4130 0012

A New Cinnabar Locality in Washoe County, Nevada

The presence of cinnabar in altered Pleistocene alluvial deposits was noted by the writer and L. H. Beal of the Nevada Bureau of Mines during a recent examination of a sulfur prospect situated in the northern Lake Range, Washoe County, Nevada. The general location of the area is shown in figure 1. Figure 2 is a topographic and geologic sketch map of the occurrence, on a scale of 1:24,000. No previous published report on the occurrence of cinnabar in this area exists insofar as the writer is aware.

The cinnabar occurs in moderately to highly altered sands and gravels of Pleistocene age and is associated with native sulfur, gypsum, opal, chalcedony, quartz, kaolinite, sericite and other alteration minerals. The altered zone is aligned in a north-south direction and is almost certainly fault controlled. It can be traced for over two miles along its' strike and in places, has an exposed width in excess of 100 feet. The altered zone is partially covered by a thin mantle of later alluvial and lacustrine deposits. Cinnabar was observed at 2 localities in the altered zone and a mercury soil anomaly was detected at a third locality (see Figure 2 for location). These localities were the only ones examined in the altered zone.

The cinnabar occurs as very fine-grained particles disseminated through both silicified and non-silicified phases of the altered rock and as encrustations and films coating fractures and open spaces. Much of the altered rock is impregnated with native sulfur. The distribution of the cinnabar appears to be approximately coincident with that of the native sulfur, but there are zones high in sulfur which seem to be low in cinnabar and other areas which contain visible cinnabar and little to no sulfur. Physical exploration of the occurrences is limited to several shallow pits and trenches made to explore the native sulfur mineralization. The economic

p. 94-95

potential of the cinnabar occurrences in this area can only be determined by physical exploration.

The mercury mineralization belongs to the sulfurous type of quicksilver deposit as defined by Bailey and Phoenix (1944, pg. 14). The altered zone almost certainly represents the deposits of extinct hot springs. Similar occurrences of mercury are found in the Sulphur District, Humboldt County, Nevada and at the Sulphur Banks Mine, Clear Lake District, Lake County, California.

Data supplied by the U. S. Bureau of Mines indicates that claims were located on the native sulfur occurences in 1909 and again in 1931. Claims were again located on the sulfur occurrences in 1951 by H. Hawton and Ed Hand of Reno, Nevada, the last known claimants. The present ownership status of the property is unknown to the writer.

Reference Cited:

Bailey, E. H. and Phoenix, D. A., 1944, Quicksilver deposits in Nevada: Nevada Univ. Bull., v. 38, no. 5, 206 p.

The Nevada Bureau of Mines announces the release of an open-file report on the occurrence of cinnabar at a previously unreported locality in northwestern Nevada. The open-file report may be viewed at the Nevada Bureau of Mines or at the Library of the Mackay School of Mines.

September 24, 1965

Four composite samples were taken at the two localities marked A and B on figure 2. Two samples were taken at locality A. The samples represent composites of channel samples cut from the walls of two trenches present at this locality. The two samples assayed 0.25 lb. Hg/ton and 0.13 lb. Hg/ton. The samples were cut across a distance of approximately 50 feet, transverse to the strike of the mineralized zone.

Two composite samples were also taken at locality B in an area where several shallow pits and trenches have been dug on occurrences of native sulfur. Vertical channel samples were cut at several places in the pit area. The assay results are 2.71 lb. Hg/ton and 3.67 lb. Hg/ton. The samples were taken from an area approximately 100 feet in diameter.

The samples were taken to verify the occurrence of cinnabar at the two localities. They were not selected from areas of better appearing mineralization, but were rather taken in a random manner, within the exposed area of alteration and mineralization. They very probably do not represent accurate assays of the average grade of mercury mineralization in the two areas sampled.

No assay samples were taken from the northern portion of the altered and mineralized zone, although cinnabar is known to occur in both altered Pleistocene alluvium and silicified Tertiary sediments in this area.

Harold F. Bonham, Jr.
Mining Geologist
Nevada Bureau of Mines

September 24, 1965

Four composite samples were taken at the two localities marked A and B on figure 2. Two samples were taken at locality A. The samples represent composites of channel samples cut from the walls of two trenches present at this locality. The two samples assayed 0.25 lb. Hg/ton and 0.13 lb. Hg/ton. The samples were cut across a distance of approximately 50 feet, transverse to the strike of the mineralized zone.

Two composite samples were also taken at locality B in an area where several shallow pits and trenches have been dug on occurrences of native sulfur. Vertical channel samples were cut at several places in the pit area. The assay results are 2.71 lb. Hg/ton and 3.67 lb. Hg/ton. The samples were taken from an area approximately 100 feet in diameter.

The samples were taken to verify the occurrence of cinnabar at the two localities. They were not selected from areas of better appearing mineralization, but were rather taken in a random manner, within the exposed area of alteration and mineralization. They very probably do not represent accurate assays of the average grade of mercury mineralization in the two areas sampled.

No assay samples were taken from the northern portion of the altered and mineralized zone, although cinnabar is known to occur in both altered Pleistocene alluvium and silicified Tertiary sediments in this area.

Harold F. Bonham, Jr.
Mining Geologist
Nevada Bureau of Mines

Benson Report U.S.B.M

originally located 1909
again 1931
again 1951

↓ Harry Hawton
3 Ft Kerman

Ed Hand
1152 Ralston

9 lode claims
Sulphur group

21 miles south of ~~Empire~~ Gerlach

Introduction

AMAX Gold Inc. (AGI: a NYSE company 85% owned by AMAX Inc.) has submitted to the Bureau of Land Management (Winnemucca district) a Plan of Operations for the Wind Mountain Gold Mine Project (Wind Mountain project) located along the northwest flank of the Lake Range (Attachment 1) in portions of Sections 27, 28, 33, 34; T30N, R23E, and Sections 3, 4; T29N, R23E (Kumiva Peak, Nev. 15 minute quadrangle - Attachment 2). The project is in northern Washoe County.

The project site is reached from Reno by driving 28 miles east on Interstate 80 to Nevada Highway 447 at Wadsworth, 60 miles north on NH 447 to the Empire Farms turn-off, and approximately 5 miles west then south on an improved Bureau of Land Management (BLM) road.

The deposit is located at approximate elevation 4650' msl on the southern portion of a north-south trending ridge approximately 7000' in length. The project area which encompasses the deposit and the ancillary facility sites includes approximately 800 acres and ranges in elevation from approximately 4200' msl to about 4750' msl. Drainage is to the west toward the playa flats of the San Emidio Desert. Two well defined primary water courses, both shallow and intermittent, drain the site; one south of the ridge and a lesser course from the small valley head at the north end of the ridge. No surface waters exist on or near the project site.

The site is part of the Basin and Range Physiographic province and is within the Great Basin Salt Desert Shrub ecological zone typified by alkaline to saline soils and low/medium-growing shrubs such as shadscale (*Atriplex confertifolia*), four-wing saltbush (*A. canescens*), and, on small isolated areas, big sagebrush (*Artemisia tridentata*). Cheatgrass (*Bromus tectorum*) is prevalent in the understory throughout the area. There are no trees on the site.

The site and general area was first prospected for gold, silver, sulfur, opal, and (possibly) mercury in the early 1900's, and has undergone extensive exploration drilling by numerous parties since 1978. The result of these drilling programs and sample analyses has been to delineate economically viable ore reserves of sufficient quantity and quality to warrant engineering feasibility studies and project development. Currently, total recoverable reserves are estimated at 178,000 oz. gold and 2,028,000 oz. silver. Production would come from approximately 16,000,000 tons of processed ore at grades averaging 0.02 oz./ton gold and 0.42 oz./ton silver.

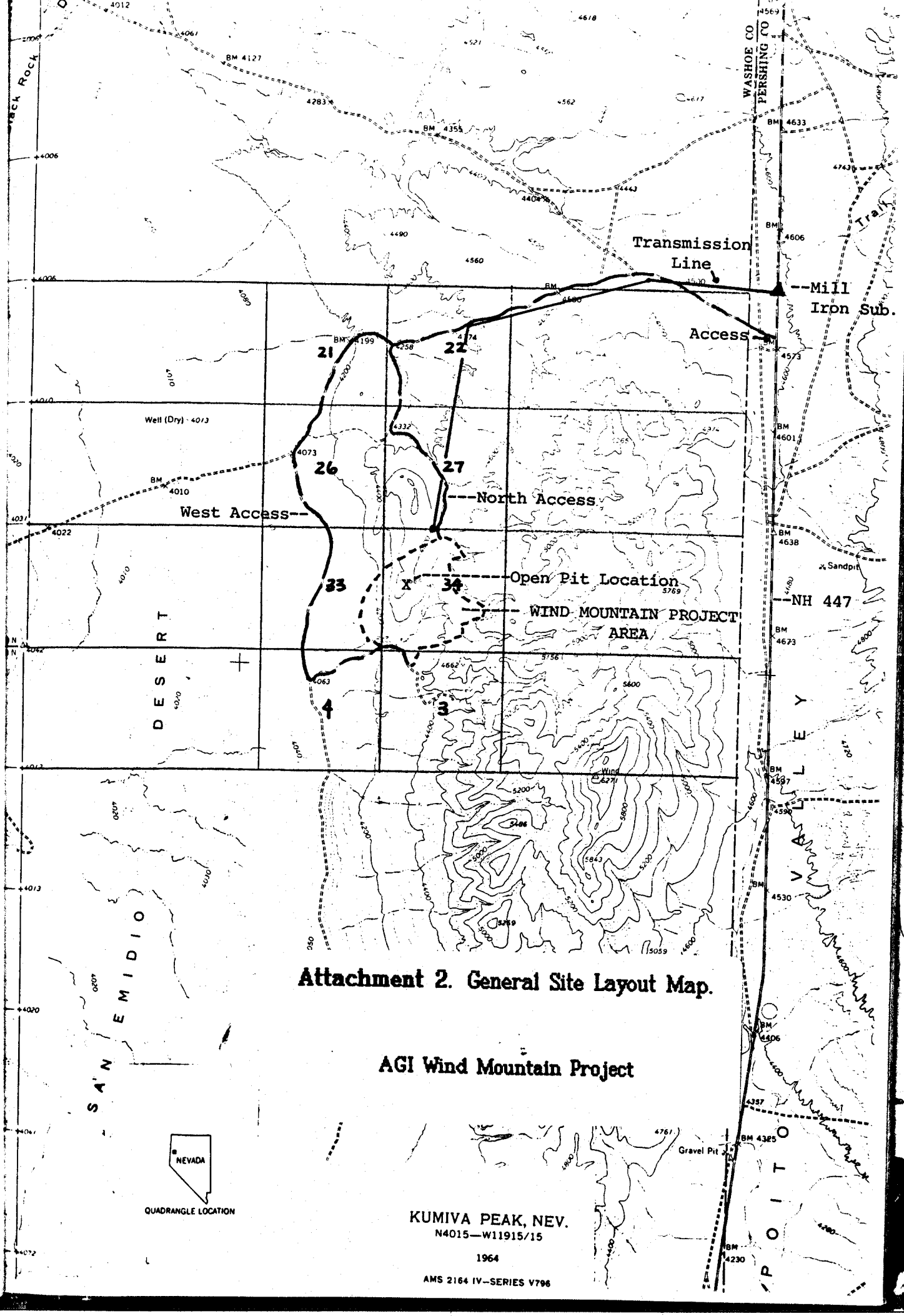
The Wind Mountain project would involve two phases; intensive drilling of the known mineralized zone to better define the ore body, followed by development of a small open pit mine using a conventional cyanide heap leaching process to extract gold and silver. Generally, after overburden is removed, ore grade material would be removed via standard drill and blast methods, hauled by truck to the crushing system, and hauled again by truck to the leach pads. Precious metals would be recovered from the pregnant leach solution through zinc precipitation circuits and shipped by truck to the AMAX Gold Inc. Sleeper Mine in Humboldt County for processing into dore bullion. Annual production is estimated at approximately 45,000 oz. gold and 507,000 oz. silver over a four-year mine life. Employment during production operations will reach approximately ninety. The intensive drilling phase and construction (including overburden stripping) is expected to take approximately six to eight months and employ approximately 125 people at peak. Capital costs are estimated at approximately $19,000,000. Attachment 3 shows the site facilities layout plan. Approximately 400 total acres would be disturbed by project development over its four to five year life.

The project in its entirety will be conducted on unpatented mining claims on public lands. None of the mining claims lie within a Wilderness Study Area; therefore, this project is subject to 43 CFR 3809, regulations concerning exploration and mining on public land.

This project is consistent with existing Bureau of Land Management land use plans. This assessment should be reviewed in concert with the Plan of Operations.

Proposed Action

The Wind Mountain Project will first incorporate an intensive drilling program on the ore body to obtain better definition of reserves. Following this drilling phase, the project will proceed to develop a small open pit mine, crushing facilities, conventional cyanide leach pad facilities, and a processing plant. The project will be capable of mining up to 38,000 tons per day, crushing 20,000 tons per day, and heap stacking 20,000 tons per day of ore. The processing plant will utilize zinc precipitation (Merrill-Crowe process) to produce a gold/silver precipitate which will be shipped by truck to the Sleeper Mine north of Winnemucca for production of dore bullion. Power to the site will be provided by a 60 Kv transmission line extending five miles from the Mill Iron substation (Sierra Pacific) adjacent to NH 447 to the mine site (Attachment 2). Access to the site will be by existing



Attachment 2. General Site Layout Map.

AGI Wind Mountain Project

Do NOT write on this page. For Laboratory use only.

Copy

0090

July 27, 1965

4. Mixed gypsum, sulfur, salts(CL, So_4) and clay.

Mercury: 0.00 lb/ton

5. Mercury: 5.64 lb/ton

6. Mercury: 0.08 lb/ton

#5 and #6--Same description as #4.

Tom Cordova

P.A. Weyler

275

Form NAML:1 (Rev.)

AUG 31 1965

NEVADA MINING ANALYTICAL LABORATORY

UNIVERSITY OF NEVADA

RENO, NEVADA

1. The Laboratory makes free identifications and analyses of ORES, MINERALS, ROCKS, and FOSSILS. This service is restricted to Nevada citizens and to samples collected from within the State. The major purpose of this service is to aid the prospector in the discovery of new mineral deposits. It may not be done for operating mines, engineers evaluating mines and prospects, nor as control assays to check other assayers. No artificial material will be analyzed.

2. Two gold-silver assays, 5 quantitative determinations, and 10 mineral identifications will be allowed in any 30-day period. Do not grind or pulverize your samples. Samples weighing less than 5 ounces will not be assayed. Please number all samples.

3. If preliminary examinations indicate that the sample is of no commercial value, quantitative analysis will not be made.

4. Report on the sample is mailed usually within 10 working days of receipt of sample and this form. The material will be kept for 90 days and then discarded.

5. Do not send soil or water samples to this laboratory. Send:

   SOIL samples to: Agriculture Soils Research Laboratory, University of Nevada, Reno, Nevada.

   WATER samples to: Nevada Health Department, Hygienic Laboratory, Reno, Nevada.

Name H Bonham

Address NBM

City ..... State .....

This is your mailing label. Please PRINT or TYPE your name and address to insure accurate mailing.

Do NOT write on this page. For Laboratory use only.

Report No. 275 **Date:** September 8, 1965

Sample Number	SAMPLE DESCRIPTION	Ounces Per Ton	
		Gold	Silver
3.	Black Calcite	0.00	0.00
4.		0.00	0.00
5a.		0.00	0.00
6.		0.00	0.00
7.		0.00	0.00

P.A. Weyler

Nevada Mining Analytical Laboratory

Form NAML:1 (Rev.) 1469

NEVADA MINING ANALYTICAL LABORATORY

UNIVERSITY OF NEVADA

RENO, NEVADA

01281
6/16/65

1. The Laboratory makes free identifications and analyses of ORES, MINERALS, ROCKS, and FOSSILS. This service is restricted to Nevada citizens and to samples collected from within the State. The major purpose of this service is to aid the prospector in the discovery of new mineral deposits. It may not be done for operating mines, engineers evaluating mines and prospects, nor as control assays to check other assayers. No artificial material will be analyzed.

2. Two gold-silver assays, 5 quantitative determinations, and 10 mineral identifications will be allowed in any 30-day period. Do not grind or pulverize your samples. Samples weighing less than 5 ounces will not be assayed. Please number all samples.

3. If preliminary examinations indicate that the sample is of no commercial value, quantitative analysis will not be made.

4. Report on the sample is mailed usually within 10 working days of receipt of sample and this form. The material will be kept for 90 days and then discarded.

5. Do not send soil or water samples to this laboratory. Send:

   SOIL samples to: Agriculture Soils Research Laboratory, University of Nevada, Reno, Nevada.

   WATER samples to: Nevada Health Department, Hygienic Laboratory, Reno, Nevada.

Name H Bonham

Address NBM

City State

This is your mailing label. Please PRINT or TYPE your name and address to insure accurate mailing.

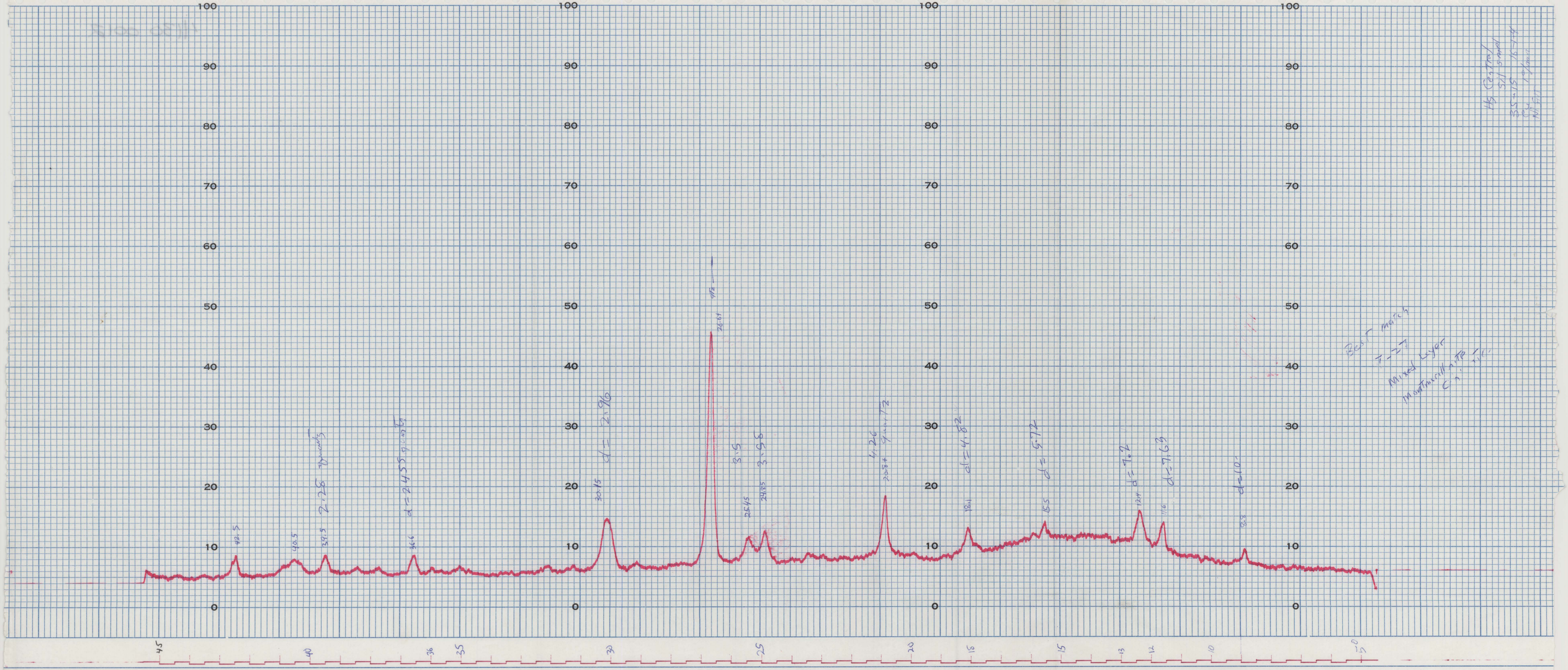
Do NOT write on this page. For Laboratory use only.

Report No. 1281 Date: June 21, 1965

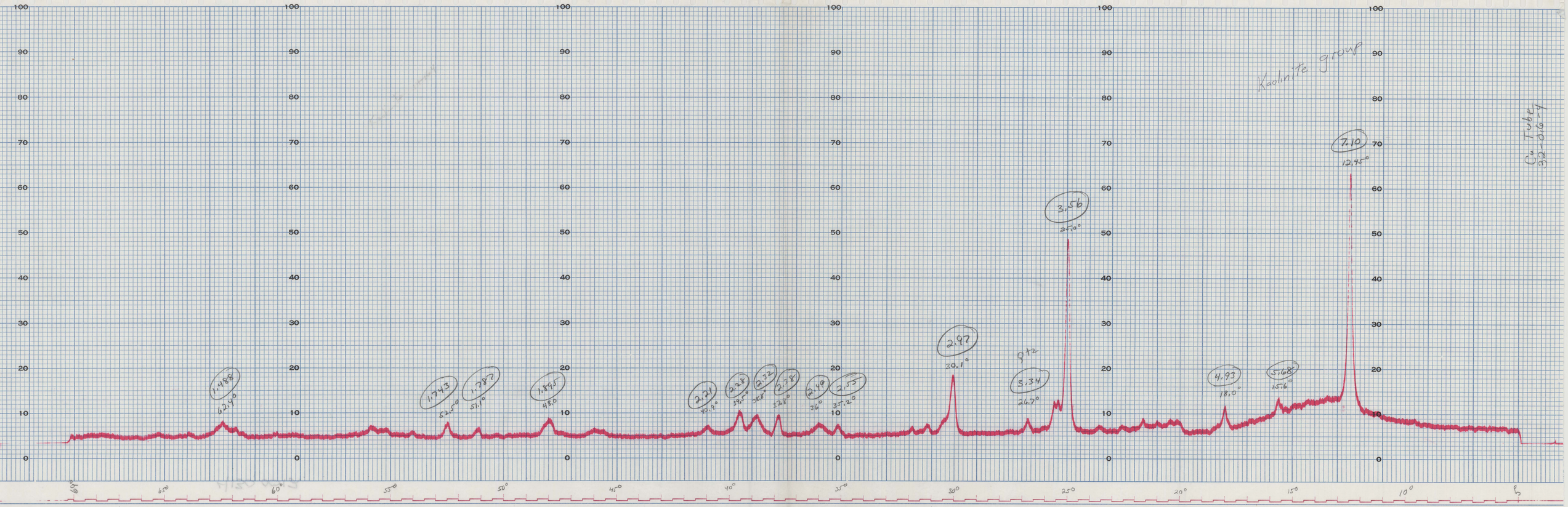
	Sample Number	SAMPLE DESCRIPTION	Ounces Per Ton	
			Gold	Silver
		Mercury		
	1Ca	0.25 lb/t		
	1Cb	0.13 "		
Comp	51	2.71 "		
Comp	52	3.67 "		

P.A. Weyler

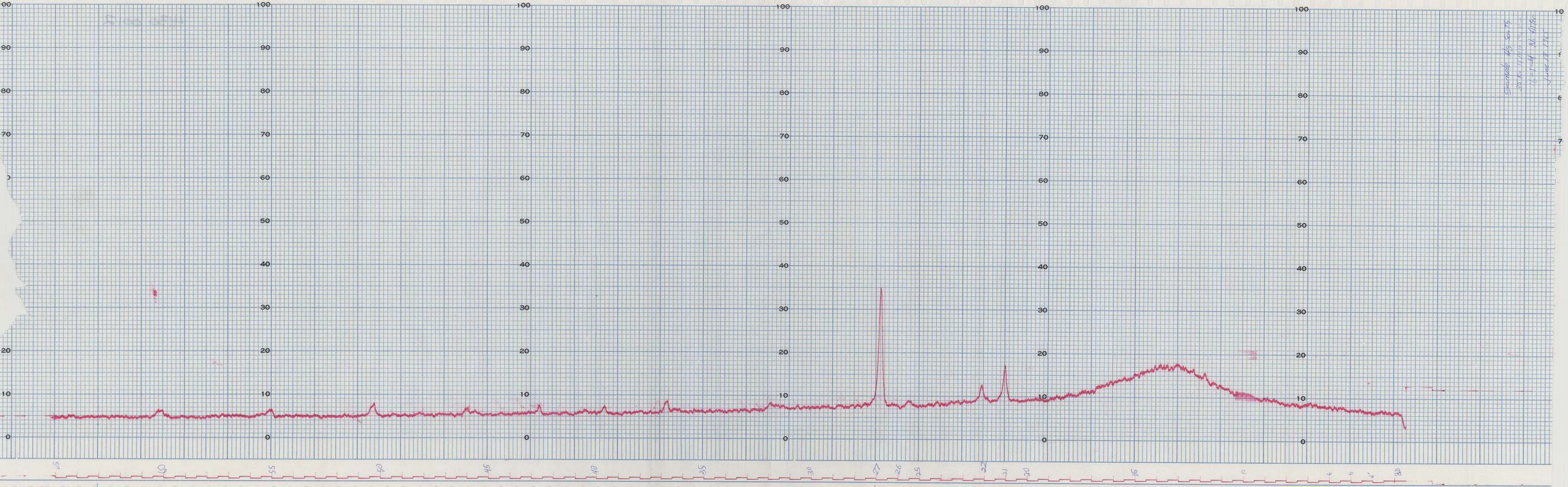
Nevada Mining Analytical Laboratory

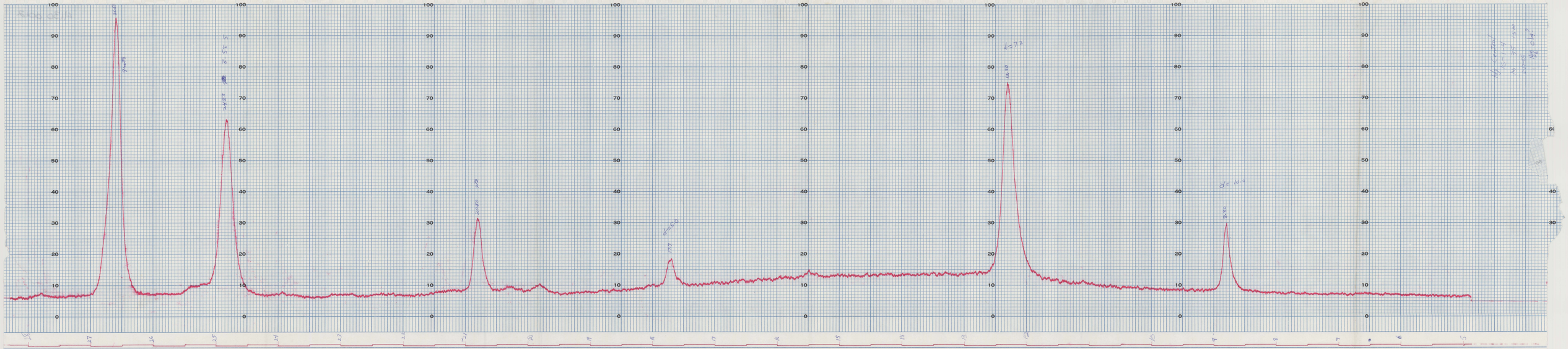


No. 6279-NR TECHNICAL CHARTS INC., BUFFALO, N.Y. PRINTED IN U.S.A. No. 6279-NR TECHNICAL



No. 6279-NR TECHNICAL CHARTS INC., BUFFALO, N.Y. PRINTED IN U.S.A.


Sample No 5-78
Sample Hum
6-11 W 4/15
June 2 1961
No. 6279-NR
TECHNICAL CHARTS INC., BUFFALO, N.Y.
PRINTED IN U.S.A.


No. 6279-NR
No. 6279-NR