PART III. STATE REVIEWS

The Mineral Industry of Alaska

By Alfred L. Ransome

* GENERAL SUMMARY *

DESPITE a decline for the second consecutive year, gold continued to rank first in value among mineral commodities. Notwithstanding this decrease, the total value of mineral output in the Territory rose to $15,302,000 in 1949 compared to $13,024,000 in 1948.

Mineral production of Alaska, 1947-49

<table>
<thead>
<tr>
<th>Mineral</th>
<th>1947</th>
<th>1948</th>
<th>1949</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quantity</td>
<td>Value</td>
<td>Quantity</td>
</tr>
<tr>
<td>Antimony ore, short tons</td>
<td>40</td>
<td>$16,056</td>
<td>68</td>
</tr>
<tr>
<td>Coal, bituminous, do</td>
<td>12</td>
<td>5,040</td>
<td>16</td>
</tr>
<tr>
<td>Copper</td>
<td>270,988</td>
<td>9,799,589</td>
<td>248,397</td>
</tr>
<tr>
<td>Gold</td>
<td>264</td>
<td>76,032</td>
<td>329</td>
</tr>
<tr>
<td>Lead</td>
<td>127</td>
<td>10,635</td>
<td>100</td>
</tr>
<tr>
<td>Mercury, flasks (76 pounds)</td>
<td>13,512</td>
<td>(7)</td>
<td>(7)</td>
</tr>
<tr>
<td>Platinum metals (crude)</td>
<td>69,150</td>
<td>55,696</td>
<td>67,341</td>
</tr>
<tr>
<td>Silver</td>
<td>(7)</td>
<td>(7)</td>
<td>(7)</td>
</tr>
<tr>
<td>Stone, short tons</td>
<td>(7)</td>
<td>(7)</td>
<td>(7)</td>
</tr>
<tr>
<td>Tungsten (60-percent concentrates)</td>
<td>1</td>
<td>2,200</td>
<td>6</td>
</tr>
<tr>
<td>Zinc, short tons</td>
<td>13</td>
<td>(7)</td>
<td>(7)</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>(7)</td>
<td>(7)</td>
<td>(7)</td>
</tr>
<tr>
<td>Total</td>
<td>15,458,000</td>
<td>13,024,000</td>
<td>15,302,000</td>
</tr>
</tbody>
</table>

1 The values for antimony, copper, gold, lead, mercury, silver, and zinc in this table continue to be calculated on the basis of unit prices of the smelter or principal market and are therefore higher than corresponding estimates, in the Statistical Summary chapter, of the value of the ores and concentrates.

2 Bureau of Mines not at liberty to publish separately; value included with “Miscellaneous.”

Coal ranked second to gold in value of output, but although production was even greater than the former record in 1948, a lower unit price resulted in the value being only a little above that for the previous year. Platinum mining continued to be an important factor in the mineral industry, with production of crude platinum-group metals exceeding that of 1948. The output of lead was only one-sixth of the 1948 production, and silver, copper, and zinc—each a byproduct from an operation conducted primarily for another metal—was one-half, one-fourth, and one-tenth, respectively, of the 1948 production.
The output of tin was small, but substantially above that in the previous year.

Gold mining, which has maintained its position as the backbone of the mining industry in Alaska, has had ever-increasing difficulty in balancing high costs of mining, labor, and supplies against an established price for its product—the United States Treasury price of gold—which has remained unchanged since 1934. Although the supply of labor in 1949 was better than at any time since the war, the narrowing margin between high operating costs and the $35 per fine ounce official price for gold was not conducive to operation of any but the more efficient enterprises. "Natural" or unprocessed gold continued to be legally sold on the open market by a number of operators, at prices varying from $3 to $8 over the official price.

Lode mining in the Territory continued to remain virtually at a standstill; and, with the exception of coal, limestone, and sand and gravel, nonmetalliferous activity was negligible.
GOLD, SILVER, COPPER, LEAD, AND ZINC

The accompanying tables show the mine production of gold, silver, copper, lead, and zinc in Alaska, 1945-49 and 1880-1949, in terms of recoverable metals; the gold production at placer mines, by classes of mines and methods of recovery; mine production of gold, silver, copper, lead, and zinc, by regions; and ore and old tailings sold or treated and various metallurgical compilations based on output in 1949.

A small proportion of the output shown in the tables following was mined before 1949 but not shipped or sold until that year.

All tonnage figures are short tons and "dry weight"; that is, they do not include moisture.

Yardage figures used in measuring material treated in placer operations are "bank measure"; that is, the material is measured in the ground before treatment.

The value of gold, silver, copper, lead, and zinc production reported herein has been calculated at the following prices.

<table>
<thead>
<tr>
<th>Year</th>
<th>Gold $ (per fine ounce)</th>
<th>Silver $ (per fine ounce)</th>
<th>Copper $ (per pound)</th>
<th>Lead $ (per pound)</th>
<th>Zinc $ (per pound)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1945</td>
<td>35.00</td>
<td>0.7114</td>
<td>0.138</td>
<td>0.0068</td>
<td>0.115</td>
</tr>
<tr>
<td>1946</td>
<td>33.00</td>
<td>0.903</td>
<td>0.162</td>
<td>0.109</td>
<td>0.122</td>
</tr>
<tr>
<td>1947</td>
<td>35.00</td>
<td>0.905</td>
<td>0.219</td>
<td>0.144</td>
<td>0.121</td>
</tr>
<tr>
<td>1948</td>
<td>35.00</td>
<td>0.905</td>
<td>0.217</td>
<td>0.179</td>
<td>0.133</td>
</tr>
<tr>
<td>1949</td>
<td>35.00</td>
<td>0.903</td>
<td>0.197</td>
<td>0.158</td>
<td>0.126</td>
</tr>
</tbody>
</table>

2 Treasury buying price for newly mined silver. 1945 to June 30, 1946: $0.71111111; July 1, 1946, to Dec. 31, 1947: $0.906; 1948-49: $0.905005.
3 Yearly average weighted price of all grades of primary metal sold by producers. Price in 1945-47 includes bonus payments by Office of Metals Reserve for overquota production.

Gold.—The recorded production of gold in Alaska in 1949 was 8 percent below the output in 1948. Only a few new operators have entered the field of gold mining, less than the number of previously established operators who either did not mine or sharply curtailed operations during 1949. One major exception was resumption of activity by the Alaska-Pacific Consolidated Mining Co. at its Independence lode-gold mine, Willow Creek district, Cook Inlet-Susitna region, for the first time since 1946. The sale of unprocessed or natural gold by a number of operators who hoped to gain by open market transactions at prices exceeding $35 per fine ounce apparently was greater in volume than in 1948. However, although some undoubtedly did benefit, others reported that the cost of handling such transactions, including assaying charges, interest on capital invested in the form of unsold gold, and transportation and insurance charges, was high enough, more or less, to offset any advantage gained by a higher price and that over-all results of natural gold sales during 1949 were disappointing. Nevertheless, 22 producers indicated that natural gold produced in 1949 had been sold for a price exceeding $35
per fine ounce. The recorded production for 1949 includes 9,836 fine ounces of gold and 88 fine ounces of silver contained in natural gold sold on the open market by 10 producers. In addition, 8,656 ounces of natural gold bullion were reported sold by 12 producers on the open market for prices equivalent to $35 or more per fine ounce of gold contained therein; information on fineness was inadequate for calculating the recoverable gold and silver content for inclusion with the 1949 statistical record. Available information indicated that an undetermined quantity of natural gold (estimated to be 5,000 ounces) was sold by 11 producers who did not report specifically, and 1,022 ounces of natural gold from 2 properties was reported produced but not sold. Specific and accurate data regarding natural gold sales are not readily available, and the afore-mentioned figures giving the number of operators and quantities involved are incomplete. However, from these data it can be assumed that approximately 22,000 ounces of natural gold bullion originating from Alaskan mines in 1949 were sold. A comparable total of 18,000 ounces was estimated sold in 1948.

Mine production of gold, silver, copper, lead, and zinc in Alaska, 1945–49, and total, 1880–1949, in terms of recoverable metals

<table>
<thead>
<tr>
<th>Year</th>
<th>Mines producing</th>
<th>Ore, old tailings, etc. (short tons)</th>
<th>Gold (lode and placer)</th>
<th>Silver (lode and placer)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lode</td>
<td>Placer</td>
<td>Fine ounces</td>
<td>Value</td>
</tr>
<tr>
<td>1945</td>
<td>18</td>
<td>143</td>
<td>5,152</td>
<td>68,117</td>
</tr>
<tr>
<td>1946</td>
<td>16</td>
<td>235</td>
<td>10,768</td>
<td>229,764</td>
</tr>
<tr>
<td>1947</td>
<td>19</td>
<td>299</td>
<td>6,891</td>
<td>279,888</td>
</tr>
<tr>
<td>1948</td>
<td>24</td>
<td>274</td>
<td>6,014</td>
<td>248,395</td>
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<tr>
<td>1949</td>
<td>18</td>
<td>222</td>
<td>75,839</td>
<td>229,416</td>
</tr>
<tr>
<td>1880–1949</td>
<td>(7)</td>
<td></td>
<td>26,841,227</td>
<td>692,457,547</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Copper</th>
<th>Lead</th>
<th>Zinc</th>
<th>Total value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Short tons</td>
<td>Value</td>
<td>Short tons</td>
<td>Value</td>
</tr>
<tr>
<td>1945</td>
<td>5</td>
<td>$1,320</td>
<td>11</td>
<td>$1,802</td>
</tr>
<tr>
<td>1946</td>
<td>2</td>
<td>648</td>
<td>115</td>
<td>25,070</td>
</tr>
<tr>
<td>1947</td>
<td>12</td>
<td>5,040</td>
<td>294</td>
<td>76,022</td>
</tr>
<tr>
<td>1948</td>
<td>15</td>
<td>6,944</td>
<td>329</td>
<td>117,782</td>
</tr>
<tr>
<td>1949</td>
<td>4</td>
<td>1,576</td>
<td>51</td>
<td>16,116</td>
</tr>
<tr>
<td>1880–1949</td>
<td>655,298</td>
<td>226,577,424</td>
<td>25,570</td>
<td>2,984,563</td>
</tr>
</tbody>
</table>

1 Excludes itinerant prospectors, snipers, high- graders, and others who gave no evidence of legal right to property.
2 Figure not available.

The unusual seasonal limitations to mining activity in Alaska are indicated by the production of gold in 1949 by months, as shown in an accompanying table. The data are based on mint and smelter receipts which have been adjusted to exclude those receipts during the first 4 months which actually reflect production in 1948 and to include similar receipts during the same period in 1950 that reflect output in 1949. Nevertheless, production was probably considerably less than that shown during the last 3 months of the year, but cor-
respondingly higher for the period May through September, which represents the season for active mining in the Territory between the spring break-up or thaw and the fall freeze. The principal reason for the relatively high receipts at mints and smelters during the last quarter is that numerous operators make their gold “clean-up” only once or twice during the active mining season, the result being that a substantial quantity of gold accumulated in the sluices over a period of several months is not recovered until late fall.

The 15 leading gold-producing mines (14 placer and 1 lode) in Alaska in 1949, listed in the accompanying table, yielded 73 percent of the total recorded gold output of the Territory; the 5 leading producers supplied 57 percent. The Fairbanks district in the Yukon River Basin region, and the Nome district in the Seward Peninsula region ranked first and second, respectively, in gold production in the Territory owing to the bucket-line dredging operations of the United States Smelting, Refining & Mining Co.

Active lode-gold mining was limited to a few relatively small scale operations, with the exception of the Independence mine, Willow Creek district, Cook Inlet-Susitna region. The greatest proportion of gold recovered from lode operations came from active mines in the Willow Creek district, but a substantial quantity was from mill cleanups at mines that were inoperative during 1949.

Fifteen leading gold-producing mines in Alaska in 1949, in order of output

<table>
<thead>
<tr>
<th>Rank</th>
<th>Mine</th>
<th>District</th>
<th>Region</th>
<th>Rank in 1949</th>
<th>Operator</th>
<th>Source of gold</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fairbanks unit...</td>
<td>Fairbanks...</td>
<td>Yukon River Basin...</td>
<td>1</td>
<td>United States Smelting, Refining &amp; Mining Co...</td>
<td>Dredge...</td>
</tr>
<tr>
<td>2</td>
<td>Nome unit...</td>
<td>Nome...</td>
<td>Seward Peninsula...</td>
<td>3</td>
<td>do...</td>
<td>Do...</td>
</tr>
<tr>
<td>3</td>
<td>New York Alaska Gold Dredging Corp...</td>
<td>Tinta...</td>
<td>Kuskokwim...</td>
<td>2</td>
<td>New York Alaska Gold Dredging Corp...</td>
<td>Dredge and placer...</td>
</tr>
<tr>
<td>4</td>
<td>Brinker-Johnson Co...</td>
<td>Fairbanks...</td>
<td>Yukon River Basin...</td>
<td>5</td>
<td>Brinker Johnson Co...</td>
<td>Dredge...</td>
</tr>
<tr>
<td>5</td>
<td>Strandberg &amp; Sons...</td>
<td>Hughes...</td>
<td>do...</td>
<td>(7)</td>
<td>Strandberg &amp; Sons...</td>
<td>Place...</td>
</tr>
<tr>
<td>6</td>
<td>Mohawk Association...</td>
<td>Iditarod...</td>
<td>do...</td>
<td>10</td>
<td>North American Dredging Co...</td>
<td>Dredge...</td>
</tr>
<tr>
<td>7</td>
<td>Havenstrite Mining Co...</td>
<td>Fairhaven...</td>
<td>Seward Peninsula...</td>
<td>6</td>
<td>Havenstrite Mining Co...</td>
<td>Place...</td>
</tr>
<tr>
<td>8</td>
<td>C. J. Berry Dredging Co...</td>
<td>Circle...</td>
<td>Yukon River Basin...</td>
<td>11</td>
<td>C. J. Berry Dredging Co...</td>
<td>Dredge...</td>
</tr>
<tr>
<td>9</td>
<td>Alluvial Golds, Inc...</td>
<td>do...</td>
<td>do...</td>
<td>12</td>
<td>Alluvial Golds, Inc...</td>
<td>Place...</td>
</tr>
<tr>
<td>10</td>
<td>Alder Creek Mining Co...</td>
<td>Fairbanks...</td>
<td>do...</td>
<td>7</td>
<td>Alder Creek Mining Co...</td>
<td>Place...</td>
</tr>
<tr>
<td>11</td>
<td>Casa de Faga Gold Co...</td>
<td>Fairhaven...</td>
<td>Seward Peninsula...</td>
<td>9</td>
<td>Casa de Faga Gold Co...</td>
<td>Dredge...</td>
</tr>
<tr>
<td>12</td>
<td>Lee Bros. Dredging Co...</td>
<td>Nome...</td>
<td>do...</td>
<td>23</td>
<td>Lee Bros. Dredging Co...</td>
<td>Do...</td>
</tr>
<tr>
<td>13</td>
<td>Wade Creek Dredging Co...</td>
<td>Fairbanks...</td>
<td>Yukon River Basin...</td>
<td>28</td>
<td>Wade Creek Dredging Co...</td>
<td>Place...</td>
</tr>
<tr>
<td>14</td>
<td>Independence...</td>
<td>Willow Creek...</td>
<td>Cook Inlet-Susitna...</td>
<td>(9)</td>
<td>Alaska-Pacific Consolidated Mining Co...</td>
<td>Gold ore...</td>
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<tr>
<td>15</td>
<td>Hubbard and McFarland...</td>
<td>Innoko...</td>
<td>Yukon River Basin...</td>
<td>25</td>
<td>Hubbard and McFarland...</td>
<td>Place...</td>
</tr>
</tbody>
</table>

1 Based on known output, including natural gold sales.
2 Production included with Cripple Creek Mining Co., Innoko district, in 1948.
3 Produced in 1948 under name of Arctic-Circle Exploration Co.
4 Did not produce in 1948.
Gold produced at placer mines in Alaska, 1945–49, by classes of mines and by methods of recovery

<table>
<thead>
<tr>
<th>Class and method</th>
<th>Mines producing</th>
<th>Washing plants (dredges)</th>
<th>Material treated (cubic yards)</th>
<th>Gold recovered</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fine ounces</td>
<td>Value</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Surface placers:</td>
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<tr>
<td>Gravel mechanically handled:</td>
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<td></td>
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<tr>
<td>Borehole-line dredges:</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1943</td>
<td>11</td>
<td>14</td>
<td>3,112,000</td>
<td>34,404</td>
</tr>
<tr>
<td>1946</td>
<td>20</td>
<td>28</td>
<td>9,819,000</td>
<td>149,352</td>
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<td>1947</td>
<td>22</td>
<td>28</td>
<td>8,286,000</td>
<td>188,599</td>
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<td>1948</td>
<td>22</td>
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<td>11,165,000</td>
<td>169,299</td>
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<td>1949</td>
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<td>28</td>
<td>14,588,000</td>
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<td>Dragline dredges:</td>
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<td>1943</td>
<td>1</td>
<td>1</td>
<td>9,300</td>
<td>1,045</td>
</tr>
<tr>
<td>1946</td>
<td>1</td>
<td>1</td>
<td>65,200</td>
<td>2,713</td>
</tr>
<tr>
<td>1947</td>
<td>2</td>
<td>2</td>
<td>148,000</td>
<td>3,715</td>
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<tr>
<td>Nonfloating washing plants:</td>
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</tr>
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<td>1943</td>
<td>24</td>
<td>24</td>
<td>518,500</td>
<td>8,249</td>
</tr>
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<td>1947</td>
<td>60</td>
<td>66</td>
<td>1,262,000</td>
<td>37,519</td>
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<tr>
<td>1948</td>
<td>75</td>
<td>75</td>
<td>2,905,000</td>
<td>45,990</td>
</tr>
<tr>
<td>1949</td>
<td>107</td>
<td>107</td>
<td>4,305,000</td>
<td>57,938</td>
</tr>
<tr>
<td>1945</td>
<td>117</td>
<td>117</td>
<td>5,470,000</td>
<td>59,265</td>
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<tr>
<td>Gravel hydraulically handled:</td>
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</tr>
<tr>
<td>Hydraulic:</td>
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</tr>
<tr>
<td>1945</td>
<td>80</td>
<td></td>
<td>668,000</td>
<td>12,900</td>
</tr>
<tr>
<td>1946</td>
<td>116</td>
<td></td>
<td>2,125,000</td>
<td>30,300</td>
</tr>
<tr>
<td>1947</td>
<td>114</td>
<td></td>
<td>2,371,000</td>
<td>30,679</td>
</tr>
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<td>1948</td>
<td>82</td>
<td></td>
<td>1,220,000</td>
<td>14,493</td>
</tr>
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<td>1949</td>
<td>33</td>
<td></td>
<td>222,500</td>
<td>5,087</td>
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<td>Small-scale hand methods:</td>
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<td>Wet:</td>
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<td>1945</td>
<td>26</td>
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<td>645</td>
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<td>1946</td>
<td>51</td>
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<td>18,500</td>
<td>688</td>
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<td>1947</td>
<td>44</td>
<td></td>
<td>46,600</td>
<td>1,121</td>
</tr>
<tr>
<td>1948</td>
<td>59</td>
<td></td>
<td>55,300</td>
<td>994</td>
</tr>
<tr>
<td>1949</td>
<td>60</td>
<td></td>
<td>55,300</td>
<td>663</td>
</tr>
<tr>
<td>Underground placers:</td>
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<td></td>
</tr>
<tr>
<td>Drift:</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>1945</td>
<td>1</td>
<td></td>
<td>1,500</td>
<td>362</td>
</tr>
<tr>
<td>1946</td>
<td>2</td>
<td></td>
<td>200</td>
<td>16</td>
</tr>
<tr>
<td>1947</td>
<td>3</td>
<td></td>
<td>400</td>
<td>48</td>
</tr>
<tr>
<td>1948</td>
<td>4</td>
<td></td>
<td>700</td>
<td>88</td>
</tr>
<tr>
<td>1949</td>
<td>2</td>
<td></td>
<td>170</td>
<td>24</td>
</tr>
<tr>
<td>Grand total placers:</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>143</td>
<td></td>
<td>4,512,000</td>
<td>57,708</td>
</tr>
<tr>
<td></td>
<td>216</td>
<td></td>
<td>14,108,000</td>
<td>220,708</td>
</tr>
<tr>
<td></td>
<td>230</td>
<td></td>
<td>13,866,000</td>
<td>270,443</td>
</tr>
<tr>
<td></td>
<td>274</td>
<td></td>
<td>10,744,000</td>
<td>343,802</td>
</tr>
<tr>
<td></td>
<td>222</td>
<td></td>
<td>18,303,000</td>
<td>221,089</td>
</tr>
</tbody>
</table>

1 Includes all placer operations using power excavator and washing plant, both on dry land; when washing plant is movable, outfit is termed "dry-land dredge."
2 Excludes itinerant prospectors, snipers, high-graders, and others who gave no evidence of legal right to property.

- Silver.—Of the silver produced in Alaska in 1949, 90 percent was a byproduct of gold mining (55 percent in 1948) and 10 percent came from lead ore. The most important producer of silver in Alaska in 1949 was the United States Smelting, Refining & Mining Co. (Fairbanks department), which recovered silver as a byproduct of bucket-line dredging operations in the Fairbanks district. The J. H. Scott Co., which dropped from first place in 1948 to second in 1949, recovered silver as a byproduct from lead ore produced from the Riversivie mine in the Huyder district, Southeastern Alaska region.
Copper, Lead, and Zinc.—Production of the base metals (copper, lead, and zinc) was limited almost entirely to output from one mine, the Riverside, near Hyder in Southeastern Alaska. A relatively small output of the metals came from several other properties in the same region as a byproduct recovery from ore and old tailings treated primarily for the recovery of gold.

**Mine production of gold, silver, copper, lead, and zinc in Alaska in 1949, by months, in terms of recoverable metals**

<table>
<thead>
<tr>
<th>Month</th>
<th>Gold (fine ounces)</th>
<th>Silver (fine ounces)</th>
<th>Copper (short tons)</th>
<th>Lead (short tons)</th>
<th>Zinc (short tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>19</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>March</td>
<td>30</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>April</td>
<td>654</td>
<td>369</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>May</td>
<td>10,302</td>
<td>1,458</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>June</td>
<td>21,866</td>
<td>5,279</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>July</td>
<td>24,233</td>
<td>3,457</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>August</td>
<td>37,720</td>
<td>5,667</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>September</td>
<td>34,387</td>
<td>5,833</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>October</td>
<td>59,101</td>
<td>9,908</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>November</td>
<td>21,100</td>
<td>3,554</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>December</td>
<td>19,892</td>
<td>2,979</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total: 1949</strong></td>
<td><strong>229,416</strong></td>
<td><strong>36,058</strong></td>
<td><strong>4</strong></td>
<td><strong>61</strong></td>
<td><strong>2</strong></td>
</tr>
<tr>
<td><strong>1948</strong></td>
<td><strong>248,340</strong></td>
<td><strong>67,341</strong></td>
<td><strong>16</strong></td>
<td><strong>229</strong></td>
<td><strong>22</strong></td>
</tr>
</tbody>
</table>

1 Based on mint and smelter receipts; data are adjusted to exclude receipts during the first part of 1949 previously credited to 1948 production, and to include receipts in 1950 which are a part of actual output in 1949.
2 Less than 1/4 ton.

**Mine production of gold, silver, copper, lead, and zinc in Alaska in 1949, by regions, in terms of recoverable metals**

<table>
<thead>
<tr>
<th>Region</th>
<th>Mines producing</th>
<th>Gold (fine ounces)</th>
<th>Silver (lode and placer, fine ounces)</th>
<th>Total value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lode</td>
<td>Placer</td>
<td>Lode</td>
<td>Placer</td>
</tr>
<tr>
<td>Cook Inlet-Susitna</td>
<td>4</td>
<td>1</td>
<td>15</td>
<td>5,071</td>
</tr>
<tr>
<td>Copper River</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Kenai Peninsula</td>
<td>2</td>
<td>1</td>
<td>127</td>
<td></td>
</tr>
<tr>
<td>Kodiak Island</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Kuskokwim</td>
<td>6</td>
<td>1</td>
<td>11,626</td>
<td>6,028</td>
</tr>
<tr>
<td>Seward Peninsula and Northwes-</td>
<td>63</td>
<td></td>
<td>56</td>
<td>36,026</td>
</tr>
<tr>
<td>tern Alaska 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Southeastern Alaska</td>
<td>7</td>
<td>1</td>
<td>2,017</td>
<td>8</td>
</tr>
<tr>
<td>Yukon River Basin</td>
<td>3</td>
<td>1</td>
<td>207</td>
<td>151,055</td>
</tr>
<tr>
<td><strong>Total Alaska: 1949</strong></td>
<td>15</td>
<td>222</td>
<td>8,327</td>
<td>221,089</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>274</td>
<td>5,503</td>
<td>242,802</td>
</tr>
</tbody>
</table>

1 Excludes itinerant prospectors, snipers, high-graders, and others who gave no evidence of legal right to property.
2 Combined to avoid disclosure of individual output.
3 Includes value of 4 short tons of copper ($1,576), 61 tons of lead ($16,116), and 2 tons of zinc ($496).
4 Includes value of 16 short tons of copper ($5,944), 329 tons of lead ($117,792), and 22 tons of zinc ($5,882).
MINING INDUSTRY

Two fewer bucket-line dredges (28 in 1949 compared with 30 in 1948) washed 79 percent of the total gravel mined for gold in Alaska in 1949 and recovered 71 percent of the total placer gold and 68 percent of the total Alaska gold (lode and placer). No dragline dredges (which include all operations using a floating washing plant and a dragline excavator) were reported in operation during 1949. Placer operations using combinations of bulldozer and hydraulic methods—in many cases supplemented with dragline equipment—are becoming more numerous in the Territory because of the distinct advantage of relatively low initial cost of equipment in proportion to the small labor crews necessary and the large volume of material that can be handled. In general, the mining method is to bulldoze the gold-bearing material to bedrock sluice boxes and use hydraulic giants (usually in closed circuit with a settling pond downstream below the sluice box, and a pump for return of the water). Dragline equipment—when used—is generally utilized for disposing of tailings and in some cases for transporting gravel to elevated sluice boxes or washing plants. Occasionally draglines or bulldozers are used for removing overburden, but by far the greater proportion of the overburden, in the form of frozen muck, is washed off with hydraulic giants. Combination methods of this type, in which the gravel is moved mechanically to the washing plant or sluice box (classified as nonfloating washing plants), washed 19 percent of the total gravel mined and recovered 27 percent of the placer gold, a 19-percent decrease in gravel handled and a 2-percent gain in gold recovered compared with 1948. Operations in which gold was recovered primarily by hydraulic methods (excluding hydraulic stripping of overburden) showed a decrease in the number of mines (partly because of reclassification from hydraulic to nonfloating washing plants), gravel washed, and gold produced. Gold output from a smaller number of small-scale hand operations was correspondingly less than in 1948. Two drift mines produced only a few ounces of gold in 1949; this method of mining, once widespread in Alaska, is now virtually obsolete. The total yardage of gravel washed at gold placer mines increased 10 percent, whereas gold recovered declined 9 percent. The average recoverable gold content of gravel decreased 17 percent.

The tonnage of material from lode mines (gold, silver, copper, lead, and zinc) in Alaska treated in 1949 apparently increased to 13 times the total for 1948. However, this marked increase is due largely to inclusion of a large tonnage of old tailings, for which comparable figures for 1948 are not available, although a substantial tonnage of similar material was known to have been treated in that year. The output of lode gold increased 49 percent, largely because of resumption of operations of the Independence mine, Willow Creek district, Cook Inlet-Susitna region; however, gold from all active lode mines and mill clean-ups at inactive mines comprised only 4 percent of the Territory total.
ORE CLASSIFICATION

Of the 78,839 tons of ore (including 70,026 tons of old tailings) sold or treated in 1949, 97 percent was gold ore and the remainder lead ore. Details of ore classification are given in the Gold and Silver chapter of this volume.

Ore and old tailings sold or treated in Alaska in 1949, with content in terms of recoverable metals

<table>
<thead>
<tr>
<th>Source</th>
<th>Material sold or treated</th>
<th>Gold (fine ounces)</th>
<th>Silver (fine ounces)</th>
<th>Copper (pounds)</th>
<th>Lead (pounds)</th>
<th>Zinc (pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ore (short tons)</td>
<td>Old tailings (short tons)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dry gold ore...</td>
<td>6,713</td>
<td>70,026</td>
<td>7,983</td>
<td>1,572</td>
<td>100</td>
<td>600</td>
</tr>
<tr>
<td>Lead ore.......</td>
<td>2,100</td>
<td>344</td>
<td>3,739</td>
<td>7,900</td>
<td>101,400</td>
<td>3,500</td>
</tr>
<tr>
<td>Total lode mines</td>
<td>8,813</td>
<td>70,026</td>
<td>8,327</td>
<td>5,111</td>
<td>102,000</td>
<td>4,000</td>
</tr>
<tr>
<td>Placers</td>
<td>221,069</td>
<td>30,945</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total: 1949</td>
<td>229,888</td>
<td>100,971</td>
<td>8,000</td>
<td>102,000</td>
<td>4,000</td>
<td></td>
</tr>
<tr>
<td>1948</td>
<td>15,818</td>
<td>166</td>
<td>225,416</td>
<td>36,056</td>
<td>658,000</td>
<td>44,000</td>
</tr>
</tbody>
</table>

1 Includes 80 tons of ore produced before 1948.

METALLURGIC INDUSTRY

Of the total ore and old tailings handled during 1949, all was treated at mills (with or without concentrating equipment) except a small tonnage shipped for direct smelting; 97 percent was treated by amalgamation. Smelters in the United States received 340 tons of flotation concentrates, 46 tons of gravity concentrates, and 14 tons of ore for direct smelting from Alaska operations of mines producing gold and lead (with silver, copper, and zinc as byproducts).

Mine production of metals in Alaska in 1949, by methods of recovery, in terms of recoverable metals

<table>
<thead>
<tr>
<th>Method of recovery</th>
<th>Gold (fine ounces)</th>
<th>Silver (fine ounces)</th>
<th>Copper (pounds)</th>
<th>Lead (pounds)</th>
<th>Zinc (pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ore and old tailings amalgamated...</td>
<td>7,131</td>
<td>851</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concentrates smelted:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flotation</td>
<td>878</td>
<td>3,832</td>
<td>7,900</td>
<td>101,400</td>
<td>3,500</td>
</tr>
<tr>
<td>Gravity</td>
<td>252</td>
<td>313</td>
<td>100</td>
<td>600</td>
<td>200</td>
</tr>
<tr>
<td>Ore smelted</td>
<td>66</td>
<td>115</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total lode mines</td>
<td>8,327</td>
<td>5,111</td>
<td>8,000</td>
<td>102,000</td>
<td>4,000</td>
</tr>
<tr>
<td>Placers</td>
<td>221,069</td>
<td>30,945</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total: 1949</td>
<td>229,416</td>
<td>36,056</td>
<td>8,000</td>
<td>102,000</td>
<td>4,000</td>
</tr>
<tr>
<td>1948</td>
<td>248,386</td>
<td>67,341</td>
<td>32,000</td>
<td>658,000</td>
<td>44,000</td>
</tr>
</tbody>
</table>
Mine production of metals from mills in Alaska in 1949, by regions, in terms of recoverable metals

<table>
<thead>
<tr>
<th>Material treated</th>
<th>Ore (short tons)</th>
<th>Old tailings (short tons)</th>
<th>Gold (fine ounces)</th>
<th>Silver (fine ounces)</th>
<th>Concentrates produced (short tons)</th>
<th>Gold (fine ounces)</th>
<th>Silver (fine ounces)</th>
<th>Copper (pounds)</th>
<th>Lead (pounds)</th>
<th>Zinc (pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5,416</td>
<td>1</td>
<td>4,026</td>
<td>261</td>
<td>57</td>
<td>445</td>
<td>38</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copper River Clean up</td>
<td>120</td>
<td>28</td>
<td>2,192</td>
<td>332</td>
<td>329</td>
<td>661</td>
<td>4,101</td>
<td>8,000</td>
<td>102,000</td>
<td>4,000</td>
</tr>
<tr>
<td>Kenai Peninsula Southeastern Alaska</td>
<td>2,800</td>
<td>105</td>
<td>70,026</td>
<td>2,102</td>
<td>329</td>
<td>661</td>
<td>4,101</td>
<td>8,000</td>
<td>102,000</td>
<td>4,000</td>
</tr>
<tr>
<td>Yukon River Basin</td>
<td>463</td>
<td>207</td>
<td>4,196</td>
<td>736</td>
<td>1,005</td>
<td>1,220</td>
<td>30,352</td>
<td>28,000</td>
<td>66,500</td>
<td>44,000</td>
</tr>
<tr>
<td>Total: 1949</td>
<td>8,799</td>
<td>15</td>
<td>7,131</td>
<td>851</td>
<td>2,865</td>
<td>1,130</td>
<td>4,145</td>
<td>8,000</td>
<td>102,000</td>
<td>4,000</td>
</tr>
<tr>
<td>1948</td>
<td>55,822</td>
<td>15</td>
<td>4,196</td>
<td>736</td>
<td>1,005</td>
<td>1,220</td>
<td>30,352</td>
<td>28,000</td>
<td>66,500</td>
<td>44,000</td>
</tr>
</tbody>
</table>

**BY CLASSES OF CONCENTRATES**

<table>
<thead>
<tr>
<th>Class of concentrates</th>
<th>Concentrates (short tons)</th>
<th>Gross metal content</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gold (fine ounces)</td>
<td>Silver (fine ounces)</td>
</tr>
<tr>
<td>Dry gold</td>
<td>106</td>
<td>786</td>
</tr>
<tr>
<td></td>
<td>280</td>
<td>344</td>
</tr>
<tr>
<td>Lead</td>
<td>386</td>
<td>1,130</td>
</tr>
<tr>
<td></td>
<td>1,005</td>
<td>1,220</td>
</tr>
</tbody>
</table>

1. Less than ½ ton.
2. Includes 80 tons of ore produced before 1948.

Gross metal content of concentrates produced from ores mined in Alaska in 1949, by classes of concentrates.
Mine production of metals from Alaska crude ore and old tailings shipped to smelters in 1949, by regions, in terms of recoverable metals

<table>
<thead>
<tr>
<th>Region</th>
<th>Ore (short tons)</th>
<th>Old tailings (short tons)</th>
<th>Gold (fine ounces)</th>
<th>Silver (fine ounces)</th>
<th>Copper (pounds)</th>
<th>Lead (pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper River</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kodiak Island</td>
<td>6</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Southeastern Alaska</td>
<td>7</td>
<td></td>
<td>64</td>
<td>114</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total: 1949</strong></td>
<td><strong>14</strong></td>
<td><strong>161</strong></td>
<td><strong>66</strong></td>
<td><strong>115</strong></td>
<td><strong>4,000</strong></td>
<td><strong>1,500</strong></td>
</tr>
<tr>
<td>1948</td>
<td>26</td>
<td>177</td>
<td>288</td>
<td>4,341</td>
<td>2,130</td>
<td></td>
</tr>
</tbody>
</table>

1 All dry gold.

Gross metal content of Alaska crude ore and old tailings shipped to smelters in 1949, by classes of material

<table>
<thead>
<tr>
<th>Class of material</th>
<th>Material treated</th>
<th>Gross metal content</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ore (short tons)</td>
<td>Old tailings (short tons)</td>
</tr>
<tr>
<td>Dry gold</td>
<td>14</td>
<td>66</td>
</tr>
<tr>
<td><strong>Total: 1949</strong></td>
<td><strong>14</strong></td>
<td><strong>161</strong></td>
</tr>
<tr>
<td>1948</td>
<td>26</td>
<td>177</td>
</tr>
</tbody>
</table>

**REVIEW BY REGIONS AND DISTRICTS**

There is no official record for a considerable quantity of natural gold produced in Alaska in 1949 and sold on the open market for prices over $35 a fine ounce, inasmuch as some producers did not submit reports and the purchasers are holding such gold on speculation. The recorded production of gold from a few of the districts in 1949 (including the Fairbanks, Fortymile, Circle, Eagle, Kantishna, Innoko, Rampart, and Tolovana districts in the Yukon River Basin region, and the Council-Bluff district in the Seward Peninsula region, from which natural gold was reported as having been sold) is probably lower than the actual output by several hundred to several thousand ounces, and there is some question as to the relative rank in production of the individual operators.
<table>
<thead>
<tr>
<th>Region and district</th>
<th>Mines producing (^2)</th>
<th>Ore and old tailings (short tons)</th>
<th>Gold (fine ounces)</th>
<th>Silver (^1) (lode and placer, fine ounces)</th>
<th>Copper (pounds)</th>
<th>Lead (pounds)</th>
<th>Zinc (pounds)</th>
<th>Total value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lode</td>
<td>Placer</td>
<td>Lode</td>
<td>Placer</td>
<td>Total</td>
<td>Lode</td>
<td>Placer</td>
<td>Total</td>
</tr>
<tr>
<td>Cook Inlet-Susitna region:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valdez</td>
<td></td>
<td></td>
<td>4</td>
<td>5,416</td>
<td></td>
<td></td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Willow Creek</td>
<td></td>
<td></td>
<td>13</td>
<td>5,071</td>
<td></td>
<td></td>
<td>2,229</td>
<td></td>
</tr>
<tr>
<td>Yakutat</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kenai Peninsula region: Moose Pass-Hope</td>
<td>7</td>
<td>120</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kodiak Island region:</td>
<td></td>
<td></td>
<td>1</td>
<td>6</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Kuskokwim region:</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goodnews Bay</td>
<td></td>
<td></td>
<td>5</td>
<td>11,626</td>
<td>11,626</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seward Peninsula region:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Council-Bluff</td>
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\(^1\) Lode and placer, fine ounces
\(^2\) Includes only those mines with total production of at least 1,000.
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1 Only those districts shown separately for which Bureau of Mines is at liberty to publish figures; others producing listed in footnote 7 and their output included with "Other districts."
2 Excludes itinerant prospectors, sappers, high-graders, and others who gave no evidence of legal right to property.
3 Sources of total silver as follows: 5,111 ounces from lode mines, and 30,945 from placers.
4 Included with "Other districts."
5 Exclusive of placer output, which is included with "Other districts."
6 Gold not sold.
7 Includes following: Willow Creek (placer) Cook Inlet-Sustina region; Chistochina and Nelchina (placer) Copper River region; Kiana (placer) Northwestern Alaska region; Koyuk (placer) Seward Peninsula region; Ketchikan (lode) Southeastern Alaska region; Hughes, Kalyuk (placer) Yukon River Basin region.
Willow Creek District.—The Alaska Pacific Consolidated Mining Co. reopened the Independence mine on Fishhook Creek near Wasilla late in the season after being inactive since 1946. The mine was operated on a leasing system, the ore being treated at the company 80-ton amalgamation-flotation mill on the property. From 4,366 tons of gold ore milled from August 18 to December 31, 3,018 ounces of gold and 179 ounces of silver were recovered as bullion by amalgamation; in addition, 42 tons of concentrate (containing 333 ounces of gold, 31 ounces of silver, and 199 pounds of copper) were produced and shipped to a smelter in the United States. The Fern Exploration Co., Inc., operated the Fern mine on Archangel Creek throughout the year; 800 tons of gold ore were treated in a 50-ton amalgamation-flotation mill to recover 1,381 ounces of gold and 63 ounces of silver as bullion and an additional 80 ounces of gold and 6 ounces of silver contained in 11 tons of concentrate shipped to a smelter in the United States. Lloyd Hill recovered a small quantity of gold from gold ore treated by amalgamation at the Lonesome mine (Gold Mint property) on the Little Susitna River. A small quantity of gold was recovered as the result of clean-up operations at the Gold Cord mill on Fishhook Creek. Development work continued throughout 1949 at the Snowbird mine on Reed Creek. A 30-ton mill and power plant were constructed during the year, but no ore had been treated by December 31.

Yentna-Cache Creek District.—Again, as in 1948, the largest producer in the district was Collinsville Mines (dryland dredge with dragline equipment) operating on Twin Creek. The Alaska Exploration and Mining Co. hydraulicked 15,000 cubic yards of gravel on Bird Creek from May 1 to October 6 and recovered 245 ounces of gold and 36 ounces of silver. Harold Stanton recovered a moderate quantity of gold by the combination bulldozer-hydraulic method on Nugget Creek from May 28 to September 5; the ground, under lease from the Nugget Creek Mining Co., was reportedly worked out at the end of the season. A few other operators recovered lesser quantities of gold by hydraulicking and the widely used bulldozer-hydraulic combination.

Copper River Region

Chistochina District.—Activity in the district was virtually at a standstill in 1949. Hagarty and Beerman operated the Big Four mine on Big Four Creek from June 22 to August 31 and recovered a small quantity of gold by the bulldozer-hydraulic method. The Slate Creek Gold Placers, the largest producer in the district in 1948, did not operate during the 1949 season.

Nelchina District.—C. J. McMahan was the only operator reported active in the district in 1949; he recovered a small quantity of gold from North and Albert Creeks, using a carry-all-bulldozer combination to move gravel to the sluice box.

Kenai Peninsula Region

Moose Pass-Hope District.—The Skeen-Leckner (Falls Creek) mine was operated by the Falls Creek Mining Co. from July 1 to October 15,
1949; 110 tons of gold ore were treated in the 25-ton amalgamation flotation plant at the mine and 98 ounces of gold and 27 ounces of silver were recovered in the form of bullion. In addition, less than one-half ton of concentrate containing 22 ounces of gold and 6 ounces of silver was shipped to a smelter in the United States. William Kelly operated the Grant Lake mine during the season and recovered a small quantity of gold from gold ore treated by amalgamation.

**KUSKOKWIM REGION**

**Goodnews Bay District.**—The only gold produced in the district in 1949 was recovered as a byproduct from platinum mined by the Goodnews Bay Mining Co. on the Salmon River.

**Tuluxak-Aniak District.**—The New York-Alaska Gold Dredging Corp., the largest gold producer in the region and the third largest in the Territory in 1949, operated two floating bucket-line dredges (electrically powered, equipped with sixty-seven 61/2-cubic-foot and sixty-six 11/2-cubic-foot buckets, respectively) and a dragline-bulldozer combination with a nonfloating washing plant on the Tuluxak River and Bear and California Creeks. The Marvel Creek Mining Co., using a dragline-bulldozer-hydraulic combination with nonfloating washing plant on Marvel Creek from June 1 to October 15, washed 100,000 cubic yards of gravel to recover 1,133 ounces of gold and 144 ounces of silver. Using a bulldozer-hydraulic combination with a nonfloating washing plant, the Canyon Creek Mining Co. (Jens Kvamme & Sons) recovered a substantial quantity of gold from Canyon Creek from July 1 to September 5.

**NORTHWESTERN ALASKA REGION**

**Kiana District.**—The Lammers Exploration Co., the only gold producer in the district in 1949, operated its Diesel-electric bucket-line dredge (with fifty-six 3-cubic-foot buckets) on Klery Creek during the 1949 season.

**SEWARD PENINSULA REGION**

In the Seward Peninsula region, 14 floating bucket-line dredges were in operation during 1949 (the same number as in 1948); in addition, numerous operators used hydraulic giants, bulldozers, and dragline excavators either separately or in combination. There was no reported production from any lode gold mine.

**Council-Bluff District.**—The principal producers in the district were the Alaska Placer Co., which operated a bucket-line dredge (flume type, equipped with sixty 3-cubic-foot buckets) on the Niukluk River benches (2,101 ounces of gold and 239 ounces of silver were recovered from 250,000 yards of gravel washed during the period from June 12 to October 5); and the Sourdough Dredging Co., which operated a bucket-line dredge equipped with sixty-two 31/2-cubic-foot buckets on Dutch and Ophir Creeks July through October 1949. The Council Dredging Co. operated a bucket-line dredge on Ophir Creek during the 1949 season—the first appearance of this company among the producers in the district since the war. C. L. Dempsey recovered a small quantity of gold from Willow Creek, using a bucket-line dredge.
Among other operators in the district using different methods, the Niukluk Mining Co. was the principal producer of placer gold.

**Fairhaven District.**—The Havenstrite Mining Co. (formerly known as Arctic Circle Exploration Co.), operating two drag-line excavators (each with $1\frac{1}{2}$-cubic-yard buckets) for the movement of tailings and three bulldozers for delivering gravel to the sluice box on Candle Creek, recovered 4,255 ounces of gold and 591 ounces of silver from 90,162 cubic yards of material washed between April 20 to November 6. The operation ranked first in production of gold in the district and seventh in the Territory. Neither of the two bucket-line dredges formerly owned by the predecessor company was operated in 1949. The Casa de Paga Gold Co. operated its two bucket-line dredges on the Inmachuk River from May 1 to October 30 and recovered 3,700 ounces of gold and 388 ounces of silver from 365,410 cubic yards of gravel. Both dredges are the flume type, equipped with seventy 3-cubic-foot buckets. Other producers of a moderate quantity of gold from placers worked hydraulically and in combination with bulldozers, pumps, or other types of mechanical equipment included N. B. Tweet & Sons (bulldozer-hydraulic on Humboldt Creek); Wallace Porter (bulldozer-hydraulic on claim 3 below Discovery on Bear Creek; 574 ounces of gold and 94 ounces of silver recovered from 30,000 cubic yards); Jump Creek Mines (Fred Weinard, hydraulic on Jump Creek); and Anderson & Luoto on Old Glory Creek (99 ounces of gold and 10 ounces of silver recovered from 7,200 cubic yards of gravel handled by a bulldozer-hydraulic combination).

**Kougarok District.**—Kougarok Consolidated Placers, Inc., operating its Diesel-powered dredge (with seventy-six $2\frac{1}{4}$-cubic-foot buckets) on claims 29, 30, and 31 above Allen’s Discovery, Kougarok River, from July 15 to October 18, was the largest producer of gold in the district in 1949. The North Fork Dredging Co. operated its bucket-line dredge (with $2\frac{1}{2}$-cubic-foot buckets) on Harris Creek during the season and recovered a substantial quantity of gold. Other mining in the district in 1949 was limited to placer operations, principally by hydraulicking and with combinations of mechanical equipment using nonfloating washing plants (in most cases bedrock sluice boxes). The large operators were Grant Mining Co. (hydraulic on Coffee Creek), Trinity Mining Co. (John Kanari and Al Carey—bulldozer on Kougarok River), Noonan & Whitmore (bulldozer-hydraulic with elevated sluice box on Mascot Gulch) on the M. J. Walsh property, Atlas Mines (Geo. J. Waldhelm—dragline-bulldozer-hydraulic on Atlas Creek), Nashenweng & Asp (hydraulic-bulldozer on claim 8, Quartz Creek), Silver Bow Mining Co. on Coffee Creek, and Wirum Bros. also on Coffee Creek (hydraulic on claim 4 above Crause’s Discovery).

**Koyuk District.**—James E. Baldwin recovered a substantial quantity of gold from the Right Fork Sweepstake Creek during the period July 1 to October 3, using bulldozer-hydraulic equipment. The bucket-line dredge of the Ungalik Syndicate did not operate during the 1949 season.

**Nome District.**—The United States Smelting, Refining & Mining Co., operating two of its fleet of four bucket-line dredges in the vicinity of Nome from May 27 to December 3, was the largest producer of
gold in the district and the Seward Peninsula region and ranked second in the Territory. The two dredges in operation were electrically powered and equipped with 194 and 109 9-cubic-foot buckets, respectively. Lee Bros. Dredging Co., the second-largest gold producer in the district in 1949, operated two bucket-line dredges (equipped with seventy-three 5-cubic-foot and sixty-six 3½-cubic-foot buckets) on the Solomon River during the 1949 season. The two other bucket-line dredges active in the district during 1949 were operated by Gold Beach Dredging Co. (Childberg claim, Nome Beach) and Tolbert Scott & Son (Iron Creek). Among the larger producers of 100 ounces or more of gold from placers worked by hydraulic giants and in combination with bulldozers and pumping equipment were E. W. Quigley on Solomon River (hydraulic), Andrew Peterson on Iron Creek, Kougarok Freighting & Mining Co. on Buster Creek (bulldozer-hydraulic), and Rocky Mountain Mining Co. on Rocky Mountain Creek (bulldozer-hydraulic).

Port Clarence District.—O’Leary & Co. hydraulicked on the Bluestone River during the 1949 season and recovered a small quantity of gold, using equipment obtained from the Glacier Creek Mines (which had operated on Glacier Creek, Nome District, in 1948). Frank L. Rice used hydraulic-bulldozer equipment on Sunset Creek to recover a moderate quantity of gold during a 50-day operating period.

Serpentine River District.—George Bodis worked the Dick Creek Placers (No. 12 above Discovery) from July 1 to October 1. Using a bulldozer-hydraulic combination with a bed-rock flume, 69 ounces of gold and 7 ounces of silver were recovered from 3,000 cubic yards of gravel.

SOUTHEASTERN ALASKA REGION

One-third of the total Alaska lode-gold output came from seven operations in the Hyder, Juneau, and Ketchikan districts. Nearly all of the lode silver and all of the copper, lead, and zinc came from this region. Placer mining was virtually nonexistent during 1949, as in 1948.

Hyder District.—The J. H. Scott Co. operated the Riverside mine on a reduced scale from August 15 to December 1 treating lead ore (containing scheelite) in its 100-ton combination flotation-gravity concentration mill. From 2,100 tons of lead ore milled, 265 tons of lead concentrate (containing 151 ounces of gold, 8,335 pounds of copper, 99,441 pounds of lead, and 4,494 pounds of zinc) were produced and shipped to smelters in the United States.

Juneau District.—The Alaska Juneau mine remained inactive during 1949, but a few tons of lead concentrate containing some gold and silver obtained as the result of mill clean-up was shipped to a smelter in the United States. Howard Hayes & Stan Whitely recovered 1,581 ounces of gold and 301 ounces of silver in the form of bullion by re-treating 65,500 tons of old tailings from the Alaska Juneau mill by amalgamation; in addition, 29 tons of gravity concentrate containing 146 ounces of gold, 74 ounces of silver, 137 pounds of copper, and 995 pounds of lead were shipped to a smelter in the United States. The same partners similarly recovered 115 ounces of gold and 12 ounces of silver from 4,500 tons of old tailings from the Treadwell mill. The
LeRoy Mining Co. operated the LeRoy (Rainbow) mine on Glacier Bay from April 1 to October 24 and treated gold ore in an 18-ton amalgamation-flotation mill; from 75 tons of ore and 26 tons of old tailings milled, 324 ounces of gold and 143 ounces of silver were recovered as mill bullion, and 3 tons of concentrate were produced (containing 67 ounces of gold, 49 ounces of silver, 4 pounds of copper, 34 pounds of lead, and 271 pounds of zinc) and shipped to a smelter in the United States.

Ketchikan District.—The only active gold mine in the district in 1949 was the Dawson mine on Prince of Wales Island, operated by Wendell Dawson from March 7 to November 12; gold ore was treated by amalgamation, and a small tonnage of ore and concentrate was shipped to a smelter in the United States.

YUKON RIVER BASIN REGION

One hundred and thirty-three placer mines and 3 lode mines in 17 districts in the Yukon River Basin region accounted for 66 percent of the total Alaskan gold produced in 1949. Sixty-nine percent of the 151,055 ounces of placer gold produced in the region came from 10 bucket-line dredges. Two percent of the total Alaska gold from lode mines came from the region. The Fairbanks district continued to be the most important gold-producing area in the region and the Territory.

Circle District.—Two bucket-line dredges were active in the district in 1949. Alluvial Golds, Inc., operated its Diesel-powered dredge equipped with seventy-two 4½-cubic-foot buckets on Woodchopper Creek from April 16 to October 11. The C. J. Berry Dredging Co., operating its dredge on Mammoth Creek, washed 352,500 cubic yards of gravel to recover 3,920 ounces of gold and 787 ounces of silver. Gold Placers, Inc., did not operate its dredge on Coal Creek during 1949; the season was spent in stripping overburden preparatory to resumption of production in 1950. The output from the two active dredges constituted the greater part of the production from the district, which ranked second in gold production in the Yukon River Basin region. The larger producers of placer gold in the district by other methods were P. R. & H. Mining Co., on lower Deadwood Creek (1,559 ounces of gold and 381 ounces of silver recovered from 110,000 cubic yards of material handled by the bulldozer-sluice box method); Deadwood Mining Co., on upper Deadwood Creek (490 ounces of gold and 74 ounces of silver recovered from 20,000 cubic yards of gravel by the combination dragline-bulldozer-hydraulic method); Kelly & Wilkinson, on Miller Creek (481 ounces of gold and 87 ounces of silver from 45,000 cubic yards of material handled; bulldozer-hydraulic); Frasca & Gibson, on Eagle Creek (bulldozer-hydraulic); Harrison Creek Mining Co., on Harrison Creek (hydraulic); and A. A. Zimmerman, on Independence Creek (hydraulic).

Eagle District.—The Yukon Placer Mining Co., using bulldozer equipment, worked placer ground on Fourth of July Creek from April 15 to September 30 and recovered 1,372 ounces of gold and some silver from 70,000 cubic yards of gravel. Burnett F. Hansen, using similar equipment, operated on Alder Creek. The Crooked Creek
Placer Co. (Bauer & Celich) hydraulicked on Crooked Creek from April 15 to September 30 and recovered 80 ounces of gold and 6 ounces of silver from 2,700 cubic yards of gold-bearing gravel washed.

**Fairbanks District.**—The United States Smelting, Refining & Mining Co., operating five bucket-line dredges in the Fairbanks district, was—as in previous years—by far the largest producer of gold, not only in the district but in the Territory. The company operated three 6-cubic-foot Bethlehem dredges (1 with 68 buckets and 2 with 78 buckets each), one 10-cubic-foot Bethlehem dredge (with 83 buckets), and one 10-cubic-foot Yuba dredge (with 106 buckets); all dredges are operated electrically. Other equipment used (chiefly for removing overburden) included 240 Joshua Hendy hydraulic giants, a Bucyrus 10–W power shovel, and numerous bulldozers and carryalls.

The Brinker-Johnson Co., the second largest producer in the Fairbanks district, recovered 8,747 ounces of gold and 1,110 ounces of silver from 671,164 cubic yards of gravel handled by a Walter Johnson Diesel-powered bucket-line dredge equipped with seventy-eight 4 1/2-cubic-foot buckets on Caribou Creek (in the Salcha area).

Of those producers of gold from placers worked hydraulically and in combination with draglines, bulldozers, and pumping equipment, the Alder Creek Mining Co. was the largest. Two dragline excavators (with 1 1/2- and 2-cubic-yard buckets, respectively), three bulldozers, and four hydraulic giants were used by the company during the 1949 season on Fairbanks Creek from May 5 to October 15. Other producers of a substantial quantity of placer gold in the district, using similar combinations of equipment, were Four A Mining Co. on Pedro Creek (bulldozer-hydraulic), Helmer Johnson on Cleary Creek from May 10 to October 12 (hydraulic with bulldozer equipment), G. B. Martin on Pedro Creek (bulldozer-hydraulic), Ernest L. Maurer on Last Chance Creek (bulldozer-hydraulic), Strom Co. on Rose Creek (dragline-bulldozer-hydraulic), Wildt & Townley on Homestake Creek (bulldozer-hydraulic), and Williams Mining Co. on Gilmore Creek.

Production of gold from lode mines in the Fairbanks district in 1949 was even smaller than has been usual during the postwar period of high costs for labor, supplies, and equipment. Only three operators reported activity during the season. Jokela & Lazeration worked the Greenback claims on Pedro Dome at the head of Little Eldorado Creek and recovered a moderate quantity of gold from gold ore treated by amalgamation at the Cleary Hill Mines Co. mill on Cleary Creek. E. L. Kay operated the Lone Tree (Sanford) mine on Ester Dome during a 7-month period in 1949. Howard Sparks recovered a small quantity of gold as a byproduct of antimony mining and milling at the Tolovana mine on Willow Creek during July 1949.

**Fortymile District.**—Of the placer gold reported recovered in the district in 1949 (excluding that quantity of natural gold concerning which records are incomplete), 81 percent came from properties operated by the Yukon Placer Mining Co. on Canyon Creek (1,946 ounces of gold and some silver recovered from 94,000 cubic yards of gravel by the use of a bucket-line dredge equipped with fifty-eight 2 1/2-cubic-foot buckets) and Walker’s Fork (248 ounces of gold and 38 ounces of silver recovered from 26,000 cubic yards of gravel by the
use of bulldozers and a sluice box), and the Wade Creek Dredging Co. on Wade Creek (3,566 ounces of gold and some silver recovered by the bulldozer-sluice box method from 189,000 cubic yards of gravel). A substantial quantity of gold also was produced by the Franklin Mining Co. from the Meldrum property on Chicken Creek (bulldozer-hydraulic) and the Uhler Creek Mining Co. on Uhler Creek. Several other producers in the area, using similar equipment, reported outputs of less than 200 ounces of gold.

**Hot Springs District.**—The largest producer of gold in the district in 1949 (on the basis of reported output for all producers excluding natural gold sold, quantity unreported) was A. W. Pringle, who operated on Rhode Island Creek (bulldozer-hydraulic). Other producers in the district with reported outputs of 100 to 400 ounces of gold, using various combination of bulldozers, hydraulic equipment, and draglines with bedrock sluice boxes, were Cleary Hill Mines Co. on Sullivan Creek and Tofty Gulch, Coble & Francis and Pete Johnson on Eureka Creek, Johnson & Johnson on Glenn Gulch, Enstrom & McDougall on American Creek, and Doyle & Conners on New York Creek. Otto Hoyerly worked a small drift mine on Cache Creek (Cannon Ball 1, 2, 3, and 4 claims) near Tofty.

**Hughes District.**—Only one producer reported activity in the district in 1949. Strandberg & Sons, using dragline-bulldozer-hydraulic equipment, recovered a substantial quantity of gold from Utopia Creek.

**Iditarod District.**—The largest producer of gold in the district in 1949, as in 1948 (on the basis of reported data), was the North American Dredging Co., which operated its Diesel-powered bucket-line dredge equipped with seventy 3½-cubic-yard buckets on the Mohawk Association property on Otter and Flat Creeks between June 10 and October 18. Among the larger operators which produced placer gold with dragline-bulldozer-hydraulic equipment were Hatton & Turner on Willow Creek, Awe Mining Co. on Chicken Creek, Uotila & Ogriz on Slate Creek, Moore Creek Mining Co. on Moore Creek, and the Alpha Mining Co. on Alpha Association property on Flat Creek. The Prince Creek Mining Co. on Prince Creek and Gust Backstrom on Flat Creek recovered a moderate quantity of gold by hydraulicking.

**Innoko District.**—Several thousand ounces of natural gold produced from the Innoko district in 1949 were sold on the open market; but, inasmuch as only part of this output was reported, the relative rank in output of each producer is in doubt. On the basis of known data the principal operators of placer-gold mines in the district in 1949—all of which used dragline-bulldozer-hydraulic equipment in conjunction with a sluice box, either of the bedrock or elevated type—were Cripple Creek Mining Co. (Strandberg & Sons) on Cripple Creek, Degnan Mining Co. on Little Creek, Gurther & Myklebust on Little Creek and (N. J. Vibe estate) Anvil Creek, Hard & Uotila on Bear Creek, Hubbard & McFarland on Little Creek and Lower Ganes Creek, Rosander & Reed on Yankee Creek, Savage & Matson on Spruce Creek, and Uotila & Hard on Ophir Creek. The mining season in the district lasted about 5½ months, from early May to mid-October.
The Innoko Dredging Co. (Repo & Molitor, lessees) was rebuilding the bucket-line dredge on Ganes Creek during 1949; the boat will be Diesel-powered and equipped with seventy 3 1/2-cubic-foot buckets.

**Kantishna District.**—The Glacier Creek Mining Co. operated on Glacier Creek from June 15 to September 10, using the dragline-bulldozer-dry-land washing plant leased from Caribou Mines. The ground on Caribou Creek and Glacier Creek is considered to be worked out, and neither company plans to resume operation in the area. Hosler Mines operated on Eureka Creek (bulldozer-hydraulic) from June 25 to September 10; and Hunter & Burnett, using similar equipment, recovered a moderate quantity of gold from its property on Crooked Creek.

**Koyukuk District.**—The South Fork Mining Co. again—as in 1948—was the largest producer of gold in the district. Operating its dragline-bulldozer combination with a bedrock sluice on gold bench, on the South Fork of Koyukuk River from April 15 to September 1, 800 ounces of gold and 82 ounces of silver were recovered from 48,000 cubic yards of gravel. Using the same type of equipment, the Myrtle Creek Mining Co. operated on Myrtle Creek in 1949. Another producer of a moderate quantity of gold, but with bulldozer-hydraulic equipment, was the Wild Lake Mining Co. (Savage & Doheny) which operated on Spring Creek from June 15 to August 31. Other producers of smaller quantities of gold in the district (on the basis of reported data) included A & S Mining Co. on Crevice Creek, Nesland & White on Vermont and Portage Creeks (bulldozer), E. H. Pitts on Lake Creek (hydraulic), Stanich Bros. on Porcupine Creek, and Bill Vurcich on Sheep Creek.

**Marshall District.**—Johnson & Ostnes operated a dry-land dredge (dragline and movable elevated washing plant) on claims 2 and 3 below Discovery on Willow Creek from June 1 to October 4.

**Rampart District.**—The Little Minook Mining Co. operated on Little Minook Creek during the 1949 season from May 15 to September 29 and recovered 1,454 ounces of gold and 205 ounces of silver from 88,000 cubic yards of gravel, using a dragline-bulldozer-hydraulic combination. Hunter Creek Mining Co. produced 207 ounces of natural gold from Hunter Creek by the bulldozer-hydraulic method from July 12 to August 28; but the greater part of the output was not sold. A substantial quantity of gold was produced by Swanson Bros. & Saarela on Hunter Creek from May through September 15, using bulldozers and a sluice plate. Pierce & Cravey operated on Gunnison Creek and recovered a moderate quantity of gold. Frank J. Dinan worked claim 2 below Discovery on Florida Creek by drift mining.

**Ruby District.**—Peter Miscovich & Sons, using a dragline-bulldozer-pump combination on Flat Creek, June through October 11, was the largest gold producer in the district in 1949. The Iditarod Operating Co., operating on Golden Creek, 30 miles south of Tanana, from July 1 to September 25, recovered 780 ounces of gold and 96 ounces of silver from 129,400 cubic yards of gravel handled by bulldozers and washed over a bed-rock sluice plate. Other producers of substantial quantities of gold in the district using similar type of equipment, some with a dragline, were Granite Creek Mining Co. (Carlo & May) on Ophir Creek; Iver Johnson & Co. on Trail Creek; Midnight Mining Co.
(Coyle & Rasmussen), operating the Enterprise and Rabbit Fraction claims on Midnight Creek (Fox Association); and Clarence Zaiser on Spruce Creek.

**Tolovana District.**—Olive Creek Mines (as in 1948) was the largest producer of gold in the district; 1,705 ounces of gold and 178 ounces of silver were recovered from 70,000 cubic yards of gold-bearing gravel handled by the commonly used bulldozer-pump-sluice-box method, the tailings being removed by a dragline. The operation was on the N. R. Hudson property on Olive Creek near Livengood. Warwick Mines, using a bulldozer-hydraulic combination on Gertrude Creek from May 1 to October 5, recovered 618 ounces of gold and some silver from 140,000 cubic yards of gravel. The Amy Creek Mining Co., using the bulldozer-hydraulic combination to handle gravel, a sluice box, and a dragline to remove tailings, operated on Amy Creek bench from April 18 to September 18. Wilbur Mines operated on Wilbur Creek (bulldozer-hydraulic) during a 4-month period, and Car, Jurich & Mandish hydraulicicked on Lillian Creek from June 1 to August 31.

**OTHER MINERALS**

**Antimony.**—Earl Pilgrim operated the Stampede mine in the Kantishna district and was the only producer reporting shipments of antimony ore or concentrates from Alaska in 1949. Shipments were 74 tons of concentrate containing 87,780 pounds of antimony. The Sawtooth Mining Co. suspended its development program at an antimony occurrence near Rampart; 100 tons of 50-percent antimony ore mined in 1948 was still at the property pending advantageous market conditions for shipment. The Antimony Corp. of Alaska produced a small tonnage of antimony ore from the Rambler mine on Boulder Creek in the Tok district; no shipments were made to the United States. Howard Sparks developed the Tolovana mine, Fairbanks district, and set up a small flotation plant for antimony concentrate; no shipments were made.

**Coal.**—Alaska produced 455,000 short tons (preliminary figure) of bituminous coal and lignite in 1949, 12 percent more than in 1948; but owing to a lower unit price the value increased only 10 percent. Nevertheless, all-time peaks in total value as well as quantity were established in 1949. Several additional properties were operated in 1949, mostly small producers, and the largest proportion of the output, as heretofore, came from one mine in the Matanuska Valley field and three mines in the Tanana field.

**Gem Stones.**—No jade (nephrite) was reported produced in the Kobuk area in 1949.

**Limestone.**—The Permanente Cement Co. shipped limestone during 1949 from its quarry on Dall Island in the Ketchikan district, southeastern Alaska, to Washington State for the manufacture of cement.

**Mercury.**—Underground activity at the Decoursey Mountain mine, 24 miles from Crooked Creek, was stopped in August 1948, but placer operations there yielded 100 flasks of mercury in 1949.

**Platinum Metals.**—Placer deposits in the Goodnews Bay district, Kuskokwim region, continued to yield a substantial quantity of crude platinum metal; the output in 1949 was higher than in 1948. The
Goodnews Bay Mining Co. operated its Yuba electrically powered bucket-line dredge (with ninety-three 8-cubic-foot buckets) on the Salmon River for the recovery of crude platinum metals during the period from April 30 to November 15.

**Sand and Gravel.**—Production of sand and gravel in Alaska was reported by R. J. Sommers Construction Co., Juneau; Anchorage Sand & Gravel Co., Inc., Anchorage; the Alaska Road Commission; Bureau of Public Roads; Naval Operating Base, Kodiak; and the Corps of Engineers, Department of the Army.

**Tin.**—Output of tin in Alaska in 1949 was small—produced under difficulties in an isolated area—but was substantially above the 1948 level. The Northern Tin Co., Inc., shipped 47 short tons of placer-tin concentrate, containing 33 tons of tin, recovered from 39,000 cubic yards of gravel mined on Buck Creek; and the U. S. Tin Corp. produced 48 tons of concentrate (not sold), containing 23 tons of tin and a substantial quantity of tungsten, which was recovered from approximately 15,000 cubic yards of placer material mined from its Lost River property. Both operations are in the Port Clarence district, Seward Peninsula region. The Cleary Hill Mines Co. reported the recovery of a small quantity of tin concentrate as a byproduct of its placer-gold operation near Toffy in the Hot Springs district, Yukon River Basin region.

**Tungsten.**—The J. H. Scott Co., operating the Riverside mine near Hyder, Southeastern Alaska, produced a small quantity of tungsten concentrate from ore mined chiefly for its lead content in 1949; none of the material was shipped.

**Miscellaneous Minerals.**—Data on production of stone are not available for publication. There was no recorded production of asbestos, chromite, or petroleum in Alaska in 1949.

**BIBLIOGRAPHY**


