' T.S.		Thin section – from 10' and 75' are both: ~50% plagioclase, ~40% sericite, ~6% chlorite, ~2% goethite, ± magnetite, pyrite, cpy, CuO. Andesite tuff by composition & texture.	80%
80								
90	Gradational contact				90' S.S.			87'
					96' S.S.	Fragmental Int. to acid tuff	Thin section – from 100': 9% qtz, 73% sericite, 13% chlorite, 2% rutile, 3% Fe Ox. – epizonal alteration	
100					100' T.S.			
					107' S.S.		90–120 – Red and gray fragments/clasts with some red-gray and green-gray matrix. Matrix more chloritic than above. Fragments are varied from andesitic to rhyolitic, some red jasper; all floating in a felsaceous, chloritic matrix.	100%
120					120' S.S.			
					124' S.S.	Int. tuff	120–150 – Pink + pink gray, v.f.g. mottled weathering, kaolinite + sericite-rich tuffs.	131'
					128 F.S.			
					131' S.S.			66%

Not Arrayed


Gold & silver profiles
+ Au/Ag ratios
P.D. D.D.H. U.V.X.-1
Compiled by Don White & Karl Budge,
April - May, 1985
Note: Au/Ag ratio plot is a 3-point moving average for curve-smoothing purposes
Gold
Silver
Au/Ag Ratio
Fire assay / A.A.
Au/Ag
Ag oz/t
Au oz/t
Gold (oz/t)
Silver (oz/t)
Au/Ag Ratio
.6 2.4 .30
.5 2.0 .25
.4 1.6 .20
.3 1.2 .15
.2 0.8 .10
.1 04 .05
Ø Ø Ø
150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340
U.V.X - 1 Drillhole footage


Gold & silver profiles
& Au/Ag ratios
P.D. D.D.H. U.V.X.-1
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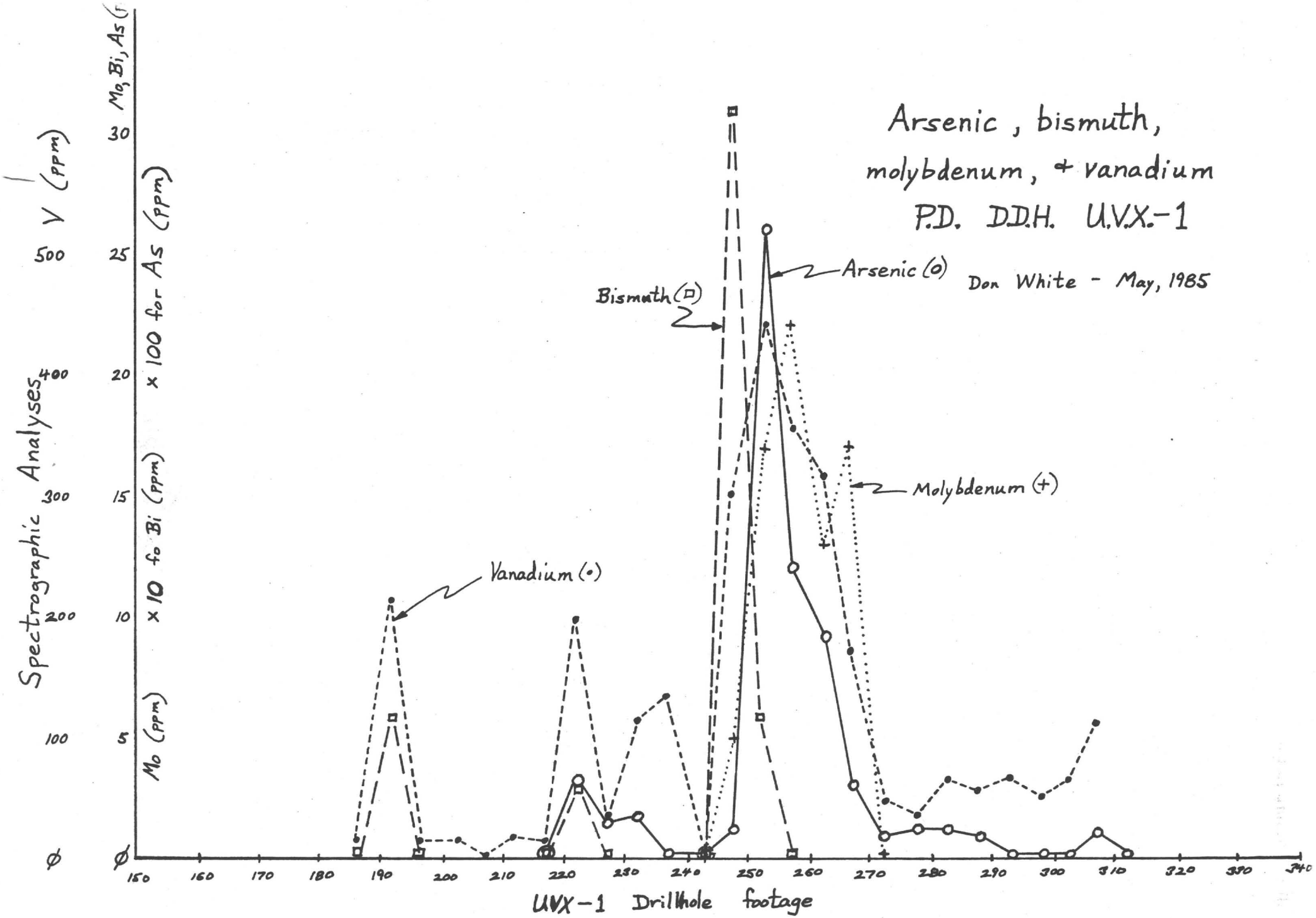
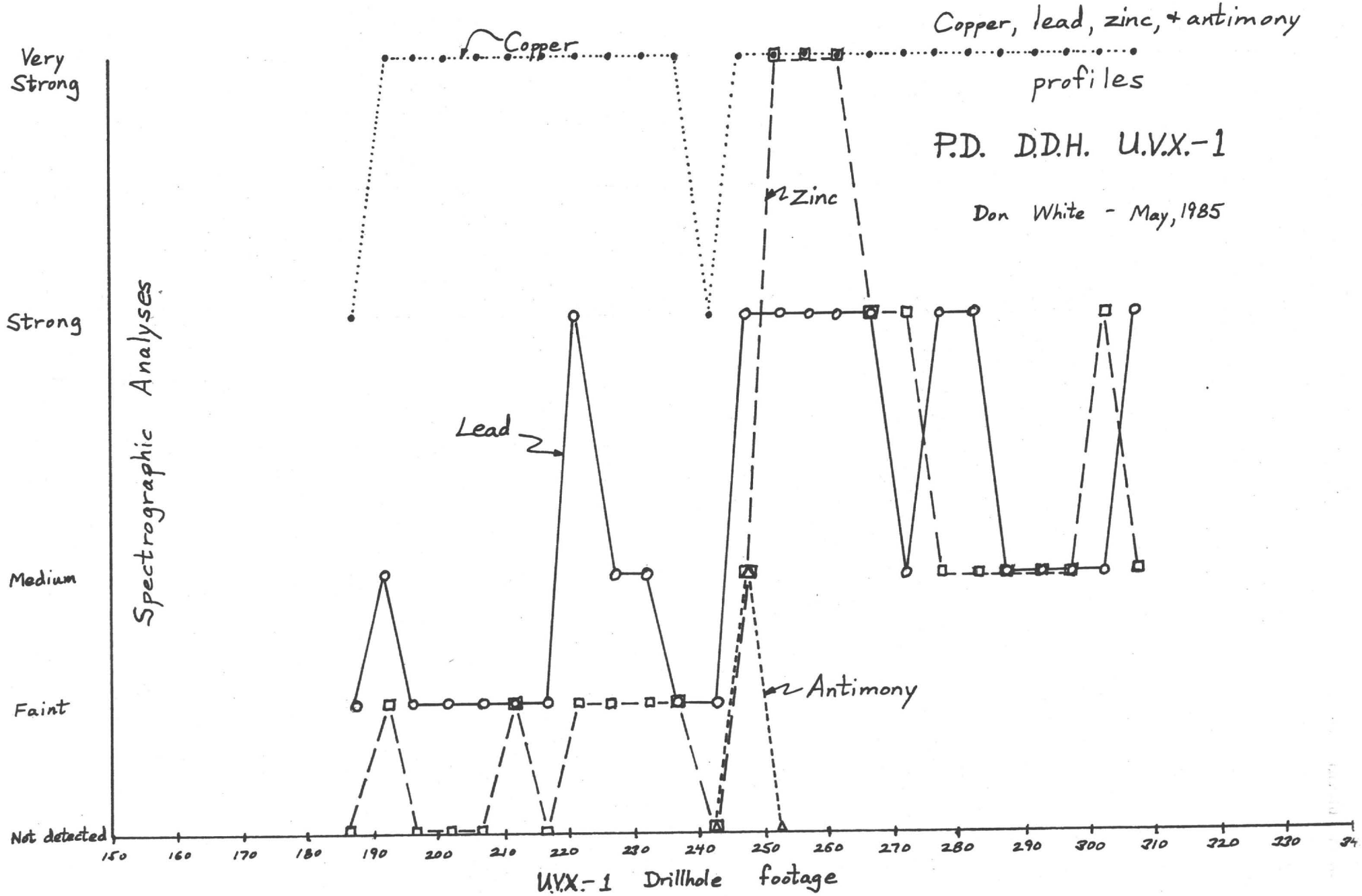
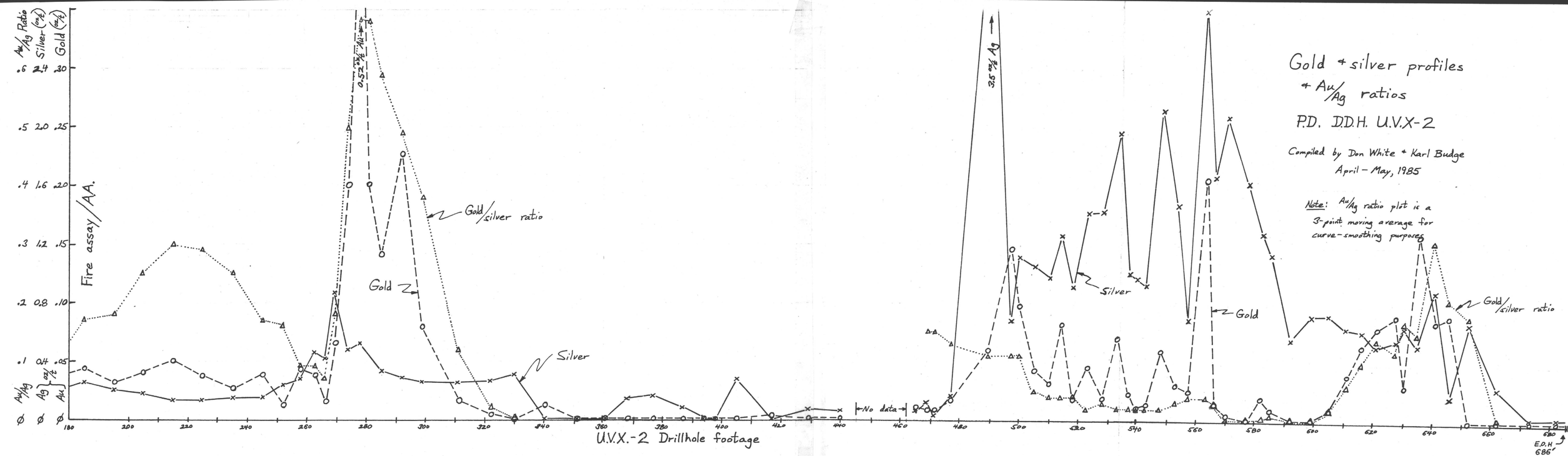
Gold
Silver
Au/Ag Ratio
Fire assay / A.A.
Au/Ag Ratio
Silver (oz/t)
Gold (oz/t)
.6 2.4 .30
.5 2.0 .25
.4 1.6 .20
.3 1.2 .15
.2 0.8 .10
.1 0.4 .05
Ø Ø Ø
Au/Ag
Ag oz/t
Au
150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340
U.V.X - 1 Drillhole footage


Arsenic, bismuth, molybdenum, & vanadium
P.D. D.D.H. U.V.X.-1
Don White - May, 1985
Arsenic (o)
Bismuth (□)
Molybdenum (+)
Vanadium (•)
Spectrographic Analyses
V (PPM)
Mo, Bi, As (
x 100 for As (PPM)
x 10 fo Bi (PPM)
Mo (PPM)
500
400
300
200
100
ϕ
30
25
20
15
10
5
ϕ
150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340
UVX-1 Drillhole footage


Copper, lead, zinc, + antimony profiles
P.D. D.D.H. U.V.X.-1
Don White - May, 1985
Very Strong
Strong
Medium
Faint
Not detected
Spectrographic Analyses
Copper
Zinc
Lead
Antimony
150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 34
U.V.X.-1 Drillhole footage


Au/Ag Ratio
Silver (oz/t)
Gold (oz/t)
Fire assay/AA.
Au/Ag
Ag oz/t
Au oz/t
0.52% Ag
35.0% Ag
Gold/silver ratio
Gold
Silver
No data
U.V.X.-2 Drillhole footage
E.O.H. 686'
Gold + silver profiles
+ Au/Ag ratios
P.D. D.D.H. U.V.X-2
Compiled by Don White + Karl Budge
April - May, 1985
Note: Au/Ag ratio plot is a 3-point moving average for curve-smoothing purposes