



ARCTIC WEB

How the oil industry can reduce risk in the Arctic with more accessible data

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PASSIONATE PARTNER

Arctic Information: What's Needed?

- **Meteorological** (Wind, Temperature), **oceanographic**, **ice**, **bathymetry**
- **Geophysical data** (gravity/magnetics, seismic), **Cultural Data** (licenses, boundaries, fields)
- **Emergency Preparedness Data**

Arctic Information: What's Available

- **Public Data Sources**
- **Private** (corporate) sources
- **Joint** research projects
- **Scientific Publications**

ArcticWeb

- ArcticWeb is a public geoportal which aims to **simplify access** to public data by making terms searchable from multiple sources at once.
- Need for easier access to E&P exploration data
- Also includes some private data sources



Joint Industry Project (JIP) Members

- Statoil
- ConocoPhillips
- BG Group
- Lundin
- ENI Norge
- Shell
- Spring Energy

Key Data Owners

- Norwegian Government Agencies
- Partners in joint research projects

Users

- **Geoscientists**
- **Information managers**
- **Emergency Preparedness Planners**
- **Environmental scientists**
- **Scouts / Investors**

Uses

- **Environmental Impact Assessments**
- **Emergency Preparedness Reports**
- **Access geological information**
- **Risk Analysis**

ArcticWeb Search Engine

RSS Feeds

Web Services

PDF

Databases

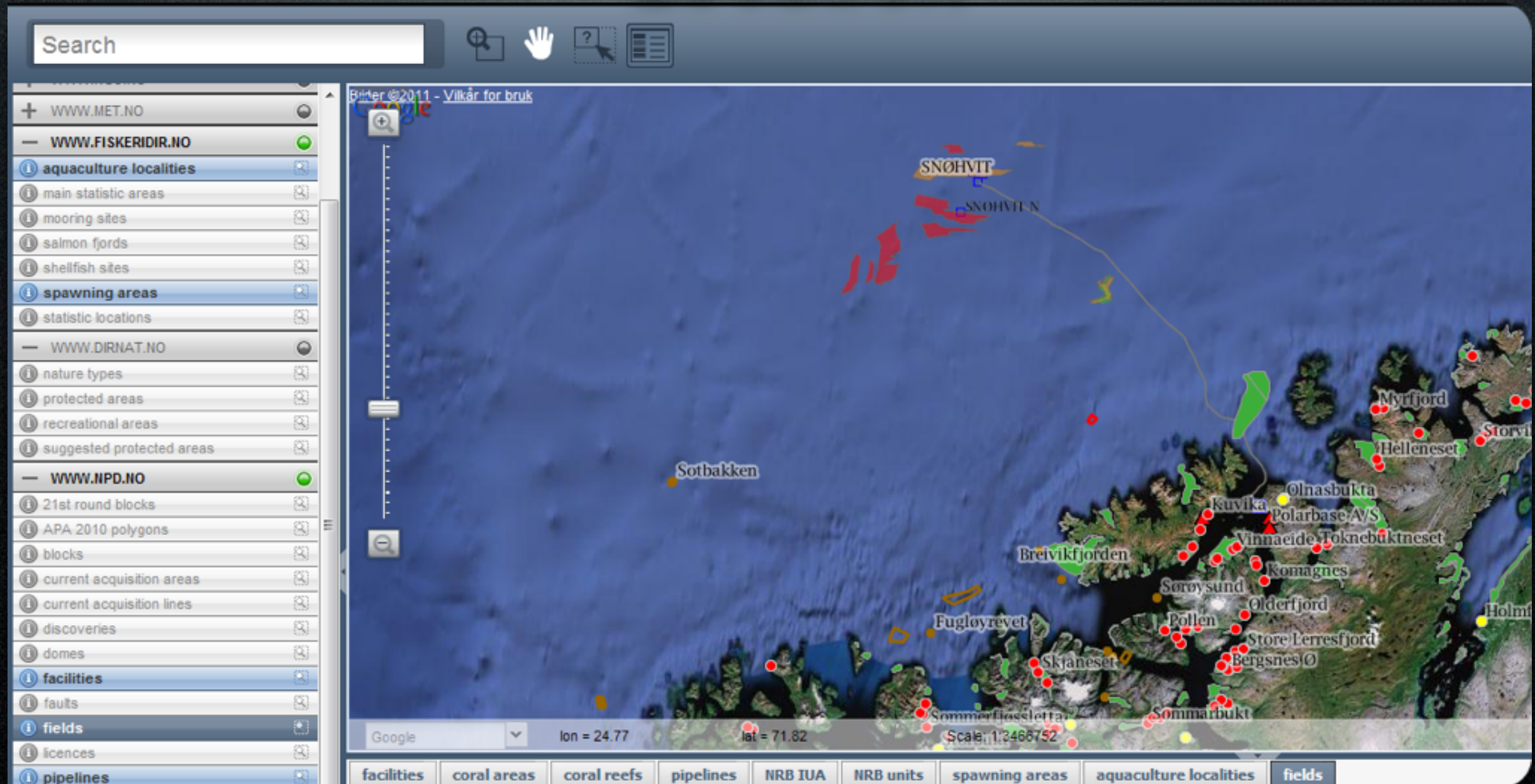
Web

Non-Standard
Protocols

HTML Pages



Data via Search or by Geographical Location



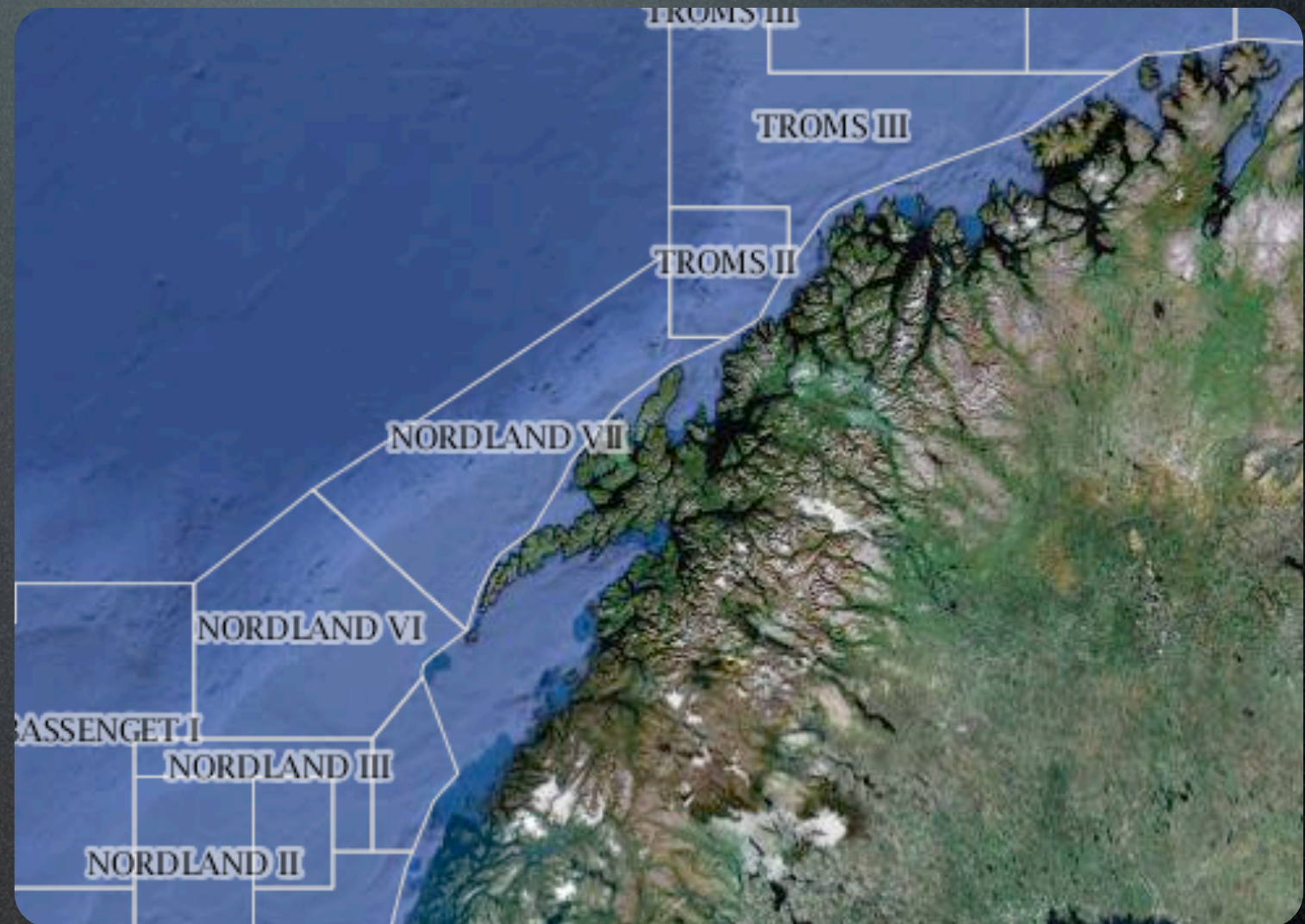
Data is correlated and overlapping. Selected areas highlighted on left, viewable on map.

This is an example of a search-based integration of a wide-range of data sources in different standards, correlated via search terms and geographical locations. We used Whereoil to remove the need for data providers to accept standard data formats and publish standard web services.


Example:

Lofoten Islands, Norway

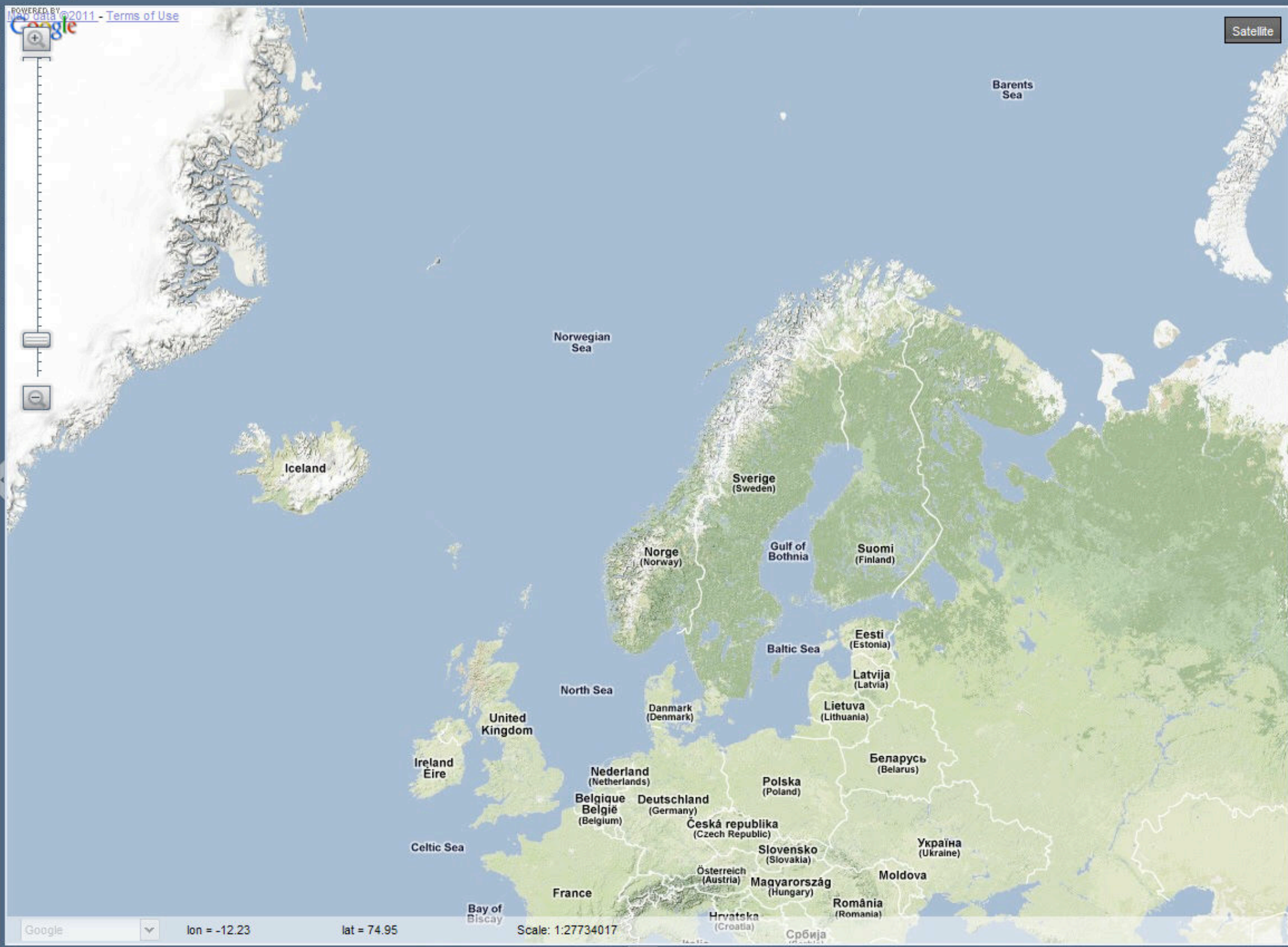
- Licenses
- Seismic
- Wells



Search



- + WWW.IMR.NO
- + WWW.SEAPOP.NO
- + WWW.NGU.NO
- + WWW.MET.NO
- + WWW.FISKERIDIR.NO
- + WWW.DIRNAT.NO
- + WWW.NPD.NO
- + WWW.KYSTVERKET.NO
- + WWW.STATKART.NO
- + WWW.NOFO.NO
- + WWW.SINTEF.NO
- + WWW.NDWP.ORG





POWERED BY Google 2011 - Terms of Use



Norwegian Sea

TROMS II

NORDLAND VII

NORDLAND VI

NORDLAND III

NORDLAND V

NORDLAND I

NORDLAND II

Google

lon = 6.24

lat = 69.30

Scale: 1:6933504

1 mile

subareas

Export to

Area name

BJØRNØYA SØR

BJØRNØYA VEST

BJØRNØYA ØST

FINNMARK VEST

FINNMARK ØST

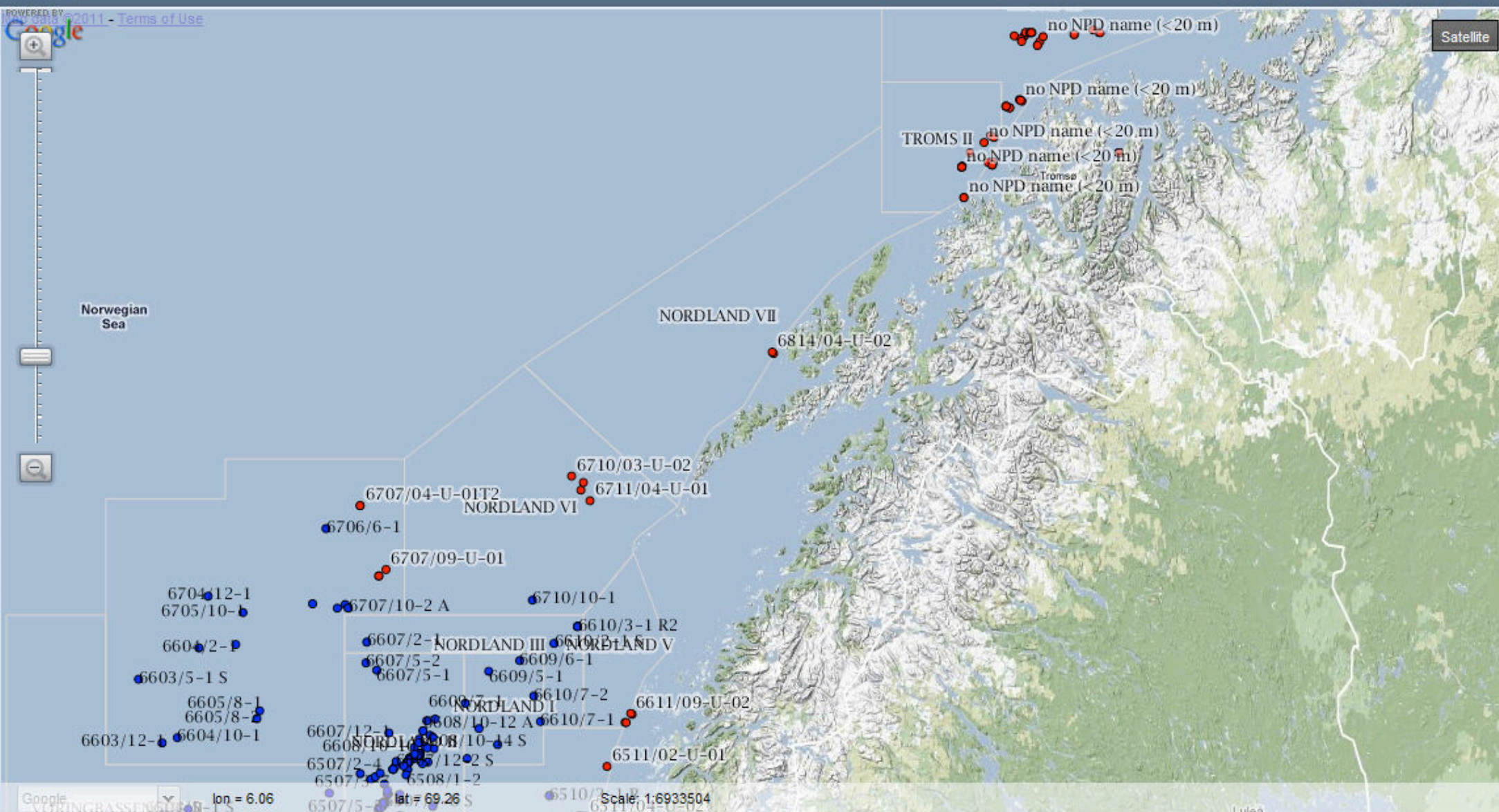
GARDARBANKEN

























Display No. of Rows

10



- POWERED BY



IKU name	NPD name	TD below seabed	Water depth	
	13/01-U-01	292.5	525	   
	13/01-U-02	208.2	505	   
	13/02-U-01	89.7	514	   
	13/02-U-02	104.3	522	   
	27/09-U-01	176	155	   
	27/09-U-02	176.5	155	   

Search



- + WWW.IMR.NO
- + WWW.SEAPOP.NO
- + WWW.NGU.NO
- + WWW.MET.NO
- + WWW.FISKERIDIR.NO
- + WWW.DIRNAT.NO
- WWW.NPD.NO
- 21st round blocks
- APA 2011 polygons
- blocks
- current acquisition areas
- current acquisition lines
- discoveries
- domes
- facilities
- faults
- fields
- licences
- pipelines
- quadrants
- structural elements
- subareas
- wellbores
- + WWW.KYSTVERKET.NO
- + WWW.STATKART.NO
- + WWW.NOFO.NO
- WWW.SINTEF.NO
- shallow wells
- + WWW.NDWP.ORG

Map data ©2011 Terms of Use



shallow wells layer info

Name	Value
Source	www.sintef.no
Last updated	2011-01-07
Update frequency	never

Description:

From 1982 to 1993, IKU (Continental Shelf Institute, now SINTEF Petroleum Research) mapped parts of the Norwegian continental shelf using a combination of shallow, high-resolution seismics and "shallow" (max. 580 m) stratigraphic drilling (diamond coring). Heat flow in the overburden was also determined at selected locations.

The seismic investigations, heat flow measurements and the collection, description and analysis of the cores and other rock samples were financed by a number of oil companies through various [projects \(map\)](#) during a period of 20 years.

Drill cores from more than 90 holes on the Norwegian Continental Shelf [\(map\)](#) and with a total length of 6600 m were collected. The rocks range in [age](#) from Late Ordovician to Late Tertiary.

The results from these projects and later work were documented in reports and publications. The core material is since 2000 in care of the The Museum of Natural History and Archaeology (Vitenskapsmuseet) at The Norwegian University of Science and Technology (NTNU) in Trondheim. The NTNU uses the material in their own research and education and may make it accessible to academic researchers. SINTEF Petroleum Research continues using the material in their own research and consultant work, and will keep cores and results accessible to the oil industry interested in these areas. We do not sell samples or data to consultants or commercial

subareas wellbores shallow wells

Export to

IKU name	NPD name	TD below seabed	Water depth
	6707/04-U-01	58.2	1446
	6707/04-U-01T2	92.5	1450
	6707/08-U-01	65	1480
	6707/08-U-01T2	75	1481
	6707/09-U-01	237.2	1474
	6710/03-U-01	193.4	241

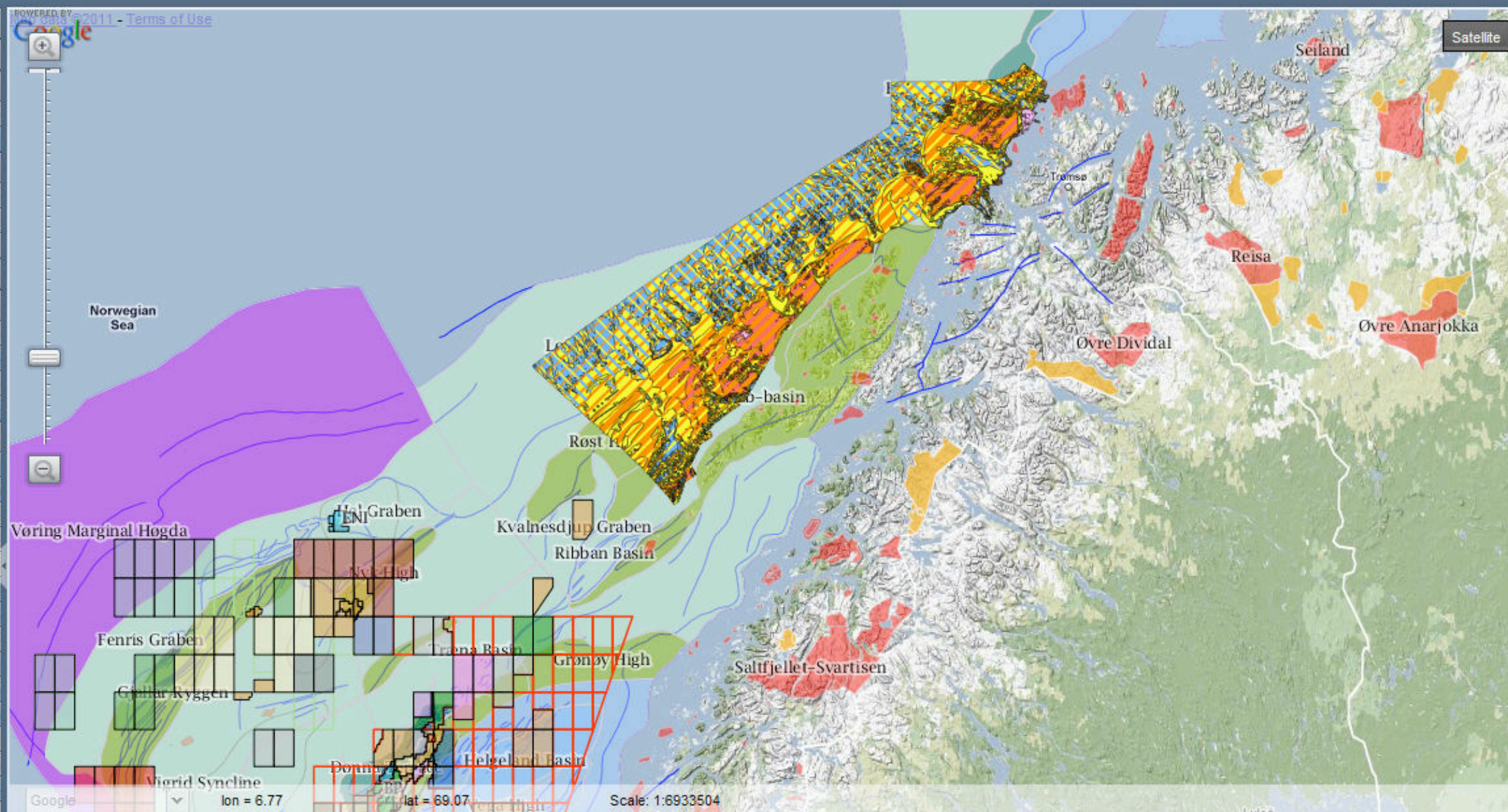
Display No. of Rows 10

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Search



- ☒ WWW.IMR.NO
- ☒ WWW.SEAPOP.NO
- ☒ WWW.NGU.NO
- ☒ geological units
- ☒ sediments (grain size)
- ☒ WWW.MET.NO
- ☒ hindcast data
- ☒ ice today (not updated)
- ☒ weather stations
- ☒ WWW.FISKERIDIR.NO
- ☒ WWW.DIRNAT.NO
- ☒ nature types
- ☒ protected areas
- ☒ recreational areas
- ☒ suggested protected areas
- ☒ WWW.NPD.NO
- ☒ 21st round blocks
- ☒ APA 2011 polygons
- ☒ blocks
- ☒ current acquisition areas
- ☒ current acquisition lines
- ☒ discoveries
- ☒ domes
- ☒ facilities
- ☒ faults
- ☒ fields
- ☒ licences
- ☒ pipelines
- ☒ quadrants
- ☒ structural elements
- ☒ subareas
- ☒ wellbores
- ☒ WWW.KYSTVERKET.NO
- ☒ WWW.STATKART.NO
- ☒ WWW.NOFO.NO
- ☒ WWW.SINTEF.NO
- ☒ shallow wells
- ☒ WWW.NDWP.ORG



discoveries domes faults fields structural elements sediments (grain size) protected areas suggested protected areas 21st round blocks APA 2011 polygons licences

Export to

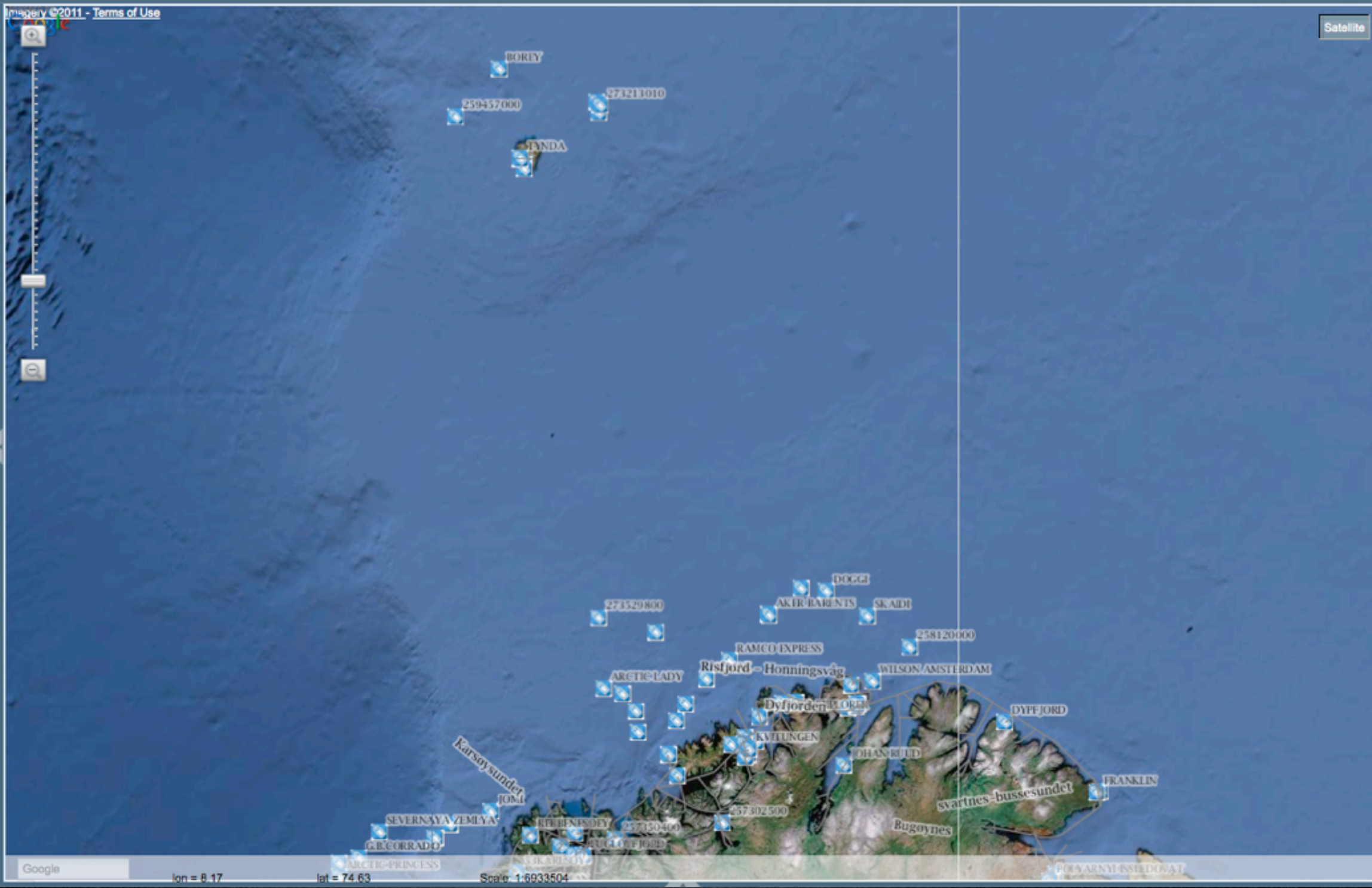
Licence	Operator	URL
242	DET NORSKE	HTTP://WWW.NPD.NO/ENGELSK/CWI/PBL/EN/PL/ALL/242...
248	STATOIL	HTTP://WWW.NPD.NO/ENGELSK/CWI/PBL/EN/PL/ALL/248...
248	STATOIL	HTTP://WWW.NPD.NO/ENGELSK/CWI/PBL/EN/PL/ALL/248...
248	STATOIL	HTTP://WWW.NPD.NO/ENGELSK/CWI/PBL/EN/PL/ALL/248...
249	STATOIL	HTTP://WWW.NPD.NO/ENGELSK/CWI/PBL/EN/PL/ALL/249...
050 C	STATOIL	HTTP://WWW.NPD.NO/ENGELSK/CWI/PBL/EN/PL/ALL/050...

Display No. of Rows 10

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Quick Look at Barents Sea

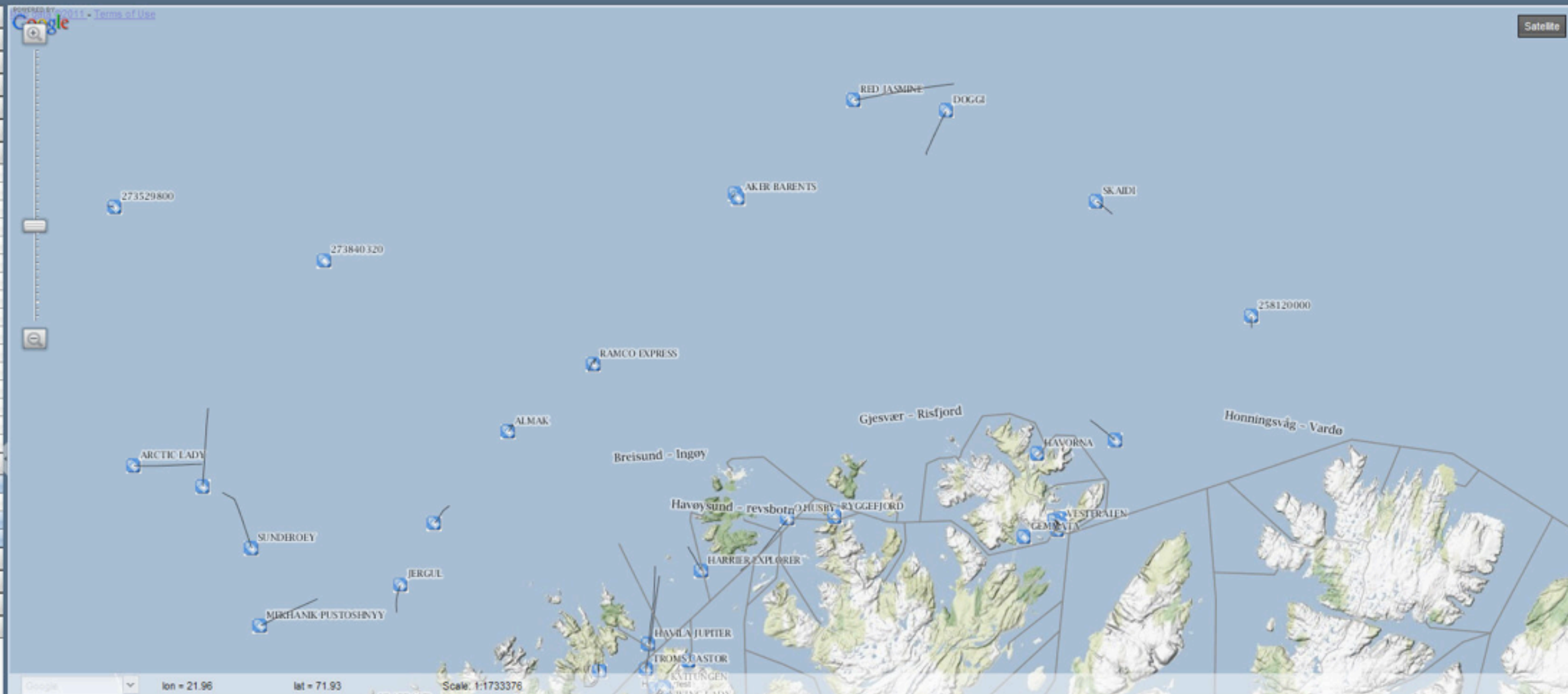
- **Vessel Locations**
- **Shipping Lanes**
- **Seismic Acquisition Areas**





Search

- + WWW.IMR.NO
- + WWW.SEAPOP.NO
- + WWW.NGU.NO
- + WWW.MET.NO
- + WWW.FISKERDIR.NO
- + WWW.DIRNAT.NO
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- faults
- fields
- licences
- pipelines
- quadrants
- structural elements
- subseas
- wellbores
- WWW.KYSTVERKET.NO
- coastal shipping lanes
- ports
- vessel 1 hour history
- vessel positions
- + WWW.STATKART.NO
- + WWW.NOFO.NO
- + WWW.SINTEF.NO
- + WWW.NDWP.ORG

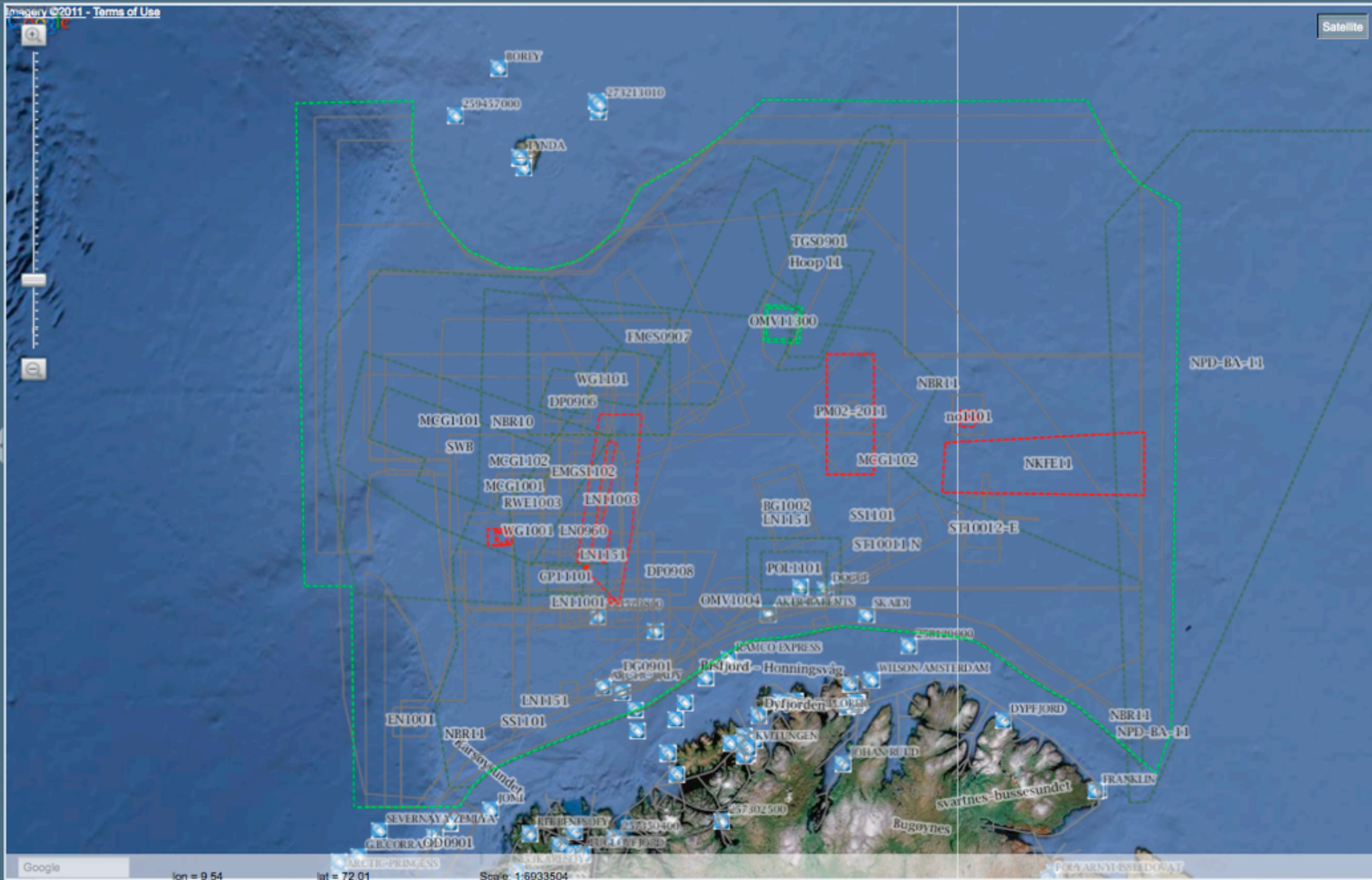


vessel positions vessel 1 hour history coastal shipping lanes

Export to

Name	Part of	Type
LOPPA - SØRØYSUNDET	BRYNILDEN - HJELMEN	FARLED
STJERNESUND	SILDMYLINGEN - GAVLODDEN	FARLED
BERGSFJORDEN	SYD OM SILDA	FARLED
SØR - TVERFJORD	SILDESPOLEN - S-TVERFJORD	FARLED
LANGFJORD	KLUBBHOLMEN - SØR-TVERRFJ.	FARLED
KLUBBHOLMEN - BERGSFJORD	KLUBBHOLMEN - BERGSFJORD	FARLED

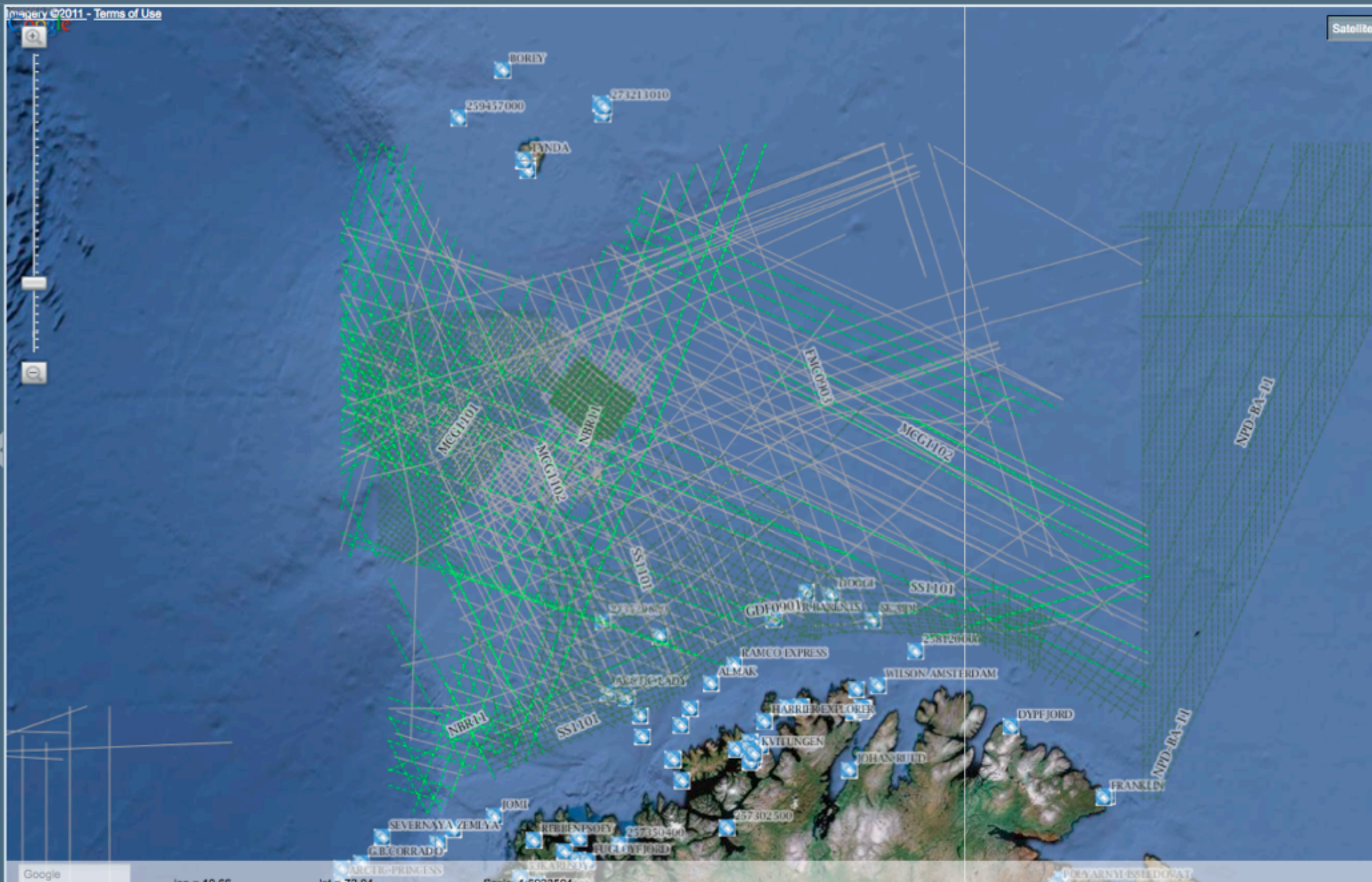
Display No. of Rows 10





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Satellite



Google

lon = 10.66

lat = 72.04

Scale: 1:6933504

POLYARNYI ESILDOVAT

- + WWW.IMR.NO
- + WWW.SEAPOP.NO
- + WWW.NGU.NO
- + WWW.MET.NO
- + WWW.FISKERIDIR.NO
- + WWW.DIRNAT.NO
- WWW.NPD.NO
- 21st round blocks
- APA 2011 polygons
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- current acquisition areas
- current acquisition lines
- discoveries
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- pipelines
- quadrants
- structural elements
- subareas
- wellbores
- WWW.KYSTVERKET.NO
- coastal shipping lanes
- ports
- vessel 1 hour history
- vessel positions
- + WWW.STATKART.NO
- + WWW.NOFO.NO
- + WWW.SINTEF.NO
- + WWW.NDWP.ORG

Search for Ships on Arctic Web ("Catalogue of Ships")



"And now, O Muses, dwellers in the mansions of Olympus, tell me for you are goddesses and are in all places so that you see all things, while we know nothing but by report who were the chiefs and princes of the Danaans? As for the common soldiers, they were so that I could not name every single one of them though I had ten tongues, and though my voice failed not and my heart were of bronze within me, unless you, O Olympian Muses, daughters of aegis-bearing Jove, were to recount them to me. Nevertheless, I will tell the captains of the ships and all the fleet together..."

Homer, Iliad, Book 2 ["The Catalogue of ships"](#)

Dear Arctic Web user,

The ships Homer listed in his famous "Catalogue of Ships" are not on the map anymore. **But there are other ships there that collect data about seabed and subsurface right now in Barents, Norwegian and North seas.**

Check out this list below. Here is what you can do with it:

Access ArcticWeb data

[Browse data](#)
[Browse map](#)

Non-commercial users:
[Request user access](#)

Latest News

ArcticWeb at Geological Society in London
 Oct 4th, 2011

Meet ArcticWeb in Halifax this week
 Aug 29th, 2011

Norway's Most Northerly discovery made
 Aug 22nd, 2011

ArcticWeb exhibiting at 3P Arctic Conference
 May 31st, 2011

ArcticWeb Presentation at Share-PSI.eu
 Workshop
 May 9th, 2011

Apply Data to Products

OCTOBER

					APRIL 10 APRIL 10 APRIL 10	APRIL 10 APRIL 10 APRIL 10
APRIL 10				APRIL 10		APRIL 10 APRIL 10 APRIL 10
APRIL 10	APRIL 10	APRIL 10		APRIL 10	APRIL 10 APRIL 10 APRIL 10	APRIL 10 APRIL 10 APRIL 10
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APRIL 10	APRIL 10	APRIL 10		APRIL 10		
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NOVEMBER

	APRIL 10		APRIL 10	APRIL 10	APRIL 10 APRIL 10 APRIL 10	APRIL 10
APRIL 10	APRIL 10	APRIL 10	APRIL 10	APRIL 10	APRIL 10 APRIL 10 APRIL 10	APRIL 10
APRIL 10	APRIL 10	APRIL 10	APRIL 10	APRIL 10	APRIL 10 APRIL 10 APRIL 10	APRIL 10
APRIL 10	APRIL 10	APRIL 10	APRIL 10	APRIL 10	APRIL 10 APRIL 10 APRIL 10	APRIL 10
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DECEMBER

			APRIL 10	APRIL 10 APRIL 10 APRIL 10	APRIL 10 APRIL 10 APRIL 10	APRIL 10
APRIL 10		APRIL 10		APRIL 10 APRIL 10 APRIL 10	APRIL 10 APRIL 10 APRIL 10	APRIL 10
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APRIL 10	APRIL 10	APRIL 10		APRIL 10 APRIL 10 APRIL 10	APRIL 10 APRIL 10 APRIL 10	APRIL 10

Seismic released
 Well raw data released
 Production licenses expire
 Well interpretations released

Conclusion

- **Collaboration and cooperation**
- **More data available, the lower the risk**
- **Simplify decision process by combining information.**
- **Future Potential:** How we're going to add even more value.



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