Porter Bros. Corporation
411 Paulsen Building
Spokane 1, Washington

BEAR VALLEY, IDAHO PROPERTY
Work Performed June, 1951 to February, 1952
List of Schedules

SCHEDULE #1

Data on all holes drilled by Porter Bros. Corporation during 1951 season and data on work performed by The Galigher Company in preparing certain drill hole samples for assay.

SCHEDULE #2

U_3O_8 determinations as reported by SMIB of Bureau of Mines at Mt. Weather, Va., the Salt Lake Station of Bureau of Mines, Vitro Chemical Company, Salt Lake City and The Atomic Energy Commission, New York, N. Y.

SCHEDULE #3

Columbium-tantalum oxide determinations as reported by Dean F. Frasche of Union Carbide and Carbon Co., Molybdenum Corporation of America and the Salt Lake Station of Bureau of Mines.

SCHEDULE #4

Rare Earth Oxides determinations as requested by Dean F. Frasche of Union Carbide and Carbon Co., Salt Lake Station of Bureau of Mines and SMIB of Bureau of Mines at Mt. Weather, Va.

SCHEDULE #5

TiO_2 determinations as reported by Dean F. Frasche of Union Carbide & Carbon Co., Molybdenum Corporation and the Salt Lake Station of Bureau of Mines.

SCHEDULE #6

ZrO_2 and zircon determinations as reported by Dean F. Frasche of Union Carbide & Carbon Co. and SMIB of Bureau of Mines, Mt. Weather, Va.

SCHEDULE #7

Other non-magnetic and magnetic minerals as reported by SMIB of Bureau of Mines, Mt. Weather, Va. and The Galigher Company.

APR 2 - 1952

SCHEDULE #2

U_3O_8 ASSAYS ON -20 MESH CONCENTRATES

PORTER BROS. CORPORATION
411 PAULSEN BUILDING
SPOKANE, WASHINGTON

HOLE NO.	LOT NO.	SMIB MT. WEATHER BUREAU OF MINES % U_3O_8	SMIB MT. WEATHER BUREAU OF MINES LBS. U_3O_8 PER CU. YD.	SALT LAKE CITY BUREAU OF MINES % U_3O_8	SALT LAKE CITY BUREAU OF MINES LBS. U_3O_8 PER YD.	VITRO CHEMICAL CO. % U_3O_8	VITRO CHEMICAL CO. LBS. U_3O_8 PER YD.	A. E. C. NEW YORK, N. Y. % U_3O_8	A. E. C. NEW YORK, N. Y. LBS. U_3O_8 PER YD.
88-D	855-A	0.012	0.0036	(b) 0.019	0.0058			(d) 0.008	0.0024
103-D	855-B	0.045	0.0181					(d) 0.024	0.0097
103-B	855-C	0.043	0.0153	(b) 0.060	0.0213				
57-D	863-A	0.011	0.0029			(c) 0.058	0.0154	(d) 0.018	0.0048
57-I	863-B	0.022	0.0062			(c) 0.077	0.0218	(d) 0.029	0.0082
57-K	863-C	0.026	0.0070			(c) 0.024	0.0065	(d) 0.017	0.0046
44-Q	867-A	0.019	0.0046						
44-C	867-B								
44-J-1	867-C-1								
44-J	867-D	(a) 0.029	0.0042						
44-2U	867-E	(a) 0.020	0.0040					(d) 0.012	0.0024
44-2N	867-F	(a) 0.017	0.0029						
44-2N	867-G								
44-2G	867-H								
44-3Y	867-I							(d) 0.010	0.0026
36-F	867-J	0.024	0.0032						
44-3-O	867-K	0.024	0.0045						

(a) Bureau of Mine SMIB Letter October 26, 1951.
(b) The Galigher Company Letter August 10, 1951. (Determinations by Salt Lake Bureau of Mines)
(c) The Galigher Company Letter October 29, 1951 and Vitro Chemical Company October 2, 1951.
(d) United States Atomic Energy Commission, New York, N. Y., January 14, 1952.

UNITED STATES
DEPARTMENT OF THE INTERIOR

Bureau of Mines
Mt. Weather, Bluemont, Va.

October 26, 1951

Mr. J. B. Morrow, Metallurgist
The Galigher Company
545 West 8th South Street
Salt Lake City 4, Utah

Dear Mr. Morrow:

Listed below is the pertinent data derived from our examination of the samples designated. No attempt was made to determine all the minerals present.

Lot No.	Radioassay Percent ThO_2 Equiv.	Chemical Percent U_3O_8	Percent Magnetite	Percent Ilmenite	Percent Garnet	Percent Quartz	Percent Monazite & Xenotime
867B	0.132		12	28	6	37	0.5
867C	0.140		16	23	4	24	0.7
867D	0.203	0.029	10	18	14	26	1.0
867E	0.161	0.020	14	35	9	19	0.7
867F	0.150	0.017	23	34	6	16	0.8
867G	0.150		11	44	10	16	0.8

All samples contained radioactive opaque minerals in amounts less than 0.2%.

Yours very truly,

s/Robert F. Griffith
for
M. H. Kline, Chief
Special Minerals Branch

THE GALIGHER COMPANY
545 West Eighth south St.
Telephone 9-8731
Salt Lake City 4, Utah

August 10, 1951

Mr. R. P. Porter
Porter Bros. Corporation
Paulsen Building
Spokane, Washington

Subject: Results of Tabling Bear Valley Gravel Samples, our Lot 855 A and C.

Dear Mr. Porter:

We are submitting herewith the information available on the tabling tests made on two samples of Bear Valley Gravel.

Our Lot No.	Your Designation	Weight of Fractions + 1/2"	-1/2" + 20 mesh	-20 mesh
855A	88D 0'-26'	22.0*	189.0	200.5
855C	103B 0'-18'	17.5*	87.0	106.5

* Weight of + 1/2" shown on log sheet

The procedure in tabling these samples is outlined as follows:

1. Screen on 20 mesh
2. Table -20 mesh cutting low-grade concentrate for high recovery
3. Screen table concentrate on 35 and 65 mesh after drying
4. Retable the three fractions separately cutting high-grade concentrate. Minus 20 + 35 fraction tabled and retabled to make grade of concentrate

Results of these tests tabulated as follows:

Lot 855A

Cl Table Conc	Wt. Gms.	Assay % TiO_2	REO	$(CbTa)_2O_5$	U_3O_8
-20 + 35	114	7.8	0.04	0.05	0.01
-35 + 65	363	8.9	0.04	0.05	0.02
-65	643	9.7	0.04	0.05	0.02
Total Conc.	1120	9.25	0.04	0.05	0.019

Lot 855C

(see next page)

Lot 855C

Cl Table Conc	Wt. Gms.	TiO_2	REO	Assay % $(CbTa)_2O_5$	U_3O_8
-20 + 35	162	15.8	0.04	0.05	0.06
-35 + 65	439	15.5	0.04	0.05	0.06
-65	665	9.6	0.7	0.05	0.06
Total Conc.	1266	13.2	0.386	0.05	0.06

These assays were made by the Bureau of Mines Station in Salt Lake, and they report that the REO (Raw Earth Oxide) and $(CbTa)_2O_5$ assays are inaccurate due to the low content and that the values shown with exception of the REO assay of the -65 mesh concentrate Lot 855C are maximum values and that in all probability the actual values are less than shown above.

As shown by these calculations the two samples above contain low values when compared to estimates made by other parties. Also it is apparent that these results do not check previous results as regards the ratio between $(CbTa)_2O_5$ and U_3O_8. The ratio of $(CbTa)_2O_5$ to U_3O_8 shown in the Bureau of Mines Report of February 19, 1951 is 5 to 1. The ratio shown by these assays is close to 2 to 1, which indicates that the uranium mineral is not samarskite in which the ratio is 5 to 1, or that these assays are in error.

We appreciate the opportunity of cooperating with you on this project.

Yours very truly,

THE GALIGHER COMPANY

J. B. Morrow
Metallurgist

JBM:clt

THE GALIGHER COMPANY
545 West Eighth South St.
Telephone 9-8731
Salt Lake City 4, Utah

October 29, 1951

Mr. R. P. Porter
c/o Statler Hotel
Washington, D. C.

Subject: U_3O_8 Analysis by Vitro Chemical Company

Dear Mr. Porter:

We summarize below the weights and assays of products requested:

Hole No.	Lot No.	Screen Fraction Table Conc.	Wt.	% Wt.	% U_3O_8
57-D	863A	Minus 20 plus 35	377	16.2	0.067
		Minus 35 plus 65	1135	48.9	0.060
		Minus 65	810	34.9	0.052
		Combined Conc	2322	100.0	0.058
57-K	863B	Minus 20 plus 35	538	14.7	0.054
		Minus 35 plus 65	1507	41.1	0.071
		Minus 65	1618	44.2	0.090
		Combined Conc.	3663	100.0	0.077
57-I	863B	Minus 20 plus 35	368	13.8	0.01
		Minus 35 plus 65	1283	47.9	0.04
		Minus 65	1027	38.3	0.01
		Combined Conc.	2678	100.0	0.024

This information is forwarded in confirmation of the telephone conversation with Mr. Dave Skidmore on October 26, 1951.

Best wishes for a successful and pleasant trip.

Yours very truly,

THE GALIGHER COMPANY

J. B. Morrow
Metallurgist

JBM:clt

VITRO CHEMICAL COMPANY
600 W. 33rd So. St.
Salt Lake City 15, Utah

Tel: 8-1942

P. O. Box 67
South Salt Lake Station

October 2, 1951

The Galigher Company
545 W. 8th South St.
Salt Lake City 4, Utah

Attention: Mr. Harold Wright

Dear Harold:

Our laboratory reports the following results upon the samples you submitted to us from Porter Brothers.

Our Sample No.	Your No.	Date	% U_3O_8
1488 (863A-20 plus 35)	377	8-21	0.067
1489 (863B minus 20 plus 35)	538	8-22	0.054
1490 (863A minus 65)	810	8-21	0.052
1491 (863A-35 plus 65)	1135	8-21	0.060
1492 (863B-35 plus 65)	1507	8-22	0.071
1493 (863B minus 65)	1618	8-22	0.090

We hope these results are of some help to you. The above-numbered pulps are being returned in a separate container. If we can be of further assistance please call on us.

Yours very truly,

VITRO CHEMICAL COMPANY

M. G. McGrath

REW:IRs

UNITES STATES
ATOMIC ENERGY COMMISSION
Division of Raw Materials

Address Reply to:

U. S. Atomic Energy Commission
Division of Raw Materials
P.O. Box 30, Ansonia Station
New York 23, New York

January 14, 1952

and refer to:
RMT:HHA:MM:rk

Mr. R. P. Porter
President
Porter Brothers Corporation
411 Paulsen Building
Spokane 1, Washington

Subject: SAMPLES FOR ANALYSIS FROM IDAHO - OUR REFERENCE NUMBER 4471.

Dear Mr. Porter:

We refer to a letter dated November 20, 1951, from the Galigher Company requesting that we send you our reports on the seven samples, reported as table concentrates, of sand from Bear Valley, Idaho, recently submitted for analysis. The radiometric and chemical analyses of these samples are available now as given below:

Your Lot Number	Our Reference Number	Percent U_3O_8 Equivalent	Chemical
855A	4471A	0.03	0.008
855B	4471B	0.08	0.024
863A	4471C	0.05	0.018
863B	4471D	0.08	0.029
863C	4471E	0.05	0.017
867E	4471F	0.05	0.012
867I	4471G	0.05	0.010

The discrepancy between the chemical and radiometric assays suggests that a large part of the radioactivity in these samples originates in thorium. Mineralogical examination tends to confirm this suggestion.

The following samples were examined for their mineral contents:

Sample number 4471 D, your number 863 B, approximate weight one-eighth pound, assaying 0.08% U_3O_8 equivalent and 0.029% U_3O_8 chemically, consists largely of ilmenite, with major magnetite, feldspar and quartz and minor garnet, amphibole and pyroxene, epidote, sphene, micas, rutile, apatite, monazite, allanite,

euxenite, fergusonite, xenotime, fluorescent zircon, and traces of iron and copper sulfides and hematite. The radioactivity results largely from monazite, euxenite, fergusonite and allanite and minor radioactivity may be attributed to xenotime and fluorescent zircon. The monazite content of this sample is estimated at about one percent by weight. The euxenite and fergusonite are uranium-bearing and minor amounts of uranium may be contained also in allanite and monazite.

Sample number 4471 E, your number 863 C, approximate weight one-eighth pound, assaying 0.05% U_3O_8 equivalent and 0.017% U_3O_8 chemically, consists largely of ilmenite and magnetite, with major quartz and feldspar, and minor amphibole, garnet, epidote, monazite, euxenite, allanite, and sphene, with traces of xenotime, hematite, micas, and fluorescent zircon. The radioactivity results largely from monazite, euxenite, and allanite, but a small amount may also be attributed to xenotime and fluorescent zircon. The monazite content of this sample is estimated to be less than one percent by weight. The euxenite is uranium-bearing and minor amounts of uranium may be present also in allanite and monazite.

The percent uranium minerals present in these samples was not determined because of the difficulty in obtaining a concentration. Euxenite, fergusonite, and allanite were identified by X-ray diffraction pattern.

Fergusonite and euxenite are multiple oxides containing columbium and tantalum and account, at least in part, for any columbium-tantalum content of these samples.

Because of the increasing demand on laboratory facilities in New York, we are sending the remaining five samples, which we have not examined, to the Bureau of Mines at Mt. Weather, Bluemont, Virginia. This laboratory has had considerable experience in studying materials of this type and has agreed to study these samples for us. We trust that this will meet with your approval; the Mt. Weather laboratory will report to you directly concerning this work.

We appreciate your interest in these materials. If there is additional information which we can supply, please do not hesitate to write to us.

Very truly yours,

Robert D. Nininger
Deputy Asst. Director

CC: The Galigher Company
M. H. Kline, Bureau of Mines, Bluemont

SCHEDULE #3

COLUMBIUM & TANTALUM OXIDE

PORTER BROS. CORPORATION
411 PAULSEN BUILDING
SPOKANE 1, WASHINGTON

		(a) UNION CARBIDE & CARBON CO.		(b) MOLYBDENUM CORP. OF AMERICA		(c) SALT LAKE STATION U. S. BUREAU OF MINES	
Hole No.	Lot No.	% Cb_2O_5 & Ta_2O_5	Lbs. of Cb_2O_5 & Ta_2O_5 per yd.	% Cb_2O_5 & Ta_2O_5	Lbs. of Cb_2O_5 & Ta_2O_5 per yd.	% Cb_2O_5& Ta_2O_5	Lbs. of Cb_2O_5& Ta_2O_5 per yd.
103-D	855-B	0.26	0.0880				
103-B	855-C	TRACE		3.85	1.372	LESS 0.05	0.0178
57-D	863-A	0.33	0.0663				
57-K	863-C	0.82	0.1614				
44-2U	867-E	0.20	0.0349				
44-3Y	867-I	TRACE					
88-D	855-A			3.95	1.217	LESS 0.05	0.0154

(a) Dean F. Frasche letter February 28, 1952.

Samples Assayed by Union Carbide and Carbon Company had magnetite removed before being assayed, therefore, pounds of concentrate per yard x fraction of Cb_2O_5 & Ta_2O_5 fraction non-magnetic = pounds of metal oxides per yard.

Hole No.	Lot No.	% Magnetite	% Non Magentic
103-D	855B	15.9	84.1
103-B	855C	2.7	97.3
57-D	863A	24.1	75.9
57-K	863C	26.9	73.1
44-2U	867E	13.2	86.8
44-3Y	867I	13.4	86.6

(b) The Galigher Company letter September 25, 1951 and Molybdenum Corporation of America letter of September 6, 1951

(c) The Galigher Company letter August 10, 1951 (Determinations by Salt Lake Bureau of Mines).

DEAN F. FRASCHE
30 East 42nd St.
New York 17, N. Y.

February 28, 1952

Mr. R. P. Porter
Porter Bros. Corporation
411 Paulsen Building
Spokane 1, Washington

Dear Mr. Porter:

With further reference to your telegram of February 25th regarding the six samples of concentrates from the Bear Valley, Idaho, sands which the Galigher Company shipped to us.

We have today received word from our Laboratories regarding these samples, and quote below the results of their analyses:

Identification	Cb_2O_5 + Ta_2O_5	TiO_2	ZrO_2	U	Rare Earth Oxides
855-C-Hole B	trace	13.91	0.28	nil	0.96
863-A-Hole D	0.33	14.54	0.54	nil	1.18
863-C-Hole K	0.82	14.76	0.52	nil	1.37
867-E-Hole 2U	0.20	14.17	0.65	nil	1.04
867-I-Hole 3Y	trace	14.75	0.73	nil	1.17
855-B-Test 1	0.26	16.10	0.40	nil	0.73

We trust you have not been inconvenienced by the unavoidable delay in forwarding this information to you.

Very truly yours,

D. F. Frasche
per D

DFFrasche/d

cc The Galigher Company

THE GALIGHER COMPANY
545 West Eighth South St.
Telephone 9-8731
Salt Lake City 4, Utah

September 25, 1951

SMIB
Bureau of Mines
Mt. Weather
Bluemont, Virginia

Attention: Mr. M. H. Kline

Subject: Columbium and Tantalum Assays on Bear Valley Concentrates Made by The Molybdenum Corp. of America

Dear Mr. Kline:

Mr. Porter of Porter Brothers Corporation advised that you would be interested in columbium and tantalum assays' results on concentrates of the Bear Valley, Idaho gravels. We list below the various products assayed by The Molybdenum Corporation.

Hole No.	Lot. No.	Concentrate Screen Fraction	% Wt.	% Columbium & Tantalum Oxides	% U_3O_8
88-D	855A	-20/35	10.2	2.70	None
"	"	-35/65	32.4	4.60	"
"	"	-65	57.4	3.80	"
"	"	Comb. Conc.	100.0	3.95	None
103-B	855C	-20/35	12.8	5.50	None
"	"	-35/65	34.7	4.70	"
"	"	-65	52.5	2.90	"
		Comb. Conc.	100.0	3.85	None

We have discussed the idea you suggested relative to having Ledoux and Company of New York assay the six concentrates for columbium and tantalum oxide with Mr. Porter and believe that this would be in order. We believe it advisable to contact Ledoux and Company before submitting samples and will advise you when we hear that samples can be forwarded.

Yours very truly,

THE GALIGHER COMPANY

J. B. Morrow
Metallurgist

JBM:clt
cc: Mr. Porter
Eastern Office

MOLYBDENUM CORPORATION
OF AMERICA
Washington,
Pennyslvania

September 6, 1951

E. A. Lucas
Executive Vice President

Porter Bros. Corporation
411 Paulsen Building
Spokane, Washington

Gentlemen:

We now report as follows on samples received from you and referred to in wires of 8/20 and 8/21:

Sample No.	% Columbium & Tantalum Oxide	% Titanium Oxide	% Uranium Oxide
Test #1 855A-65 Cl. Table Conc.	3.80	8.40	None
Test #1 855-C-65 Cl Table Conc. 665	2.90	8.50	None
Test #1 855A-35/65 Cl. Table Conc.	4.60	8.20	None
Test #1 855A-20 35/Cl. Table Conc #2	2.70	7.10	None
Test #1 855C-20/35 Cl. Table Conc. #2	5.50	13.00	None
Test #1 855C-35 65/ Cl. Table Conc.	4.70	14.00	None

Very truly yours,

E. A. Lucas

EAL:wfb
cc-Mr. Marx Hirsch

THE GALIGHER COMPANY
545 West Eighth South St.
Telephone 908731
Salt Lake City 4, Utah

August 10, 1951

Mr. R. P. Porter
Porter Bros. Corporation
Paulsen Building
Spokane, Washington

Subject: Results of Tabling Bear Valley Gravel Samples, our Lot 855, A and C.

Dear Mr. Porter:

We are submitting herewith the information available on the tabling tests made on two samples of Bear Valley Gravel.

Our Lot No.	Your Designation	+ 1/2"	Weight of Fractions -1/2" + 20 mesh	-20 mesh
855A	88D 0'-26'	22.0*	189.0	200.5
855C	103B 0'-18'	17.5*	87.0	106.5

* Weight of + 1/2" shown on log sheet.

The procedure in tabling these samples is outlined as follows:

1. Screen on 20 mesh
2. Table -20 mesh cutting low-grade concentrate for high recovery.
3. Screen table concentrate on 35 and 65 mesh after drying.
4. Retable the three fractions separately cutting high-grade concentrate. Minus 20 + 35 fraction tabled and retabled to make grade of concentrate

Results of these tests tabulated as follows:

Lot 855 A

Cl Table Conc	Wt. Gms.	Assay % TiO_2	REO	$(CbTa)_2O_5$	U_3O_8
-20 + 35	114	7.8	0.04	0.05	0.01
-35 + 65	363	8.9	0.04	0.05	0.02
-65	643	9.7	0.04	0.05	0.02
Total Conc.	1120	9.25	0.04	0.05	0.019

Lot 855C

(see next page)

Lot 855C

Cl Table Conc	Wt. Gms.	TiO_2	REO	Assay % $(CbTa)_2O_5$	U_3O_8
-20 + 35	162	15.8	0.04	0.05	0.06
-35 + 65	439	15.5	0.04	0.05	0.06
-65	665	9.6	0.7	0.05	0.06
Total Conc.	1266	13.2	0.386	0.05	0.06

These assays were made by the Bureau of Mines Station in Salt Lake, and they report that the REO (Raw Earth Oxide) and $(CbTa)_2O_5$ assays are inaccurate due to the low content and that the values shown with exception of the REO assay of the -65 mesh concentrate Lot 855C are maximum values and that in all probability the actual values are less than shown above.

As shown by these calculations the two samples above contain low values when compared to estimates made by other parties. Also it is apparent that these results do not check previous results as regards the ratio between $(CbTa)_2O_5$ and U_3O_8. The ratio of $(CbTa)_2O_5$ to U_3O_8 shown in the Bureau of Mines Report of February 19, 1951 is 5 to 1. The ratio shown by these assays is close to 2 to 1, which indicates that the uranium mineral is not samarskite in which the ratio is 5 to 1, or that these assays are in error.

We appreciate the opportunity of cooperating with you on this project.

Yours very truly,

THE GALIGHER COMPANY

J. B. Morrow
Metallurgist

JBM:clt

SCHEDULE #4

RARE EARTH OXIDES (REO) ASSAYS

Porter Bros. Corporation
411 Paulsen Building
Spokane 1, Washington

HOLE NO.	LOT NO.	(a) UNION CARBIDE & CARBON CO. % REO	(a) LBS. REO PER YD.	(b) BUREAU OF MINES SALT LAKE CITY % REO	(b) LBS. REO PER YD.	(c) SMIB % MONAZITE & XENOTIME	(d) MT. WEATHER BUREAU OF MINES RADIOASSAY % ThO_2 EQUIV.	(e) *LBS. MONAZITE PER YD.	(f) % MONAZITE PETROGRAPHIC
103-D	855-B	0.73	0.247				0.289	1.92	0.67
103-B	855-C	0.96	0.333	0.386	0.1376		0.277	1.63	
57-D	863-A	1.18	0.237				0.176	0.77	
57-K	863-C	1.37	0.270				0.188	0.84	
44-2U	867-E	1.04	0.182			0.7	0.161	0.53	
44-3Y	867-I	1.17	0.264						
88-D	855-A			0.04	0.1232		0.103	1.02	0.5
57-I	863-B						0.289	1.36	1.2
44-Q	867-A						0.125	0.50	0.5
44-C	867-B					0.5	0.132	0.42	
44-J	867-C-1					0.7	0.140	0.38	
44-J	867-D					1.0	0.203	0.49	
44-2N	867-F					0.8	0.150	0.42	
44-2N	867-G					0.8	0.150	1.01	

(a) Dean F. Frasche Letter February 28, 1952.
(b) The Galigher Company letter August 10, 1951 (Determinations by Salt Lake Bureau of Mines)
(c) Bureau of Mines, SMIB letter October 26, 1951
(d) Bureau of Mines, SMIB letter October 4, 1951
(e) Given to R. P. Porter by M. H. Kline in Washington, D. C.
(*) If all the radioactivity were attributed to monazite.
(f) Bureau of Mines SMIB Letter October 4, 1951.

DEAN F. FRASCHE
30 East 42nd St.
New York 17, N. Y.

February 28, 1952

Mr. R. P. Porter
Porter Bros. Corporation
411 Paulsen Building
Spokane 1, Washington

Dear Mr. Porter:

With further reference to your telegram of February 25th regarding the six samples of concentrates from the Bear Valley, Idaho, sands which the Galigher Company shipped to us.

We have today received word from our Laboratories regarding these samples, and quote below the results of their analyses:

Identification	Cb_2O_5 + Ta_2O_5	TiO_2	ZrO_2	U	Rare Earth Oxides
855-C-Hole B	trace	13.91	0.28	Nil	0.96
863-A-Hole D	0.33	14.54	0.54	Nil	1.18
863-C-Hole K	0.82	14.76	0.52	nil	1.37
867-E-Hole 2U	0.20	14.17	0.65	nil	1.04
867-I-Hole 3Y	trace	14.75	0.73	nil	1.17
855-B-Test 1	0.26	16.10	0.40	nil	0.73

We trust you have not been inconvenienced by the unavoidable delay in forwarding this information to you.

Yours very truly,

D. F. Frasche
per D

DDFrasche/d

cc The Galigher Company

THE GALIGHER COMPZNY
545 West Eighth South St.
Telephone 9-8731
Salt Lake City 4, Utah

August 10, 1951

Mr. R. P. Porter
Porter Bros. Corporation
Paulsen Building
Spokane, Washington

Subject: Results of Tabling Bear Valley Gravel Samples, Our Lot 855, A and C.

Dear Mr. Porter:

We are submitting herewith the information available on the tabling tests made on two samples of Bear Valley Gravel.

Our Lot No.	Your Designation	+1/2"	Weight of Fractions -1/2" +20 mesh	-20 mesh
855A	88D 0'-26'	22.0*	189.0	200.5
855C	103B 0'-18'	17.5*	87.0	106.5

* Weight of + 1/2" shown on log sheet.

The procedure in tabling these samples is outlined as follows:

1. Screen on 20 mesh
2. Table -20 mesh cutting low-grade concentrate for high recovery
3. Screen table concentrate on 35 and 65 mesh after drying
4. Retable the three fractions separately cutting high-grade concentrate. Minus 20+35 fraction tabled and retabled to make grade of concentrate

Results of these tests tabulated as follows:

Lot 855A

Cl Table Conc	Wt. Gms.	Assay % TiO_2	REO	$(CbTa)_2O_5$	U_3O_8
-20+35	114	7.8	0.04	0.05	0.01
-35+65	363	8.9	0.04	0.05	0.02
-65	643	9.7	0.04	0.05	0.02
Total Conc	1120	9.25	0.04	0.05	0.019

Lot 855C

(see next page)

Lot 855C Cl Table Conc	Wt. Gms.	Assay % TiO_2	REO	$(CbTa)_2O_5$	U_3O_8
-20/35	162	15.8	0.04	0.05	0.06
-35/65	439	15.5	0.04	0.05	0.06
-65	665	9.6	0.7	0.05	0.06
Total Conc	1266	13.2	0.386	0.05	0.06

These assays were made by the Bureau of Mines Station in Salt Lake, and they report that the REO (Raw Earth Oxide) and $(CbTa)_2O_5$ assays are inaccurate due to the low content and that the values shown with exception of the REO assay of the -65 mesh concentrate Lot 855C are maximum values and that in all probability the actual values are less than shown above.

As shown by these calculations the two samples above contain low values when compared to estimates made by other parties. Also it is apparent that these results do not check previous results as regards the ratio between $(CbTa)_2O_5$ and U_3O_8. The ratio of $(CbTa)_2O_5$ to U_3O_8 shown in the Bureau of Mines Report of February 19, 1951 is 5 to 1. The ratio shown by these assays is close to 2 to 1, which indicates that the uranium mineral is not samarskite in which the ratio is 5 to 1, or that these assays are in error.

We appreciate the opportunity of cooperating with you on this project.

Yours very truly,

THE GALIGHER COMPANY

J. B. Morrow
Metallurgist

JBM:clt

UNITED STATES
DEPARTMENT OF THE INTERIOR

Bureau of Mines
Mt. Weather, Bluemont, Va.

October 26, 1951

Mr. J. B. Morrow, Metallurgist
The Galigher Company
545 West 8th South Street
Salt Lake City 4, Utah

Dear Mr. Morrow:

Listed below is the pertinent data derived from our examination of the samples designated. No attempt was made to determine all the minerals present.

Lot No	Radioassay Percent ThO_2 Equiv.	Chemical Percent U_3O_8	Percent Magnetite	Percent Ilmenite	Percent Garnet	Percent Quartz	Percent Monazite & Xenotime
867B	0.132		12	28	6	37	0.5
867C	0.140		16	23	4	24	0.7
867D	0.203	0.029	10	18	14	26	1.0
867E	0.161	0.020	14	35	9	19	0.7
867F	0.150	0.017	23	34	6	16	0.8
867G	0.150		11	44	10	16	0.8

All samples contained radioactive opaque minerals in amounts less than 0.2%.

Very truly yours,

s/Robert E. Griffith
for
M.H. Kline, Chief
Special Minerals Branch

UNITED STATES
DEPARTMENT OF THE INTERIOR
Bureau of Mines

Mt. Weather, Bluemont, Va.

October 4, 1951

Air Mail

Mr. J. B. Morrow, Metallurgist
The Galigher Company
545 West Eighth South Street
Salt Lake City 4, Utah

Dear Mr. Morrow:

Enclosed are the results of our analytical work performed on your Black Sands concentrates obtained from the Porter Brothers drill holes, Bear Valley, Idaho. This data includes radioassays of each sample, mineralogical determinations of three samples, and chemical analyses on hand-picked monazite and radioactive opaque minerals.

From this data and the information you have on hand you can readily determine the results in lbs. per cubic yard. If you have any difficulty with this calculation, please advise us and we will be glad to assist.

Your letter of September 25 containing the columbium-tantalum analyses has been received with interest. Thank you for making this information available to us.

Yours very truly,

M. H. Kline, Chief
Special Minerals Branch

Enc.

Analytical Results

Radioassays

Hole No.	Lot No.	Radioassay Percent ThO_2 Equiv.
57-D	863-A	0.176
57-I	863-B	0.289
57-K	863-C	0.188
88-D	855-A	0.103
103-B	855-C	0.277
103-D	855-B	0.289
44-Q	867-A	0.125

Petrographic Determination

Mineral	57-I	88-D	103-D	41-Q
Magnetite	15%	38%	18%	
Ilmenite	46	25	38	
Garnet	10.4	1.8	13	
Fe-Mag	7	5	6	
Epidote	-	5.4	4	
Quartz	14.6	17	17	46%
Zircon	1.5	0.2	0.5	
Monazite	1.2	0.5	0.67	0.5
Sphene	1.7	3.3	3.2	
Xenotime	0.1	0.1	0.1	
Radioactive opaques 1/	0.25	0.1	0.3	0.1

Chemical Analyses

	Percent ThO_2	Percent U_3O_8
Monazite	4.72	0.30
Radioactive opaque	5.70	15.4

1/ Euxenite and/or Samarskite

SCHEDULE #5

TiO_2 ASSAYS

PORTER BROS. CORPORATION
411 PAULSEN BUILDING
SPOKANE, WASHINGTON

		(a) UNION CARBIDE AND CARBON COMPANY		(b) MOLYBDENUM CORPORATION OF AMERICA		(c) SALT LAKE CITY U. S. BUREAU OF MINES	
HOLE NO.	LOT NO.	% TiO_2	LBS. TiO_2 PER YD.	% TiO_2	LBS. TiO_2 PER YD.	% TiO_2	LBS. TiO_2 PER YD.
103-D	855-B	16.10	5.45				
103-B	855-C	13.91	4.82	10.98	3.92	13.2	4.70
57-D	863-A	14.54	2.92				
57-K	863-C	14.76	2.90				
44-2U	867-E	14.17	2.47				
44-3Y	867-I	14.75	3.32				
88-D	855-A			8.20	2.52	9.25	2.84

(a) Dean F. Frasche Letter of February 28, 1952

(b) Molybdenum Corporation of America Letter September 6, 1951 (Summary for Averages).

(c) The Galigher Company Letter August 10, 1951.

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DEAN F. FRASCHE
30 East 42nd St.
New York 17, N. Y.

February 28, 1952

Mr. R. P. Porter
Porter Bros. Corporation
411 Paulsen Building
Spokane, Washington

Dear Mr. Porter:

With further reference to your telegram of February 25th regarding the six samples of concentrates from the Bear Valley, Idaho, sands which the Galigher Company shipped to us.

We have today received word from our Laboratories regarding these samples, and quote below the results of their analyses:

Identification	Cb_2O_5 / Ta_2O_5	TiO_2	ZrO_2	U	Rare Earth Oxides
855-C-Hole B	trace	13.91	0.28	nil	0.96
863-A-Hole D	0.33	14.54	0.54	nil	1.18
863-C-Hole K	0.82	14.76	0.52	nil	1.37
867-E-Hole 2U	0.20	14.17	0.65	nil	1.04
867-I-Hole 3Y	trace	14.75	0.73	nil	1.17
855-B-Test 1	0.26	16.10	0.40	nil	0.73

We trust you have not been inconvenienced by the unavoidable delay in forwarding this information to you.

Very truly yours,

D. F. Frasche
per D

DFFrasche/d

cc The Galigher Company

MOLYBDENUM CORPORATION OF AMERICA
Washington
Pennsylvania

September 6, 1951

E. A. Lucas
Executive Vice President

Porter Bros. Corporation
411 Paulsen Building
Spokane, Washington

Gentlemen:

We now report as follows on samples received from you and referred to in wires of 8/20 and 8/21:

Sample No.	% Columbium & Tantalum Oxide	% Titanium-Oxide	% Uranium Oxide
Test #1 855A-65 Cl. Table Conc.	3.80	8.40	None
Test #1 855C-65 Cl. Table Conc. 665	2.90	8.50	None
Test #1 855A-35/65 Cl. Table Conc.	4.60	8.20	None
Test #1 855A-20 35/Cl. Table Conc. #2	2.70	7.10	None
Test #1 855C-20/35 Cl. Table Conc. #2	5.50	13.00	None
Test #1 855C-35 65/Cl. Table Conc.	4.70	14.00	None

Very truly yours,

E. A. Lucas

EAL:wfb
cc: Mr. Marx Hirsch

TITANIUM OXIDE
ASSAYS BY MOLYBDENUM CORPORATION OF AMERICA
As per letter September 6, 1951

Hole No.	Lot No.	Concentrate Screen Fraction	% Weight	% Titanium Oxide
88D	855A	-20 + 35	10.2	7.10
88D	855A	-35 + 65	32.4	8.20
88D	855A	-65	57.4	8.40
88D	855A	Comb. Conc.	100.0	8.20
103B	855C	-20 + 35	12.8	13.00
103B	855C	-35 + 65	34.7	14.00
103B	855C	-65	52.5	8.50
103B	855C	Comb. Conc.	100.0	10.98

THE GALIGHER COMPANY
545 West Eighth South St.
Telephone 9-8731
Salt Lake City 4, Utah

August 10, 1951

Mr. R. P. Porter
Porter Bros. Corporation
Paulsen Building
Spokane, Washington

Subject: Results of Tabling Bear Valley Gravel Samples, Our Lot 855, A and C.

Dear Mr. Porter:

We are submitting herewith the information available on the tabling tests made on two samples of Bear Valley Gravel.

Our Lot No.	Your Designation	Weight of Fractions		
		+1/2"	-1/2" +20 mesh	-20 mesh
855A	88D 0'-26'	22.0*	189.0	200.5
855C	103B 0'-18'	17.5*	87.0	106.5

* Weight of + 1/2" shown on log sheet

The procedure in tabling these samples is outlined as follows:

1. Screen on 20 mesh
2. Table -20 mesh cutting low-grade concentrate for high recovery
3. Screen table concentrate on 35 and 65 mesh after drying
4. Retable the three fractions separately cutting high-grade concentrate. Minus 20+35 fraction tabled and retabled to make grade of concentrate

Results of these tests tabulated as follows:

Lot 855A

Cl Table Conc	Wt. Gms.	Assay %			
		TiO_2	REO	$(CbTa)_2O_5$	U_3O_8
-20+35	114	7.8	0.04	0.05	0.01
-35+65	363	8.9	0.04	0.05	0.02
-65	643	9.7	0.04	0.05	0.02
Total Conc.	1120	9.25	0.04	0.05	0.019

Lot 855C

(see next page)

Lot 855C

Cl Table Conc	Wt. Gms.	TiO_2	Assay % REO	$(CbTa)_2O_5$	U_3O_8
-20+35	162	15.8	0.04	0.05	0.06
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-65	665	9.6	0.7	0.05	0.06
Total Conc.	1266	13.2	0.386	0.05	0.06

These assays were made by the Bureau of Mines Station in Salt Lake, and they report that the REO (Raw Earth Oxide) and $(CbTa)_2O_5$ assays are inaccurate due to the low content and that the values shown with exception of the REO assay of the -65 mesh concentrate Lot 855C are maximum values and that in all probability the actual values are less than shown above.

As shown by these calculations the two samples above contain low values when compared to estimates made by other parties. Also it is apparent that these results do not check previous results as regards the ratio between $(CbTa)_2O_5$ and U_3O_8. The ratio of $(CbTa)_2O_5$ to U_3O_8 shown in the Bureau of Mines Report of February 19, 1951 is 5 to 1. The ratio shown by these assays is close to 2 to 1, which indicates that the uranium mineral is not samarskite in which the ratio is 5 to 1, or that these assays are in error.

We appreciate the opportunity of cooperating with you on this project.

Yours very truly,

THE GALIGHER COMPANY

J. B. Morrow
Metallurgist

JBM:clt

SCHEDULE #6

ZIRCON ASSAYS

PORTER BROS. CORPORATION
411 PAULSEN BUILDING
SPOKANE 1, WASHINGTON

		(a) UNION CARBIDE AND CARBON CO.		(b) SMIB MT WEATHER BUREAU OF MINES
HOLE NO.	LOT NO.	% ZrO_2	LBS. ZrO_2 PER YD.	Zircon %
103-D	855-B	0.40	0.054	0.5
103-B	855 C	0.28	0.097	
57-D	863 A	0.54	0.108	
57-K	863 C	0.52	0.102	
44-2U	867 E	0.65	0.113	
44-2Y	867 I	0.73	0.164	
57-I	863 B			1.5
88-D	855 A			0.2

(a) Dean F. Frasche letter February 28, 1952

(b) Bureau of Mines SMIB Letter October 4, 1951.

6

DEAN F. FRASCHE
30 East 42nd St.
New York 17, N. Y.

February 28, 1952

Mr. R. P. Porter
Porter Bros. Corporation
411 Paulsen Building
Spokane 1, Washington

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Identification	Cb_2O_5 + Ta_2O_5	TiO_2	ZrO_2	U	Rare Earth Oxides
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863-A-Hole D	0.33	14.54	0.54	nil	1.18
863-C-Hole k	0.82	14.76	0.52	nil	1.37
867-E-Hole 2U	0.20	14.17	0.65	nil	1.04
867-I-Hole 3Y	trace	14.75	0.73	nil	1.17
855-B-Test 1	0.26	16.10	0.40	nil	0.73

We trust you have not been inconvenienced by the unavoidable delay in forwarding this information to you.

Very truly yours,

D. F. Frasche
per D

DFFrasche/d

cc The Galigher Company

UNITED STATES
DEPARTMENT OF THE INTERIOR
Bureau of Mines

Mt. Weather, Bluemont, Va.

October 4, 1951

Air Mail

Mr. J. B. Morrow, Metallurgist
The Galigher Company
545 West Eighth South Street
Salt Lake City 4, Utah

Dear Mr. Morrow:

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Your letter of September 25 containing the columbium-tantalum analyses has been received with interest. Thank you for making this information available to us.

Very truly yours,

M. H. Kline, Chief
Special Minerals Branch

Enc.

Analytical Results

Radioassays

Hole No.	Lot No.	Radioassay Percent ThO_2 Equiv.
57-D	863-A	0.176
57-I	863-B	0.289
57-K	863-C	0.188
88-D	855-A	0.103
103-B	855-C	0.277
103-D	855-B	0.289
44-Q	867-A	0.125

Petrographic Determination

Mineral	57-I	88-D	103-D	41-Q
Magnetite	15%	38%	18%	
Ilmenite	46	25	38	
Garnet	10.4	1.8	13	
Fe-Mag	7	5	6	
Epidote	-	5.4	4	
Quartz	14.6	17	17	46%
Zircon	1.5	0.2	0.5	
Monazite	1.2	0.5	0.67	0.5
Sphene	1.7	3.3	3.2	
Xenotime	0.1	0.1	0.1	
Radioactive opaques 1/	0.25	0.1	0.3	0.1

Chemical Analyses

	Percent ThO_2	Percent U_3O_8
Monazite	4.72	0.30
Radioactive opaques	5.70	15.4

1/ Euxenite and/or Samarskite

SCHEDULE #7

OTHER NON MAGNETIC & MAGNETIC MINERALS

PORTER BROS. CORPORATION
411 PAULSEN BUILDING
SPOKANE, WASHINGTON

		SMIB BUREAU OF MINES, MOUNT WEATHER			(c)
HOLE NO.	LOT NO.	MAGNETITE	ILMENITE	GARNET	MAGNETITE
57-I	863-B	*(a) 15.0%	(a) 46.0%	(a) 10.4%	
88-D	855-A	*(a) 38.0	(a) 25.0	(a) 1.8	
103-D	855-B	*(a) 18.0	(a) 38.0	(a) 13.0	15.9
103-B	855-C				2.7
57-D	863-A				24.1
57-K	863-C				26.9
44-2U	867-E	(b) 14.0	35.0	9.0	13.2
44-3Y	867-I				13.4
44-C	867-B	(b) 12.0	28.0	6.0	
44-J	867-C-1	(b) 16.0	23.0	4.0	
44-J	867-D	(b) 10.0	18.0	14.0	
44-2N	867-F	(b) 23.0	34.0	6.0	
44-2N	867-G	(b) 11.0	44.0	10.0	

(a) Bureau of Mines SMIB Letter October 4, 1951
(*) Determination by the Petrographic Method
(b) Bureau of Mines SMIB letter October 26, 1951
(c) Magnetite removed by hand magnet by Galigher Company

UNITED STATES
DEPARTMENT OF THE INTERIOR
Bureau of Mines

Mt. Weather, Bluemont, Va.

October 4, 1951

Air Mail

Mr. J. B. Morrow, Metallurgist
The Galigher Company
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Garnet	10.4	1.8	13	
Fe-Mag	7	5	6	
Epidote	-	5.4	4	
Quartz	14.6	17	17	46%
Zircon	1.5	0.2	0.5	
Monazite	1.2	0.5	0.67	0.5
Sphene	1.7	3.3	3.2	
Xenotime	0.1	0.1	0.1	
Radioactive opaques 1/	0.25	0.1	0.3	0.1

Chemical Analyses

	Percent ThO_2	Percent U_3O_8
Monazite	4.72	0.30
Radioactive opaques	5.70	15.4

1/ Euxenite and/or Samarskite

UNITED STATES
DEPARTMENT OF THE INTERIOR

Bureau of Mines
Mt. Weather, Bluemont, Va.

October 26, 1951

Mr. J. B. Morrow, Metallurgist
The Galigher Company
545 West 8th South Street
Salt Lake City 4, Utah

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All samples contained radioactive opaque minerals in amounts less than 0.2%.

Very truly yours,

s/Robert F. Griffith
for
M. H. Kline, Chief
Special Minerals Branch