MAR 19680108: LA SALINE LAKE

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SAMPLINGS OF LASALINE LAKE AND THE SULPHUROUS SPRING AREA,
FORT MCMURRAY, ALBERTA

BY J.WAN

MARCH 1968
TOBE MINES LTD.

March 20, 1968.

SAMPLINGS OF LASALINE LAKE AND THE SULPHUROUS SPRING AREA,
FORT MCMURRAY, ALBERTA.

In order to collect samples from the bottom of Lasaline Lake, a drill-auger of 3" in diameter was designed and made by Liberty Machine Works Ltd. of Edmonton, Alberta. This auger is powered by a 4 H.P. motor which was converted from an electric generating plant. The drill rig was shipped to Fort McMurray on March 14, 1968.

A total of 170 feet in 12 holes (S1 to S12, see fig. P24-1) was drilled measuring from the bottom of Lasaline Lake. The holes were drilled, through approximately 2' of ice and 1' to 3' of water. Samples of 4 foot length were collected from each hole. In each hole the material encountered (field observation) appeared to be.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 1'</td>
<td>darkish soft silty clay</td>
</tr>
<tr>
<td>1' - 4'</td>
<td>darkish, sticky clay</td>
</tr>
<tr>
<td>4' - 8'</td>
<td>darkish clay, containing some fine sand and woody matter</td>
</tr>
<tr>
<td>8' - 12'</td>
<td>darkish sandy clay containing woody matter</td>
</tr>
</tbody>
</table>

Hole S-8 appeared to hit bedrock at 16' from the ice level. A small amount of limestone, buff to white, was collected at this level.

Holes 5 - 13 to S-15 (see fig. P24-1) were drilled at the sulphurous spring area. S-14 was set up 4 feet west of the water pool. This hole was forced to stop at 4 feet below the surface on account of the inability of the drill to go down further. S-13 was set up approximately 100 feet west and 75 below S-14, and is one foot from the small stream of spring water which is the run-off from the pool above. This hole was stopped at 4 feet below the surface. S-15 was set up at 40' south, and south-west of S-14 and the hole was stopped at 8' feet below the surface.

Continued . . . . /2
FIELD OBSERVATION OF S-13 TO S-15 AND THE IMMEDIATE AREA.

S-13
0' - 1' sulphur-gypsum mud and calcite.
1' - 2' sandy clay, containing gypsum and calcite.
2' - 4' darkish sandy clay and coarse gravel.

S-14
0' - 1' sulphur-gypsum mud and containing calcite.
1' - 3' whitish clay probably containing gypsum and calcite.
3' - 5' similar to the above except at 5', darkish sandy clay and gravel were observed.

S-15
0' - ½' sulphur-gypsum mud and calcite.
½ - 2' whitish clay, probably dominated by gypsum and calcite.
2' - 3' similar to above except softer.
3' - 4' darkish sandy clay.
4' - 8½' darkish sandy clay, with small amount of whitish material (gypsum). The drill apparently hit a boulder or bedrock at 8½ feet.

50 percent surface area west of the spring water pool is exposed. The exposed area is mostly gravel and calcite fragments are plentiful. Yellow sulphur appears only along the small stream of spring water and within the vicinity of the pool area. A few yellow spots were seen along the slope. These sulphurous spots probably deposited from the water sippage of the sulphurous spring water.

One important item was observed in an area of some 500 square feet covered with black tar sand. This area is approximately 600 feet north north-west of the sulphurous spring.
Tobe Mines Ltd.,
11933 - 106th Avenue,
Edmonton, Alberta.

Lab No. 289 Samples: 140; 141 & 142.

Dear Sirs:

The results of the elementary sulphur analyses are as follows:

<table>
<thead>
<tr>
<th>Client Number</th>
<th>Carbon Disulphide Extractables (for sulphur)</th>
</tr>
</thead>
<tbody>
<tr>
<td>140</td>
<td>1.22 - by inspection - oils were found to account for this percentage.</td>
</tr>
<tr>
<td>141</td>
<td>0.2</td>
</tr>
<tr>
<td>142</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Yours very truly,

CREST LABORATORIES LTD.

R. Sawyer, Chemist.
## CREST LABORATORIES LTD.  
7911 ARGYLL ROAD  
EDMONTON, ALBERTA  

March 28, 1968.

Tobe Mines Ltd.,  
P.O. Box 3832, Station "D",  
Edmonton, Alberta.

<table>
<thead>
<tr>
<th>Lab No. 319</th>
<th>Samples: 1157 - 1170, inclusive.</th>
<th>P.O. &amp; 187</th>
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</thead>
<tbody>
<tr>
<td>Client Number</td>
<td>Carbon Disulphide Extractables (for sulphur)</td>
<td></td>
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<tr>
<td>1157</td>
<td>6.9</td>
<td></td>
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<tr>
<td>1158</td>
<td>4.3</td>
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<tr>
<td>1159</td>
<td>1.2</td>
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<tr>
<td>1160</td>
<td>0.1</td>
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<tr>
<td>1161</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>1162</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>1163</td>
<td>0.6</td>
<td></td>
</tr>
<tr>
<td>1164</td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td>1165</td>
<td>0.2</td>
<td></td>
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<tr>
<td>1166</td>
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<tr>
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<td></td>
</tr>
<tr>
<td>1170</td>
<td>0.1</td>
<td></td>
</tr>
</tbody>
</table>

Yours very truly,  
CREST LABORATORIES LTD.

R. Sawyer,  
Chemist.

RS/bb
Tobe Mines Ltd.,
11933 - 106th Avenue,
Edmonton, Alberta.

February 20, 1968.

Lab No. 277  Samples 1124 - 1137, inclusive. Corrected report.

<table>
<thead>
<tr>
<th>Sample Number</th>
<th>Sulphur (Carbon Disulphide Extractables)</th>
<th>Total Sulphur</th>
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<tbody>
<tr>
<td>1124</td>
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<tr>
<td>1125</td>
<td>16.9</td>
<td>-----</td>
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<tr>
<td>1126</td>
<td>15.1</td>
<td>30.4</td>
</tr>
<tr>
<td>1127</td>
<td>7.3</td>
<td>-----</td>
</tr>
<tr>
<td>1128</td>
<td>0.8</td>
<td>-----</td>
</tr>
<tr>
<td>1129</td>
<td>0.2</td>
<td>2.0</td>
</tr>
<tr>
<td>1130</td>
<td>25.8</td>
<td>-----</td>
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<tr>
<td>1131</td>
<td>51.7</td>
<td>-----</td>
</tr>
<tr>
<td>1132</td>
<td>66.9</td>
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<tr>
<td>1133</td>
<td>70.9</td>
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<tr>
<td>1134</td>
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<tr>
<td>1135</td>
<td>76.9</td>
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<td>1136</td>
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<tr>
<td>1137</td>
<td>76.6</td>
<td>-----</td>
</tr>
</tbody>
</table>

Yours very truly,
CREST LABORATORIES LTD."

R. Sawyer,
Chemist.

FEB 21 1968
CERTIFICATE OF ANALYSIS No. 2466.. Feb. 20, 1968.

We have Analysed two samples of sulphurous cuttings & mud.
and submitted by Tobe Mines Ltd.

with the following results:

SPECTROGRAPHIC SEMI-QUANTITATIVE ANALYSIS

ELEMENTS SOUGHT: Antimony, Arsenic, Barium, Beryllium, Bismuth, Cadmium, Chromium, Cobalt, Copper, Gallium, Germanium, Indium, Lead, Iron, Lithium, Manganese, Mercury, Molybdenum, Nickel, Niobium (Columbium), Rare Earths, Silver, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Zinc, Zirconium.

ELEMENTS FOUND: # 1138

Approx. Amount

Over 10%

5 to 30%

2 to 10%

1 to 5%

.5 to 3%

.2 to 1%

.1 to .5%

.05 to .3%

.02 to .1%

.01 to .05%

.005 to .03%

Less than .01%

Iron

Vanadium

Copper, Silver

Samples high in Calcium

Free sulphur noticed.

# 1139

SURFACE SAMPLES FROM TUDA DEPOSIT

Iron

Vanadium

Copper, Silver

CORRELATION LABS. LTD.

MEMBER CANADIAN TESTING ASSOCIATION
ASSOCIATED WITH SWASTIKA LABORATORIES LIMITED