

NGU Report 2003.042

Norway's coastal aggregates.  
Production in 2002 and potential.

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| Title:<br>Norway's coastal aggregates. Production in 2002 and potential.                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |                                      |                     |            |
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| County:<br>South-Norway - Finnmark                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               | Commune:                             |                     |            |
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| Summary:<br>The Geological Survey of Norway is in the process of compiling an inventory of hard rock aggregate deposits in coastal Norway. This report contains a catalogue of Norwegian coastal quarries presently in production, as well as potential production areas along the coast of southern Norway. 10.4 million tonnes of aggregates were exported to Europe in 2002, of which about 1.3 million tonnes was used by the offshore oil and gas industry on the continental shelf. |                               |                                      |                     |            |
| Keywords:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |                                      |                     |            |
| Pukkregister                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               | Database                             |                     | Fagrapport |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                      |                     |            |

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## INTRODUCTION

The Norwegian production of hardrock aggregates amounted to about 34 million tonnes in 2002. In addition, 14 million tonnes of sand/gravel were produced.

A total of 10.2 million tonnes of aggregate and 0.17 million tonnes of sand and gravel were exported, with an export value of NOK 454 million (or 56 mill EUR), from 20 hard rock aggregate- and 4 sand and gravel producers from Svelvik in Vestfold county to Sør-Trøndelag (statistics compiled by NGU and the producers); see pages 5-7. Export of hard rock aggregate represents 34 % of the total hard rock production. The majority of the quarrying companies are relatively small, catering essentially for local needs. There are, however, a number of major players including Oster Pukk og Grus A/S, NorStone, Kolo-Veidekke AS, NCC Roads AS, Halsvik Aggregates A/S and Franzefoss Pukk A/S. These companies each have an annual production in the order of 1-2.5 million tonnes. The largest individual aggregate quarry (gneiss) owned by Norsk Stein A/S had a production of approx. 3.0 million tonnes in 2002. Export of aggregates for use offshore, mostly in Norwegian sectors of the North Sea was 1.3 million tonnes in 2002. The exported sand and gravel is from three quarries in Rogaland and one in Sør Trøndelag County.

Norway is probably northern Europe's principal **hardrock** country being composed almost entirely of Precambrian and Palaeozoic igneous and metamorphic rocks. Norway has a long, indented and rugged coastline where a considerable variety of rocks suitable for aggregate production are well exposed. Deep-water anchorage, low tidal range and a well-developed infrastructure allow for planning of harbour facilities for medium-large size bulk carriers. Norway has an attractive investment and taxation climate and overseas investment is encouraged. National and local authorities are aware of the potential for the development of large coastal quarries (super-quarries) designed for the production and export of rock aggregates. The Geological Survey of Norway (NGU) is undertaking a number of investigations of potential coastal sites for such quarries, in order that local government planners will be able to classify such sites for future development. In Bremanger municipality, one new quarry are planned and will start production of green sandstone in 2004, with PSV from 58 to 62. Bremanger Quarry AS has started a small export production to Netherlands in 2001. A new sandstone quarry is planned in Flora commune.

NGU is planning to map, in cooperation with counties, local authorities and industry, the potential for new coastal rock units for which environmental, topographic and transport criteria would favour quarrying.

The Gravel- and Aggregate database has been placed on the Internet and includes digital maps for zooming in on the quarries:

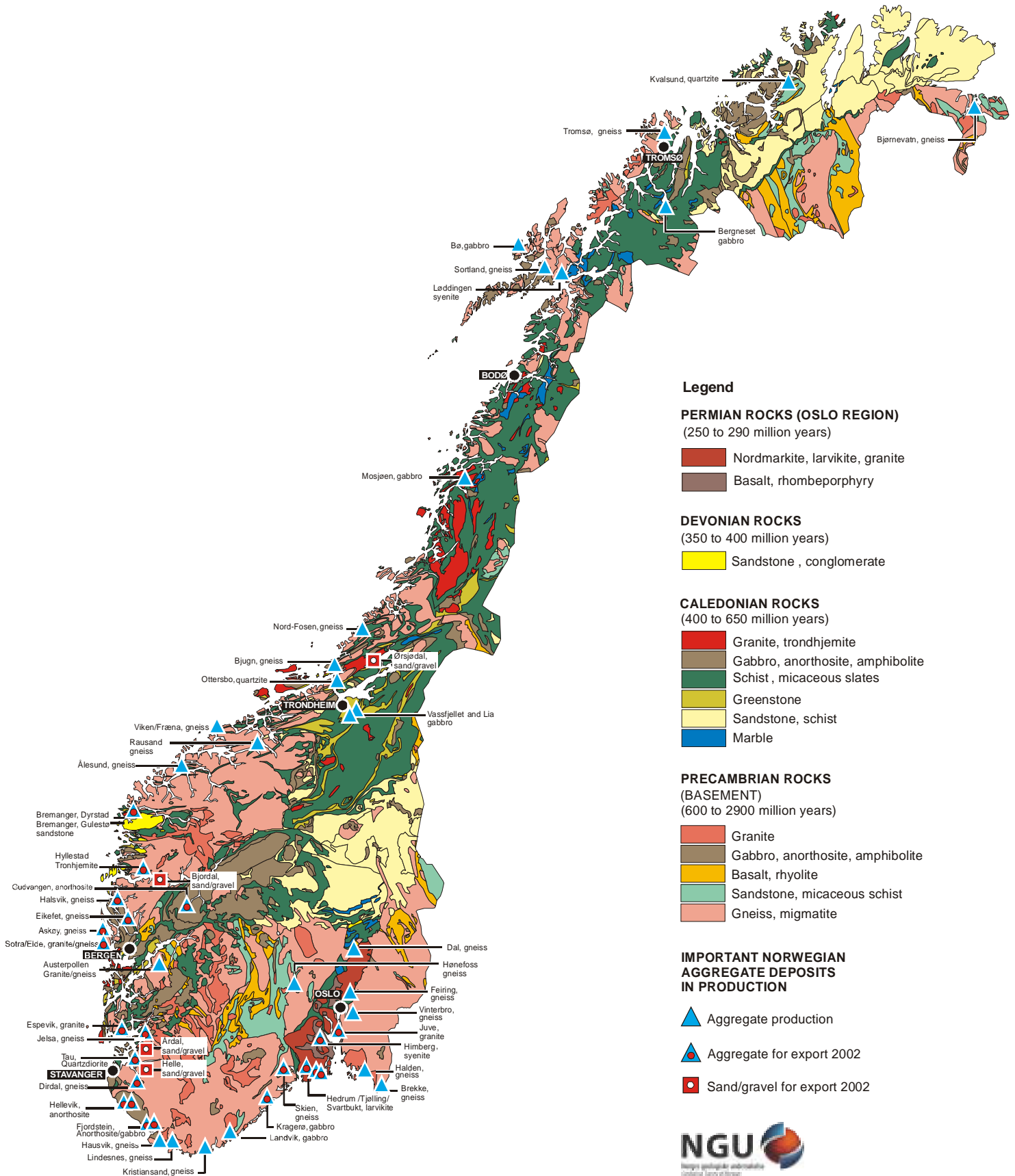
<http://www.ngu.no/grusogpukk> or <http://www.ngu.no>

The next report will be available in April 2004.

Trondheim, 22<sup>nd</sup> April 2003

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Mineral Resources

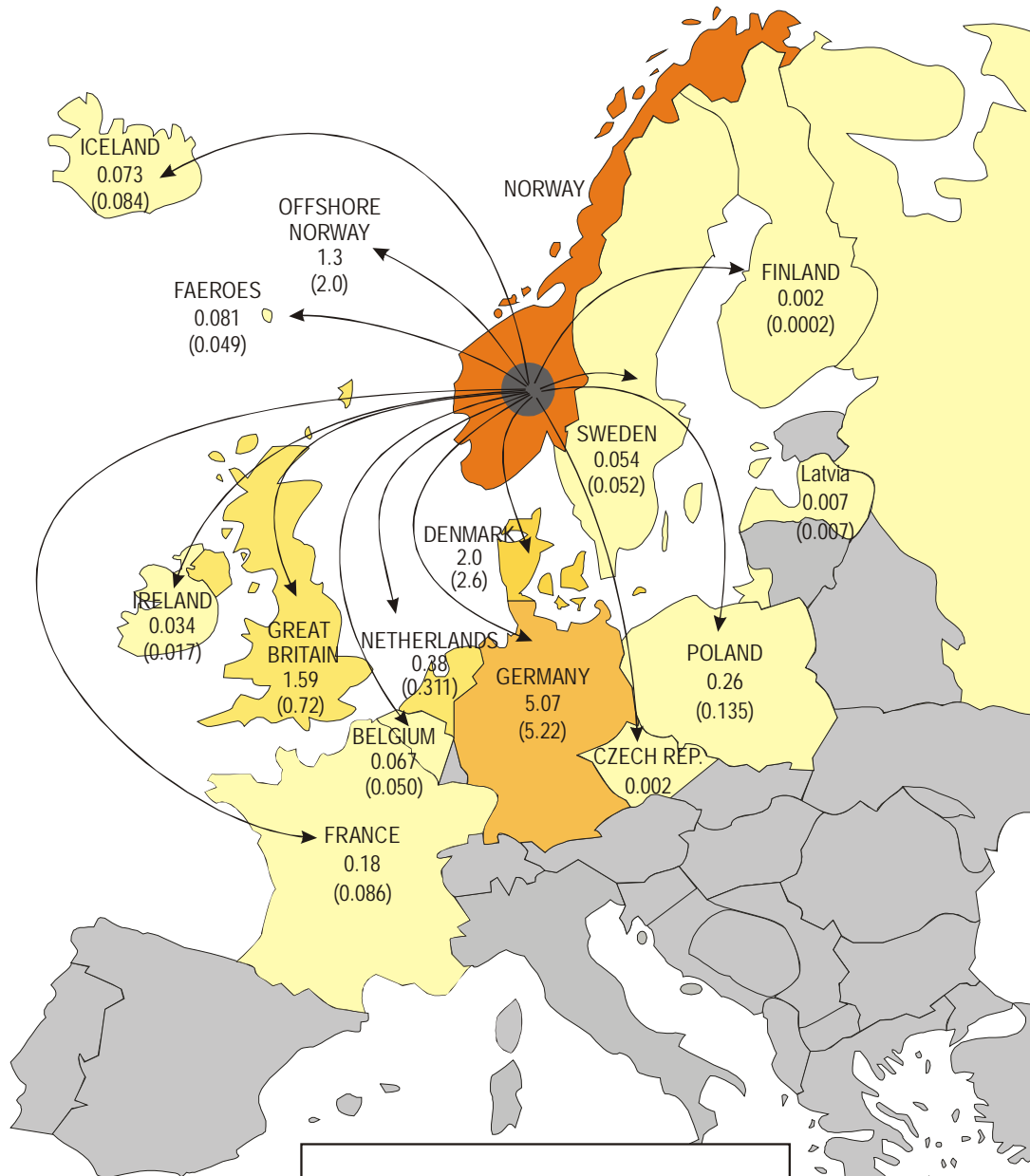
# BEDROCK MAP OF NORWAY WITH IMPORTANT AGGREGATE DEPOSITS



# NORWEGIAN AGGREGATE FOR EXPORT IN 2002

Total production 11.7 mill. tons and export 9.7 mill. tons aggregate, armourstone, sand and gravel and in addition 1.3 mill. tons aggregate for offshore use.

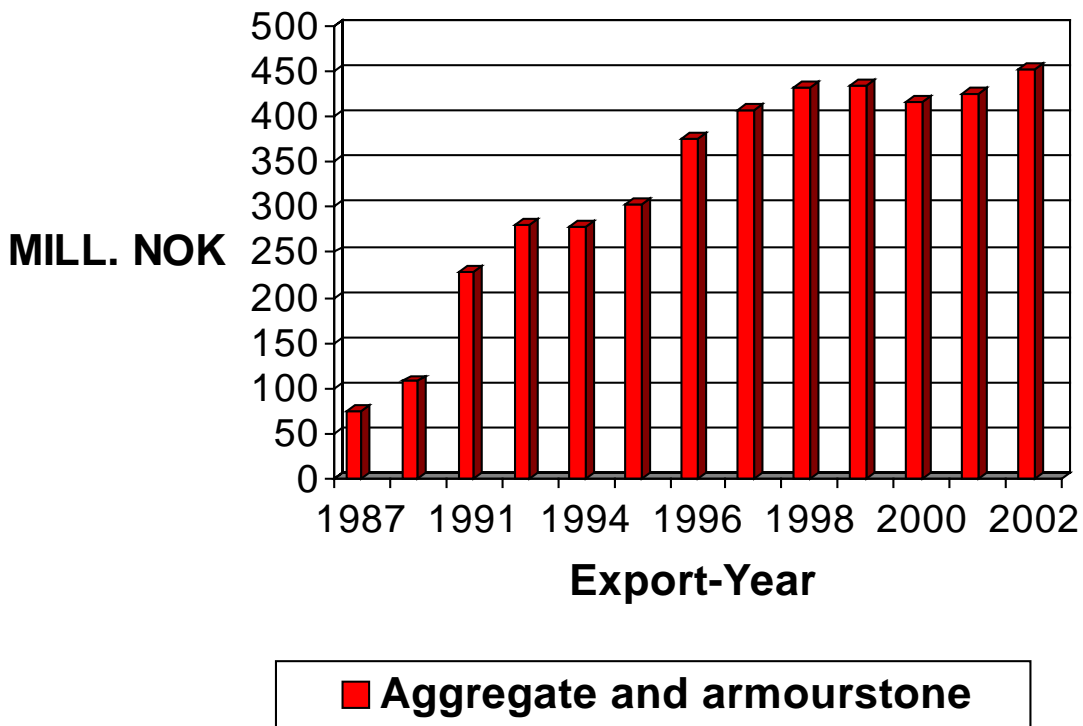
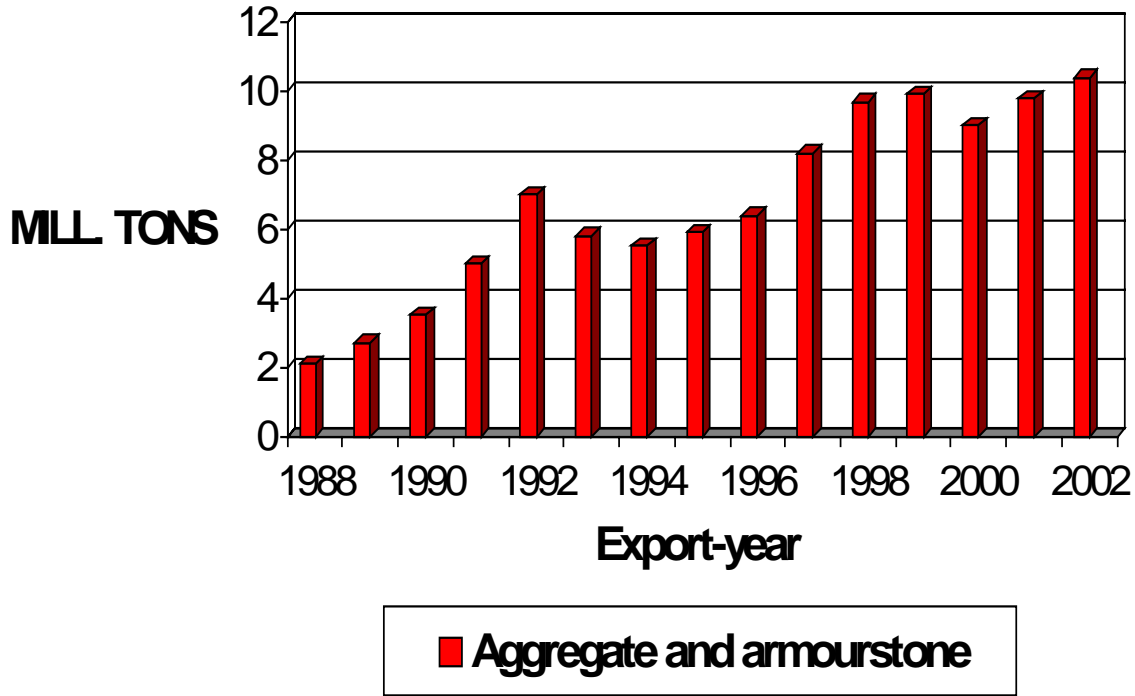
Production values in parentheses are from 2001.



Aggregate/armourstone 10,2 mill tons  
 Sand/gravel 0.17 mill tons  
 Export value 454 mill NOK/58 mill EUR  
 Offshore-aggregate 1.3 mill tons



# AGGREGATE EXPORT 1988-2002





Geological Survey of Norway  
 N-7491 Trondheim, Norway  
 Tel.: 47 73 90 40 11  
 Telefax: 47 73 92 16 20

Aggregate database  
 Geological Survey of Norway  
 25.05.2003

NORWEGIAN QUARRIES AND POTENTIAL AREAS ALONG THE COAST OF SOUTH NORWAY. HARD ROCK AGGREGATES AND ARMOURSTONE. NUMBER REFERENCE TO ENCLOSED MAPS

[http:// www.ngu.no/grusogpukk](http://www.ngu.no/grusogpukk)

*Østfold County*

| No. Commune        | Production place                                                             | Export today      | Contact person | Telephone                  | Fax-number  | Bedrock/ colour        | Quality     |     |             | Other |
|--------------------|------------------------------------------------------------------------------|-------------------|----------------|----------------------------|-------------|------------------------|-------------|-----|-------------|-------|
|                    |                                                                              |                   |                |                            |             |                        | Los Angeles | PSV | Density     |       |
| 0101-501<br>Halden | Kolo - Veidekke A.S.<br>Sauøya Pukkverk<br>Halden, Postboks 70<br>1580 Rygge | Export before -99 | Lars Hovland   | 69 18 15 02<br>90 02 08 43 | 69 18 12 82 | Gneiss-granite<br>Grey |             |     | <b>2.60</b> |       |
| 0101-xxx<br>Halden | Brekke Iddefjorden<br>Rute 503<br>1733 Halden                                | Export<br>97/98   | Tore Brekke    | 69 19 71 07                |             | Granite<br>Grey        |             |     | <b>2.65</b> |       |
| 0101-506 Halden    | NorStone as, Svingen                                                         |                   | Terje Holt     | 69 19 53 61                | 69 19 50 74 | Gneiss/grey            |             |     |             |       |



*Vestfold County*

| Nr. Commune         | Production place                                                          | Export today | Contact person      | Telephone               | Fax-number  | Bedrock/ colour              | Quality            |           |                    | Other                |
|---------------------|---------------------------------------------------------------------------|--------------|---------------------|-------------------------|-------------|------------------------------|--------------------|-----------|--------------------|----------------------|
|                     |                                                                           |              |                     |                         |             |                              | Los Angeles        | PSV       | Density            |                      |
| 0709-511            | NCC Roads AS avd Hedrum- og Tjølling Pukkverk, Postboks 2073, 3255 Larvik | x            | Ole Steinholt       | 33 13 69 60             | 33 13 69 79 | Syenite/Larvikite Grey-black | <b>30.9</b>        | <b>48</b> | <b>2.72 – 2.73</b> | Hedrum               |
| 709-501             |                                                                           |              |                     |                         |             |                              | <b>31.2</b>        |           | <b>2.71</b>        | Tjølling             |
| 0709-xxx<br>Larvik  | Svartbukt/Larvik Stema Shipping (N) A/S Grøtinglia 32, 3261 Larvik        | x            | Arne Nicander       | 33 13 03 94<br>91663070 | 33 12 72 30 | Syenite/Larvikite Grey-black | <b>24.5</b>        | <b>48</b> | <b>2.74</b>        |                      |
| 0718-503<br>Ramnes  | Martin Haraldstad AS<br>3175 Ramnes                                       | x            | Steinar Frellumstad | 33 39 65 54             | 33 39 51 95 | Syenite Grey                 | <b>19.0 – 23.2</b> | <b>50</b> | <b>2.62 – 2.74</b> | Avd. Himberg, Freste |
| 0713-508<br>Sande   | Sando Kalk og Pukk-<br>servise AS                                         | Closed       | NGU                 |                         |             | Carbonate White              | <b>19.4</b>        | <b>57</b> | <b>2.78</b>        |                      |
| 0711-506<br>Svelvik | Juve pukkverk A/S,<br>3060 Svelvik                                        | x            | Guri Olsen          | 33 77 20 15             |             | Granite Red                  | <b>23.7 – 27.4</b> |           | <b>2.50 – 2.60</b> |                      |

*Telemark County*

| Nr. Commune         | Production place                                           | Export today | Contact person  | Telephone   | Fax-number  | Bedrock/ colour | Quality        |           |                    | Other |
|---------------------|------------------------------------------------------------|--------------|-----------------|-------------|-------------|-----------------|----------------|-----------|--------------------|-------|
|                     |                                                            |              |                 |             |             |                 | Los Angeles    | PSV       | Density            |       |
| 0806-501<br>Skien   | NCC Skien pukkverk AS, Voldsfjorden Havnevn. 22 3739 Skien | x            | Per Særen       | 35 90 04 44 | 35 90 04 41 | Gneiss          | <b>22 - 35</b> |           | <b>2.65</b>        |       |
| 0815-509<br>Kragerø | NCC ROADS Avd. Valberg 3770 Kragerø                        | x            | Frode Jørgensen | 35 98 99 40 | 35 98 99 41 | Gabbro Black    | <b>15 - 20</b> | <b>51</b> | <b>2.90 – 3.11</b> |       |

*Aust-Agder County*

| Nr. Commune          | Production place                                          | Export today | Contact person | Telephone                  | Fax-number                 | Bedrock/<br>colour | Quality     |     |             | Other |
|----------------------|-----------------------------------------------------------|--------------|----------------|----------------------------|----------------------------|--------------------|-------------|-----|-------------|-------|
|                      |                                                           |              |                |                            |                            |                    | Los Angeles | PSV | Density     |       |
| 0901-506<br>Risør    | Franzefoss Pukk A/S<br>Ravneberget<br>4990 Søndeland      |              | Eigil Runsag   | 67 15 20 00<br>37 15 61 87 | 67 15 20 01<br>37 15 62 73 | Gabbro             |             |     | <b>3.03</b> |       |
| 0904-516<br>Grimstad | Landvik pukkverk<br>Postboks 481<br>4801 Arendal          |              | Oddvar Madsen  |                            |                            | Gabbro             |             |     |             |       |
| 0906-502<br>Arendal  | Klodeborg pukkverk<br>Postb. 1701, Myrene<br>4801 Arendal |              | Oddvar Madsen  |                            | 37 09 49 72                | Gneiss             |             |     |             |       |

*Vest-Agder County*

| Nr. Commune              | Production place                                                                | Export today | Contact person | Telephone                  | Fax-number  | Bedrock/<br>colour | Quality     |           |                    | Other |
|--------------------------|---------------------------------------------------------------------------------|--------------|----------------|----------------------------|-------------|--------------------|-------------|-----------|--------------------|-------|
|                          |                                                                                 |              |                |                            |             |                    | Los Angeles | PSV       | Density            |       |
| 1001-508<br>Kristiansand | Ringknuten<br>pukkverk A/S<br>Postboks 1121<br>Lundsiden<br>4602 Kristiansand S |              | Karsten Reme   | 38 17 91 00                | 38 09 72 08 | Gneiss             |             |           | <b>2.60 – 2.70</b> |       |
| 1029-xxx<br>Lindesnes    | Kolo - Veidekke A.S<br>Båly Pukkverk<br>Lindesnes kommune                       |              | Lars Hovland   | 69 28 31 00<br>90 02 08 43 | 69 28 31 20 | Gneiss/granite     |             |           |                    |       |
| 1032-501<br>Lyngdal      | Kolo - Veidekke A.S<br>Hausvik Pukkverk<br>Postboks 70, 1580<br>Rygge           | x            | Lars Hovland   | 69 28 31 00<br>90 02 08 43 | 69 28 31 20 | Gneiss/granite     | <b>24.4</b> | <b>50</b> | <b>2.73</b>        |       |

Rogaland County

| Nr. Commune                       | Production place                                       | Export today | Contact person                | Telephone                    | Fax-number  | Bedrock/ colour            | Quality            |                                 |                                | Other                     |
|-----------------------------------|--------------------------------------------------------|--------------|-------------------------------|------------------------------|-------------|----------------------------|--------------------|---------------------------------|--------------------------------|---------------------------|
|                                   |                                                        |              |                               |                              |             |                            | Los Angeles        | PSV                             | Density                        |                           |
| 1101-501<br>1101-502<br>Eigersund | K.S. Norwegian<br>Edelsplit<br>4375 Hegrestad          | x            | Anders Hovland                | 51 46 11 80 /<br>51 49 68 77 | 51 49 66 54 | Anorthosite<br>White       | <b>11.9 - 17</b>   | <b>51 - 55</b><br><br><b>42</b> | <b>2.69 – 2.77</b>             |                           |
| 1101-503<br>Eigersund             | Ramsland pukk A.S,<br>Hellvik 4387 Bjerkreim           |              | Paul Ramsland<br>local marked | 51 45 01 88<br>51 49 68 77   | 51 45 01 11 | Anorthosite<br>White       | <b>12.3</b>        | <b>54</b>                       | <b>2.78</b>                    |                           |
| 1111-501<br>Sokndal               | NCC ROADS AS avd<br>Fjordstein,<br>4380 Hauge i Dalane | x            | Pål Tjøme                     | 51 47 08 00                  | 51 47 08 44 | Anorthosite/<br>Norite     | <b>18</b>          | <b>51</b><br><br><b>53</b>      | <b>2.75</b><br><br><b>3.16</b> | Anorthosite<br><br>Norite |
| 1134-501<br>Suldal                | Norsk Stein AS<br>Berakvam<br>4234 Jelsa               | x            | Jan-Øyvind<br>Jørgensen       | 52 79 29 00                  | 52 79 29 01 | Gneiss                     | <b>15.4 – 18.0</b> | <b>53 - 58</b>                  | <b>2.76 – 2.79</b>             |                           |
| 1122-501<br>Gjesdal               | NorStone a.s<br>NorStone Dirdal<br>4335 Dirdal         | x            | Bjarne Bersagel               | 51 67 61 00                  | 51 67 61 01 | Gneiss                     | <b>24.3</b>        | <b>48</b>                       | <b>2.76 – 3.0</b>              |                           |
| 1122 - 8                          | NorStone a.s<br>NorStone Frafjord<br>4335 Dirdal       | x            | Bjarne Bersagel               | 51 67 61 00                  | 51 67 61 01 | Sand/gravel                |                    |                                 |                                |                           |
| 1130-501<br>Strand                | NorStone a.s<br>NorStoneTau<br>4120 Tau                | x            | Bjarne Bersagel               | 51 67 61 00                  | 51 67 61 01 | Mylonite<br>Quartz diorite | <b>10.5 – 10.8</b> | <b>55 – 57</b>                  | <b>2.77 – 2.80</b>             | Tau, new<br>quarry        |
| 1146-506<br>Tysvær                | Amrock J.V. A/S<br>Espevik,5560<br>Hinderåvåg, Tysvær  | x            | Odd Hotdvedt                  | 52 75 42 30<br>94 61 34 62   | 52 77 89 33 | Granite                    | <b>23.5 – 25.9</b> | <b>52 - 56</b>                  | <b>2.65</b>                    |                           |
| 1154-502<br>Vindafjord            | Knapphus knuseverk<br>Toraneset<br>Øvre Vats 5576      |              | Svein Ove<br>Tyssebotn        | 53 76 39 16                  |             | Granite                    |                    |                                 | <b>2.71</b>                    |                           |
| 1133-018<br>Hjelmeland            | NorStone Årdal<br>4137 Årdal i Ryfylke                 | x            | Bjarne Bersagel               | 51 67 61 00                  | 51 67 61 01 | Sand/gravel                |                    |                                 |                                |                           |
| 1122-13/14<br>Gjesdal             | Lemminkainen Norge<br>A/S Postboks 69<br>4301 Sandnes  | x            | Rolf Stangeland               | 51 57 90 50<br>90 76 12 40   | 51 57 54 17 | Sand/gravel                |                    |                                 |                                | Avd. Vølstad              |

*Rogaland County - Potential deposit of aggregate*

| Nr. Commune | Production place                                                              | Potential           | Contact person  | Telephone          | Fax-number  | Bedrock/<br>colour | Quality            |                |                    | Other                        |
|-------------|-------------------------------------------------------------------------------|---------------------|-----------------|--------------------|-------------|--------------------|--------------------|----------------|--------------------|------------------------------|
|             |                                                                               |                     |                 |                    |             |                    | Los Angeles        | PSV            | Density            |                              |
| 1103-503    | Ådnanesnuten<br>Strand kommune                                                | Potential           |                 |                    |             | Augen gneiss       |                    |                | <b>2.66</b>        |                              |
| 1141-501    | Sørevågen<br>Finnøy kommune                                                   | Potential           |                 |                    |             | Gneiss             |                    |                | 2.75               |                              |
| 1145-501    | Sønnaland<br>Bokn kommune                                                     | Potential           |                 |                    |             | Gneiss             |                    |                | 2.64               |                              |
| 1146-503    | Ramsvika<br>Tysvær kommune                                                    | Potential           |                 |                    |             | Gneiss             |                    |                | 2.67               |                              |
| 1134-503    | Ersdal<br>Suldal kmmune                                                       | Potential           |                 |                    |             | Gneiss             |                    |                | 2.73               |                              |
| 1154-505    | Rafoss Invest AS,<br>Vindafjord Rock<br>Company AS,Raunes<br>Vindafjord komm. | Potential           |                 | 53 76 12 00<br>NGU | 53 76 05 20 | Gneiss             | <b>21.4 – 40.3</b> | <b>51 – 54</b> | <b>2.62 – 2.71</b> |                              |
| 1111-504    | Sokndal-Jøssingfjord<br>Noran A/S                                             | Potential<br>quarry | Steinar Melgren | 66 78 75 65        | 66 78 72 67 | Anorthosite        |                    |                |                    |                              |
| 1111-503    | Hauge i Dalane,<br>Sokndal Titania a/s                                        | Potential           | Ragnar Hagen    | 51 47 80 00        | 51 47 80 10 | Anorthosite        | <b>24.1</b>        | <b>48</b>      | <b>2.88</b>        | Waste from<br>illmenite mine |

*Hordaland County*

| Nr. Commune        | Production place                                                    | Export today | Contact person               | Telephone                  | Fax-number                 | Bedrock/<br>colour | Quality     |           |                    | Other |
|--------------------|---------------------------------------------------------------------|--------------|------------------------------|----------------------------|----------------------------|--------------------|-------------|-----------|--------------------|-------|
|                    |                                                                     |              |                              |                            |                            |                    | Los Angeles | PSV       | Density            |       |
| 1247-501           | NorStone a.s<br>NorStone Askøy<br>5328 Herdla                       | x            | Tore Dale<br>Bjarne Bersagel | 56 14 67 90<br>51 67 61 00 | 56 14 68 10<br>51 67 61 01 | Mylonite           |             |           | <b>2.60</b>        |       |
| 1263-501<br>Lindås | Eikefet pukkverk<br>Oster pukk og sand<br>A/S<br>Ø. Muralm. 1, 5012 | x            | Jostein Gjesdal              | 55 36 30 00                | 55 36 30 10                | Granite-gneiss     |             | <b>53</b> | <b>2.65 – 2.70</b> |       |

| Nr. Commune                   | Production place                                     | Export today | Contact person         | Telephone      | Fax-number              | Bedrock/<br>colour | Quality     |           |             | Other |
|-------------------------------|------------------------------------------------------|--------------|------------------------|----------------|-------------------------|--------------------|-------------|-----------|-------------|-------|
|                               |                                                      |              |                        |                |                         |                    | Los Angeles | PSV       | Density     |       |
|                               | Bergen                                               |              |                        |                |                         |                    |             |           |             |       |
| 1246-501<br>Fjell             | Sotra Pukk A/S, Eide<br>Ø. Muralm. 1, 5012<br>Bergen | x            | Jostein Gjesdal        | Granite-gneiss | 55 36 30 00             | 55 36 30 10        |             | <b>54</b> | <b>2.64</b> |       |
| 1224<br>xxx/xxx<br>Kvinnherad | Mauranger Stein A/S<br>5464 Dimmelsvik               |              | Johannes<br>Hjelmeland | Granite-gneiss | 53 48 30 70<br>41683070 | 56 55 60 57        |             | <b>52</b> | <b>2.72</b> |       |

*Hordaland County - Potential deposit of aggregate*

| Nr. Commune | Production place                                                                                               | Potential | Contact person | Telephone    | Fax-number  | Bedrock/<br>colour | Quality            |                |             | Other |
|-------------|----------------------------------------------------------------------------------------------------------------|-----------|----------------|--------------|-------------|--------------------|--------------------|----------------|-------------|-------|
|             |                                                                                                                |           |                |              |             |                    | Los Angeles        | PSV            | Density     |       |
| 1222-504    | Svartasmoget, SIM,<br>5410 Sagvåg<br>Fitjar kommune                                                            | Potential | Terje Gilje    | 53 45 78 50  | 53 45 78 60 | Granite            |                    |                | <b>2.76</b> |       |
| 1222-xxx    | Gabbro Stone,<br>Rauholmen<br>box 344, 546224<br>Varnersberg, Sverige                                          | Potential | Arvid Andersen | 467086640955 |             | Gabbro             |                    |                |             |       |
| 1222-xxx    | Landasåtane, 5419<br>Fitjar<br>Fitjar kommune                                                                  | Potential | Fitjar kommune | 53 49 71 01  | 53 49 73 97 | Amphibolite        |                    |                |             |       |
| 1245-502    | Sund Granitt AS,<br>Nova Maritime<br>Service A/S<br>Postboks 3703, 5845<br>Bergen, Lundaneset,<br>Sund kommune | Potential | Jan Johnsen    | 55 12 35 50  | 55 12 48 90 | Gneiss-granite     | <b>10.6 – 15.2</b> | <b>50 - 56</b> | <b>2.64</b> |       |
| 1266-505    | Eikemo Steinbrot<br>Masfjorden                                                                                 | Potential | Tore Svendsen  | 56 36 51 00  | 56 36 51 05 | Gneiss             | <b>25.9 – 31.1</b> | <b>52 - 55</b> | <b>2.65</b> |       |
| 1263-504    | Hodna, 5110<br>Isdalsstø<br>Lindås kommune                                                                     | Potential |                | 56 35 05 55  | 56 35 28 00 | Gabbro             |                    |                |             |       |

| Nr. Commune | Production place                                                       | Potential | Contact person | Telephone   | Fax-number  | Bedrock/<br>colour | Quality     |     |             | Other |
|-------------|------------------------------------------------------------------------|-----------|----------------|-------------|-------------|--------------------|-------------|-----|-------------|-------|
|             |                                                                        |           |                |             |             |                    | Los Angeles | PSV | Density     |       |
| 1246-505    | Vindenes, Aktivest,<br>Postboks<br>244, 5353 Straume,<br>Fjell kommune | Potential | Harald Smedal  | 56 32 0055  | 56 32 01 60 | Gneiss             |             |     | <b>2.74</b> |       |
| 1241-xxx    | Matland, 5640<br>Eikelandsosen<br>Fusa kommune                         | Potential | Fusa kommune   | 56 56 11 00 | 56 58 13 38 | Gneiss             |             |     |             |       |
| 1223-501    | Steinåsen, 5685<br>Uggdal<br>Tysnes kommune                            | Potential |                | 53 42 22 22 | 53 43 21 81 | Quartzdiorite      |             |     | <b>3.03</b> |       |
| 1216-xxx    | Ålfjorden, 5520<br>Sveio, Sveio komm.                                  | Potential | Sveio kommune  | 53 74 01 00 | 52 74 00 96 | Gneiss-granite     |             |     |             |       |
| 1216-xxx    | Mjuk, 5520 Sveio<br>Sveio kommune                                      | Potential | Sveio kommune  | 53 74 01 00 | 52 74 00 96 | Gneiss-granite     |             |     |             |       |
| 1214-501    | Vardåsen, 5580 Ølen<br>Ølen kommune                                    | Potential | Ølen kommune   | 53 76 81 66 | 53 76 82 52 | Granite            |             |     | <b>2.65</b> |       |

*Sogn og Fjordane County*

| Nr. Commune           | Production place                                                       | Export today | Contact person                            | Telephone                                 | Fax-number  | Bedrock/<br>colour                              | Quality            |                |                    | Other                 |
|-----------------------|------------------------------------------------------------------------|--------------|-------------------------------------------|-------------------------------------------|-------------|-------------------------------------------------|--------------------|----------------|--------------------|-----------------------|
|                       |                                                                        |              |                                           |                                           |             |                                                 | Los Angeles        | PSV            | Density            |                       |
| 1411-504<br>Gulen     | Halsvik Aggregates<br>A/S, Sløvåg,<br>5960 Dalsøyra                    | x            | Lars Hellandsjø                           | 57 78 38 40                               | 57 78 38 76 | Gneiss                                          | <b>19,5 – 22,3</b> | <b>57</b>      | <b>2,67 - 2.71</b> |                       |
| 1421-539<br>Aurland   | Gudvangen stein AS,<br>Bryalii 153, 5700<br>Voss                       | x            | Sigmund Bjørke                            | 56 52 34 65<br>94 68 25 20                | 56 52 34 61 | Anorthosite<br>White                            | <b>15.2</b>        | <b>60</b>      | <b>2,88 – 3.04</b> |                       |
| 1424-501<br>Årdal     | Årdalitt A/S<br>Offerdal, 6146<br>Åheim                                |              | Henning Hansen                            | 70 02 43 22                               |             | Trondhemite                                     | <b>26</b>          | <b>47</b>      | <b>2.63</b>        |                       |
| 1413-504<br>Hyllestad | Hyllestad Pukk A/S<br>Molde Pullverk<br>Årødalen 6422<br>Molde         | x            | Jan Løvik                                 | 71 21 03 68<br>71 20 33 80<br>90 88 41 80 | 71 21 31 50 | Trondhemite/-<br>quartzdiorite<br>white granite | <b>12</b>          | <b>50 - 53</b> | <b>2,63</b>        |                       |
| 1433-504<br>Naustal   | Fjordblokk A/S<br>Engebø,<br>Nausdal                                   | Closed 99    |                                           | NGU                                       |             | Eclogite                                        | <b>9.5 – 12.6</b>  | <b>51 – 53</b> | <b>3.31 - 3.38</b> |                       |
| 1420-501<br>Sogndal   | Sogndal Pukkverk<br>Fredheim Maskin og<br>Betong A/S , 6856<br>Sogndal |              | Arvid Fredheim                            | 57 67 84 46<br>90 51 33 66                | 57 67 88 14 | Anorthosite                                     | <b>18</b>          | <b>49</b>      | <b>2.91-2.93</b>   |                       |
| 1401-514<br>Flora     | Havrøy Pukkverk<br>Flora                                               | Closed       |                                           |                                           |             | Anorthosite                                     |                    |                |                    |                       |
| 1416-046<br>Høyanger  | Bjorsand AS<br>6949 Bjordal                                            | x            | Helge Bjordal                             | 57 71 02 80<br>57 71 02 52                | 57 71 02 81 | Sand/gravel                                     |                    |                |                    |                       |
| 1438-515<br>Bremanger | Bremanger Quarry<br>A.S, Dyrstad<br>6723 Svelgen                       | x            | Joop Bouwman<br>Postboks 64<br>4557 Vanse | 38 39 43 00                               | 38 39 43 84 | Sandstone<br>Green                              | <b>12</b>          | <b>60</b>      | <b>2.69</b>        | NGU sample<br>09.2001 |

*Sogn og Fjordane County - Potential deposit of aggregate*

| Nr. Commune                   | Production place                                         | Potential | Contact person                      | Telephone   | Fax-number  | Bedrock/<br>colour        | Quality            |                |                    | Other                                   |
|-------------------------------|----------------------------------------------------------|-----------|-------------------------------------|-------------|-------------|---------------------------|--------------------|----------------|--------------------|-----------------------------------------|
|                               |                                                          |           |                                     |             |             |                           | Los Angeles        | PSV            | Density            |                                         |
| 1438-514<br>Bremanger         | Bremanger<br>Aggregates,<br>Gulestø,                     | Potential | NGU                                 | 73 90 40 00 | 73 92 16 20 | Sandstone<br>Green        | <b>13</b>          | <b>57 – 58</b> | <b>2.74</b>        | EUROVIA<br>gmbH, Germany<br>New Company |
| 1438-504 and 510<br>Bremanger | Gotraneset -<br>Skipperdalen                             | Potential | NGU                                 |             |             | Trondhemite<br>Grey/white | <b>14.7 – 17.2</b> | <b>50 - 58</b> | <b>2.68 – 2.71</b> |                                         |
| 1401-5xx<br>Flora             | Årebråt. Seljestokken<br>-Bjørkeliskaret                 | Potential | Norwegian<br>Sandstone Export<br>AS |             |             | Sandstone<br>Green        | <b>12-14</b>       | <b>55-57</b>   | <b>2.74</b>        | New company<br>2002                     |
| 1401-506<br>Flora             | Beidvik,<br>Durmålhornet                                 | Potential | NGU                                 |             |             | Sandstone<br>Green        | <b>11.8</b>        | <b>56</b>      | <b>2.74</b>        |                                         |
| 1412-501<br>Solund            | West Stein A/S,<br>Daløy ,Postboks 258<br>2381 Brumundal | Potential | Geir Skjelstad                      | 62 36 84 55 | 62 36 86 03 | Conglomerate              |                    |                | <b>2.80</b>        |                                         |

*Møre og Romsdal County*

| Nr. Commune         | Production place                                                 | Export today | Contact person | Telephone                  | Fax-number  | Bedrock/<br>colour | Quality     |     |                    | Other |
|---------------------|------------------------------------------------------------------|--------------|----------------|----------------------------|-------------|--------------------|-------------|-----|--------------------|-------|
|                     |                                                                  |              |                |                            |             |                    | Los Angeles | PSV | Density            |       |
| 1516-505<br>Ulstein | Kvalnes pukkverk<br>Ulstein<br>Betongindustri A/S<br>6072 Haddal |              |                | 70 01 60 04                |             | Gneiss/granite     |             |     | <b>2.67 – 2.70</b> |       |
| 1504-501<br>Ålesund | Kolo -Veidekke AS<br>Ålesund<br>6019 Ålesund                     |              | Magne Mørkedal | 70 17 54 00<br>94 73 63 76 | 70 17 54 10 | Gneiss             |             |     | <b>2.65 – 2.72</b> |       |
| 1504-502<br>Ålesund | Ufo pukkverk<br>Nodest vei A/S<br>6010 Spjelkavik                |              | Tore Rødal     | 70 14 19 00                |             | Gneiss             |             |     | <b>2.69 – 2.71</b> |       |



| Nr. Commune        | Production place                               | Export today | Contact person                 | Telephone   | Fax-number  | Bedrock/<br>colour | Quality     |                |                    | Other       |
|--------------------|------------------------------------------------|--------------|--------------------------------|-------------|-------------|--------------------|-------------|----------------|--------------------|-------------|
|                    |                                                |              |                                |             |             |                    | Los Angeles | PSV            | Density            |             |
| 1523-501<br>Ørskog | Skjøholt pukkverk<br>6240 Sjøholt              |              | Karl Vaksvik<br>Vaksvik Maskin | 70 27 30 52 | 70 27 31 02 | Dioritic-Gneiss    |             |                | <b>2.77 – 2.85</b> |             |
| 1543-522<br>Neset  | Kolo-Veidekke A.S<br>Raudsand<br>6462 Raudsand |              | Magne Mørkedal                 | 71 23 31 00 | 71 23 31 02 | Gneiss/granite     |             |                | <b>2.60 – 2.66</b> |             |
| 1551-508<br>Eide   | Visnes Eklogitt A.S<br>6493 Lyngstad           | Export -98   | Karl Johan Eide                | 71 29 56 05 | 71 29 55 70 | Eclogite           | <b>21.9</b> | <b>59 – 61</b> | <b>3.14</b>        |             |
| 1548-512<br>Fræna  | Viken Pukkverk A/S<br>1548 Fræna               | x            | Gunder Viken/<br>Kjell Hvattum | 71 26 93 78 | 71 26 93 76 | Gneiss             |             |                | <b>2.9</b>         | Export 2001 |

*Møre og Romsdal County - Potential deposit of aggregate*

| Nr. Commune                     | Production place                                                  | Potential                | Contact person | Telephone   | Fax-number | Bedrock/<br>colour        | Quality     |           |             | Other |
|---------------------------------|-------------------------------------------------------------------|--------------------------|----------------|-------------|------------|---------------------------|-------------|-----------|-------------|-------|
|                                 |                                                                   |                          |                |             |            |                           | Los Angeles | PSV       | Density     |       |
| 1523-502<br>Ørskog kommune      | Viset pukkverk A.S<br>Jønningshagen 40,<br>4316 Sandnes           | Potential<br>In planning | Alf Follo      | 51 62 43 18 |            | Gabbro<br>black           | <b>11.9</b> | <b>52</b> | <b>3.13</b> |       |
| 1547-502                        | Hollingen<br>Aukra kommune                                        | Potential                |                |             |            | Gneiss-granite            |             |           | <b>2.63</b> |       |
| 1543-501<br>Neset kommune       | Breidvik                                                          | Potential                |                |             |            | Gabbro                    |             |           | <b>3.20</b> |       |
| 1560-503<br>Tingvoll            | Hammaren                                                          | Potential                |                |             |            | Gabbro                    |             |           | <b>3.15</b> |       |
| 1566-501<br>Tingvoll<br>kommune | Durmålhaugen<br>pukkverk A.S<br>Jønningshagen 40,<br>4316 Sandnes | Potential<br>In planning | Alf Follo      | 51 62 43 18 |            | Gneiss/granite            | <b>26</b>   | <b>52</b> | <b>2.69</b> |       |
| 1560-501<br>Surnadal            | Settem                                                            | Potential                |                |             |            | Amphibolite/-<br>tonalite |             |           | <b>2.85</b> |       |

*Sør-Trøndelag/Nord-Trøndelag Counties*

| Nr. Commune                 | Production place                                          | Export today   | Contact person  | Telephone                  | Fax-number  | Bedrock/<br>colour | Quality            |     |                    | Other                                     |
|-----------------------------|-----------------------------------------------------------|----------------|-----------------|----------------------------|-------------|--------------------|--------------------|-----|--------------------|-------------------------------------------|
|                             |                                                           |                |                 |                            |             |                    | Los Angeles        | PSV | Density            |                                           |
| 1617-501<br>Hitra           | Hitra Bergverk<br>7240 Fillan                             |                | Åge Kaasbøll    | 72 44 14 85                | 72 44 15 04 | Granodiorite       |                    |     | <b>2.65</b>        |                                           |
| 1621-501<br>Ørland          | Kolo Veidekke A.S<br>Ottersbo pukkverk<br>7140 Opphaug    |                | Ketil Oksvold   | 73 82 35 00<br>72 52 27 80 | 72 52 10 80 | Mylonite           |                    |     | <b>2.74 – 2.78</b> |                                           |
| 1627-505<br>Bjugn           | Bjugn Pukkverk,<br>Valsneset<br>NCC Roads AS<br>Trondheim |                |                 |                            |             | Gneiss             |                    |     | <b>2.77 – 2.81</b> |                                           |
| 1633-501<br>Osen            | Nord-Fosen<br>pukkverk<br>7740 Steinsdalen                | Offshore stone | Jon E Høvik     | 72 57 78 90<br>72 57 78 62 | 72 57 78 68 | Granodiorite       | <b>27.4 – 47.5</b> |     | <b>2.67 – 2.69</b> |                                           |
| 1724.001.04<br>Rissa/Verran | Ørsjødalen<br>Verran Grus A/S<br>7797 Verabotn            |                | Per Jarle Vigum | 74 15 72 22                |             | Sand/gravel        |                    |     |                    | <b>Sand/gravel<br/>production<br/>new</b> |

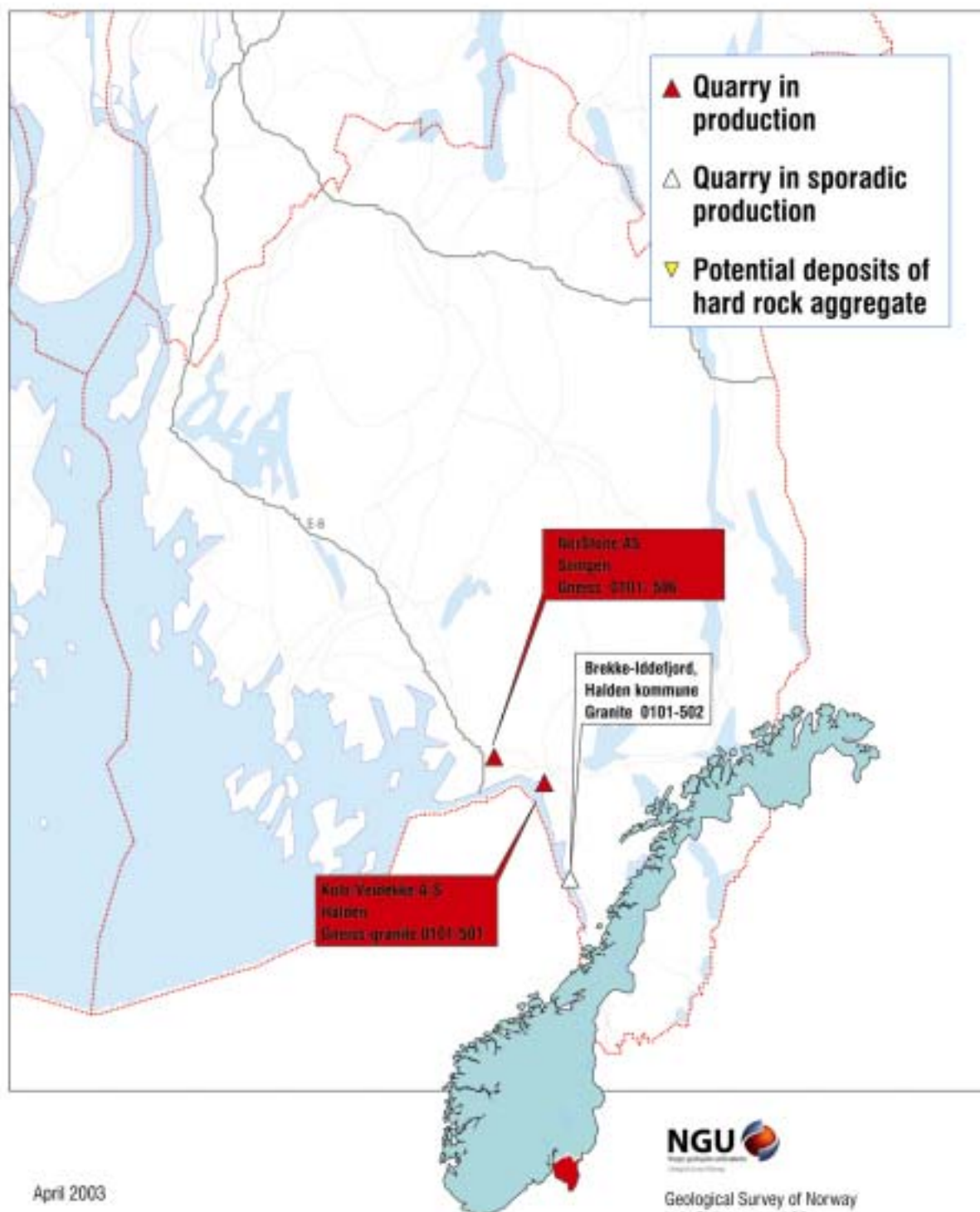
*Sør-Trøndelag County - Potential deposit of aggregate*

| Nr. Commune  | Production place                         | Potential     | Contact person               | Telephone   | Fax-number  | Bedrock/<br>colour         | Quality                    |                        |                            | Other |
|--------------|------------------------------------------|---------------|------------------------------|-------------|-------------|----------------------------|----------------------------|------------------------|----------------------------|-------|
|              |                                          |               |                              |             |             |                            | Los Angeles                | PSV                    | Density                    |       |
| 1617-515     | Korskammen<br>Hitra kommune              | Potential     |                              |             |             | Granodiorite<br>Grey/white |                            |                        | <b>2.70 – 2.75</b>         |       |
| 1630-506     | Raudhammaren<br>Åfjord kommune           | Potential     | NGU                          |             |             | Granite/<br>amphibolite    |                            |                        |                            |       |
| 1633-502     | Langstrandheia<br>Osen kommune           | Potential     | NGU                          |             |             | Granite-gneiss             | <b>37.9 – 70.7</b>         | <b>54 -61</b>          | <b>2.62 – 2.78</b>         |       |
| 1612-506/507 | Gjøbergsheia/<br>Kammen<br>Hemne kommune | Potential new | NGU                          |             |             | Gneiss                     | <b>23.3</b><br><b>27.2</b> | <b>52</b><br><b>46</b> | <b>2.68</b><br><b>2.61</b> |       |
| 1613-505     | Stokkafjellet<br>Snillfjord kommune      | Potential new | NGU<br>Snillfjord<br>kommune | 72 45 55 55 | 72 45 55 97 | Gneiss                     | <b>19.6</b>                | <b>53</b>              | <b>2.64</b>                |       |

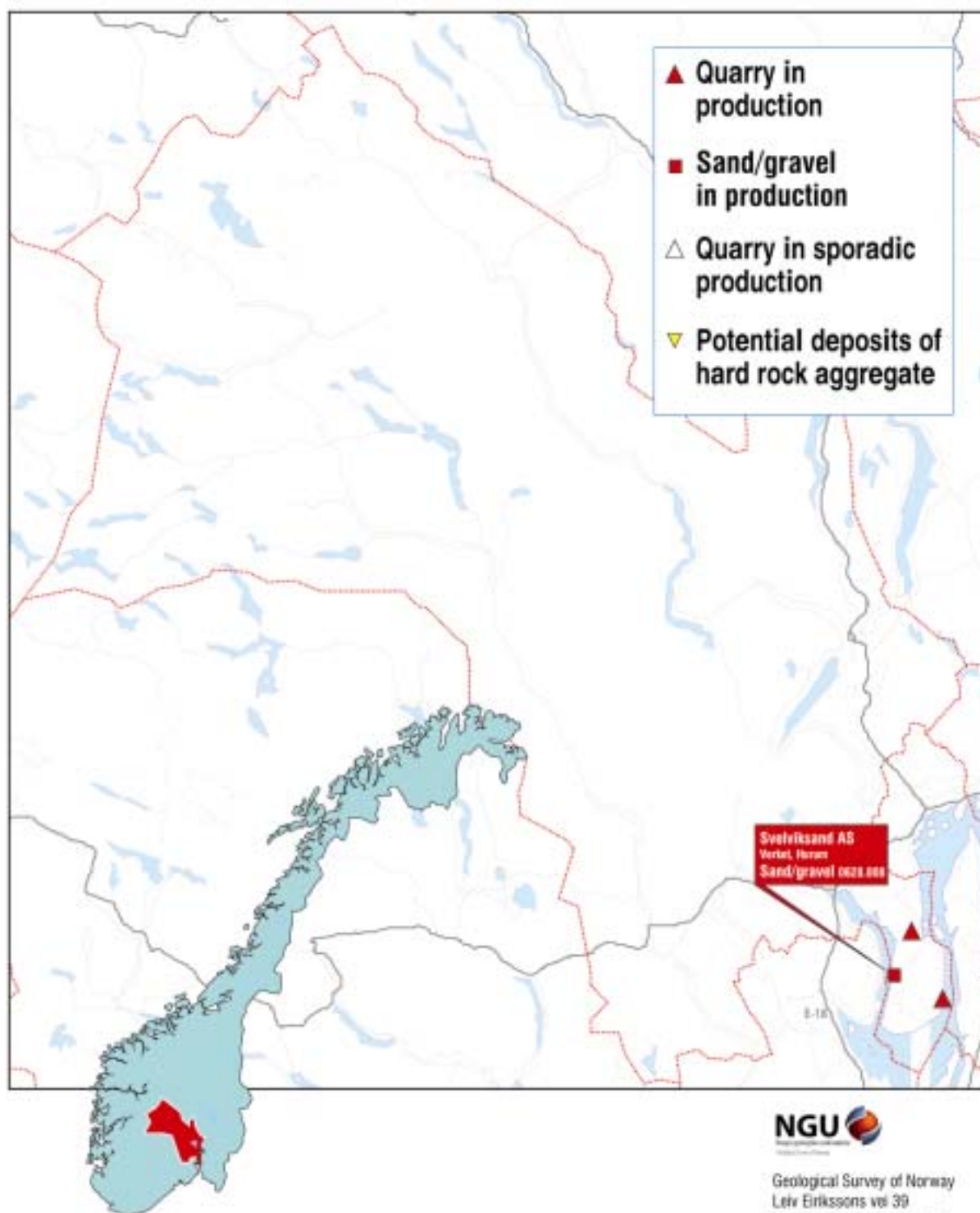
*Finnmark County*

| Nr. Commune                | Production place                                                       | Export today | Contact person  | Telephone   | Fax-number  | Bedrock/<br>colour | Quality        |                |                  | Other                                   |
|----------------------------|------------------------------------------------------------------------|--------------|-----------------|-------------|-------------|--------------------|----------------|----------------|------------------|-----------------------------------------|
|                            |                                                                        |              |                 |             |             |                    | Los Angeles    | PSV            | Density          |                                         |
| 2017-501<br>Kvalsund       | Repparfjord-<br>Kvalsund<br>Kvalsund Aggregates<br>AS                  |              | Lars Hellandsjø | 57 78 38 40 | 57 78 38 76 | Quartzite/grey     |                | 58             | 2.68             | New producer<br>Offshore/export<br>2003 |
| 2030-501<br>Sør - Varanger | Bjørnevatn<br>Kirkenes Utvikling<br>AS, Post boks 220<br>9915 Kirkenes |              | Trond Dahlberg  | 78 99 48 00 | 78 99 48 10 | Gneiss<br>Grey     | <b>12 – 18</b> | <b>54 – 56</b> | <b>2.75-3.02</b> | Waste from<br>iron mine                 |

## QUARRIES AND POTENTIAL DEPOSITS OF HARD ROCK AGGREGATE IN ØSTFOLD COUNTY



## QUARRIES AND POTENTIAL DEPOSITS OF HARD ROCK AGGREGATE IN BUSKERUD COUNTY

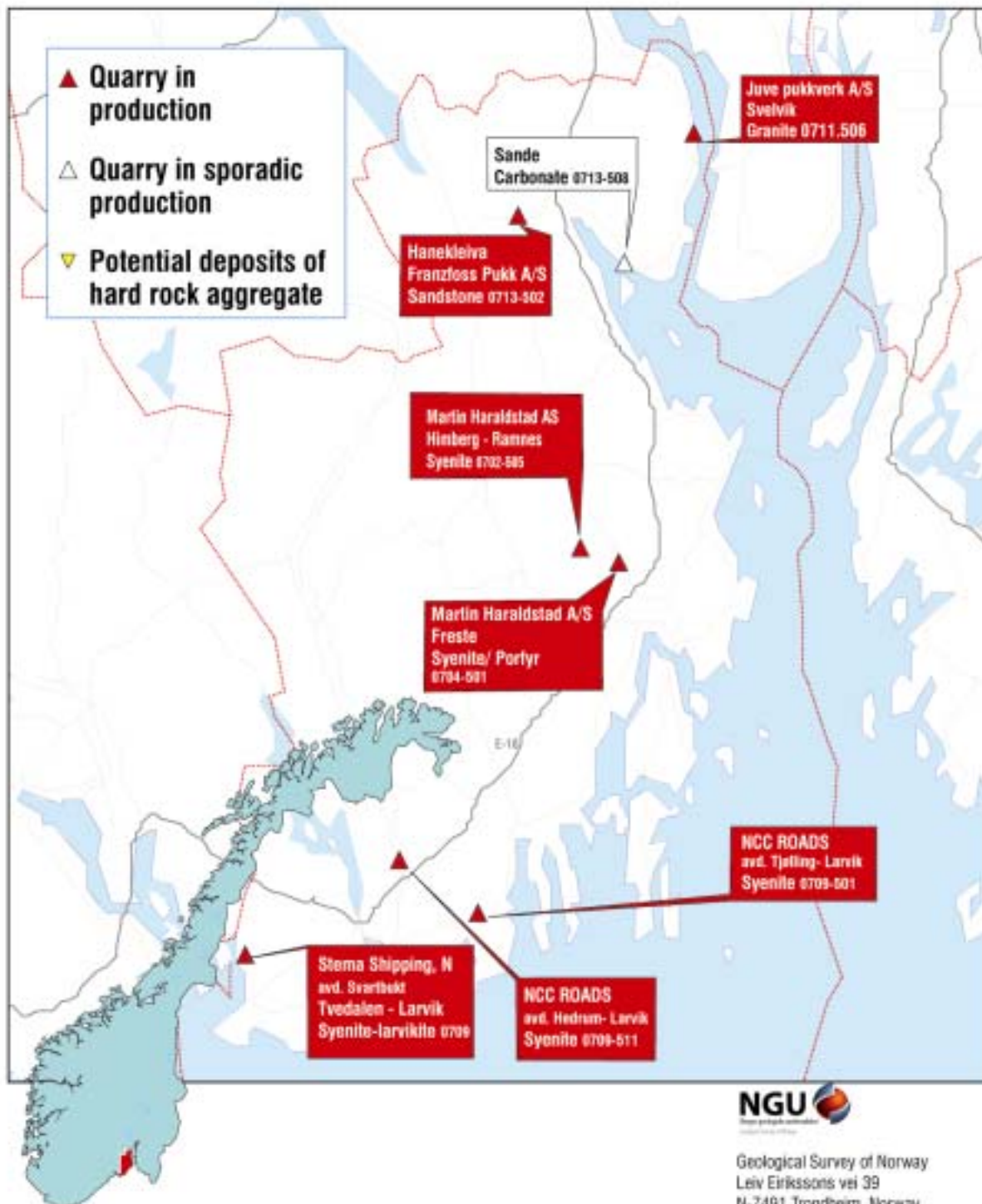


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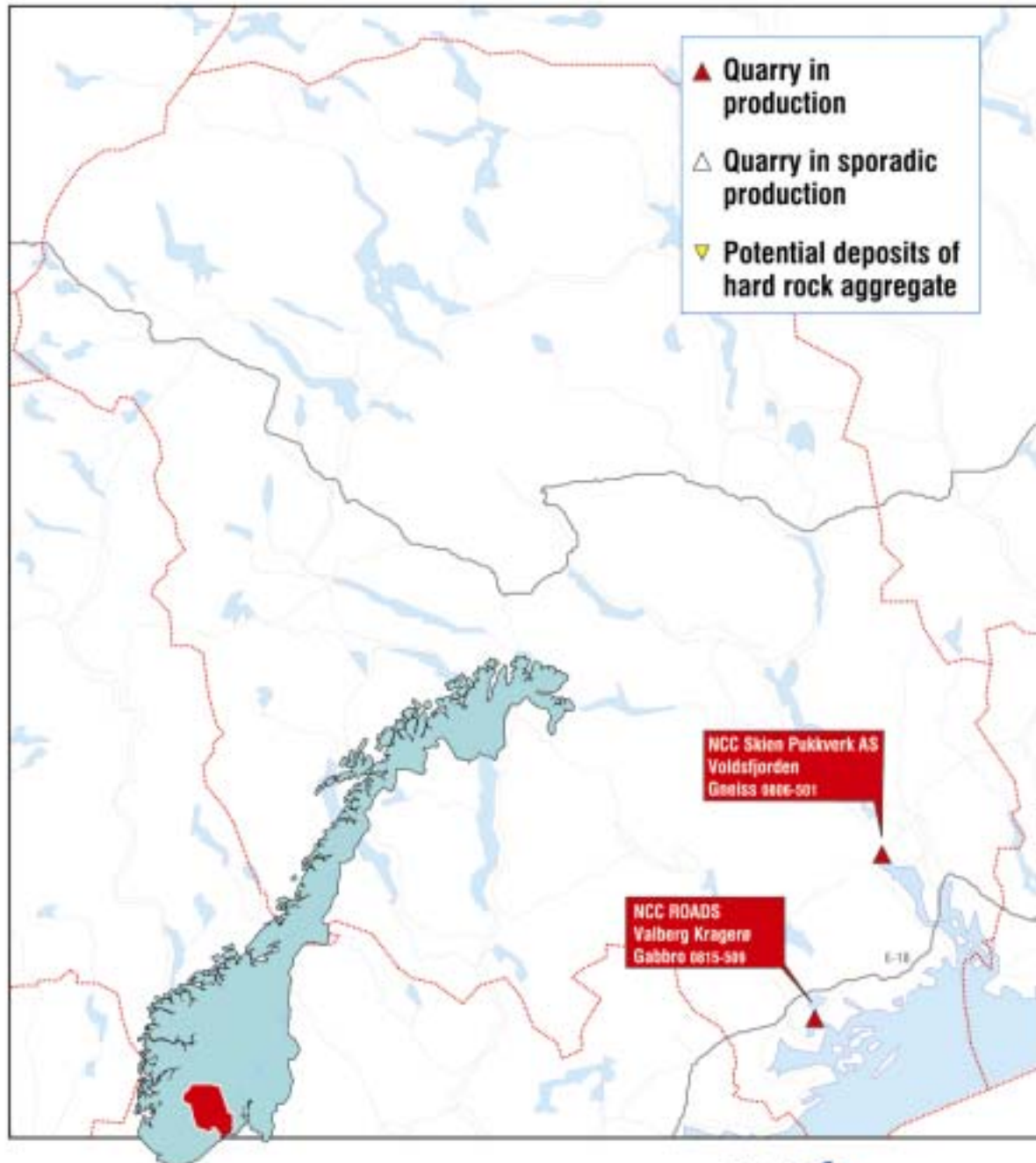
Geological Survey of Norway  
Leiv Eirikssons vei 39  
N-7491 Trondheim, Norway  
Telephone.: 47 73 90 40 00  
Telefax: 47 73 92 16 20

## QUARRIES AND POTENTIAL DEPOSITS OF HARD ROCK AGGREGATE IN VESTFOLD COUNTY

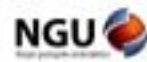


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## QUARRIES AND POTENTIAL DEPOSITS OF HARD ROCK AGGREGATE IN TELEMARK COUNTY

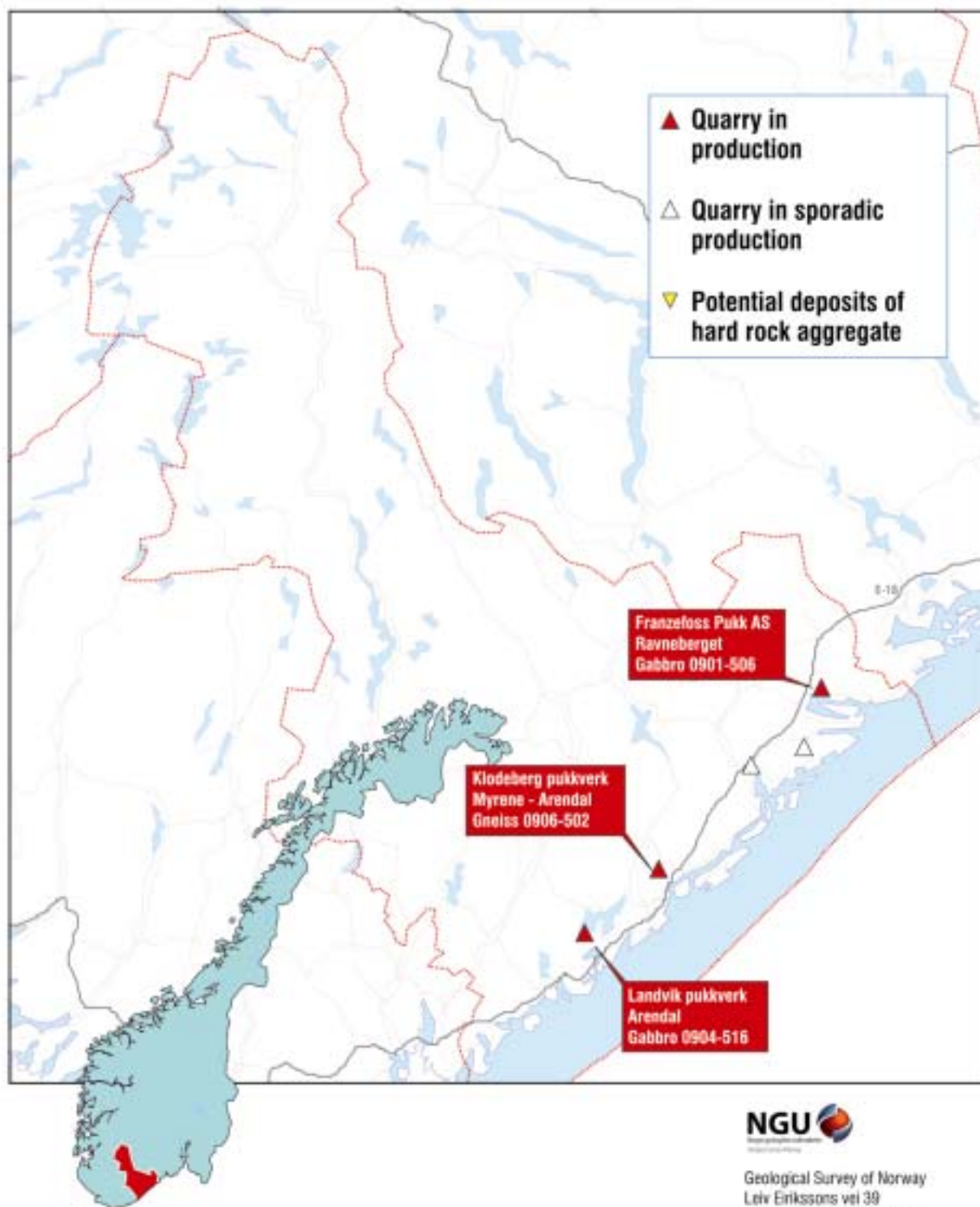


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Geological Survey of Norway  
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Telefax: 47 73 92 16 20

## QUARRIES AND POTENTIAL DEPOSITS OF HARD ROCK AGGREGATE IN AUST-AGDER COUNTY



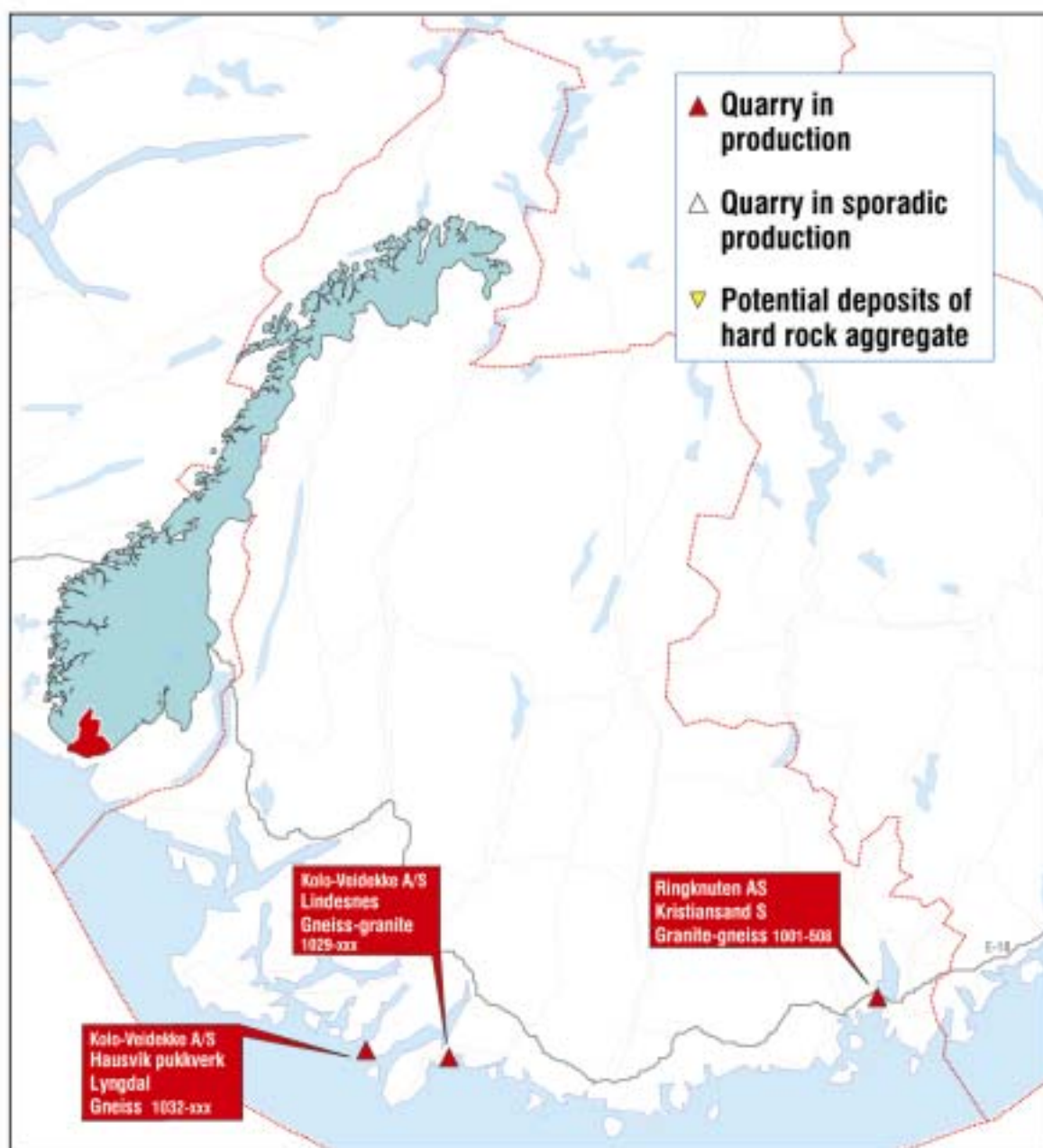
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## QUARRIES AND POTENTIAL DEPOSITS OF HARD ROCK AGGREGATE IN VEST-AGDER COUNTY

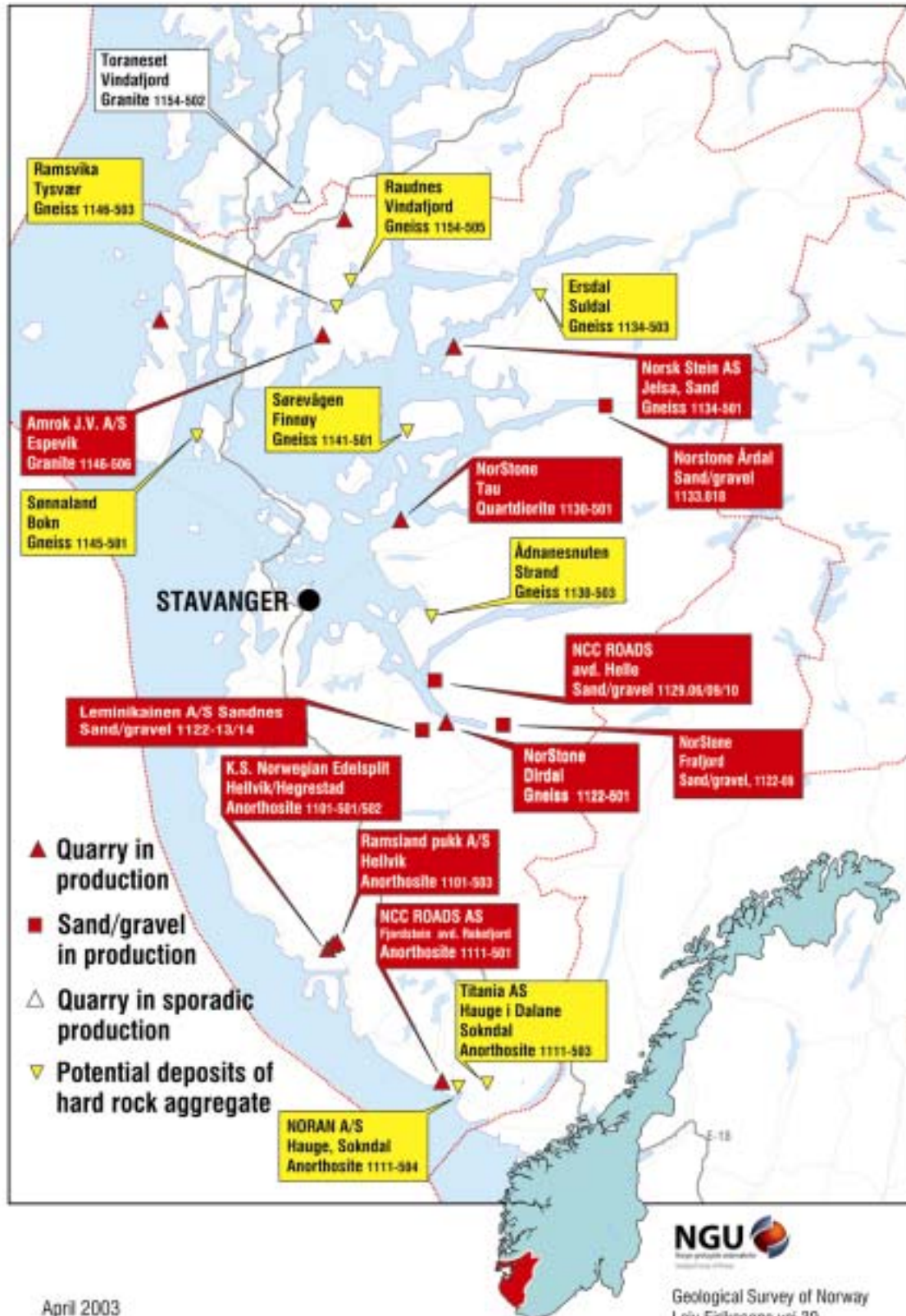


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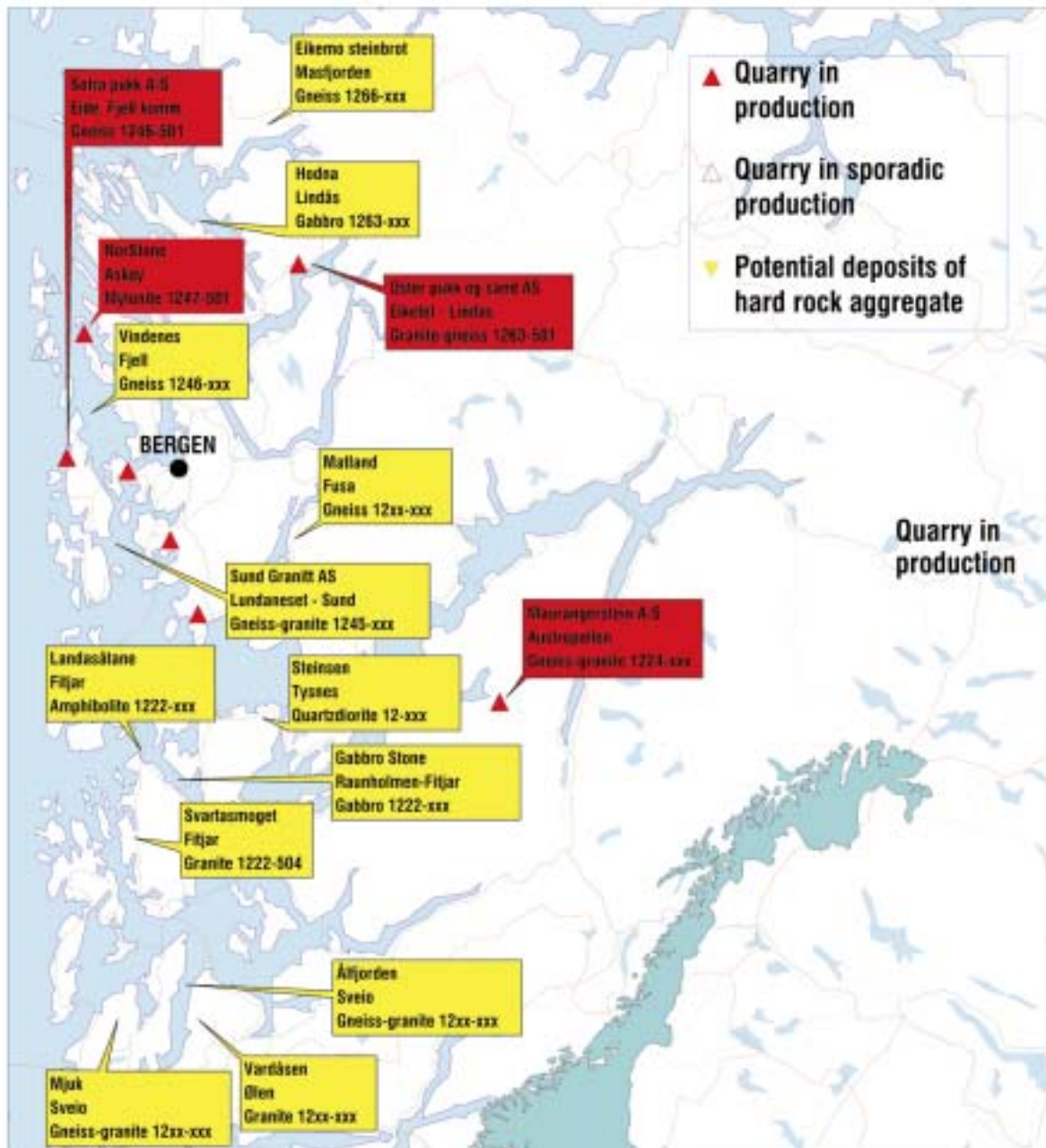
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Telephone: 47 73 90 40 00  
Teletax: 47 73 92 16 20

# QUARRIES AND POTENTIAL DEPOSITS OF HARD ROCK AGGREGATE IN ROGALAND COUNTY

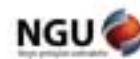


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## QUARRIES AND POTENTIAL DEPOSITS OF HARD ROCK AGGREGATE IN HORDALAND COUNTY

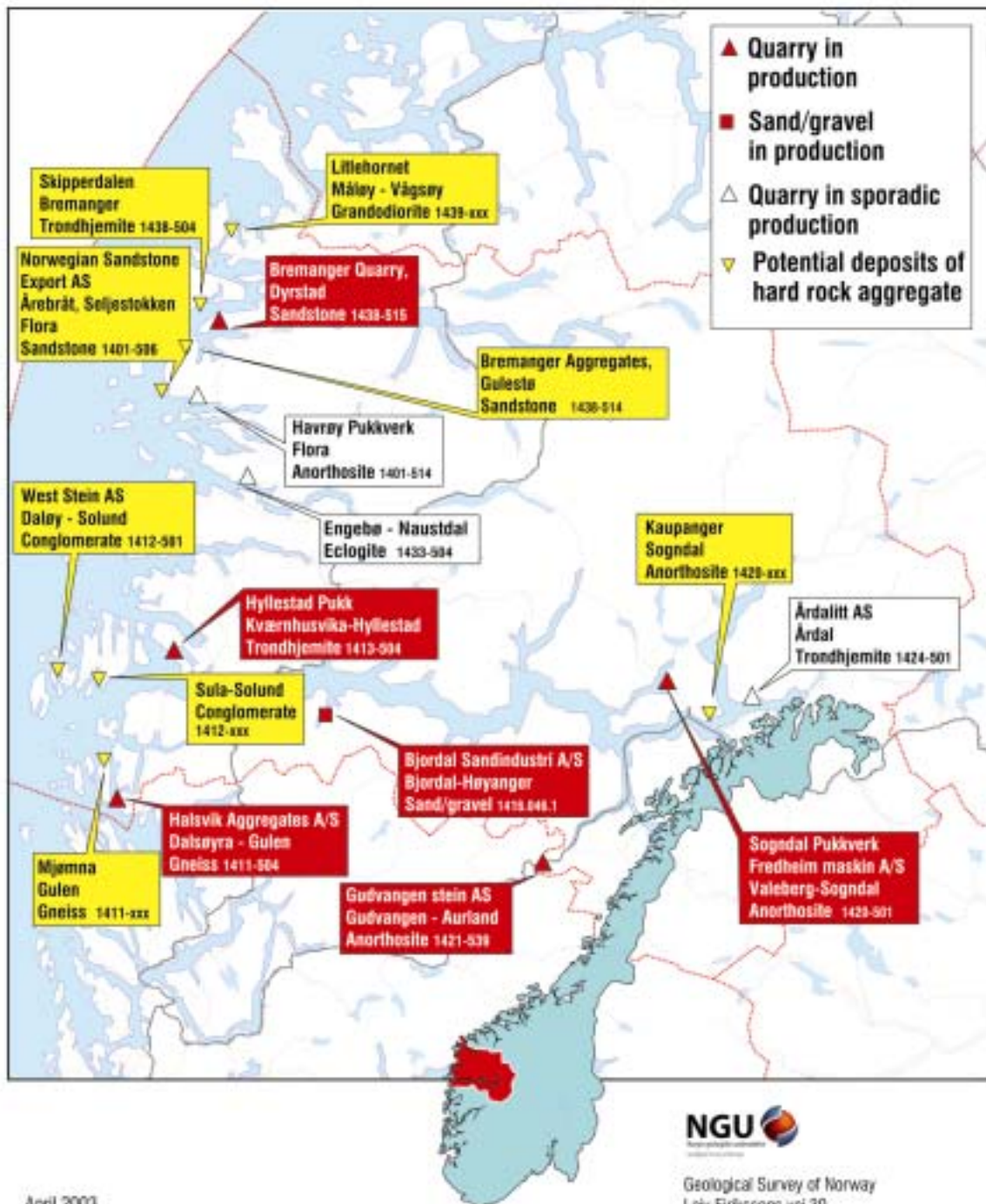


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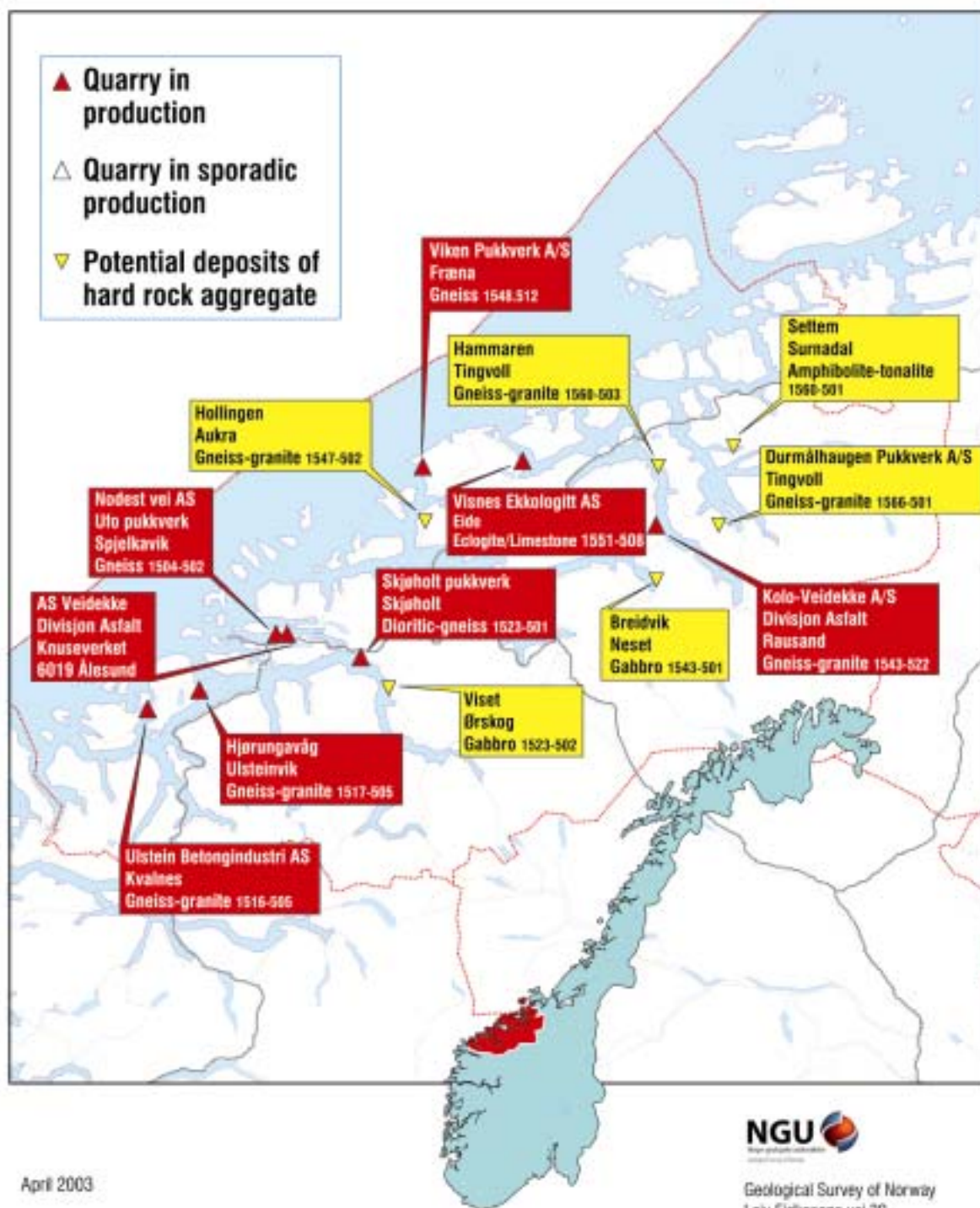
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## QUARRIES AND POTENTIAL DEPOSITS OF HARD ROCK AGGREGATE IN SOGN OG FJORDANE COUNTY



April 2003

## QUARRIES AND POTENTIAL DEPOSITS OF HARD ROCK AGGREGATE IN MØRE OG ROMSDAL COUNTY



April 2003

## QUARRIES AND POTENTIAL DEPOSITS OF HARD ROCK AGGREGATE IN SØR-TRØNDELAG COUNTY

