This factsheet was originally published on 10 January 2018, and has since been updated on 15 January 2018.

Sanchi oil tanker collision and sinking - Greenpeace East Asia and Greenpeace Japan factsheet

Sanchi location and movement, 6 Jan - 15 Jan 2018

According to the latest VIIRS images and government information, the Sanchi sank at 28°22’30″ N, 125°56’30″ E at 15:00 Beijing time on Sunday 14 January. The site of the sinking is 530 km from Shanghai, 450 km from Ningbo, and 310 km from Naha, Japan. The bathymetry (water depth) is 115 meters. The size of the light spot at 01:30 15 Jan shows the fire continuing to burn on the sea surface. An article by CCTV at noon on 15 Jan stated that the fire on the sea surface had been extinguished by 09:58 15 Jan, and that there is a 18.5km long, 1.85-7.4 km wide condensate leak zone around the burning area, several times larger than the expanse of the spill reported yesterday.

It is now assumed that there is no longer hope of finding any survivors from the disaster. Greenpeace shares it condolences with their families and loved ones.
An initial assessment of the potential environmental impacts of the sinking of the Sanchi at 15:00 Beijing time, January 14 2018 (Dr. Paul Johnston from Greenpeace International’s Science Unit in the University of Exeter, UK):

- The focus should now move away from salvage and recovery, and to an assessment of the impacts. Most importantly, this must include an assessment of how much condensate has entered the water and an assessment of the area contaminated.
- There is also the possibility of a fuel oil spill. Given that the fuel tanks in these sorts of vessels are located close to the engine room, it is likely that the fuel tanks have remained intact since the initial collision on 6 Jan. As the fuel oil cools, it will become more viscous which will help to slow or even prevent leaks. In this scenario, it is possible that we will see chronic low volume leakage over a period of time at the seabed. Impact would remain relatively local.
- Surveillance and assessment by authorities is critical to understand the extent of the potential environmental impact and for deciding on the appropriate next steps in terms of salvage and recovery of the potential condensate spill.

Greenpeace East Asia & Greenpeace Japan on the potential risks to the marine environment and edible fish species:
The explosion and sinking of the Sanchi on 14 January occurred in an important spawning ground for many commercial species such as the bluefin leatherjacket (Thamnaconus septentrionalis) and the swordtip squid (Uroteuthis edulis). At this time of year the area is used
as wintering ground by common edible species such as hairtail (*Trichiurus japonicus*), yellow croaker (*Larimichthys polyactis*), chub mackerel (*Scomber japonicus*) and blue crab (*Portunus trituberculatus*). The area is also on the migratory pathway of many marine mammals, such as humpback whale, right whale and gray whale.

**Background**

On the evening of the 6 January 2018 the oil tanker *Sanchi*, transporting 136,000 tonnes of highly volatile condensate ultra-light crude from Iran to South Korea, collided with the cargo ship *CF Crystal* 160 nautical miles off the coast of China. On 7 January China’s Ministry of Transport released a [statement](http://vesselregister.dnvgl.com/VesselRegister/vesseldetails.html?vesselid=27100) confirming the collision, the location, the vessels involved, the quantity and type of oil being transported, and the number and nationality of the missing crew.

The condensate, equivalent to almost 1 million barrels of oil, was purchased by South Korean joint venture Hanhwa Total and being transported to the port of Daesan.

*[Video footage](#)* and satellite imagery (see below) of the scene, as reference, shows the scale and intensity of the fire.

On Monday 8 January, the body of one crew member was recovered from the sea. On Saturday 13 January, Chinese coast guard boarded the *Sanchi* and recovered two further bodies. On Sunday 14 January, Mahmoud Rastad, the chief of Iran’s maritime agency, stated that there was now “no hope” of finding survivors among the 29 still missing.

On Saturday 13 January, Chinese coast guard retrieved the *Sanchi*’s black box.

On Sunday 14 January an [explosion](#) occurred on the *Sanchi* at around midday. The tanker then [sank](#) at 15:00.

**The vessels involved**

The *Sanchi* is an 85,000 tonne Panamanian-flagged tanker, owned by Bright Shipping Ltd and leased by the National Iranian Tanker Co.. Commissioned in 2008, the *Sanchi* is a 274m long oil tanker.¹

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The Sanchi’s movements, 6 - 15 Jan:
Condensate oil
The Sanchi was carrying 136,000 tons, almost 1 million barrels, of condensate oil, a form of oil that consists a mixture of hydrocarbons recovered during the processing of natural gas.

Condensate is very volatile, meaning that much of the substance will have been consumed in the fire and that most of the spilled condensate will evaporate into the air. For this reason, we will not see the sort of thick, black oil slick associated with crude oil spills.

This does not mean it is free of environmental risks, however. A proportion of condensate spilled will dissolve into the water, and this will be locally toxic until it dilutes enough to be broken down by natural processes, probably quite quickly. (see below for more information on condensate toxicity).

Any condensate that does spill may produce a surface sheen, though that may be hard to see or detect in current weather conditions, which will evaporate, dissolve or disperse quite quickly.

Currently, it is impossible to estimate how much of the condensate has burned off or evaporated. The one modelling test conducted so far suggested that less than 1% would remain on the sea surface 5 hours after the collision.²

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² Modelling conducted by the Yantai Oil Spill and Emergency Response Technical Center and referenced in a statement issued by China’s Ministry of Transport on 10 Jan 2018.
Further modelling and tests will be required to confirm the amount of condensate oil that has leaked into the sea since 6 January, and how much will continue to leak into the sea since the Sanchi sank on 14 January.

Environmental Risks

It is currently still unclear exactly how much condensate has spilled into the sea so far and how much more is likely to spill, meaning that a full assessment of the environmental risks is not yet possible.

Wind analysis shows that any condensate spilled while the tanker was still afloat and burning could have been pushed south east by strong north westerly winds. Sea current analysis on 6 January showed prevailing currents moving north east. By 9 January, however, these began moving south east.

China National Marine Environmental Forecasting Center map on possible oil spread over 48 hours from 1600, 8 January 2018. 3 At first there was a possibility for oil to spread south west by

https://mp.weixin.qq.com/s?__biz=MjM5NDYxNTM4MA==&mid=2651711207&idx=1&sn=62e2a25f8c9b96621f4616e31d787a2b&chksm=bd7c5fdca0bd6cae959fcdc78cf5f7dd01f47eab440473dee0d8631168c0
about 15km. From 1000 on 9 January, the pattern shifted to movement within a 10km radius of the tanker.

As condensate is light, colourless and partially soluble, it can be much harder to separate from water than thick crude oil. A major concern is that, now that the tanker has sunk, any condensate which did not yet burn off could continue to leak underwater, disperse and break down quite quickly, significantly complicating clean up operations.

Condensate contains toxic components such as hydrogen sulfide and mercaptan, the volatilisation of which causes air pollution. In addition, the combustion and decomposition process of these chemicals generates pollutants such as nitric oxide, nitrogen dioxide, nitrogen oxides, sulfur oxides, which can be poisonous to humans through inhalation and skin exposure.  

Greenpeace recommendations

- Now that the tanker has sunk, it is important that operations now shift from salvage and recovery, to assessment of the impacts of the potential condensate spill.
- An assessment of how much condensate has been spilled must be conducted as soon as possible and appropriate containment and clean up measures adopted.
- In the medium term, a full enquiry into the causes of this collision in open waters must be carried out. The risks to lives and the environment are enormous and lessons must be learned.

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http://www.mot.gov.cn/jiaotongyaowen/201801/t20180109_2970903.html