

Jim White  
O.H. Hershey

REPORT ON VISIT TO SUSANVILLE, OREGON BY J.D.B. - OCT. 15, 1938

A surprise to me was the accessibility of Susanville to Weiser or Ontario on the North to South Idaho highway. Going West from Ontario I found the John Day highway to be a first class and fast road. This highway goes within 21 miles of Susanville. This last stretch is quite rough comparable say to the road into Opalite. From Ontario to the turn off at Austins on the main highway is 104 miles. About 3½ to 4 hours should be allowed for this trip.

At Susanville I contacted Mrs. Gertie O'Rourke at the Post Office and General Store. Mrs. O'Rourke's son then took me around the property.

We first went to the Ophir claim which adjoins the S.W. end line of our Badger claim. This is one of the O'Rourke claims which they are trying to sell us. In the face of a new short tunnel heading North towards our Badger claim I cut a sample in 6 inches of quartz and 8 inches of wall rock which assayed .52 oz. Ag. This vein may or may not prove to be important and likewise it may or may not connect with our main Badger vein.

From the Ophir claim we went over to the Badger claim where I saw the old shaft and pits where the stope had holed through to the surface. I did not sample the vein exposed in the caved collar of the shaft mentioned in Harden's report of Sept. 7, 1935 because I figured it was merely a pillar left to protect the shaft. At this location, however, Harden cut a 2 ft. sample which assayed .67 oz. Au and 5.94 oz. Ag, also a 3 ft. sample

which assayed 1.37 oz. Au and 60.54 oz. Ag.

After leaving the Badger claim we started down toward the Bull of the Woods claim on the way visiting and prowling about the Stockton and Blackhawk claims neither of which are ours. The Blackhawk has been worked comparatively recently and O'Rourke says the leasers developed some good milling ore but didn't have enough money to build a mill.

We went into the Bull of the Woods tunnel just above the road and just a few hundred yards up the road from the Post Office. We went down the winze to the next level about 30 ft. below the tunnel level. I had a difficult time determining how the ground lay as my light was poor and the ground well timbered. I did not cut a sample here since the rock was so hard it required a hammer andmoil. Climbing back to the tunnel level we went North almost 1000 ft. before we were stopped by a cave. At a point approximately 500 ft. N. of the winze I cut a sample 2½ ft. wide in the quartz vein which assayed .06 oz. Au and .22 oz. Ag; this area wasn't near any of the stoped ground.

We next climbed up to the Mocking Bird claim but couldn't get into the tunnel as the portal was caved. From this point I obtained a very good idea of the immediate country - looking South and just across Elk Creek I could see the Badger tunnel portal and the old mill building close together; just below me was the town of Susanville (about 15 inhabitants); over the opposite ridge above the Badger tunnel was the Badger Shaft where we had been just a few hours before. I took a picked sample of the Mocking Bird dump which I thought would run very well but

assayed only .01 oz. Au. and .11 oz. Ag.

We couldn't get into the Badger tunnel owing to the caved portal, but O'Rourke tells me that outside of one or two spots the tunnel should be open all the way into the shaft about 1400 ft. South.

The mill building is large and was very well constructed, for it still appears to be in fair shape. I took a grab of some ore piled on the mill floor which O'Rourke told me came from the Badger Mine when he worked there. The ore pile was predominately slate which checked O'Rourke's previous statement that the last leasers didn't mine very carefully. I took no pains to include any quartz or vein matter in my grab and yet the sample assayed .106 oz. Au and 5.80 oz. Ag. This can be compared with Worthen's sample from the same spot which ran .07 oz. Au and 15.20 oz. Ag.

We next examined O'Rourke's mine which was down the road several hundred yards below the town. Here I saw a very pretty and well mineralized vein, but it was too short and narrow to be of any value unless perhaps a good mill was established and paid for from the earnings of one of the other mines. In the tunnel level above the road I cut a 2 ft. sample which assayed .15 oz. Au and .58 oz. Ag. In the level about 60 ft. below this one I took another 2 ft. cut which ran .14 oz. Au and .78 oz. Ag. I made a point of taking these samples after we had climbed through the prospect and after he had pointed out high grade spots where he said I would get at least 60 oz. Ag. My samples were taken in the vein in places that O'Rourke wasn't bragging about, and, therefore, I feel the remainder of the vein will run a good deal better. There appeared to be two short shoots each about 60 ft. long and  $1\frac{1}{2}$  to 2 ft. wide.

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I have studied some of the correspondence and as many reports as I could find on our Susanville property and believe it a good idea to include excerpts and summaries from the reports in this paper.

REPORT OF JIM WHITE'S - AUGUST 1, 1924

Homestake Group

Ethyl claim - lays mostly in creek bottom, covered in large part with debris, shows some acid porphyry, serpentine, and metagabbro. Very little work done on claim. Shaft and tunnel work on South side line indicates search for gravel. Old dilapidated Heileg mill stands on S.W. end of claim, consists of 10 stamps (about 1000# each), 1 - 10 x 12 Blake crusher, 2 challenge feeders. The claim shows no outcrops and has no timber.

Bull of the Woods claim - rocks consist of serpentine, schist, and limestone. This claim comprises the principal workings of this group. There are two tunnels and one shaft, all badly caved and lower workings of mine are flooded.

Flowman claim - shows schist, limestone, and serpentine. No outcrop found - no work done.

Mocking Bird claim - rocks consist of serpentine, slate, porphyry and basalt. There are two tunnels on this claim - one on the N.W. side of a small outcrop of acid porphyry on contact between porphyry and metagabbro, which shows a fault line carrying small bunches of ore. This tunnel is about 50 ft. long but has no backs. The other tunnel on the S.E. side, which is between the schist and porphyry, is badly caved. There are numerous open cuts above both tunnels but panning shows no values.

### Conclusion

The Bull of the Woods claim comprises the only one of this group of any probable value.

### Golden Gate Group

Poorman - A tunnel starts about the center of this claim and about 15 ft. above Elk Creek and the southerly boundary of the porphyry outcrop. The tunnel runs N.  $17\frac{1}{2}^{\circ}$  W. for an estimated 1000ft.

Blue Jay - A raise or shaft on this claim indicates a connection with the Poorman tunnel.

There is one shaft on the Alta, one on the Beaver and two on the Blue Jay. All the trenching open cuts and tunneling was run in a N. & S. direction.

Later work done by leasers shows fault lines in the porphyry also running in a N. and S. direction, the width varying from seams to 10 ft. or more, and from what I could learn from the leasers and my pannings, the dumps and the few cuts opened for inspection show surface oxidation and enrichment of a bunched and pockety nature.

On the Poorman and Beaver claims the fault lines carry the values and are from 10 to 75 ft. apart, usually connecting with one another leaving large barren bunches between.

### Conclusion

If a sample record of the underground and trench work done was kept and no favorable results shown, I would not consider the group of any value.

### Badger Group

Steamboat claim - the rocks are chlorite schist, limestone,

and acid porphyry. There is a vein outcropping in the creek, running through the S.W. corner of the Monarch claim on which a shaft was sunk last year and from which some ore was shipped. The work was done by Hughes and Sanders. The shaft is flooded. The Hunter Bros. worked last year and shipped some ore. The Steamboat tunnel is 156 ft. long and is stoped to the surface.

King of the Hills - rocks consist of schist, limestone, and chlorite schist. The old workings are on the N.E. end of the claim. The ore was milled in the old De Witt mill on the Bear claim. The King of the Hills tunnel is badly caved.

Hughes claim - rocks consist of slates and overlaying basalts. The Hughes tunnel shows a large percentage of low grade ore. The tunnel runs towards the West end of the Badger claim.

Bear claim - rocks consist of chlorite schist, schist, and limestone. The old De Witt mill stands on the N.W. side of the claim and is in poor condition.

Badger claim - is the principal claim of the group. Rocks are chlorite schist, limestone schist, and serpentine. On the surface no work is exposed except the old shaft with the vein outcrop to the N.E.

Bishop claim - rocks consist of chlorite schist, lime shale, and chert. The Badger mill and tunnel portal are on this claim, the latter being caved.

Great Eastern claim - rocks consist of chert, limestone, and serpentine. The claim contains no workings or outcrops and is mainly covered with debris. The South end of the Bull of the Woods vein should run into this claim.

### Conclusion

Considering the caved condition of the Bull of the Woods shaft and tunnels, also the same condition of the Badger shafts and tunnel, the small amount of known ore, the dilapidated condition of the ditch line, and the fact that undoubtedly the best of the ore has been stoped makes the property in my mind a bad gamble since I believe it would take \$150,000 to put the property into a workable condition, I recommend leasing all or any one of the three groups.

I went up to the Gen, the Compton, and the Chatanooga - the mines were flooded and in no condition to sample.

### EXCERPTS FROM REPORT OF UNKNOWN ENGINEER \* NOT DATED

The property embraces the holdings of the Badger G. M. & M. Co., the Homestake G. M. Co., the Golden Gate G. M. Co., and the Elk Creek Placer and Water Company. There are 19 patented quartz claims together with unpatented placer ground and valuable water rights.

The property is located 20 miles from Austin's, the present terminus of the S. V. R. R., on Elk Creek about one mile from the middle fork of the John Day River at an elevation of 3700 ft. above sea level.

The claims lie in an extensive slate belt which traverses the country for a hundred miles or more and is one or more miles wide.

The bulk of the development work has been done on the Badger claim which single claim has produced shipping ore and concentrates to the amount of at least \$300,000.

The ground above the 500 ft. level is accessible for examining and sampling. The unstoped ground consists mainly of a considerable block of oxidized ore which is very amenable to cyanide treatment.

The ground below the 500 ft. level is not accessible due to water.

The face of the 900 ft. level showed some high grade ore, the level having just reached the beginning of the ore shoot.

The mine makes only a small amount of water and can be easily unwatered with compressed air by relaying a pipe line from the compressor to the mine.

Of the Homestake Group the bulk of the work has been done on the Bull of the Woods claim where ore to the amount of \$50,000 was blocked out and stoped in 1904.

The Elk Creek Placer & Water Co.'s holdings consist of placer ground mostly worked out and a very valuable water right.

The location for cheap mining and milling is very favorable; there is timber in abundance and water power for most of the year.

When the company owning the adjoining mining claim to the Badger, obtained an injunction which resulted in shutting down the Badger Mine, the present owners, entertaining differences of opinion, concluded that the best solution was to agree to a sale and concluded in the interval to suspend all operations at Susanville.

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EXCERPTS FROM O.H.HERSHEY'S REPORT TO F.W.B. - MAY 26, 1908

Conditions -

Aside from transportation, the conditions for mining are favorable. Susanville is in the midst of an immense forest of pine, fir and tamarack. It is in the Blue Mountain Forest Reserve.

In short, the conditions for mining and milling (transportation excepted) are similar to those in the most favorably situated camps of Northwestern California and the Sierra Nevada region. It is preeminently a



country of timber, water and good climate.

Golden Gate Gold Mining Company

The property consists of the Blue Jay, Beaver, Alta, Poorman, Ruth, St. Lawrence and Ruby claims. The company was organized I believe in 1901. In April 18, 1907 the Susanville Commercial Company owned all of its stock.

Only the main Beaver vein seems promising. Here an orebody was worked by a man named F. Cabel before 1870. The orebody was approximately 70 ft. long,  $2\frac{1}{2}$  ft. thick and 100 ft. deep. Later a tunnel 833 feet long was driven from near the Creek level. At 450 ft. it cut the right vein but this fact has only recently been known and no driving was done on it. At 650 ft. it cut another strong vein or zone of shearing. Thence it runs 180 ft. into barren ground ending almost under the outcrop of the surface orebody. E. P. Kennedy for the Golden Gate Company sank a shaft along the Southwestern edge of the old stopes to a depth of 130 ft. Being on the "footwall streak" he cross cut, I am told, 25 ft. easterly and found nothing encouraging. The Sloan tunnel level is about 170 ft. down on the vein from the bottom of the old stopes.

The Blue Jay claim which was located by H. W. Sloan April 9, 1894 has two prospects, one near the eastern and the other near the northwestern border of the felsite.

The tunnel that developed the Alta vein is caved. It is probable that the Alta vein is cut by the Sloan tunnel between the mouth and the Beaver vein, but if so, it does not appear promising.

The Poorman claim was located by Charles Smith, April 28, 1879. A small shoot of free-gold ore, apparently 15 or 20 ft. long, 25 ft. deep and several ft. thick was mined and worked in an arrastra. I don't doubt

that at greater depth small bodies of pay ore may occur, but this prospect does not appear of much value.

I don't think there is a prospect of any kind on the Ruth claim, but on the St. Lawrence or Ruby claims there is a shaft on the dump of which there is altered serpentine, some of which, it is said, prospects well in free gold. I don't know much about this prospect and cannot judge of its value.

In short, it is my opinion that the future of the Golden Gate group hinges upon what the Kinnear brothers (leasors on the Beaver claim) develop on the Beaver vein. I even doubt the existence of a continuous shoot of ore, but expect a series of lenses distributed along a line which may have a pitch like an ordinary ore shoot. I consider the chances rather good of the Kinnear brothers finding sufficient ore within the limit of their present lease to well repay them for their work.

#### The Homestake Gold Mining Company

This company was organized in 1901 to operate the Bull of the Woods, Mocking Bird, Plowman, and Lone Star quartz claims and 20 acres of placer ground which I presume is the Ethel claim. Extravagant statements as to the contents of the ores were made in a prospectus issued by the Company and subsequent developments show that they are not worthy of a place in the history of the property. In 1902, W. Gregg, Jr. and F. W. Bradley, after an examination of the Bull of the Woods Mine, purchased much of the stock of the Company. On April 18th, 1907, 98% of the stock was held by the Susanville Commercial Company.

The Plowman, Lone Star and Ethel claims did not appear to me to present anything definite enough to be worth description.

The Mocking Bird claim (formerly the North Star) was prospected

over 35 years ago. John Hughes, an old resident, said that an 80 ftl shaft was sunk and \$21.00 per ton in free gold was taken from it. It became base at the bottom and was not followed deeper. Two tunnels were run subsequently. The upper tunnel was over 100ft. long and yielded ore that milled \$10 or \$12 per ton in free gold. The ore shoot was over 50 ft. long and probably averaged 18 inches wide. It was mined out above this tunnel and then the lower tunnel was driven, but developed only stringers. It may be that the lower tunnel failed to reach the place where the ore shoot, presuming that it has the usual north-eastward pitch, is due. The present title to the claim dates from a location on Aug. 30th, 1883 by Sampson Roy and J. A. Whitman.

The Bull of the Woods claim was first located very early in the history of the camp by a man named Chrisup, and about 1885 John Hughes became an owner with Chrisup. About 1894, Hughes sold his interest to H. W. Sloan, who relocated the claim on Jan. 1, 1896, the foundation of the present title. About 1897, two pocket hunters named Clark found the shoot of ore which has since been worked down to a depth of 200 ft. At that time Sloan had the sole interest in it, but he bonded it to De Witt and associates and in 1901 it came into the possession of the present company. Previous to this a tunnel had been driven 100 ft. on the vein and some ore stoped above it. At one place on the surface of the claim but some distance from where the shoot exposed by the tunnel reaches the surface, two shafts about 30 ft. deep developed a shoot of ore of which not much is known. This shoot, it seems evident, has not been opened by any lower workings.

At another place on the surface there is an old shaft which is said to be 70 ft. deep, though partly caved. Ore from this shaft is said to have milled over \$6 per ton in free gold. I am told that this shaft is

directly over the ore which is exposed near the end of the long Bull of the Woods tunnel. All the surface workings are either caved or unsafe to enter without new timbering. The ore referred to as being near the end of the long tunnel was discovered just before the mine ceased operation in 1905. It was subsequently better developed by mistake under a lease. It now appears as a shoot exposed about 70 ft. long with one and certainly not in sight. The vein is well defined and carries sulphides including much blende. Possibly a width three to four ft. may be ore. Wm. Kinnear says that Kennedy told him that the ore averages \$10 per ton and would merely pay the expense of working. I think it probable that a thorough investigation would reveal here a shoot of ore comparable with that worked by the Homestake Company and which perhaps could be profitable worked if Susanville had railroad connection.

I like the relation between the little chimneys of porphyry and the ore shoots. It makes the shoots short, but it also indicates that they may go deep. The acid porphyry is seen underground close to the ore. Although I am usually prejudiced against mines in serpentine, I am rather favorably impressed by the Bull of the Woods claim.

I will now go at considerable length into the operations of the Homestake Company on the shoot of ore that has been worked down 200 ft. The Homestake prospectus states that at the surface this shoot was only 2 ft. wide and assayed \$2.60 per ton; 50 ft. deeper the tunnel exposes it 70 ft. long and 7 ft. wide, the ore averaging \$15 per ton. The Meyers & Ben-nison report describes it as 2 to 9 ft. wide and states that some of the ore was sacked and the rest sent to the mill, "which showed good values on plates, and gave a good percentage of concentrates, which gave smelter returns of

\$60 per ton; the ore about \$70 per ton, with the promise of much better values with depth". At that time the main tunnel was 457 feet long.

In the Superintendent's report for 1905 it is stated that an assay plan of the mine made Nov. 2, 1903 showed 6946 tons of ore of an average assay value of \$7.10. This ground yielded, when stoped, 8058 tons of an average assay value of \$6.31. The gross value of the ore as shown by assay maps was \$49,316.60, and the gross value of the ore when mined was \$50,858.55.

A letter to the stockholders of the Badger Gold Mining Company dated June 27, 1904, says, "The ore body as so developed is 150 ft. long by an average thickness of 4 ft. and an average assay value of \$7 per ton." This was developed by sinking a shaft 200 ft. deep and driving two levels on the ore body.

There were mined in 1905, 7775 tons costing \$16,657.76 or \$2.12 per ton.

There were milled in 1905, 7775 tons costing \$4,481.37 or \$.576 per ton.

Including ore mined in December, 1904, there were 8058 tons of ore produced at a total cost per ton of \$5.04, including smelter deductions and Mint charges. The total gross value was \$50,858.55 or \$6.31 per ton of ore mined. The extraction was 68.2% or \$4.30 per ton of ore mined. This gives a loss of \$.74 per ton.

The mining included the cost of driving 260 ft. of drifts and 22 ft. of crosscut on the main tunnel level.

The bullion expense covered labor in sacking, sacks, twine, hauling charges and freight agent.

The mill crushed  $3\frac{1}{2}$  tons per day per stamp. There was saved on

the plates \$4,692.85 or \$.582 per ton crushed.

From December 1904 to October 1905 the vanner feed carried an average of .234 oz. gold and 1.84 oz. silver per ton; the extraction was, gold 58.4%, silver 48.5%. The final milling, from Sept. 1st to Oct. 13th, showed the best extraction, namely 79% gold and 47% silver.

The loss given above of \$.74 per ton is not the total loss, for it takes no account of the expenditures for development previous to December, 1904. This makes a poor showing for the mine and there was good reason to close it down about November 1st, 1905, and wait for the building of the railroad to Susanville.

The lower workings of the mine are filled with water and could not be examined by me. I am told, however, that the shoot of ore had not given out on the 200 ft. level. It can, therefore, be depended on to go deeper. With the likelihood of the claim containing three other ore shoots. it is a fairly reasonable presumption that it could be made to produce a considerable quantity of such ore as was hadled in 1905. The future of the property seems to depend on the possibility of so reducing the costs as to make \$6.31 ore pay a profit.

The only considerable reduction that seems to me certainly in sight is in the hauling of the concentrates. In 1905 the cost was \$11.42 per ton. With a railroad at Susanville the saving on hauling might have been \$10 per ton or a total of \$5,192.57. This would have more than wiped out the deficit for 1905 but would not yet have covered the cost of development.

A less certain factor is the possibility of securing a higher extraction. The art of concentrating sulphides is making rapid strides and within a few years it may be possible to find some kind of machinery that will save a much higher percentage of the contents of the Bull of the Woods ore. I have been told that the ore averaged \$8 per ton by assay and

that it barely paid for its working. This may have referred to a short period immediately preceding the close of operations in which case it is distinctly favorable to the property as showing improvement.

#### Elk Creek Placer Mining & Water Co.

I know comparatively little about the property of this company. The property as described by old residents had some rich sections, but it is now apparently worked out. However, the water rights may some day be valuable.

#### The Badger Gold Mining & Milling Company

This company was probably organized about 1899. In the Spring of 1902, Wellington Gregg and F. W. Bradley bought a controlling interest in the Company and placed E. P. Kennedy in charge of the Badger Mine as superintendent. On April 18th, 1907, the Susanville Commercial Company owned 89% of the stock of the Badger Company. The Badger group at present consists of the patented claims, Badger, Hughes, Bear, King of the Hills, Steamboat, Great Eastern and Bishop. The latter two have no prospects of any apparent value.

The Steamboat mine was discovered by High McQuade many years ago. About 1894 it came into the possession of John Hughes who relocated it on Jan. 1, 1896 and about 1898 sold it as part of the Badger group to De Witt and associates. The workings consist of a caved shaft about 50 ft. deep, a tunnel about 120 ft. long and drift on the vein 40 ft. long, with some stopes. The tunnel is open and was visited. The vein is a fault fissure in black slate, and stands nearly vertical, dipping a little toward the southeast. ~~The stopes~~ appear to be about 45 ft. long and to extend only

from 5 to 10 ft. above the level of the roof of the tunnel. In the face of the drift there remains 4 to 6 inches of what looks like very good ore and beside it three ft. of what may be milling ore. I cannot see any evidence that the ore has been touched below the floor of the drift. Perhaps there is here a small shoot of good ore that might be taken out without much further development work. I am told that Kennedy thought better of this prospect than any other in which the Susanville Commercial Company was interested - aside from the mines being worked.

On the Hughes and Bear claims there is an old mine commonly known as the McQuade. It was discovered by Hugh McQuade and was probably located by him as the McQuade discovery claim on May 13, 1881. Gus Smith became an owner with McQuade. They sank a shaft 50 ft. deep and drove 70 ft. on the vein, and worked the ore in a small mill. Mr. Hughes said they crushed 100 tons that yielded \$8.00 per ton in free gold and at another mill crushed 25 tons that yielded about \$17 per ton in free gold. About 1886 it came into the possession of John Hughes who sank a winze 30 or 35 ft. deep and drifted somewhat on the vein. He then drove a crosscut tunnel about 100 ft. to the vein and drove probably 200 ft. on the vein. He stoped out several hundred tons of ore and crushed it in an arrastra. Most of it yielded \$15 or \$16 per ton in free gold. The ore shoot he worked was 40 ft. long, then there was a pinch for about ten feet and then ore for another 14 feet. The average width was 20 inches. It was worked down to about 55 or 60 ft. depth and Mr. Hughes says there is still good ore at the bottom of the caved workings. The shoot seemed to pitch north-easterly at a rather low angle. About 70 ft. further southwest on the vein there was another shoot of ore probably 40 or 50 ft. long, possibly averaging 18 inches wide, but it was not very good ore and Mr. Hughes did not work much of it. His



tunnel opened this shoot, but he says it did not extend far enough to get the northern shoot. Later the property came into the possession of the Badger Gold Mining and Milling Company. Kennedy began work in the long King of the Hills crosscut tunnel, and in 1903, drove 289 feet on the vein and made a raise of 43 ft. Hughes claims that Kennedy found the south shoot, but did not drive far enough northeast to get the good north shoot. The ore he did find I am told averages \$10 per ton. The workings are so caved that I could not get through enough of them to enable me to form an opinion as to whether Hughes' idea is correct. Being in black slate I would have considerable confidence in the probability of the ore shoots continuing to great depth. I consider this McQuade mine well worthy of further exploration, especially after the extension of the railroad makes it possible to profitably work lower grade ore.

I am told that the King of the Hills tunnels which Kennedy used to explore the McQuade mine, was originally started to develop a large low-grade vein that in the tunnel, according to the Meyers and Bennison report, is 40 ft. wide at a depth of about 60 to 70 feet from the surface; and that the general average assay of samples taken from the vein was between \$3 and \$4 per ton. On the surface there was good float and it is supposed that the tunnel did not intersect the ore shoot which yielded the float. This seems reasonable, but without a knowledge of assays I cannot say whether there seems a likely chance to develop a good orebody there.

#### The Badger Mine

The Badger vein was discovered about 1878 by, it is thought, Charley Smith, who drove a 150-foot crosscut tunnel which cut the so-called secondary vein at the 50-foot level. About 1885 it came into the possession, by purchase, of John Hughes, who relocated it on Jan. 1st, 1897, the foundation of the present title. While it was in his possession, Mr. Hughes developed it to a depth of about 90 ft., including drifts on a vein aggregating 265 feet. In surface

cuts on the discovery vein, northeast of the collar of the present main shaft, he had a shoot of ore in some of which he could see free gold and some of this ore he worked in an arrastra, getting fair but not high returns per ton. Much of his driving was done easterly on the 50 ft. level with the object of opening the ore shoot he had on the discovery vein on the surface, but he found nothing, because, as subsequently developed, he was not driving on the discovery vein but on the spur which is a part of what is now known as the secondary vein. The ore shoot that he had on the discovery vein at the surface is evidently untouched underground and remains a possible asset of the mine when it is practical to work lower grade ore. The Badger vein joins the main vein which at the surface is at about the collar of the shaft.

On the vein west from the present shaft, Hughes had ore which he thought carried from \$35 to \$140 per ton. About 1898 he sold the mine, along with the McQuade, King of the Hills and Steamboat mines to George De Witt and associates for \$12,000 and in addition got about \$3,000 as a 15% royalty on ore shipped while payments were pending. In about 1899 the purchasers organized the Badger Gold Mining & Milling Company.

The Meyers and Bennison report contains the following information: The ore carried gold and silver, partly in sulphides. The high-grade shipping ore ran from \$150 to \$300 per ton. This streak of ore was from 6 inches to 2 ft. wide. The mine had an inclined shaft on the vein 450 ft. deep and 6 levels. The 50 ft. level was opened 307 ft., the vein was from 3 to 5 ft. wide and all the ore went to the mill, except 10 tons which was sorted out and shipped to the smelter. The 100ft. level was opened 268 ft.; considerable high grade shipping ore was taken from this level and the balance sent to the mill. On the 150 ft. level, the drifts aggregated 191 ft. It says the 250 level was opened 299 ft. and yielded considerable high-grade ore; also that the ground from the 250 ft.

level to the surface had been practically all stoped out as far as developed and that smelter returns show a net production from this ore, after freight and treatment charges, of \$109,000.17. (At that time the terminus of the Sumpter Valley Railroad was 30 miles away and hauling to it may have cost \$20.00/ton.) The 350 ft. level had been opened 269 ft. and no stoping done. The 450 ft. level had 35 ft. of drifts in ore. The ore was left in place between the 250 ft. and 450 ft. levels (except what was removed in driving) and was described as being much higher in grade than the ore extracted above the 250 ft. level. There were 10,000 tons of second grade ore on the dump and about 2,000 tons of similar ore used as filling in the mine, making 12,000 tons the average value of which was placed at \$25 per ton. The equipment consisted of a 10-stamp gold mill, cook and boarding house, office, bunk houses, ore houses, good hoisting plant and a 40 h.p. engine. This report probably describes the condition of the property at about the time E. P. Kennedy became superintendent. I have no reason to think that the figure given as the production of the mine above the 250 ft. level is materially incorrect. A bundle of smelter receipts on ore and concentrates and bullion deposited running from Jan. 18th, 1899 to Oct. 25, 1901, that has passed through my hands, adds up to about \$95,000 and doubtless there were shipments before 1899.

According to the superintendent's report for the period from March to Dec. 31st, 1902 \$76,952.48 was spent and was charged to the following accounts:

Mill equipment	\$16,346.76
Milling	3,710.30
Mine equipment	2,468.90
Mining	32,222.04
Bullion	6,982.30
Stable	7,313.12
Mining claims	1,656.45
General expense	5,666.72
Boarding house	585.89

As development work, the main shaft was sunk to the 500 foot level, 548½ ft. of drifts were driven on the 300, 400, and 500 ft. levels, 199 ft. of crosscuts run, and the mill tunnel was driven 715½ ft; 2,605 tons of ore were stoped from the mine and 5,142 tons were trammed from the dump. The mill was completed on July 6th and ran most of the time up to December. It crushed 7878 tons of ore of an average value of \$8.92 per ton, making 684.11 tons of concentrate averaging \$60.58 per ton. Thus the ore carried 8-6/10% of recoverable concentrate and the extraction was 58-9/10% of the value. The value of the ore milled was \$70,328.78, the smelter values from which were \$42,778.80. Some of the concentrates were hauled to Whitney at a cost of \$13.75 per ton and some were hauled to Pendleton at a cost of \$18.19 per ton. The net value of the concentrates after deducting the cost of transportation and treatment was \$22,550.45. Of the ore mined, 70 tons from above the 250 ft. level proved much below the average, 1099.6 tons from the 350 West stope were far above the average, 174.4 tons from the 350 East stope were about the average ore, while 528 tons from the 500 ft. level averaged less than \$3.00 per ton.

The superintendent's report for the period from March 1st, 1902 to Dec. 31, 1903 contains probably the best evidence of what the Badger ore has been capable of under such conditions as existed before the extension of the Sumpter Valley railroad to Austin. The development work consisted of 716 ft. of drifts, 471 ft. of raises, 75 ft. of crosscuts, 294 ft. of shafts, 1137 ft. of the Mill Tunnel, 287½ ft. of the "500 crosscut", at a total expense (including the money spent on the McQuade Mine) of \$38,699.29. 8,809.254 tons of ore were stoped from the mine and 5792 tons were trammed from the dump at a total cost of \$31,415.13. Of the milling ore the 500 stope yielded 1903 tons, assaying \$5.48; 400 stope, 2967.1 tons, assaying \$ 7.53; 300 West stope 1099.6 tons, assaying \$10.88; 300 East stope, 956.8 tons, assaying \$14.33; 500, 400, and 300 East stopes, 1475 tons,

assaying \$10.64; above 250 ft. level, 136.5 tons, assaying \$4.90; dump 5792 tons, assaying \$8.50, giving a total value of \$122,113.68.

The shipping ore amounted to 241.254 tons assaying 2.017 oz. Au and 131.44 oz. Ag, a total value of \$101.06 per ton.

The hoist was removed from the collar of the shaft and set up underground so as to sink below the 500 ft. level. This hoist and the pump were operated by compressed air. The pump handled the small amount of water by pumping between shifts.

The cost of milling 14,360 tons of ore was \$6,988.29 or \$4.86 per ton. This, however, included mill supplies on hand sufficient for a season's run. About 70 tons was the average milled in 24 hours. The concentrate made amounted to 1294.615 tons of a gross value of \$73,992.10, showing concentrates recovered to be 11% of tonnage milled and containing 60.5% of the assay value of the ore milled. The richest concentrates were the coarsest, about  $\frac{1}{2}$  inch in size, and the value decreased with the size.

The bullion expense at Susanville amounted to \$24,023.03 of which \$21,711.11 was for hauling. 1,306.657 tons were hauled to Whitney at a cost per ton of \$13.95 and 220.150 tons were hauled to Pendleton at a cost of \$17.57. Had the railroad been extended to Susanville there should have been a saving on hauling of at least \$12 per ton or about \$18,000.

The superintendent's statement of receipts and disbursements from March 1, 1902 to Dec. 31, 1903 shows that there was received from concentrates and shipping ore \$106,812.27. Against this he has charged to capital account and improvements, \$45,478.01 and to operating expenses \$139,690.40. Apparently the latter sum does not include all of the development expense but only such portion as was necessary to open up the ore to be stoped. In short, the ore cost \$32,878.13 more than it returned. Had the railroad been extended to

Susanville, the loss might have been reduced to \$14,878.13. Perhaps a better mill might have given a higher percentage of saving and perhaps also part of the apparent loss went into the development of ore to be mined later. In short, it looks to me as though between March 1st, 1902 and Dec. 31st, 1903 no reasonably expected improvement in conditions could have made the Badger Mine a paying proposition.

The superintendent's report for 1904 has not come into my hands and this is to be regretted as this must have been one of the best years of the mine's history. I have receipts from the Tacoma Smelting Company showing net returns of \$13,081.71 but this was apparently on ore shipped or at least mined the preceding year. It seems that there was some development work done below the 500 ft. level, which opened up the ore shoot, and that stoping of ore was continued above the 500 ft. level.

In 1905 the receipts were \$18,025.96 and the expenses were \$29,745.50.

The development consisted of 97 ft. of shaft, 100 ft. of raise, 900 ft. of drift, 344 ft. of drifts on the 900 ft. level and a 94 ft. of drift on the same level. The stoping of 1507 tons cost 2.36 per ton, a total of \$3,569.48. The milling of 1498 tons cost \$.987 per ton or \$1,479.32.

The ore yielded about 15.6% concentrate with an extraction of 75% of gold and 75% of the silver. The gross assay value of the ore was \$9.34 per ton.

In October 1905, 521 tons were milled from the 700 stope and averaged 120 oz. Au and 7.28 oz. Ag per ton. In November, 552 tons were milled from the 700 stope and 325 tons from above the 500 ft. level; the average concentrate was .143 oz. Au and 5.158 oz. Ag per ton. The value of the latter was \$5.53 per ton and the preceding month's ore carried \$7.77 per ton. The

milling of such ore below the 500 ft. level suggests that the grade of ore had become poorer below that level. At any rate, the ore was not paying the expense of working it, and the mine was closed down about Nove. 1st and the mill about Nove. 30th.

The ore in sight in the mine is apparently as follows--above the 500 ft. level, the unstoped ground consists mainly of a considerable block of oxidized ore which is said to be very <sup>amenable</sup> to cyanide treatment. It is developed by the extreme westerly workings near the surface and is described as carrying \$8 to \$12 per ton. The main body of the ore in reserve is in that portion of the mine which is now under water, namely, below the 500 ft. level.

It is stated that the face of the 900 ft. level showed some high grade ore, the drift having just reached the beginning of the ore shoot. The mine makes only a small amount of water and could easily be unwatered with compressed air by relaying a pipe line from the compressor to the mine.

#### Badger-Stockton Controversy

From such documents as have passed through my hands and information gathered at Susanville, the Badger-Stockton litigation appears to have had the following history. In the winter of 1894-5 the owner of the Stockton claim, William Welch, deeded a half interest in it to William Moran for certain work the latter performed on it. Moran later considered the claim of little value and he left the Susanville district, remaining away for years and not contributing to the cost of annual assessment work on the claim. In December 1898, I. J. Simmons and H. H. Ames took a bond on the claim and they subsequently sold it to the Stockton Gold & Copper Mining Company. At this time (1900) or after they got an abstract of title and first learned that Moran had a deed to a half interest in the claim. They then proceeded to advertise him out as a co-partner in the claim. About Feb. 1902 F. W. Bradley in pursuance of a plan to get control of as many claims in the Susanville district as possible, met Moran in San Francisco

and purchased a quitclaim deed to his half interest in the Stockton claim. Subsequently he learned that Moran had been advertised out. In 1904 the Stockton Company applied for a United States Patent on the claim and the Badger Company advertised it, entering a suit to quiet title in the U. S. Circuit Court for the District of Oregon. The trial began on Oct. 24, 1904 before Geo. A. Brodie, Examiner. The Badger attorneys seem to have relied for their case upon the irregularity of the forfeiture proceedings, because the notice forfeiting the interest of Wm. Moran was not published until Simmons and Ames had purchased the property and organized the Stockton Company to handle it. On or about Aug. 10, 1905, U. S. Circuit Court Judge Gilbert decided that the Stockton Company owned the Stockton claim absolutely, and that the Badger people have no right to extend their work underground thereon, nor to maintain any suit for a share of the property.

In the meantime, the Badger Company had entered under the Stockton claim in following the Badger ore shoot on its dip and pitch. Late in August 1905 the Stockton Company entered a complaint and affidavit for injunction in the U. S. Circuit Court of the United States for the Ninth Circuit, District of Oregon. The complaint asks for a temporary injunction enjoining the Badger Company from removing any ore from under the Stockton claim, then a permanent injunction to restrain the Badger Company from mining or trespassing on or within the Stockton claim, for an order of inspection and survey of all the workings of the Badger Mine opened by the respondents, for an order restraining the respondents from concealing any of the underground workings of the Badger Mine, for the full value of the ore taken by the Badger Company from under the Stockton claim, and for other equitable relief, including costs and disbursements of the suit.

The question at issue was as to whether the Badger vein passes through the end lines or side lines of the Badger claim. The Stockton Company maintained that it has such a course where exposed at the surface and in the underground workings that if extended it must pass through the side lines and hence the Badger Company have no right to pursue it under the Stockton claim. The Badger



Company maintained that the Badger working vein crossed the Badger discovery vein and that its right to follow the ore under the Stockton claim was derived from the fact that the discovery vein has such a course as must take it through the end lines of the Badger claim, and that the Badger veins are entirely in slate and that the slate-serpentine contact traverses the Badger claim lengthwise, passing through both end lines. The Stockton complaint expresses the belief that the Badger Company mined ore from under the Stockton claim to the value of \$350,000 plus. The Badger Company claimed that no profit whatever had been made in working ores extracted from beneath the surface of the Stockton claim. Up to Sept. 3, 1905, the ore removed from beneath the Stockton claim had a gross value of \$21,589.44. At least \$25,000 had been expended in that ground.

The Badger Company appeared and filed an answer and a plea to the jurisdiction. The plea was overruled and the court ordered the company to deposit in court the proceeds of its work in the future. It seems that in the course of the trial the court ordered the trenching of the outcrop of the Badger vein on the Badger claim. This the Stockton Company did in a very perfunctory manner, avoiding the real Badger vein, but with assumption that is ridiculous as reviewed in the field, built up an alleged Badger vein, which, however, it did not expose near the Stockton claim. Miners were induced to make affidavits in regard to this alleged Badger vein. Afterwards, some of these miners expressed a realization that they had, in their affidavits, misrepresented the facts. The Badger Company it seems did not meet these affidavits with the proper counter evidence, which evidence the ground plainly affords.

The present status of the case seems to be that the court's injunction against working under the Stockton claim without depositing the proceeds in court is in effect but that the case can be reopened at any time. The geological

fact are entirely in th Badger Company's favor and if the case were to be tried strictly on its merits, there should be no difficulty in quickly beating the Stockton Company.

#### THE FUTURE OF THE BADGER MINE

It is evident to me that the hope of making the Badger property pay in the future must lie along three directions. Some means must be found for getting a higher extraction. The second line of hope lies in the possibility that the grade of the Badger ore may become much better at depth. The best portions of the ore shoot are likely to be in lense form, separated by relatively low grade portions. One of these good lenses may have been worked out above the 250 ft. level, while the Badger Company after March 1st, 1902 may have been working on the relatively low grade portion of the ore shoot. There seems to be an improvement from the 500 to the 700 ft. level. Perhaps the 900 level, in the face of which there is said to be very good ore, if extended will cut another bonanza lense. The third line of hope lies in the development of the other mines and prospects on the Badger property.

I think best of that portion of the district which lies south of the Creek and west of the northeast end line of the Badger claim. I consider this territory including the Badger, Bear, Hughes, King of the Hills, Steamboat and Ophir claims as worthy of more careful surface prospecting. It is preeminently a region of slates and has considerable galena in much of its ore. The ore shoots are likely to be longer and better than elsewhere in the district, but to make less showing at the surface. I have been surprised that there has not been more surface work done on the Badger claim. It would be comparatively cheap and might lead to the discovery of new ore shoots.

I also think that something might be gained by mining in the Badger and other ~~mines~~ of the district, smaller bodies of higher grade ore. The

precious metal contents of the ores are very irregularly distributed, giving rise to many small bunches of rich ore, but I am not quite certain that these rich pockets can be found without handling a large amount of low grade ore. I would, however, make the attempt. In some cases the rich ores may be in chimneys continued up and down a long distance and which can be followed after once found.

Respectfully submitted,

OSCAR H. HERSHEY.

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My opinion is that it would be worth while to send Butterfield, Johnson, and Forrest to Susanville to open up some of the most attractive workings to determine whether, with the prevailing gold price, modern methods of transportation, and better metallurgical practice, a profitable mining venture might be possible.

Butterfield and Johnson should be free to start North some time in March. Forrest will be available when he is released from the Harvard Mine.

There are several places which warrant examination, I list the main ones in the order I believe they should be attacked -

1. The Bull of the Woods shaft unwatered.
2. The Badger Tunnel reopened and shaft pumped out to the 900 ft. level.
3. The Steamboat Mine reopened.

I believe sufficient equipment can be gathered at the San Juan and Spanish along with a truck for transportation to accomplish all the examination work necessary.

The main boarding house at Susanville should house the families.

Groceries, etc. can be purchased at the Susanville store.

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Orig. to WB  
CC: JPB