

## DRILLERS FIELD LOG

Name of Property..... Potosi Placers.  
 Location... Pony Gulch, Beaver Mining District.  
 Line No..... 1..... Hole No..... 9  
 Depth (overburden) 23 feet...... Depth (Bed Rock) 23' 6"  
 Value per Cu. Yd..... 0.31 cents...... Gold @ \$31.00..... per ounce

### EXPLANATION

**Column 1 (Time)**

The first entry is the time of day that drilling started. The following entries in this Column are the time of day at each pumping.

**Column 4 (Drive)**

The pipe is driven into the ground and the depth of drive is recorded in this Column. The first entry shows the depth the pipe is driven before any pumping is done.

Although this is the first operation it is recorded in Column 4 so as to leave space for the time and depth records in the first two Columns. Having these values at the left of the page assists in future reference work when locating the corresponding values, colors, and formations for the various depths.

**Column 2 (Pipe)**

This Column gives the depth of the cutting edge of the drive shoe. The last item in this Column will be the total depth drilled.

**Column 3 (Pumping)**

The depth of pumping is shown in this Column. Care must be taken to see that pumping is not continued within 2 inches of the lower edge of the drive shoe until bed rock has been reached.

**Column 5 (Core Before Pumping)**

The core before pumping is the depth of the core forced into the pipe. This depth is the distance from the top of the core to the bottom of the drive shoe.

**Column 6 (Core After Pumping)**

The depth of the remaining core or plug left in the pipe is recorded in this Column. This plug is usually from 2 to 4 inches.

**★ Column 7 (Core Volume by Pipe Measurement)**

This volume is represented by a cylinder the diameter of which is the inside diameter of the pipe and the length is the depth of core removed. The depth of core removed for each

drive is the depth of core before pumping less the depth of core after pumping.

$$\frac{(\text{Inside diameter of pipe})^2 \times \pi \times \text{length of core pumped out of pipe}}{4 \times 1,728}$$

Note: Pipe diameter and length of core expressed in inches. Volume of core will be expressed in cubic feet.

**★ Column 8 (Core Volume by Bucket Measurement)**

After the pumpings are run out of the dump box into the volume bucket, they are measured. These measurements are recorded in this Column.

**Column 9 (Theoretical Volume)**

This is the volume represented by a cylinder, the diameter of which is the outside diameter of the drive shoe and the length is the depth of drive.

$$\frac{(\text{Outside dia. Drive Shoe})^2 \times \pi \times \text{depth of drive}}{4 \times 1,728}$$

Note: Diameter of drive shoe and depth expressed in inches. Core Volume will be expressed in cubic feet.

**Column 10 (Number of Colors)**

The sizes and number of gold colors are recorded in this Column. The panner classifies the gold in the 1, 2, and 3 colors. No. 3 is the finest and consists of all particles weighing less than 1 Mg. No. 2 is gold consisting of all particles weighing between 1 Mg. and 4 Mg., while No. 1 gold is any particle weighing over 4 Mg.

**Column 11 (Estimated Weight)**

This Column gives a record of the estimated weight of gold. This, however, is used only as a check, although it is surprising how accurate an experienced panner can estimate the values after he has worked for some time with gold of the same character.

**Column 12 (Formation)**

A record of the formation of the ground is recorded in this Column.

★ The volume by pipe measurement and the volume by bucket measurement are used in checking irregular holes.

# DRILLERS

NAME OF PROPERTY Potosi Placers

LINE No. 1 HOLE No. 9

TIME OF PUMPING	DEPTH OF						CORE				VOLUME Pipe Measurement $\pi (\text{pipe dia.})^2 \times \text{Dp}$ 4 x 1728 Dph. = Depth of Core for Drive
	PIPE		PUMPING		DRIVE		BEFORE PUMPING		AFTER PUMPING		
	Feet	Inches	Feet	Inches	Feet	Inches	Feet	Inches	Feet	Inches	
5:10	6	0	3	9	6	0	4	1	0	4	✓
	8	0	2	0	2	0	2	2	0	2	
	10	6	1	10	2	6	2	0	0	2	
Sept 8	12	7	0	3	1	7	0	6	0	3	
	13	7	0	10	1	6	0	10	0	0	
	15	2	0	5	1	7	0	9	0	4	
	17	5	0	7	2	3	0	9	0	2	
	19	2	1	0	1	9	1	0	0	0	
	21	0	0	9	1	10	1	0	0	3	
	22	6	1	0	1	6	1	2	0	2	
	23	9	1	6	1	3	1	8	0	2	
10:30	24	6	0	7	0	9	1	0	0	5	
11:45	Moved to Hole # 10										

DIAMETER OF DRIVE SHOE 5 1/4"

THEORETICAL VOLUME

MEASURED VOLUME

WEIGHT OF GOLD (Mgs.) 0.12

FINENESS OF GOLD

CONSTANT USED

VALUE PER CUBIC YARD (Cents) 0.31

$\frac{(3.14)(.88)^2}{12} \times \frac{(0.12)(6)}{8} = 0.31$

DEPTH

Soil 2'

Gravel ✓

Bed Rock 23'6"

Water Level 11'0"

Pay in Bed Rock None

sample 2-3

# FIELD LOG

C. KIRK HILLMAN COMPANY FORM  
SEATTLE, WASH., U.S.A.

LOCATION Pony Gulch 25' Northwesterly of #8

ELEVATION \_\_\_\_\_ DATE Sept 7, 1936

VOLUME Measured by VOLUME BUCKET	VOLUME Theoretical $\pi \cdot D.^2 \times \text{Depth}$ 4 x 1728 D. = Dia. of Drive Shoe	Number of COLORS			ESTIMATED WEIGHT	FORMATION
		1	2	3		
4"						soil-G-S
2"						" " "
2"						G-S
1"						Boulder-G-S
1"						Boulder-G-S
1"						Wash-G-S large
4"						" " " "
3"						" " " "
1"						"-G-S-cl
1"						cl-G-S
2"						cl-S-B&R
1"						Bedrock-cl
						Decomposed slate
						Pyrite conc. from ground up piece of float.

ABBREVIATIONS	TIME LOG
S. Sand Th. Thawed	Drilling.....
G. Gravel F. Frozen	Pulling.....
Cl. Clay M. Much	Moving <u>1/2 hr</u>
B. Boulders Sm. Some	Repairs.....
St. Sticky T. Tailings	Delays.....
Md. Medium Tr. Trace	TOTAL Time.....
L. Loose F. Firm	
F. Fine V. Very	
C. Coarse Mk. Muck	

*Pony Gulch*  
*38.02 mg.*

*BILL KIRBY*  
Driller

*DUFF EBBLEY*  
Panner

*ERIC VINCENT*  
Helper

## Convenient Equivalents

1 Troy Ounce..... 480 Grains 1 Troy Ounce..... 20 Pennyweight 1 Troy Ounce..... 31,104 Milligrams 1 Grain..... 64.8 Milligrams	1 Cu. Yd..... 46,656 Cu. In. 1 Cu. Yd..... 27 Cu. Ft. 1 Cu. Ft..... 1,728 Cu. In. 1 Cu. Ft..... 7.48 U. S. Gallons
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## Drive Pipe and Drive Shoe Measurements

	4" Drive Pipe Inside dia. 3.826"	5 1/4" Drive Shoe Cutting Edge dia. 5 1/4"
Cross-sectional Area.....	11.4969 Sq. In.	21.6475 Sq. In.
Volume in Cu. In. per Ft. depth.....	137.9628 Cu. In.	259.7700 Cu. In.
Volume in Cu. Ft. per Ft. depth.....	.079835 Cu. Ft.	.1503299 Cu. Ft.
Volume in Cu. Yds. per Ft. depth.....	.00295695 Cu. Yds.	.00556777 Cu. Yds.

Theoretical Rise in 4" Drive Pipe using a 5 1/4" Drive Shoe driven to a depth of one foot—22.6"

	5" Drive Pipe Inside dia. 4.813"	6 1/2" Drive Shoe Cutting Edge dia. 6 1/2"
Cross-sectional Area.....	18.1938 Sq. In.	33.1832 Sq. In.
Volume in Cu. In. per Ft. depth.....	218.3255 Cu. In.	398.1978 Cu. In.
Volume in Cu. Ft. per Ft. depth.....	.1263394 Cu. Ft.	.2304585 Cu. Ft.
Volume in Cu. Yds. per Ft. depth.....	.0046795 Cu. Yds.	.0085355 Cu. Yds.

Theoretical Rise in 5" Drive Pipe using a 6 1/2" Drive Shoe driven to a depth of one foot—21.9"

	6" Drive Pipe Inside dia. 5.761"	7 1/2" Drive Shoe Cutting Edge dia. 7 1/2"
Cross-sectional Area.....	26.0666 Sq. In.	44.1788 Sq. In.
Volume in Cu. In. per Ft. depth.....	312.7997 Cu. In.	530.1450 Cu. In.
Volume in Cu. Ft. per Ft. depth.....	.181019 Cu. Ft.	.3067968 Cu. Ft.
Volume in Cu. Yds. per Ft. depth.....	.00670433 Cu. Yds.	.0113628 Cu. Yds.

Theoretical Rise in 6" Drive Pipe using a 7 1/2" Drive Shoe driven to a depth of one foot—20.3"

Theoretical Rise in 6" Drive Pipe using a 7 1/2" Drive Shoe (Using Keystone Constant)—17.9"

## Comparison of Gold Values per Ounce, Grain, Milligram

Gold value per ounce (dollars)	Gold value per Grain (cents)	Gold value per Mg. (cents)	Gold value per ounce (dollars)	Gold value per Grain (cents)	Gold value per Mg. (cents)
50.00	10.4166	.1607	30.00	6.2499	.0965
49.00	10.2083	.1575	29.00	6.0417	.0933
48.00	10.0000	.1543	28.00	5.8332	.0901
47.00	9.7916	.1511	27.00	5.6250	.0868
46.00	9.5833	.1479	26.00	5.4167	.0836
45.00	9.3750	.1447	25.00	5.2083	.0804
44.00	9.1666	.1415	24.00	5.0000	.0772
43.00	8.9583	.1382	23.00	4.7916	.0740
42.00	8.7500	.1350	22.00	4.5833	.0707
41.00	8.5416	.1318	21.00	4.3750	.0675
40.00	8.3333	.1286	20.00	4.1666	.0643
39.00	8.1250	.1254	19.00	3.9583	.0611
38.00	7.9166	.1222	18.00	3.7500	.0579
37.00	7.7083	.1190	17.00	3.5416	.0547
36.00	7.5000	.1157	16.00	3.3333	.0514
35.00	7.2916	.1125	15.00	3.1250	.0482
34.00	7.0832	.1093	14.00	2.9166	.0450
33.00	6.8750	.1061	13.00	2.7083	.0418
32.00	6.6666	.1029	12.00	2.5000	.0386
31.00	6.4583	.0997			