Sec 4 T32S R15W
Owned by M. C. Landreth.
of 102 N Parrott Roseburg
and Mrs - - - Estes of
Coquille Ore.
Elev. 50 ft.
~~Porter~~ It is being
operated in a small
way since last Decem

MADDEN MINE REPORT

By

H. F. Byram
375 Edgecliff Road
Portland, Ore.
Sept. 20, 1931.

General Description, -

The Madden Mine is situated twenty-two miles south of Bandon, Oregon, in Township 32 South, Range 15 West. It consists of forty acres patented homestead land and seventy acres held by mineral location. It is four miles east of Cape Blanco and the Pacific Ocean and crossed by the Roosevelt Highway. The climate is excellent and suitable for all year mining operations. An electric power line follows the highway and is available for power.

Geology, -

A gold and platinum bearing deposit of sand blankets the property representing an ancient sea beach underlain by bed rock of schist and slate. The depth of sand from the surface to bed rock varies from ten to forty feet. The concentration of precious metals occured as the result of wave tide and current action which sorted out the heavier, mineral bearing particles brought into the ocean from the erosion of interior formations by the streams of that time. Along the Oregon coast from the California line north to Marshfield these concentrations of material exist as potential workable deposits and it is safe to say the production of precious metals from them totals since commencement of operations, many millions of dollars. At the Madden Mine there seems to have been ideal conditions existing at the time this inland point was the shore line. Reef's of solid rock formed a low barrier just off shore over which tides and waves carried sands rich in gold and platinum; the backwash carried the lighter material back to the sea. These reef's are seen to-day as low points of bedrock behind which lie deeper sand deposits. It is also likely that an ancient stream flowed into the ocean at or near this point for in working the deposit coarse gravel is encountered that does not seem to be of marine origin. The percentage of this, however is light.

Former Operations,-

The property has been worked sporadically a great many years. Hydraulic methods were used, breaking down a bank of sand with a monitor and sluicing the material over riffles. In this way a pit was worked out about 1800 feet in length and with an average width of 150 feet. Water was obtained from Crystal Creek thru a ditch four and one half miles long and a pipe line to the giant of 2000 feet under a head of 160 feet. The pit was bottomed not on bed rock but from ten to fourteen feet above it following a floor of reddish cemented sand. Over

the entire worked area this material is apparent having a thickness of at least ten feet and bearing values comparable with the portion worked out. That this was not worked is due to the fact that there was not sufficient grade to remove tailings and the cementation of material did not make sluicing easy as there was not disintegration of material in the sluice boxes. It is also likely that the values were not entirely in a free state, prohibiting recovery with the methods used. At all events, there must have been something over 300,000 tons of sand removed from this pit judging from the dimensions and the depth. The record of gold and platinum production is not known but from local report it must have been in excess of $300,000. It is stated by men who worked on the property that areas of very high concentration were sometimes encountered and that operations were on the whole profitable. Failure eventually resulted and is attributed to various causes. But there is a certainty that there always was difficulty in separating the gold and platinum from the black sand which is very abundant since the gold on this property does not seem to amalgamate readily with quicksilver and occurs in particles so fine that only a portion were retained on the riffles. It has been estimated that recoveries did not exceed thirty per cent of the total values but notwithstanding this, it is interesting to note that the total estimated yield including overburden and waste was seemingly about $1.00 per ton. Examination of the tailing dump disclosed values there so high that future working over should be very profitable with many thousands of tons available.

Present Operation,-

The Curry County Development Company after leasing the property a little over a year ago, performed many tests to determine the best method of treatment. Mr. H.F. Way in their employ, discovered by mortaring the material to minus eighty mesh that free recoverable values were greatly increased. He proved that the gold occurred not combined with the black sand and also the quartz sand but simply attached thereto as though still unseparated from the original matrix in which it existed before erosion and that find grinding would release it. In a series of tests he demonstrated that the gold now free is less than one fourth the amount attached. I cannot vouch for the accuracy of his results as his facilities were not of the best but there is no doubt but that fine grinding of concentrates if not of the run of bank sand is well worth while. Way extracted first the free values on a pan of Luckenback compound. The tailings were sieved and found to be approximately 63% plus forty mesh and 37% minus forty. Both classifications were mortared separately to minus eighty mesh and the free gold again removed over a pan covered with compound. The total gold according to his figures was $20.43 whereas the free gold first extracted was only $1.78 per ton of sample. Accordingly a 3 by 5 Handy mill was installed having a capacity of about ten tons in twenty-four hours. It was intended to grind in open circuit to a product estimated to be 60% minus eighty and the rest minus forty, which in turn was to be fed to a vanner table with rubber belt coated with Luckenback compound. Unfortunately unexpected difficulties arose. The source of supply of the compound was in the east which caused delay; further a new supply having been obtained it was found unlike previous shipments and did not perform as well as previous tests had indicated were to be expected. Further delays occurred in correspondence over this until the water supply became so low that even experimental runs were impossible and it was decided to await fall rains before attempting anything more. It is now possible to control the supply of Luckenback compound that

a repetition of this trouble is unlikely to occur again. The water supply can also be provided for adequately in the future as only a small supply is necessary. In regard to this compound I wish to refer the reader to the report made by Norman Stines in August 1930 covering a test of the Luckenback process on a commercial scale at Weddenburn, Oregon and also to my own report of the same test as space prohibits me from a detailed description of it here.

Description of Workings,-

The Curry County Development Co. and C. C. Hayes have worked back the face of the pit at the south end about thirty feet and in width seventy-five. The monitor is set up now at that point with sluice boxes on fair grade extending downward to the mill about 800 feet away. Below the mill, sluice boxes lead the tailings under the Roosevelt Highway to the tailing dump where adequate storage space remains for future operations. The Hendy Mill is furnished power from a 25 H.P. Diesel Engine which also operates the vanner table and a pump. Water is obtained by pumping the sluice water from a sump to a 700 gal. tank raised about forty feet above the mill. In the face of the pit is showing from four to eight feet of pay sand that pans well and contains a large percentage of black sand. The overburden is fine sand which contains some values. This in practice is removed with the monitor and allowed to go to waste thru the sluice and down to the dump without going thru the mill. This is not an expensive operation as it works up fast and flows easily when the stream of water is turned on it. Under this pay sand lies a strata about ten feet thick of reddish cemented material carrying good values. This lower deposit appears to be continuous over the whole property and has nowhere been worked. It is exposed in many places but is seen to the best advantage in the sluice box cut which penetrates it to a depth of twelve feet about half way between the face of the south pit and the mill. Both the upper and the lower sand deposits feather out toward the highway and the mill against a jutting point of bedrock which may have been an offshore reef in ancient times. The north end of the property is covered with underbrush but the old pit rims show that a width of several hundred feet was worked. Panning tests show good values. An old drain cut exposes the lower pay sand to a depth of eight feet, with values about the same as elsewhere. North of the property under lease forty acres has been drilled according to local report and show a deposit similar in structure and value to that on the Madden. Beyond this to the north lie state lands and still further north about a mile is the Butler Mine which has a favorable production record. To the south several small tunnels disclose the pay stratas about one thousand feet ahead of present workings with probability that continuation can be picked up for a considerable distance by further prospecting. About one thousand feet of virgin ground lies ahead of present workings on both the north and south end. The width of the deposit has not been ascertained definitely and may extend toward the east for a considerable distance. There is in sight in the lower pay alone over 100,000 tons of material which from samples taken will more than stand treatment charges. Further testing of this block is recommended at once to determine average values. The unexposed upper and lower pay stratas beyond present workings will also yield a very large tonnage but in the absence of definite information can not be estimated but the possibilities are that it will total in amount as much tonnage as has already been mined.

Samples and assay values,-

Top	5 feet	Upper Pay	East Face	South Pit	$1.60 Per Ton
Bottom	4 "	" "	" "	" "	.80 " "
Top	3½ "	" "	Center "	" "	.80 " "
Bottom	3½ "	" "	" "	" "	.40 " "
Top	4 "	" "	West "	" "	.80 " "
Bottom	3½ "	" "	" "	" "	1.00 " "
Center of Face South Pit 5 Feet (Sept. 18.)					2.40 " "
Top	4 Feet	Lower Pay	near face	South Pit	.40 " "
Top	4 "	" "	" giant	" "	.40 " "
Top	4 "	" "	500 feet north of above		1.20 " "
Top	4 "	" "	100 " south of last sample		.60 " "
Top	6 "	" "	North end of Pit		.80 " "
Top	8 "	" "	In sluice Cut 95' from Bridge		2.06 " "
Top	7 "	" "	" " " 50 " "		2.12 " "
Top	8 "	" "	" " " 40 North of Bridge		1.66 " "
Top	8 "	" "	Old Drain Cut North End Workings		2.49 " "

Actual recovery tests made by Way and others indicate values in excess of above assays; likewise panning tests in a great many places not sampled gave results in free values alone that lead me to conclude errors in assaying that may show up in later sampling. It would be unwise to estimate the average values of the ore tonnage in sight from these few samples but considering the fact that they represent a pay strata eighteen feet thick and in excess of one hundred feet wide,(both upper and lower pay sand) of easily worked material, it is truly a remarkable showing with further development fully warranted. Further, none of the samples were run for platinum although payments for this metal in the past have been important. Way's tests indicate platinoid contents of buttons from seven to twelve per cent.

Method of Operation,-

The mining of this deposit presents no difficulties. The Upper Pay is most easily handled by breaking down the bank with a monitor after removing the overburden of soil and fine sand. All material is washed into the line of boxes and led either to the mill or to the tailing dump as desired. Between the top of the pay and the overburden which carries light values, is a horizontal rib of iron stone or reddish cemented sand a few inches in thickness which permits sluicing off the overburden without disturbing the pay sand. Light shooting of the bank sometimes facilitates the work of the monitor. Stripping operations should be conducted ahead of workings during the period of high water. The bottom pay is harder to work owing to its partially cemented condition and will require more shooting but can nevertheless be worked up with a giant. A pit can be started where the sluice cut penetrates the lower pay twelve feet and worked back toward the east from there. The present position of the pipe line is close to this point so that water for the giant can be obtained with no extra expense except that of installing a "Y" in the line and a gate valve. Since assays show the highest values at this point and since the bed rock rises toward the east affording a grade to sluice the material washed, it is recommended that this work be done at once. It will afford material for a very much desired experimental run under actual operating conditions of mining and recovery. From the face of the south pit and the above recommended new opening, it is easily possible to deliver to the mill five hundred tons of sand daily at very light cost.

Method of Milling,-

This subject is of paramount importance considering past recovery difficulties and failures, on these coastal deposits where very fine gold

occurs intimately mixed with heavy black sand. One of the difficulties at the Madden is owing to the fact that the partially cemented sand does not disintegrate in washing and sluicing therefore the lumps must be broken up. As the run of bank material contains also some wash gravel, the problem is to crush these lumps of pay without crushing the gravel which is waste, or else to eliminate the gravel first. A revolving screen or trommel of special design and run at higher than customary speed may be necessary to accomplish this classification. Such a screen was built and used at the Chickimin Mine near Marshfield on similar material and is said to have operated with complete success. It would be necessary to elevate all the sand to the trommel. A forty foot elevator with 6" by 8" buckets is on the ground and can be installed. The undersize from the trommel should then pass over a vibrating screen for further sizing since there is very little of the gold that will not pass a twenty mesh screen. The undersize is then fed to aline of sluice boxes fitted with special riffles designed to concentrate the material about ten to one. The ratio of concentration would be controlled by the time allowed to elapse before cleaning the riffles. The ideal ratio of concentration is that which will yield the greatest daily profit regardless of the tailing losses. The concentrates should next go a roasting furnace and treated with a heat of about 600 degress F. which prepares the gold and platinum for either efficient amalgamation or recovery on the Luckenback compound. Without this roasting heavy tailing losses occur due to the fact that the metals are coated with a film of some chemical compound that interferes with recovery, and possibly the cause of ill success past operators. The slight roasting facilitates fine grinding which is the next step. The dried material is fed to a 3 by 5 Handy ball mill and ground to about 60% minus eighty mesh and the balance minus forty, to break up the adherence of metals to the sand particles. The final step is treating the wet ball mill product over a vibrating table with belt coated with Luckenback compound where the metals are retained on the belt imbedded in the compound and nothing else. The tails flow into the sluice to the dump. The metals are then easily recovered from the compound by burning or other known methods. This mill flow is adapted to the use of equipment already installed or on the ground with the minimum additions possible. As the capacity of the ball mill is about ten tons in twenty-four hours, the material that can be handled is limited to the amount that will produce ten tons of concentrates. This will be in my opinion about one hundred tons of good pay sand or double that amount of leaner ore, since the values seem to be in proportion to the black sand contents and it is the black sand that will make more frequent cleaning of the riffles necessary. It is obvious that increased milling capacity can be obtained by installing a larger ball mill and more riffle capacity since the other units all have a rated duty in excess of one hundred tons daily and the mining can be expanded at will. A recovery of 80% of the metals is to be expected, the heaviest losses occurring in the tailings from the riffles.

Chromite,-

This property contains a large amount of chromite mixed with the black sand which can be recovered when and if a market is available. At present transportation, sacking, and trucking costs prohibit shipment to the east but before long a west coast market will be developed at which time this chromite will become a valuable asset. Indeed, even

now, in the form of bichromate of soda which can be prepared chemically by the installation of a properly designed plant, it is possible to make use of this resource profitably.

General Conclusions,-

It must be borne in mind that this project is neither placer nor lode mining but a combination of both. It will require supervision of the highest order as many of the problems depend on judgments. Mechanical concentrators of various types have been considered but to date the evidence indicates that passing the material over riffles will show the smallest tailing losses and can be operated at the least expense. The main objective is not to make a nicely classified product but to save values and eliminate waste. Improvements in practice will come but should be adopted only after their efficiency is demonstrated. The initial cost of remodeling the present mill along the lines suggested should not exceed $10,000. Whether or not this expenditure is justified can be ascertained at small outlay for further sampling, and this is recommended at once because of the high results already obtained and the large tonnage of material available on the property. Appended are a list of equipment now installed or on the ground and approximate estimates of installation and operating costs.

Respectfully submitted,

Equipment,-

1 Diesel Engine 25 H.P.
1 Truck (one ton) Belongs to C. C. Hayes.
1 Gas Engine 5 H.P.
1 Elevator 40'. Buckets 6" by 8".
1 Monitor No 2 Hendy (no deflector)
500 feet 18" iron pipe (installed)
1000 " 10" " "
500 " 8" " "
100 " 8" " " (not installed)
2 Gate Valves 12"
1 Y 10
6 Elbows 8" and 10"
4½ miles ditch (head 165 feet)
Concrete penstoke
2500 feet sluice boxes
1 Vanner table 4' by 6'
1 Pump Bulldozer 2"
1 " Evinrude 2"
1 " Centrifugal 1¼"
1 Tank, galvanized iron 700 gal. capacity, head 40'
Iron water pipe, fittings etc. value $250.
3 Cabins (will accomodate 10 men)
1 Mill Building
1 Assay Office, furnace, supplies.
1 Ore Bin 20 ton capacity installed at mill.
1 Hendy 3 by 5 Ball Mill
Line shafting, pulleys, launders, screens etc.
Miscellaneous tools.

Additional Equipment Required with Estimated Costs.

1 - Vibrating Screen (Niagara or S.A.)	$1000.00
1 - Revolving Screen or Trommel	1000.00

State Department of Geology and Mineral Industries

702 Woodlark Building
Portland, Oregon

Sixes River Area
Curry County

MADDEN (Blanco) MINE (Beach Placer)

Owners: M.C. Landreth, 102 N. Parrett St., Roseburg, Oregon; Mrs. Gates, Coquille, Oregon. Operated in small way since Dec. 1938,

"The Madden mine, also known as the Blanco mine, was discovered July 24, 1871 by Cyrus Madden, the present owner. This placer mine is about 7 miles north of Port Orford, Curry County, Oregon in the SE¼ of NE¼ of sec. 4,T 32 S., R 15 W., on Crystal Creek, a tributary of Sixes River.

"The deposit is a gold and platinum bearing ancient beach, lying at an elevation of about 150 feet above sea level. In downward order a section of the deposit is as follows: 12 to 14 inches of soil and vegetation, 8 to 10 feet of fine to coarse gray sand, frequently containing streaks one-half to 2 inches thick of iron-stained material; 2 to 3 feet of coarse iron-stained cemented sand; 3 to 4 feet thick of coarse grayish sand and gravel containing streaks of black sand one-eighth to one-fourth inch thick; and then a shale bedrock.

"A number of samples taken at different places in the deposit were panned; they all showed 20 to 30 fine colors of gold, but no platinum was observed. Platinum, however, is reported to be present in the proportion of 20% of the gold, but this estimate is probably too high, 5 to 10% being probably nearer to the amounts.

"The proportion of black sand present is not large, probably not exceeding 5% of the entire mass of material.

"The mine is worked with a hydraulic giant, the water being brought about 2 miles by ditch from Crystal Creek. The sand and gravel are washed from the bank into about 500 feet of sluice boxes containing riffles, where the coarse gold and platinum are caught. Near the lower end of the sluice boxes the black sand is taken out by an under current and treated on tables covered with burlap, where most of the fine gold passing ober the riffles is recovered.

"In past years the mine was worked six to seven months in the year, during the period of high water, but in recent years work has been more or less intermittent. It has never been a large producer, but has maintained a small output for nearly forty years.

" In all, several acres of ground have been worked to a depth of 20- to 25 feet to a false bedrock composed of cemented coarse sand and gravel. The true bedrock of shale, 6 to 10 feet deeper, is too low for drainage without the use of a hydraulic elevator.

"Three samples taken for assay yielded the following results:

Results of assays of three samples from Madden mine.

	Au and Pt ounces per ton
Sample no. H-135	0.02
Sample no. H-135-A	.00
Sample no. H-136	.01

"Sample H-135 was taken from a bed of iron-stained, cemented, and rather coarse sand, and represents a thickness of 3 feet 6 inches. At the point of sampling the bed has a covering of 10 feet of coarse to fine gray sand and 12 to 14 inches of soil and vegetation.

"Sample H-135A is from a bed of iron-stained sand and gravel underlain by coarse grayish sand containg streaks of black sand one-eighth to one-fourth inch thick. The sample was taken over a width of 4 feet and represents a bed lying beneath the one from which sample H-135 was taken.

"Sample H-136 is from a bed of fine to coarse sand with about 6 inches of gravel near the base. The sample represents a thickness of 9 feet 4 inches. The bed has a covering of 3 feet of beach sand and contains bands one-half to two inches thick of hard iron-stained material at irregular intervals over the entire width."

Ref: Hornor 18:25 quoted Parks and Swartley 16:34

Pardee 34: H.F. Byram (private report) 31.

Put in file

(Photos in envelop) LR

Len;

Heres some snaps of de Madden Operation, missing ~~after~~ de developement was: (1) De Cyanide Vats
(2) De ORE BINS
full of rodent guts & old granite.

De madden blak sand is a seam of thik rusty brown hematite & limonite with large sharp pieces of brecciated matter in a east trending dip and a N-S strike. It is very olde and about 2"-6" thick. De old ditche and rock walls durind it out under de old highway now [illegible] Road, 101. De mill site was about 50' from de road, de workers cabins close to road and de sand seam is overburdened with about 19-20 ft of blonde sand. De old horse and fresno dug ditch 6 deep 8' wide goes for miles back up onto Madden Butte, yours - Vance Mason

MADDEN (Blanco) MINE (Beach Placer) Sixes River Area

Owners: M.C. Landreth, 102 Parrett St., Roseburg, Ore.; Mrs. Gates, Coquille, Ore.
Location: SE¼ NE¼ sec. 4, T. 32 S., R. 15 W.
Ref: Hornor, 18, Parks and Swartley, 16, Pardee, 34, H. F. Byram, 31.

CRIB MINERAL RESOURCES FILE 12

RECORD IDENTIFICATION
RECORD NO..... M061376
RECORD TYPE..... X1M
COUNTRY/ORGANIZATION. USGS
DEPOSIT NO..... 032
MAP CODE NO. OF REC..

REPORTER
NAME..... JOHNSON, MAUREEN G.
DATE..... 76 05

NAME AND LOCATION
DEPOSIT NAME..... MADDEN
SYNONYM NAME..... BLANCO

COUNTRY CODE..... US
COUNTRY NAME: UNITED STATES

STATE CODE..... OR
STATE NAME: OREGON

COUNTY..... CURRY

QUAD SCALE	QUAD NO OR NAME
1: 62500	LANGLOIS

LATITUDE	LONGITUDE
42-49-57N	124-28-23W

UTM NORTHING	UTM EASTING	UTM ZONE NO
4743050.0	379600.0	+10

TWP..... 32S
RANGE.... 15W
SECTION.. 04

POSITION FROM NEAREST PROMINENT LOCALITY: NEAR SIXES ON THE SIXES RIVER

COMMODITY INFORMATION
COMMODITIES PRESENT..... AU PT

PRODUCER(PAST OR PRESENT):
MAJOR PRODUCTS.. AU
MINOR PRODUCTS.. PT

COMMODITY SPECIALIST INFORMATION:
PGM PROD NOT VERIFIED

EXPLORATION AND DEVELOPMENT
STATUS OF EXPLOR. OR DEV. 4

DESCRIPTION OF DEPOSIT

DEPOSIT TYPES:
PLACER
FORM/SHAPE OF DEPOSIT:

SIZE/DIRECTIONAL DATA
SIZE OF DEPOSIT..... SMALL
MAX THICKNESS..... 25 FT

DESCRIPTION OF WORKINGS

COMMENTS(DESCRIP. OF WORKINGS):
HYDRAULIC

PRODUCTION
YES
SMALL PRODUCTION

GEOLOGY AND MINERALOGY
HOST ROCK TYPES..... ANCIENT BEACH GRAVEL

GENERAL REFERENCES
1) DILLER, J. S., 1902, TOPOGRAPHIC DEVELOPMENT OF THE KLAMATH MOUNTAINS: U.S. GEOL. SURVEY BULL. 196, 69P.
2) OREGON DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES, 1940, OREGON METAL MINES HANDBOOK--COOS, CURRY, AND DOUGLAS COUNTIES: OREGON DEPT. GEOLOGY AND MINERAL INDUSTRIES BULL. 14-C, V. 1, 133 P.