Review of mining authority on exploration and mining industry in Finland in 19.5.2020

Terveys-, kemikaali- ja maaperävirasto (Tukes)
Tukes and GTK briefing: Overview of exploration and mining activities and licensing in Finland

Chairs: 12:00-14:00 Terho Liikamaa, Tukes and 14:00-16:00 Pekka Tuomela, GTK

12:00-12:50 TUKES

• Opening the event, annual review by Tukes, current affairs related to mining and mineral exploration, Terho Liikamaa Tukes
• Mineral exploration - Companies feedback on the situation at the moment /Tukes’ experiences of the strengths and weaknesses of the permitting process, Ilkka Keskitalo Tukes

13:00-13:50 Mining Law reform and Local peoples perceptions about mineral exploration

• Mining Law reform, Riikka Aaltonen TEM
• Local peoples perceptions about mineral exploration, Tentative results from Next-project interviews and survey in Ylitornio and Rovaniemi, Leena Suopajärvi University of Lapland

14:00-14:50 Geological Data

• The importance of accumulating Geological Data for Finland, Jukka Jokela AA Sakatti Mining
• GTK Geodata and network service, Taina Eloranta GTK and Jouni Vuollo GTK

15:00-15:40 Surveys: Mineral Cluster in Finland and

• Presentation of Mineral Cluster Survey, Joonas Hokkanen ja Heikki Savikko, Ramboll Finland Oy
• VN TEAS review, Geodata and their acquisition price, Pekka Tuomela GTK

15:40-16:00 Discussion
Kokousohje / Working in a meeting

• Puheenvuoropyynnöt (pvp) keskustelukentässä (chat)
• Chatissa voi
  • ESITTÄÄ KYSYMYSIÄ
  • KOMMENTOIDA
  • KESKUSTELLA
  • suomeksi ja englanniksi
• Pidäthän oman mikkisi mykistettynä ja kamerasi kiinni, kun et puhu.
• Voit myös kirjoittaa kysymyksesi suoraan chattiin.

• Speech requests (SR/PVP) in the chat field
• In the chat you can
  • ASK QUESTIONS
  • COMMENT
  • DEBATE in Finnish and English
• Keep the microphone muted and the camera closed when you are not talking.
• You can also write questions by selecting a chat
Mining Authority and Covid-19

EXPLORATION SUPERVISION

- Permit holders have not cancelled permits or applications.
- Landowners have not complained about exploration fees.
- A few companies have problems because geologists cannot travel to Finland; this causes problems in delimiting the target area for mineral exploration during the 2 years reservation period.
- A few companies have suspended exploration activities - this may also be due to the spring and snow conditions.

MINING SUPERVISION

- Permits are processed almost normally.
- On-site inspections related to mining safety have mainly been postponed to the post-COVID-19 period.
- However, individual mining safety inspections are performed.

MINING UNIT, TUKES

- We have taken "a digital jump"
- We work decentralized in Rovaniemi, Helsinki, Tampere, Oulu, etc.
- We talk to customers in video conferencing globally (Teams, Skype for Business, Webex, etc.)
- We resolve decisions with electronic signatures.
- We are very motivated and efficient!
Investments in ore prospecting 1995–2019

Global

Finland

62,8 Me

million $

million euros

0 20 40 60 80 100

10000 15000 20000 25000

5000 10000 15000

2000 0


Global

Finland

Exploration and mining in Finland 2019 / Terho Liikamaa, Tukes
Mineral exploration activity in Finland by province

Valid exploration area in Lapland (125 000 ha)

Area of pending exploration permits in Lapland

Exploration and mining in Finland 2019 / Terho Liikamaa
## Mining activity 2010–2019 in Finland

Mining companies (Outokumpu/Kemi, AgnicoEagle/Kittilä, Boliden/Kevitsa invested EUR 458 million in Lapland in 2019

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<tbody>
<tr>
<td><strong>Number of mines</strong> (REPORTED EXCAVATION)</td>
<td>44</td>
<td>46</td>
<td>44</td>
<td>42</td>
<td>45</td>
<td>40</td>
<td>46</td>
<td>50</td>
<td>52</td>
<td>51</td>
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<td><strong>Mine investments (million €)</strong></td>
<td>525</td>
<td>390</td>
<td>303</td>
<td>242</td>
<td>157</td>
<td>190</td>
<td>200</td>
<td>320</td>
<td>555</td>
<td>297</td>
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<td><strong>Excavation of ore (million tons)</strong></td>
<td>44,6</td>
<td>49,0</td>
<td>48,4</td>
<td>43,7</td>
<td>32,9</td>
<td>29,5</td>
<td>36,5</td>
<td>34,8</td>
<td>33,2</td>
<td>33,9</td>
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<td><strong>Total excavation (million tons)</strong></td>
<td>115,1</td>
<td>130,1</td>
<td>120,4</td>
<td>117,2</td>
<td>89,2</td>
<td>74,8</td>
<td>79,4</td>
<td>68,4</td>
<td>72,0</td>
<td>71,5</td>
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Excavation (tons) for ore in 2001–2018

Million tons

- Metal ores
- Carbonate mines
- Industry minerals and others
Total excavation (tons) of 16 biggest mines in Finland 2019

- **Boliden Kevitsa Mining Oy, Sodankylä; Ni, Cu, PGE**
- **Terrafame Oy, Sotkamo, Kajaani; Zn, Cu, Ni, PGE**
- **Yara Suomi Oy, Siilinjärvi; Ap**
- **Agnico Eagle Finland Oy, Kittilä; Au**
- **Outokumpu Chrome Oy, Keminmaa; Cr**
- **Nordkalk Oy Ab, Parainen; Kals, Wo**
- **Elementis Minerals B.V., Polvijärvi; Tlk, Ni**
- **Pyhäjärvi Mine Oy, Pyhäjärvi; Cu, Zn, S**
- **Elementis Minerals B.V., Polvijärvi; Tlk, Ni**
- **Otso Gold Oy, Raahe; Au**
- **Nordkalk Oy Ab, Lappeenranta; Kals, Wo**
- **Elementis Minerals B.V., Sotkamo; Tlk, Ni**
- **Nordkalk Oy Ab, Lappeenranta; Kals, Wo**
- **Elementis Minerals B.V., Polvijärvi; Tlk, Ni**
- **Elementis Minerals B.V., Polvijärvi; Tlk, Ni**
- **Sotkamo Silver Oy, Sotkamo; Ag, Au, Pb, Zn**
- **Boliden Kylylahti Oy, Polvijärvi; Cu, Zn, Ni, Co**
- **Agnico Eagle Finland Oy, Kittilä; Au**
- **Outokumpu Chrome Oy, Keminmaa; Cr**
- **Agnico Eagle Finland Oy, Kittilä; Au**
- **Elementis Minerals B.V., Polvijärvi; Tlk, Ni**
- **Pyhäalama Oy, Pyhäjärvi; Cu, Zn, S**
- **Otso Gold Oy, Raahe; Au**
- **Nordkalk Oy Ab, Lappeenranta; Kals, Wo**

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Exploration and mining in Finland 2019 / Terho Liikamaa, Tukes
Area of mining districts (km²) by province 2019

Malminetsintä ja kaivosteollisuus 2019 / Terho Liikamaa, Tukes

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Accident frequency mining accidents that resulted in more than one day away from work 1972 - 2019 (number of accidents per million working hours)
More information about mining and exploration in Finland

Contact to mining authority
Finnish Safety and Chemicals Agency (Tukes)
Address: Valtakatu 2, 96100 ROVANIEMI
• kaivosasiat@tukes.fi / miningauthority@tukes.fi

Homepage of the mining authority

Map service of the mining register in Finland (in Finnish)
• http://gtkdata.gtk.fi/kaivosrekisteri/

Mineral Deposits, Exploration and Mining Registry (in English)
• http://gtkdata.gtk.fi/mdae/index.html