

PRESS RELEASE

Potential Environmental Risks Associated With Dumped Chemical Warfare Agents (CWA) in the Baltic Sea Very Low According to New Research

- **Article published in the Journal of Hazardous Materials shows that the impact of Nord Stream's first pipeline on dumped CWA on the seabed is minor**
- **Nord Stream has invested 100 million Euros in environmental surveys and monitoring of the Baltic Sea**

Zug, March 22, 2012. A new scientific article published in the peer reviewed magazine for environmental engineers *Journal of Hazardous Materials* shows that the natural gas pipeline's impact on the potential re-suspension of historically dumped chemical warfare agents (CWA) is insignificant. The research and collection of data from the Baltic Sea that provides the background for both the report and the scientific article are financed by Nord Stream.

In connection with the construction of the two parallel natural gas pipelines through the Baltic Sea from Russia to Germany passing east of Bornholm, there has been concern regarding potential re-suspension of dumped chemical warfare agents in a nearby dump site and potential environmental risks associated with this. This is however not the case, as demonstrated by senior researcher, Ph.D. Hans Sanderson and senior researcher Ph.D. Patrik Fauser, DCE – Danish Centre for Environment and Energy at Aarhus University.

"In connection with the installation of the first of the two parallel pipelines we measured low concentrations of CWA related metabolites. The subsequent calculated bioavailable concentrations for the fish population constitute a very low risk," Hans Sanderson says.

Sanderson underlines the importance of making this particular research – according to 'UN resolution A/RES/65/149' – available to both the public and the scientific community. The final analyses will be ready in 2013, when surveys are done after the completion of both pipelines.

In both 2008 and 2010 the researchers analysed 192 sediment and 11 pore water samples for CWA residues along the pipeline corridor next to the dump site. The results show that detection frequencies and levels of intact CWA were low, whereas CWA metabolites were more frequently found.

The research has also proved that the sediment containing CWA which are re-suspended in connection with the installation of the pipelines only adds marginally to the general CWA exposure along the pipeline route. The article also demonstrates that the presence of the biota does not depend on the level of CWA in the sediment, but on other parameters like depth, mud and oxygen.

The tests have shown that the sediment containing CWA and its dissipation products, which are re-suspended due to the construction work, only adds marginally to the general CWA exposure and risk along the route.

The paper furthermore documents that the abundance, diversity and biomass of benthic macroinvertebrates along the pipeline route are not limited by the exposure to the CWA related residues, but rather to background variables such as dissolved oxygen, turbidity, and sediment substrate. This corroborates the predicted low risk to the fish community.

So far Nord Stream has invested more than 100 million euros in environmental research of the Baltic Sea and plan to invest a further 40 million Euro at its extensive environmental monitoring programme with approximately 1,000 survey locations along the entire pipeline route.

During the design of the pipeline and its route Nord Stream's highest priority has been to avoid areas with dumped chemical and conventional munitions. In order to judge the risk of impact from CWA, more than 100 samples were collected from Danish waters. These samples were analysed by the Danish Hydraulic Institute (DHI) and the Finnish Institute for Verification of the Chemical Weapons Convention (VeriFin). The results at that time did not show any increased risk along the route either.

Despite the positive test results Nord Stream takes no chances during the construction work. Nord Stream has made an agreement with Admiral Danish Fleet regarding expert advice and surveillance of the activities onboard regarding CWA from the seabed. Furthermore all vessels, which are in contact with the seabed in Danish waters, have special equipment installed to handle CWA.

Shortly after WW2 there were several dumping operations of chemical and conventional munitions in the Baltic Sea. Many of these operations were kept secret and it is not obvious who can be held responsible. Information regarding details of number, type and placement is not available.

The article can be accessed online via the [Journal of Hazardous Materials website](#).

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Notes to editors

Nord Stream is a natural gas pipeline which links Russia and the European Union through the Baltic Sea. The European Union's annual natural gas imports in 2009 were approximately 312 billion cubic metres (bcm) and are projected to increase to over 523 bcm by 2030. By then, the EU will need additional gas imports of 211 bcm per year (Source: IEA, 2011). Nord Stream will meet more than a quarter of this additional gas import requirement by connecting the European gas pipeline network to some of the world's largest gas reserves. The project will be an important contribution to long-term security of supply and a milestone of the energy partnership between the European Union and Russia.

The first of Nord Stream's two parallel pipelines became operational in November 2011. Each line is approximately 1,220 kilometres long, providing a transport capacity of some 27.5 bcm per year. More than 90 percent of Line 2 has also already been laid. Full capacity of about 55 bcm per year will be reached when the second line goes on stream in late 2012. This is enough gas to supply more than 26 million European households.

Nord Stream AG is an international joint venture established for the planning, construction and subsequent operation of the new offshore gas pipeline through the Baltic Sea. Russian OAO Gazprom holds a 51 percent stake in the joint venture. The German companies BASF SE/Wintershall Holding GmbH and E.ON Ruhrgas AG hold 15.5 percent each, and the Dutch gas infrastructure company N.V. Nederlandse Gasunie and the French energy company GDF SUEZ S.A. each hold a 9 percent stake.

Nord Stream is included in the Trans-European Energy Network Guidelines (TEN-E) of the European Union. In 2006, the project was designated a "project of European interest" by the European Commission, the European Parliament and the Council of the European Union. Nord Stream is, therefore, recognised as a key project for meeting Europe's energy infrastructure needs.

Construction of the Nord Stream Pipeline started in April 2010, after completion of environmental studies and planning and an Environmental Impact Assessment (EIA) along the entire pipeline route. Three pipelay barges have been commissioned to work on the project: Saipem's Castoro Sei is carrying out the majority of the construction in the Baltic Sea. The Castoro Dieci has completed its operations in German waters, where it constructed both pipelines in the German landfall section; Allseas' Solitaire handled construction in the Gulf of Finland as a subcontractor of Saipem. The first pipeline became operational in November 2011, the second one is scheduled to become operational in 2012.

In 2010 and 2011, Nord Stream invested 20 million euros in its Environmental and Social Monitoring Programme (ESMP). More than 20 specialist companies are conducting the surveys defined in the ESMPs, to determine just how, and if, the Baltic Sea's flora and fauna have been impacted by the construction of the Nord Stream pipelines. Data from sixteen subjects, including water quality, bird, fish and mammal populations, as well as seabed recovery, are collected from approximately 1,000 survey locations along the route in the waters of Russia, Finland, Sweden, Denmark and

Germany. These data are analysed in internationally recognised laboratories, and Nord Stream reports the results to the national environmental authorities in each country. Nord Stream plans to invest approximately 40 million euros into its ESMP to monitor any impact of the construction and operation of the pipelines through 2016.

Saipem, 43 percent owned by Eni, is organised in three Business Units: Offshore, Onshore and Drilling, with focus on oil & gas related activities in remote areas and deepwater. Saipem is a leader in the provision of engineering, procurement, project management and construction services with distinctive capabilities in the design and the execution of large scale offshore and onshore projects and technological competences such as gas monetisation and heavy oil exploitation.

EUPEC is one of the world-wide leading companies in the application of multi-layer anti-corrosion coating systems. For more than 40 years, EUPEC has been providing reliable solutions for the “end-to-end” protection of steel pipelines on both onshore and offshore pipeline industries. This international reputation also applies to concrete weight coating, pipe-in-pipe fabrication, cathodic protection, remote processing and monitoring of pipelines and services related to global project management and pipeline field services. EUPEC is certified ISO 9001, 14001, OHSAS 18001 and Qualicert.

No intermediate compressor station: Nord Stream was able to design its offshore pipeline to operate without an intermediate compressor station, but with three different design pressures and pipe wall thicknesses as the gas pressure drops over its long journey from Russia to landfall in Germany. The connection by hyperbaric tie-in of these three pipeline sections was carried out at the two offshore locations where the design pressure changes from 220 to 200 bar and from 200 to 177.5 bar respectively. The connection of the Gulf of Finland and Central sections took place off the coast of Finland at a sea depth of approximately 80 metres, and the connection of the Central and South Western sections off the Swedish island of Gotland at a depth of approximately 110 metres.