



**NATIONAL TRANSPORTATION SAFETY COMMITTEE
REPUBLIC OF INDONESIA**

FINAL
KNKT.18.03.09.03

Marine Accident Investigation Report

**Pipeline Damage and Crude Oil Pollution in Balikpapan Bay
Balikpapan, East Kalimantan
Republic of Indonesia
30 March 2018**



2019

The report is based upon the investigation carried out by the National Transportation Safety Committee (KNKT) in accordance with IMO Resolution MSC. 255 (84) and Indonesian Shipping Act (UU No.17/2008).

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1. Indonesian Shipping Act No. 17 Year of 2008, articles 256 and 257 as well as the explanatory memorandum;
2. Government Regulation No. 62 Year of 2013 on Transport Accident Investigations;
3. Presidential Regulation of the Republic of Indonesia No. 2 Year of 2012 on the National Transportation Safety Committee;
4. IMO Resolution MSC.255 (84) on the Casualty Investigation Code.

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NATIONAL TRANSPORTATION SAFETY COMMITTEE

Ever Judger, Balikpapan Bay, 30 March 2018

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Ever Judger, Balikpapan Bay, 30 March 2018

FOREWORD

Praise to be given to the Almighty God with the completion of the preparation of the Final Report on the Investigation of the Pipe Line Damage and Crude Oil Pollution in Balikpapan Bay involved the *Ever Judger* on 30 March 2018 in the waters of Balikpapan Bay, East Kalimantan.

The completion of this Final Report of Marine Accident Investigation was mandated by Indonesian Shipping Act No. 17 Year of 2008 Articles 256 and 257 as well as Government Regulation of Transport Accident Investigations No. 62 Year of 2013 Article 39 paragraph 2 Letter c which states that "The report of transport accident as referred to the verse (1) consists of the final report".

The report is the final output of the entire investigation process which covers fact information, analysis of causal factors that most likely contributed the accidents, recommendations for prevention and improvement, and appendix of other supporting documents. The report discussed the marine accidents issues about what, how and why the accident occurred and findings about the cause of the accident along with the recommendations of shipping safety to the parties to minimise or prevent recurrence by the same factors in the future. The final report is issued or publicly published after requesting responses and/or feedback from regulators, operators, manufacturers of transportation facilities and other related parties.

The last, but not the least, the Final Report of Marine Accident Investigation was made so that the interested parties could learn and take lessons from the accident.

Jakarta, January 2019

NATIONAL TRANSPORTATION
SAFETY COMMITTEE

CHAIRMAN



Dr. Ir. SOERJANTO TJAHJONO

NATIONAL TRANSPORTATION SAFETY COMMITTEE

Ever Judger, Balikpapan Bay, 30 March 2018

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EXECUTIVE SUMMARY

On 30 March 2018 approximately at about 22.00 Local Time (LT), the anchor of Panamanian Bulk Carrier *Ever Judger* hit and dragged the submerged crude oil pipeline of Pertamina.

On 31 March 2018 at about 11.05 local time, a huge blaze with thick black smoke began to spread out in Balikpapan Bay. It was started from the front of the *Ever Judger* and then spread towards north and south. The fire was spreading on the water from the front towards the aft of the *Ever Judger*. One crew who was on the aft deck burnt on some parts of his body. Five villagers on two boats located in front of the *Ever Judger* were counted as fatalities.

Knowing the situation, in order to avoid the possibility of a fire spreading to the refinery area and endanger the refinery in operation, the officer in charge of Pertamina ordered the Field Officer in Lawe-Lawe to stop the remaining operating pump that transfers crude oil across the bay and was forced to stop the production, even Pertamina did not know the source of oil spill at the time.

Following the fire on the sea, Pertamina deployed its own fire extinguisher (multipurpose boat with firefighting equipment) and asked the surrounding oil companies to work together to extinguish the fire at the Balikpapan bay.

At the same time, the Harbour Master of Balikpapan ordered fire boats to diminish the fire. All ships were ordered to leave the bay immediately, particularly tanker ships. Less than one hour later, the fire had been completely extinguished. All crew of *Ever Judger* had been evacuated to the shore.

Days after the disaster, the oil spread along the bay and went out of the Balikpapan Bay. The marine ecosystem was severely affected by crude oil pollution. Many fishermen were also negatively impacted by this accident.

The National Transportation Safety Committee (KNKT) identified several safety issues that had contributed to the accident and issued safety recommendations to prevent a similar occurrence in the future. The bridge resource management has been found as the main issue in this accident. Therefore, a number of safety actions are essentially needed to prevent the recurrence of the same accident in the future.

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GLOSSARY

Accident site is a locus/place of a marine casualty(ies), ship wreck, ship collision(s), major damage of ship(s) or any property(ies) or environmental disaster due to ship operation, or any injuries to person(s).

Causal factor means actions, omissions, events or conditions.

Closed-loop communication is a communication technique used to avoid misunderstandings. When the sender gives a message, the receiver repeats this back. The sender then confirms the message; thereby common is using the word “yes”.

Coastal State means a State in whose territory, including its territorial sea, a marine casualty or marine incident occurs.

Emergency evacuation is a direct and rapid movement of the people away from any risks or occurrence.

Flag State is a State whose flag a ship is entitled to fly.

Interested party is an organization, or individual, who, as determined by the marine safety investigating State(s), has significant interests, rights or legitimate expectations with respect to the outcome of a marine safety investigation.

Marine casualty investigator or **investigator** is a qualified person who has assigned by the marine safety investigation authority to carry out an investigation in regards a marine casualty.

Marine safety investigation is an investigation or inquiry (however referred to by a State), into a marine casualty or marine incident, conducted with the objective of preventing marine casualties and marine incidents in the future (casualty prevention).

Marine Safety Investigation Authority is an Authority in a State, responsible for conducting investigations in accordance with this Code.

Pilot is a person who is in charge of the transportation and pilotage of the vessel into the port up to her being anchored and moored and, similarly, in the reverse process until ship reaches the outward pilot station.

Seafarer is any person who is employed or engaged or works in any capacity on board a ship.

Ship seaworthiness is the ship’s ability to withstand ordinary stress of wind, waves and other weather which the vessel might normally be expected to encounter the ordinary perils of the seas.

Traditional vessel is a ship which is built in a traditional method or does not follow the convention rules.

Very serious casualty is a marine casualty involving the total loss of the ship or a death or severe damage to the environment.

Wooden vessel is a ship which the most of its hull is made of wood/timber.

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I. FACTUAL INFORMATION

I.1. THE ACCIDENT

On 30 March 2018 at about 13.00 local time¹ (LT), *Ever Judger*, a Panamanian bulk carrier (IMO 9632844), has finished the loading process of 74,808 metric tonnes of coals into her seven cargo holds. She was berthing on Balikpapan Coal Terminal (BCT) on starboard side alongside and in even keel with the average draft of 13.86 m. All the paperworks were completed. She was ready to leave Balikpapan and headed for Lumut, Malaysia. The Pilot A embarked the vessel to assist the departing process towards the Makassar Strait.

However, due to an unexpected issue on the main engine, her departure should be delayed. The engine crew subsequently made an attempt to work it out. Following more than two hours had been left without any progress, the pilot A disembarked the vessel.

In the evening, a ship's crew resolved the main engine issue. Afterwards, the agent asked again the Pilot Station to assist the departure.

At about 20.30 LT, the Pilot B embarked the *Ever Judger*. The Pilot B asked the Master, in English, about the readiness of the main engine and crew. The Pilot B acknowledged that both engines and crew were ready for sailing. The Pilot B asked the *Ever Judger* crew to provide mooring line on the fore to *Antasena* and aft to *Anggada 15*.

The Master asked the Pilot B about the anchorage location. At this time, the ship was not going to sail towards Makassar Strait, but she had planned to drop the anchor in Balikpapan Bay, instead. Afterwards, the Pilot B pointed the location on the ECDIS as well as explained that there was only one spot for the *Ever Judger*. The Master agreed on the plan.

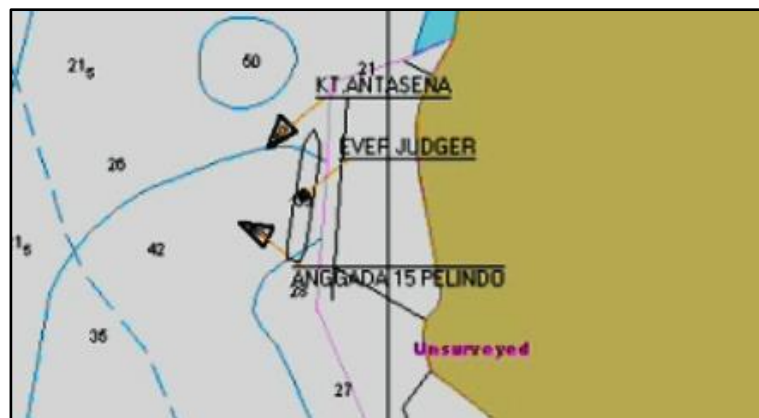


Figure I-1: *Antasena, Anggada 15 and Ever Judger whilst at BCT port (source: Balikpapan VTS)*

At about 21.07 LT, the *Ever Judger* began to depart. Two tug boats assisted the *Ever Judger* on the fore and aft, particularly in rotating the *Ever Judger*. At that time, the tide of the current of the bay was receding (towards south). The visual was clear. Despite the sky was cloudy, there was no rain.

¹ Central Indonesia Time (*Waktu Indonesia Tengah/WITA*) is UTC +08:00.

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A couple of minutes later, the *Anggada 15* moved to the starboard bow of the *Ever Judger*. Together with the *Antasena*, they were rotating the *Ever Judger*.

There were four seafarers on the bridge. The Master was standing and most of the time walking around between the front windows of the bridge and Pilot B. The Pilot B was standing next to the portside radar. The helmsman was holding the steer. The Second Officer (2/O) was standing next to the starboard side radar.

In the meantime, there were two seafarers on the forecastle deck and two seafarers on the aft deck. Seafarers on the forecastle deck, the Chief Officer (CO) and the Bosun, had the duty to control the anchor. As the port side anchor will be engaged for anchoring, they were standing around the port side anchor windlass from pre-departure until anchoring had been completed. Seafarers on the aft deck had the duty to assist mooring line only during departure from the BCT.

At about 21.33 LT the *Ever Judger* was going out of the BCT port basin and facing towards 180° as suggested by the Pilot B. The Pilot B asked the Master to position the engine to dead slow ahead. Both *Antasena* and *Anggada 15* left *Ever Judger* after all mooring lines were released.

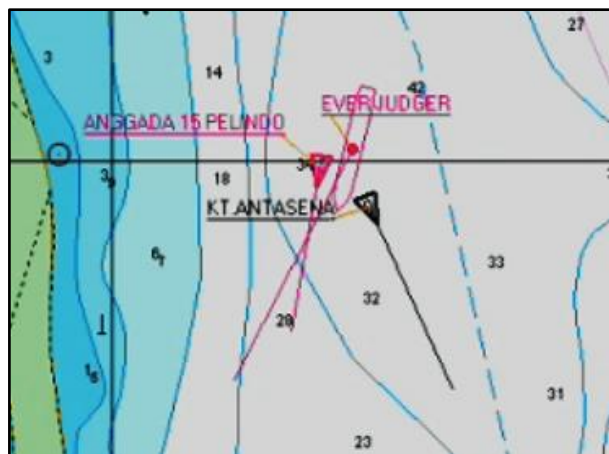


Figure I-2: Antasena and Anggada 15 began to detach from the Ever Judger (source: Balikpapan VTS)

At about 21.47 LT the *Ever Judger* was passing the Petrosea jetty. The speed on the radar was about 6 knots.

At about 21.54 LT the *Ever Judger* was approaching the northernmost buoy. The ship's speed was about 5 knots. The Master asked the Pilot B about the time to lower down the anchor at about one meter above the water surface. The Pilot B agreed with the Master. Afterwards, the Master ordered the CO in the Chinese language, through radio communication, to lower the anchor one shackle² at water level. In replying to the Master order, the CO asked confirmation to the Master by mentioned the order as closed-loop communication. Afterwards, the Master acknowledged the CO's reply.

² One shackle equals 27.432 metres.

About five minutes later, the CO reported to the Master that the lowering of the anchor was completed. The CO reconfirmed to Master about the length of the chain (one shackle at water level) to the Master. The Master, again, acknowledged it.

At about 22.02 LT, the CO reported to the Master that the anchor chain was tight. He also mentioned that the anchor might hit the seabed. The Master confirmed the CO whether the order was to prepare the anchor one meter above water level, but the CO denied it. Shortly after, the Master instructed the CO to heave up the anchor immediately.

The Pilot B who was shocked and muddled about the situation in the bridge asked the Master to know more about what was happening. The Master told the Pilot B that the anchor chain was released as long as one shackle. In response to this circumstance, the Pilot B yelled the Master several times to heave up the anchor as soon as possible. The Pilot B also loudly explained about the dangers of oil pipes underneath the ship at that time.

Following the order, the Master ordered the crew to stop the engine. Shortly after, the Master ordered the crew to adjust the engine to dead slow ahead. A couple of seconds later, the Master ordered slow astern. The 2/O confirmed by saying the order. Shortly after, the Pilot B asked the Master to order half astern.

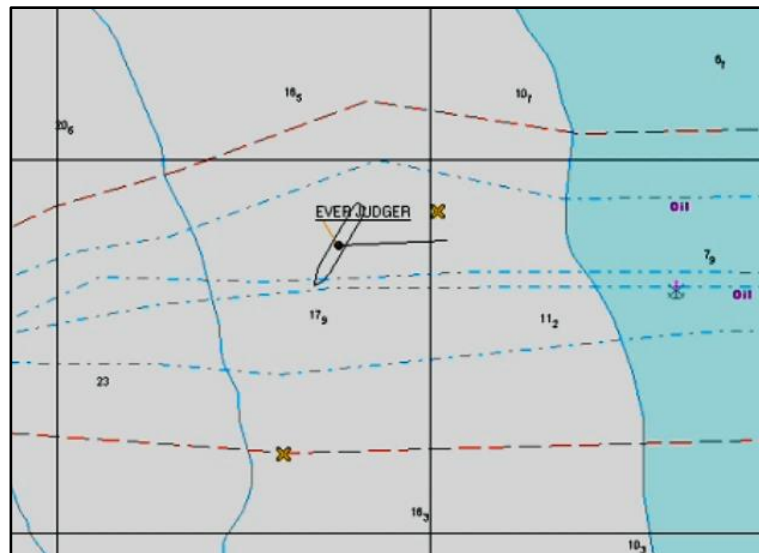


Figure I-3: The Ever Judger whilst moving astern (source: Balikpapan VTS)

At about 22.04 LT, the remained chain length was a half shackle in the water. The Master then ordered the crew to alter hard to starboard side while moving astern. In the meantime, the Pilot B told the Pilot Station Officer on duty that the anchor was dropped to the seabed and he worried about the pipes beneath the water. The Pilot B asked the Pilot Station Officer to deploy the Tug Boat immediately. However, after ten times calling, *Antasena* did not answer the Pilot Station at all.

Because none of the crew of *Antasena* answered the Pilot Station Officer, the Pilot B asked the Pilot Station Officer to dispatch any available boats immediately towards the *Ever Judger*. The Pilot B also told the Pilot Station about the *Ever Judger's* position in the pipeline area.

At about 22.50 LT, *Ever Judger* stopped at the coordinate of 01° 15.323' S and 116° 47.402' E after completed the anchoring process. The heading of the *Ever Judger* was facing towards about 343° T. She was on the southern of restricted area (subsea pipelines). On her starboard

side, there was the Pertamina Refinery Unit V (Pertamina RU V), the owner of one of those pipes.

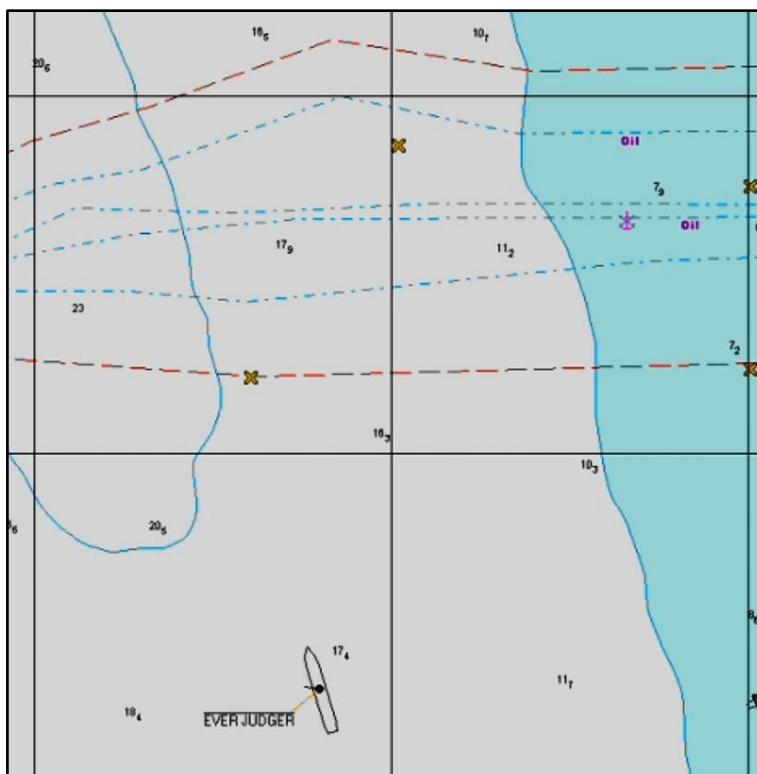


Figure I-4: The Ever Judger whilst anchoring in Balikpapan Bay

At about 23.00 LT, the Pilot B moved on from the *Ever Judger* to the Pilot Boat of *Sanggau*. There was no suspicious or uncommon circumstance, such as odour or oily film on the water witnessed by Pilot B or any other *Ever Judger*'s crew. After this, neither Pertamina nor Local Harbour Master were informed about it.

In the middle of the night, the torrential rain came up. The current was still southerly.

On the 31 March 2018 at about 00.30 LT, there was a significant reduction of the crude oil level in the Buffer D tank of Pertamina Refinery Station. The Shift Supervisor of Pertamina's North Tank Farm — Balikpapan (SSV Balikpapan) reported to the Shift Superintendent (SSI) about the condition. The Shift Supervisor in Lawe-Lawe (SSV Lawe-Lawe) informed the SSI that there was a problem at the Transfer Pump C. At about 01.00 LT, the SSI asked the SSV Lawe-Lawe to switch over the transfer pump to transfer pump B while the pump A was still running.

Unfortunately, while the Transfer Pump C's problem had not been resolved, Transfer Pump B only being operated for 15 minutes had malfunctioned (trip). In this condition, there was only one transfer pump operating. Therefore, the SSI asked the SSV Balikpapan and the Panel man CDU IV in Balikpapan to reduce the intake from 185 to 180 MBD³ while continuing to monitor the Buffer Tank level.

³ Million barrels per day.

At about 01.45 LT, the Pump B successfully restarted.

At about 02.15 LT, the Transfer Pump B had failed/malfunctioned (trip) again. Therefore, the Transfer Pump C was restarted and operated with a lower output. In this condition, to maintain production level, at about 03.15 LT, the SSI asked the SSV Balikpapan and the Panel man CDU IV Balikpapan to reduce the intake from 180 to 175 MBD. While supporting the intake of CDU IV by injecting crude oil from R-1 tank and D-20-11 tank into the Buffer D Tank.

At about 02.30 LT, another one of Pertamina's SSV officers in Balikpapan reported to the SSI about the oil found in the vicinity of Pertamina's jetties (No. 1, 2 and 5). To find the source of the oil spill, they inspected and confirmed that the oil was neither from the ship berthed on those jetties nor the storage tank. Pertamina's staff had already placed the oil boom and sprayed oil spill dispersant (OSD) as well as oil skimmer to confine and treat some of the oil found next to the jetties.

At about 04.30 LT, Pertamina asked the divers to check the subsea pipes. At that time, the Transfer Pump B was operating after its gas filter had been fixed and the Transfer Pump C was turned off. Unfortunately, at about 04.45 LT, the Transfer Pump B had malfunctioned (trip) again. Therefore, at about 05.30 LT, the Transfer Pump C was restarted and operated with a lower output. In the meantime, the intake of the CDU IV was reduced from 175 to 160 MBD while supporting the intake of CDU IV by injecting crude oil from A-2 tank into Buffer D Tank at about 06.20 LT.

Meanwhile, another one of Pertamina's staff also asked to check the oil that was spilt in the Balikpapan Bay and called qualified divers to find the possibility of subsea pipeline leakage.

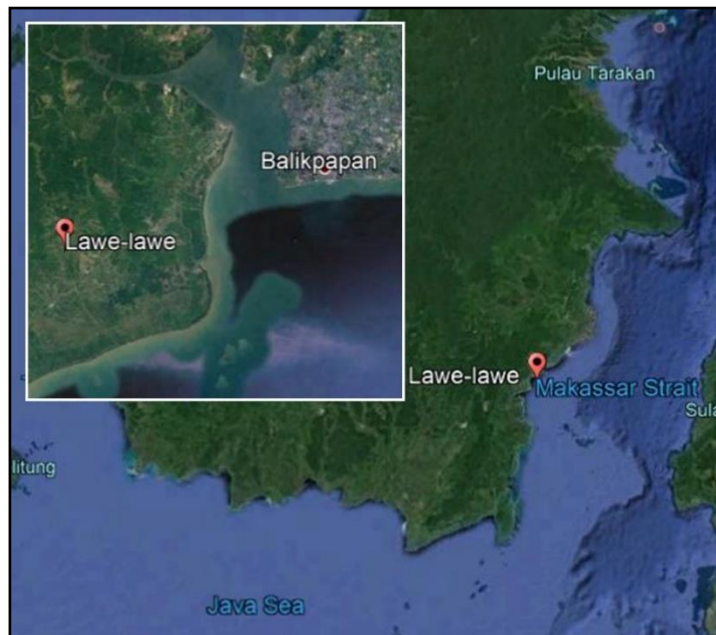


Figure I-5: Location of Lawe-lawe and Balikpapan (image: Google Earth)

At about 07.00 LT, the oil surrounding Pertamina's jetties had reduced significantly. The rain had completely stopped, and vision was clear. Nevertheless, Pertamina was still using its possible efforts to find the source of oil, while maintaining the production level by reducing intake of the CDU IV from 160 to 140 MBD as Pertamina's Refinery Unit V in Balikpapan holds the critical role of supplying fuel product to Eastern Indonesia.

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Not long after, the divers came up and undertook safety briefing. At about one hour later, the divers dove but could not stay longer due to limited visibility and current.

On the other hand, some local inhabitants along the beach of Balikpapan smelt a strong odour of oil, but they did not know where it came from and what the oil type was. This case had been reported to the Balikpapan Harbour Master. Nonetheless, the local Harbour Master's effort to locate the source of the oil gave no results at that time. Hence, the local authority did not issue any prohibition regarding bay sterilisation. The oil was spread out to almost all Balikpapan Bay. The oil colour was black, but has a wide range of thickness, from oil slick to thick.

Approximately at the same time, there were five inhabitants on the two boats who departed from the Balikpapan beach. They were planning for fishing on the bay. One of them took a video about the thickness of the oil and published through a social media platform.

At about 08.15 LT, Pertamina stopped the operation of the Transfer Pump C because the operation of one transfer pump (Transfer Pump A) was enough to intake 140 MBD. Thus, at this time there was only one transfer pump which needed to maintain the production level in the intake of CDU IV. Meanwhile the source of the oil spill was still unknown.

Pertamina checked the sample of oil that had spilt in the Balikpapan bay, but it was shown that the spilt oil was similar to the Marine Fuel Oil (MFO).

Divers did not find any leakage during the inspection of the subsea pipeline along 200 meters from the refinery shoreline. Further inspection could not be conducted due to the condition of the water and had planned to be continued after the condition is safe for divers.

At about 11.05 LT, a huge fire blaze with thick black smoke began to spread out. It was started from in front of the *Ever Judger* (approximately 1.5 km from the Pertamina's jetties) and then spread towards north and south. The fire was spreading on the water towards the front and the aft of the *Ever Judger*. One crew who was on the aft deck was burnt on some parts of his body. He then jumped to the water to escape and was rescued by a boat, later on. The other crew who were in the accommodation building closed all windows and doors. In the surrounding *Ever Judger* was black and hot.



Figure I-6: Fire and smoke in the initial of the fire blast occurrence could be seen from a distant

Following the fire on the sea, the officer in charge of Pertamina in Balikpapan ordered the Field Officer in Lawe-Lawe to stop all pump operations that transfer crude oil across the bay and was forced to stop the production, considering the fire that was very huge could endanger Pertamina's Refinery Unit V Balikpapan.

Knowing the situation, the Pertamina deployed its own fire extinguisher equipment, such as a multipurpose boat *PTK 5405* with firefighting equipment. The Pertamina also asked surrounding oil companies to work together to extinguish the fire at the Balikpapan bay. At

the same time, the Harbour Master of Balikpapan ordered fireboats to diminish the fire. All ships were ordered to leave the bay immediately, particularly tanker ships. Less than one hour later, the fire had been completely extinguished. Fireboats were still cooling the hull of *Ever Judger*. All crew members of the *Ever Judger* had been evacuated to the shore.

Two days after the blaze, on 2 April 2018, the Tier 1 team had been established. The Local Harbour Master took the role as the Mission Coordinator (MC), while Environment Agency was as the vice MC. The assignment of the Tier 1 team, including the organizational chart, is available in the appendix. The Tier 1 team engaged 10 ships in controlling the oil. The team was closed officially on 6 April 2018.

I.2. THE AFTERMATH

I.2.1. Ships and Human

There were three ships impacted by the fire blast on 31 March 2018, namely the Bulk Carrier *Ever Judger* and two wooden vessels. In general, the *Ever Judger* suffered burnt and sooted, particularly on her port side. Her port side was worse than her starboard side because the fire on her port side was much bigger than on another side. Her appliances which made of plastic, composite, aluminium and glass were wrecked and shattered. For example, aft mooring line, lifeboat, portside accommodation ladder, severely burnt, even most of the part became ash. Her port side wall, windows, lights, hydrant hoses, and crane were partially destroyed. Her surrounding hull was smoked black. In addition, the fire and smoke reached the top of the ship's mast on the forecastle deck and port side bridge roof.

One crew of *Ever Judger*, who was working on the aft deck while the fire came up, was burnt on some parts of his body. After rescued from the water, he was subsequently taken to the hospital. After underwent an intensive care for about two weeks, he was allowed to leave the hospital to conduct outpatient therapy.



Figure I-7: The sooted hull of *Ever Judger* on P/S of her bow (a), S/B of her bow (b) and P/S of her aft

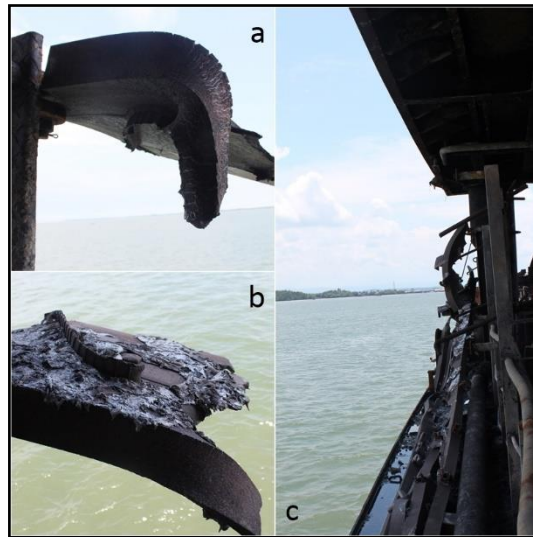


Figure I-8: The burnt port side ladder

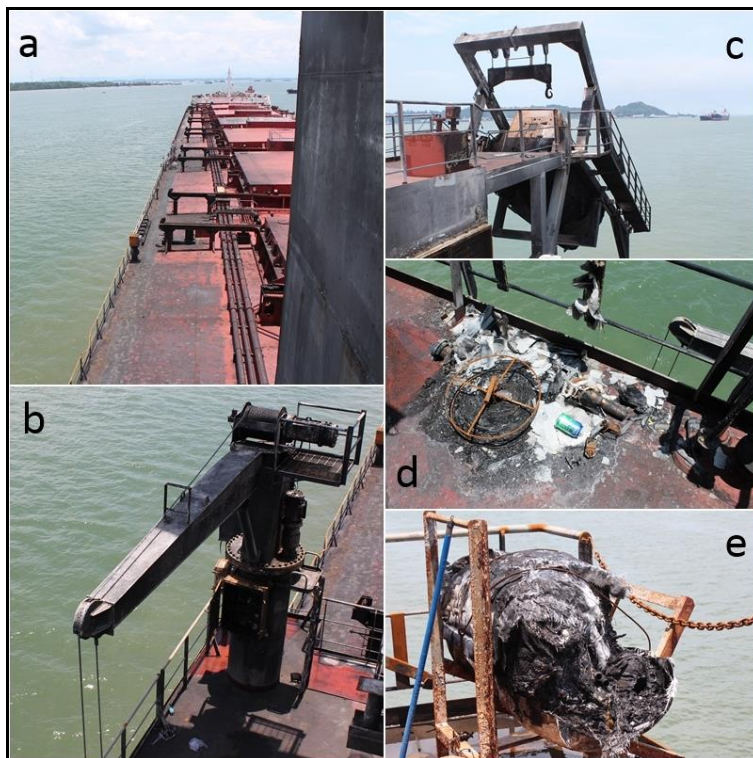


Figure I-9: a) Sooted on port side deck; b) sooted on her crane; c) the burnt lifeboat; d) the burnt fire hydrant hose; e) one of the burnt inflatable life rafts



Figure I-10: a) One of the KNKT team members whilst on board; b) the sooted port side ladder; c) broken window; d) broken light; e) the sooted door



Figure I-11: The burnt windlass on aft port side

There was no report regarding marine pollution due to the coal or fuel of *Ever Judger*. The internal parts and rooms of *Ever Judger* were in acceptable condition. The port anchor and chain had no damage.

Meanwhile, all wooden vessels were seriously burnt as their locations are adjacent to the fire source. Five people died at the scene. All of their bodies were sooted and some part of their clothes were ripped off. Two of the five fatalities had been found at about noon of the same day. The other fatalities were found on the next day.

I.2.2. Environment

The Ministry of Environment and Forestry (MoEF) conducted an impact analysis for air and water pollution as well as the impacts on the marine environment, marine resources and marine ecosystem .



Figure I-12: The thick smoke from oil fire in Balikpapan Bay

The air pollution was created by two elements. First, the oil odour in the early morning on 31 March 2018 which made a great number of people felt a headache. Second, the burnt oil on the same day. However, there was no detailed record regarding both matters on the MoEF report.



Figure I-13: The death of a Dugong in Balikpapan beach because of oil pollution

The consequences of the oil pollution on marine animals and plants were the main concern by the MoEF. Regarding the MoEF's report, there were more than 7,000-kilo litres of crude

oil spread onto more than 13,000 hectares of the bay. The worst conditions were along the coastline of Balikpapan and North Penajam Paser District, East Kalimantan.



Figure I-14: Aerial captures of the oil spill in Balikpapan Bay

MoEF suggested several important marine life damaged by the oil in the report. Mangrove as the substantial ecosystem of marine habitat had perished since the day after the *Ever Judger* accident. The MoEF listed mangrove areas in Kariangau District as large as 34 hectares as the most impacted mangrove forest. Besides, at least 6,000 Mangrove plants and 2,000 Mangrove seeds also failed to grow due to the oil impact in the Atas Air Margasari District, Balikpapan. In addition, many crab farmers lost their opportunities because their crabs died suddenly.

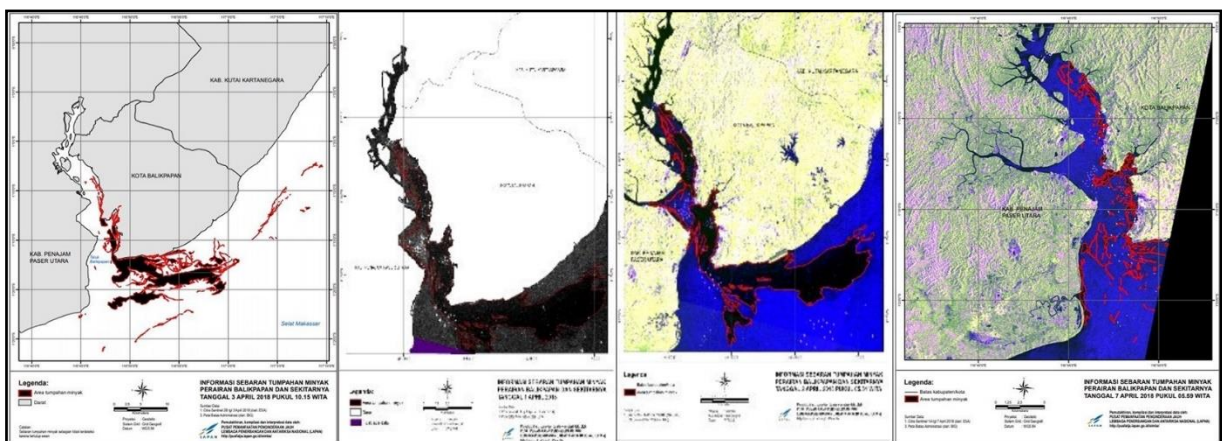


Figure I-15: Satellite images on 3, 5, 6, 7 April 2018 (source: LAPAN)

Despite the fire had been controlled within one hour, the oil still remained in Balikpapan Bay until a couple of weeks later. The satellite images captured by Indonesia National Institute

of Aeronautics and Space (LAPAN) on 3, 5, 6 and 7 April 2018 showed the shifting of the oil. On 3 April 2018 (3 days after oil pipe broken), most of the oil pushed by the current towards Makassar Strait, despite some oil remained along Balikpapan coastline. At the time, Penajam District had less oil spill. Within the next four days, the oil film had been scattered and spread out along the bay. The Penajam District, which previously was cleaner than the Balikpapan beach, was affected again by the oil. Although the pollution in the Makassar Strait had not been monitored precisely, it is believed that the oil shifted to the strait due to the current.

1.2.3. Subsea Pipe

Although there were five pipes, including one buried gas pipe, the northern most pipe was the only affected pipe. It was the 20-inch pipe owned by the Pertamina RU V which connects crude oil tanks from Lawe-Lawe station to the crude oil buffer tanks in Balikpapan for the Crude Distillation Unit IV (CDU IV) intake.

The 20-inch pipe was cut into two parts in the depth of approximately 20-22 m below the sea surface. One of them was folded with V-shape.



Figure I-16: a) A folded; and b) bent and cut subsea 20-inch pipe

Based on the underwater survey, held by the Pertamina, there was an anchor scar with the approximate depth of 1.5, width of 1.6 and length of 1,000 m. This scar was matched with the location where *Ever Judger's* anchor was dropped and heaved up as well as the *Ever Judger's* anchor size.

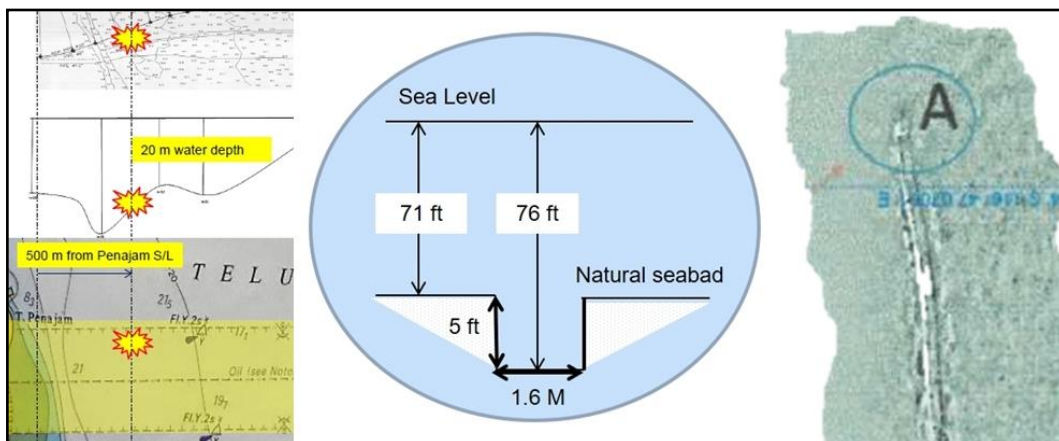


Figure I-17: Side Scan Sonar Imagery (source: Pertamina RU V)

The post-leak survey by the Indonesian Navy (TNI AL) also confirmed this finding. The Multibeam Echosounder caught the scar and wreck of the cut pipe. Then both edges were

separated by more than 25 m away. The location of the damaged pipe was shifted about 120 m from its original location (see Figure I-31).

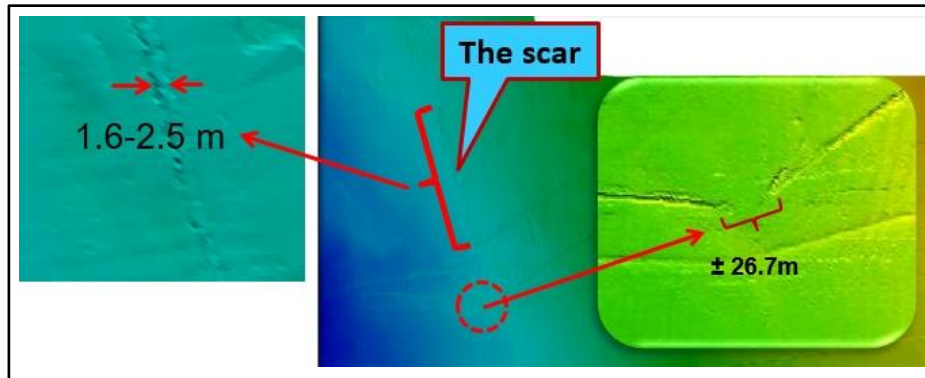


Figure I-18: Multibeam echosounder image (source: TNI AL)

I.2.4. Recovery

The recovery process which Pertamina conducted was based on the common sense, although there was no verdict from the court in relation with the liability and responsibility. The report of loss of marine properties due to the oil pollution had been escalated within a couple of days after the oil burnt in terms of social, economy and environment. At the first place, the Pertamina RU V established expert teams and mapped the impacted areas based on reports and field inspections. Afterwards, the areas were divided into four zones. To ensure the cleaning steps, there was a set of benchmarks to decide the cleanliness of the environment from oil pollution. This criterion was critical as the Local Environmental Agency did not release or set any detail criteria concerning the oil pollution on waters. The clean level is available in the appendix.

In regards the loss of profit claimed by the people, there were also some criteria to verify the claims. The criteria should match with the submitted claim. Amongst those people, most of them are fishers. Their fishing equipment were directly impacted by the oil —for example, fishing net, boats, ponds, buoys and many others. This stopped them from using their equipment for a while until the marine ecosystem comes back to normal.



Figure I-19: Pollution impact on the fishermen's properties

The incorrect data was the biggest obstacle to the reconciliation process. Although Pertamina RU V opened the claim booths, the other local government institutions did the same. The situation came worse when many of the people registered their properties on more than one claim lists. As a result, the teams had to ensure that the claims were not submitted multiple times. To resolve this, Pertamina RU V cooperated with the pertinent local agencies to verify their claims.

There were four monitoring areas set by the Pertamina RU V to speed up the settlement of claims, from Zone 1 to 4. Each zone comprised about five subdistricts (kelurahan). Especially for the Zone 4 in Penajam region, the affected zone was split into three subzones from 4A to C and each subzone comprised about seven subdistricts.

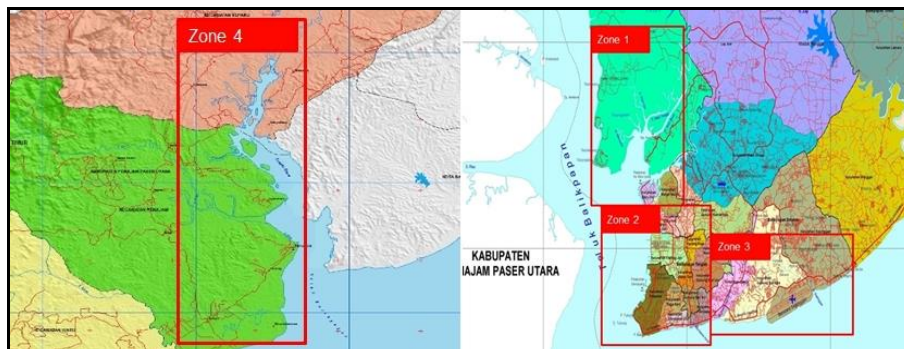


Figure I-20: Monitoring zones (source: Pertamina RU V)

To carry out the monitoring system, Pertamina RU V arranged four steps. First, the field officers —together with the local government— collected the real data. At this step, the team also assessed the cleanliness of the object (the criteria are available in the appendix). Second, the field coordinator compiled all field reports and arranged the budget, manpower, location as well as the cleaning equipment needed for cleaning projects. Third, the On-Scene Commander (OSC) reported the progress to the higher managerial levels. The last segment, but not least, was the data controller who ensured the data are valid and ready to be documented.

The bay normalization in manual method acquired a big effort. Referring to the information from the local Search and Rescue, more than 750 local military officers, police officers, Harbour Master, environmental agency and local citizen were involved in the oil spill response done manually. Also, some local organisations took part in this environment act and campaign. This outstanding cooperation cleaned mainly the sector along Balikpapan Bay.



Figure I-21: Oil dispersant spraying



Figure I-22: Cooperation amongst the military officers and civilians to scoop up oil at the beach

Meanwhile, the collaboration amongst Harbour Master and oil companies in a couple days after the fire blaze was seen much better. Many oil response devices were deployed to confine and reduce the spread of oil into the sea. They could be grouped into some groups based on their characteristics, namely floatation devices, pump, oil bag, oil skimmer, oil dispersant oil absorbent and vacuum truck.

I.3. BRIDGE RESOURCE MANAGEMENT

I.3.1. Ships Crew

The Manila Amendments to the Seafarers' Training, Certification and Watchkeeping (STCW) Code requires Officers on Watch (OOW) to maintain a safe navigational watch. One important factor is the Bridge Resources Management (BRM). The knowledge covered in this competence are resources allocation, effective communication, leadership and experience as required by Table A-II/1 on the Specification of minimum standard of competence for officers in charge of a navigational watch on ships of 500 gross tonnages or more. Amongst those factors, effective communication could not be found clearly during the shifting of *Ever Judger* from the BCT port to the anchorage area.

The Master's order to release one shackle anchor chain in water demonstrated a poor of bridge watch amongst the four seafarers in the bridge and the Pilot B. The Master was the only one person who knew the situation until the CO reported the anchor condition. At least, there were two big reasons behind this, specifically the deficient of pre-departure briefing and the use of double language in one time.

SOLAS Chapter V Annex 24 on the Voyage Planning as explained further by Resolution A.893(21) on the Guidelines for Voyage Planning stipulates that the voyage plan comprised of five major steps, namely objectives, appraisal, planning, execution and monitoring. The rules give important guidelines to plot the intended course, navigational and machinery status as well as critical situations which might be experienced before the ship departure.

A study (House, 2004) suggested some standard questions which might be asked in a pre-departure briefing as follows.

1. Whether the voyage plan needs to be revised by the Pilot?
2. Whether the under-keel clearance (UKC) is safe for the ship to pass by?
3. Are there any hazard, warnings or restricted zones along the voyage path?
4. Whether the local laws are different than the international laws?
5. Whether the tidal and current conditions are safe for the ship?
6. How are the detail plans for dropping anchor?

However, right after the Pilot B went on board the *Ever Judger*, there was insufficient briefing to review a voyage plan and other matters mentioned above involving all bridge resources. The only very short discussion was between the Pilot B and Master about the main engine and crew condition as well as the anchorage location.

I.3.2. Pilot

Pilotage services were delivered by Indonesia Port Corporations (PT Pelindo) Branch of Balikpapan. Although the Local Pilot Station did the services and had the Pilots, the coaching and development of Pilots are the responsibility of the Local Harbour Master as stated in the Minister of Transportation Regulations No. 57 Year of 2015 on the Piloting and Handling of Ships Article 46.

Referring to the IMO Resolution A.960 on the Recommendations on Training and Certification and Operational Procedures for Maritime Pilots Other Than Deep-Sea Pilots, the Pilot should do an exchange of information which includes at least:

1. presentation of a completed standard Pilot Card. In addition, information should be provided on the rate of turn at different speeds, turning circles, stopping distances and, if available, other appropriate data;
2. general agreement on plans and procedures, including contingency plans, for the anticipated passage;
3. discussion of any special conditions such as weather, depth of water, tidal currents and marine traffic that may be expected during the passage;
4. discussion of any unusual ship-handling characteristics, machinery difficulties, navigational equipment problems or crew limitations that could affect the operation, handling or safe manoeuvring of the ship;
5. information on berthing arrangements; use, characteristics and number of tugs; mooring boats and other external facilities;
6. information on mooring arrangements; and
7. confirmation of the language to be used on the bridge and with external parties.

The role of the Pilot in a limited channel as in Balikpapan Bay is extremely important. The competency and situational awareness of the Pilot could save the ships, cargoes, seafarers and also the surrounding environment (National Research Council, 1994). Therefore, under the Balikpapan Harbour Master Office Regulations No. UM.003/21/5/KSOP.Bpn-2013 on the Technical Procedure of Piloting and Ship Safety while Crossing Oil and Gas Facilities in Balikpapan Waters, Balikpapan Bay is a Pilotage Waters. This rule came into force on 23 September 2013. This Harbour Master regulation manages the tasks and duties of Pilots, including procedures of approaching and/or crossing facilities of subsea gas and oil pipes. Also, the regulation requires the Pilots to report and watch any extraordinary occurrences related to the facilities.

Notwithstanding the Local Harbour Master's regulation is already available, the Pilot Service did not equip its Pilots with user-friendly checklist tasks. The regulation covers general matters; therefore, the wording was not detailed and insufficient for Pilots' routine works. Based on the interview, there was no standard protocol for a Pilot in guiding a ship. The local Pilots relied on the common practice, such as a short question about the crew and engine. The Pilot Station had no checklist to be followed by the Pilots. For instance, informing subsea locations, preparing anchor time as well as to stop the engine. Therefore, the practice would be much more depending on the personality and creativity of the Pilots themselves.

The limited pre-departure briefing before making the decision to ship departure was the main evidence in the lack of Piloting Procedure as well as did not comply to the IMO Resolution A.960. The conversation about the voyage plan did not show up in this accident which should be done at the briefing. Along the way, the Master asked a confirmation to the Pilot B about the location and time to prepare the anchor. Afterwards, the Pilot B suggested the Master prepare the anchor. This situation depicts the confusion of the bridge team role as the Pilot B was the only person who knew where and when to prepare and drop anchor. At this phase, the Pilot Service let the Pilots work without any specific directions.

In terms of the Pilots' knowledge, the schooling for Pilots is currently under the responsibility of the Human Resources Development Agency, Ministry of Transport, despite the syllabus and target of competencies are defined by the Directorate General of Sea Transport, Ministry of Transport. Nevertheless, the course of the BRM is mixed with the other courses in the Bridge Simulator course in which the learning method is practice only (without any classroom session). In addition, the BRM course only appears in the Pilot Level II. The other levels (level I and deep sea) contain no BRM course at all.

I.4. EMERGENCY RESPONSE

I.4.1. Crew Members

The effort of reporting the occurrence by the crew members did not appear in the sequential of events. Right after the Pilot B told the Master regarding the dangerous of the subsea pipes, the crew onboard had sufficient time and equipment to inform the occurrence through the Channel 16 (emergency channel). Despite the increasing of the tension of the anchor chain was hard to be assessed as the accident of anchor hit a pipe and the Master was not sure about it, the Master should report it in the emergency channel.

Referring to the Bridge Procedures Manual of *Ever Judger*, the part of 2.2 Anchoring the Vessel obliged the Master to report the anchoring position as follows.

The vessel's anchoring position must be reported to the port authorities or pilot station.

In addition, the International Maritime Organization (IMO) issued Resolution A.851 on the General Principles for Ship Reporting Systems and Ship Reporting Requirements, including Guidelines for Reporting Incidents Involving Dangerous Goods, Harmful Substances and/or Marine Pollutants. The resolution guides the ship involved in or witnessed an accident to report it immediately to the nearest Local Harbour.

However, the Master did not report the situation to the Local Harbour Master or Pilot Station as instructed by the procedure and resolution. This missing step led to the missing information about the occurrence in the emergency channel. Therefore, neither the Local VTS Station nor Local Harbour Master informed about it.

I.4.2. Pilot Service

Regarding procedures related to the piloting activities, at least there are three available standard operation procedures being applied, namely Instructions for Piloting, Instructions for Towing and Instructions for Pilot Station Officer. However, those procedures did not explain their Pilots about how to report unusual/emergency situation.

After the Pilot Station Officer received the information from the Pilot B about the unintentionally of anchor drop, there was no enquiry to ensure the situation. The Pilot B disembarked from the *Ever Judger* without any further checking to the ship nor sea condition. Also, the Pilot Station issued neither any precaution or warning or advice to the surrounding oil companies, all ships in the bay, Local Harbour Master, water police nor local inhabitants regarding the circumstance which might be a possible of an accident. This situation was the result of the absence of the standard protocol in reporting an unusual situation to the Pilot Station.

At the same time, the Marine Region VI and other surrounding companies did not tune in the Channel 12. There are 2 (two) channels (Channel 9 and Channel 12) which are practically used for communication in relation with ship operational or marine circumstances in Balikpapan Bay.

The main channel used during the incident was channel 12. In the common practice, if an institution in the port area, such as the Local Harbour Master or Pilot Service, needs to communicate with an oil company which owns or has an interest to its subsea pipeline or shipping operational, they could change the frequency from the Channel 12 to the Channel 9. The default channel for those companies was in the Channel 9.

I.4.3. Local VTS Station

I.4.3.1. Information and Communication

In this accident, there was no local VTS's portion in either providing a precaution notice or managing vessel traffic prior the anchor accident. The only warning was given by the Pilot B, but after the anchor hit the subsea pipe, instead of by the local VTS prior to the ship departed from BCT port. Also, the anchorage location was pointed solely by the Pilot, instead of the discussion with the local VTS. The voyage data recorder (VDR) record shows that the

prominent role of the vessel traffic through radio communication was under the Pilot Station, instead of the local VTS.

The Local VTS has set the default radio communication in the Channel 16, instead of 9 or 12. The Local VTS has only one radio and it was still active at the accident time. However, it was not turned to the Channel 12 at the accident time.

Referring to the Minister of Transportation Regulations No. 26 Year of 2011 on Shipping Telecommunications Article 5, the VTS has main duties to:

- a. Monitor the marine traffic and the channel;
- b. Enhance the security of marine traffic;
- c. Enhance the efficiency of navigation;
- d. Protect marine environment;
- e. Watch, detect and tracking ships in the VTS's range;
- f. Manage special information;
- g. Manage general information; and
- h. Assist ships with special needs.

However, the Local VTS did not operate in its full function as defined by the abovementioned Minister of Transportation regulation. There was no communication or warning between *Ever Judger* and the VTS station.

1.4.3.2. Authority

The limited authority of the Balikpapan VTS Station gave the VTS no options to take contribution in the marine safety. Nowadays, the VTS' authority was very limited. Most of the VTS' works had been overtaken by the Harbour Master and the Pilot Station. For example, the shifting of a ship was managed by both institutions without any intervention of the VTS.

At the same time, the level of the Local VTS Station in Balikpapan was much lower than the level of the Local Port Authority. While the Local Port of Balikpapan is on Level 1 (Indonesian: *Kelas I*), the Local VTS Station had no level as it was the subordinate of the Navigational District Office of Samarinda which held Level 1 as well. As the outcome, the Balikpapan VTS had many limitations. There is no voice recording on radio communication. The deficiency of the authority also made the Local VTS Station had no power to force reporting compulsory for any inbound and outbound ships.

Another problem was the inadequacy of resources. To resolve it, there was a request to add more staff to the Directorate General of Sea Transportation (DGST). On the other hand, the request had no reply.

I.4.4. Pipe Owner

I.4.4.1. Oil Treatment and Fire Extinguishing

After the report of the oil spill found in the vicinity of the Pertamina's jetties, the owner of the pipe had taken any possible and rationale steps as standing operation procedure such as:

- a. Inspected any possible source of such oil found which related to its property in its territory.
- b. Took sample of such oil found to laboratory checks its specification and characteristic.
- c. Put the flexible oil boom, sprayed oil spill dispersant (OSD) as well as oil skimmer to confine and treat some of the oil found next to jetties to protect the environment.
- d. Assigned divers to inspect a subsea pipeline.

Although Pertamina has taken several actions as mentioned above, the source of the oil spill was not detected immediately after the incident.

Pertamina oil spill emergency response team took action based on the procedures although they have not discovered yet the source of the spill. Oil booms were dispatched, fire extinguishers were mobilized, environmentally friendly dispersants were used. The dispersants used were based on the ministerial regulation of the Ministry of Energy and Mineral Resources. The fire extinguishing process had been experiencing two types of obstacles, such as authority and familiarity. First, Pertamina RU V's authority was limited from their complex until its jetty area. The Balikpapan Bay was not in its territory, although there was its oil pipe beneath the sea because it is an open/public area which is used not only by Pertamina but also any surrounding oil and other companies and other shipping activity that should be under local government/institution/agencies authority.

Second, Pertamina and others surrounding companies had never been asked by the Local Harbour Master or DGST to undertake the oil spill drill in a wide scale. As the drills which were conducted by Pertamina and other companies were limited from the small to medium level, for instance, oil leak from a ship around a jetty during loading or unloading activity, the wide range accidents could not be dealt with. Hence, the effort which had been done by the pipe owner was based on the practices usually held by the company officers.

I.4.4.2. Oil Spill Response Procedure and Drill

Pertamina had the Procedure of Oil Spill Response in the Waters which states all stakeholders' role when the oil spill occurs. The procedure referred to the Indonesian Shipping Act No. 17 Year of 2008, Presidential Regulation of the Republic of Indonesia No. 109 Year of 2006 on the Oil Spill Response in the Sea as well as Minister of Transportation Regulations No. 58 Year of 2013 on the Pollution Control in Waters and Ports. In regards the procedure, the action should be led by the Manager of Region Marine VI. The oil spill in this document is assumed in waters, instead of from any storage tanks onshore. As the consequence, in order to apply the procedure, the source of the oil spill has to be defined correctly within Pertamina's territory. If the oil spill source is from the onshore facilities, another procedure would be applied.

The document defined clearly some terms used in the procedure. The Tier 1, stated by the document, is an oil spill in little amount or a situation where an oil spill occurred in the work

authority or interest authority of the Pertamina’s special port. Therefore, Tier 1 situation can be handled by Pertamina itself. On Scene Commander described as the local Marine Manager which has the responsibility of oil spill in Tier 1 level. For those reasons, the document was prepared to deal with the Tier 1 only. Related to the oil spill drill, there were two drills already conducted by Pertamina RU V, either joint drill or by itself.

Referring to the Presidential Regulation of the Republic Indonesia No. 109 Year of 2006 on the Oil Spill Response in the Sea, Article 6 paragraph (1) has stipulated that the leader of oil and gas business unit shall form Local Team of Oil Spill Response in the Sea (Local Team). Further, pursuant to Article 6 paragraph (2), has stipulated that in conducting emergency response of oil spill in the sea at Tier 1 stage, the Local Team shall coordinate with the closest Local Harbour Master. Therefore, such Procedure was made to fulfill such requirement. In this matter, the Local Team from Pertamina as mentioned in such Procedure shall coordinate with the nearest Local Harbour Master while conducting an emergency response as done by Pertamina on 31 March 2018.

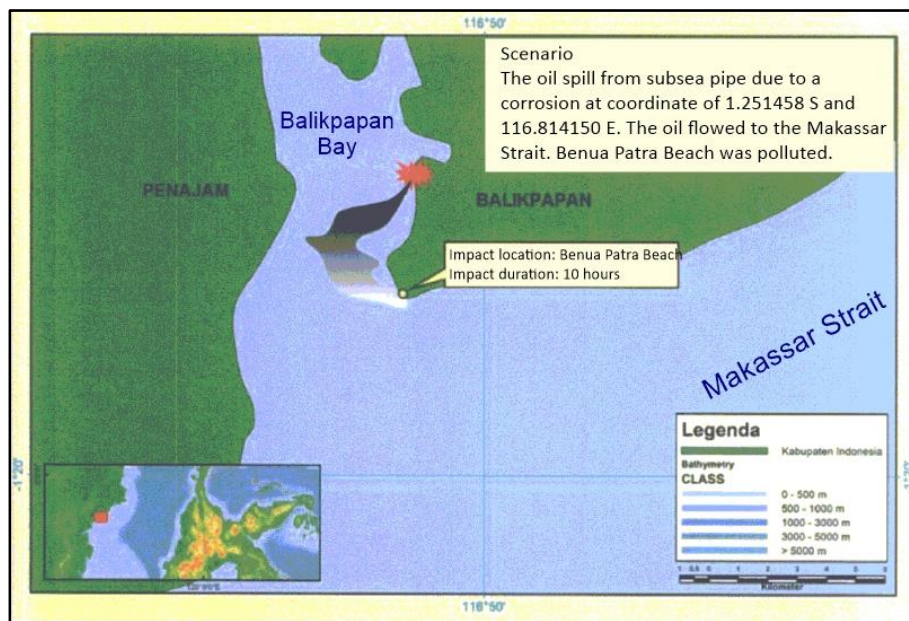


Figure I-23: Scenario of an oil spill from a subsea pipe (source: Pertamina RU V)

In April 2017, a joint of oil drill already took place in which the scenario was on Tier 1. The Scenario was very different to the disaster in 2018. The joint drill scenario was only caused by small leak at the subsea pipeline while the actual disaster was sourced by detached subsea pipeline. Further, the detached subsea pipeline was also moved about 100 meters from its original location. There were two teams established in the joint drill, on the beach and on the waters. However, the scenario was much lower than the actual disaster on 30 and 31 March 2018. In that scenario, the spilt oil was in a little amount (could be dealt with oil dispersant) and polluted Banua Patra Beach in Balikpapan as seen in Figure I-23. Some oil response equipment used to absorb the oil were a solid floatation compact boom, solid floatation boom, brush skimmer, temporary on-land storage tank, rubber boat, and sorbent pads.



Figure I-24: J-formation in an oil spill drill in April 2017 (source: Pertamina RU V)

A month before the accident, Pertamina MOR VI carried out an oil spill drill again. Even though this time it was a self-drill and as the ISPS exercise, the scenario set up the oil spill came from a ship on the waters. After the inspection, the source of the oil was found and managed properly. An oil boom was engaged to confine the oil around the aft of the ship as seen in the Figure I-24.

Notwithstanding the joint exercise held annually, it did not meet the Minister regulations. Based on the Minister of Transportation Regulations No. 58 Year of 2013 Chapter VI on Drills, there were several types and frequency of drills as in the Table I-1.

Table I-1: Minimum drills

| Drill type | Minimum requirement | Accomplishment |
|-----------------------------|---------------------|----------------|
| Communication and reporting | 4 times each year | None |
| Tabletop exercise | 4 times each year | None |
| Deployment of equipment | 2 times each year | None |
| Joint exercise | Annually | Yes |

In general, the comparison amongst the oil spill drill in April 2017 and February 2018 as well as the actual fire blast on the end of March 2018 in various aspects were as follows.

Table I-2: Comparison between the oil spill drills and actual

| Aspects | April 2017 (drill) | February 2018 (drill) | March 2018 (actual) |
|---------|--|---|---|
| Factor | Known days before the drill as stated on the scenario: rust. | Known days before the drill as stated on the scenario: oil valve. | Unknown until the diver team deployed (5 days after): anchor hit. |

| Aspects | April 2017 (drill) | February 2018 (drill) | March 2018 (actual) |
|----------------------------|---|--|---|
| Oil source location | On 16-inch subsea pipe subsea pipe around Pertamina's jetties (east). | Oil disposal valve of a ship near the Pertamina's jetties. | On 20-inch subsea pipe at 3,5 km from Balikpapan side (a quarter of length from Penajam). |
| Symptoms of leak | A pressure-drop on pipeline. | Oil film found. | There were no symptoms known by Pertamina. |
| Action taken | Closed pipe valve right after the leak had been confirmed. | Closed disposal valve right after the oil source had been confirmed. | Fully closed delayed until the blaze appeared. |
| Current | Southernly. | Northernly. | Southernly. |
| Accident level | Tier 1. | Tier 1. | Directly jumped to Tier 2 and then 3. |
| Time of leak | Day, sunny. | Day, sunny. | Night, cloudy then heavy rain. |
| Initial report | From fishers and oilmen and then spread to all stakeholders. | From oilmen and kept internally. | Oil company did not have any information related to the occurrence, including any information from the Harbour Master or other parties. |
| Equipment | Oil boom and dispersant. | Oil boom and dispersant. | All available equipment. |

In accordance with Procedure of Oil Spill Response in the Sea (Tier 1) which had been applied since 2013 by Pertamina, such procedure not only lists the Pertamina division but also the external institution, i.e. Local Harbour Master, Local Police Station and Local Environment Agency, although there are no rules for such external institution since Pertamina has no authority to define the role of such external authorities.

Another serious weakness of the drills, which had been held for years, was that they were not initiated by the Local Harbour Master. The idea of annual drill was from the oil companies along the Balikpapan Bay, such as Pertamina EP Asset 5 (field Tanjung), Pertamina Hulu Mahakam, Chevron Pacific Indonesia, VICO, Mubadala Petroleum, Medco Energy and Pertamina RU V. They had an agreement to undergo an annual fire drill because it is critical for their business sustainability. At this point, the Local Harbour Master acted no more than an observer, instead of the leader or initiator in the drills.

I.4.4.3. The Procedure of Subsea Pipe Damage Assessment

Currently, there was no regulation which stipulated the standard of the underwater oil pipe inspection with regard to the damage assessment. The inspection regulation only stipulated about the feasibility of subsea pipeline to be operated. The inspection of Pertamina's subsea pipeline 20-inch had been done in November 2016 and certified by the Directorate General of Oil and Gas (DGOG) MoEMR on 10 November 2016 and valid until 26 October 2019. In addition, Pertamina also conducted an inspection to the SPL 20-inch in December 2017 and found the pipe was in good condition. However, the inspection could not be undertaken immediately to find out the oil spill.

In Addition, there is no regulation regarding the leak detection system. This circumstance made Pertamina RU V had to rely on three manual steps in inspecting any leaks on its submerged pipe, such as physical examination, oil pressure gauges and laboratory test as the best practice in oil and gas industries.

The Pertamina's pipe inspection should be done visually, either by divers or remotely operated underwater vehicles (ROVs). These methods were not easy in considering the current and cleanliness of the sea. The inspection after the accident revealed that the maximum visual distance was about 50 cm and the deep current was sometimes did not permit the divers to stay longer beneath the water.

The inspection submarine pipeline will take a long time to ensure the source of the oil spill in the bay. No need to mention, the long progress of ensuring the failure in the piping detection system should be taken into account in the future, even though there is no government regulation which requires such system as a standard protection.

When the trouble of crude oil pump was occurred, as Pertamina's procedure of transfer pump operation, Pertamina's officer will turn on the spare pump to maintain refinery operation. After the pipe was hit by an anchor, the oil pressure at one the transfer pumps Lawe-Lawe station was not significantly change.

Thus, the subnormal level was assumed related to the impact of the broken pump. Further, this case was not deemed as the effect of the pipe had been torn down. In such a way, the Officer in duty turned on the spare pump to maintain the two pumps operate all the time.

After underwater visual checking which conducted in several days since the mishap and strengthen with side sonar scan, on 4 April 2018 (5 days after the occurrence) Pertamina concluded that its subsea pipeline was destroyed by external force. Pertamina was supported by Kepolisian Republik Indonesia Daerah Kalimantan Timur (National Police Region of East Kalimantan), PUSHIDROSAL, and other institutions/agencies to find out such condition.

In the context of the law, however, there was no rule to require any oil pipes in installing the pipe leak detection system. The need of the system would deter any recurrence of disastrous oil leak such in Balikpapan Bay. The system should inform the location of the leak and other information, so that a duty officer could make a proper decision, such as to totally stop the oil transfer.

I.4.4.4. The Structure of Subdirectorate of Pertamina in Balikpapan

Based on Oil and Gas Act No. 22 Year of 2001, PT Pertamina (Persero) has limited business in midstream (refinery) and downstream (marketing). Further, the latest of Minister of State Own Enterprises (MSOE) decision in 2018, PT Pertamina (Persero) has Logistic, Supply Chain, and Infrastructure Directorate (LSCI Directorate) which manages subunit of Marine.

In relation with PT Pertamina (Persero) operation in Balikpapan, either from RU V or MOR VI, Pertamina has Marine Region VI which are responsible for supporting any ships which will berth to or sail from Pertamina's asset, either RU V (jetties at the Refinery) or MOR VI (jetties at its Depot), including to assist documentation works. Therefore, in providing marine navigational equipment related to the pipe locations and meetings with the Local Harbour Master were held by such Marine Region. The relationships amongst Marine Region VI, RU V and MOR VI is coordination. These three subunits are under different directorates (RU V is under Refining Directorate, while MOR VI is under Retail Marketing Directorate). In relation to the spilt oil, Marine Region also has a subordinate named LLP (Indonesian: *Lindungan Lingkungan Perairan*) which is responsible for responding oil spill with limitation of water area near the jetties. Therefore, if there are any occurrences RU V would coordinate with Marine Region VI to deploy its LLP to cope with the occurrence at RU V's jetties. In relation to the equipment, Pertamina's tugboat is an asset under Marine Region VI.

In relation to the asset of PT Pertamina (Persero), given there are any distribution of authority for each directorate pursuant to MSOE Decision on this 2018, as professional company, responsibility on each asset also distributed to each directorate in accordance with its business territory and authority. As described previously, Marine Region VI is responsible and authorized to implement Minister of Transportation Regulation No. HK 103/2/14/DJPL-16 year of 2016 on the Procedures for the State Revenues, Submission, Use and Reporting of Non-Tax on the Directorate General of Sea Transport which part of marine matters. RU V and Marine Region VI also have its own asset distributed in accordance with its business scope to be protected.

To ensure the number of resources, PT Pertamina has an agreement with PT Peteka Karya Gapura (PKG) to supply employees. PKG will provide personnels in an adequate amount. Marine Region VI also has sufficient equipment to response any occurrences related to the operation of MOR VI or RU V which will be categorised as Tier 1.

I.4.5. Local Harbour Master

I.4.5.1. Oil Treatment and Fire Extinguishing

In terms of firefighting equipment, there was an issue. In concerning the Minister of Transportation Regulations No. 58 Year of 2013 on the Pollution Control in Waters and Ports, the oil combating should be coordinated by the Local Harbour Master. Accordingly, the Balikpapan Harbour Master should ensure that all equipment and resources involved comply to the need in the Tier 1 circumstance.

Since the scale of the oil spill, the first movable oil boom engaged in the extinguishing process was less than the need. This situation made the team to ask for a longer oil boom and OSD. The effort, however, had another obstacle about how to carry on the oil boom because there was no available tug boat to transport the longer boom.

The Balikpapan Harbour Master had a fireboat to extinguish a fire on the sea. However, the boat had not been equipped by the foam which is needed in fighting the fire due to oil or its derivatives. The inadequacy of oil fire extinguisher made the fire take longer to be controlled.



Figure I-25: Fire extinguishing by sea water which was done by a) Antasena; and b) Crest Odyssey 1

The water should not be involved solely without foam in suppressing an oil fire. As the water is easier to vapour than the oil when heated by the fire, gas of water would cause the flaming oil to spread everywhere or even create a fireball which is larger than the original size. Also, the water pressure could break the oil inundation into many smaller parts. Further, this would trigger a bigger issue if the helper vessel caught by the fire. The problem of the proper fire extinguisher was not solved by the coming up of other fireboats. The other fireboats and Harbour Master's boat were focusing on cooling down *Ever Judger* by using the same fire extinguisher. Luckily, the situation did not turn to worse, such as an additional burnt ship.

The successful of fire suppression was not merely because water sprays onto the *Ever Judger*. This was because the flammable and combustible materials were run out after burnt, such as mooring ropes, raft and boat. Also, the oil was discontinued following the totally closing of subsea pipe valve.

The absence of the foam in fire extinguishing process related to the inexistence of the fire extinguishing regulation. The available regulation related to the oil spill in the ministerial level were the Minister of Transportation Regulations No. 58 Year of 2013 on the Pollution Control in Waters and Ports and the Minister of Transportation Regulations No. 93 Year of 2014 on Medium and Infrastructure of Ship Piloting. Those regulations did not regulate about how to extinguish a fire due to an oil leak. They require several equipment and medium in combating the oil spill. On the other hand, the foam was not mentioned by any of them. Accordingly, the Local Harbour Master's Procedure did not state anything related to fire extinguishing where the flammable material is oil.

1.4.5.2. The Procedure of Oil Spill Contingency Plan

Under the Indonesian Shipping Act No. 17 Year of 2008 Article 235 and Minister of Transportation Regulations No. 58 Year of 2013 on the Pollution Control in Waters and Ports, a Local Port should be able to deal with the oil spill which occurred in its working territory. The oil spill was found on 31 March 2018 in almost along Balikpapan beach from Pertamina

jetties until the Bay of Balikpapan, including Semayang Port. At this stage, the Local Harbour Master cannot abandon the job or assume that the disaster was business of the owner of special or Local Ports' business.

Nevertheless, the Local Harbour Master had no guidance or standard which could give clear steps to Harbour Master Officers on duty to make correct decisions prior to the flames on water. After the report of oil detected in the early morning of 31 March 2018, there was no action taken by the Local Harbour Master, such as informing the oil and gas companies in the surrounding as described in the Local Harbour's Procedure. Also, the decision to deal with the vast amount of oil in Balikpapan waters was delayed because the duty officers should wait for the higher Manager who was not at the scene.

In the morning, the Manager on the Scene ordered the Operators to undertake a visual checking by using boats. This effort presented confusing result as the oil was spread in almost all Balikpapan Bay area, instead of in surrounding of a ship or jetty. At this difficult situation, the lack of procedure allowed the Harbour Master took no action to minimise risks, except confining the oil by using short oil booms.

Actually, there was a longer oil boom and tug boat to transport its owned by an oil company. Based on this circumstance, Local Harbour Master should have sufficient time and equipment to control the oil spill.

The death of five local citizens was the indication of the inadequacy of fire drill without any proper standard. They went to the bay for fishing and leisure and they had no warning from the Local Harbour Master. At this stage, the early warning system was not recognised properly. This reflected the insufficient drills to include the early warning procedures.

Moreover, the submission of amateur video by one of the deceased into the social media indicated that the community did not know where to report the situation. At the time of the accident, the hotline number to report the oil spill was unrecognised well in the society. There was no social media engaged as the reporting line for any emergency or unusual situation.

Considering the severity of the oil spill, sea sterilisation should be enlarged to all activities in Balikpapan waters. A measure which could reduce fire on ship risks is departing all ships away from the bay immediately. At the time of the fire, there were several vessels in Balikpapan Bay waters. Notwithstanding that the oil had been found thick and spread everywhere, the Local Harbour Master released no warning or command to depart them away from waters. The second option took just after the fire and smoke came up in the channel.

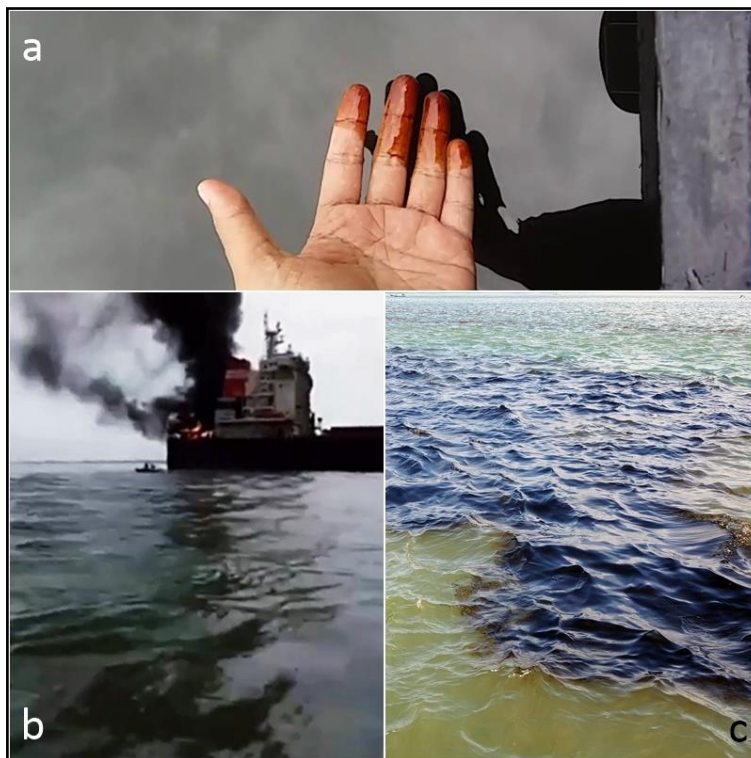


Figure I-26: a) A video uploaded by one of the deceased on 31 March 2018; b) Oil film on 31 March 2018; c) Oil film on 2 April 2018

Despite localisation of the oil by oil booms had been done, it was far from effective. The extensive area of the Balikpapan Bay made the effort impossible to be taken as there was no available long boom to block the channel bank to bank. This elevated the issue in letting the oil to be spread out towards Makassar Strait. The only available boom was the short one which usually used at the Semayang Port, the domestic passenger ferry port. Although the Article 10 of the regulation states that the port should have a boom with the minimum length of 1.5 times of the biggest ship operate in the area, the local port still had no required boom. Considering the *Ever Judger* as the longest ship, the minimum length of the boom should be 345 m.

The regulation on Article 1 and 6 obligate the Local Harbour Master to coordinate the fire extinguishing effort amongst the involved parties and lead by a MC and an OSC. On the other hand, the fire extinguishing did by sporadic without any control. At this accident, the attention was centered to the *Ever Judger* which was thought as a tanker ship at the initial of the fire and also the longest fire found at the scene. Thus, all assistance ships were gathered in the vicinity of the *Ever Judger*. The story would be different when there were many ships and fire spots without any single Emergency Commander.

The local harbour Master had already oil spill response procedure of marine pollution mitigation, the Local Harbour Master supposed to be a good model to the surrounding special ports, such as Pertamina RU V's port. By doing this, the Local Harbour Master would obey Minister of Transportation Regulations No. 20 Year of 2017 which requires the Local Authority to coach, control and monitor special port and port for its own businesses.

Regarding the emergency reporting system, the Local Harbour Master had the hotline number. Moreover, the Balikpapan Harbour Master has a list of pertinent institutions in the vicinity of the bay. However, the hotline number was unpublished well.

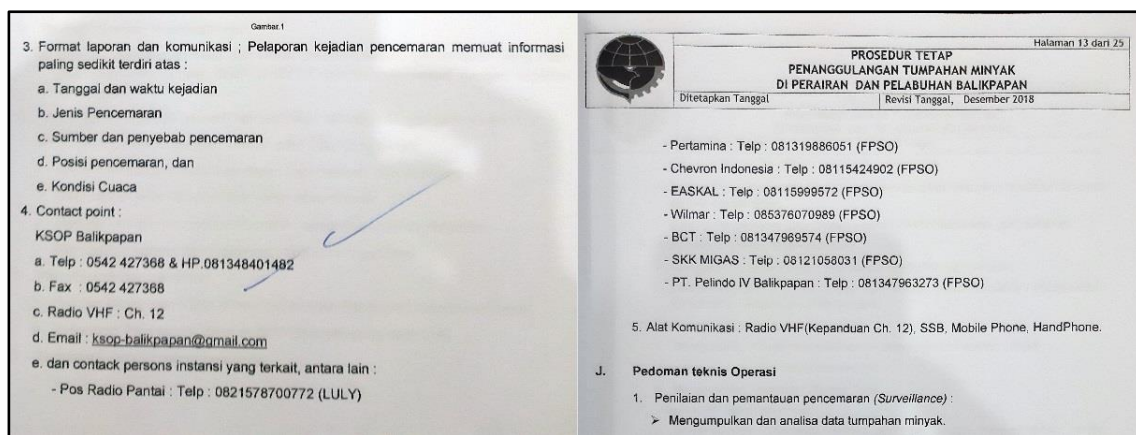


Figure I-27: Reporting system in the SOP of Local Harbour Master

1.4.5.3. Coordinator in the Tier 1

There were a couple of regulations instructed the Local Harbour Master to take the direct role in managing the oil spill situation in its territory. The Indonesian Shipping Act No. 17 Year of 2008 Article 207 and 208 states that the Local Harbour Master acting as the leader of the marine pollution and fire in the surrounding of its port authority. More details, in relating to the Minister of Transportation Regulations No. 58 Year of 2013 on the Pollution Control in Waters and Ports, the coordinator role of Tier 1 oil spill disaster should be undertaken directly by the Local Harbour Master.

In general, the Local Harbour Master had insufficient fire and oil spill drill. Although the annual oil spill exercise and periodical ISPS drills —usually involve oil and gas companies in the Balikpapan Bay as well as the Local Harbour Master— the role of the Local Harbour Master was less as there was no major role of the Local Harbour Master on those drills. Referring to the Procedure of Oil Spill Response in the Sea, created by the Pertamina, those activities were mainly to develop the familiarisation of the oil disaster amongst human resources of oil and gas companies, instead of training for the Local Harbour Master.

At this standpoint, the resources of the Local Harbour Master were not ready to face such a huge blaze in the bay. As a result, the oil combatants from oil companies and voluntary firefighter vessels did not have any guidance of what was supposed to be done. The communication and command were chaotic. Moreover, the real situation was neither practised in the drills nor written on the scenario. There was a misleading paradigm amongst the Local Harbour Master officers that all fire drills were entirely the responsibility of the oil companies, regardless the level of fire or oil spill accident, instead of the Harbour Master.

Other than the annual Tier 1 exercise, there were several Marine Pollution Exercise (Marpolex) drill held periodically. Normally, the Marpolex drill conducted in a selected location, in considering the impact and needs at the location. The Marpolex drill had been done in Balikpapan Bay in the mid of 2009. The drill involved 197 people from various institutions (such as military, police, Harbour Master, oil and gas companies, search and rescue agency). An airplane, a helicopter, an ambulance and some 15 ships were also been

engaged in the drill. The drill was held under the cooperation amongst Indonesia, Japan and Phillipines.

The Marpolex drill played the scenario of all levels, from Tier 1 until Tier 3. The scenario had been set where the oil spill was failed to be handled and then the pollutant flowed to the vicinity. However, the drill set all stake holders in their ideal position, instead in their daily activities.

1.4.6. Unharmonised Regulations

The tragedy of the oil spill in Balikpapan could not be stopped. The satellite images showed that the floating oil flowed onto Makassar Strait (see Figure I-15). At this point, the Tier 1 disaster management failed to solve the problems. Therefore, Tier 2 should be applied.

As per the Presidential Regulation of the Republic of Indonesia No. 109 Year of 2006 on the Oil Spill Response in the Sea, the level of the disaster should be escalated when the Local Harbour Master as the Tier 1 top manager could not deal with the spill. The Presidential Regulation on Article 5 stated that the Local Harbour Master and Local Government should develop a Local Team when the calamity is appropriately deemed as Tier subject to the condition and pollution level. On the Tier 2, the Local Government would grab the leadership of the disaster management, such as team organising, pointing appropriate resources, funding, equipment deployment as well as managing the wider and bigger parties to be involved in the effort. Indeed, the shifting from Tier 1 to Tier 2 should follow a technical guidance.

However, since the Local Government Act No. 23 Year of 2014 has come into force, all local governments across Indonesia have lost their Tier 2 responsibilities. The act No. 2014 has revoked the former Local Government Act No. 32 Year of 2004. The appendix of the Act No. 23 stipulates that the responsibility of safety and security in waters as well as marine life protection is on the central government, not on the local governments anymore. This implies to all regulations below the act, such as government regulations, presidential regulations, minister regulations and any others.

Until the completion of this report, the Local Government Act No. 23 Year of 2014 has no delegated regulations regarding emergency response in waters. The highest regulation about emergency response is the Presidential Regulation of the Republic of Indonesia No. 109 Year of 2006 on the Oil Spill Response in the Sea which still refers to the Local Government Act No. 32 Year of 2004. As the hierarchy of the act is superior to the presidential regulation, the articles regarding local governments of the Presidential Regulation of the Republic of Indonesia No. 109 Year of 2006 have become invalid. At this case, the leadership in the Tier 2 does not exist as no law of a lower rank can be contradictory of a law of higher rank. Accordingly, there were two options available, specifically keep the accident level to the Tier 1 –even though it will return to a worse situation– or increase it directly to the Tier 3. At this accident, the decision fell to keep it in the Tier 1.

In terms of the requirements to act as the leader of oil combating, there was a serious defect. DGST have no fair guidelines related the minimum training for those who will sit as the MC, OSC and Equipment Operators at each disaster level. Further, there was no detail guidelines regarding the Skill Level of those positions as mentioned by the Minister of Transportation Regulations No. 58 Year of 2013. Thus, it was normal if each oil and gas company has

different standards with regards to minimum training and knowledge for MC, OSC and operator.

I.5. SUBSEA PIPE INSTALLATIONS

I.5.1. Pipe Marking

Subsea pipe installations beneath the Balikpapan Bay had been updated in the Indonesian nautical chart in 2013. The location marked as Prohibited Area (Indonesian: *Dilarang Berlabuh Jangkar*) covered area between Panajam and Balikpapan. The chart also had been updated to follow the latest installed pipe, belongs to Pertamina RU V, which was the damaged one in this accident. Figure I-28 shows the changes of Prohibited Area border (orange lines). There were four buoys to mark the border of the location and complied with Minister of Energy and Mineral Resources Regulations No. 300.K/38/M.pe/1997 on the Work Safety on Oil and Gas Transfer Pipe and also Ministry of Transportation has released Minister of Transportation Regulations No. 25 Year of 2011 on the Aids to Marine Navigation. All of these features could also be found in the ECDIS of *Ever Judger*.



Figure I-28: Subsea pipes in Balikpapan Bay on the old (a) and new (b) marine chart

The updated Indonesian nautical chart showed incorrect information about the number of pipes. The chart displayed four pipes on the channel, despite there were actually five pipes. Based on the post-leak survey by the Hydrographic & Oceanography Office of the Indonesian Navy (Pushidros TNI AL), it was confirmed that there were five pipes underneath the restricted area. Amongst them, only one was buried as seen in Figure I-29 (black line) and Figure I-30. This condition was found after the oil disaster sparked off.

There was the various size of underwater pipes. The biggest one was the damaged one with the diameter of 20-inch. The two 16-inch pipes, belonged to Pertamina EP Asset 5 Tanjung, were occasionally used to transfer crude oil. The other small pipes were used to transfer gas with the diameter of 8 and 12-inch which owned by Vico and Chevron, respectively. The smallest pipe was buried and inactive for a long time.

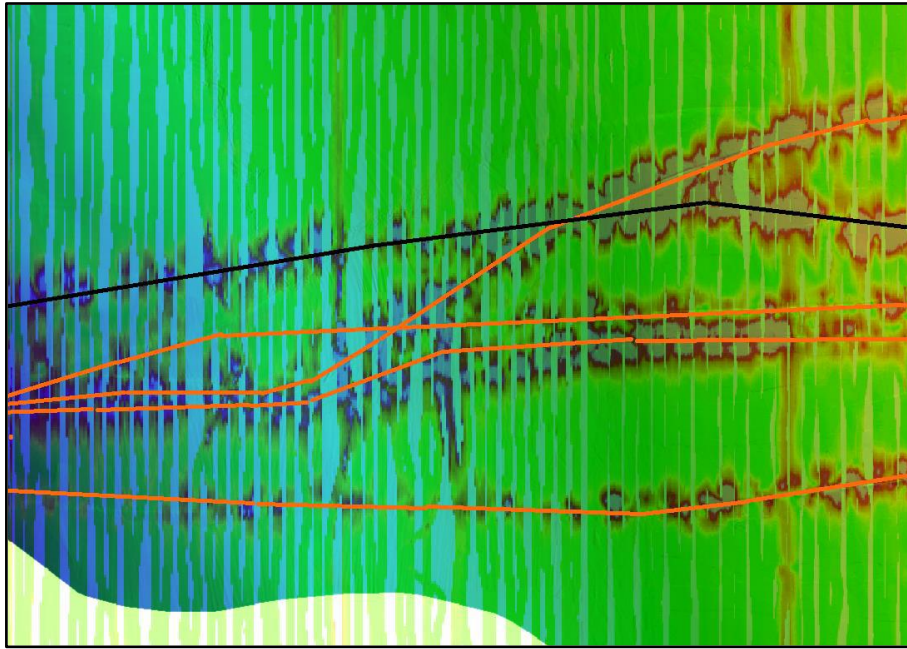


Figure I-29: Pipes image read by Magnetometer (source: TNI AL)

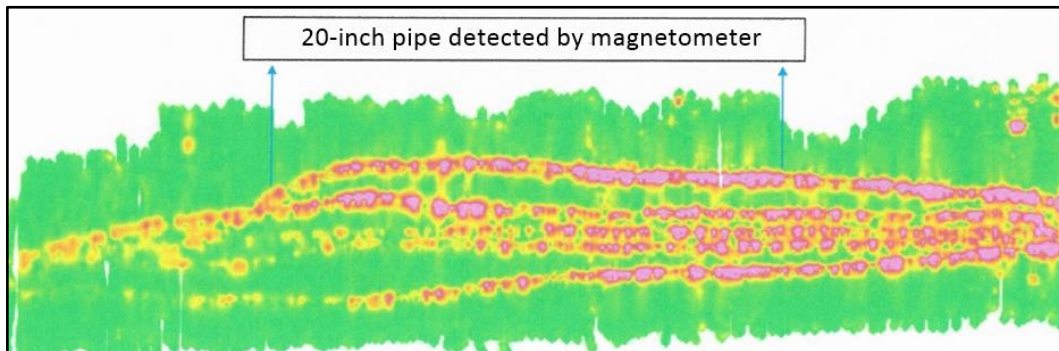


Figure I-30: The image of the 20-inch pipe (source: Pertamina RU V)

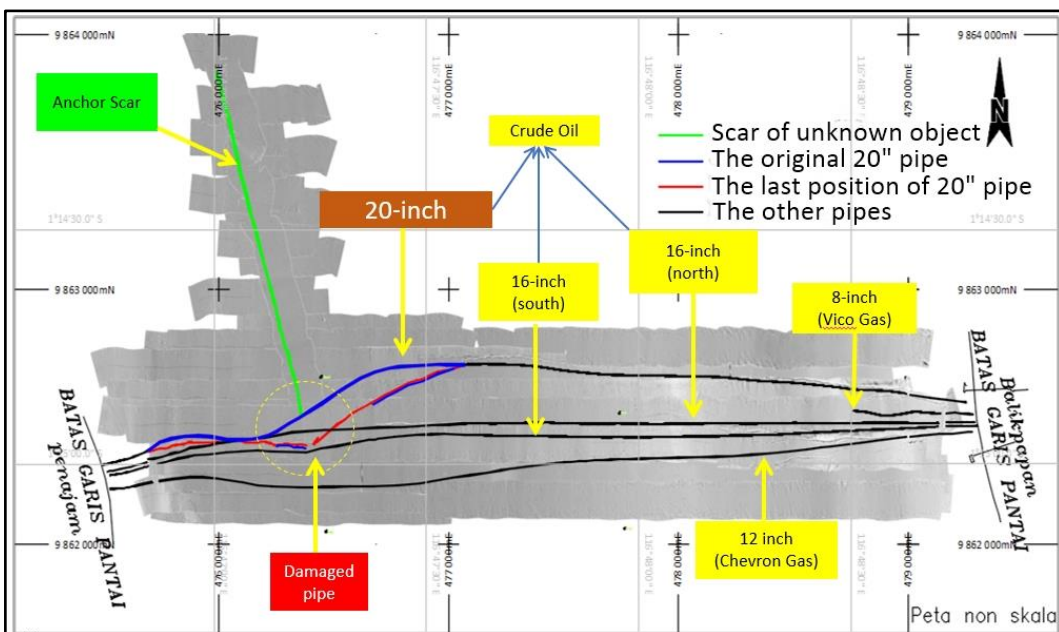


Figure I-31: The underwater pipes in Balikpapan Bay (source: Pertamina RU V)

Not only on the map, pipe markings were also made on the waters and the shore. There were four buoys located on the channel to inform the border of Prohibited Area and were in good condition. There were also four towers equipped with lights with the same function as buoys. Two towers located at Balikpapan side and the others at Panajam side.



Figure I-32: Towers as subsea pipe markings

I.5.2. Impact Protection

At the moment, the regulations regarding underwater pipes, either for oil or gas, were organised by Ministry of Transportation as well as Ministry of Energy and Mineral Resources. Although the object of regulations is the same, specifically pipe, each of them has different rules. The Minister of Transportation Regulations No. 129 Year of 2016 on Sea Shipping Channel and Offshore Buildings and/or Installations at Article 64 stipulates that a pipe which located on the natural seabed with the depth of less than 20 m should be buried 2 m into a trench. In contrast, the Minister of Energy and Mineral Resources Regulations No. 300.K/38/M.pe/1997 on the Work Safety on Oil and Gas Transfer Pipe Article 13 imposed the pipe in seawater should be buried as deep as 2 m if the depth of natural seabed is less than 13 m.

In relating to both rules, all pipes in Balikpapan Bay were not impacted by the regulations. The pipes have been existing before the rules were issued. As the rules do not apply retroactively, there was no compulsory for the pipe owners to apply the rules to their existing pipes.

The damaged pipe was installed and used in 1998 and subject to the Minister of Transportation Regulations No. 23 Year of 1990 on the Salvage or Underwater Works. The permission No. JM 88/3/19-95 had been granted in 1995 with some notes, such as to embed the pipe underground when the water depth is less than 5 m. As the topography of the bay is not uniform, the east side is shallower than west side, the pipe on the west and middle was not buried.

The 20-inch pipe was already protected by two materials. The inner layer was coaltar enamel as thick as 5 mm, while the outer cover was concrete coating with the thickness of 3.09". The concrete was used to insulate the main pipe from rust and marine creatures. Also, the concrete provided more weight to stable the pipe on its position.



Figure I-33: Protection layers of an underwater pipe

In terms of water surface monitoring, the protection in the marine area limited by permit. The Marine Division did not have any authority to chase away any ship stopping or drop the anchor above the restricted range.

However, as the area showing the increase of marine traffic, there is an urgent need to evaluate the existing rule, particularly for Balikpapan Bay area. In each month, not less than four times the vessel with more than a length of 200 m and depth of 13 m crossing those pipes. When the pipe was installed twenty years ago, the marine traffic was much lighter than now. Also, there were only traditional ports for small ships in the north of the channel. Accordingly, the pipes should be protected with extra caution to deter recurrence in the future.

Nowadays, there are many available options to protect subsea installations which laid on the seabed. One of common methods named concrete mattress. This allows any seabed infrastructure hidden under the concrete, but they will still on the seabed. By doing this, there will be no costs to modify the existing subsea assets and the production could be going without any interruption. Also, the installation enables an easier and faster than to embed the installation into the trench.

I.6. ANCHORAGE AREA

Head of Balikpapan Harbour Master Regulations No. UM.003/21/5/KSOP.Bpn-2013 on the Technical Procedure of Piloting and Ship Safety while Crossing Oil and Gas Facilities in Balikpapan Waters had set the anchorage area as seen in Figure I-34. There were two groups of vessels could drop their anchors based on their length overall (LOA). The first sector (green) was for ships with a length of between 125 and 250 m, while the second sector was prepared for ships with a length of 125 m and above. The second region next to the no anchor zone was specially prepared for any ships with a deep draft as it is the deepest, widest and safest along the channel as well as nearest to the BCT port.

Nowadays, the number of tanker ships getting more than decades ago. Some tankers had to anchor at the BCT anchorage area. They had no options as the general anchorage area was full day by day. In addition, more ships were spread around the limited area at Balikpapan Bay for anchorage.

Even though the anchorage areas could not be found on the map, they are known by Pilots and Harbour Master Officers as stipulated in the Local Harbour Master's regulation No. UM.003/21/5/KSOP.Bpn-2013. The picture or map which depicts the location of both anchorage sectors could not be found.



Figure I-34: Anchorage area in Balikpapan (the chart was recreated using Google Earth based on Balikpapan Harbour Master Regulations)

Nonetheless, the Minister of Transportation Regulations No. 129 Year of 2016 on Sea Shipping Channel and Offshore Buildings and/or Installations at Article 46, verse 5 stipulates that the ship anchorage areas should be charted on the nautical chart. Balikpapan Channel had a limited area compared to the number of ships anchoring there. The more ships coming in, there will be the need to optimally need the anchorage territory to wait for berthing or departing. Further, the more ships berthing in the anchorage area would force them to lay their anchor approaching the restricted zone. The hazard of anchoring near the restricted zone would be bigger when the strong current came up combined with a failure on a ship's anchor. For these reasons, the anchorage border should be reviewed to consider additional protection for more ships.

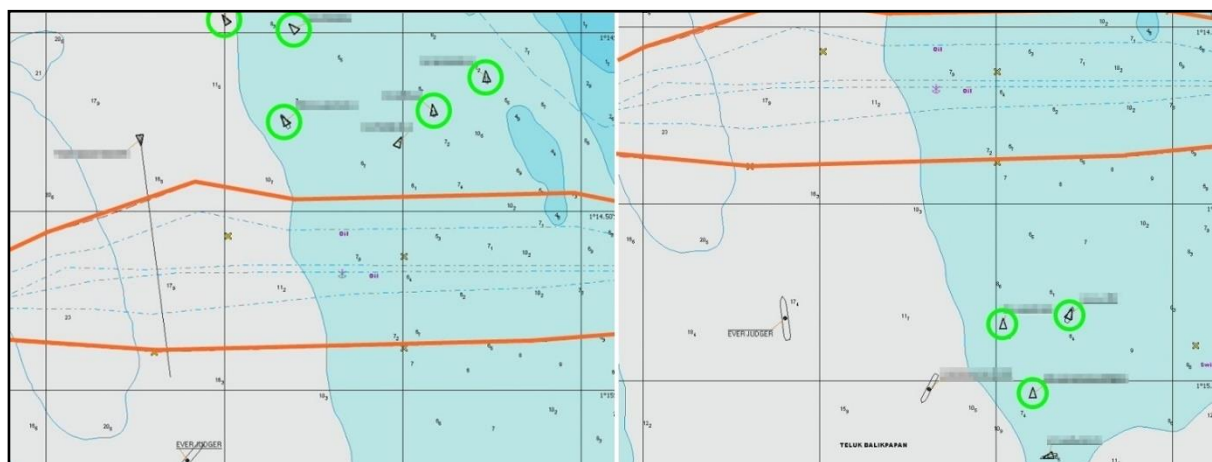


Figure I-35: Ships whilst anchoring (green circles) in the south (right) and north (left) of the restricted zone

I.7. SHIP INFORMATION

I.7.1. Ever Judger

Ever Judger (IMO No. 9632844/Call Sign 3ERQ4) was a Panamanian registered bulk carrier. The steel vessel was built at Zhejiang Judger Shipyard, China in 2011⁴. She had an overall length, breadth and depth of 224.828, 32.272 and 20.040 m, respectively.

Her maximum tropical draft was 14.450 m with deadweight tonnes of more than 83,000 MT. The vessel which formerly name was *Li Shi* had seven cargo holds with her maximum capacity of nearly 10,000 m³ of grain.

Ever Judger was owned by Ever Judger Holding Company Ltd. and operated by Fleet Management Ltd. She was classed with Det Norske Veritas (DNV). She carried out the class survey in October 2017.

⁴ The date on which keel was laid or ship was at a similar stage of construction.



Figure I-36: Ever Judger

She was equipped by two anchors. The weight of each anchor was 11.10 tonnes attached to the 12 shackles of chain on each side. Based on the inspection carried out by the Investigator, there was no issue in relation to the windlass system.

The navigation bridge was equipped with navigational equipment consistent with SOLAS Requirement. This included a gyro autopilot, ARPA equipped radars, AIS, GPS plotter, ECDIS, echosounder, VHF radios, satellite telephone and a Furuno VR-5020 VDR.

I.7.2. Ship's Crew

The *Ever Judger* was manned by twenty crew. Based on the interview, the Master acknowledged that the ship was the first time been in the Balikpapan Bay. He joined the *Ever Judger* since November 2017. Meanwhile, the CO and 2/O joined the ship twelve days before the accident of anchor hit the pipe. The other eight crew also joined in on the same date as the CO and 2/O.

All crew in the ship had the same nationality, specifically Chinese. Therefore, they were talking in the Chinese language. The English is only used to talk to the Pilot B who was Indonesian and other external people.

There were four deck officers, four engine officers and twelve ratings. The details of the crew list of *Ever Judger* is as follows.

Table I-3: Crew list of Ever Judger

| Rank | Number |
|-------------------|--------|
| Master | 1 |
| CO | 1 |
| 2/O | 1 |
| 3 rd O | 1 |

| Rank | Number |
|--------------------------------|---------------|
| Chief Engineer | 1 |
| 2nd Engineer | 1 |
| 3rd Engineer | 1 |
| 4th Engineer | 1 |
| Wiper | 1 |
| Bosun | 1 |
| AB | 3 |
| OS | 1 |
| Oiler | 3 |
| Chef Cook | 1 |
| 2nd Cook | 1 |
| Engine Cadet | 1 |

I.8. HUMAN FACTOR

The human factor is a science about how persons interact with the surroundings, for example, colleagues and equipment, while doing tasks. As mandated by IMO via Resolution A.884(21) on the Amendments to The Code for The Investigation of Marine Casualties and Incidents (Resolution A.849(20) and Resolution MSC.255(84) on the Adoption of the Code of the International Standards and Recommended Practices for A Safety Investigation into A Marine Casualty or Marine Incident (Casualty Investigation Code), the accident report will also discuss about human factor (HF) aspects in related to the causal factors of the accident.

The HF has been recognised as the dominant factors behind numerous types of marine accident. The human wrongdoing almost usually appears on multi persons, instead of on single, and afterwards create multiple effects of a failure of safety systems (Berg, 2013). Further, the individual error mostly accompanied by the failure of other factors, such as risk control system and organisation rules (Kobylinski, 2009). For these reasons, should the root causes of this accident come up from the human factor side, the prevention actions are extremely needed to prevent the recurrence as it is preventable (Mokhtari and Khodadadi Didani, 2013). On this report, there are two important elements of the HF which would be elaborated further, specifically fatigue and bilingual issues.

I.8.1. Fatigue

Fatigue is a notoriously as one of human factor elements that have raised concern amongst many scientists and practitioner. Seafarers as the frontline in the marine industry play an eminent role in deterring fatigue. This negative impact has been identified as the essential factor behind more than 50% of collision and grounding accidents (Xhelilaj and Lapa 2010 and Arslan and Er 2007).

On the IMO guidance issued in 2006, the fatigue has been described as a “*State of feeling tired, weary, or sleepy that results from prolonged mental or physical work, exposure to harsh environment, or loss of sleep which can lead to the impairment of performance and to the reduction of alertness*”. To be precise, IMO MSC/Circ.1014 on Guidance on fatigue defined fatigue as the branch of the human factor element in terms of physical inabilities which are resulted by detrimental effects of either mental or emotional continuous activities.

There is a wide variety of fatigue elements, but not all of them related to the fatigue altogether. The most common considerations amongst fatigue factors are lengthy working duration, low quality of sleep as well as night work (Allen, Wadsworth and Smith, 2008). In addition, psychological, health, stress and alcoholic or chemical consumption also related to fatigue. Having mentioned above justifications, the *Ever Judger's* crew work and rest pattern would be analysed in regard to the fatigue measures. Furthermore, The Annex of MSC/Circ.1014 on the Guidelines on Fatigue suggests the outcome of the fatigue is the degradation of work performance and shrinkage of alertness.

Based on the crew explanation on the interview, the work and rest pattern of *Ever Judger's* crew was 4-hour on-duty. Whilst off-duty, the crew could take their time to rest or any normal individual relaxation activities. This had been the work standard onboard the ship. There was no issue while sleeping or rest. Based on those circumstances, the normal daily works had no obstacles.

I.8.2. Language Switch

Bilingual is a person who speaks two languages. Sometimes the speaker talks two languages in the same session by switching the languages, yet sometimes the switching occurs quite often. In addition, the switching between languages takes longer steps to engage (Basnight-brown and Altarriba, 2007). Therefore, bilingual is different than a monolingual, especially in the frequency of switching the languages (Moreno, Kutas and Wicha, 2008). Nevertheless, some cases make a person to do a bilingual conversation, for example being in a non-homogenous language society or a compulsory to speak in a non-native language.

There are two point-of-views of becoming bilingual. The benefit side shows the evidence that speaking in more than one language increases the recognition of alternate names as well as discounting irrelevant factors while speaking. On the other hand, the bilingual might experience the slow in selecting a substitution word, and even facing the tip-of-tongue when the brain fails to find an appropriate phrase. The research demonstrated the bilinguals spoke slower in a foreign language (L2) than in native language (L1) (Chauncey, Grainger, and Holcomb 2008 and Rayner and Ellis 2015). Thus, the discrepancy of speaking timing (switch cost) in L1 and L2 indicated the difference of accessing speed of each language.

The drawback of bilingual could go beyond tolerable when the error takes place in a critical situation or order and at the same time the risk control breaks down or does not exist. Not

to mention that speaking in L1 is easier and much faster than in L2 (Bultena, Dijkstra and Hell, 2015). However, many studies proved that switching from L2 to L1 contributed to the error of word selection (Kroll et al. 2008 and Zheng, Roelofs, and Lemhöfer 2018). In contrast, the opposite exchange (from L1 to L2) developed normally. The phenomenon of language error could be easily be found when the speaker had less-dominant L2. The impairment strength between L1 and L2 was because the imbalance of engagement frequency of both languages.

At least, there were many types of language switching consequences, including the errors resulted. The most common type is blending L2 word(s) into an L1 sentence. Generally known, this is usually taken deliberately to accent the importance of L2 word(s) to the listener (Kroll and Bialystok, 2013). Another type is an error on one or more letters of a word while uttering either L1 or L2 sentence. In addition, the consequence of cross-language could be as the incorrect selection of the word meaning yet correct in some part of word's sound. For instance, the bilingual says "reading", instead of "leading". The last type is known as morpheme error which is one of the slip-of-tongue events.

The appearance of slip of tongue appeared in the order from the Master to the CO. The Master acknowledged released order to the CO to lower the anchor with one-metre length as the preparation before arriving the anchor drop point. Conversely, the CO insisted that the order was one shackle length. The situation highlighted the disagreement between what the Master thought and what the Master told. In the other words, the tongue and the brain did not match.

II. ANALYSIS

Based on the weather and condition of the *Ever Judger* prior to the accident, there was no indication of both elements involved as the causal factors. Therefore, the analysis will elaborate more about the human aspects, such as communication issue, human factor, bridge resource management as well as the contingency steps had been taken following the accident.

II.1. TIREDNESS

Prior to the departure from the BCT, there were several important aspects of the HF need to emphasise, particularly on the physical and mental condition of the Master. First, the adaptation of the CO which forced the Master to assist the CO who had joined the ship less than a month before the ship was involved in the accident. A few exclusive matters, such as loading and preparing for departure works, were assisted by the Master directly. Consequently, this came together with the main works of the Master.

Second, the engine failed to start when the Pilot A onboard forced the Master to remain to stand by in the bridge until the middle of the night on 30 March 2018. In other words, the Master worked more than 10 hours, including the ship departure works. This condition might impact on the Master awareness. When the CO replied the Master order to release the anchor one shackle, The Master did not aware that the order was not the same as his thought.

Third, the inadequate briefing amongst officers on watch caused the Master alone to determine all shifting tasks. The VDR data has confirmed that the conversation about to prepare the anchor was initiated by the Master, for instance, the length of chain required and the appropriate time. The accumulation of those factors forced the Master to concentrate in almost all the time while he was on the bridge.

II.2. COMMUNICATION ERROR

The communication error which occurred in the bridge of *Ever Judger* comprised of two vital events. To be specific, the slip of tongue and then followed by the focus distraction. The first one occurred on the Master and the other one on another crew on the bridge.

The VDR data showed that the Master encountered speech error, in which the spoken word was different than the desired one. Considering the workload of the Master was more than ten hours and quite often switching languages between English and Chinese, the fatigue most likely triggered the misspeaking. At this situation, the type of slip of tongue was the partial error, namely metathesis.

Metathesis is a type of intentional linguistic error in which single or few letters in a word incorrectly pronounced (Cruttenden, 1936, Hume, 2001 and Lerer, 2007). This speech error type applies to individual words. For example, a person pronounced *geik* for “cake” word. Further, a study revealed that this error is more common to arise in males than females (Behnam and Rassekh-Alqol, 2012).

The metathesis at the accident of *Ever Judger* happened on the resembling pronunciation of two Chinese words. The word of one shackle (pronounce: *yi jie*) and one metre (pronounce:

yi mie) were almost similar each other in Chinese pronunciation. Previously, the Master switched the language from Chinese to English (L2) while talking to the Pilot B about a metre, and afterwards the Master translated it to a Chinese (L1) word. There were various studies which suggested that the switch of languages between L1 and L2 had detrimental impacts, particularly in the working sector which requires a high load of concentration in a long time.

However, the communication error made the Master conveyed another similar-sound word which means shackle. It just happened suddenly and caused the anchor dropped unintentionally. At this case, the communication error became a mistaken command.

At the same time, there was no criticism expressed to the Master. The slip-of-tongue order to release the anchor as long as one shackle in the 20's metre depth water was not corrected by either the AB or the 2/O. By taking into account that the AB was in charge of the steer, the 2/O most likely had the sufficient time and chance to review the Master order as the 2/O could watch the navigational equipment, particularly the echo sounder. In contrast, the 2/O did not deliver any objection. The ignorance of the 2/O in regards the Master order was most likely because the 2/O was focusing on something not related to the navigational works.

VDR recording revealed the mobile phone ringtone several times, with an interval some seconds, like the incoming messages. In this matter, the highest possibility of distraction source was the mobile phone. Even though the effects of using mobile phone on the focus of work may vary, many studies confirmed that mobile phone has a detrimental influence to its users. The main point of the dangerous of using the mobile while working is the competition between visual attention to the works and looking at the mobile phone's screen (Regan, Lee and Young, 2009). Another study suggested that reading a message is a high level of distraction as the reader needs to comprehend and assimilate letters in the message (Yan, 2015). This inattention circumstance, additionally, lead the mobile phone user to reduce the situational awareness.

II.3. BRIDGE RESOURCE MANAGEMENT AND TRAFFIC INFORMATION

The limited briefing undertook prior to the departure of the *Ever Judger* between the Pilot B and Master was not forwarded to the ship's crew. As a consequence, there was no clear voyage plan and distribution of tasks. The only person knew exactly where and when to change the speed and prepare the anchor was the Pilot B. The location of anchorage was not detail and pointed by Pilot B's finger on the ECDIS screen. This practice allowed the other crew in the bridge to know nothing about the shifting, except for the Master and Pilot. This could give a perception that the voyage plan was the business amongst the Master and Pilot B only.

The incomplete briefing also had an impact on the missing information of restricted zone above pipelines. As Pilot B had no checklist of the Pilot's tasks, Pilot B had no compulsory either to render a copy of important messages or mention about it by speaking. Likewise, the crew of *Ever Judger* did not apply the company procedure to undertake the short meeting prior departure.

The double language (Chinese and English languages) onboard whilst shifting from the BCT to the anchorage spot was an obstacle, instead of an easiness. English was only being used by the ship crew to talk to the Pilot B. This created a barrier for Pilot B to understand their

communication. Additionally, the Pilot B could not revise the Master's order when the Master ordered the CO to lower the anchor one shackle.

The combination of those factors finally resulted in the solo watch by the Master. The 2/O and AB did not know the voyage plan, the CO knew nothing about the anchor drop and the Pilot B had nothing to do with the Chinese language. At the same time, there was no warning advice given by the Local VTS Station regarding the restricted area. For those reasons, the situation created a complete failure to keep a good lookout.

The missing of the marine traffic information which should be conveyed by the Local VTS Station was another critical issue found in this investigation. As neither the Pilot B nor the Local VTS Station provided the marine traffic information, the ship's crew did not know the actual situations in the area. Should the Local VTS informed the *Ever Judger* about the hazards in the bay, the crew on duties and Pilot B would be reminded of any danger situations along the voyage route and took action appropriately before scrolling down the anchor. As the Balikpapan Bay is the vital channel in the bay, the Local VTS has a substantial role in providing the information regarding the subsea pipes to vessels crossing no-anchor-area as well as shifting/sailing from port to anchor area.

II.4. OIL SPILL MITIGATION

The mitigation steps to alleviate the consequences of crude oil were not performed well in advance. At least, there were three risk controls to prevent a worse situation in terms of emergency communication, immediate warning and fire extinguishing. The communication amongst Local Pilot Station, Local Harbour Master and other institutions, including Pertamina, disappeared at the time due to the communication systems were unable to be undertaken, except amongst the Pilot Station labours themselves. In addition, due to the absence of information related to the destruction of subsea pipeline, those actions were the most effective that could be done by Pertamina in relation to the several problems.

Following the deterioration communication systems, the emergency warning was not being present due to the lack of procedures in the Balikpapan Harbour Master to deal with wide spreading oil on waters. The absence of the warning of oil spill then generated a large amount of oil spilt into the water and some civilians did their business as usual.

Finally, the deficiency of the oil spill readiness, including firefighting equipment in conjunction with the absence of the Tier 2 procedure, enabled the fire blaze resulted five people died and one person burnt. The disorganised actions took place at the initial blaze reflected the big gaps between risks and emergency procedures in the accident zone.

The other step which did not accomplish optimally was the inspection done by the Pilot B. Right before the Pilot B moved onto the Pilot boat, the Pilot B checked the water situation. As the water was dark in the night and the wind flowed strongly before the rain, the Pilot B failed to see and smell the appearance of the oil in water. At this situation, Pilot B could not acquire the real situation by physical checking. Thus, the assessment of the water situation had been done with a misleading conclusion.

Even though the Marpolex drill had been done nearly a decade ago and Tier 1 drill annually done, the drills were not effective. One crucial factor was because the drill did not test the standard procedure. The drills were playing the scenario which was far from the real case.

II.5. ACTIVE PROTECTION

Considering the high traffic Balikpapan Bay, and active protection is needed. As provided in other places, for the example, where in sub sea installations is laid down, the area is needed to be patrolled continuously (24 hours) to secure the area as a complementary action of a passive protection.

Considering that in that area traffic is dense, protection is actively needed. Examples of practices in some areas where underwater installations are installed, a patrol is needed to secure the area as a complement to passive protection in the form of bouy, maps, and marker towers. The patrol will work together with the passive protection.

Besides that, an active alert through sirens and radio calls are also needed. This method will be used if there is a ship approaching the prohibited area anchored by the anchor. Thus, a special policy is needed to give an authority to the owner of the subsea installation to secure the area.

Considering the role of the Local VTS Station, the duty of informing the traffic situation could be increased to ensure the ships whilst approaching the restricted zone in the bay. Also, in order to prevent the accident, the Local VTS Station should support the safety and security on the restricted area above the subsea pipes by releasing warning calls. Since all big ships transmit the AIS signals, the Local VTS Station could easily identify name, speed, heading and destination of each vessel. Even, the VTS operator is able to be alerted by the system when a ship is approaching its working territory. Therefore, the latest marine traffic technologies should facilitate the Local VTS to watch every single movement of a ship in the bay. However, considering the monitoring system prior to the accident, there seems no elaboration amongst ship AIS data and VTS system to empower their authority to prevent such situation.

III. SUMMARY

The oil spill on Balikpapan waters was due to the lack of Bridge Resource Management onboard the *Ever Judger* as well as the improper emergency response. This circumstance, further, allowed the *Ever Judger's* anchor to hit the 20-inch crude oil pipe on the sea bed. Following the accident, the Master did not report the situation to the Local Harbour Master. In this investigation, the investigation team found various findings related to the accident as follows.

III.1. CONTRIBUTING FACTORS⁵

- The communication amongst ship's crew and the Pilot B was not in a single language.
- There was no specific procedure of pilotage services pertaining the exchange of information as stated by the IMO Resolution A.960, except the general guidelines from the Harbour Master.

III.2. FINDINGS

III.2.1. Onshore

- The Pilot Service had the procedure, but did not report unusual events to the appropriate parties.
- There is an urgent need to develop the clear authority amongst the Local VTS, Pilot Service and Local Harbour Master to manage the marine traffic.
- The Local Harbour Master did an unsatisfactory job of developing drill and procedure regarding fire and oil spill.
- The Local Harbour Master was partially compliant with the Presidential Regulation of the Republic of Indonesia No. 109 Year of 2006 on Oil Spill Response in the Sea.
- The hotline number to report the oil spill in the Balikpapan Bay area was unfamiliar.
- The existing regulations regarding oil spill response in the sea do not rule about fire extinguishing due to the oil spill.

III.2.2. Offshore

- The pipe's owner had no special authority to secure its assets outside its working area.
- The oil companies in Balikpapan Bay area had been involved in Marpolex drill but failed to handle the situation properly.

⁵ Contributing factors are anything which might be the source of an accident. In terms of any act, negligence, condition or situation in which avoided or diminished would prevent an accident or reduce the impacts.

NATIONAL TRANSPORTATION SAFETY COMMITTEE

Ever Judger, Balikpapan Bay, 30 March 2018

- The fire extinguishing in the Balikpapan Bay waters did not use foam to combat the fire.
- The anchorage zones were uncharted.
- The existing early warning system regarding the subsea pipelines need to be complemented with appropriate automatic leakage detection system.
- There was no obligation to use a single language onboard the ship whilst manoeuvring and shifting.
- The buried pipe (not the damaged one) was uncharted and the Local Harbour Master did not aware about it.
- The Master worked extra in assisting the Chief Officer for more than 10 hours.
- Marine ecosystem in Balikpapan Bay was seriously affected by the accident.

IV. RECOMMENDATIONS

Based on the causal and contributing factors of the pipe dragging in anchoring operation of *Ever Judger*, the National Transportation Safety Committee (KNKT) recommends following matters to interested parties to be applied to prevent the recurrence of an accident by the same factors in the future.

Referring to the Government Regulation of Transport Accident Investigations No. 62 Year of 2013 Article 47 stipulates that the interested parties must follow up the safety recommendations on this report and report the progress of those recommendations to the chairman of the KNKT.

IV.1. MINISTRY OF TRANSPORT

IV.1.1. BUREAU OF LEGAL AFFAIRS

1. Together with the Ministry of Energy and Mineral Resources to synchronise detail guidelines for subsea pipelines.

Until the final report is issued, the KNKT had not received safety actions yet following the recommendations.

Status: Open

IV.1.2. DIRECTORATE GENERAL OF SEA TRANSPORT

1. To create clear guidelines for the Tier 1, 2 and 3 drills, including equipment, resources, organisation as well as altering the level.
2. To set up harmonised and clear rules of piloting and marine information involving Local Harbour Master, Pilot Service and VTS Station.
3. To ensure the resources of Local VTS Station are adequate and proper to meet the duties.
4. To review the Local VTS's authority and its working load.

Until the final report is issued, the KNKT had not received safety actions yet following the recommendations.

Status: Open

IV.1.3. HUMAN RESOURCES DEVELOPMENT AGENCY

1. To review the bridge resource management courses specifically designed for Pilots.

Until the final report is issued, the KNKT had not received safety actions yet following the recommendations.

Status: Open

IV.1.4. BALIKPAPAN HARBOUR MASTER OFFICE

1. To review oil leak response procedure based on related regulations, including:
 - a. the assessment of the oil companies' procedures and implementation of Tier 1 drills;
 - b. developing clear procedures of being the coordinator of Tier 1; and
 - c. campaigning the hotline number to the companies and community in the Balikpapan Bay region.
2. To review and comply with the adequacy of fire fighting system in its working region.
3. To ensure all offshore installations in its working region match with the nautical charts.
4. To provide a right to the oil companies in securing their subsea assets continuously.

Until the final report is issued, the KNKT had not received safety actions yet following the recommendations.

Status: Open

IV.1.5. NAVIGATIONAL DISTRICT OF SAMARINDA AND BALIKPAPAN

1. To undertake the role of Marine Traffic Manager.

Until the final report is issued, the KNKT had not received comments or safety actions yet following the recommendations.

Status: Open

IV.2. DIRECTORATE GENERAL OF OIL AND GAS, MINISTRY OF ENERGY AND MINERAL RESOURCES

1. To review and ensure all subsea installations are reported to the Hydrographic & Oceanography Office of the Indonesian Navy.

Regarding this recommendation, the Ministry of Energy and Mineral Resources has initiated the safety action to update the condition of oil and gas installation data across Indonesia as well as the permit status. This report would be submitted to the Hydrographic & Oceanography Office of the Indonesian Navy (Pushidrosal).

Status: Closed

2. To enhance the regulation of subsea installation security and monitoring system in the dense traffic waters.

Until the final report is issued, the KNKT had not received safety actions yet following the recommendations.

Status: Open

IV.3. PT PELABUHAN INDONESIA (PERSERO) BRANCH OF BALIKPAPAN

1. To detail procedure for piloting operations, particularly on the information exchange, as described in the IMO Resolution A.960.

Until the final report is issued, the KNKT had not received safety actions yet following the recommendations.

Status: Open

IV.4. PT PERTAMINA (PERSERO) REFINERY UNIT V

1. To install the appropriate leak detection system.

Regarding this recommendation, the PT Pertamina (Persero) Refinery Unit V has initiated the safety action to enhance the leak detection system on its subsea pipe.

Status: Closed

2. To establish an active protection system to secure the assets in the public area of Balikpapan Bay.

Regarding this recommendation, the PT Pertamina (Persero) Refinery Unit V has initiated the safety action to ask the permission to apply an active protection system in the public waters area.

Status: Closed

IV.5. MINISTRY OF STATE SECRETARY

1. To revise the Presidential Regulation of the Republic of Indonesia No. 109 Year of 2006 on the Oil Spill Response in the Sea and to take into account the fire extinguishing due to the oil spill.

Until the final report is issued, the KNKT had not received comments or safety actions yet following the recommendations.

Status: Open

IV.6. FLEET MANAGEMENT LTD.

1. To enhance the implementation of bridge resource management (please see the recommendations for the IMO).
2. To ensure pre-arrival and pre-departure briefing has been done properly involving all relevant stakeholders.
3. To ensure that ships' crew are speaking Marine English during shifting, manoeuvring and work communication.

Until the final report is issued, the KNKT had not received comments or safety actions yet following the recommendations.

Status: Open

IV.7. COORDINATING MINISTRY FOR MARITIME AFFAIRS

1. To coordinate the implementation of recommendations on this report through the establishment of a plan of action.

Regarding this recommendation, the Coordinating Ministry for Maritime Affairs has initiated several safety actions, such as undertook meetings amongst government institutions regarding the accident and has asked the Ministry of Energy and Mineral Resources to update the subsea installations data as the data source of Indonesian nautical charts produced by the Hydrographic & Oceanography Office of the Indonesian Navy.

Status: Closed

IV.8. INTERNATIONAL MARITIME ORGANIZATION (IMO)

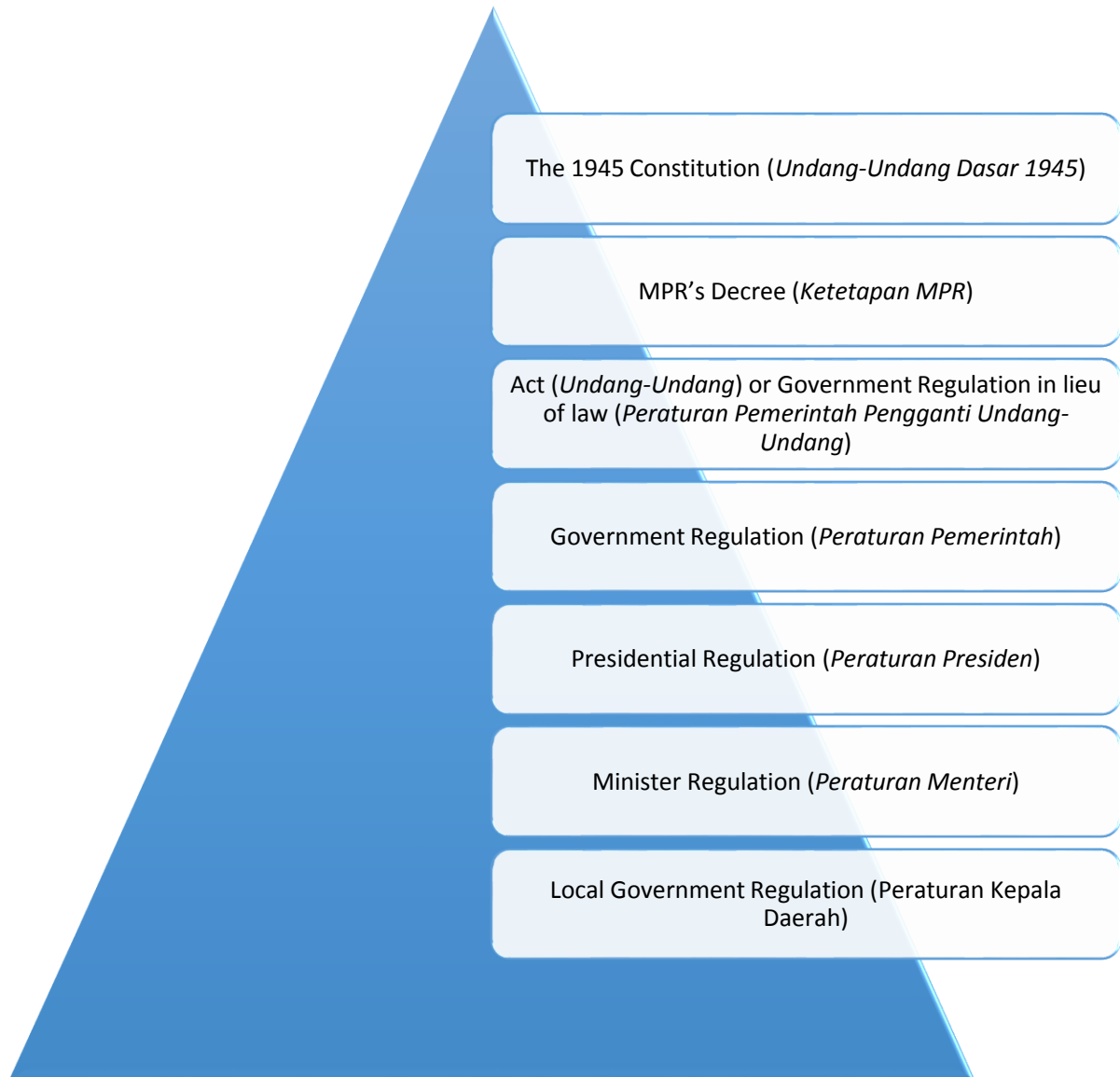
1. To review the syllabus of the Bridge Resource Management (BRM) course.
2. To shorten the revalidation the BRM course to every 2 or 3 years.
3. To obligate ship operators to undertake the BRM course which includes company procedure, company culture and working in a multi-culture environment as well as to measure the effectivity of the course.

Until the final report is issued, the KNKT had not received comments or safety actions yet following the recommendations.

Status: Open

APPENDIX

HIERARCHY OF INDONESIAN LAW ACT NO. 12 YEAR OF 2011



CLEAN LEVELS



LOCAL HARBOUR MASTER'S TIER I TEAM

KESIMPULAN

**RAPAT KOORDINASI PENANGGULANGAN
PENCEMARAN MINYAK DI PERAIRAN BALIKPAPAN**

RISALAH RAPAT

Hari / Tanggal/Waktu : Senin, 2 April 2018, Pukul 10.00 s/d Selesai
 Tempat : Ruang Rapat Kantor Kesyahbandaran dan Otoritas Pelabuhan Kelas I Balikpapan
 Acara : Rapat Koordinasi Penanggulangan Pencemaran Minyak Di perairan Balikpapan.
 Pimpinan rapat : Kepala Kantor Kesyahbandaran dan Otoritas Pelabuhan Kelas I Balikpapan.

I. Peserta rapat sebagaimana daftar hadir terlampir.

II. Kesimpulan Rapat.

1. PT. Pertamina Balikpapan, Kementerian ESDM, KNKT, Kementerian Lingkungan Hidup, Kantor Kesyahbandaran dan Otoritas Pelabuhan Kelas I Balikpapan dan instansi terkait lainnya samapai saat ini belum dapat memastikan sumber tumpahan minyak di Teluk Balikpapan dan sumber titik api.
2. Membentuk Posko Koordinasi di Terminal umum Semayang Balikpapan dengan *Mission Comanmander* (Koordinator Misi) Kepala Kantor Kesyahbandaran dan Otoritas Pelabuhan Kelas I Balikpapan.
3. Kegiatan Operasional Kapal PT. Pertamina Balikpapan yang akan melakukan loading di Dermaga PT. Pertamina akan dirapatkan sore ini dengan pihak PT. Pertamina Balikpapan untuk memastikan bahwa kegiatan loading kapal, kapal yang berlayar dan berlabuh terlaksana dengan aman.
4. Perusahaan dan instansi terkait yang memiliki peralatan penanggulangan pencemaran (*Oil Boom, Oil Skimmer dan Dispersant Pump Sprayer*) agar dapat membantu penanggulangan pencemaran tumpahan minyak, serta selalu berkoordinasi di posko yang telah disiapkan.
5. Masing-masing instansi terkait agar melakukan sosialisasi kemasyarakat untuk tidak membuang puntung rokok atau barang-barang yang dapat memicu percikan api di perairan Balikpapan untuk sementara waktu.

III. Demikianlah risalah rapat ini dibuat untuk digunakan sebagaimana mestinya.

PIMPINAN RAPAT

KEPALA KANTOR

KESYAHBANDARAN DAN OTORITAS PELABUHAN KELAS I
BALIKPAPAN



SAMUDRAM MARIHOT, SE, MM

Pembina Tk. I (IV/b)

NIP. 19640510 198903 1 001

PEMBENTUKAN TIM POSKO

Membentuk Posko Koordinasi di Terminal Umum Semayang Balikpapan dengan *Mission Commander* (Koordinator Misi) Kepala Kantor Kesyahbandaran dan Otoritas Pelabuhan Kelas I Balikpapan. Posko yang berlokasi di Terminal Umum Semayang sebagai tempat berkumpul sebelum memulai kegiatan pembersihan minyak di teluk Balikpapan.

Kegiatan operasional penanggulangan pencegahan pencemaran minyak yang berada di perairan teluk Balikpapan dilakukan dengan menggunakan kapal serta peralatan dan petugas yang memiliki kompetensi dalam bidang Keselamatan dan Pengamanan di areal pelabuhan Balikpapan.



Unsur-unsur yang terlibat dalam kegiatan Posko Penanggulangan Pencemaran Minyak di teluk Balikpapan adalah :

1. Kantor Kesyahbandaran dan Otoritas Pelabuhan Balikpapan(KSOP), sebagai *Mission Coordinator* (Koordinator Misi)
2. Kementerian Lingkungan Hidup
3. Tentara Nasional Indonesia (T N I) cq KODIM
4. POLRI cq. POLSEK KPPP Pelabuhan Semayang
5. Badan Penanggulangan Bencana Daerah Propinsi Kalimantan Timur
6. Badan Penanggulangan Bencana Daerah Kota Balikpapan
7. Dinas Lingkungan Hidup Propinsi Kalimantan Timur
8. Dinas Lingkungan Hidup Kota Balikpapan
9. Kantor Kesehatan Pelabuhan Balikpapan
10. PT. Pertamina Balikpapan
11. PT. Pelindo IV Balikpapan
12. PT. Petrosca
13. PT. Dermaga Perkasapratama (BCT)
14. PT. Chevron
15. PT. Astra Infra Port – Eastkal
16. PT. Wilmar Nabati Indonesia
17. Taruna Siaga Bencana (TAGANA)
18. Dan lain-lain



KEMENTERIAN PERHUBUNGAN
DIREKTORAT JENDERAL PERHUBUNGAN LAUT
KANTOR KESYAHBANDARAN DAN OTORITAS PELABUHAN KELAS I BALIKPAPAN

JL. YOS SUDARSO NO. 1
BALIKPAPAN (76111)

TELP. : (0542) 422096, 736276, 427368
FAX. . : (0542) 427368,

**KEPUTUSAN KEPALA KANTOR KESYAHBANDARAN DAN OTORITAS PELABUHAN
KELAS I BALIKPAPAN
NOMOR : UM.003/ 12/ 4 /KSOP.BPN-2018**

TENTANG

TIM PENANGGULANGAN TUMPAHAN MINYAK DI PERAIRAN PELABUHAN BALIKPAPAN

**KEPALA KANTOR KESYAHBANDARAN DAN OTORITAS PELABUHAN
KELAS I BALIKPAPAN,**

- Menimbang : a. bahwa dalam rangka penanggulangan pencemaran di perairan dan pelabuhan secara cepat, tepat dan terpadu serta terkoordinasi untuk mengendalikan, mengurangi dan membersihkan tumpahan minyak atau bahan lain ke perairan dan pelabuhan untuk meminimalisasi kerugian masyarakat dan kerusakan lingkungan laut.
- b. sehubungan dengan butir a diatas, perlu dibentuk tim penanggulangan tumpahan minyak di perairan pelabuhan Balikpapan
- Mengingat : 1. Undang – undang nomor 17 Tahun 2008 tentang Pelayaran;
2. Peraturan Pemerintah Nomor 19 Tahun 1999 tentang Pengendalian Pencemaran dan/atau Perusakan Laut
3. Peraturan Pemerintah nomor 109 Tahun 2006 tentang Penanggulangan Keadaan Darurat Tumpahan Minyak di Laut
4. Peraturan Pemerintah nomor 21 Tahun 2010 tentang Perlindungan Lingkungan Maritim
5. Peraturan Menteri Perhubungan nomor 58 Tahun 2013 tentang Penanggulangan Pencemaran di Perairan dan Pelabuhan
6. Peraturan Menteri Perhubungan nomor 29 Tahun 2014 tentang Pencegahan Pencemaran Lingkungan Maritim

NATIONAL TRANSPORTATION SAFETY COMMITTEE

Ever Judger, Balikpapan Bay, 30 March 2018

MEMUTUSKAN :

- Menetapkan : KEPUTUSAN KEPALA KANTOR KESYAHBANDARAN DAN OTORITAS PELABUHAN KELAS I BALIKPAPAN TENTANG TIM PENANGGULANGAN TUMPAHAN MINYAK DI PERAIRAN PELABUHAN BALIKPAPAN
- PERTAMA : Menunjuk/mengangkat Tim sebagaimana daftar terlampir sebagai Tim Penanggulangan Tumpahan Minyak di Perairan Pelabuhan Balikpapan
- KEDUA : Tim yang telah ditunjuk/diangkat sebagaimana dimaksud pada Diktum PERTAMA segera melaksanakan tugas dan tanggungjawabnya
- KEEMPAT : Keputusan ini mulai berlaku pada tanggal 02 April 2018

Ditetapkan di : Balikpapan
Pada Tanggal : 02 April 2018

KEPALA KANTOR
KESYAHBANDARAN DAN OTORITAS PELABUHAN
KELAS I BALIKPAPAN



Sanggam MARIHOT
SANGGAM MARIHOT, SE, MM
Pembina TK. I (IV/b)
NIP. 19640510 198903 1 001

Lampiran : Keputusan Kepala Kantor KSOP Kelas I Balikpapan
Nomor : UM.003/1218/KSOP Bpn-2018
Tanggal : April 2018

**SUSUNAN TIM PENANGGULANGAN
TUMPAHAN MINYAK DI PERAIRAN BALIKPAPAN**

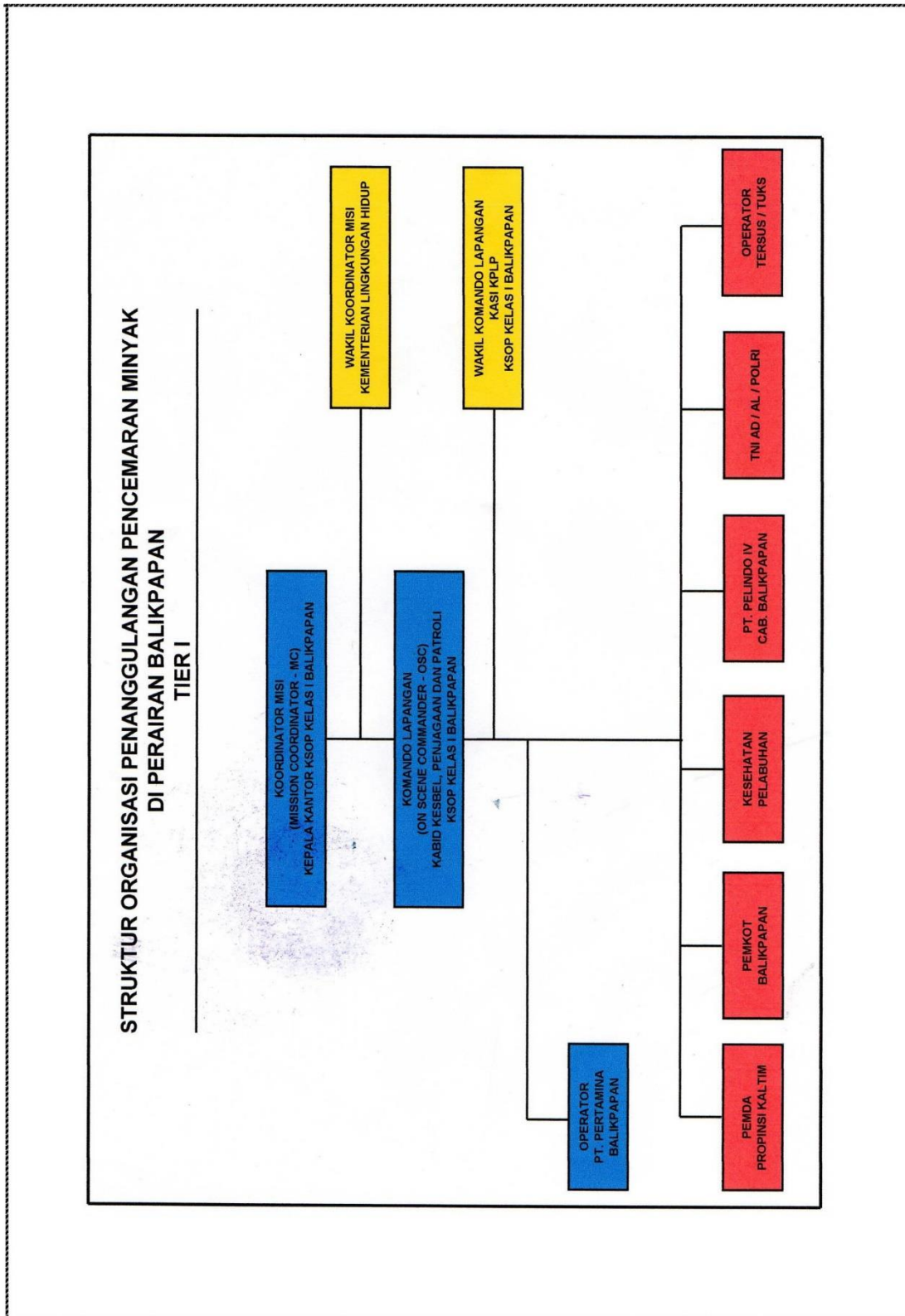
- 1. Koordinator Misi (Mission Coordinator - MC) : Kepala Kantor Kesyahbandaran dan Otoritas Pelabuhan Kelas I Balikpapan
- 2. Wakil Koordinator Misi : Kementerian Lingkungan Hidup
- 2. Komando Lapangan (On Scene Commander - OSC) : Kabid Keselamatan Berlayar KSOP Kelas I Balikpapan
Wakil Komando Lapangan : Kasi KPLP KSOP Kelas I Balikpapan
- 4. Operator : PT. Pertamina Balikpapan
- 5. Anggota :
 - 1. Badan Pencarian dan Pertolongan Daerah Provinsi Kaltim
 - 2. BPPD Kota Balikpapan
 - 3. Dinas Lingkungan Hidup Kota Balikpapan
 - 4. Dinas Lingkungan Hidup Provinsi Kaltim
 - 5. Dinas ESDM Kota Balikpapan
 - 6. Pemanduan PT. Pelindo IV (Persero) Cabang Balikpapan
 - 7. TNI.AD - KODIM
 - 8. TNI.AL
 - 9. Polres Kota Balikpapan - Polsek Semayang
 - 10. Kapal Patroli KNP.349 dan KNP.555
 - 11. PT. Chevron
 - 12. PT. Petrosea
 - 13. PT. Wilmar
 - 14. PT. Eastkal

DITETAPKAN : Balikpapan
PADA TANGGAL : 02 April 2018

**KEPALA KANTOR
KESYAHBANDARAN DAN OTORITAS PELABUHAN
KELAS I BALIKPAPAN**



SANGGAM MARIHOT, SE, MM
Pembina TK. I (IV/b)
NIP. 19640510 198903 1 001



RENCANA KEGIATAN PENANGGULANGAN PENCEMARAN MINYAK DI AREA PELABUHAN BALIKPAPAN

Formasi kapal yang bergabung dalam kegiatan penanggulangan pencemaran minyak di area pelabuhan Balikpapan serta lokasi atau areal yang akan dilakukan pembersihan minyak yang terdapat di permukaan perairan teluk Balikpapan.

Jumlah kapal yang melakukan kegiatan pembersihan atau penanggulangan pencemaran minyak di teluk Balikpapan berjumlah 10 unit kapal yang terbagi dalam 5 tim, yaitu sesuai dengan gambar di bawah ini.



REKAPITULASI HASIL PENANGGULANGAN MINYAK DI AREA PELABUHAN BALIKPAPAN

HARI MINGGU, TANGGAL 01 APRIL 2018

| Lokasi | Tim | Kapal 1 | Kapal 2 | Peralatan | Personeil | PIC |
|---|---|---|---|--|--|---|
| Puskodal Puskodal Puskodal Marine Marine Drone | | | | | | Agus Pranoto Sutedjo Oky Setyawan(HSSE) RM Dani Badarudin Amin |
| ZONA I Pangkalan LLP (Jetty) -Semayang - Kp. Baru | Alpha 1 Alpha 2 Alpha 3 Alpha 4 | Alumunium 1 Alumunium 2 Mooring Boat 1 Mooring Boat 2 | | Pompa Di persant + OSD Pompa Di persant + OSD Absorbent Absorbent | LLP 2 orang + MG STS 1 orang LLP 2 orang + MG STS 1 orang MG STS 2 orang MG STS 2 orang | Bayu, Aryanto, Panji, Adhika, Lordy, Yusept, Adi (HSSE) |
| ZONA II Rede/ Kolam Labuh | Beta 1 Beta 2 Charlie 1 Charlie 2 Charlie 3 | TB Tunda Rahayu TB Transko Camar Locolina V RIB 1 Transko Celebes RIB 2 Transko Celebes | TB Leo Mariner TB Delta 1 PB Mandau | Oil Boom + Skimmer (OSCT) + Ponton Oil Boom + Skimmer (OSCT) + Ponton kedl Oil Boom + Pompa Dispersant + OSD Absorbent Absorbent Absorbent Absorbent | LLP 2 orang + MG STS 1 orang LLP 2 orang + MG STS 1 orang LLP 1 orang + MG STS 2 orang LLP 1 orang + MG STS 2 orang LLP 1 orang + MG STS 2 orang | Khairul Saleh Ginanjar |
| ZONA III Pantai Monpera | Charlie 4 Charlie 5 Charlie 6 Charlie 7 | speed sewa speed sewa speed sewa speed sewa | | Absorbent Absorbent Absorbent Absorbent | LLP 1 orang + PCF 2 orang LLP 1 orang + PCF 2 orang LLP 1 orang + PCF 2 orang LLP 1 orang + PCF 2 orang | Wanda |
| ZONA IV Outer Pantal | Delta 1 Delta 2 | AHTS Celebes AHTS Kitiway | TB Prosper TB Denada | Oil Boom + Skimmer (PHM) Oil Boom + Skimmer (Chevron) | | Salahuddin Lukman |

| TIM | NAMA KAPAL | AREA KEGIATAN | PERALATAN DI ATAS KAPAL | MINYAK YANG TERKUMPUL |
|---------|----------------|--|-------------------------|-------------------------|
| Alpha 1 | Alumunium 1 | ZONA I Pangkalan LLP (Jetty) - Semayang - Kp.Baru | Pompa Dispersant + OSD | 43 m³ |
| Alpha 2 | Alumunium 2 | | Pompa Dispersant + OSD | |
| Alpha 3 | Mooring Boat 1 | | Absorbent | |
| Alpha 4 | Mooring Boat 2 | | Absorbent | |
| | | | | |
| | | | | |

Catatan:

- Lokasi penampungan di PT. Pertamina Balikpapan



Kunjungan dari TNI dan Polri

NATIONAL TRANSPORTATION SAFETY COMMITTEE

Ever Judger, Balikpapan Bay, 30 March 2018

HARI SENIN, TANGGAL 02 APRIL 2018

| Lokasi | Tim | Kapal 1 | Kapal 2 | Peralatan | Personeil | PIC |
|---|---|--|------------------------------|--|---|---|
| Puskodal Puskodal Puskodal Marine Marine Drone | | | | | | Agus Pranoto Sutedjo Oky Setyawan(HSSE) RM Dani Badarudin Amin |
| ZONA I Pangkalan LLP (Jetty) -Semayang - Kp. Baru | Alpha 1 Alpha 2 Alpha 3 Alpha 4 | Alumunium 1 Alumunium 2 Mooring Boat 1 Mooring Boat 2 | | Pompa Dispersant + OSD Pompa Dispersant + OSD Absorbent Absorbent | LLP 2 orang + MG STS 1 orang LLP 2 orang + MG STS 1 orang MG STS 2 orang MG STS 2 orang | Bayu, Aryanto, Panji, Adhika, Lordy, Yusept, Adi (HSSE) |
| ZONA II Rede/ Kolam Labuh | Beta 1 Beta 2 | TB Tunda Rahayu TB Transko Camar | TB Leo Mariner TB Delta 1 | Oil Boom + Skimmer (OSCT) +Ponton Oil Boom + Skimmer (OSCT) +Ponton ke dl | LLP 2 orang + MG STS 1 orang LLP 2 orang + MG STS 1 orang | Khairul Saleh Ginjar |
| ZONA III Pantai Monpera | Charlie 1 Charlie 2 Charlie 3 Charlie 4 Charlie 5 Charlie 6 Charlie 7 | Locolina V RIB 1 Transko Celebes RIB 2 Transko Celebes speed sewa speed sewa speed sewa | PB Mandau | Absorbent Absorbent Absorbent Absorbent Absorbent Absorbent | LLP 1 orang + MG STS 2 orang LLP 1 orang + MG STS 2 orang LLP 1 orang + PCF 2 orang LLP 1 orang + PCF 2 orang LLP 1 orang + PCF 2 orang | Wanda |
| ZONA IV Outer Pantai | Delta 1 Delta 2 | AHTS Celebes AHTS Kitiway | TB Prosper TB Denada | Oil Boom + Skimmer (PHM) Oil Boom + Skimmer (Chevron) | | Salahuddin lukman |

| TIM | NAMA KAPAL | AREA KEGIATAN | PERALATAN DI ATAS KAPAL | MINYAK YANG TERKUMPUL |
|---------|----------------|------------------|-------------------------|---------------------------|
| Alpha 1 | Alumunium 1 | ZONA I Pangkalan | Pompa Dispersant + OSD | 37,5 m³ |
| Alpha 2 | Alumunium 2 | LLP (Jetty) - | Pompa Dispersant + OSD | |
| Alpha 3 | Mooring Boat 1 | Semayang - | Absorbent | |
| Alpha 4 | Mooring Boat 2 | Kp.Baru | Absorbent | |

Catatan:

- Lokasi penampungan di PT. Pertamina Balikpapan



Kunjungan dari KNKT dalam rangka kegiatan Investigasi Kapal MV. EVER JUDGER dan Perairan Teluk Balikpapan



NATIONAL TRANSPORTATION SAFETY COMMITTEE

Ever Judger, Balikpapan Bay, 30 March 2018

HARI SELASA, TANGGAL 03 APRIL 2018

| Lokasi | Tim | Kapal 1 | Kapal 2 | Peralatan | Personeil | PIC |
|---|--|--|---|--|---|---|
| Puskodal Puskodal Puskodal Marine Marine Drone | | | | | | Agus Pranoto Sutedjo Oky Setyawan(HSSE) RM Dani Badarudin Amin |
| ZONA I Pangkalan LLP (Jetty) -Semayang - Kp. Baru | Alpha 1 Alpha 2 Alpha 3 Alpha 4 | Aluminium 1 Aluminium 2 Mooring Boat 1 Mooring Boat 2 | | Pompa Dispersant + OSD Pompa Dispersant + OSD Absorbent Absorbent | LLP 2 orang + MG STS 1 orang LLP 2 orang + MG STS 1 orang MG STS 2 orang MG STS 2 orang | Bayu, Aryanto, Panji, Adhika, Lordy, Yusept, Adi (HSSE) |
| ZONA II Rede/ Kolam Labuh | Beta 1 Beta 2 Charlie 1 | TB Tunda Rahayu TB Transko Camar Locolina V | TB Leo Mariner TB Delta 1 PB Mandau | Oil Boom + Skimmer (OSCT) +Ponton Oil Boom + Skimmer (OSCT) +Ponton kecil Oil Boom + Pompa Dispersant + OSD Absorbent | LLP 2 orang + MG STS 1 orang LLP 2 orang + MG STS 1 orang LLP 1 orang + MG STS 2 orang | Khairul Saleh Ginjar |
| ZONA III Pantai Monpera | Charlie 2 Charlie 3 Charlie 4 Charlie 5 Charlie 6 Charlie 7 | RIB 1 Transko Celebes RIB 2 Transko Celebes speed sewa speed sewa speed sewa | | Absorbent Absorbent Absorbent Absorbent Absorbent | LLP 1 orang + MG STS 2 orang LLP 1 orang + MG STS 2 orang LLP 1 orang + PCF 2 orang LLP 1 orang + PCF 2 orang LLP 1 orang + PCF 2 orang | Wanda |
| ZONA IV Outer Pantai | Delta 1 Delta 2 | AHTS Celebes AHTS Kitiway | TB Prosper TB Denada | Oil Boom + Skimmer (PHM) Oil Boom + Skimmer (Chevron) | | Salahuddin Iukman |

| TIM | NAMA KAPAL | AREA KEGIATAN | PERALATAN DI ATAS KAPAL | MINYAK YANG TERKUMPUL |
|---------|-----------------|---|--|-----------------------|
| Tim I | AHTS Kitiway | Pelabuhan Semayang - Kp.Baru - Pertamina - Penajam - Petrosea | Oil Boom + Skimmer (Chevron) | 55 m ³ |
| | TB Dhanada | | | |
| Tim II | TB Tunda Rahayu | | Oil Boom + Skimmer (OSCT) + Ponton Kecil | |
| | TB Wisnu X | | | |
| Tim III | TB Prosperer | | | |
| | AHTS Celebes | | Oil Boom + Skimmer (PHM) | |

Catatan:

1. Lokasi penampungan di PT. Pertamina Balikpapan



Kunjungan Bapak Sekditjen Hubla



Peninjauan Perairan Teluk Balikpapan

NATIONAL TRANSPORTATION SAFETY COMMITTEE

Ever Judger, Balikpapan Bay, 30 March 2018



Peninjauan Kapal MV. EVER JUDGER

HARI RABU, TANGGAL 04 APRIL 2018

Evaluasi kegiatan yang telah terlaksana beberapa hari yang melibatkan seluruh unsur-unsur yang terkait dalam penanggulangan pencemaran minyak di pelabuhan Balikpapan



NATIONAL TRANSPORTATION SAFETY COMMITTEE

Ever Judger, Balikpapan Bay, 30 March 2018

| Lokasi | Tim | Kapal 1 | Kapal 2 | Peralatan | Personeil | PIC |
|--|---|---|---|--|--|---|
| Puskodal Puskodal Marine Marine Drone | | | | | | Agus Pranoto Sutedjo Oky Setyawan(HSSE) RM Dani Badarudin Amin |
| ZONA I Pangkalan LLP (Jetty) -Semayang - Kp. Baru | Alpha 1 Alpha 2 Alpha 3 Alpha 4 | Alumunium 1 Alumunium 2 Mooring Boat 1 Mooring Boat 2 | | Pompa Dispersant + OSD Pompa Dispersant + OSD Absorbent Absorbent | LLP 2 orang + IMG STS 1 orang LLP 2 orang + IMG STS 1 orang IMG STS 2 orang IMG STS 2 orang | Bayu, Aryanto, Panji, Adhika, Lordy, Yusept, Adi (HSSE) |
| ZONA II Rede/ Kolam Labuh | Beta 1 Beta 2 Charlie 1 Charlie 2 Charlie 3 | TB Tunda Rahayu TB Transko Camar Localina V RIB 1 Transko Celebes RIB 2 Transko Celebes | TB Leo Mariner TB Delta 1 PB Mandau | Oil Boom + Skimmer (OSCT) + Ponton Oil Boom + Skimmer (OSCT) + Ponton kecil Oil Boom + Pompa Dispersant + OSD Absorbent | LLP 2 orang + IMG STS 1 orang LLP 2 orang + IMG STS 1 orang LLP 1 orang + IMG STS 2 orang LLP 1 orang + IMG STS 2 orang | Khairul Saleh Ginanjari |
| ZONA III Pantai Monpera | Charlie 4 Charlie 5 Charlie 6 Charlie 7 | speed sewa speed sewa speed sewa speed sewa | | Absorbent Absorbent Absorbent Absorbent | LLP 1 orang + IMG STS 2 orang LLP 1 orang + PCF 2 orang LLP 1 orang + PCF 2 orang LLP 1 orang + PCF 2 orang | Wanda |
| ZONA IV Outer Pantai | Delta 1 Delta 2 | AHTS Celebes AHTS Kitiway | TB Prosper TB Denada | Oil Boom + Skimmer (PHM) Oil Boom + Skimmer (Chevron) | LLP 1 orang + PCF 2 orang | Salahuddin Lukman |

| TIM | NAMA KAPAL | AREA KEGIATAN | PERALATAN DI ATAS KAPAL | MINYAK YANG TERKUMPUL |
|-------------|---------------------------------------|--|---|---|
| TIM KE SATU | TB. TRANSKO CAMAR TB. TUNDA RAHAYU | ZONA REDE/KOLAM BANDARA II | 1. <u>OLI BOOM</u> 2. <u>OIL SKIMER (OSCT)</u> 3. <u>PONTON</u> | Tgl 1/4/18 Hasil 43 m ³ Tgl 2/4/18 Hasil 37,5 m ³ Tgl 3/4/18 Hasil 55 m ³ Tgl 4/4/18 Hasil 236,7 m ³ |
| TIM KE DUA | TB. LEO MARINIER TB. DELTA I | AREA KELANDASAN SAMPAI DENGAN PERTAMINA DAN SEKITARNYA. | 1. <u>OLI BOOM</u> 2. <u>OIL SKIMER (OSCT)</u> 3. <u>PONTON KECIL</u> | Hasil kegiatan ditampung Pertamina Total keseluruhan dari tgl 1 s/d 4 Apr 2018 TTL = 372,2 m³ / 2342 Bbl (Barel) |
| TIM KETIGA | TB. LOCALINA V PB. MANDAU | PANTAI MENPORA | 1. <u>OLI BOOM</u> 2. <u>POMPA DISPERSAN</u> | |
| TIM KEEMPAT | AHTS. CELEBES TB. PROSPER | DI AREA SEPINGGAN BOUY NOL SAMPAI MANGGAR BATAKAN KELANDASAN | 1. <u>OLI BOOM</u> 2. <u>POMPA DISPERSAN</u> 3. <u>OSD</u> 4. <u>ABSORBENT</u> | Hasil kegiatan dari tgl 1 s/d 4 Apr 2018 total 130 KI (Ditampung diatas kapal) |
| TIM KELIMA | AHTS. KITWAY TB. DENADA | DI AREA SEPINGGAN BOUY NOL SAMPAI MANGGAR BATAKAN KELANDASAN | 1. <u>OLI BOOM</u> 2. <u>OIL SKIMER</u> | Hasil kegiatan dari tgl 1 s/d 4 Apr 2018 total 30 KI (Ditampung diatas kapal) |

Catatan:

1. Lokasi penampungan di PT. Pertamina Balikpapan antara lain :
 - A. Jumbo bag berjumlah 26 kantong
 - B. Dalam bentuk penampungan drum 31 drum

2. Untuk AHTS Celebes dan AHTS Kiteway ditampung di atas kapal masing-masing





Kegiatan Penanggulangan Pencemaran Minyak di Perairan Balikpapan

HARI KAMIS, TANGGAL 05 APRIL 2018

| Lokasi | Tim | Kapal 1 | Kapal 2 | Peralatan | Personeil | PIC |
|---|---|---|---|--|---|---|
| Puskodal Puskodal Puskodal Marine Marine Drone | | | | | | Agus Pranoto Sutedjo Oly Setyawan(HSSE) RM Dani Badarudin Amin |
| ZONA I Pangkalan LLP (Jetty) -Semayang- Kp. Baru | Alpha 1 Alpha 2 Alpha 3 Alpha 4 | Aluminium 1 Aluminium 2 Mooring Boat 1 Mooring Boat 2 | | Pompa Di spersant + OSD Pompa Di spersant + OSD Absorbent Absorbent | LLP 2 orang + MG STS 1 orang LLP 2 orang + MG STS 1 orang MG STS 2 orang MG STS 2 orang | Bayu, Aryanto, Panji, Adhika, Lordy, Yusept, Adi (HSSE) |
| ZONA II Rede/ Kolam Labuh | Beta 1 Beta 2 Charlie 1 Charlie 2 Charlie 3 Charlie 4 Charlie 5 Charlie 6 Charlie 7 | TB Tunda Rahayu TB Transko Camar Locolina V RIB 1 Transko Celebes RIB 2 Transko Celebes speed sewa speed sewa speed sewa speed sewa | TB Leo Mariner TB Delta 1 PB Mandau | Oil Boom + Skimmer (OSCT) + Ponton Oil Boom + Skimmer (OSCT) + Ponton kecil Oil Boom + Pompa Dispersant + OSD Absorbent Absorbent Absorbent Absorbent Absorbent | LLP 2 orang + MG STS 1 orang LLP 2 orang + MG STS 1 orang LLP 1 orang + MG STS 2 orang LLP 1 orang + MG STS 2 orang LLP 1 orang + PCF 2 orang LLP 1 orang + PCF 2 orang LLP 1 orang + PCF 2 orang | Khairul Saleh Ginjar Wanda |
| ZONA III Pantai Monpera | | | | | | |
| ZONA IV Outer Pantai | Delta 1 Delta 2 | AHTS Celebes AHTS Kitiway | TB Prosper TB Denada | Oil Boom + Skimmer (PHM) Oil Boom + Skimmer (Chevron) | | Salahuddin Lukman |

| TIM | NAMA KAPAL | AREA KEGIATAN | PERALATAN DI ATAS KAPAL | MINYAK YANG TERKUMPUL |
|-------------|---------------------------------------|--|---|-----------------------|
| TIM KE SATU | TB. TRANSKO CAMAR TB. TUNDA RAHAYU | ZONA REDE/KOLAM BANDARA II | 4. <u>OLI BOOM</u> 5. <u>OIL SKIMER (OSCT)</u> 6. <u>PONTON</u> | |
| TIM KE DUA | TB. LEO MARINIER TB. DELTA I | AREA KELANDASAN SAMPAI DENGAN PERTAMINA DAN SEKITARNYA. | 4. <u>OLI BOOM</u> 5. <u>OIL SKIMER (OSCT)</u> 6. <u>PONTON KECIL</u> | |
| TIM KETIGA | TB. LOCOLINA V PB. MANDAU | PANTAI MENPORA | 3. <u>OLI BOOM</u> 4. <u>POMPA DISPERSAN</u> | |
| TIM KEEMPAT | AHTS. CELEBES TB. PROSPER | DI AREA SEPINGGAN BOUY NOL SAMPAI MANGGAR BATAKAN KELANDASAN | 5. <u>OLI BOOM</u> 6. <u>POMPA DISPERSAN</u> 7. <u>OSD</u> 8. <u>ABSORBENT</u> | |
| TIM KELIMA | AHTS. KITEWAY TB. DENADA | DI AREA SEPINGGAN BOUY NOL SAMPAI MANGGAR BATAKAN KELANDASAN | 3. <u>OLI BOOM</u> 4. <u>OIL SKIMER</u> | |

Catatan:

1. Lokasi penampungan di PT. Pertamina Balikpapan antara lain :
 - A. Jumbo bag berjumlah 26 kantong
 - B. Dalam bentuk penampungan drum 31 drum
2. Untuk AHTS Celebes dan AHTS Kiteway ditampung di atas kapal masing-masing



Kapal Patroli KN.P.555 dan KN.P.349
yang Sedang Melakukan Pengawasan di Perairan Balikpapan

MARPOLEX DRILL



PENDAHULUAN

- Berkenaan dengan telah ditandatangani *MoU Sulawesi Sea Oil Spill Network Plan* oleh Pemerintah Indonesia, Philippines dan Malaysia tahun 1981
- Dalam rangka menguji coba efektifitas MoU dimaksud **maka sejak tahun 1986** secara berkala telah diadakan Latihan Regional *Marine Pollution Exercise (MARPOLEX)* dengan bergantian sebagai tuan rumah penyelenggara antara Instansi Pelaksana yakni Direktorat Jenderal Perhubungan Laut-Indonesia dan *Philippine Coast Guard*
- Latihan terakhir pada **tahun 2005 Indonesia** sebagai tuan rumah (dilaksanakan di perairan Sorong-Papua Barat)
- Sedangkan **tahun 2007 Philippine** sebagai tuan rumah (dilaksanakan di perairan *Iloilo-Philippine*)

2

TUJUAN MoU SULAWESI SEA OIL SPILL RESPONSE NETWORK PLAN

- a. Mengadakan tindakan yang tepat untuk mengendalikan pencemaran lingkungan yang bersumber dari tumpahan minyak ke perairan akibat kecelakaan maupun unsur kesengajaan
- b. Mengurangi kerusakan lingkungan akibat tumpahan minyak
- c. Mengkoordinasikan dan mengintegrasikan tindakan dan usaha negara-anggota dalam menanggulangi tumpahan minyak
- d. Menyediakan Informasi Fasilitas dan Peralatan operasi anti-pollution
- e. Memfasilitasi operasi penanggulangan serta perawatan dan pemeliharaan peralatan di Davao Training Center
- f. Meningkatkan kapasitas penanggulangan tumpahan negara-anggota
- g. Mengadakan Pelatihan antar negara anggota secara periodik

3

PLANNING & SIGNING CONFERENCE OF REGIONAL MARPOLEX 2009

- Dalam rangka menyusun Rencana Latihan Regional 3 (tiga) negara umumnya didahului oleh kegiatan *Planning and Signing Conference of Regional Marpolex 2009* (telah dilaksanakan akhir November 2008 di Manila)
- Delegasi Indonesia diwakili Ditjen Hubla, TNI AL, BPMIGAS/KKKS TOTAL Indonesiae dan PERTAMINA
- Telah disepakati **Indonesia** sebagai tuan rumah penyelenggara *Regional Marpolex'09* dengan kesepakatan:
 - ❖ Waktu pelaksanaan latihan tanggal **14-16 Juli 2009**
 - ❖ Berlokasi di **perairan Balikpapan**

4

TUJUAN LATIHAN REGIONAL MARPOLEX 2009

- Menguji dan mengevaluasi kemampuan menanggulangi kejadian tumpahan minyak besar yang dekat maupun di sepanjang garis pantai Indonesia, dan Philippine.
- Menguji dan mengevaluasi keefektifan Sulawesi Sea Oil Spill Response Network Plan.
- Menguji prosedur dari kemampuan penanggulangan tumpahan minyak dari Indonesia, dan Philippine dengan partisipasi Japan Coast Guard serta kemungkinan peningkatan kerjasama.
- Mencapai tujuan yang ditetapkan dalam Sulawesi Sea Oil Spill Response Network Plan.

5

TUJUAN LATIHAN (lanjutan)

- Melatih serta meningkatkan kerjasama dan kemampuan Pemadaman Kebakaran, SAR dan Penanggulangan Tumpahan Minyak.
- Melatih perencanaan, komando dan pengendalian operasi Pemadaman Kebakaran, SAR dan Penanggulangan Tumpahan Minyak yang terintegrasi.
- Memberikan dasar kerjasama yang efektif antara Direktorat Jenderal Perhubungan Laut, *Philippine Coast Guard* dan *Japan Coast Guard*.
- Mendorong partisipasi dan keterlibatan *stake holders* dari Industri perminyakan dalam usaha bersama mengontrol dan menanggulangi tumpahan minyak.

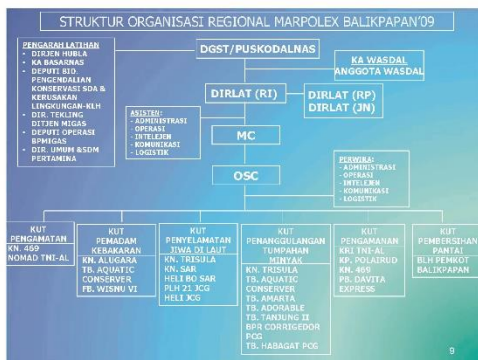
6

NATIONAL TRANSPORTATION SAFETY COMMITTEE

Ever Judger, Balikpapan Bay, 30 March 2018

| ORGANISASI TUGAS | | |
|------------------|-----------------------------|---|
| NO | PERENCANA LATIHAN | NAMA |
| 1 | Exercise Co-director | EKA SUKMAWATI/DJPL |
| 2 | Asst. Exercise Co- Director | SUDIYONO/DJPL |
| 3 | Operation Planner | ZULKARNAIN/DJPL KOL TEDDY SUTEDJO/BASARNAS |
| 4 | Administrative Planner | LUSI ANDAYANI /DJPL JOKO SUSILO /PT.PERTAMINA ARUDJI WAHYONO/PT.CHEVRON |
| 5 | Intelligence Planner | MARWANSYAH/DJPL |
| 6 | Logistic Planner | RUDI SUMARNO/DJPL M. NAJIB/PT. TOTAL INDONESIA |
| 7 | Communications Planner | SENTOT B. ISMOYO/KADISNAV ROSMAN IFZAN/PT.PERTAMINA |

| NO | PELAKU LATIHAN | NAMA |
|----|------------------------------|--|
| 1 | Commandant Task Group | A. KADIR KATERRU (MC) CAPT. GAJAH ROSENO (OSC) |
| 2 | Deputy Commandant Task Group | JULI RUSDJANTO (BPMIGAS/TOTAL INDONESIA) GHUFRON MUARIF (PERTAMINA UP V) |
| 3 | Operation Officer | SONNY MUKTI UTOMO (ADPEL Balikpapan) PONTAS SIREGAR (ADPEL Balikpapan) HASAN ALWIE (PERTAMINA UP V) YONG ARDINAL (BPMIGAS/C/Co) |
| 4 | Communication Officer | GUSTAF ADRIAN LOESI (SROP BALIKPAPAN) DIDIK KUSDIHANTO (SROP SAWARINDA) AGUS ANSIAH (PERTAMINA UP V) |
| 5 | Logistic Officer | HARYONO (ADPEL Balikpapan) SWASTANTO ADJI (ADPEL Balikpapan) BURWITO (ADPEL Balikpapan) |
| 6 | Intelligence Officer | KARNADI EDDY PRANOTO (ADPEL Balikpapan) BACHDARUDDIN (ADPEL Balikpapan) ZULKIYAH (ADPEL Balikpapan) |
| 7 | Administrative Officer | WARSONO (ADPEL Balikpapan) WARSINI (ADPEL Balikpapan) |



| SEKRETARIAT LATIHAN | | |
|--|---|---|
| * DIREKTORAT KESATUAN PENJAGAAN LAUT DAN PANTAI Telp. 021-3505550, 021-3505006 ext. 4090/4091 Fax. 021-3506530, 3507574 Email: pmpba_kplp@yahoo.co.id | | |
| * ADPEL BALIKPAPAN Telp. 0542-422096 Fax. 0542-427368 | | |
| NO | SEKRETARIAT | NAMA |
| 1 | Officer in charge (OIC) | LUSI ANDAYANI (DJPL) |
| 2 | Asst. OIC | WARSONO (ADPEL Balikpapan) |
| 3 | Protocol Officer | ETI ACHRIAH (ADPEL Balikpapan) |
| 4 | Humas | SILIO DARMOHJO (DJPL), PETI (ADPEL Balikpapan) |
| 5 | Liaison Officer JCG | PURNOMO (DJPL), WAKDI (ADPEL Balikpapan) |
| 6 | Liaison Officer PCG | DIDI SUPRIYADI (DJPL), HARYONO (ADPEL Balikpapan) |
| 7 | Liaison Koordinator untuk kebutuhan VIP | A.U. AKBAR (ADPEL Balikpapan) |

| RANGKAIAN KEGIATAN REGIONAL MARPOLEX 2009 | | | |
|---|--|-------------------|-----------------------------|
| No | Kegiatan | Tanggal | Penanggungjawab |
| 1 | Sosialisasi Exercise Plan Regional MARPOLEX 2009 | 28 April | KLH/BLH Balikpapan |
| 2 | Inspeksi Peralatan OSPAR di Balikpapan | 05 Mei | PERTAMINA |
| 3 | RAKOR Tim Daerah | 06 Mei | Adpel Balikpapan |
| 4 | Workshop Improvement Protap Penanggulangan Tumpahan Minyak Pelabuhan di Balikpapan | 19-20 Mei | Dijepin Hubla |
| 5 | Penyusunan Perintah Operasi (Operations Order) di Balikpapan | 02-03 Juni | Dijepin Hubla |
| 6 | Inspeksi Peralatan BPMIGAS/PT. Total Indonesia di Samarinda | TBAL | BPMIGAS/PT. Total Indonesia |
| 7 | Pre Exercise PTMP Area VI BPMIGAS di Senepah | TBAL | BPMIGAS/PT. Total Indonesia |
| 8 | Paparan Rencana Latihan kepada Pimpinan Tim Nasional (Dijepin Hubla, BASARNAS, KLH, BPMIGAS, PERTAMINA, TNI-AL) di Jakarta | Hinggu Ke-23 Juni | Dijepin Hubla |
| 9 | Pre Exercise/Peningkatan Keterampilan - Class, tentatave bertempat di Hotel Bahana Surya/Blue Sky - Communication Exercise, bertempat di SROP Balikpapan - Deployment, bertempat di PERTAMINA Balikpapan | 30 Juni - 03 Juli | Dijepin Hubla |
| 10 | Courtesy Call Tim Nasional (dipimpin Dijepin Hubla dan pimpinan BASARNAS, KLH, BPMIGAS, PERTAMINA, TNI-AL) kepada Gubernur Kaltim di Samarinda | 13 Juli | Dijepin Hubla |
| 11 | Pelaksanaan Regional MARPOLEX 2009 di Balikpapan | 14-16 Juli | Dijepin Hubla |

| JADWAL PELAKSANAAN REGIONAL MARPOLEX'09 | |
|---|----------------------|
| Kedatangan Unsur (Senin, 13 Juli 2009) | |
| Kegiatan | Lokasi |
| Kedatangan Unsur Latihan | Pelabuhan Balikpapan |
| Acara Penyambutan | Pelabuhan Balikpapan |
| Courtesy Call | Kantor Gubernur |
| Welcome Party oleh RI | Gran Senyur |

| Hari Pertama – Pembukaan (Selasa, 14 Juli 2009) | |
|---|---------------------------|
| Kegiatan | Lokasi |
| Upacara Pembukaan | Banoa Patra - PERTAMINA |
| Deklarasi Permulaan Latihan | Banoa Patra - PERTAMINA |
| Press Conference | TOTAL Community Center |
| Pre-sail Conference | Solar Room PERTAMINA RU V |
| Controllers Meeting | Solar Room PERTAMINA RU V |
| Task Group Conference | Solar Room PERTAMINA RU V |
| Latihan Komunikasi | SROP Balikpapan |
| Table Top Exercise | SROP Balikpapan |
| Dinner Party oleh JCG | Gran Senyur |



13

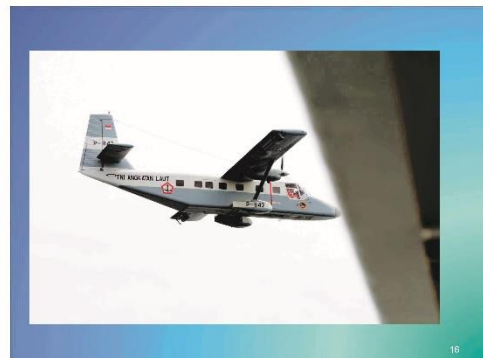


14

**Hari Kedua – Manuvra di Laut
(Rabu, 15 Juli 2009)**

| Tahap | Kegiatan | Lokasi |
|-------|--|------------------------------|
| I | Persiapan | Area Dermaga |
| II | Operasi Pengamatan | Lokasi Latihan |
| III | Operasi Pemadam Kebakaran | -sda- |
| | Operasi SAR | -sda- |
| IV | Operasi Penanggulangan Tumpahan Minyak | -sda- |
| | Operasi Pembersihan Pantai | -sda- |
| | Operasi Recovery Peralatan | -sda- |
| V | FINEX | -sda- |
| VI | Sailing Pass | -sda- |
| VII | Kaji Ulang | Solar Room PERTAMINA RU V |
| | Dinner Party oleh PCG | |

15



16



17



18



**Hari Ketiga – Penutupan
(Kamis, 16 Juli 2009)**

| Kegiatan | Lokasi |
|-------------------------|-------------------------|
| Upacara Penutupan | Banoa Patra - PERTAMINA |
| Fellowship | -sda- |
| Keberangkatan Kapal JCG | -sda- |
| Keberangkatan Kapal PCG | -sda- |

**SUSUNAN UPACARA
PEMBUKAAN DAN PENUTUPAN**

| Opening Ceremony | |
|---|---|
| Penaikan Bendera (diiringi Lagu Kebangsaan) | Bendera RI-RP-JN |
| Sambutan Pembukaan (Opening Remarks) | Commandant PCG Commandant JCG DIRJEN HUBLA |
| Joint Declaration of the Start Exercise | RI-RP-JN Co-director |
| Sambutan Kehormatan (Speech Of the Guest of Honor) | - Gubernur KALTIMI - Menteri Perhubungan (tentative) |
| Press Conference | Commandant PCG Commandant JCG DIRJEN HUBLA |
| Closing Ceremony | |
| Penurunan Bendera (diiringi Lagu Kebangsaan) | Bendera RI-RP-JN |
| Joint Declaration of Termination of Exercise | RI-RP-JN Co-Director |
| Penyerahan Piagam Penghargaan | RI-RP-JN Co-Director |
| Sambutan Penutupan (Closing Remarks) | Commandant PCG Commandant JCG DIRJEN HUBLA |

TUGAS RI

- Menyediakan Personil Direktorat Latihan, Perencana dan Pengawas dan Pengendali (WASDAL) serta Pengamat (*Observer*).
- Menyediakan Sekretariat Latihan.
- Menyediakan Kapal dengan oil boom dan oil skimmer serta peralatan pendukung lain (DJPL, BPMIGAS/KKKS, PERTAMINA).
- Menyediakan Kapal Pemadam Kebakaran (DJPL, BPMIGAS/KKKS, PERTAMINA).
- Menyediakan Pesawat untuk Pengamatan Udara (TNI-AL) dan SAR (BASARNAS).
- Menyediakan Kapal SAR (BASARNAS) dan Pengamanan (TNI-AL).
- Menyediakan Kapal untuk Komando dan Pengendali Latihan serta untuk mengakomodasi VIP (DJPL).

GARIS BESAR SKENARIO LATIHAN

PADA TANGGAL 14 JULI 2009 PUKUL 08.00 WIB, MT. OIL SPILLER GT 200.000 BERBENDERA INDONESIA, MEMUAT 1.300.000 TON MINYAK MENTAH, BERTABRAKAN DENGAN KAPAL CARGO PADA POSISI 01°22'30"LS/116°56'00"BT.

AKIBAT TUBRUKAN KAPAL MT. OIL SPILLER MENGALAMI KECOCORAN TANGKI DAN DIPERKIRAKAN MINYAK TUMPAH 700 LITER PER MENIT. TERJADI KEBAKARAN PADA KAPAL TANKER DAN TERDAPAT BEBERAPA PENUMPANG JATUH KE LAUT.

PERMINTAAN OPERASI PENYELAMATAN, PEMADAMAN KEBAKARAN DAN PENANGGULANGAN TUMPAHAN MINYAK TERPADU AKAN DILAKSANAKAN DENGAN PUSAT KENDALI DI KANTOR ADPEL BALIKPAPAN, DAN AKIBAT OPERASI PTM DI LAUT TIDAK SEPENUHNYA SEMPURNA, SEHINGGA TERDAPAT MINYAK YANG LOLOS KE PANTAI.

KST PEMBERSIHAN PANTAI YANG DIKOORDINIR BLH BALIKPAPAN MULAI MELAKUKAN AKSI PERLINDUNGAN PANTAI.

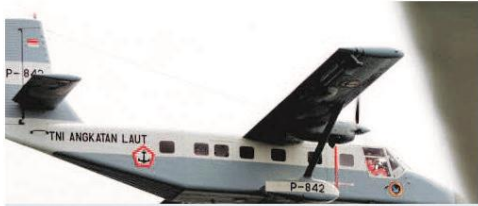
**SUSUNAN ACARA
KAJI ULANG (*CRITIQUE*)**

Kaji Ulang (*Critique*) tentative dilaksanakan pada jam 14.00 tanggal 15 Juli 2006, bertempat di Solar Room PERTAMINA RU V dengan susunan acara sebagai berikut:

| | |
|--------------------|----------------------------------|
| Sambutan Pembukaan | Japan Exercise Co. Director |
| Overview Latihan | RI Exercise Chief Controller |
| Sambutan Penutupan | Philippine Exercise Co. Director |

31

TERIMA KASIH



GUIDELINES
MARPOL EXERCISE BALIKPAPAN 2009



BALIKPAPAN - 14-16 JULY 2009



RESCUE OPERATION

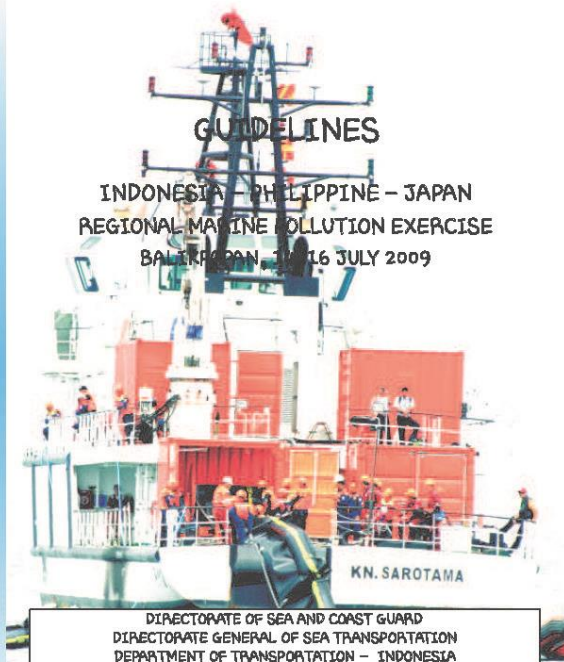


OIL SPILL RESPONSE OPERATION



FIRE FIGHTING OPERATION

GUIDELINES
INDONESIA - PHILIPPINE - JAPAN
REGIONAL MARINE POLLUTION EXERCISE
BALIKPAPAN - 14-16 JULY 2009



DIRECTORATE OF SEA AND COAST GUARD
DIRECTORATE GENERAL OF SEA TRANSPORTATION
DEPARTMENT OF TRANSPORTATION - INDONESIA

NATIONAL TRANSPORTATION SAFETY COMMITTEE

Ever Judger, Balikpapan Bay, 30 March 2018

I

HISTORICAL OF THE EXERCISE

The Marine Pollution Exercise (MARPOLEX) is conducted every two years between the Directorate General Sea Communication of the Republic of Indonesia and Philippine Coast Guard alternately hosting the exercise.

This activity was started in 1986. MARPOLEX Balikpapan'09 is the 16th (sixteenth) bilateral exercise on marine pollution, the last exercise code named MARPOL Iloilo'07 was held in the waters of Guimaras Province, the Republic Philippine on 24 to 26 April 2007.

The idea of having a bi-annual MARPOLEX began when the prospect of major oil spill in the Sealane between Lombok, Makassar Strait and Sulawesi Sea has grown in real terms since the implementation of the 3.5 meters keel to sea floor clearance for bulk oil carriers was enforced.

In recognition of this real risk, the Governments of the Republic of Indonesia, Philippines and Japan through their respective representatives drew-up an action plan for the establishment of pollution equipment center to protect this sealane. This pollution equipment center was formally established in Balikpapan, Indonesia.

The realization of the Oil Spill Prevention and Response (OSPAR) Project in line with provision of the Oil Spill Preparedness and Response Cooperation Convention (OPRC) paved the way for Japan Maritime Safety Agency-JMSA now the Japan Coast Guard-JCG to joint the MARPOLEX, which was held in the Philippine in 1995. The integration of JCG has greatly enhanced this exercise and has transformed

X

RI SEKRETARIAT

SEKRETARIAT JAKARTA

DIRECTORATE SEA AND COAST GUARD :
Jl. Medan Merdeka Barat No. 8
Karya Bld. Floor 13th, Jakarta
Tel. 62-21-3505550 Ext. 4011/4092
62-21-3505705 or 62-21-3505687
Fax. 62-21-3506530, 3506207
Email. pmpba_kplp@yahoo.co.id

Contact Person :

- Sukirno - 08128895460
- Rami - 081310037510
- Efy Achfiah - 081314775760
- Ahmad Fathoni - 085225904040
- Jan Piter Daniel - 081376083115

SEKRETARIAT PORT ADMINISTRATION OF BALIKAPAN

Jl. Yos Sudarso No.1 Balikpapan
Tel. 62-542-422096
Fax 62-542-736276

Contact Person :

- Warseno - 08111899157
- Warsini - 08125415962

PUBLIC RELATION :

- Silo Darmono - 08128085070
- Fety - 081520403252

LIAISON OFFICER

- Liaison Coordinator for VIP Requirement
- Ali Akbar - 08125412315
- L.O. for PCG
- Purnomo - 081319988005
- Wakidi - 0811539981
- L.O. for JCG
- Didi Supriadi - 08128146912
- Haryono - 08127589132

IX

RI TASK ORGANIZATION

PLANNER

- EXERCISE CO-DIRECTOR - EKA SUKMAWATI
- ASST EXERCISE CO-DIRECTOR - CAPT. SUDIONO
- OPERATION CHIP PLANNER - ZULKARNAIN
- COMMUNICATION PLANNER - SENTOT B ISMOYO
- INTELLIGENCE PLANNER - YUSUF
- LOGISTIC PLANNER - RUDI SUMARNO
- ADMINISTRATION PLANNER - LUSI ANDAYANI

CONTROLLER

- CHIEF CONTROLLER - CAPT. SALEHJUDIN
- DEPUTY CHIEF CONTROLLER - BUDI INDIANTO
- SECRETARY CONTROLLER - AGUS SURYONO
- CHIEF OF OIL SPILL CONTROLLER - CAPT. CAROLUS SANGAJI
- CHIEF OF FIRE FIGHTING CONT. - EFFRIZON
- CHIEF OF RESCUE CONTROLLER - CAPT. TEDDY MAYANDI
- CHIEF OF SECURITY CONTROLLER - M. DAHRI
- CHIEF OF BEACH CLEAN UP - HENI AGUSTINA

TASK GROUP

- COMMANDANT TASK GROUP/CTG - A. KADIA KATERAU
- DEPUTY CTG - CAPT. GAJAH ROOSENO
- OPERATION OFFICER - HARYONO
- COMMUNICATION OFFICER - GUSTAF ADRIAN LOESI
- LOGISTIC OFFICER - M. NAJIB
- CTU OIL SPILL RESPONSE - CO. KN TRISULA
- CTU RESCUE - CO. RB, 306
- CTU FIRE FIGHTING - CO. FB, WISNU VI
- CTU SECURITY - CO. KRI SULUH PARI
- CTU CLEAN UP BEACH - BLH BALIKAPAN

II

OBJECTIVE OF THE EXERCISE

- a. To test and evaluate the oil spill response capability of the Republic of Indonesia, Republic of Philippine and Japan particularly during major oil spillage occurring near or along the shoreline of either the Indonesia or Philippine
- b. To test and evaluate the effectiveness of the SULAWESI SEA OIL SPILL RESPONSE NETWORK PLAN.
- c. To test current procedures of the Oil Spill Recovery and Response Capability of the Indonesia and Philippines with the participation of Japan Coast Guard and seek further improvement.
- d. To accomplish the objective set forth by the SULAWESI SEA OIL SPILL RESPONSE NETWORK PLAN
- e. To train and enhance cooperation and capability in fire fighting, rescue and oil spill recovery operation
- f. To exercise participants in planning, command and control, conduct of integrated operation in rescue, fire fighting and oil spill recovery.
- g. To provide a firm basis for the effective working relationship among DGGC, PSG and JCG.
- h. To encourage the participation and involvement of oil companies of concerned countries in the common effort to combat, control and recover oil spillage

III

SCENARIO

On 15 July 2009 at 04.00 AM, M/T Oil Spiller, a 200,000 tonner bulk oil carrier registered in Indonesia carrying 1.3 million barrels of oil collided with a cargo vessel position at Latitude 01° 22' 30" S and Longitude 116° 56' 00" E (5 NM, SE of Port of Balikpapan).

M/T oil spiller sent an emergency distress signal reporting the accident to Coastal Station of Balikpapan and to the Port of Administrator, that 9 (nine) crew abandoned, fire broke out, and 30 cm x 155 cm crack amidship starboard side one foot above waterline, oil spill 7 thousand liters per minute and request for rescue, fire fighting and oil spill recovery assistance.

VII
I

CLOSING CEREMONY PROGRAM
JULY 16, 2009 : 08,00 LT

| No | Program | Remark |
|----|--|--|
| 1 | Flag Lowering : -Republic Indonesia -Republic Philippine -Japan | National Anthems : -Republic Indonesia -Republic Philippine -Japan |
| 2 | Report Exercise Activities | RI Chief Controller |
| 3 | Joint Declaration of Termination Exercise | Exercise Co-Director 3 (three) Country : - RI-DGST - Philippine Coast Guard - Japan Coast Guard |
| 4 | Closing Remarks | Commandant Japan Coast Guard |
| 5 | Closing Remarks | Commandant Philippine Coast Guard |
| 6 | Closing Remarks | Director General of Sea Transportation |

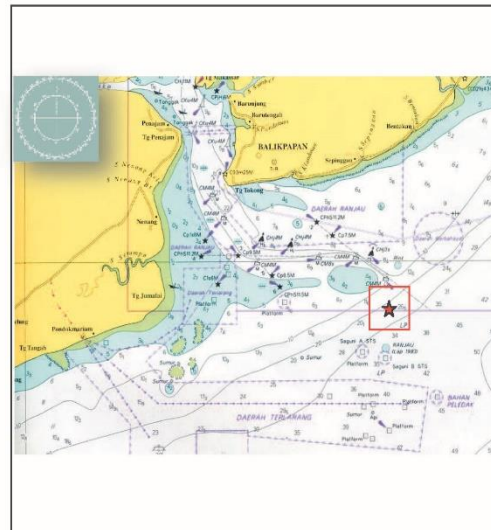
VI
I

OPENING CEREMONY PROGRAM
JULY 14, 2009 : 08,00 LT

| No | Program | Remark |
|----|---|---|
| 1 | Flag Raising : -Republic Indonesia -Republic Philippine -Japan | National Anthems : -Republic Indonesia -Republic Philippine -Japan |
| 2 | Opening Remarks | Commandant Japan Coast Guard |
| 3 | Opening Remarks | Commandant Philippine Coast Guard |
| 4 | Opening Remarks | Director General of Sea Transportation |
| 5 | Joint Declaration of the Start Exercise | Exercise Co-Director RI-RP-JN |
| 6 | Speech of the Guest of Honor | Governor of East Kalimantan |
| 7 | Press Conference | • Directorate General of Sea Transportation RI • Commandant Philippine Coast Guard • Commandant Japan Coast Guard |

IV

EXERCISE AREA



NATIONAL TRANSPORTATION SAFETY COMMITTEE

Ever Judger, Balikpapan Bay, 30 March 2018

V SCHEDULE OF ACTIVITIES

| PRE-EXERCISE JULY 13 to 14 JULY 2009 (MONDAY to TUESDAY) | | |
|---|--|--|
| DATE/TIME | ACTIVITIES | LOCATION |
| MONDAY 13 July 2009 | Arrival of Participating Unit (BAP PAMPANGA (SARF-003), TB. HABAGAT, PLH. MIZUHO, KN. TRISULA, KAI, SULATN NUKU) | Wharf VI & VII PERTAMINA RU V Balikpapan |
| 13 1900H July 2009 | Welcome Party to be hosted by RI-Directorate General of Sea Transportation | Grand Senyur Hotel |
| TUESDAY 14 0800H July 2009 | OPENING CEREMONY MARPOLEX Balikpapan'09 | Banua Patra PERTAMINA RU V |
| | a. Joint Declaration of the Start of Exercise (Exercise Co-Director RI-AP-JN) | -do- |
| | b. Press Conference by Indonesia, Philippine, Japan and Major City of Balikpapan | TOTAL Community Center |
| | c. Pre-sail Conference | SOLAR Room PERTAMINA RU V |
| | d. Task Group Conference | -do- |
| | e. Controller Conference | -do- |
| | f. Lunch | -do- |
| | g. Tactical Floor Game | -do- |
| | h. Communication Work Up and Drill | Coastal Station Radio |
| | i. Equipment Check | Wharf VI & VII PERTAMINA RU V Balikpapan |
| 14 1900H July 2009 | Dinner Party to be hosted by Japan Coast Guard | Grand Senyur Hotel |

VI PARTICIPANT

| REPUBLIC OF INDONESIA | |
|------------------------|--|
| 1. | KN. MITHUNA - CASUALTY SHIP |
| 2. | KN. ALUGARA - VIP/COMMAND SHIP |
| 3. | KN. TRISULA - FF & OIL SPILL |
| 4. | TB. AQUATIC CONSERVERA - FF, OIL SPILL |
| 5. | TB. AMARTA - OIL SPILL |
| 6. | TB. ADORABLE - OIL SPILL |
| 7. | TB. TANJUNG II - OIL SPILL |
| 8. | FB WISNU VI - FIRE FIGHTING |
| 9. | RB TRISULA - RESCUE |
| 10. | RB 306 - RESCUE |
| 11. | HELLY BO SAR - RESCUE |
| 12. | KAI, SULUH PARI - SECURITY |
| 13. | KP. STARNAJA - SECURITY |
| 14. | KN. 469 - SECURITY |
| 15. | PB. DAVITA EXPRESS - SECURITY |
| 16. | NOMAD P-897 - AIR SURVEILLANCE |
| 17. | KN. 469 - SEA SURVEILLANCE |
| 18. | AMBULANCE - MEDICAL TEAM |
| REPUBLIC OF PHILIPPINE | |
| 1. | BAP PAMPANGA (SARF-003) - SAR |
| 2. | TB. HAGABAT - OIL SPILL, FIRE FIGHTING |
| JAPAN | |
| 1. | PLH MIZUHO - RESCUE |
| 2. | HELLY 212 BELL - AIR SURVEILLANCE |

EXERCISE PROPER JULY 15, 2009 (WEDNESDAY)

| DATE/TIME | ACTIVITIES | LOCATION |
|-----------------------|--|---------------------------------|
| 15 0600H July 2009 | Sortie Out | |
| 15 0800H July 2009 | Declaration of Start Exercise - Exercise Co-Director RI | Designated Location |
| | a. Surveillance Operation | - do - |
| | b. Security Operation | - do - |
| | c. Fire Fighting Operation | - do - |
| | d. Rescue Operation | - do - |
| | e. Oil Spill Response Operation | - do - |
| | f. Clean Up Beach Operation | - do - |
| | g. Equipment Recovery | - do - |
| | h. FINEX (Final Exercise) | - do - |
| | i. Sailing Pass | - do - |
| | j. Lunch | - do - |
| 15 1500H July 2009 | Exercise Critique a. Opening Remarks : RP- Exercise Co Director b. Overview of the exercise : Chief Controller RI-AP-JN c. Closing Remarks : RI Exercise Co-Director | Solar Room PERTAMINA RU V |
| 15 1900H July 2009 | Dinner Party to be hosted by Philippine Coast Guard | Grand Senyur Hotel |

POST EXERCISE JULY 16, 2009 (THURSDAY)

| DATE/TIME | ACTIVITIES | LOCATION |
|-----------------------|--|--|
| 16 0800H July 2009 | CLOSING CEREMONY : a. National Anthems RI- AP-JN b. Report Exercise Activities-chief Controller c. Joint Declaration of Termination Exercise (Exercise Co-Director RI- JP-JN) d. Closing Remarks- Commandant JCG e. Closing Remarks- Commandant PCG f. Closing Remarks-DGSC | Banua Patra PERTAMINA RU V |
| 16 1000H July 2009 | Sport or Extra Curricular Activities | Designated Location |
| 16 0800H July 2005 | Fellowship | Wharf VI & VII PERTAMINA Balikpapan |
| | Departure of Participating Unit | |

COMMENTS FROM DIRECTORATE GENERAL OF SEA TRANSPORT, MINISTRY OF TRANSPORT

MINISTRY OF TRANSPORTATION REVIEW ON KNKT'S FINAL DRAFT MARINE ACCIDENT INVESTIGATION REPORT

| No. | Part | Page/ Paragraph | KNKT Report | Review/Propose | Description |
|-----|---|----------------------------------|---|--|--|
| 1. | I. FACTUAL INFORMATION I.1 THE ACCIDENT | Page 3 Par. 6, last sentence. | On her starboard side, there was the Pertamina Refinery Unit V (Pertamina RU V), the owner of one of those pipes. | On her starboard side, there was the Pertamina Refinery Unit V (Pertamina RU V), the owner of one of the pipes. | Wording suggestion. |
| 2 | I. FACTUAL INFORMATION I.1 THE ACCIDENT | Page 4 Par 1 | After this, neither pilot nor pilot station informed this situation to any other parties. | Afterwards, neither pilot nor pilot station informed this situation to any other parties. | Wording suggestion. |
| 3 | I.3.3.2. Oil Spill Response Procedure and Drill | Page 18 Par 4 | Pertamina had the Procedure of Oil Spill in the Waters Countermeasure which states all stakeholders' role when the oil spill occurs. The procedure referred to the Indonesian Shipping Act No. 17 Year of 2008, Presidential Regulation of the Republic of Indonesia No. 109 Year of 2006 on the Countermeasures of Emergency Situation of Oil Spill in the Sea as well as Minister of Transportation Regulations No. 58 Year of 2013 on the Pollution Control in Waters and Ports. | Pertamina had the Procedure of Oil Spill in the Waters Response which states all stakeholders' role when the oil spill occurs, however it had not been legalized by the DGST. Thus, the content of the procedure had not been checked and tested as the standard Oil Spill Contingency Plan. The procedure referred to the Indonesian Shipping Act No. 17/2008, Presidential Regulation of the Republic of Indonesia No. 109/2006 on the Response of Emergency Situation of Oil Spill in the Sea as well as Minister of Transportation Regulations No. 58 Year of 2013 on the Pollution Response in Waters and Ports | According to the Minister of Transportation Regulation 58/2013, Pertamina as a company that has a risk of oil spill has to fulfill the requirements of pollution response, one of the requirements is an Oil Spill Contingency Plan. The requirements have to be checked and verified by Directorate General of Sea Transportation. The procedure that Pertamina has made by Pertamina itself, but it is not a fulfillment to the Minister of Transportation Regulation 58/2013. Note: after the oil spill incident in the Bay of Balikpapan, Pertamina RU V Balikpapan submitted proposal and documents as a |

NATIONAL TRANSPORTATION SAFETY COMMITTEE

Ever Judger, Balikpapan Bay, 30 March 2018

MINISTRY OF TRANSPORTATION REVIEW ON KNKT'S FINAL DRAFT MARINE ACCIDENT INVESTIGATION REPORT

| No. | Part | Page/ Paragraph | KNKT Report | Review/Propose | Description |
|-----|---|--|--|---|---|
| 4 | I.3.3.2. Oil Spill Response Procedure and Drill | Page 18 Par 4 3 rd sentence | Refer to the procedure, the action should be led by the Manager of Region Marine VI. | According to the Minister of Transportation Regulation 58/2013, the Leader of an oil spill response operation should be the Harbour Master. | fulfilment to pollution response requirements of Minister of Transportation Regulation 58/2013 to the Directorate General of Sea Transportation. Another proof that Pertamina has not comply the pollution response requirements of Minister of Transportation Regulation 58/2013. |
| 5 | I.3.3.2. Oil Spill Response Procedure and Drill | Page 19 Par 3 | Refer to the Presidential Regulation of the Republic Indonesia No. 109 Year of 2006 on the Countermeasures of Emergency Situation of Oil Spill in the Sea, particularly Article 6 paragraph (1) has stipulated that the leader of oil and gas business unit shall form Local Team for Emergency Situation Countermeasures of Oil Spill in the Sea (Local Team). Further, pursuant to Article 6 paragraph (2), has stipulated that in conducting emergency situation countermeasures of oil spill in the sea at Tier 1 stage, Local Team shall coordinate with the closest Local Harbour Master. Therefore, such Procedure was made to fulfill such requirement. In this matter, the Local Team from Pertamina as mentioned in such Procedure shall coordinate with the closest Local Harbour Master while conducting an emergency situation countermeasures as done by Pertamina on 31 March 2018. | Refer to the Presidential Regulation of the Republic Indonesia No. 109/2006 on the Response of Emergency Situation of Oil Spill in the Sea, particularly Article 6 paragraph (1) has stipulated that the leader of oil and gas business unit shall form Local Team for Emergency Situation Response of Oil Spill in the Sea (Local Team). Further, pursuant to Article 6 paragraph (2), has stipulated that in conducting emergency situation response of oil spill in the sea at Tier 1 stage, Local Team shall coordinate with the closest Local Harbour Master. Therefore, such Procedure was made to fulfill such requirement. In this matter, the Local Team from Pertamina as mentioned in such Procedure shall coordinate with the closest Local Harbour Master while conducting an emergency situation response as taken by Pertamina on 31 March 2018. | Instead of using word 'Countermeasures', the term commonly used is 'Response'. Please replace word 'Countermeasures' with 'Response' Wording suggestion. |

MINISTRY OF TRANSPORTATION REVIEW ON KNKT'S FINAL DRAFT MARINE ACCIDENT INVESTIGATION REPORT

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|-----|---|---|---|--|---------------------|
| 6 | I.3.3.3. The Procedure of Subsea Pipe Damage Assessment | Page 22 Par 7 | After underwater visual checking which conducted in several days since the mishap and strengthen with side sonar scan, on 4 April 2018 (5 days after the occurrence) Pertamina concluded that it's subsea pipeline was destroyed by external force. Pertamina was supported by Kepolisian Republik Indonesia Daerah Kalimantan Timur, PUSHIDROSAL, and another institution/agencies to find out such condition. | After underwater visual checking which conducted in several days since the mishap and strengthen with side sonar scan, on 4 April 2018 (5 days after the occurrence) Pertamina concluded that it's subsea pipeline was destroyed by external force. Pertamina was supported by Indonesian National Police Region of East Kalimantan, PUSHIDROSAL, and another institution/agencies to find out such condition. | Wording suggestion. |
| 7 | I.3.4.1. Oil Treatment and Fire Extinguishing | Page 23 Par 2 | Since the scale of the oil spill, the first movable oil boom engaged in the extinguishing process was less than the need. | Due to the scale of the oil spill, the first movable oil boom engaged in the extinguishing process was less than the need. | Wording suggestion |
| 8 | I.3.4.1. Oil Treatment and Fire Extinguishing | Page 24 Par 1 | The inadequacy of oil fire extinguishing made the fire take longer to be controlled. | The inadequacy of oil fire extinguisher made the fire take longer to be controlled. | Wording suggestion |
| 9 | I.3.4.2. The Procedure of oil Spill Contingency Plan | Page 24 Par 5 | Under the Indonesian Shipping Act No. 17 Year of 2008 Article 235 and Minister of Transportation Regulations No. 58 Year of 2013 on the Pollution Control in Waters and Ports, a Local Port should be able to face the oil spill which occurred in its working territory. | Under the Indonesian Shipping Act No. 17/2008 Article 235 and Minister of Transportation Regulations No. 58/2013 on the Pollution Response in Waters and Ports, a Local Port should be able to handle the oil spill which occurred in its working territory. | Wording suggestion |
| 10 | I.3.4.2. The Procedure of oil Spill Contingency Plan | Page 26 Par 1 2 nd sentence | The wide of the Balikpapan Bay made the effort impossible to be taken as there was no available long boom to block the channel bank to bank. | The breadth of the Balikpapan Bay made the effort impossible to be taken as there was inadequacy on the length of boom to block the channel bank to bank. | Wording suggestion |

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| No. | Part | Page/ Paragraph | KNKT Report | Review/Propose | Description |
|-----|--|---|---|--|---|
| 11 | I.3.4.3. Leadership in the Tier 1 | Page 26 Par 5 2 nd sentence | Refer to the Procedure of Oil Spill in the Waters Countermeasures, | Refer to the Procedure of Oil Spill Response in the Waters, | Wording suggestion |
| 12 | III. SUMMARY | Page 44 Par 1 | The oil spill on Balikpapan waters was due to primarily the lack of Bridge Resource Management amongst the Ever Judger's crew as well as the Pilot B. | The oil spill on Balikpapan waters was due to primarily the lack of Bridge Resource Management amongst the Ever Judger's crew. | According to Indonesian Shipping Act No. 17/2008, Article 137 Point (1): "Captain for a vessel 35 GT (Thirty Five Gross Tonnage) or above authorizes in law enforcement and is responsible for the safety, security and order of the vessel, seafarers and its cargo." The Article 199 Point (3) of the Shipping Act stipulates that: "Pilotage of a vessel does not reduce the authority and responsibility of the Captain" Furthermore, according to the Code of the Civil Law (Kitab Undang-undang Hukum Perdata) Article 1366 stipulates: "Every person is responsible not only for losses caused by his/her actions, but also for losses caused by his negligence or inadvertence." |

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| 13 | III.1. FINDINGS | Page 45 Part III.1.2 Offshore, point 8 th | The Master worked for more than 10 hours. | Deletion | Therefore the responsibility of the Captain of MV. Ever Judger is absolute. The working hour of the Master and all the seafarers of MV. Ever Judger is internal affairs between the seafarers and the Shipowner/shipping company. Therefore it should not be included as a finding. |
| 14 | Summary | III.1.2/ butir ke 3 | The technical guidelines refer to Presidential Regulation of the Republic of Indonesia No. 109 Year of 2006 on Countermeasures of Emergency Situation of Oil Spill in the Sea do not exist | Deletion | The technique of emergency oil spills response in the sea already exists and has been made by the Harbour Master and Port Office of Balikpapan and it was in accordance with Presidential Regulation 109/2006 by establishing the Balikpapan Oil Spill Response Team which involves several agencies and stakeholders. |
| 15 | FINDINGS | III.2.1 Butir ke 3 | The Local Harbour Master had a poor concern in developing fire and oil spill drill and procedure | Deletion | The Harbour Master and Port Office of Balikpapan has conducted fire fighting and oil spill response, the Harbour Master and Port Office of Balikpapan puts high attention and concerned with with firefighting and oil spill. |

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| 16 | FINDINGS | III.2.1 Butir ke 4 | The Local Harbour Master and Local Government had no procedure to response the oil spill | Deletion | KSOP Balikpapan telah memiliki SOP Penanggulangan tumpahan minyak Tier 1. Untuk Tier 2 kewenangan penyusunan SOP Penanggulangan Tumpahan Minyak berada di Bupati/Walikota/Gubernur Kalimantan Timur. KSOP sebagai salah satu anggota dan menjadi Mission Coordinator Tier 2 yang mempunyai tugas mengkoordinasikan Operasi Penanggulangan tumpahan Minyak. |
| 17 | FINDINGS | III.2.1 Butir ke 5 | There was no hotline number to report the oil spill | Deletion | Dalam pelaksanaan penanggulangan tumpahan minyak dibentuk posko penanggulangan tumpahan minyak Balikpapan yang melibatkan bbrrp stakeholder. |

COMMENTS FROM PELABUHAN INDONESIA BRANCH OF BALIKPAPAN

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| No. | Part | Page/ Paragraph | KNKT Report | Review/Propose | Description |
|-----|---|---------------------------|--|--|---|
| 1. | I. FACTUAL INFORMATION I.1. ACCIDENT | Page 2 Paragraph 5 & 6 | At about 21.54 LT the Ever Judger was approaching the northernmost buoy. The ship's speed was about 5 knots. The Master asked the Pilot B about the time to lower down the anchor at about one meter above the water surface. The Pilot B agreed with the Master. Afterwards, the Master ordered the CO in the Chinese language, through radio communication, to lower the anchor one shackle at water level. In replying to the Master order, the CO asked confirmation to the Master by mentioned the order as closed-loop communication. Afterwards, the Master acknowledged the CO's reply. About five minutes later, the CO reported to the Master that the lowering of the anchor was completed. The CO reconfirmed to Master about the length of the chain (one shackle at water level) to the Master. The Master, again, acknowledged it. | At about 21.54 LT the Ever Judger was approaching the northernmost buoy. The ship's speed was about 5 knots. The Master asked the Pilot B about the time to lower down the anchor at about one meter above the water surface. Pilot B directs the Master regarding anchorage location and to lower the anchor on standby position about one meter above water surface for anchorage preparation and agreed by the Master. Afterwards, the Master ordered the CO in the Chinese language, through radio communication, to lower the anchor one shackle at water level. In replying to the Master order, the CO asked confirmation to the Master by mentioned the order as closed-loop communication. Afterwards, the Master acknowledged the CO's reply. About five minutes later, the CO reported to the Master that the lowering of the anchor was completed. The CO reconfirmed to Master about the length of the chain (one shackle at water level) to the Master. The Master, again, acknowledged it. | Additional Factual Information |
| 2. | I. FACTUAL INFORMATION I.1. ACCIDENT | Page 3 Paragraph 2 | The Pilot B who was shocked and confused about the situation in the bridge asked the Master to know more about what was happening. The Master told the Pilot B that the anchor chain was released as long as one shackle. In response to this circumstance, the Pilot B yelled the Master several times to heave up the anchor as soon as possible. The Pilot B also loudly explained about the dangers of oil pipes underneath the ship at that time. | The Pilot B who was shocked about the situation in the bridge asked the Master to know more about what was happening. The Master told the Pilot B that the anchor chain was released as long as one shackle. In response to this circumstance, the Pilot B yelled the Master several times to heave up the anchor as soon as possible. The Pilot B also loudly explained about the dangers of oil pipes underneath the ship at that time. | Correction |
| 2. | I. FACTUAL INFORMATION I.1. ACCIDENT | Page 3 Paragraph 4 | At about 22.04 LT, the remained chain length was a half shackle in the water. The Master then ordered the crew to alter hard to starboard side while moving astern. In the meantime, the Pilot B told the Pilot Station Officer on duty that the anchor was dropped to the seabed and he worried about the pipes beneath the water. The Pilot B asked the Pilot Station Officer to deploy the Pilot Boat immediately. However, after ten times calling, <i>Antasena</i> did not answer the Pilot Station at all. | At about 22.04 LT, the remained chain length was a half shackle in the water. The Master then ordered the crew to alter hard to starboard side while moving astern. In the meantime, the Pilot B told the Pilot Station Officer on duty that the anchor was dropped to the seabed and he worried about the pipes beneath the water. The Pilot B asked the Pilot Station Officer to deploy the Tug Boat immediately. However, after ten times calling, <i>Antasena</i> did not answer the Pilot Station at all. | Correction At the same time <i>Antasena</i> is serving another vessel with different Channel (not Channel 12 as used by Station Officer) |

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|-----|--|------------------------|--|---|---|
| 3. | I. FACTUAL INFORMATION I.1. ACCIDENT | Page 4 Paragraph 1 | <p>Because none of the crew of <i>Antasena</i> answered the Pilot Station Officer, the Pilot B asked the Pilot Station Officer to dispatch any available boats immediately towards the <i>Ever Judger</i>. The Pilot B also told the Pilot Station about the <i>Ever Judger's</i> position in the pipeline area.</p> <p>At about 23:00 LT, the Pilot B moved on from the <i>Ever Judger</i> to the Pilot Boat of Sanggau. There was no suspicious or uncommon circumstance, such as odour or oily film on the water witnessed by Pilot B or any other <i>Ever Judger's</i> crew. After this, neither pilot nor pilot station informed this situation to any other parties.</p> | <p>Because none of the crew of <i>Antasena</i> answered the Pilot Station Officer, the Pilot B asked the Pilot Station Officer to dispatch any available boats immediately towards the <i>Ever Judger</i>. The Pilot B also told the Pilot Station about the <i>Ever Judger's</i> position in the pipeline area.</p> <p>At about 23:00 LT, the Pilot B moved on from the <i>Ever Judger</i> to the Pilot Boat of Sanggau. There was no suspicious or uncommon circumstance, such as odour or oily film on the water witnessed by Pilot B or any other <i>Ever Judger's</i> crew.</p> | Correction |
| 4. | I.3. PRECAUTION & EMERGENCY RESPONSES I.3.1 Pilot Service | Page 15 Paragraph 2 | <p>After the Pilot Station Officer received the information from the Pilot B about the anchor drop, there was no enquiry PENYELIDIKAN. The Pilot B disembarked from the <i>Ever Judger</i> without any further checking to the ship nor sea condition. Also, the Pilot Station did not issue any precaution or warning or advice to the surrounding oil companies, all ships, Local Harbour Master, water police as well as the local inhabitants regarding the accident. This situation was the result of the absence of the standard protocol in reporting an unusual situation to the Pilot Station</p> | <p>Since there was no suspicious circumstance both related to the ship as well as to the vicinity water environment, thus after conducting pilotage and towage service, pilot B complete the pilot certificate which is signed by Master and then Pilot B went back to pilot station based on the written procedure :</p> <ol style="list-style-type: none"> 1. Decree of Board Directors of PT Pelindo IV (Persero) Nomor PD 30 Tahun 2006 regarding Ship Service Provision; 2. Decree of Harbour Master and Port Authority of Balikpapan Nomor: UIM.003/21/5/KSOP-Bpn-2013 dated 23 September 2013 regarding technical guideline of pilotage and safety of ships sailing above oil and gas facility in Balikpapan Water Territory. <p>Based on Article 1 Number 41.jo. Article 249 Law Number 17 Year 2008 on Shipping, The Master are the highest authority in the ship and has the responsibility on safety and security of the ship including shipwreck. Henceforth, based on Article 244 section (4), Master obliged to report any occurrences should there any peril on ship and/or individual causing threat to ship safety and/or human lives.</p> | Additional Factual Information Attached |

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| 5. | I.3. PRECAUTION & EMERGENCY RESPONST I.3.1 Pilot Service | Page 15 Paragraph 3 | At the same time, the Marine Region VI and other surrounding companies did not tune in the Channel 12. There are 2 (two) channels (Channel 9 and Channel 12) which are practically used for communication in relation with ship operational or marine circumstances in Balikpapan Bay. In the common practice, if any government institutions, such as the Local Harbour Master or Pilot Service, needs to communicate with a oil company which owned or has an interest to its subsea pipeline or shipping operational, they could change the frequency from the Channel 12 to the Channel 9. The default channel for those companies was in the Channel 9. | Channel used for pilotage operational activities at Port of Balikpapan is Channel 12 which is on stand by for 24 hours. Whereas, Channel 9 belongs and used by Pertamina for Pertamina's operational activities. Meanwhile VTS communication uses Channel 16 which generally applied in Port of Balikpapan. | Additional Factual Information |
| 6. | I.4. BRIDGE RESOURCES MANAGEMEN T I.4.2. Pilot | Page 28 Paragraph 3 | Notwithstanding the regulation already available, the Pilot Service did not equip its Pilots with user-friendly checklist tasks. The regulation covers general matters; therefore, the wording was not detailed and not ready to be used in daily life for Pilots. Based on the interview, there was no standard protocol for a Pilot in guiding a ship. The local Pilots relied on the common practice, such as a short question about the crew and engine. The Pilot Station had no checklist to be followed by the Pilots. For instance, informing subsea locations, preparing anchor time as well as to stop the engine. Therefore, the practice would be much more depending on the personality and creativity of the Pilots themselves. | In conducting pilotage service, Pilot refers to Standards Operation and Procedure of pilotage service, as follows: 1. Rules of Board Directors of PT Pelindo IV (Persero) Nomor PD 30 Tahun 2006 regarding Ship Service Provision; 2. Decree of Harbour Master and Port Authority of Balikpapan Nomor: UM.003/21/5/KSOP.Bpn-2013 dated 23 September 2013 regarding technical guideline of pilotage and safety of ships sailing above oil and gas facility in Balikpapan Water Territory In aiming to provide maximum pilotage service there shall be detailed improvement in Standards Operation and Procedure. In conducting pilotage activity in Balikpapan water territory, pilots have been equipped with electronic tablet (iPad) containing complete real time information related to Balikpapan water channels. | Additional Factual Information Attached |

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| 7. | I.4. BRIDGE RESOURCES MANAGEMENT I.4.2. Pilot | Page 28 Paragraph 4 | The missing of briefing before making the decision to ship departure was main evidence in the lack of Piloting Procedure as well as breaching of the IMO Resolution A.960. The conversation about the voyage plan did not show up in this accident which should be done at the briefing. Along the way, the Master asked a confirmation to the Pilot B about the location and time to prepare the anchor. Afterwards, the Pilot B suggested the Master prepare the anchor. This situation depicts the confusion of the bridge team role as the Pilot B was the only person who knew where and when to prepare and drop anchor. At this phase, the Pilot Service let the Pilots work without any specific directions. | Conversation regarding voyage plan by Pilot B and Master. Along the way, the Master asked a confirmation to the Pilot B about the location and time to prepare the anchor. At this time, the ship was not going to sail towards Makassar Strait, but she had planned to drop the anchor in Balikpapan Port and the pilot B indicates anchorage location on ECDIS screen. Master agreed on the plan. The distance between incident location and the anchorage area is about 1 mile. | Factual Information |
| 8. | I.6. ANCHORAGE AREA | Page 32 Paragraph 5 | Unfortunately, no anchorage areas could be found on the map owned by The Local Harbour Master. The Local Harbour Master's regulation regarding anchorage area was known by Pilots and Harbour Master Officers only by relying on their memory. The picture or map which depicts the location of both anchorage sectors could not be found | There is anchorage area based on ship's length and type. Pilots awareness of anchorage area by referring to Decree of Harbour Master and Port Authority of Balikpapan Nomor: UM.003/21/5/KSOP.Bpn-2013 dated 23 September 2013 regarding technical guideline of pilotage and safety of ships sailing above oil and gas facility in Balikpapan Water Territory | Factual Information Attached |
| 9. | II. COMMUNICATION ERROR | Page 39 Paragraph 4 | The segmented error at the accident of Ever Judger happened on the resembling pronunciation of two Chinese words. The word of one shackle (pronounce: yi jie) and one metre (pronounce: yi mie) were not really different each other. Previously, the Master switched the language from Chinese to English (L2) while talking to the Pilot B about a metre, and afterwards the Master translated it to a Chinese (L1) word. However, the speech error made the Master conveyed another similar-sound word which means shackle. It occurred spontaneously and unintentionally | The segmented error at the accident of Ever Judger happened on the resembling pronunciation of two Chinese words. The word of one shackle (pronounce: yi jie) and one metre (pronounce: yi mie) were not really different each other. Previously, the Master switched the language from Chinese to English (L2). However, the mispronunciation causes the Master to convey different meaning to CO by saying different words that has similar pronunciation which means 1 meter and 1 shackle above the water. This mispronunciation results the anchor to reached seabed. While pilot B has instructed to drop the anchor 1 meter above the water surface. | Additional Factual Information |

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| 10. | II.3. BRIDGE RESOURCES MANAGEMENT AND TRAFFIC INFORMATION | Page 40 Paragraph 3 | There was no briefing undertook prior to the departure of the Ever Judger amongst the Pilot B and ship's crew. As a consequence, there was no voyage plan and a clear distribution of tasks. The only person knew exactly where and when to change the speed and prepare the anchor was the Pilot B. The location of anchorage was not detail and pointed by Pilot B's finger on the ECDIS screen. This practice allowed the other crew in the bridge to know nothing about the shifting, except for the Master and Pilot. This could give a perception that the voyage plan was the business amongst the Master and Pilot B only. | Referring to the procedure, pilots as adviser communicate with the Master concerning water information, maneuver plan, as well as anchorage location. While Master as the ship's highest authority and person in charge is obliged to conduct briefing to ship crew regarding ship maneuver | Correction |
| 11. | II.3. BRIDGE RESOURCES MANAGEMENT AND TRAFFIC INFORMATION | Page 40 Paragraph 4 | The omitted briefing also had an impact on the missing information of restricted zone above pipelines. As Pilot B had no checklist of the Pilot's tasks, Pilot B had no compulsory either to render a copy of important messages or mention about it by speaking. Likewise, the crew of Ever Judger did not apply the company procedure to undertake the short meeting prior departure. | In accordance to the procedure, Pilot B has coordinated with the Master concerning the water information, maneuver plan, as well as anchorage location and anchor standby 1 meter above water surface. The crew of Ever Judger did not apply the company procedure to undertake the short meeting prior departure. | Correction |
| 12. | II.3. BRIDGE RESOURCES MANAGEMENT AND TRAFFIC INFORMATION | Page 40 Paragraph 5 | The double language (Chinese and English languages) onboard whilst shifting from the BCT to the anchorage spot was an obstacle, instead of an easiness. English was only being used by the ship crew to talk to the Pilot B. This created a barrier for Pilot B to understand their communication. Additionally, the Pilot B could not order when the Master ordered the CO to lower the anchor one shackle. | The double language (Chinese and English languages) onboard whilst shifting from the BCT to the anchorage spot was an obstacle, instead of an easiness. English was only being used by the ship crew to talk to the Pilot B, while the communication between CO and Master including ship crew were in Chinese. This created a barrier for Pilot B to understand their communication. Additionally, the Pilot B could not understand the Master's order when the Master ordered the CO to lower the anchor one shackle because the communication between Master and CO were in Chinese. | Additional Factual Information |
| 13. | II.3. BRIDGE RESOURCES MANAGEMENT AND TRAFFIC INFORMATION | Page 40 Paragraph 6 | The combination of those factors finally resulted in the solo watch by the Master. The Z/O and AB did not know the voyage plan, the CO knew nothing about the anchor drop and the Pilot B had nothing to do with the Chinese language. At the same time, there was no warning advice given by the Local VTS Station regarding the restricted area. For those reasons, the situation created a complete failure to keep a good lookout. | The combination of those factors finally resulted in the solo watch by the Master. The Z/O (second officer) and AB (Able Bodied Seaman) did not know the voyage plan, CO received order from the Master to drop the anchor for 1 shackle below water surface and pilot B did not understand the language used which is Chinese. | Correction |

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| 14. | III. SUMMARY III.1. FINDINGS III.1.1. Onshore | Page 43 Poin 1 | The Pilot Service had no procedure to report any accident or unusual events to the appropriate parties | Pilotage Service has Standard operation and procedure of pilotage service by referring to Decree of Harbour Master and Port Authority of Balikpapan Nomor: UM.003/21/5/KSOP.Bpn-2013 dated 23 September 2013 regarding technical guideline of pilotage and safety of ships sailing above oil and gas facility in Balikpapan Water Territory | Additional Factual Information Recent Factual condition there is ISO 9001-2013 already |
| 15. | III. SUMMARY III.2 Contributing Factors | Page 44 Poin 1 | The communication amongst ship's crew and the Pilot B was not in a single language | Communication between Ever Judger crew and The Master were in Chinese while communication between The Master and Pilot B were in English. The communication should be in single language which is English as the formal International Language. | Additional Factual Information |
| 16. | IV. RECOMMENDATIONS IV.7. PT Pelabuhan Indonesia IV (Persero) Branch Balikpapan | Page 46 | <p>1. To set clear and detail procedure for piloting operations as described in the IMO Resolution A.960, including:</p> <ol style="list-style-type: none"> 1. pre-arrival and pre-departure briefing. 2. dangerous areas. 3. emergency response. 4. waters condition. <p>2. To establish a procedure in reporting an emergency situation to the Local Harbour Master</p> | <p>Pilot Service has Standard Operation and Procedure by referring to:</p> <ol style="list-style-type: none"> 1. Rules of Board Directors of PT Pelindo IV (Persero) Nomor PD 30 Tahun 2006 regarding Ship Service Provision; 2. Decree of Harbour Master and Port Authority of Balikpapan Nomor: UM.003/21/5/KSOP.Bpn-2013 dated 23 September 2013 regarding technical guideline of pilotage and safety of ships sailing above oil and gas facility in Balikpapan Water Territory <p>In aiming to provide maximum pilotage service there shall be detailed improvement in Standards Operation and Procedure.</p> | <p>Additional Factual Information</p> <p>Attached</p> <p>Emergency Response procedure has been regulated since May 2018 based on ISPS Code and ISO 14001 2015 version</p> |

COMMENTS FROM HUMAN RESOURCES DEVELOPMENT AGENCY

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|-----|---------|--------------------|-------------|--|---|
| 1. | Summary | 43/ III.1.2. | | <p>Ditambahkan:</p> <ul style="list-style-type: none"> - The lack of competence Master to organize BRM when the Pilot present on the Bridge (UMC + Pilot advice/ Under Master Command plus advice by Pilot) | <p>1. <i>Standard Training, Certification and Watchkeeping (STCW) 1978 amandemen 2010 Table A-II/2. Competence Use of Leadership and Managerial Skill, Knowledge and ability to apply effective resource management:</i></p> <ol style="list-style-type: none"> a. <i>Allocation, assignment and prioritization of resources;</i> b. Effective Communication on board ship and ashore; c. <i>Decisions reflect consideration of team experiences;</i> d. <i>Assertiveness and leadership, including motivation;</i> e. <i>Obtaining and maintaining situation awareness.</i> <p>2. Master menggunakan bahasa yang tidak dipahami oleh Pandu pada saat memberikan perintah kepada CO, perintah kepada CO (dalam Bahasa Chinese) berbeda dengan pertanyaan yang sebelumnya diajukan Master ke pandu (dalam Bahasa Inggris) untuk menurunkan Jangkar satu meter di atas air, sehingga pandu sendiri tidak bisa mengoreksi secara langsung ketika Master ternyata memberikan perintah yang salah kepada CO;</p> <p>3. <i>STCW 1978 amandemen 2010 Chapter VIII Standards Regarding Watchkeeping Section A-VIII/2 Watchkeeping arrangements and principles to be</i></p> |

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| 2. | Recommendations | IV.4 | Human Resources Development Agency, Ministry of Transport 1. To review the bridge resource management courses specially designed for Pilots. | Human Resources Development Agency, Ministry of Transport. 1. To review the bridge resource management courses specially designed for Pilots. (Delete) | observed Part 4-1 Principles to be observed in keeping a navigational watch "Navigation with pilot on board" paragraph 49 menyatakan "Despite the duties and obligations of pilots, their presence on board does not relieve the Master or the officer in charge of the navigational watch from their duties and obligations for the safety of the ship. The Master and the Pilot shall exchange information regarding navigation procedures, local conditions and the ships characteristics. The Master and / or officer in charge of the navigational watch shall co-operate closely with the Pilot and maintain an accurate check on the Ship's position and movement". 1. Peraturan Direktur Jenderal Perhubungan Laut HK.103/1/16/DIPL-2017 tentang Silabus dan Sertifikasi Pendidikan dan Pelatihan Sumber Daya Manusia Pemandu Kapal, Pasal 11 Direktur Kepelabuhan melakukan pembinaan dan pengawasan terhadap pelaksanaan Peraturan Direktur Jenderal ini. 2. Silabus yang dibuat sudah sesuai dengan IMO Resolution A.960 Recommendation on Training and Certification and Operational Procedures for Maritime Pilots other than Deep-Sea Pilots. |

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| No. | Part | Page/ Paragraph | KNKT Report | Review/Propose | Description |
|-----|-----------------|--------------------|--|---|--|
| 3. | Recommendations | IV.12 | <p>International Maritime Organization (IMO)</p> <ol style="list-style-type: none"> To review the syllabus of the Bridge Resource Management (BRM) Course; To shorten the revalidation the BRM course to every 2 or 3 years; To obligate ship operators to undertake the BRM course which includes company culture and working in a multi-cultural environment as well as to measure the effectivity of the course | <p>International Maritime Organization (IMO)</p> <ol style="list-style-type: none"> To review the syllabus of the Bridge Resource Management (BRM) Course; To shorten the revalidation the BRM course to every 2 or 3 years; (Delete) To obligate ship operators to undertake the BRM course which includes company procedure, company culture and working in a multi-cultural environment as well as to measure the effectivity of the course | <ol style="list-style-type: none"> STCW 1978 amandemen 2010 "Table B-1/2 List of Certificates or Documentary Evidence Required Under The STCW Convention" untuk sertifikat BRM tidak termasuk sertifikat yang dipersyaratkan untuk direvalidasi. Surat Edaran Direktur Perkapalan dan Kelautan Nomor: SM.001/1/14/DK-15 tentang Revalidasi Sertifikat (Revalidation of Certificate) Sesuai Standards of Training Certification and Watchkeeping For Seafarers (STCW) 1978 Amndemen 2010 Regulasi 1/2, bahwa untuk sertifikat <i>Bridge Resource Management (BRM)</i> tidak termasuk sertifikat yang wajib direvalidasi dalam jangka waktu 5 (lima) tahunan. Jangka waktu tercepat untuk revalidasi sertifikat pelaut adalah 5 (lima) tahun, jika saran untuk mempercepat masa revalidasi sertifikat BRM ini diterima oleh IMO akan memberatkan pada sisi pelaut, karena sudah memberatkan dengan sertifikat yang banyak dan harus memikirkan dan menyempatkan waktu kembali untuk merevalidasi kembali sertifikatnya. |

SAFETY ACTION AND COMMENTS FROM DIRECTORATE GENERAL OF OIL AND GAS, MINISTRY OF ENERGY AND MINERAL RESOURCES

MASUKAN BIRO HUKUM KEMENTERIAN ESDM ATAS LAPORAN KNKT ATAS KERUSAKAN PIPA DAN PENCEMARAN MINYAK BUMI DI TELUK BALIKAPAN

| No. | Bagian | Hlm/pgrh | Laporan KNKT | Usulan Perbaikan | Keterangan |
|-----|---------|---------------------------|--|--|---|
| 1. | Summary | III.1.2/ butir ke 2 | <i>The Oil Companies had never been involved in Cathaspropic level drill</i> | <i>The pipe's owner never had experienced with alike Cathaspropic event.</i> <i>Atau</i> <i>The pipe's owner unable to conduct certain level drill as regulated in Minister of Transportation Regulation No. 58/2013.</i> <i>Atau</i> <i>The pipe's owner unable to comply with the certain level drill requirement which stated in Minister of Transportation Regulation No. 58/2013.</i> | <ul style="list-style-type: none"> Penggunaan kata "oil companies" sangat luas dimana dapat diartikan seluruh perusahaan minyak dan gas bumi di Indonesia (termasuk upstream and downstream), sedangkan kasus kecelakaan ini hanya terkait dengan 1 oil company pada downstream yaitu Pertamina sebagai pemilik pipa. Disamping itu untuk konsistensi dengan penggunaan kata diatasnya, maka "the pipe's owner" lebih tepat. Terdapat perbedaan data yang disampaikan Pertamina dengan data teknis migas. Dalam rapat, Pertamina menyatakan belum pernah melakukan latihan penanggulangan tumpahan minyak untuk kondisi yang lebih besar. <p>Data dari Migas ESDM pada tanggal 17 april 2017 ada laporan pelatihan IMO OPRC Level 1 PT Pertamina EP Field Tanjung dan Joint Exercise area</p> |

MASUKAN BIRO HUKUM KEMENTERIAN ESDM ATAS LAPORAN KNKT ATAS KERUSAKAN PIPA DAN PENCEMARAN
MINYAK BUMI DI TELUK BALIKPAPAN

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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NATIONAL TRANSPORTATION SAFETY COMMITTEE

Ever Judger, Balikpapan Bay, 30 March 2018



KEMENTERIAN ENERGI DAN SUMBER DAYA MINERAL
REPUBLIK INDONESIA
DIREKTORAT JENDERAL MINYAK DAN GAS BUMI
GEDUNG MIGAS, JALAN H.R. RASUNA SAID KAV B - 5. JAKARTA 12910

KOTAK POS : 1296/JKT 100.12 TELEPON : (021) 5268910 (HUNTING) FAKSIMILE : (021) 5269114 e-mail: migas@migas.esdm.go.id

Nomor : 66 /18.06/DMT/2019 10 Januari 2019
Lampiran : -
Hal : Pelaporan *Update* Data, Status Perizinan dan Kondisi Instalasi Migas di Perairan

Yang terhormat
(daftar terlampir)
di -
Tempat

Sehubungan dengan surat Deputi Bidang Koordinasi Kedaulatan Maritim Kementerian Koordinator Bidang Kemaritiman No. 257/Deputi1/Maritim/XII/2018 tanggal 10 Desember 2018 terkait rekomendasi Komite Nasional Keselamatan Transportasi (KNKT) sebagai tindak lanjut penanganan pencemaran tumpahan minyak di Balikpapan, bersama ini kami menugaskan saudara untuk:

1. Melakukan *update* data, status perizinan dan kondisi Instalasi Migas di perairan dan melaporkan kepada Kepala Inspeksi paling lambat tanggal 31 Januari 2019. Berdasarkan *update* data Instalasi Migas di Perairan tersebut kemudian akan dilaporkan kepada Pusat Hidrografi dan Oseanografi TNI AL.
2. Meningkatkan sistem pengamanan dan pengawasan Instalasi Migas di Perairan yang mencakup:
 - a. Kegiatan pencegahan:
 - Menyampaikan *update* hasil analisis risiko terhadap Instalasi Migas di Perairan (eksisting);
 - Mengimplementasikan sistem pemantauan *real time* (AIS);
 - Membuat sistem patroli yang menyeluruh dan periodik;
 - Meningkatkan pemeliharaan navigasi *buoy* dan rambu-rambu navigasi;
 - Melakukan Inspeksi Instalasi pipa bawah air secara berkala;
 - Melakukan pengukuran sistem proteksi katodik; dan
 - Melakukan pengamanan obvitnas.
 - b. Kegiatan Tanggap Darurat:
 - Melengkapi sistem tanggap darurat (*Oil Spill Contingency Plan/OSCP*, kebakaran, kegagalan operasi, gangguan keamanan, dll); dan
 - Melakukan pelatihan tanggap darurat secara berkala dan terintegrasi bersama instansi terkait.

Demikian disampaikan, atas perhatian dan kerja samanya diucapkan terima kasih.

Direktur Teknik dan Lingkungan Migas
Selaku Kepala Inspeksi

Adhi Wibowo
NIP. 19601123 198803 1001

Tembusan: 4

1. Direktur Jenderal Migas
2. Deputi Bidang Koordinasi Kedaulatan Maritim – Kemenko Maritim
3. Kepala SKK Migas
4. Sekretaris Ditjen Migas

SAFETY ACTION FROM PT PERTAMINA (PERSERO) REFINERY UNIT V



Balikpapan, 4 Februari 2019
No.R-075/E15000/2019-S0

Lampiran : 1 (satu) berkas
Perihal : Laporan Pelaksanaan Rekomendasi Draft Laporan Hasil Investigasi
KNKT

Kepada Yth.
Ketua Komite Nasional Keselamatan Transportasi
di Jakarta

Dengan hormat,

Menindaklanjuti hasil Rakor Finalisasi Masukan Laporan KNKT tentang Kecelakaan Kapal *Ever Judger* pada tanggal 31 Januari 2019 ("**Rakor Finalisasi Laporan KNKT**") yang dilaksanakan berdasarkan Surat Deputi Bidang Koordinasi Sumber Daya Alam dan Jasa – Kementerian Koordinator Bidang Kemaritiman Republik Indonesia No. Und.73/Deputi II/Maritim/II/2019 tanggal 25 Januari 2019, bersama ini dapat kami sampaikan laporan pelaksanaan Rekomendasi KNKT kepada Pertamina sebagai berikut:

1. Terkait dengan rekomendasi untuk memasang sistem deteksi kebocoran yang sesuai (*to install the appropriate leak detection system*), pada saat ini kami telah memiliki Perjanjian Pemasangan Piping Leak Detection System SPL 20" Lawe-Lawe-Penajam-Balikpapan ("**Perjanjian**") dengan detail sebagai berikut:
 - a. Perjanjian dimaksud kami tandatangani pada tanggal 7 Juni 2018;
 - b. Pekerjaan yang harus dilakukan penyedia barang/jasa dalam Perjanjian tersebut adalah Implementasi Pipeline SCADA System PT Pertamina RU V Balikpapan (Lawe-Lawe-Penajam-Balikpapan) dan Field Instrument Leak Detection System (LDS).
 - c. Pekerjaan dimaksud telah dilaksanakan sejak tanggal 27 Agustus 2018 dan telah selesai dipasang, namun pelaksanaan *commissioning* menunggu selesainya perbaikan pipa yang dijadwalkan pada tanggal 24-30 Juni 2019.Dalam hal ini, kami tidak dapat melampirkan Perjanjian dimaksud secara keseluruhan karena kami juga terikat dengan ketentuan kerahasiaan yang ada di dalamnya.
2. Terkait dengan rekomendasi pengadaan sistem perlindungan aktif untuk mengamankan aset-aset yang berada di area umum perairan Teluk Balikpapan (*to establish an active protection system to secure the assets in the public area of Balikpapan Bay*), pada saat ini kami telah mengirimkan Surat kepada Kepala Syahbandar Otoritas Pelabuhan Kelas 1 Balikpapan ("**KSOP Kelas 1 Balikpapan**") sebagaimana terlampir agar dapat memperoleh hak untuk melaksanakan kewajiban tersebut di perairan Teluk Balikpapan yang merupakan area pelayaran umum (*public area*).

Berdasarkan hal-hal tersebut di atas, kami berharap Laporan Hasil Investigasi KNKT yang akan dipublikasikan dalam waktu dekat dapat mencantumkan status "*closed*" mengingat kedua rekomendasi dimaksud telah kami (mulai) laksanakan.

REFINERY UNIT V
Jalan Yos Sudarso No. 1
Balikpapan 76111
T (0542) 733011 F (0542) 732716 - 514148

NATIONAL TRANSPORTATION SAFETY COMMITTEE


Ever Judger, Balikpapan Bay, 30 March 2018


- 2 -

No. 075/ E15000/2019-S0

Demikian kami sampaikan dan atas perhatian maupun perkenan Bapak Ketua Komite Nasional Kecelakaan Transportasi kami ucapkan terima kasih.

Direktorat Pengolahan
GM Refinery Unit V Balikpapan


Feri Yani



Tembusan:

1. Deputi Bidang Koordinasi Sumber Daya Alam dan Jasa – Kementerian Koordinator Bidang Kemaritiman Republik Indonesia
2. Direktur Jenderal Minyak dan Gas Bumi – Kementerian Energi dan Sumber Daya Mineral Republik Indonesia
3. Direktur Jenderal Perhubungan Laut – Kementerian Perhubungan Republik Indonesia



Balikpapan, 4 Februari 2019
No. 074/E15000/2019-S0

Perihal : **Permohonan Ijin Pelaksanaan Sistem Perlindungan Aktif (*Active Protection*) di Area Pelayaran Umum Teluk Balikpapan untuk Pengamanan Pipa Bawah Laut**

Kepada Yth.
Kepala KSOP Kelas I Balikpapan
Jl. Yos Sudarso No.1
Balikpapan

Dengan hormat,

Menindaklanjuti rekomendasi Komite Nasional Keselamatan Transportasi kepada PT Pertamina (Persero), dalam rangka meningkatkan pengamanan atas Pipa Bawah Laut milik PT Pertamina (Persero) di area pelayaran Teluk Balikpapan, kami bermaksud untuk memberikan sistem perlindungan aktif (*Active Protection*) pada Pipa Bawah Laut yang kami miliki dan berada di area pelayaran umum dengan melakukan patroli disemua lokasi Pipa Bawah Laut selama 24 (dua puluh empat) jam.

Terkait dengan hal tersebut, bersama ini mohon Kepala KSOP Kelas I Balikpapan memberikan ijin dan kewenangan kepada PT Pertamina (Persero) c.q. Refinery Unit V Balikpapan untuk menggunakan Kapal Patroli di area pelayaran umum (*public area*) dan mengambil tindakan awal seperti memberikan peringatan kepada setiap kapal yang melintas/berada di areal pipa (area terlarang dan area terbatas) atau tindakan lain yang dianggap perlu dengan tetap berkoordinasi dengan KSOP apabila ada kegiatan kapal yang dapat berdampak pada keselamatan Pipa Bawah Laut Pertamina.

Demikian disampaikan, atas perhatian dan perkenannya kami ucapkan terima kasih.

Direktorat Pengolahan
GM Refinery Unit V Balikpapan

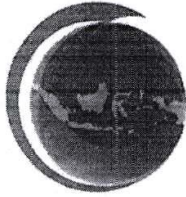

Feri Yani

Tembusan:

1. Ketua Komite Nasional Keselamatan Transportasi
2. Deputi Bidang Koordinasi Sumber Daya Alam dan Jasa – Kementerian Koordinator Bidang Kemaritiman Republik Indonesia
3. Direktur Jenderal Minyak dan Gas Bumi – Kementerian Energi dan Sumber Daya Mineral Republik Indonesia
4. Direktur Jenderal Perhubungan Laut – Kementerian Perhubungan Republik Indonesia

REFINERY UNIT V
Jalan Yos Sudarso No. 1
Balikpapan 76111
T (0542) 733011 F (0542) 732716 - 514148

SAFETY ACTION AND COMMENTS FROM COORDINATING MINISTRY FOR MARITIME AFFAIRS


**KEMENTERIAN KOORDINATOR BIDANG KEMARITIMAN
REPUBLIC INDONESIA**

Jalan MH. Thamrin No. 8, Jakarta 10340 - INDONESIA
Telp. +62 21 23951100, email : kemenkomaritim@maritim.go.id

Jakarta, 10 Desember 2018

Nomor **257**/Deputi1/Maritim/XII/2018
Lampiran 1 (satu) berkas
Perihal **Laporan Hasil Rapat Koordinasi dan Kunjungan Lapangan (*Field Trip*) ke Balikpapan sebagai Tindak Lanjut Penanganan Pencemaran Tumpahan Minyak, 22-23 November 2018**

Kepada Yth.
Direktur Jenderal Migas
Kementerian Energi dan Sumber Daya Mineral
di

Tempat

Sehubungan telah dilaksanakannya Rapat Koordinasi dan Kunjungan Lapangan (*Field Trip*) ke Balikpapan sebagai Tindak Lanjut Penanganan Pencemaran Tumpahan Minyak pada, 22-23 November 2018, bersama ini disampaikan hal-hal sebagai berikut:

1. Rapat dibuka dan dipimpin oleh Asisten Deputi Navigasi dan Keselamatan Maritim serta dihadiri oleh perwakilan peserta dari Komite Nasional Keselamatan Transportasi (KNKT), Badan Riset Sumber Daya Manusia Kelautan dan Perikanan (BRSDM-KKP), Kementerian Lingkungan Hidup dan Kehutanan (KLHK), Ditjen Migas ESDM, Dinas Perhubungan Provinsi Kaltim, Badan Penanggulangan Bencana Daerah (BPBD) Provinsi Kaltim, BPBD Kota Balikpapan, Kantor Syahbandar dan Otoritas Pelabuhan (KSOP) Balikpapan, PT. Pertamina (Persero) dan PT. Pertamina (Persero) *Reverery Unit V*.
2. Rakor dan Kunjungan lapangan (*field trip*) ini merupakan tindak lanjut dari serangkaian Rapat Koordinasi Penanganan Tumpahan Minyak di Balikpapan yang dilaksanakan berturut-turut pada 30 Agustus, 3, dan 14 September 2018 di Kemenko Bidang Kematriman. Rakor tersebut bertujuan untuk menelaah berbagai langkah penanganan pada tingkat operasional untuk pencegahan (mitigasi) kecelakaan di laut, dan memperoleh masukan pembuatan kebijakan dalam mengantisipasi atau pencegahan kecelakaan di laut.
3. KNKT telah memaparkan matriks 17 daftar permasalahan keselamatan pelayaran di Teluk Balikpapan yang perlu ditindaklanjuti dan ditanggapi oleh K/L terkait. Daftar temuan tersebut diharapkan bisa diperbaiki hingga Desember 2018 sebelum laporan dari KNKT diumumkan secara resmi ke seluruh pemangku kepentingan pada Maret 2019.
4. Pada pertemuan tersebut, KNKT memberikan rekomendasi, berdasarkan metode matrik *Impact & Effort* ke antara lain Ditjen Hubla Kemhub, Badan SDM Kemhub, Ditjen Migas ESDM, KSOP Balikpapan, Distrik Navigasi Samarinda dan Balikpapan, PT. Pelabuhan Indonesia (Persero), PT. Pertamina (Persero) Refinery Unit V, Walikota Balikpapan, dan *Fleet Management Ltd*.

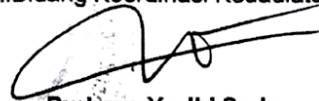
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5. Adapun rekomendasi KNKT bagi Ditjen Migas adalah sebagai berikut:
- meninjau kembali dan memastikan bahwa semua instalasi bawah air telah dilaporkan kepada Pusat Hidrografi dan Oseanografi TNI AL;
 - meningkatkan peraturan tentang keamanan dan sistem pengawasan instalasi bawah air dengan lalu lintas padat (Lampiran I).
6. Sehubungan dengan hal-hal di atas, mohon kerja samanya untuk dapat memenuhi rekomendasi dari KNKT tersebut pada kesempatan pertama. Akan sangat dihargai jika masukan dan langkah-langkah tersebut dapat dilaksanakan sebelum akhir Desember 2018.

Demikian disampaikan, atas perhatian dan kerja samanya diucapkan terima kasih

Deputi Bidang Koordinasi Kedaulatan Maritim



Purbaya Yudhi Sadewa

Tembusan:

1. Yth. Menteri Koordinator Bidang Kemaritiman (Sebagai Laporan)
2. Yth. Menteri Perhubungan
3. Yth. Sekretaris Menteri Koordinator Bidang Kemaritiman
4. Yth. Sekretaris Jenderal Kementerian Perhubungan
5. Yth. Ketua Komite Nasional Keselamatan Transportasi

Lampiran 1.

Rekomendasi Matriks Impact & Effort KNKT
Direktur Jenderal Migas, Kementerian Energi dan Sumber Daya Mineral

Impact tinggi, effort tinggi

| PENERIMA REKOMENDASI | REKOMENDASI | KETERANGAN |
|--------------------------------------|---|---|
| Dirjen Migas ¹ , KESDM | <i>To enhance the regulation of subsea installation security and monitoring system in the dense traffic waters.</i> | Aturan tentang instalasi bawah air di mana lalu lintas perairan di atasnya padat harus ditinjau kembali. Perlindungan pipa bawah air terhadap <i>hazard</i> dan dampaknya terhadap lingkungan harus ditetapkan. |

Impact tinggi, effort rendah

| PENERIMA REKOMENDASI | REKOMENDASI | KETERANGAN |
|--------------------------------------|--|---|
| Dirjen Migas ¹ , KESDM | <i>To review and ensure all subsea installation all reported to the Hydrografic and Oceanography Office of the Indonesian Navy</i> | Data semua instalasi perairan perlu dilaporkan secara berkala ke Pushidrosal. |

¹Direktorat Jenderal Minyak dan Gas.

NATIONAL TRANSPORTATION SAFETY COMMITTEE

Ever Judger, Balikpapan Bay, 30 March 2018

SOURCES OF INFORMATION

Class I Navigational District of Samarinda c.q. Navigational District of Balikpapan;

Class I Harbour Master of Balikpapan;

Directorat General of Oil and Gas, Ministry of Energy and Mineral Resources;

Environmental Services Agency of Balikpapan;

Hydrographic & Oceanography Office of the Indonesian Navy;

PT Pertamina MOR VI Balikpapan;

PT Pertamina Refinery Unit V Balikpapan;

PT Pelindo IV (Persero) Cabang Balikpapan;

Search and Rescue Agency, Branch of Balikpapan.

NATIONAL TRANSPORTATION SAFETY COMMITTEE

Ever Judger, Balikpapan Bay, 30 March 2018

REGULATIONS

Balikpapan Port Regulations No. UM.003/21/5/KSOP.Bpn-2013 on Technical Procedure of Piloting and Ship Safety while Crossing Oil and Gas Facilities in Balikpapan Waters.

Government Regulation of Transport Accident Investigations No. 62 Year of 2013.

IMO MSC/Circ.1014 on Guidance on Fatigue.

Resolution A.851 on the General Principles for Ship Reporting Systems and Ship Reporting Requirements.

IMO Resolution A.960 on Recommendations on Training and Certification and Operational Procedures for Maritime Pilots Other Than Deep-Sea Pilots.

Indonesian Shipping Act No. 17 Year of 2008.

Local Government Act No. 32 Year of 2004.

Local Government Act No. 23 Year of 2014.

Minister of Energy and Mineral Resources Regulations No. 300.K/38/M.pe/1997 on Work Safety on Oil and Gas Transfer Pipe.

Minister of Transportation Regulations No. 93 Year of 2014 on Medium and Infrastructure of Ship Piloting.

Minister of Transportation Regulations No. 129 Year of 2016 on Sea Shipping Channel and Offshore Buildings and/or Installations.

Minister of Transportation Regulations No. 189 Year of 2015 on Organisation and Working Procedure of Ministry of Transport.

Minister of Transportation Regulations No. 20 Year of 2017 on Special Purpose and Industry Port.

Minister of Transportation Regulations No. 23 Year of 1990 on Salvage or Underwater Works.

Minister of Transportation Regulations No. 25 Year of 2011 on the Aids to Marine Navigation.

Minister of Transportation Regulations No. 26 Year of 2011 on Shipping Telecommunications.

Minister of Transportation Regulations No. 57 Year of 2015 on Piloting and Handling of Ships.

Minister of Transportation Regulations No. 58 Year of 2013 on Pollution Control in Waters and Ports.

Minister of Transportation Regulations No. HK 103/2/14/DJPL-16 Year of 2016 on the Procedures for the State Revenues, Submission, Use and Reporting of Non-Tax on the Directorate General of Sea Transport.

Presidential Regulation of the Republic of Indonesia No. 109 Year of 2006 on Oil Spill Response in the Sea.

Resolution A.849(20) on Code for the Investigation of Marine Casualties and Incidents.

Resolution A.884(21) on Amendments to The Code for The Investigation of Marine Casualties and Incidents.

NATIONAL TRANSPORTATION SAFETY COMMITTEE

Ever Judger, Balikpapan Bay, 30 March 2018

Resolution MSC.255(84) on Casualty Investigation Code.

SOLAS Chapter V Annex 24 on Voyage Planning as explained further by Resolution A.893(21) on Guidelines for Voyage Planning.

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