4840 0883

Memorandum

UNIVERSITY OF NEVADA
Reno, Nevada

To: R. C. Horton

From: R. H. Olson

Subject: Geologic Report on Nevada-13 Clay Sample to be submitted to the U. S. Bureau of Mines for testing under the Co-op Program.

Date: November 15, 1961

On October 16 I sampled a clay deposit owned by the Lambertucci Bros. of Tonopah. Sample Nevada-13 was collected on the Garibaldi #3 claim in Sec. 32, T. 3 N., R. 42 E. approximately four miles due west of Tonopah.

Three east-west bulldozer trenches have exposed the clay body. Brunton-and-pace work has established the deposit to be 475 feet long in a N 30° E direction and to have an average exposed length in the trenches of 70 feet. Several measurements of the thickness of the bed averaged 1.8 feet. Therefore, a not too conservative estimate of the amount of clay present would be on the order of 60,000 cubic feet, which converts to approximately 3,000 tons using the density factor of 100 lbs./cubic foot of clay.

The clay has been altered from tuff and is definitely concordant with the bedding attitude of the volcanic sequence, which I assume to be the Siebert lake beds (Miocene). The strata dip an average of 7° westerly and are only locally exposed where the northwesterly dipping pediment surface has been breached by erosion. At every locality where the base of the clay could be observed it is underlain by an intensely iron-stained rhyolite (?) felsite which is well-cemented and forms an excellent floor for excavation work. No exploratory work has been done below this surface. Above the clay there is either unaltered tuff, a reworked regolith, or soil. The clay is nowhere exposed on the property at a depth of greater than 3 feet below the ground surface and appears to be very uniform over its entire exposed extent.

Sample Nevada-13 is a composite from three sample lines along the north wall of the middle trench which divide this wall into four roughly equal parts. The average of the three sample widths is 1.6 feet.

Three samples submitted previously by the owners have been analyzed by X-ray and all are "kaolinite type clay" of varying grades of purity.

R. H. Olson

Memorandum

UNIVERSITY OF NEVADA
Reno, Nevada

R. C. Horton

m: R. H. Olson

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Three samples submitted previously by the owners have been analyzed by X-ray and all are "kaolinite type clay" of varying grades of purity.

RHO

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

REGION II

Division
of
Mineral Resources

Reno Field Office
1605 Evans Avenue
Reno, Nevada

January 9, 1961

Memorandum:

To: E. A. Magill, Supervisory Mining Engineer, Seattle Nonmetallics Laboratory, Region I, Seattle, Washington

From: A. C. Johnson, Supervisory Mining Engineer, Reno, Nevada

Subject: Clay testing

There is being forwarded, via parcel post a clay sample from the Lambertucci Brothers clay deposit near Tonopah, Nevada for testing in your laboratories. The testing of this clay is under a Cooperative Agreement with the Nevada Bureau of Mines and the U. S. Bureau of Mines for the evaluation of clay deposits in Nevada.

The attached copy of a letter from Mr. Robert C. Horton, Mining Engineer of the Nevada State Bureau of Mines contains information on the deposit.

Tests on this sample should be terminated when the quality and possible evaluation of the clay becomes apparent. When the tests are completed, it will be appreciated if you will send a copy of your report to Dr. Vernon E. Schied, Director of the Nevada Bureau of Mines, University of Nevada, Reno, Nevada.

A work order will be prepared by the Chief, Division of Mineral Resources, Region II for the test.

A. C. Johnson

Copy to: Dr. Vernon E. Schied, Director, Nevada Bureau of Mines
W. F. Dietrich, Chief, Division of Mineral Resources
O. M. Bishop, Chief, Division of Mineral Resources
C. H. Johnson, Executive Assistant for Regional Activities

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
REGION I

Division
of
Mineral Resources

Seattle Nonmetallics Laboratory
217 Roberts Hall
University Campus
Seattle 5, Washington

February 1, 1962

Memorandum

To: A. C. Johnson, Supervisory Mining Engineer, Bureau of Mines, Reno, Nevada

From: Supervisory Mining Engineer, Seattle Nonmetallics Laboratory

Subject: Clay testing sample NEV. 13

Preliminary tests have been conducted on sample NEV. 13 (our C-2047) and a report covering the results of these tests is attached.

As you will note, the clay has a high cone of fusion. We would be glad to carry our tests further if you think the size of the deposit warrants.

E. A. Magill

Attachment

cc:
Dr. Vernon E. Schied
W. F. Dietrich
O. M. Bishop

RECEIVED FEB 5 1962

Mackay School of Mines
University of Nevada
Reno, Nevada

6—258 b

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
ANALYTICAL REPORT

Sample No. NEV. 13 Laboratory No. C-2047

Sample of Clay

From A. C. Johnson, Reno Field Office, Reno, Nevada

Sampled Robert C. Horton Received at lab. ____ Analyzed ____

Section or Bureau Seattle Nonmetallics Laboratory Collector ____

ANALYSIS

Location:
Giribaldi No. 3 claim in Sec. 32, T. 3N., R. 42 E., approximately four miles due west of Tonopah, Nevada. The claims are owned by the Lambertucci Brothers of Tonopah.

Sample Nev. 13 as reported by Robert C. Horton, Mining Engineer, Nevada Bureau of Mines in a memo dated December 28, 1961 to A. C. Johnson, "is a composite from three samples (lines along the north wall of the middle trench. The average of the average of the three sample widths is 1.6 feet".

Laboratory Tests:

Description (megascopic):
Sample NEV. 13 (No. C-2047) consisted of numerous 1- to 3-inch lumps of a very white clay-like material. The material was very fine and was crushed without difficulty using a mortar and pestle. The freshly broken surfaces of most of the lumps were dotted with minute reddish brown speckles that appeared to be some form of iron oxide. Bedding planes were also apparent in some of the broken surfaces. Most of the crushed lumps were light tan in color, a few were light gray or white.

P.C.E.:
Cone 33, white

D.T.A.:
Kaolinite-type clay

Reflectance:

Gardner Reflectometer			C.E. Equivalent
Green	Amber	Blue	
87.75	89.40	70.85	80.2

Evaluation:
This clay has a high cone of fusion (cone 33), and fires white. It could be used as a super-duty refractory material. If its use for this purpose is

Date February 1, 1962 (Signed) George J. Carter, *Chemist.*
Ceramic Engineer

U. S. GOVERNMENT PRINTING OFFICE 16—23840

considered it should undergo firing tests to determine its firing characteristics. Whether further tests are warranted depends upon the size of of the deposit and the dilution that might occur while mining. The narrowness (1.6 feet) would indicate that further tests are probably not warranted.

Low reflectance, (G.E. equivalent of 80.2) eliminates this clay from use as a filler material. The low reflectance is largely due to the inclusion of reddish brown iron oxide minerals.

6-207 b

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
ANALYTICAL REPORT

Sample No. NEV. 13 Laboratory No. C-2047

Sample of Clay

From A. C. Johnson, Reno Field Office, Reno, Nevada

Sampled Robert C. Horton Received at lab. ____ Analyzed ____

Section or Bureau Seattle Nonmetallics Laboratory Collector ____

ANALYSIS

Location:
Giribaldi No. 3 claim in Sec. 32, T. 3N., R. 42 E., approximately four miles due west of Tonopah, Nevada. The claims are owned by the Lambertucci Brothers of Tonopah.

Sample Nev. 13 as reported by Robert C. Horton, Mining Engineer, Nevada Bureau of Mines in a memo dated December 28, 1961 to A. C. Johnson, "is a composite from three samples lines along the north wall of the middle trench. The average of the average of the three sample widths is 1.6 feet".

Laboratory Tests:

Description (megascopic):
Sample NEV. 13 (No. C-2047) consisted of numerous 1- to 3-inch lumps of a very white clay-like material. The material was very fine and was crushed without difficulty using a mortar and pestle. The freshly broken surfaces of most of the lumps were dotted with minute reddish brown speckles that appeared to be some form of iron oxide. Bedding planes were also apparent in some of the broken surfaces. Most of the crushed lumps were light tan in color, a few were light gray or white.

P.C.E.:
Cone 33, white

D.T.A.:
Kaolinite-type clay

Reflectance:

Gardner Reflectometer			G.E. Equivalent
Green	Amber	Blue	
87.75	89.40	70.85	80.2

Evaluation:
This clay has a high cone of fusion (cone 33), and fires white. It could be used as a super-duty refractory material. If its use for this purpose is

Date February 1, 1962 (Signed) George J. Carter, Chemist.
Ceramic Engineer

U. S. GOVERNMENT PRINTING OFFICE 16—23840

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Low reflectance, (G.E. equivalent of 80.2) eliminates this clay from use as a filler material. The low reflectance is largely due to the inclusion of reddish brown iron oxide minerals.

Region II field

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

REGION II

Division
of
Mineral Resources

Reno Field Office
1605 Evans Avenue
Reno, Nevada

January 9, 1961

Memorandum

To: E. A. Magill, Supervisory Mining Engineer, Seattle Nonmetallics Laboratory, Region I, Seattle, Washington

From: A. C. Johnson, Supervisory Mining Engineer, Reno, Nevada

Subject: Clay testing

There is being forwarded, via parcel post a clay sample from the Lambertucci Brothers clay deposit near Tonopah, Nevada for testing in your laboratories. The testing of this clay is under a Cooperative Agreement with the Nevada Bureau of Mines and the U. S. Bureau of Mines for the evaluation of clay deposits in Nevada.

The attached copy of a letter from Mr. Robert C. Horton, Mining Engineer of the Nevada State Bureau of Mines contains information on the deposit.

Tests on this sample should be terminated when the quality and possible evaluation of the clay becomes apparent. When the tests are completed, it will be appreciated if you will send a copy of your report to Dr. Vernon E. Schied, Director of the Nevada Bureau of Mines, University of Nevada, Reno, Nevada.

A work order will be prepared by the Chief, Division of Mineral Resources, Region II for the test.

A. C. Johnson

Attachment

A. C. Johnson

NEVADA BUREAU OF MINES
UNIVERSITY OF NEVADA
RENO, NEVADA

OFFICE OF THE DIRECTOR

December 28, 1951

Mr. A. C. Johnson
U. S. Bureau of Mines
1603 Evans Avenue
Reno, Nevada

Dear Mr. Johnson:

A single clay sample is being submitted to you for transfer to the proper U. S. Bureau of Mines station for testing under the cooperative agreement between the U. S. Bureau of Mines and the Nevada Bureau of Mines. The sample is numbered Nev. 13.

The following is a description of the deposit:

Nev. 13

The sample was collected at the Giribaldi #3 claim in Sec. 32, T. 3 N., R. 42 E., approximately four miles due west of Tonopah, Nevada. The claims are owned by the Lambertucci Brothers of Tonopah.

Three east-west bulldozer trenches have exposed the clay body. Brunton and tape surveying established the dimensions of the deposit as 475 feet in length in a N. 30 E. direction with an average exposed width of 77 in the trenches. Several measurements of the thickness of the bed averaged 1.3 feet. The body contains an estimated 60,000 cubic feet, which converts to 3,000 tons when using a density of 100 lbs. per cubic foot.

The clay has been formed by alteration of a volcanic tuff and is definitely concordant with the bedding attitude of the volcanic sequence, which is assumed to be the Siebert Lake beds (Miocene). The strata dip an average of 7 degrees uniformly and are exposed locally where the northwesterly dipping pediment surface has been breached by erosion. At every locality where the base of the clay could be observed it is underlain by an intensely iron-stained rhyolite (?) felsite which is well cemented and forms an excellent floor for exploration work. No exploratory work has been done below this surface. Above the clay there is either unaltered tuff, a weathered rhyolith, or soil. The clay is nowhere exposed on the property at a depth greater than three feet and appears to be uniform over its entire exposed extent.

Sample Nev. 13 is a composite from three sample lines along the north wall of the middle trench. The average of the three sample widths is 1.6 feet.

Three samples previously submitted to the Nevada Bureau of Mines by the owners were identified as bentonite type clay by X-ray analysis.

Very truly yours,

Robert C. Horton
Mining Engineer

RCH:hs

Region II file

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

REGION II

Division
of
Mineral Resources

Reno Field Office
1605 Evans Avenue
Reno, Nevada

January 9, 1961

Memorandum

To: E. A. Magill, Supervisory Mining Engineer, Seattle Nonmetallics Laboratory, Region I, Seattle, Washington

From: A. C. Johnson, Supervisory Mining Engineer, Reno, Nevada

Subject: Clay testing

There is being forwarded, via parcel post a clay sample from the Lambertucci Brothers clay deposit near Tonopah, Nevada for testing in your laboratories. The testing of this clay is under a Cooperative Agreement with the Nevada Bureau of Mines and the U. S. Bureau of Mines for the evaluation of clay deposits in Nevada.

The attached copy of a letter from Mr. Robert C. Horton, Mining Engineer of the Nevada State Bureau of Mines contains information on the deposit.

Tests on this sample should be terminated when the quality and possible evaluation of the clay becomes apparent. When the tests are completed, it will be appreciated if you will send a copy of your report to Dr. Vernon E. Schied, Director of the Nevada Bureau of Mines, University of Nevada, Reno, Nevada.

A work order will be prepared by the Chief, Division of Mineral Resources, Region II for the test.

A. C. Johnson

Attachment

A. C. Johnson

NEVADA BUREAU OF MINES
UNIVERSITY OF NEVADA
RENO, NEVADA

OFFICE OF THE DIRECTOR

December [illegible], 1961

Mr. A. C. Johnson
U. S. Bureau of Mines
1605 Evans Avenue
Reno, Nevada

Dear Mr. Johnson:

A single clay sample is being submitted to you for transfer to the proper U. S. Bureau of Mines station for testing under the cooperative agreement between the U. S. Bureau of Mines and the Nevada Bureau of Mines. The sample is numbered Nev. 13.

The following is a description of the deposit:

Nev. 13

The sample was collected at the [illegible] #3 claim in Sec. 31, T. [illegible] N., R. 42 E., approximately four miles due east of Tonopah, Nevada. The claims are owned by the [illegible] brothers of Tonopah.

Three east-west bulldozer trenches have exposed the clay body. Brunton-and-pace surveying established the dimensions of the deposit as 475 feet in length in a N. 30 E. direction with an average exposed width of 77 in the trenches. Several measurements of the thickness of the bed averaged 1.8 feet. The body contains an estimated [illegible] cubic feet, which converts to 3,000 tons when using a density of 100 lbs. per cubic foot.

The clay has been formed by alteration of a volcanic tuff and is definitely concordant with the bedding attitude of the volcanic sequence, which is assumed to be the Siebert Lake beds (Pliocene). The strata dip an average of 7 degrees westerly and the exposed locality where the [illegible] dipping [illegible] surface has been breached by erosion. In every locality where the base of the clay could be observed it is underlain by an intensely iron-stained rhyolite (?) breccia which is well cemented and forms an excellent floor for excavation work. No exploratory work has been done below this surface. Above the clay there is either unaltered tuff, a resistant rhyolite, or soil. The clay is nowhere exposed on the property at a depth greater than three feet and appears to be uniform over the entire exposed extent.

Sample Nev. 13 is a composite from three sample lines along the north wall of the middle trench. The average of the three sample widths is 1.6 feet.

Three samples previously submitted to the Nevada Bureau of Mines by the owners were identified as kaolinite type clay by X-ray analysis.

Very truly yours,

Robert C. Horton
Mining Engineer

RCH:bm

December 23, 1951

Mr. A. C. Johnson
U. S. Bureau of Mines
1605 Evans Avenue
Reno, Nevada

Dear Mr. Johnson:

A single clay sample is being submitted to you for transfer to the proper U. S. Bureau of Mines station for testing under the cooperative agreement between the U. S. Bureau of Mines and the Nevada Bureau of Mines. The sample is numbered Nev. 13.

The following is a description of the deposit:

Nev. 13

The sample was collected at the Giribaldi #3 claim in Sec. 32, T. 3 N., R. 42 E., approximately four miles due west of Tonopah, Nevada. The claims are owned by the Lambertucci Brothers of Tonopah.

Three east-west bulldozer trenches have exposed the clay body. Brunton-and-pace surveying established the dimensions of the deposit as 475 feet in length in a N. 30 E. direction with an average exposed width of 70 in the trenches. Several measurements of the thickness of the bed averaged 1.8 feet. The body contains an estimated 60,000 cubic feet, which converts to 3,000 tons when using a density of 100 lbs. per cubic foot.

The clay has been formed by alteration of a volcanic tuff and is definitely concordant with the bedding attitude of the volcanic sequence, which is assumed to be the Siebert Lake beds (Miocene). The strata dip an average of 7 degrees westerly and are exposed locally where the northwesterly dipping pediment surface has been breached by erosion. At every locality where the base of the clay could be observed it is underlain by an intensely iron-stained rhyolite (?) felsite which is well cemented and forms an excellent floor for excavation work. No exploratory work has been done below this surface. Above the clay there is either unaltered tuff, a reworked regolith, or soil. The clay is nowhere exposed on the property at a depth greater than three feet and appears to be uniform over its entire exposed extent.

Sample Nev. 13 is a composite from three sample lines along the north wall of the middle trench. The average of the three sample widths is 1.6 feet.

Three samples previously submitted to the Nevada Bureau of Mines by the owners were identified as kaolinite type clay by X-ray analysis.

Very truly yours,

Robert C. Horton
Mining Engineer

RCH:hm

February 15, 1962

Lambertucci Bros.
Box 18
Tonopah, Nevada

Gentlemen:

The U. S. Bureau of Mines has completed the testing of the clay sample which I cut on the Garibaldi No. 3 claim (Sec. 32, T. 3 N., R. 42 E.) last October 16. The results of these tests will be summarized below.

The clay has a pyrometric cone equivalent of 33 and fires white. This would indicate that it has the potential to be a super-duty refractory clay. Differential thermal analysis by the U. S. Bureau of Mines and our X-ray work shows that the material is a kaolinite-type clay. Its reflectance expressed as a G. E. Equivalent is 80.2.

The U. S. Bureau of Mines' evaluation is quoted directly as follows:

> Evaluation:
>
> This clay has a high cone of fusion (cone 33), and fires white. It could be used as a super-duty refractory material. If its use for this purpose is considered it should undergo firing tests to determine its firing characteristics. Whether further tests are warranted depends upon the size of the deposit and the dilution that might occur while mining. The narrowness (1.6 feet) would indicate that further tests are probably not warranted.
>
> Low reflectance, (G. E. equivalent of 80.2) eliminates this clay from use as a filler material. The low reflectance is largely due to the inclusion of reddish brown iron oxide minerals.

On my next trip to Nye and Clark Counties in mid-March I will stop in to see you and discuss at length with you what I know about clay and possibly suggest what should be done next on the property.

Sincerely yours,

RHO

R. H. Olson
Economic Geologist

RHO:hm

cc: Lambertucci Bros.
Robert C. Horton ✓

NEVADA BUREAU OF MINES
UNIVERSITY OF NEVADA
RENO, NEVADA

OFFICE OF THE DIRECTOR

May 8, 1962

Mr. G. B. Shea
U. S. Bureau of Mines
555 Battery Street
San Francisco 11, California

Dear Mr. Shea:

You will remember the talk we had with Mr. George Gates last February in which it was agreed that Mr. Gates could test not more than two clay samples per month for us under our cooperative program with your agency. The first group of samples is being sent to you via parcel post and this package will contain samples Nevada 13A, Nevada 14, and Nevada 15.

Nevada 13A was collected in the NW/4 Sec. 32, T. 3 N., R. 42 E., Esmeralda County, Nevada. The site is about four miles west of Tonopah and readily accessible by conventional vehicle. From a narrow bulldozer trench I sampled a 2.5 foot thickness of pure greenish-white, waxey, bentonitic clay. The bottom of this clay body is not exposed in the trench and the clay is overlain by approximately three feet of unargillised volcanic ash beds which are somewhat silicified. Clay which appears to be the same as Nevada 13A is exposed in two trenches approximately 300 feet southerly across a major gully. At this latter locality the clay is probably not more than three feet thick. Nevada 13A was collected about one-half mile westerly from Nevada 13, which has been determined by your Seattle laboratories to be a superduty refractory clay (P.C.E. 33).

Nevada 14 is a duplicate sample of one which is being sent to Seattle for testing under the cooperative program. The probable location is Sec. 20, T. 14 N., R. 35 E., Mineral County, Nevada. (See my letter of May 7 to W. T. Benson for details).

Nevada 15 is also a duplicate of a sample which is being sent to the Seattle laboratories for testing. Its probable location is NE/4, Sec. 1, T. 8 N., R. 34 E., Mineral County, Nevada about 10 miles north of Luning. (See my letter of May 7 to W. T. Benson for details).

Would you please test these three samples for possible exploitation as commercial drilling clays? Sample Nevada 15 may not be a bentonite clay, but I am sending it along anyway. Thank you for your cooperation.

Very truly yours,

Richard E. Olson
Economic Geologist

REO:hm

cc: W. T. Benson
W. F. Dietrich
G. L. Gates
R. C. Horton