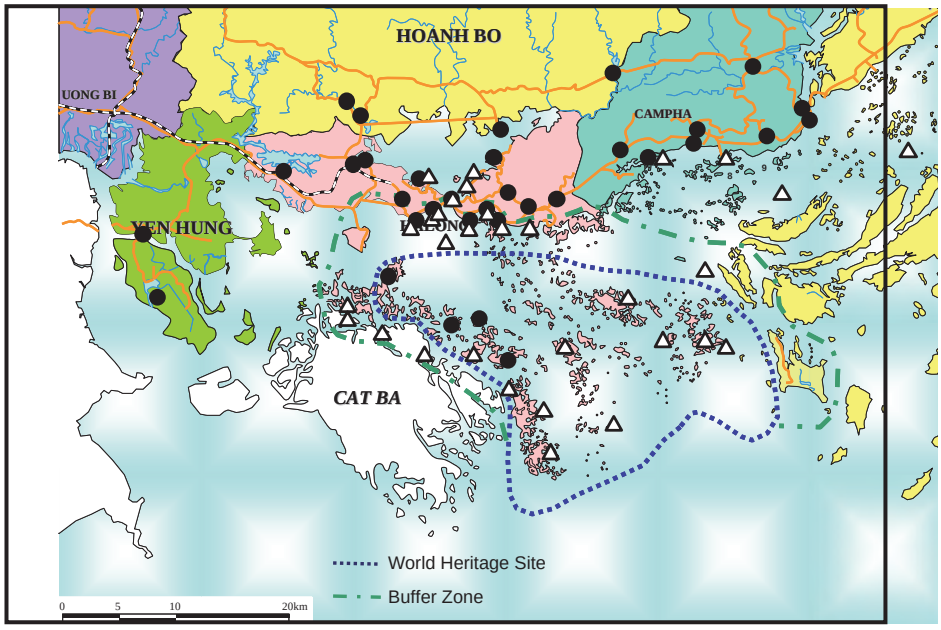
Attachment-1

Reviewing Current Water Environment Monitoring Network and Recommendation for Adding Monitoring Points

1) Current Monitoring Network

Current water environment monitoring network is shown in Figure 1. Quang Ninh DONRE monitors (i) Inland pollution sources, (ii) coastal sea water, and (iii) main tourism area in world hesitate site. HBMD monitors (i) world heritage site, (ii) buffer zone of heritage site, (iii) main tourism spots, (iv) floating villages, and (v) sea in Bai Tu Long area. Both organizations' monitoring network cover inland area and sea area including world heritage site and its buffer zone, so basically existing monitoring network can be applied for the IEMIP in 2012.



Note: ● Monitoring points by Quang Ninh DONRE △ Monitoring points by HBMD
Source: JET

Figure 1 Current Water Environment Monitoring Network

2) Facilities and Areas to be Cared for Water Environment Management Selected by WG-1

WG-1 is preparing Quang Ninh Pollution Source Database, and is confirming distribution of pollution sources. This work is on-going, so preliminary, WG-1 members selected facilities and areas to be cared for water environment management in Halong Bay. The selected pollution sources are shown in Table 1. These pollution sources can be categorized as shown below:

- Coal mining related facilities,
- Factories in Cai Lan Industrial park,
- Cement plants,

- Cement plants,
- Food and beverage industry,
- Shipyard & port,
- Specific facilities, and
- Residential area

Table 1 Facilities and Areas to be Cared for Water Environment Management Selected by WG-1

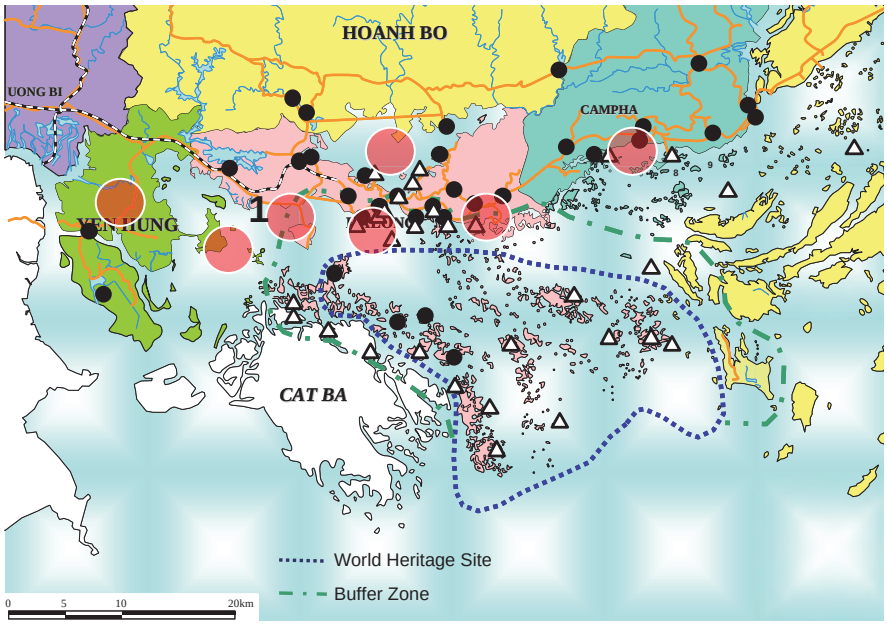
No	Category	Sources of Pollution	Remark
1	Coal mining related facilities	Cua Ong Coal Screening Plant	Screening of coal generates TSS, heavy metals, pH
2		South of Trang Bridge Coal screening Plant	Screening of coal generates TSS, heavy metals
3		Ha Lam Coal Company	TSS, COD, pH, heavy metals.
4		Ha Tu Coal Company	TSS, COD, pH, heavy metals.
5		Trang Bridge Coal screening Plant	Sea water is polluted due to operations of vessels for coal transportation from the Coal screening Plant and from the Wharf of the 170 Military Brigade.
6		Coal mining area affecting to Lo Phong stream towards the Sea	Environment is polluted due to discharging of wastewater from coal mining sites to the Sea
7		Quang Ninh Mine Chemical Company	
8		Area of Dien Vong River (belonging to Ha Khanh Ward)	Water in this area is impacted due to coal mining and transportation, operation of the Quang Ninh Thermal Power Plant, Thang Long Cement Factory.
9	Industrial park	Cai Lan Industrial park	COD, BOD, T-N, T-P, coliform, heavy metals, CxHy, oil
10	Cement plant	Thang Long Cement Plant	TSS
11		Cam Pha Cement Plant	TSS
12		Halong Cement Plant	TSS
13		10/10 Port, Cam Pha Cement Plant	TSS
14	Food & beverage industry	Halong Beer Company	BOD, T-N, coliform, NO3.
15		Restaurant, hotels in Bai Chay area (the wastewater treatment plant is inadequate in capacity)	Domestic wastewater and wastewater from hotels, BOD, coliform, NO3-, PO4, Oil and grease, T-N etc.
16		Halong 1 Market	Waste from Market operation TSS, BOD, COD
17		Sea food Export Company No. 1	Sea food wastewater with coliform, COD, BOD, S2, T-N, T-P
18		Halong Development Joint stock Company for Industrial Prawn Farming – Dong Linh Village, Minh Thanh Commune, Yen Hung District	Sea food wastewater with coliform, COD, BOD, S2, T-N, T-P
19		Tan An Aquaculture Joint stock Company for Industrial Prawn Farming – Tan An Commune, Yen Hung District	-
20		Fish Pond Area (at outlet of the Bai Chay Wastewater Treatment Plant)	Supervision of effluent quality after treatment discharging to the environment
21	Shipyard & port	Halong Shipyard Company	-
22		Shipyard Company belong to VINACOMIN	-
23		Petrol Port No. B12	-
24	Specific facilities	Provincial General Hospital	Pathogenic micro-organisms, BOD, CxHy, T-N, T-P, hazardous chemicals
25		Tuberculosis Hospital K67	-
26		Ha Khanh Thermal Power Plant	-
27		Thermal Power Plant of Cam Pha	-
28		Ha Khau Landfill site, Deo Sen Landfill site	Domestic solid waste, oil, grease, hazardous waste.
29	Residential area	Outlet to the Sea from the Vuon Dao Area, passing the Halong Road (In-front of the Halong Dream Hotel)	Damaging to the Landscape and causing pollution at the Bai Chay Beach
30		Coastal area of Km 5 (Floating restaurant area)	Sea water is at risk of pollution due to business operations of the floating restaurants and domestic wastewater
31		Floating village of Cua Van, Vong Vieng, Cong Dam, Ba Hang; some tourist destinations such as: Dau Go cave, Sung Sot cave	-
32		Reclaimed urban area from Cam Binh to Cam Phu Ward, Domestic wastewater drainage directly to the Sea	-

Source: WG-1 and JET

3) Tentative Reviewing of Current Water Environment Monitoring Network

Considering facilities and areas to be cared selected by WG-1 and distribution of existing monitoring points, current water environment monitoring network was reviewed tentatively. As a result of reviewing, the followings were found to be examined:

- Water quality of Lo Phong stream affected by coal mining areas is recommended to be checked.
- Impact of domestic wastewater from Reclaimed urban area from Cam Binh to Cam Phu Ward is recommended to be checked.
- Impact from shrimp firm in Yen Hung district is recommended to be checked.



Note: Monitoring points by Quang Ninh DONRE Monitoring points by HBMD

4. Water quality of Lo Phong stream affected by coal mining areas is recommended to be checked.
5. Impact of domestic wastewater from reclaimed urban area from Cam Binh to Cam Phu Ward is recommended to be checked.
6. Impact from shrimp firm in Yen Hung district is recommended to be checked.

Source: JET

Figure 2 Tentative Recommendations on Monitoring Activity in 2012

In September 2011, WG-1 selected major pollution sources and areas that may affect water environment in Halong bay, and reviewed whether the existing water environment monitoring network covered such major pollution sources and areas to monitor their impact or not. As a result of reviewing, WG-1 considered that the existing water environment monitoring network did not cover some main pollution sources and areas to be monitored. Concretely, the followings were pointed out:

- Water quality of Lo Phong stream affected by coal mining areas should be checked,
- Impact of domestic wastewater from Reclaimed urban area from Cam Binh to Cam Phu Ward should be checked,
- Impact from shrimp firm in Yen Hung district should be checked, and

- Other pollution sources and areas to be cared existed.

To examine necessity to add monitoring points JET recommended to tentative implement water environment monitoring under the IEMIP by Quang Ninh DONRE to check water quality around such pollution sources and areas.

Based on the above reviewing, WG-1 planned to implement tentative water quality monitoring in December 2011. Outline of the monitoring plan is as follows.

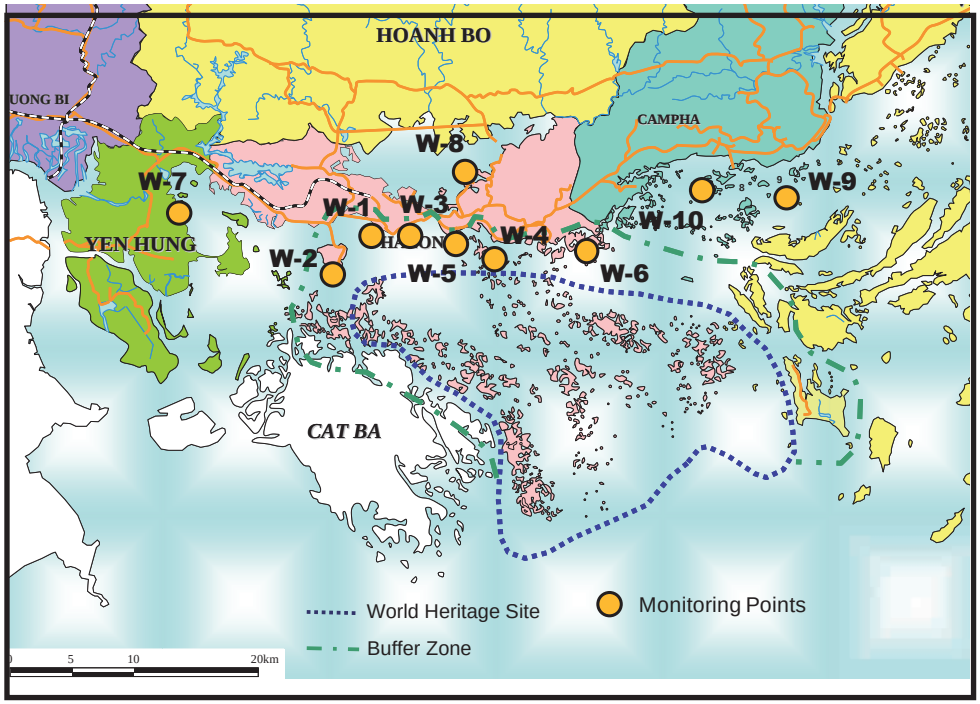
4) Monitoring Points

Considering location of selected major pollution source and areas to be monitored but that were not covered by the existing monitoring network, WG-1 selected 10 monitoring points for tentative water quality monitoring to examine necessity to add new water quality monitoring points. Location and characteristics of the monitoring points were as shown in Table 2 and Figure 3.

Table 2 Selected Monitoring Points by WG-1

No.	Name	Code	Coordination		Characteristics of Relevant Area
1	Resident Area of Hung Thang Ward	W-1	20°57'12.-N	107°00'23.-E	Area receiving waste from residents of Hung Thang, discharging to the Sea
2	Waste receiving area from tourist resorts operation of the Tuan Chau Island	W-2	20°55'24.13"	106°59'36.63"	Area near the Tuan Chau Ferry, opposite the beach, 300m away from the regulation lake.
3	Buffer Zone in front of Bai Chay Area	W-3	20°57'15.98"	107°02'53.88".	730m away from the Thanh Nien (theYouth) Beach.
4	Buffer Zone in front of Vùng đệm phía trước khu vực Hồng Gai và Hồng Hải	W-4	20°56'25.27"	107°06'14.48"	Area receiving domestic waste water source from residents and floating houses at Km 5.
5		W-5	20o56'56.63"	107o04'57.45"	Area receiving waste source from Halong Market and other sources of domestic wastewater.
6	Lo Phong stream	W-6	20°56'20.52"	107°12'14.05"	Receiving point of water from the Lo Phong stream.
7	Area relating to wastewater sources in Yen Hung District	W-7	20°58'44.47"	106°52'26.65"	Area receiving waste source from the Halong Developing Joint Stock Company, Dong Linh Village, Minh Thanh Commune.
8	Inland and Sea areas relating to the Ha Khanh zone	W-8	20°59'06.61"	107°05'04.60"	600m away from the drainage channel between Cao Xanh and Ha Khanh, near the ending point of the Halong Cement Conveying.
9	Coastal area relating to the new residential areas in Cam Binh to Cam Phu Wards.	W-9	20°59'04.10"	107°19'40.39"	Wastewater receiving point from the coal port, 5 km away from 10/10 port.
10		W-10	20°59'37.16"	107°16'32.05"	1 km from the Do Beach, domestic wastewater from resident areas.

Source: WG-1



Source: WG-1

Figure 3 Selected Monitoring Points by WG-1

5) Monitored Parameters

Usually, EMAC selected different parameters by each sampling point, considering characteristics of pollution sources affecting the area monitored. However, in this monitoring activity, same parameters were surveyed on all sampling points to confirm various possible impacts from main pollution sources. Analyzed parameters are shown in Table 3.

Table 3 Analyzed Parameters

Category	Parameters
Field measurement parameters	(1) water temperature, (2) pH, (3) DO, (4) EC, (5) turbidity, (6) salinity
Basic parameters	(1) SS, (2) BOD, (3) COD, (4) NH_4, (5) T-N, (6) T-P, (7) oil, (8) phenol, (9) coliform
Heavy metals	(1) As, (2) Cd, (3) Pb, (4) Cr (III), (5) Cr (VI), (6) Cu, (7) Zn, (8) Mn, (9) Fe, (10) Hg,

6) Sampling Date and Condition

Water samplings were implemented on 2nd and 3rd December 2011 under high tide condition, and 7th and 8th December 2011 under low tide condition. Samples were taken from surface layer and bottom layer.

7) Water Quality Analytical Results

Water quality analytical results of main parameters are shown in Table 4. COD and ammonium nitrogen concentration exceeded coastal standard value at almost all of sampling points. It is considered that sea water at each sampling point is affected by domestic and industrial wastewater. Coastal water along Halong city contained relatively high concentration of oil and grease. It is considered that operation of vessels affects water quality in buffer zone of Halong bay. At estuary of

Lo Phong stream, relatively high concentration of COD and heavy metals were observed. It can be said that coal mining activity in the upstream area of Lo Phong stream affects water quality.

Table 4 Analytical Results of Main Parameters

Station	Description	Period		pH	DO (mg/l)	COD (mg/l)	NH_4 (mg/l)	Oil and grease (mg/l)	SS (mg/l)	Pd	Mn	Fe
W-1	Resident Area of Hung Thang Ward	High Tide	Surface	7.8	7.7	3.1	0.21	0.12	8	N.D.	0.012	0.012
			Bottom	7.7	7.4	3.2	0.23	0.13	9	N.D.	0.011	0.013
		Low tide	Surface	7.7	7.1	3.3	0.26	0.20	10	0.002	0.019	0.016
			Bottom	7.6	6.9	3.3	0.27	0.20	10	0.002	0.018	0.016
W-2	Waste receiving area from tourist resorts operation of the Tuan Chau Island	High Tide	Surface	7.9	7.9	2.9	0.13	0.04	11	N.D.	0.015	0.017
			Bottom	7.8	7.1	2.9	0.13	0.03	7	N.D.	0.013	0.016
		Low tide	Surface	7.6	7.5	2.7	0.12	0.16	9	N.D.	0.048	0.013
			Bottom	7.8	7.1	2.9	0.13	0.14	9	N.D.	0.044	0.013
W-3	Buffer Zone in front of Bai Chay Area	High Tide	Surface	7.8	8.4	3.2	0.04	0.02	10	N.D.	0.016	0.014
			Bottom	7.7	8.2	2.9	0.04	0.19	8	N.D.	0.016	0.017
		Low tide	Surface	7.8	6.5	3.8	0.05	0.33	9	N.D.	0.017	0.015
			Bottom	7.7	6.1	3.7	0.05	0.34	9	N.D.	0.016	0.016
W-4	Buffer Zone in front of Hong Gai area	High Tide	Surface	7.9	8.3	4.4	0.17	0.04	8	N.D.	0.027	N.D.
			Bottom	7.9	7.6	3.8	0.19	0.04	8	N.D.	0.032	N.D.
		Low tide	Surface	8.0	8.3	4.7	0.49	0.07	6	0.002	0.036	0.065
			Bottom	8.0	7.9	4.8	0.58	0.07	8	0.002	0.036	0.07
W-5		High Tide	Surface	7.9	7.2	3.2	0.13	0.02	11	N.D.	0.019	0.018
			Bottom	7.9	7.8	3.1	0.11	0.02	11	N.D.	0.019	0.017
		Low tide	Surface	8.0	8.8	3.7	0.40	0.08	5	N.D.	0.037	0.055
			Bottom	1.8	8.0	4.9	0.67	0.09	10	N.D.	0.037	0.093
W-6	Lo Phong stream	High Tide	Surface	8.0	7.0	4.1	0.07	0.01	11	N.D.	0.027	0.017
			Bottom	8.0	6.8	4.7	0.08	0.01	8	N.D.	0.028	N.D.
		Low tide	Surface	7.8	5.9	4.8	0.36	0.07	33	0.193	0.063	0.112
			Bottom	7.8	5.4	4.9	0.45	0.07	97	0.195	0.191	0.530
W-7	Area relating to wastewater sources in Yen Hung District	High Tide	Surface	7.8	5.8	3.1	0.02	0.04	16	N.D.	0.015	0.027
			Bottom	7.7	4.7	3.3	0.05	0.10	8	N.D.	0.017	0.019
		Low tide	Surface	7.6	5.7	4.9	0.76	0.13	6	0.002	0.069	0.193
			Bottom	7.3	4.7	5.2	0.90	0.31	2	N.D.	0.056	0.099
W-8	Inland and Sea areas relating to the Ha Khanh zone	High Tide	Surface	7.7	12.7	4.4	0.11	0.02	10	N.D.	0.015	0.019
			Bottom	7.8	9.7	4.1	0.10	0.01	10	N.D.	0.017	0.018
		Low tide	Surface	7.5	6.1	4.6	0.29	0.08	12	N.D.	0.047	0.021
			Bottom	7.2	5.8	4.7	0.35	0.07	13	N.D.	0.047	0.029
W-9	Coastal area relating to the new residential areas in Cam Binh to Cam Phu Wards.	High Tide	Surface	7.8	9.1	4.1	0.14	0.03	7	N.D.	0.015	0.078
			Bottom	7.8	7.3	4.6	0.16	0.03	7	N.D.	0.014	0.084
		Low tide	Surface	7.9	8.4	4.0	0.63	0.08	5	0.044	0.044	0.040
			Bottom	7.7	6.4	4.4	0.72	0.07	10	0.044	0.122	0.039
W-10		High Tide	Surface	7.8	7.5	4.5	0.16	0.02	17	N.D.	0.006	0.023
			Bottom	7.8	6.9	4.4	0.19	0.03	15	N.D.	0.006	0.030
		Low tide	Surface	7.8	8.0	3.4	0.94	0.11	8	0.013	0.105	0.024
			Bottom	7.6	9.0	3.8	0.67	0.10	11	0.013	0.102	0.583
Coastal water quality standard (QCVN 10: 2008/BTNMT)		Aquaculture		6.5-8.5	≥5	3	0.1	0.1	50	0.05	0.1	0.1
		Recreation		6.5-8.5	≥4	4	0.5	0.2	50	0.02	0.1	0.1

Note: It means that the analytical result exceed coastal water quality standard value for aquaculture activity and recreation activity.

It means that the analytical result exceed coastal water quality standard value for aquaculture activity.

Source: EMAC

Attachment-2 List of Pollution Sources in CEPC

No.	Project Name (EN)	Project Name (VN)	District	Commune	Sector	Product or Service	No of Employee (person)	Authorization Type	Longitude (X)	Latitude (Y)
1	Ang Village lime-stone exploitation	Khai thác mỏ đá vôi khu thôn Ấng	Cam Pha Township	Quang Hanh Ward	Industry	Mineral mining	91	EIA	107.206400	20.978400
2	Quang Ninh Beer and Beverage Company	Công ty Bia và NGK Quảng Ninh	Halong City	Yet Kieu Ward	Industry	Beer & beverage	300	EIA	107.075596	20.958890
3	Vegetable-oil factory in Cai Lan	Nhà máy dầu thực vật Cái Lân	Halong City	Bai Chay Ward	Industry	Food products & processing	425	EIA	107.046726	20.974591
4	Activities for improving capacity of oil manufacture from 400 to 550 tons per day	Hoạt động nâng công suất xưởng tinh chế dầu từ 400 tấn /ngày đến 500 tấn /ngày	Halong City	Bai Chay Ward	Industry	Food products & processing	425	EPP	107.046726	20.973861
5	Wheat flour production Join Venture of Vima Flour	Liên doanh sản xuất bột mỳ Vima Flour	Halong City	Bai Chay Ward	Industry	Food products & processing	169	EIA	107.046162	20.976662
6	Clay exploition at Gieng Day mine for solution production to serve the geological survey drilling	Khai thác sét tại phường Giếng Đáy phục vụ sản xuất dung dịch khoan thăm dò địa chất	Halong City	Cam Thuy Ward	Industry	Mineral mining	32	EIA	107.001061	20.979351
7	Improving and repairing the Ha Tu Cement factory	Cải tạo, sửa chữa nhà máy xi măng Hà Tu	Halong City	Ha Phong Ward	Industry	Construction materials	200	EIA	107.164529	20.960617
8	Work of industrial waste water treatmen station at Cai Lan industrial zone - Halong city.	Dự án đầu tư xây dựng Khu xử lý nước thải công nghiệp tại KCN Cái Lân, thành phố Hạ Long	Halong City	Bai Chay Ward	Wastes treatment	Wastewater treatment facilities	200	EIA	107.032444	20.978549
9	Coal processing factory of Nam Cau trang	Nhà máy tuyển than Nam Cầu trắng	Halong City	Hong Ha Ward	Industry	Coal processing	2112	EIA	107.131127	20.946040
10	Coal production and business on coal processing of Nam Cau Trang factory	Mở rộng sản xuất kinh doanh than Nhà máy tuyển than Nam Cầu Trắng	Halong City	Hong Ha Ward	Industry	Coal processing	1468	EIA	107.131127	20.946040
11	Construction Investment of muddy water treatment on coal processing of Hon Gai factory	Đầu tư xây dựng công trình xử lý bùn nước nhà máy tuyển than Hon Gai	Halong City	Hong Ha Ward	Wastes treatment	Coal processing	25	EIA	107.131127	20.946040
12	Expanding and improving the exploitation capacity of the lime stone	Dự án mở rộng và nâng công suất mỏ đá vôi Km 15, phường Quang Hanh, thị xã Cẩm Phả, tỉnh Quảng	Cam Pha Township	Quang Hanh Ward	Industry	Stone quarrying	55	EIA	107.177503	20.966725
13	Cua ong Port	Cảng Cửa Ông	Cam Pha Township	Cua Ong Ward	Industry	Coal processing	1302	EIA	107.369127	21.022983
14	Warehouse for vegetable oil in Cai Lan	Kho dầu thực vật Cái Lân	Halong City	Bai Chay Ward	Industry	Food products & processing	15	EIA	107.045934	20.977238
15	Explosive production for open pit	Phân xưởng sản xuất thuốc nổ lộ thiên	Halong City	Ha Khanh Ward	Industry	Paper & paper products	60	EIA	107.105273	20.986760
16	Explosive materials production in Quang Ninh	Cơ sở sản xuất vật liệu nổ khu vực Quảng Ninh	Halong City	Ha Khanh Ward	Industry	Paper & paper products	210	EIA	107.105868	20.987094
17	Saigon- Halong hotel	Khách sạn Sài Gòn Hạ Long	Halong City	Bai Chay Ward	Tourism	Leisure facilities	226	EPP	107.039507	20.951526
18	Expanding factory for shipbuilding and repair in Ha Long company	Mở rộng nhà máy đúng tàu Hạ Long	Halong City	Gieng Day Ward	Industry	Transport equipment	1130		107.023809	20.984776
19	Build a redubt 50000 DWT - Ha Long Shipbuilding factory	Xây dựng ụ khô 50000DWT tại nhà máy đúng tàu Hạ Long	Halong City	Gieng Day Ward	Industry	Transport equipment	1392		107.025115	20.986867
20	Northern steel factory construction	Đầu tư xây dựng nhà máy thép phía Bắc	Halong City	Bai Chay Ward	Industry	Fabricated metal products	538	EIA	107.030777	20.985778
21	Lime-stone exploitation to supply the material for contructions Quang Hanh - Cam Pha Town	Khai thác đá làm VLXD phường Quang Hanh - thị xã Cẩm Phả	Cam Pha Township	Quang Hanh Ward	Industry	Construction materials	81	EIA	107.236500	21.002500
22	Exploitation and taking all of coal at coal Bed No.10 &11	Khai thác tận thu than vỉa 10 và vỉa 11 trong giới hạn mặt bằng khu đô thị ngành than	Halong City	Ha Khanh Ward	Industry	Coal processing	137	EIA	107.109588	21.000729
23	Stone mining for material construction at Quang Hanh ward, Cam Pha Town Quang Ninh	Khai thác đá làm vật liệu xây dựng tại phường Quang Hanh, thị xã Cẩm Phả, tỉnh Quảng Ninh	Cam Pha Township	Quang Hanh Ward	Industry	Construction material exploitation	62	EIA	107.212400	20.991700
24	Warehouse works of Nam Cau Trang port	Phân xưởng kho cảng Nam Cầu Trắng	Halong City	Hong Ha Ward	Industry	Coal processing	95	EPP	107.135219	20.940764
25	Improving the capacity of Cai Lan wheat flour production in Bai Chay from5 00tons to 750 tons per	Nâng công suất nhà máy sản xuất bột mỳ Cái Lân tại phường Bãi Cháy thành phố hạ Long tỉnh Quảng Ninh	Halong City	Bai Chay Ward	Industry	Food products & processing	170	EIA	107.046162	20.976662
26	Warehouse and processing coal in Cam Thach	Kho bãi chứa và chế biến than phường Cẩm Thạch, thị xã Cẩm Phả	Cam Pha Township	Cam Tay Ward	Industry	Coal mining	35	EPP	107.242328	20.993931
27	Ground for coal strore and delivery	Bến bãi xuất chứa than	Cam Pha Township	Cam Tay Ward	Industry	Coal mining	40	EIA	107.334173	20.999910
28	Stone exploitation at Cam pha Town	Hoạt động khai thác đá Cẩm phả	Cam Pha Township	Quang Hanh Ward	Industry	Construction material exploitation	184	EIA	107.240601	21.004230
29	Limestone exploitation for construction at Quang Hanh ward Cam Pha Town	Khai thác mỏ đá vôi làm vật liệu xây dựng tại phường Quang Hanh, thị xã Cẩm Phả tỉnh Quảng Ninh	Cam Pha Township	Quang Hanh Ward	Industry	Construction material exploitation	81	EIA	107.182274	20.970835
30	Moving the mechanical factory of Hon Gai to the new location in Hong Ha ward	Dự án di chuyển nhà máy cơ khí Hòn Gai đến địa đ iểm mới tại phường HồngHà, thành phố Hạ Long, tỉnh	Halong City	Hong Ha Ward	Industry	Machinery & equipment	270	EIA	107.130528	20.943093
31	Quang Hanh dock warehouse at Quang Hanh ward, Cam Pha town	Kho cảng Quang Hanh tại phường Quang Hanh, thị x ã Cẩm Phả	Cam Pha Township	Quang Hanh Ward	Industry	Coal mining	64	EPC	107.245400	20.997300
32	Production chemical fibre	Dự án nhà máy sản xuất sợi hóa học	Halong City	Bai Chay Ward	Industry	Textiles	350	EPP	107.031368	20.975026
33	Viet Nam AIDI high- grade candle production	Dự án nhà máy sản xuất nến cao cấp AIDI Việt Nam	Halong City	Bai Chay Ward	Industry	Chemicals and paints	800	EPP	107.032792	20.978144
34	Producing wire and cable	Sản xuất dây điện và cáp điện các loại	Halong City	Bai Chay Ward	Industry	Electronic equipment	100	EIA	107.029426	20.978164
35	Industrial explosive material warehouse	Kho vật liệu nổ	Halong City	Ha Tu Ward	Industry	Chemicals and paints	9	EPP	107.171404	20.960718
36	Expanding and upgrade Genaral hospital Bai Chay area	Nâng cấp, mở rộng Bệnh viện đa khoa khu vực Bãi Cháy	Halong City	Gieng Day Ward	Health	Hospital	520	EIA	107.013593	20.976242
37	Exploitation and processing Stone - Work C2	Khai thác và chế biến đá xây dựng - Công trường đá C2	Halong City	Ha Phong Ward	Industry	Coal mining	40	EIA	107.180432	20.956472
38	Project for coal mining at coal bed 4 (9) in TKV's Urban area.	Dự án khai thác thu hồi than vỉa 4(9) trong dự án khu đô thị ngành than tại phường Hà Khánh, thành phố Hạ	Halong City	Ha Khanh Ward	Industry	Coal mining	171	EIA	107.107764	21.001968
39	Construction work infection department	Xây dựng Công trình Khoa truyền nhiễm thuộc Bệnh viện Đa Khoa tỉnh Quảng Ninh	Halong City	Tran Hung Dao Ward	Health	Hospital	150	EIA	107.088756	20.952747
40	Investment construction 5 star IMICO Hotel	Đầu tư xây dựng khách sạn 5 sao IMICO tại phường Bãi Cháy, Hạ Long	Halong City	Bai Chay Ward	Tourism	Hotel	454	EIA	107.048309	20.955313
41	Cai Lan Thermal Power Plant	Nhà máy điện Cái Lân - Vinashin	Halong City	Gieng Day Ward	Industry	Power generation	100	EPP	107.026114	20.987093
42	Tuan Chau Tourist area	Dự án khu du lịch đảo Tuần Châu tại Quảng Ninh	Halong City	Tuan Chau Ward	Tourism	Leisure facilities	7000	EIA	106.991099	20.927337
43	Ha Long Union hotel	Khách sạn Công đoàn Hạ Long	Halong City	Bai Chay Ward	Tourism	Hotel	288	EPP	107.045904	20.954497
44	Ha Long Pearl Hotel	Khách sạn Ha Long Pearl	Halong City	Bai Chay Ward	Tourism	Hotel	150	EPP	107.041423	20.951540
45	Mithrin Hotel	Khách sạn Mithrin	Halong City	Cao Thang Ward	Electric and telecom.	Hotel	103	EPP	107.020037	20.956024
46	Novotel Hotel	Khách sạn Novotel	Halong City	Bai Chay Ward	Tourism	Hotel	200	EPP	107.042082	20.951620
47	Ha Long plaza hotel	Khách sạn Ha Long Plaza	Halong City	Bai Chay Ward	Tourism	Hotel	151	EPP	107.061047	20.960036
48	Heritage Ha Long Hotel	Khách sạn Heritage Hạ Long	Halong City	Bai Chay Ward	Tourism	Hotel	140	EPP	107.046754	20.955372
49	Hospital nursing and rehabilitation	Bệnh viện điều dưỡng và phục hồi chức năng Sở Y tế QN	Cam Pha Township	Quang Hanh Ward	Health	Hospital	50	EIA	107.198551	20.985116
50	10-10 and Khe Day ports	Cảng 10-10 và cảng Khe Dây	Cam Pha Township	Cam Phu Ward	Industry	Coal mining	134	EIA	107.325094	20.994572
51	Investment in renovation works Km6 ports in Quang Hanh Ward, Cam Pha Town	Đầu tư cải tạo công trình cụm cảng km6 tại phường Quang Hanh, thị xã Cẩm Phả	Cam Pha Township	Quang Hanh Ward	Industry	Coal mining	1302	EIA	107.245400	20.997300

Attachment-3 Water Quality Monitoring Activity with Secchi Disk

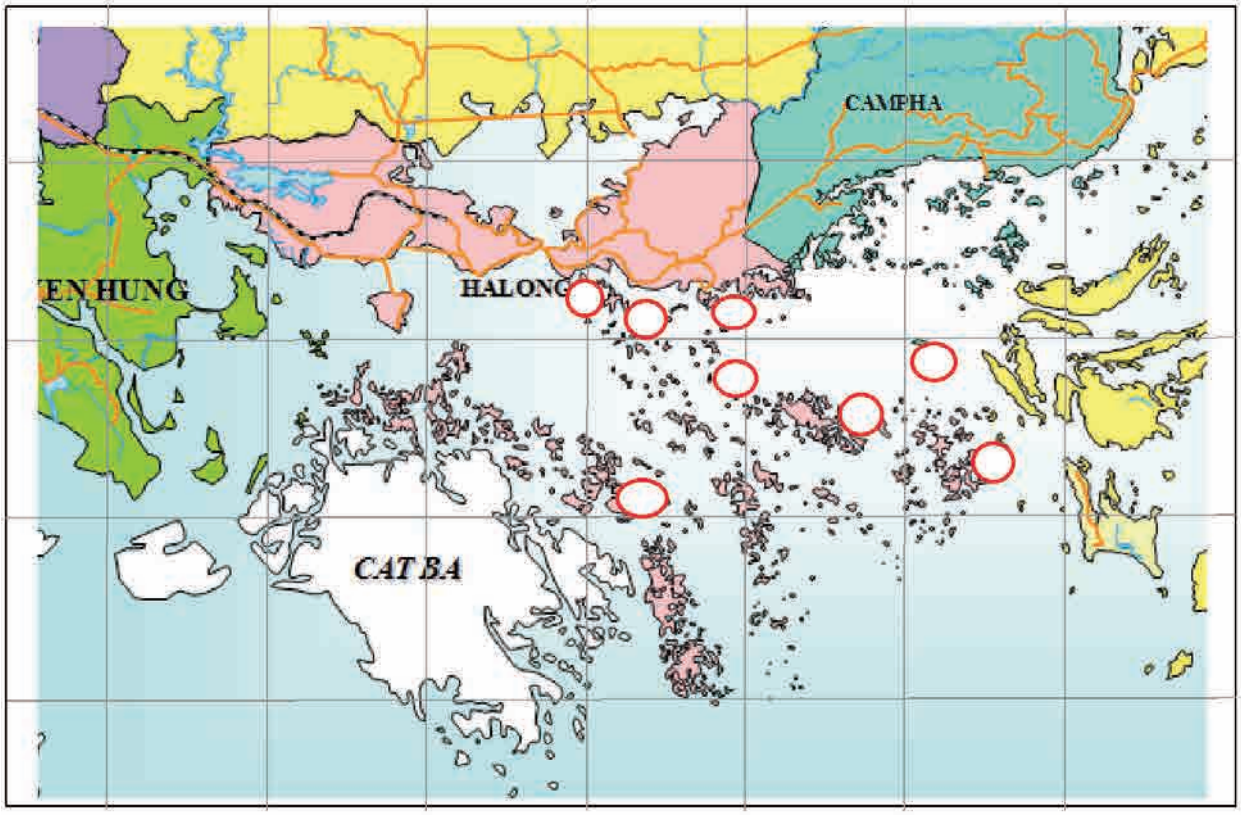
Processed Data

Result of Secchi Disk Data in Halong Bay

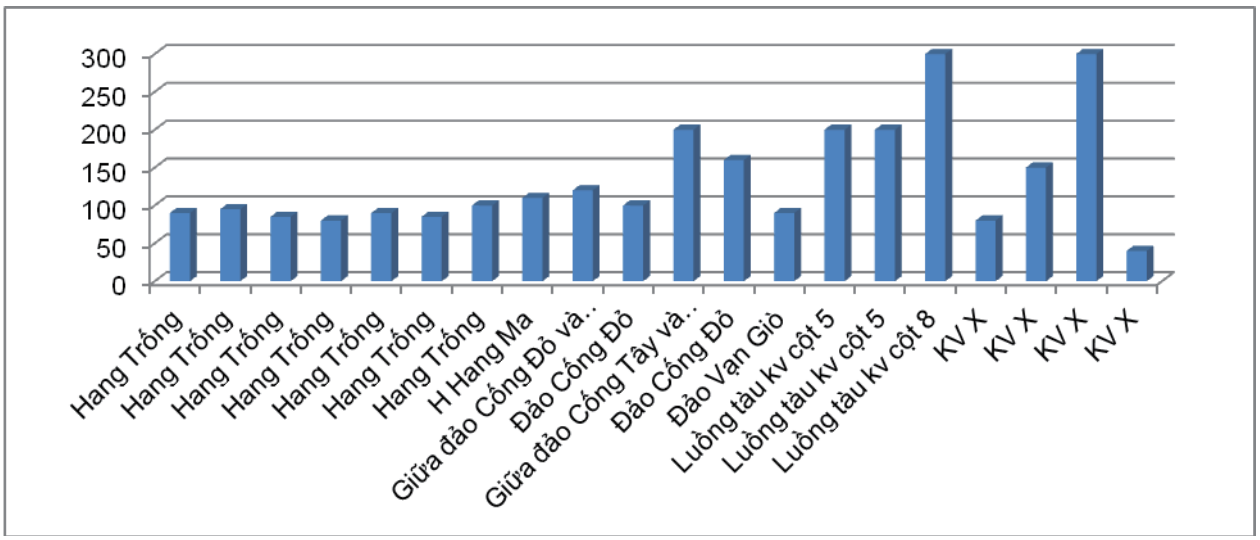
1. Sign of Measured Point

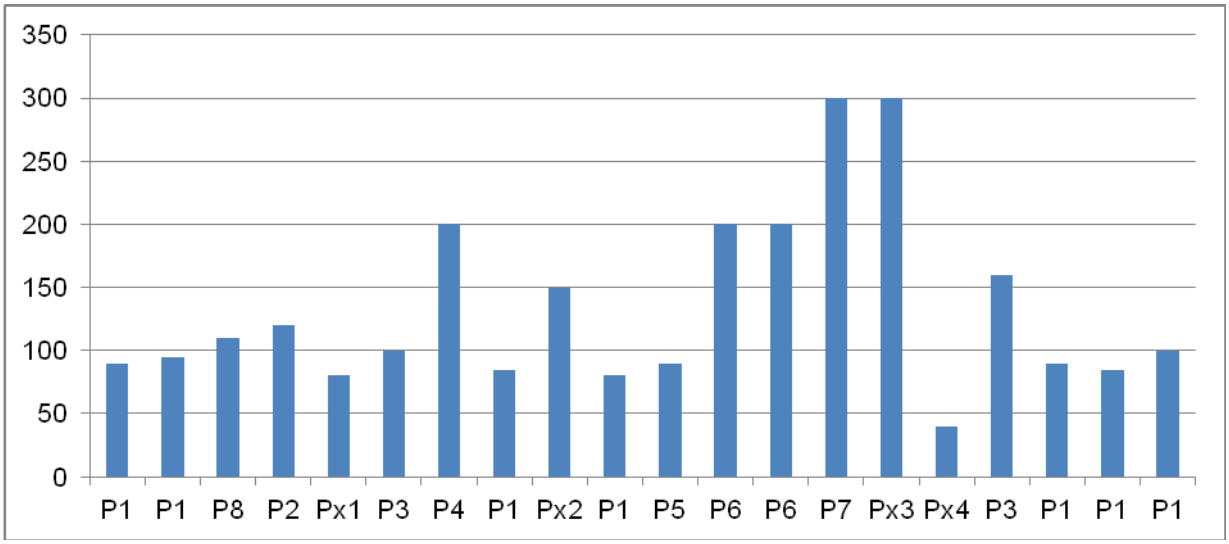
No	Measured Point	Sign
1.	Hang Trống	P1
2.	Giữa đảo Cống Đỏ và Bờ	P2
3.	Không đánh dấu	Px1
4.	Đảo Cống Đỏ	P3
5.	Giữa đảo Cống Tây và Đảo Cống Đỏ	P4
6.	Không đánh dấu	Px2
7.	Đảo Vạn Giò	P5
8.	Luồng tàu kv cột 5	P6
9.	Luồng tàu kv cột 8	P7
10.	Không đánh dấu	Px3
11.	Không đánh dấu	Px4
12.	H.Hang Ma	P

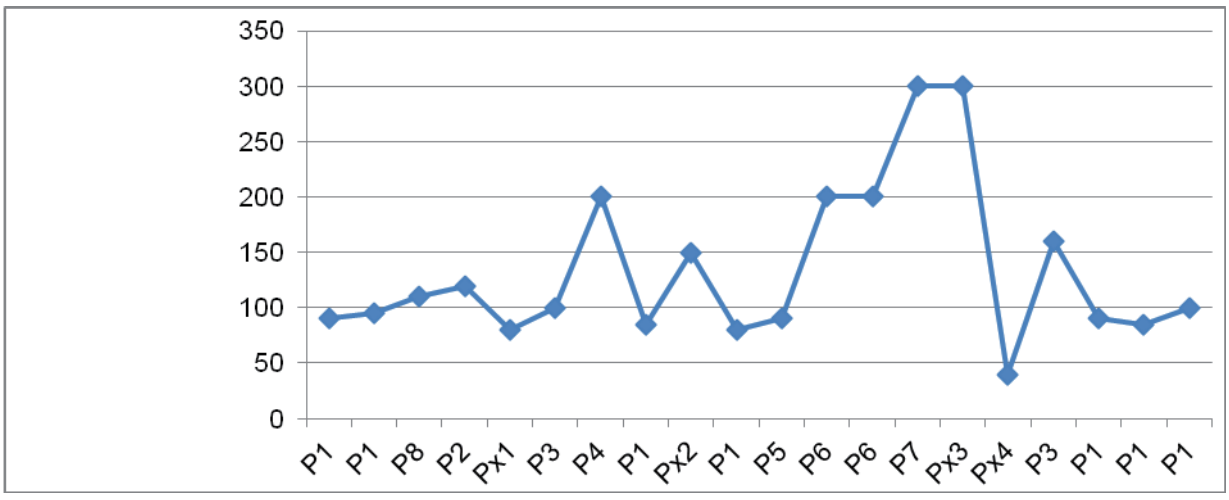
2. Measuared Point on Map



3. Graph


300
250
200
150
100
50
0
Hang Trống
Hang Trống
Hang Trống
Hang Trống
Hang Trống
Hang Trống
Hang Trống
H Hang Ma
Giữa đảo Cống Đỏ và...
Đảo Cống Đỏ
Giữa đảo Cống Tây và...
Đảo Cống Đỏ
Đảo Vạn Gió
Luồng tàu kv cột 5
Luồng tàu kv cột 5
Luồng tàu kv cột 8
KV X
KV X
KV X
KV X


350
300
250
200
150
100
50
0
P1 P1 P8 P2 Px1 P3 P4 P1 Px2 P1 P5 P6 P6 P7 Px3 Px4 P3 P1 P1 P1


350
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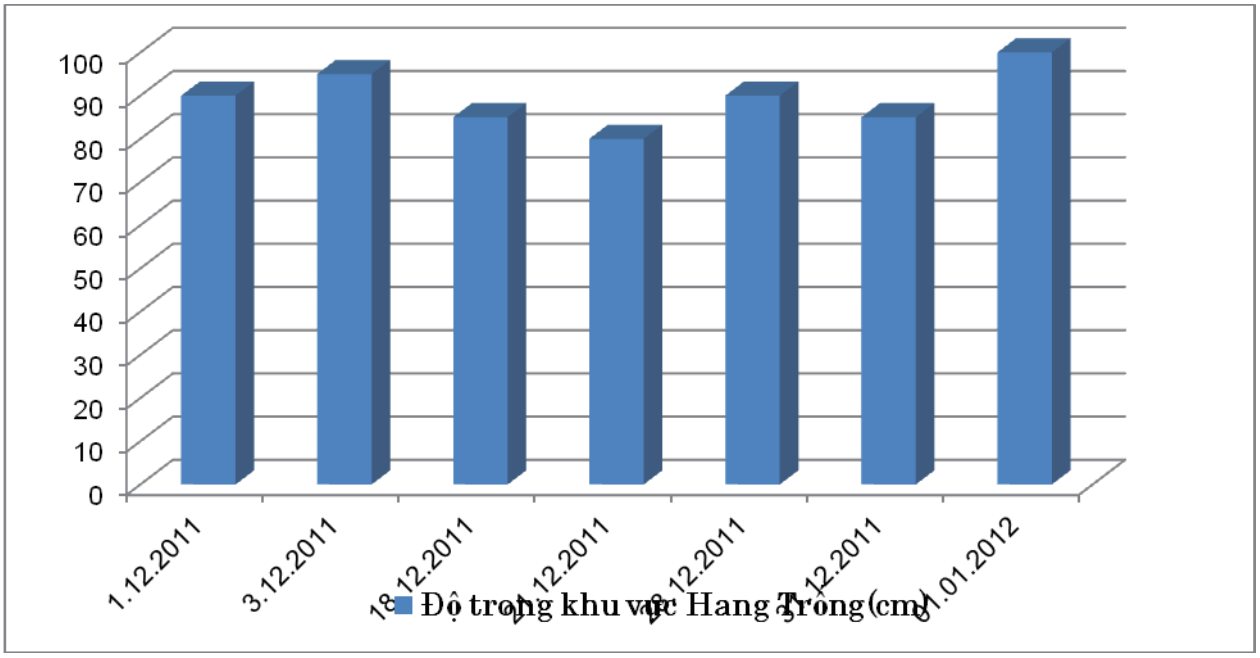
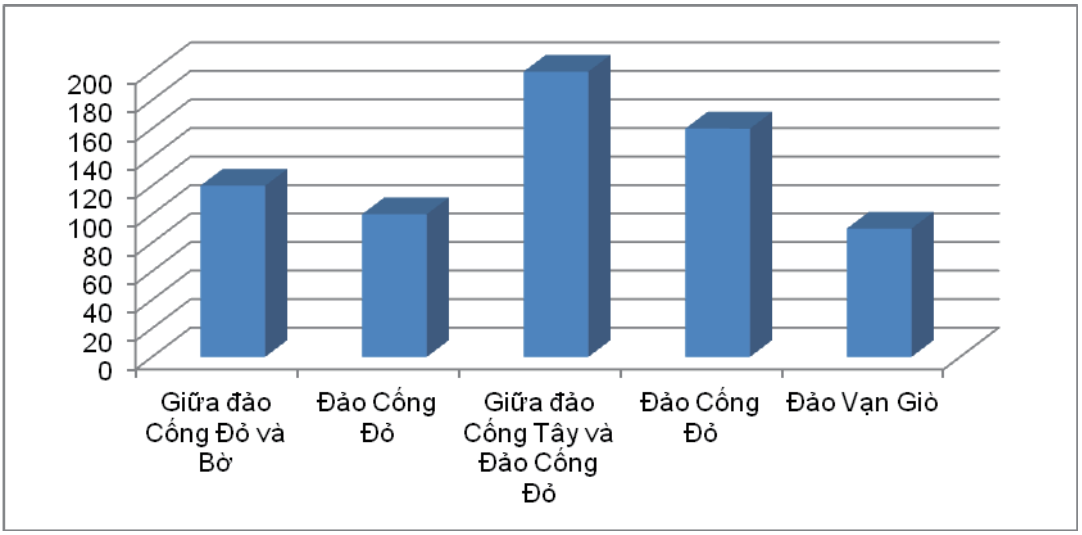
100
50
0
P1 P1 P8 P2 Px1 P3 P4 P1 Px2 P1 P5 P6 P6 P7 Px3 Px4 P3 P1 P1 P1

4. Graph of measured value at Hang Trống (P1)



⇨ The transparency at Hang Trong area varies a little between 80-100cm over different measured time

5. Transparency at in-shore areas



6. Comments

Regarding the data collection:

- There are some data without mention about measured point -> no meaning.
- There are some data recorded at time: 18:00-18:30pm or 19:00-19:30pm => These data is not honestly because that from 18:00pm the sun already set -> and the result is 90cm -> in December, from 18:00pm we can not see that Secchi disk until 60cm .
- The Anh Duong Company has just only one text style that copy for all 7 names of recorded at Hang Trong area => The authenticity of the data to review.
- There are some data recorded at Km5, Km8 that the results are from 200cm-300cm. It seems dishonest because that coastal area's transparency can't be measured with depth like that.
- Almost the results are by method 1 of measurement so it is impossible to compare.

About the results:

- The difference among the record time in a day and among day in month is not enough to estimate.
- At offshore areas the transparency is normally greater than coastal areas but the complied data is in contrast (comparing to Hang Trong area and Km5, Km8 area)

Part B
Implementation Plan of Inspection and Administrative Guidance

THE PROJECT FOR ENVIRONMENT PROTECTION IN HALONG BAY
OUTPUT-2: ENVIRONMENTAL MANAGEMET

IMPLEMENTATION PLAN
OF
INSPECTION AND ADMINISTRATIVE GUIDANCE

(INCLUDING SUGGESTION FOR STRENGTHENING ENVIRONMENTAL CHECK AND INSPECTION)

FEBRUARY 2013

WORKING GROUP OF ENVIRONMENTAL MANAGEMENT (WG-1)
JICA EXPERT TEAM (JET)

Table of Content

List of Table and Figure

Abbreviation

DONRE	Department of Natural Resources and Environment
ECD	Environment Control Division (of Sub-Department of EP in DONRE)
EIA	Environmental Impact Assessment
EMAC	Environmental Management and Analysis Center
EPC	Environmental Protection Commitment
MONRE	Ministry of Natural Resources and Environment
OJT	On the Job Training
PC	Peoples' Committee
PPC	Provincial Peoples' Committee
PSD	Pollution Source Database
PSI	Pollution Source Inventory
PST	Pollution Source Table
PSM	Pollution Source Map
QIZA	Quang Ninh Industrial Zone Authority
QN	Quang Ninh Province
Sub-Department of EP	Sub-Department of Environmental Protection
SWOT Analysis	Strength-Weakness-Opportunity-Threat Analysis
VND	Vietnamese Dong
WG-1	Working Group 1 of Environmental Management in the Project

Summary

1. Introduction

1.1 The environmental check and inspection are key activity of state environment management: i) to examine environment protection measures at pollution sources, and thereby, ii) to prevent violations and, as a result, to promote appropriate measures conforming to national, local environment protection policies/strategies and regulations. This is a report corresponding to the "Implementation Plan of Inspection and Administrative Guidance" defined in the activity 2-3-1 and 2-3-2 of the Output-2 (Environmental Management).

1.2 This Implementation Plan (Final Version) has been formulated, reflecting results of the check and inspection coming from activities conducted in 2010 to 2012, including some activities as measures for capacity development taken during the project period and some suggestions to be made by JET Expert.

1.3 In this report, in light of actual activities conducted by Sub-Department of Environmental Protection (EP), Inspection Division and other units, the following definitions of terms are applied:

- "Check (or environmental check)" means supervision and examination activities conducted by Sub-Department of EP, grounded on Law on Environment Protection.

- "Inspection (or environmental inspection)" means supervision and examination activities conducted by Inspection Division, grounded on Inspection Law, Law on Environment Protection and others.

- In addition, "administrative guidance" is interpreted as a collective term of orders or instructions given out by state management units as a result of check and inspection.

1.4 This report is aiming, specifically:

- To suggest countermeasures for improving the implementation of the environmental check and inspection for the water environment, and

- To suggest requirements of implementation plan to effectively enforce the environmental check and inspection.

2. Status of Water Environment Protection Measures

2.1 According to the Law on Environment Protection and other regulations in Vietnam, entities and projects discharging wastewater must comply with various regulations not to cause water pollution by taking appropriate environment protection measures. The status of water environment protection measures has been surveyed and clarified, because the improvement of protection measures is a final aim of the environmental check and inspection.

2.2 The Pollution Source Table in Quang Ninh Province lists 534 pollution source projects in 335 entities (investors) in Quang Ninh Province. Of them, actual pollution source project which are subject to EIA approval and discharges wastewater account for 310 projects. Of 310 projects, the Halong Area (Halong City, Cam Pha City and Hoanh Bo District) accommodates a total of 197 projects (64 %).

2.3 In terms of economic sector categories, of total 534 pollution source projects in Quang Ninh Province, the industry sector is at the highest rank (271 projects), followed by the tourism sector (30 projects) and the health care sector (19 projects). In the industry, coal mining which is a major industry in the regions placed at the highest rank (177 projects), followed by food processing (16 project), chemicals (8 projects) and metal products (8 projects).

2.4 Current environment protection measures by entities in Quang Ninh Province are very substandard. Namely:

- Many projects do not install necessary wastewater treatment facilities and are discharging untreated wastewater into the environment, and

- Many projects have not observed legal duties, failing to take necessary legal authorization, conduct self-monitoring, pay industrial wastewater fee and take wastewater discharge license..

2.5 It is assessed that such insufficient protection measures are attributed to very low environmental awareness of pollution source enterprises. The compliance status by pollution source projects may be considered to be resultant outcomes of pollution source control by state management agencies. Thus, it is implied that current pollution source control in Quang Ninh Province is weak in preventing violations and promoting necessary environmental protection measures at pollution sources.

3. Current Practice and Implementation of Check and Inspection

3.1 Numbers of management activities concerned with environmental check and inspection are carried out by environment-related institutes. Main units and their tasks are as follows:

- Sub-Department of EP conducts environmental check (not inspection) to investigate and supervise the status of environmental compliance in pollution generators. It doesn't have the power to impose administrative sanctions, even if violations are found out.

- Inspection Division is a state management agency to conduct the environmental inspection at provincial level. They have the power to impose administrative

sanctions against violators for environmental regulations.

- District-level PCs has the legal power to inspect projects with EPC registration to give out administrative sanctions to violations.

- EMAC is involved in measurement and analysis of effluent wastewater to check the observance of the national effluent standard, assisting the inspection conducted by Inspection Division and the check by Sub-Department of EP.

3.2 The environmental check by Sub-Department of EP aims to supervise (or examine) environment protection measures at pollution source projects against the Environment Protection Law and other regulations and/or requirements. If incompliances are detected, correspondent administrative instructions (otherwise called "administrative guidance") are given out to enterprises to take countermeasures for the improvement. This instruction is of the character of not "sanction" but "recommendation". Sub-Department of EP is not delegated the authority for imposing administrative sanctions.

3.3 Sub-Department of EP has conducted periodical environmental checks since the year 2005. While the numbers of the environmental check have fluctuated, they have conducted the checks of 48, 25 and 86 in 2009, 2010 and 2011. It is however presumed that these achieved numbers are not enough to supervise environment protection measures of about actual pollution source projects in Quang Ninh Province.

3.4 Members of Inspection Division lead the inspection activity as a responsible unit. The environmental inspection performed by Inspection Department aims to examine environment protection measures at pollution source projects against the Environment Protection Law and other regulations and/or requirements. If violations are detected, correspondent administrative sanctions are imposed in accordance to the Inspection Laws and other related regulations. Basically, environmental inspection is carried out in accordance with the inspection manual established by MONRE.

3.5 The administrative sanctions are imposed based on Decree No. 117/2009/ND-CP. Chief inspector and inspector on duty have the competence for sanctions. In 2009, a total of 25 pollution projects were subject to the environmental inspection but all of them were a part of the inspection including other fields. Inspection Division found out a total of 40 violations.

3.6 While a total of 12 staffs including a chief inspector are working in the division, only two (2) persons of them are dedicated to the environment field. This human shortage is a major reason why the division cannot organize environment-specialized inspection. This is why the necessity of human resources development in terms of both the quantity and quality has been emphasized in the annual implementation plan of environmental inspection.

3.7 Annual implementation plan of environmental check is established in the beginning of the year. Pollution source projects to be checked are selected from the list owned by Sub-Department of EP on projects with EIA approval, on the basis of historical reviews of violations.

3.8 Inspection Division makes an annual inspection plan in the end of every year. Though the implementation plan stipulates subject fields and industrial categories by quarterly periods, specific name of enterprises and numbers for the inspection are not set up.

3.9 Based on the OJT for four (4) entities, it has been observed that on-site check based on specialized knowledge and skills has not been realized in the current check and inspection. Thus, officers involved cannot have an insight to detect possible environmental violations in protection measures at site. From such view, more capacity building of officer's specialized knowledge and skills is inevitable to enhance the effect of the check and inspection.

4. Training Needs Analysis for Check and Inspection

4.1 In the environmental check and inspection, it has been clarified beforehand that the strengthening of the individual capacity of staffs concerned is one of key issues to be addressed. From that reason, this training analysis was conducted to assess present capacity of concerned staff and to analyze and clarify the training needs for the capacity building. For the training needs analysis, questionnaires were distributed to WG-1-concerned units (Inspection Division, EPC of Sub-Department of EP, EMAC, Halong City DONRE and Environmental police).

4.2 The higher training needs shown from members of Inspectorate are related with the category A (legal matters) and the category B (environmental check and inspection), as below (in the order of the magnitude of needs):

- Legal knowledge on administrative sanction (A)

- Knowledge and skills on consolidating and concluding environmental inspection and check results (B)

- Knowledge and skills on assessing environmental protection measures (B)

4.3 The higher training needs shown from members of Sub-Department of EP are related with all categories A to C, as below (in the order of the magnitude of needs):

- Knowledge and skills on wastewater environment protection measures (C)

- Knowledge and skills on assessing environmental protection measures (B)

- Knowledge and skills on checking and assessing

legal dossiers (B)

4.4 Considering the training needs identified through the training needs survey and the OJT, the "Wastewater Management Handbook" has been compiled and provided to members of DONRE. This is aiming to be used for technical trainings for building up specialized knowledge and skills necessary for the environmental check and inspection, as a technical information resource. This handbook is composed by essential parts necessary for the environment management in terms of wastewater treatment. It is expected that DONRE plans to set out opportunities for technical trainings for building up specialized knowledge and skills, by using these handbook.

5. Improvement of Implementation of Check and Inspection

5.1 As the result of SWOT analysis, a number of visible weaknesses in the check and inspection by Inspection Sub-Department of EP and Division have been found. Especially, weaknesses related to the enforcement of the both units are enumerated as below:

- Frequencies of the check and inspection are too low: The numbers of the check conducted by Sub-Department of EP in 2009 and 2010 are equivalent to only about 10 - 20%, to the total number of pollution source projects.

- Systematic and reliable information system is not in place: As for pollution source information, Sub-Department of EP has the existing database. However, this database cannot accumulate renewed information generated repeatedly, because of its construction is basically the plain spreadsheet type. Meanwhile, reports of check and inspection results are not accessible easily, because they are not archived, systematically.

- Referential manuals (procedural and technical) are not in place: Procedural and technical manual to support staffs engaged in the check and inspection are almost not in place. Therefore, the practices of check and inspection tends to be not unified and superficial (especially in case of younger staffs), missing out on potential problems in environment protection measures.

- Management resources are very limited: Human resources for the implementation of check and inspection are limited in both the quantity and quality. The actual total number directly dedicated to the environmental check in ECD of Sub-Department of EP are only five (5) and this is main cause of the insufficient frequency of the check and inspection. Because most of the staffs dedicated to the environment have only short work experiences in this filed, they don't have enough specialized knowledge, experience and skills, as clarified by them in the Technical Need Analysis.

5.2 Series of actions for the improvement of the implementation of check and inspection to solve a set of challenges identified as above are proposed. They are comprised of:

- Realization of effective and systematic inspection and check (Challenge 1)

- Consolidation of partnership among units concerned in environment check (Challenge 2)

- Development and sharing of pollution source information (Challenge 3)

- Development of management resource for check and inspection (Challenge 4)

To overcome these challenges, series of actions must be taken by mainly Sub-Department of EP to overcome challenges identified in the above.

5.3 Realization of effective and systematic check and inspection (Challenge 1) will be achieved by the following component actions:

- Setup of implementation criteria and planning of implementation of environmental check according to the criteria

- Setup of clear criteria for implementing environmental inspection

- Setup for criteria for imposing rigorous sanctions

5.4 Consolidation of Partnership among Units Concerned in Environmental Check (Challenge 2) will be achieved by the following component actions:

- Constructing of strong regime for environmental check by Sub-Department of EP

- Setup of a standing committee for environment check and inspection

5.5 Development and Sharing of Pollution Source Information (Challenge 3) will be achieved by the following component actions:

- Refining of pollution source database

- Updating data record in the database

- Sharing of pollution source information to partner units

5.6 Enhancement of Human Resource for Check and Inspection (Challenge 4) will be achieved by the following component actions:

- Organizing of internal trainings

- Organizing of technical trainings

6. Conclusion and Recommendation

6.1 Latest implementation status of the check: In 2011, Sub-Department of EP has enforced the environmental check for a total of 86 entities along the annual implementation plan. The numbers of implementation exceeded 84 entities which were set out in the plan. As the result of the environmental check, Sub-Department of EP requested that Inspection Division would impose appropriate administrative sanctions to four (4) entities which

have been founded to violate environmental regulations concerned. Also, Sub-Department of EP has established the implementation plan of the environmental check for 2012 against a total of 88 entities.

6.2 Latest implementation status of the inspection: In 2011, inspection Division has carried out the environmental-specialized inspection for a total of 18 entities. About 120 inspections including other fields have been enforced by Inspection Division. As a result, a total of 531 million VND have been imposed against a variety of infringements. In 2011, Inspection Division has imposed administrative sanctions against four (4) entities which violated environmental regulations, in response to the request from Sub-Department of EP. The annual implementation plan of the inspection for 2012 includes the implementation plan for the environmental-specialized inspection to be undertaken by Inspection Division.

6.3 WG-1B has tackled to improve challenges of check and inspection in various activities. By these undertakings, some challenges have been improved and/or moving to the betterment during this project period, as set forth below:

6.4 Realization of effective and systematic implementation of check and inspection (Challenge 1):

- The annual implementation plans for check and inspection have been formulated every year in recent years.

- The numbers of environmental check have been increased at the level of around 90 times a year.

- The criteria for the implementation of check and inspection have become clear.

6.5 Consolidation of partnership among units concerned with environmental check and inspection (Challenge 2): Necessary partnerships have come to be constructed, based on the communications among persons concerned, although special organizations were not formed.

6.6 Development of pollution source information system and information sharing (Challenge 3): The pollution source information system (like PSD, PSI (or PST) and PSM) using computers have been developed and started the operation, resulting into helpful tools for the implementation of check and inspection.

6.7 Enhancement of human resources engaged in check and inspection (Challenge 4):

- Training need analysis has been conducted, clarifying more opportunities for training to be necessary.

- The wastewater management handbook has been compiled and distributed as resource information.

6.8 The strengthening of check and inspection by Sub-Dept. and Inspection Division has been progressing, recently. It is, however, advisable that more rigid regime of check and inspection be consolidated to upgrade the environmental management. Major directions of further strengthening from now on are proposed, as follows:

6.9 To upgrade the quantity and quality of the environmental check and inspection, more frequent and strict check and inspection are crucial for promoting the environmental compliance of entities, by taking actions as below:

- To set up clear criteria for the implementation of check and inspection,

- To set up clear criteria for the imposition of sanctions in the shape of official documents,

- To set up and utilize internal training and other technical trainings to expand specialized knowledge and skills of persons concerned.

6.10 Effective and efficient utilization of the Quang Ninh Pollution Source Database (PSD) for the check and inspection should be pursued, by taking actions as below:

- To operate and update the PSD in a sustainable way in the cooperation of units concerned, and

- To upgrade the PSD into the type of the network environment, and

- To extend the application of the PSD into more units concerned (like District DONREs).

CHAPTER 1
INTRODUCTION

1.1 General

(1) Preamble

Pollution source control of environmental management in Vietnam is carried out with applying a number of management approaches. Among them, check and inspection (including administrative guidance) is a prime management instrument in the regulatory approach with the principle of "Command and Control".

The environmental check and inspection are key instruments of state management activities: i) to examine environment protection measures at pollution sources, and thereby, ii) to prevent violations and, as a result, to promote appropriate measures conforming to national, local environment protection policies/strategies and regulations.

This is a report corresponding to the "Implementation Plan of Inspection and Administrative Guidance" defined in the activity 2-3-1 and 2-3-2 of the Output-2 (Environmental Management).

(2) Updating and Review of Implementation Plan

The Implementation Plan was formulated in February 2011 as the initial version. In the year of 2011 and 2012, Quang Ninh DONRE had carried out series of activities for the environmental check and inspection as its regular tasks.

This Implementation Plan (Final Version) has been formulated, reflecting results of the check and inspection coming from activities conducted in 2010 to 2012, including some activities as measures for capacity development taken during the project period and some suggestions to be made by JET Expert.

1.2 Definition

The Record of Discussion of this Project says that one of Output-2 objectives is the enhancement of "environmental inspection and administrative guidance". Considering this main purpose of this Project, it has been interpreted that the terms of "environmental inspection" and "administrative guidance" imply "inspection (including check and examination) related to the environment", and "actions taken by administrative units", respectively.

In Vietnam, the terms of "inspection", "check" and other words are often used without clear definition, , thereby causing some confusions.

In this report, in light of actual activities conducted by Sub-Department of Environmental Protection (EP), Inspection Division and other units, the following definitions are applied:

- "Check (or environmental check)" means supervision and examination activities conducted by Sub-Department of EP, grounded on Law on Environment Protection.
- "Inspection (or environmental inspection)" means supervision and examination activities conducted by Inspection Division, grounded on Inspection Law, Law on Environment Protection and others.

In addition, "administrative guidance" is interpreted as a collective term of orders or instructions given out by state management units as a result of check and inspection. More specifically, "administrative guidance" is defined in this report in the relation with allocated mandates to units , as follows.

- In case of the check, administrative guidance means administrative instructions (not sanctions)

given out by Sub-Department of EP, requesting that pollution generators take appropriate countermeasures.

- In case of the inspection, administrative guidance means administrative sanctions (cautions, monetary fines, cease of operation, etc.) against violations given out by Inspection Division (exactly, chief inspectors and inspectors) and others, grounded on Inspection Law and other regulations,

The required content of Activity 2-3-1 in this Project is defined to develop "Implementation Plan of Inspection and Administrative Guidance". In view of the objective of Output-2, this report handles not just the "inspection" but both the "inspection" conducted by Inspection Department and the "check" by Sub-Department of EP.

It should be noted that the term of "administrative guidance" is often omitted from descriptions in this report to avoid redundancy, because the terms of "inspection" or "check" themselves are generally conceived to contain the meaning of "administrative guidance."

Based on the objective of Output-2 and the definitions above, this report covers the environmental check (including administrative instructions) conducted by Sub-Department of EP and the environmental inspection (including administrative sanctions) conducted by Inspection Division, also including some environmental activities taken by other units concerned.

1.3 Object of Report

The environmental check and inspection are conducted as a routine work mainly by Sub-Department of Environment Protection and Inspection Division of QN DONRE, involving other related units. Their responsibilities cover the whole territory of the province and the entire environment media (including air pollution, hazardous wastes, noise, etc.). Therefore, their annual implementation plan is to cover the entire environment media in the whole province as well as the water environment.

Moreover, the annual implementation plan of inspection formulated by Inspection Division deals with land use and mineral resources as well as the environment, because the inspection usually takes place all together. In this wise, Sub-Department of EP and Inspection Division have their respective implementation plan in response to their respective duties, and are practicing routine activities of check and inspection, respectively, cooperating each other, at times.

The environmental management (Output-2) of this Project is focusing on just the water environment in Halong Area. In view of such difference in the coverage between this Project and primary duties of both Sub-Department of EP and Inspection Division, this report is concentrating on how to improve their activities, not sticking to the preparation of specific annual implementation plan for actual enforcement.

From such view, this report is aiming, specifically:

- To suggest countermeasures for improving the implementation of mainly the environmental check and inspection for the water environment, and
- To suggest requirements of implementation plan to effectively enforce the environmental check and inspection.

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CHAPTER 2
STATUS OF WATER ENVIRONMENT PROTECTION MEASURES

2.1 General

According to the Law on Environment Protection and other regulations in Vietnam, entities and projects discharging wastewater must comply with various regulations not to cause water pollution, by obtaining authorizations from state management agencies and taking appropriate environment protection measures.

The status of water environment protection measures in Quang Ninh Province has been surveyed and clarified, because the improvement of protection measures is a final aim of the environmental check and inspection.

Sub-Department of EP has an existing database, tabulating the information of pollution sources. Besides, WG-1 is trying to develop a new pollution source database, up to now having generated an intermediate output of the Preliminary Pollution Source Table in Quang Ninh Province. **Annex 1** is the Pollution Source Table[1] in the Halong Area.

2.2 Distribution of Pollution Sources

(1) Number of Pollution Source Projects

The Pollution Source Table in Quang Ninh Province lists 534 pollution source projects in 335 entities (investors) in Quang Ninh Province. Of them, actual pollution source project which are subject to EIA approval and discharges wastewater account for 310 projects, as shown in **Table 1**. The remaining projects are construction works, irrigation works, road construction, forestation, etc. which are not directly related to the water environment.

Table 1 Numbers of Actual Pollution Sources in Quang Ninh Province

District	Number of Pollution Source
Ba Che District	2
Cam Pha City	92
Co To District	1
Dam Ha District	3
Dong Trieu District	32
Hai Ha District	4
Halong City	74
Hoanh Bo District	31
Mong Cai City	6
Tien Yen District	3
Uong Bi City	42
Van Don District	8
Q. Yen Town	10
Unknown	2
Total	310

Source: Pollution Source Table in Quang Ninh Province, WG-1G, August 13, 2012

Note: Table lists projects with discharging wastewater.

[1] : The term "Pollution Source Table" is used instead of "Pollution Source Inventory" in this project, to avoid the confusion with the terms "Inventory" being used in the Pollution Source Database.

In Quang Ninh Province, a total of 11 industrial or economic zones are operated, including some ones under construction. They are industrial zones of Hai Yen, Hai Ha, Tien Yen, Viet Hung, Cai Lan, Dam Nha MAC, Dong Mai, Phuong Nam and Quan Trieu, and economic zone of Van Don. Of a total of 310 projects, a total of 30 projects are located in industrial zones in Quang Ninh Province. In Halong Area, a total of 17 projects are located in industrial zones.

Of 310 projects, the Halong Area (Halong City, Cam Pha City and Hoanh Bo District) accommodates a total of 197 projects (64 %), as shown in Table 2. At the commune-level, Bai Chay (Halong City), Mong Duong and Quang Hanh (Cam Pha City) have a large numbers of pollution source projects.

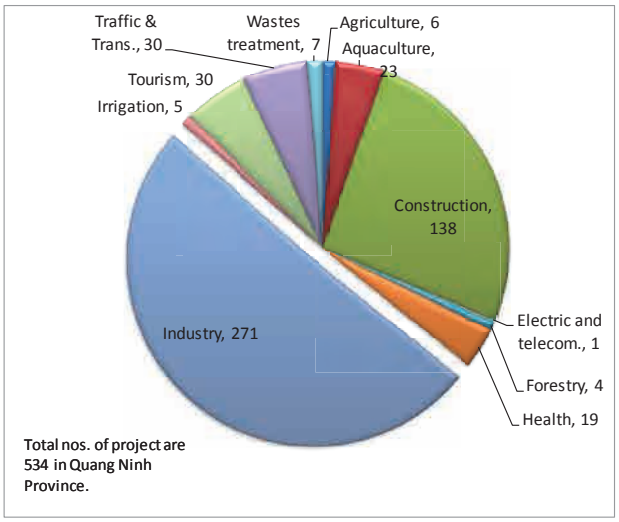
Table 2 Numbers of Pollution Sources in Halong Area

Halong City		Cam Pha City		Hoanh Bo District	
Ward	Pollution Source	Ward	Pollution Source	Commune	Pollution Source
Bai Chay	19	Cam Đong	3	Dan Chu	2
Cao Thang	1	Cam Hai	1	Hoa Binh	1
Cao Xanh	1	Cam Phu	9	Le Loi	5
Gieng Day	4	Cam Tay	3	Quang La	1
Ha Khanh	15	Cam Thach	2	Son Duong	2
Ha Khau	4	Cam Thanh	1	Tan Dan	3
Ha Lam	3	Cam Thinh	1	Thong Nhat	12
Ha Phong	4	Cam Thuy	5	Troi	2
Ha Tu	5	Cao Son	5	Vu Oai	3
Hong Ha	7	Cong Hoa	1		
Tran Hung Dao	1	Cua Ong	4		
Tuan Chau	1	Duong Huy	14		
Viet Hung	2	Mong Duong	24		
Yet Kieu	1	Quang Hanh	19		
Unknown	6				
Total	74	Total	92	Total	31

Source: Pollution Source Table in Quang Ninh, WG-1G, August 13, 2012.
Note: Table lists projects with discharging wastewater.

(2) Category of Pollution Source Projects

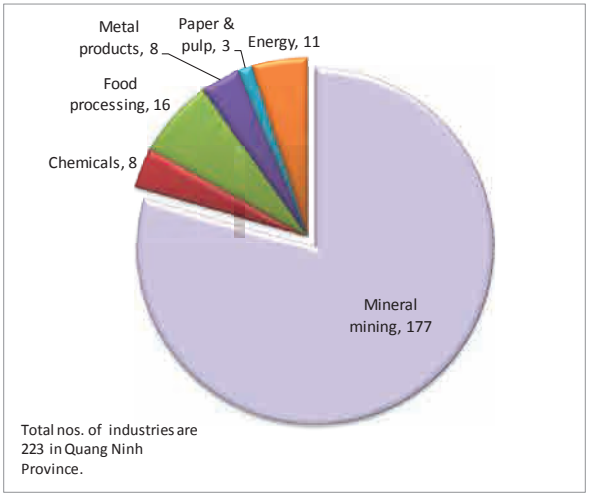
In terms of economic sector categories, of total 534 pollution source projects, the industry sector is at the highest rank (271 projects), followed by the tourism sector (30 projects) and the health care sector (19 projects), as shown in **Figure 1**.



Source: Pollution Source Table in Quang Ninh, WG-1G, August 13, 2012.

Figure 1 Shares of Pollution Source Sectors in Quang Ninh Province

In the industry, coal mining which is a major industry in the regions placed at the highest rank (177 projects), followed by food processing (16 project), chemicals (8 projects) and metal products (8 projects), as shown in **Figure 2**.



Source: Pollution Source Table in Quang Ninh, WG-1G, August 13, 2012.

Figure 2 Shares of Industrial Sub-Sectors in Quang Ninh Province

2.3 Environment Protection Measures at Sources

The current status of water environment protection measures at pollution sources and the accomplishment of their duties are summarized as **Table 3**, based on the environmental check results.

As seen from these records, environment protection measures by entities in Quang Ninh Province are very substandard. Namely:

- Many projects do not install necessary wastewater treatment facilities and are discharging

untreated wastewater into the environment, and

- Many projects have not observed legal duties, failing to take necessary legal authorization, conduct self-monitoring, pay industrial wastewater fee and take wastewater discharge license..

Table 3 Current Status of Water Protection Measures in Quang Ninh Province

Items	Status
Environmental authorization	97% of checked projects obtain the authorizations with EIA approval or EPC registration, but many of them have not submitted necessary renewals.
Provision of wastewater treatment facilities	84 % of checked projects are equipped with some types of industrial wastewater treatment facilities. However, only 38 % of them can treat wastewater to meet with the national effluent standards and the remaining is not enough to treat wastewater.
Payment of wastewater fee	37 % of checked projects pay industrial wastewater fees but the remaining 56 % don't pay.
Wastewater discharge license	14 % of checked projects have taken license but the remaining don't have.
Self-environment monitoring	28 % of checked projects submit self-environment monitoring report in compliance with regulations but the remaining don't submit.

Source: Pollution Source Table in Quang Ninh, WG-1G, August 13, 2012.

It is assessed that such insufficient protection measures are attributed to very low environmental awareness of pollution source enterprises.

The compliance status by pollution source projects may be considered to be resultant outcomes of pollution source control by state management agencies. Thus, it is implied that current pollution source control in Quang Ninh Province is weak in preventing violations and promoting necessary environmental protection measures at pollution sources.

CHAPTER 3
CURRENT PRACTICE AND IMPLEMENTATION OF CHECK AND INSPECTION

3.1 Overview

The environmental check and inspection (including administrative guidance) are essential state management activities to realize appropriate environment protection measures.

A number of institutes and units are involved in environmental check and inspection. Among them, Sub-Department of EP and Inspection Division play a leading role in the implementation of environmental check and inspection. Thus, this report is focusing on mainly related activities taken by Sub-Department and Inspection Division and related issues to be addressed.

3.2 Units and Tasks Concerned with Check and Inspection

(1) General

Numbers of management activities concerned with environmental check and inspection are carried out by environment-related institutes and units and they involve diverse works, as shown in **Table 4**.

Table 4 Management Activities Related to Check and Inspection

Units	Activities and Tasks
Environment Control Division of Sub-Department of EP (of DONRE)	Carry out environmental check (otherwise called examination and supervision) for pollution sources and give recommendations to take appropriate protection measures..
Inspection Division (of DONRE)	Carry out environment-specialized inspection to give and impose administrative sanctions against violations, if they founded out.
Environment Police Department (of Provincial Police)	Carry out environmental inspection to impose administrative sanctions and to make criminal accusation against violations.
Quang Ninh Industrial Zone Authority (QIZA)	Carry out the environmental management on pollution source project in industrial or economic zones.
District Level PCs	Carry out environmental specialized inspection and environmental check for EPC registration projects to give recommendations and to impose administrative sanctions against violations.
Environment Management and Analysis Center (EMAC)	Carry out measurement and analysis for checking the compliance status to the national standard.
Water Resources Division (of DONRE)	Carry out and assist in the environmental check and inspection related wastewater discharge and groundwater exploitation.

Source: Compiled by WG-1

Sub-Department of EP (actually, Environment Control Division (ECD) is in charge) conducts environmental check (not inspection) to investigate and supervise the status of environmental compliance in pollution generators. It doesn't have the power to impose administrative sanctions, even if violations are found out.

Inspection Division is a state management agency to conduct the environmental inspection at provincial level. Besides, city/district DONREs (of city/district PCs) have the mandate for the environmental inspection against projects with EPC registration. They have the power to impose administrative sanctions against violators for environmental regulations.

Environmental Police Department (of Provincial Police) has the power to prosecute violators as criminal cases, in addition to imposing the administrative sanction.

Quang Ninh Industrial Zone Authority (QIZA) implements the environmental management within the area of industrial or economic zones. Summarized results of the environmental management are reported to DONRE, periodically.

EMAC is involved in measurement and analysis of effluent wastewater to check the observance of the national effluent standard, assisting the inspection conducted by Inspection Division and the check by Sub-Department of EP.

Water Resources Division participates in the environmental check and inspection at times, because it grants licenses for wastewater discharge and groundwater exploitation.

(2) Sub-Department of EP

1) Environmental Check

In Sub-Department of EP, Environment Control Division (ECD) is in charge of actual works of the environmental check.

The environmental check by Sub-Department of EP aims to supervise (or examine) environment protection measures at pollution source projects against the Environment Protection Law and other regulations and/or requirements. If incompliances are detected, correspondent administrative instructions (otherwise called "administrative guidance") are given out to enterprises to take countermeasures for the improvement. This instruction is of the character of not "sanction" but "recommendation". Sub-Department of EP is not delegated the authority for imposing administrative sanctions.

2) Participants in Environmental Check

In the environment check performed by Sub-Department of EP, a number of related units participate, depending on the subject projects. They are Inspection Division, Water Resources division, Department of Industry and Trade, Medical Department, Mineral Resources Division, District-level PCs and others. Besides, Environmental Police joins the environmental check, occasionally.

Among others, the participation of Inspection Division and Environmental Police imply important meanings, because Sub-Department of EP has no authority to impose administrative sanctions against violations. Even not in the environmental inspection performed by Inspection Division, inspectors from Inspection Division who attend the check may impose administrative sanctions against violations, provided that evidential records are established. In case of Environmental Police, it can deal with violations even as criminal cases as well as administrative violations.

3) Information on Pollution Sources

Sub-Department of EP has been using the database of spreadsheet type to keep records of environmental checks. This existing database which covers all environment media as well as the water environment enumerates a total of 450 projects in the whole Quang Ninh Province and a total of 174 projects in the Study Area. The data/information contained in the database are a total of 42 for each projects which include basic information, legal procedures, check records of environment protection measures and others.

It is considered that the existing database may be useful data/information source for environmental inspection. However, there are some difficulties in using it as a complete pollution source inventory, because:

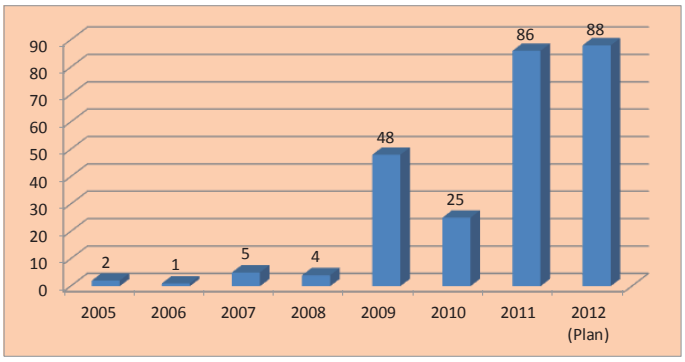
- It cannot record renewed EIAs in the relational function with an original one;
- It is difficult in recording results of inspection and check more than one;
- Some necessary data/information for actual pollution control should be added;

- Some unauthorized projects which don't obtain EIA or EPP approval are not recoded in it;
- Some projects without renewal EIAs are existing; and
- Some withdrawing projects are still remaining on the record.

Therefore, it is assessed that the existing database is required to be renewed into a more systematic and effective type by means of a database application soft.

4) Practices of Environmental Check on Site

Up to 2010, Sub-Department of EP has conducted a total of 85 environmental checks since the year 2005, according to available check reports. While the numbers of the environmental check have fluctuated 48, 25 and 86 in 2009, 2010 and 2011, as shown in **Figure 3**, the desired level have not been achieved, yet. It is presumed that these achieved numbers are not enough to supervise environment protection measures of about actual pollution source projects in Quang Ninh Province.



Source: Source: Quang Ninh Preliminary Pollution Source Table, WG-1G, February 18, 2011, and other sources.

Figure 3 Numbers of Implemented Environmental Check

As the result of the environmental check, Sub-department of EP has given out administrative instruction (request and/or recommendation) to almost all of pollution source enterprises. Despite these administrative instructions, actual environment protection measures have not been improved visibly, due to the lack of compliance awareness in enterprises and incomplete follow-up activities by Sub-department of EP.

5) Administrative Instructions

Sub-Department of EP has been conducting the environmental check as a routine work, setting up the annual implementation plan. Besides regular environmental check, Sub-Department conducts un-scheduled check against serious environment pollutions, in response to the requests from upper-layer institutes (like PCs, Provincial Council and Provincial Party Committee) and other information sources.

The examinations at sites are conducted in almost similar manner to that by Inspection Division, except for administrative guidance. According to reports of the environmental check, series of items related with environment management activities are examined at sites, like; dossiers for authorization, payment of environment protection, provision and operation of wastewater treatment plant, etc. As a result of site examination, the check team has given out administrative instruments in almost all checks. Examples of administrative instructions are shown in **Table 5**.

Administrative instructions are just requests which Sub-Department of EP urges for pollution generators to take appropriate measures. Because they don't legal power to impose administrative sanctions against negligence, these instruction are often neglected in many cases, reportedly.

Table 5 Examples of Administrative Instructions Given out in Check

Date of Check	Entity	Project	Instruction from Check Team
2010/10/12	Bai Tho Construction material Company	Lime-Stone Exploitation	- To make project and deposit for environmental improvement and rehabilitation, then submit approving authority before 30 November 2010. - To implement rightly the pledged contents of approved EIA report. - To update mining status and report mineral exploration operation according to regulation.
2010/6/16	Beer and Beverage Company	Viet Duc Beer Factory	- To require unit construct wastewater treatment system meet technique according to regulation, finish before 31 December 2010. - To hasten progress of making project on discharging waste water to common source on order to take License of wastewater discharge to source before 30 September 2010.
2010/9/17	Cao Thang Coal Enterprise	Project for Expanding Coal Mine of Cao Thang	- Define industrial wastewater discharge from pollution sources according to fact-production in order to ensure exact wastewater fee return. After having analysis result of wastewater quality, the unit will inform to the enterprise. In necessary, the unit must adjust the return and pay further fees for the pollution resource at +48 pit-door according to regulations. - To implement fully the contents of approved EIA report; To hasten construction progress for wastewater treatment system at +15 pit-door; To raise capacity of +48 pit-door wastewater treatment system in order to ensure treatment effect.
2010/10/14	Dong Bac Shipping Industry JS Company	Facility Construction for Ship Repairing and New Building	- To declare and pay for wastewater fees according to regulations. - To implement fully the contents of approved EIA report.
2010/5/14	General Hospital in Q. Yen Town	General Hospital in Q. Yen Town	- To complete the documentation for the issuance into common area accordance with Decision of No.149/2004/ND-CP date 22/7/2004 by the Government before 31 May 2010. - Unit operates in accordance with the procedure and check operation status of treatment system for wastewater and incinerator system for medical waste, and; record operation diary of these systems. - Contract with functional units for collection and treatment according to regulation in May 2010. - Regularly monitor environment for wastewater, emission gas and around environment three months per one time; report environment protection to DONRE, natural resource and environment office of Q. Yen Town to keep watch and check on implementation.
2010/9/17	Hon Gai Coal Company, VINACOMIN	Coal Mine of Cao Thang	- To implement fully contents of EIA report. - To make progress of construction and operate wastewater treatment system at +15 pit-door.
2010/9/14	Khe Cham Coal Company	Coal Mine of Khe Cham	- To define wastewater discharge from pollution sources in reality. - To have measure for collection and management HW according to regulation.

6) Resources for Environmental Check

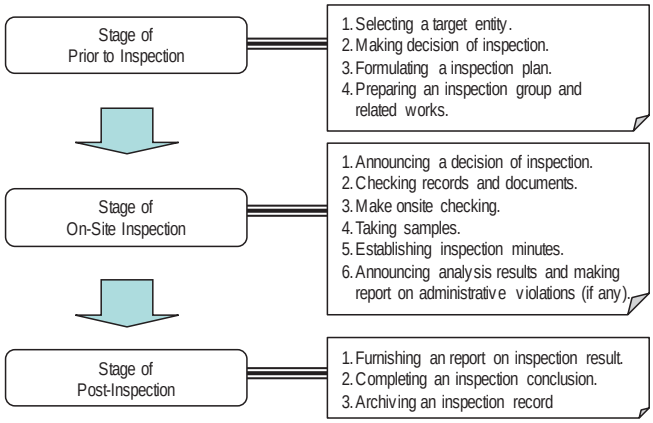
EPC of Sub-Department has five (5) staffs for the assignment of the environmental check. Given a total number of 265 projects in Quang Ninh Province, it is obvious that the present staff's numbers are very short.

(3) Inspection Division

1) Annual Implementation Plan

The environmental inspection performed by Inspection Department aims to examine environment protection measures at pollution source projects against the Environment Protection Law and other regulations and/or requirements. If violations are detected, correspondent administrative sanctions are imposed in accordance to the Inspection Laws and other related regulations.

Basically, environmental inspection is carried out in accordance with the inspection manual established by MONRE. **Figure 4** shows typical procedure of the environmental inspection including the preparation, inspection on site and post-inspection stage. Before the inspection on site, individual inspection plans are prepared to clarify details and specific information on respective pollution source projects.



Source: Prepared by WG-1

Figure 4 General Procedure of Environmental Inspection

2) Participants in Site Inspection

Members of Inspection Division lead the inspection activity as a responsible units. In the inspection subject to the environment, a member of Sub-Department of EP dedicated to this field accompanies as a member of this inspection team. In case water quality measurement and analysis are necessary, a member of EMAC participates to take samples, also.

Environmental Police joins in some cases, under the consideration of the necessity. Members of other divisions in DONRE and district PCs participate in the environmental inspection, to assists the inspection team also, when needed.

3) Administrative Sanction

The administrative sanctions are imposed based on Decree No. 117/2009/ND-CP. Chief inspector and inspector on duty have the competence for sanctions. According to this decree, not only monetary fines but also other sanctions (cease of operation, remedies, etc.) can be given out as per **Box 1**, but it is reported that cease and ban of operation have never been exercised in Quang Ninh Province, up to now. Besides chief inspectors and inspectors, even chairpersons of commune-level, district-level and province-level have the competence for the administrative sanctions, too.

Box 1 Excerption of Administrative Violations and Sanctions in Decree No.117

§1. Sanctioning Competence

The Decree gives the sanctioning competences with different sanctioning degrees to the following:

Article 40: Commune-level People's Committee chairpersons, District-level People's Committee chairpersons,

Provincial-level People's Committee chairpersons.

Article 41: Environmental policeman on duty, Heads of commune-level Public Security Sections, Heads of district-level Environmental Police divisions and Public Security Division, Director of Environmental Police department.

Article 42: Specialized environmental protection inspectors of provincial-level DONREs on duty, Chief inspectors of provincial-level DONREs, Chief inspector of General department of Environment, Chief inspector of MONRE.

§2. Form of Sanctions for Administrative Violations

The Decree defines forms of sanctions, as follows:

Article 3:

1. Principal sanctions: Caution, fine,

2. Additional sanctions: Deprivation of the right, license, confiscation of material evidence and means,

3. Remedies: Forced application of measures, forced restoration, forced transportation, forced destruction, forced proper implementation of all contents of EIA, forced proper operation, construction and installation, forced compliance, forced termination, forced recovery or handling, forced restoration.

Article 4:

Handling for polluting or seriously polluting establishments: operation suspension, forced relocation, operation ban, publication of information,

§3. Forms of Administrative Violations subject to Fines, Remedies and Others

The Decree classifies forms of administrative violation subject to fines, remedies and others (related to the water environment), as follows:

Article 7: Violation of procedural regulations on EPCs or EPSs (Environmental Protection Scheme)

Article 8: Violation of procedural regulation on EIA

Article 10: Violation of regulations on wastewater discharge

Article 15: Violation of environmental protection regulations committed by establishment on the list of seriously polluting establishments or establishments subject to forced relocation

Article 33: Violation of regulations on environmental incident response and handling

Article 34: Violation of regulations on provision of consultancy services for preparing environmental impact assessment reports or services for appraising environmental impact assessment reports

Article 35: Violation of regulations on payment of environmental protection charges, environmental rehabilitation and restoration deposits or insurance for environmental damage compensation liability

Article 36: Violation of regulations on collection, management, exploitation and use of environmental data and information

Article 37: Violation of regulations on protection and use of facilities, equipment or means for environmental protection

Article 39: Obstructing environmental protection state management, inspection, examination, or administrative sanctioning

(Source: Decree No. 117/2009/ND-CP (on the handling of law violation in the domain of environmental protection)

In 2009, a total of 25 pollution projects were subject to the environmental inspection but all of them were a part of the inspection including other fields. Inspection Division found out a total of 40 violations, as a result of the environmental inspection and has given out a set of correspondent administrative sanctions against these violations, as the state management authority. Total amounts of 350 million VND were imposed in 2009, as the result of inspection for 25 pollution source enterprises.

4) Resources for Environmental Inspection

While a total of 12 staffs including a chief inspector are working in the division, only two (2) persons of them are dedicated to the environment field. This human shortage is a major reason why the division cannot organize environment-specialized inspection. This is why the necessity

of human resources development in terms of both the quantity and quality has been emphasized in the annual implementation plan of environmental inspection.

In addition, Inspection Division is not endowed with hard-wares necessary for the inspection. Thus, the annual implementation plan calls for the reinforcement of equipment like computers, vehicles, etc. Meanwhile, it is also reported that data and information necessary for the environmental inspection are not enough for Inspection Division.

(4) Other Units Concerned

The environmental check and inspection are involved many other units, other than Sub-Department of EP and Inspection Division. They are EMAC, District-level PCs, Environmental Police and QIZA, participating in with its specialized duties and/or mandates.

Their activities during 2009 to 2010 are summarized in **Table 6**.

Table 6 Activities of Units Concerned with Check and Inspection

Units	Activities during 2009 to 2010
Environment Monitoring & Analysis Center (EMAC)	Conducted the measurement and analysis of 36 units for the effluent compliance check.
District Level PCs	- Halong City DONRE conducted 85 projects of environmental inspection, imposing 15 administrative sanctions. - Q. Yen Town DONRE conducted no actual inspection but checked only relevant dossiers.
Environmental Police Dept. (Provincial Police)	Conducted 85 inspections in total, imposing a total of 21 sanctions including 3 for water environment.
Quang Ninh Industrial Zone Authority (QIZA)	Assigned for the environmental protection management in a total of 11 industrial or economic zones (detail activities are not informed).

Source: Prepared by WG-1 based on e questionnaire survey.

3.3 Implementation Plan and Result of Check and Inspection

(1) Environmental Check by Sub-Department of EP

1) Implementation Plan of Check

Annual implementation plan of environmental check is established in the beginning of the year. Pollution source projects to be checked are selected from the list owned by Sub-Department of EP on projects with EIA approval, on the basis of historical reviews of violations. In some cases, the top layers of DONRE or PPC give instructions for the environment check.

Annex 2 shows the annual implementation plan of environment check for the year 2012 issued by Sub-Department of EP. The target numbers of environment check for the year 2012 have been set to be 88 in total. As seen from this plan, Sub-Department of EP has prepared precise implementation plan, enumerating specific project names and data of check.

2) Implementation Result of Check

Sub-Department of EP has enforced the environmental check for a total of 86 entities in 2011 in Quang Ninh Province. The numbers of implementation exceeded 84 entities which were set out in the plan.

The status of environmental compliance has been checked based on related regulations. The results of the environmental check are summarized, as per **Table 7**:

Table 7 Summarized Result of Environment Check for 2011

Items	Results
EIA	Of 86 subject entities, 72 entities (83.7%) have owned EIA approved by the authorities.
Industrial wastewater fee	Of 78 subject entities, 67 entities (85.9%) have been confirmed to pay the fee, in accordance with the regulation.
Completion certificate	Of 86 subject entities, 14 entities (16.3%) have acquired the completion certificates of environment protection projects.

Source: Report of Environment Check for 2011 (Sub-Department of EP)

As the result of the environmental check, Sub-Department of EP requested that Inspection Division would impose appropriate administrative sanctions to four (4) entities which have been founded to violate environmental regulations concerned.

(2) Environmental Inspection by Inspection Division

1) Implementation Plan of Inspection

Inspection Division makes an annual inspection plan in the end of every year. Though the implementation plan stipulates subject fields and industrial categories by quarterly periods, specific name of enterprises and numbers for the inspection are not set up.

Pollution source projects to be inspected are selected in actual implementation stages, considering the degree of possible environmental influence, and taking account of the following information and instruction:

- Review previous inspection results,
- Instruction from the upper layers of DONRE, reflecting complains from general citizens and other institutes, and
- Opinions and information coming from other related sections (including Sub-Department of EP).

The basic mandate of Inspection Division is conforming to that of MONRE, including not only the environment but also other fields like land-use, mineral resources and natural resources. Therefore, the environmental inspection by Inspection Division is performed as one of several duties including other fields.

Annex 3 shows the annual implementation plan of inspection for the year 2012 prepared by Inspection Division. This shows the implementation plan for the environmental-specialized inspection to be undertaken by Inspection Division.

2) Implementation Result of Inspection

Inspection Division has carried out the environmental-specialized inspection for a total of 18 entities in 2011. About 120 inspections including other fields have been enforced by Inspection Division in 2011. As a result, a total of 531 million VND have been imposed against a variety of infringements.

Inspection Division has imposed administrative sanctions against four (4) entities which violated environmental regulations, in response to the request from Sub-Department of EP.

3.4 Observation of Environmental Check and Inspection

(1) General

JET Experts participated in the environmental check and inspection led by Sub-Department of EP or Inspection Division to observe actual practices on site. As shown **Table 8**, the observation took place four (4) times from 2011 to 2012. The objective of this observation is to provide some

suggestions on the practices of environmental check and inspection, as one of capacity building.

The actual works on site for environmental check and inspection are divided into check of legal dossiers on entities' duties and on-site check of environmental protection measures.

Table 8 Entities for Observation of Environmental Check and Inspection

Entity	Date	Place	Industrial Category	Leading Unit
1. Halong Beer and Beverage JSC	June 29, 2011	Halong City and Q. Yen	Brewery & beverage producing	Inspection Division
2. Khe Sim One Member Company	July 7, 2011	Cam Pha City	Coal mining	Sub-Dep. of EP
3. Cai Lan Vegetable Oil Company Ltd.	Nov. 15, 2011	Halong City	Vegetable oil producing	Sub-Dep. of EP
4. Mao Khe Coal Co., Ltd.	Feb. 8-10, 2012	Dong Trieu District	Coal mining	Inspection Division

Source: JET

Among four (4) entities, three (3) except for Mao Khe Coal Company shows relatively good compliance against the environmental regulation, though minor violations have been detected. This is because they have comparatively high- awareness for the environment protection.

However, it has become clear as a result of the inspection that Mao Khe Coal Company have violated in many points of coal mine wastewater treatment, as follows. The entity is identified to:

- Not to install the wastewater treatment facilities with appropriate capacity.
- Not to maintain the wastewater treatment facilities, leaving important instruments broken.
- Not to operate the wastewater treatment facilities appropriately.
- To discharge untreated wastewater into canals, resulting into heavy silting.

This situation explains that the entity has intentionally continued not to observe the environmental duties for a long time.

(2) Check of Legal Dossiers

According to the Law on Environment Protection, entities must submit variety of legal documents to competent authorities. Representative legal procedures are EIA approval, EPC registration, permission of wastewater discharges and others. This legal dossier check takes place in the beginning of the check and/or inspection.

Many deficiencies have been found and pointed out by the authorities. For example, they have been insufficient acquirement of EIA approval and EPC registration, no submission of self-monitoring report, no application of wastewater discharge permission, etc.

Such deficiencies in legal dossiers imply that; compliance awareness of entities is modest, and, on other sides, the awareness-raising by the competent authority is not enough. Furthermore, it indicates that the administrative instruction on such legal compliance by competent authorities is not sufficient.

As seen from the above, the check of legal dossiers has been clearly detecting low compliance status of entities to be improved by the environment management activities. This situation implies that more strong activities of education and enhancement are called for the improvement of entities' awareness to the environmental compliance.

(3) On-Site Check

During the on-site work of check and inspection, it is practice that officers go around and check related sites and facilities like wastewater treatment facilities and discharge points. This on-site check is a very important and useful opportunity to detect deficiencies in environment protection measures. However, it is evaluated that most officers concerned with check and inspection are not endowed with specialized knowledge and skills. This is presumed based on common on-site practices, as follows:

According to the observation of JET expert, Most officers don't appear:

- To enter the inside of wastewater treatment facilities, just going around the outside of the facilities.
- To observe and check the quality of discharged wastewater by their eyes.
- To check the operation record of wastewater treatment facilities.
- To check the canals that the treated wastewater is discharged into.

As implied from the above, on-site check based on specialized knowledge and skills has not been realized in the current check and inspection. It is presumed that this is why serious intentional violations found in Mao Khe Coal Company have been missed out on for a long time.

From such view, more capacity building of officer's specialized knowledge and skills is inevitable to enhance the effect of the check and inspection.

CHAPTER 4
TRAINING NEEDS ANALYSIS FOR CHECK AND INSPECTION

4.1 General

In the environmental check and inspection, it has been clarified beforehand that the strengthening of the individual capacity of staffs concerned is one of key issues to be addressed. From that reason, this training analysis was conducted to assess present capacity of concerned staff and to analyze and clarify the training needs for the capacity building.

As accepted internationally, the capacity may be assessed from the viewpoint of three (3) aspects: individual element, organizational element and society-institutional element. This survey is focusing on the individual element of the capacity strengthening of environmental check and inspection.

Though questionnaires for this survey have been distributed into all units of WG-1 including EMAC, Environmental Police and City/District DONREs, answers returned to the JET from units other than Inspectorate and Sub-Dept. of EP were very a few. Thus, this analysis has focused on the responses from Sub-Dept. of EP and Inspection Division.

4.2 Survey Methodology

(1) Design of Questionnaire

The following questions (21 in total) classified into three (3) groups were included in the questionnaire to know the needs which persons concerned have for their trainings:

Category A: Knowledge on legal matters related to environmental management (4 in total)

Category B: Knowledge and skills on environmental inspection and check (8 in total)

Category C: Knowledge and skills on water environment protection and related measures (9 in total)

Each question item was responded with the score from 1 (low needs) to 5 (high needs).

(2) Distribution and Collection of Answers

Questionnaires were distributed to WG-1-concerned units (Inspection Division, EPC of Sub-Department of EP, EMAC, Halong City DONRE and Environmental police) in the middle of July and then answers were collected in the end of July.

Respondents were working-level officials and manager-level officials belonging to units concerned.

4.3 Survey Results

(1) Obtained answers

A total of 21 answers have been collected, comprised of 8 from Sub-Dept. of EP, 9 Inspectorate, 2 from EMAC, 1 from Halong DONRE and 1 Environmental Police.

(2) Evaluation

The degree of training needs of each question was answered with the score 1 to 5 by respondents. Averaged scores of all respondents have been computed and evaluated as the scales showing the magnitude of needs.

(3) Result on the magnitudes of training needs

Table 9 shows the computed result of magnitudes of each training needs.

Table 9 Average Score of Training Needs

Questions		Sub-Dept. (8 respondents)	Inspectorate (9 respondents)	EMAC (2 respondents)	Halong City DONRE (1 respondent)	Env. Police (1 respondent)
A. Knowledge on legal matters						
	A1.Env. protection & management	4.6	4.8	4.0	5.0	5.0
	A2.Env. inspection, check & guidance	4.6	4.6	4.5	5.0	5.0
	A3.Administrative sanction	4.0	5.0	5.0	5.0	5.0
	A4.Env. standards & technical norms	4.5	4.8	3.0	5.0	5.0
B. Knowledge and skills on env. inspection and check						
	B1.Planning env. inspection & check	4.4	4.7	2.5	5.0	5.0
	B2.Preparing env. inspection & check	4.4	4.4	3.5	5.0	5.0
	B3.Checking and assessing legal dossiers	4.9	4.7	4.0	5.0	5.0
	B4.Assessing env. protection measures	4.9	4.8	4.5	5.0	5.0
	B5.Consolidating & concluding env. inspection & check results	4.5	4.9	4.0	5.0	5.0
	B6.Giving instructions based on inspection & check	4.3	4.7	4.0	5.0	5.0
	B7.Dealing with violations and imposing sanctions	4.1	4.4	4.5	5.0	5.0
	B8.Compiling data & preparing report	4.5	4.3	4.0	5.0	5.0
	B9.Sampling water for compliance monitoring	3.8	4.3	4.5	5.0	5.0
C. Knowledge on water env. protection measures						
	C1.Water pollution mechanism	4.5	4.4	3.5	5.0	5.0
	C2.Env. risk assessment	4.6	4.1	4.0	5.0	5.0
	C3.Product manufacturing process	4.5	4.1	3.5	5.0	5.0
	C4.Wastewater env. protection measures	4.9	4.3	4.5	5.0	5.0
	C5.Wastewater treatment technologies	4.6	3.9	4.5	5.0	5.0
	C6.Application of wastewater treatment technologies	4.5	4.2	4.5	5.0	5.0
	C7.Cleaner production technologies	4.5	4.2	4.0	5.0	5.0
	C8.Assessing operation of wastewater treatment	4.5	4.2	5.0	5.0	5.0
	C9.Economic and financial aspect on env. protection	4.6	4.2	5.0	5.0	5.0

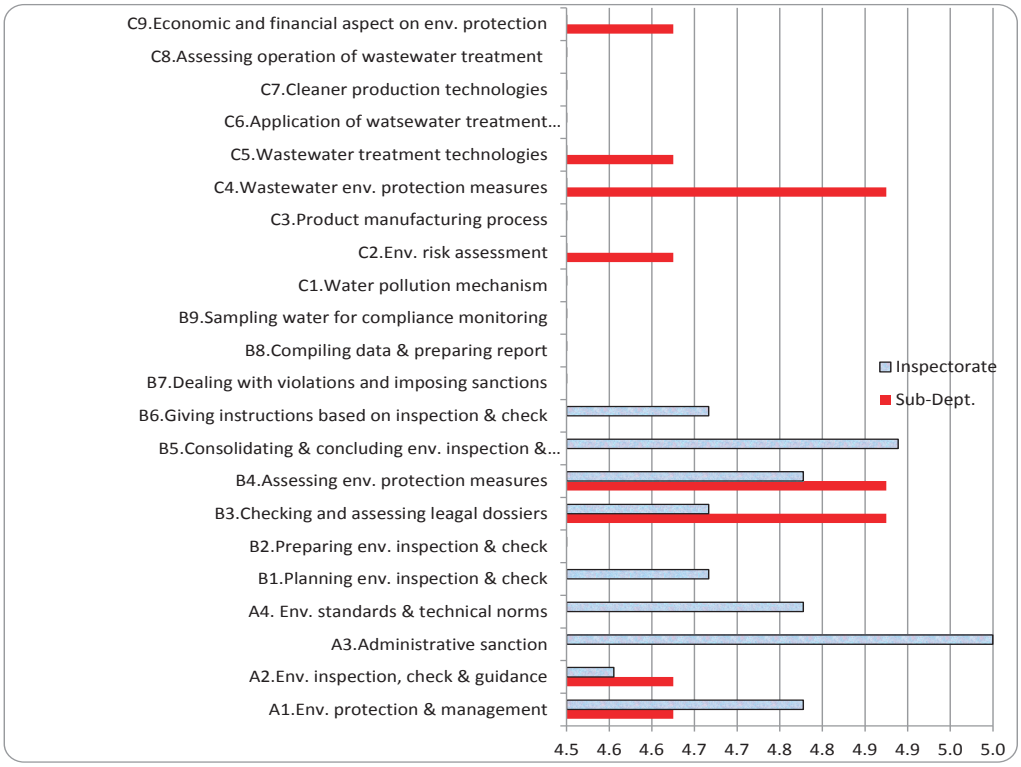
Note: The table shows average score by units.
Source: Prepared by WG-1.

4.4 Analysis of Training Needs

(1) General Tendencies

Figure 5 shows the magnitudes of training needs of members belonging to Inspectorate and Sub-Department of EP, focusing on the parts higher than the score 4.5. The magnitudes of training needs which are not displayed as a bar in this graph are implied to be less than 4.5 of averaged score.

Respondents from both units generally indicate very high training needs for all items, showing the score 3.8 to 5.0.



Note: The figure shows the graph of average score higher than 4.5.
Source: Prepared by WG-1

Figure 5 Magnitudes of Training Needs

(2) Higher needs shown from Inspectorate

The higher training needs shown from members of Inspectorate are related with the category A (legal matters) and the category B (environmental check and inspection), as below (in the order of the magnitude of needs):

- Legal knowledge on administrative sanction (A)
- Knowledge and skills on consolidating and concluding environmental inspection and check results (B)
- Knowledge and skills on assessing environmental protection measures (B)
- Legal knowledge on environmental standards and technical norms (A)
- Legal knowledge on environmental protection and management (A)

(3) Higher needs shown from Sub-Department of EP

The higher training needs shown from members of Sub-Department of EP are related with all categories A to C, as below (in the order of the magnitude of needs):

- Knowledge and skills on wastewater environment protection measures (C)
- Knowledge and skills on assessing environmental protection measures (B)
- Knowledge and skills on checking and assessing legal dossiers (B)
- Knowledge and skills on economic and financial aspect on environment protection (C)
- Knowledge and skills on wastewater treatment technologies (C)
- Knowledge and skills on environmental risk assessment (C)
- Legal knowledge on environmental inspection, check and guidance (A)
- Legal knowledge environmental protection and management (A)

4.5 Consideration on Training Opportunities

(1) Necessity of Internal Trainings

Among training needs, the survey shows that very basic and common items of inspection and check are located in the higher needs, like:

- Legal knowledge on environmental protection and management (A)
- Legal knowledge on administrative sanction (A)
- Legal knowledge on environmental standards and technical norms (A)
- Knowledge and skills on checking and assessing legal dossiers (B)
- Knowledge and skills on consolidating and concluding environmental inspection and check results (B)

Apparently, these results imply that many members of Inspectorate and Sub-Department of EP are in the younger generation with a short experience in this field.

Vietnam has its own legal regulations on environmental inspection and check, including Inspection Law, other decrees/decisions and inspection manuals. These documents specify many and diverse legal requirements and practices distinctive to Vietnam on inspection and check.

It is presumable that trainings peculiar to requirements and practices in Vietnam should be effectively conducted by the Vietnam side through internal trainings (with central units concerned, specialized institutes concerned and/or within QN PPC). Thus, it is recommended that, in the cooperation with internal/external institutes, DONRE organizes and provide more internal training opportunities to members concerned, especially the younger generation not endowed with much work experiences.

At the same time, it has been found that existing instruction manuals for environmental inspection and check are very a few. It is advised that local DONREs and MONRE establish appropriate manuals and guidance for inspection and check, especially targeting the younger generation.

For training needs listed above, the assistance from the Japanese side may be limited to providing referential information.

(2) Technical Training in WG-1B (Pollution Source Control) of this Project

In WG-1 (Pollution Source Control), the technical training for environmental inspection and check (including administrative guidance) is scheduled. These trainings are supposed to be conducted through the opportunities like lecture and OJT (on-the-job training) of inspection and check.

In view of clarified magnitudes of training needs and appropriateness of training items, it is concluded that the technical training in WG-1 should be planned and conducted under the following aspects:

- Knowledge and skills on wastewater environmental protection measures
- Knowledge and skills on assessing environmental protection measures
- Japanese experiences on legal matters and knowledge/skills on administrative management and inspections.

4.6 Actions Taken during the Project Period

(1) Lecture in Sector Seminar

In this project, the technical training on inspection and check (Activity 2-4) in the shape of lecture has taken place. The JET Expert made the technology transfer knowledge and skills wastewater management, by introducing wastewater management and measures in Japan along the following agenda:

- History of water pollution control in Japan
- Legal system of water environment protection in Japan
- Measures for water environment protection in Japan
- Industrial wastewater regulation in Japan
- Measures for water environment incident
- Comparison between wastewater regulation in Japan and that in Vietnam

(2) Wastewater Management Handbook

Besides, the "Wastewater Management Handbook" has been developed. This is aiming to be used for technical trainings for building up specialized knowledge and skills necessary for the environmental check and inspection, as a technical information resource.

This handbook is composed by essential parts necessary for the environment management in terms of wastewater treatment. It is expected that DONRE plans to set out opportunities for technical trainings for building up specialized knowledge and skills, by using these handbook.

This handbook which contains fundamental and practical knowledge necessary for evaluating the protection measures against the water environment is comprised of:

Box 2 Contents of Wastewater Management Handbook

Section 1: Guideline of Industrial Wastewater Management

1. Introduction
2. Present Situation of Wastewater Treatment in Vietnam
3. Appropriate Wastewater Treatment in Vietnam

Section 2: Wastewater Treatment Technology Manual

1. Basic of Wastewater Treatment Processes

2. Appropriate Wastewater Treatment Technology of Pulp & Paper Industry
3. Appropriate Wastewater Treatment Technology of Seafood Processing Industry
4. Appropriate Wastewater Treatment Technology of Textile Dyeing Industry
5. Appropriate Wastewater Treatment Technology of Tanning Industry

CHAPTER 5
IMPROVEMENT OF IMPLEMENTATION OF CHECK AND INSPECTION

5.1 General

Main agenda of Output-2b (Pollution Source Control in Environmental Management) is to enhance the environmental check and inspection undertaken by DONRE and other related units. To start the project, current status on the check and inspection has been analyzed. Based on this, WG-1 has formulated the improvement plan of implementation of check and inspection in March 2011, after the discussion for around a year.

The Chapter 5 explains contents of the improvement plan of implementation of check and inspection based on the status "before the project". Meanwhile, final review and recommendation are described in the Chapter 6, based on the situation "after the Project".

5.2 SWOT Analysis on Current Check and Inspection

As defined in the Law on Environment Protection, pollution generators have the total responsibility to take appropriate environment protection measures which prevent the pollution load discharge into the environment. Thus, current delayed environment protection measures at pollution sources are attributed primarily to the lack of environment awareness and attitude and the lack of financial/technical investment in pollution source projects/owners.

On the other hand, the Law on Environment Protection defines that DONRE at provincial level, as the state environment management authority, have the integrated mandates in the provincial territories to supervise and promote environment protect measures, urging and encouraging pollution source generators by means of various management systems and instruments. While DONRE has various tasks as state management authority, the check and inspection are a major tool for promoting environment protection measures, among others.

By using collected data and information in Chapter 2, 3 and 4, the SWOT (Strength-Weakness-Opportunity-Threat) analysis has been performed to clarify problems and constraints in the check and inspection (including administrative guidance) being exercised mainly by EPC of Sub-Department of EP and Inspection Division.

The result of SWOT analysis on the check and inspection is tabulated in **Table 10**.

Table 10 SWOT Analysis on Environmental Check and Inspection

Strengths (S)	Weakness (W)
S-1: They (EPC of Sub-Department of EP and Inspection Division) have the state authorities to enforce check and inspection against pollution sources (in Law on Environmental Protection, Inspection Law and other related regulations). S-2: They have the state authorities to give administrative instruction and/or sanctions to pollution sources.	W-1: Frequencies of the implementation of the check and inspection at present are not enough to correct environment protection measures at sites. W-2: The check with the number set in the annual implementation plan has not achieved. W-3: There are no integrated and reliable information system on pollution sources. W-4: Referential manuals (procedural and technical) to support activities are not developed. W-5: Management resources like number of engaged persons, budget and hard-wares are very limited. W-6: Internal information exchange are not activated enough. W-7: Many persons (especially in the younger generation) are weak in individual abilities not having specialized knowledge, experience and skills. W-8: Internal training for the capacity building is not activated enough.

Opportunities (O)	Threats (T)
O-1: They have possible units to cooperate with (like EMAC, Water Resources Division, Environmental Police, Quang Ninh Industrial Zone Authority, District-level PCs, etc.) O-2: They have possible opportunities to receive technical trainings from central institutes (like MONRE, VAST/IET, etc.).	T-1: The environment awareness and attitude of pollution source enterprises are very weak in promoting environment protection measure. T-2: The environment awareness of general citizens is low. T-3: Some legal mechanisms of the check and inspection set by MONRE are weak in rigorous regulations. T-4: The information on environment protection measures stated in an EIA report is not enough to examine for inspection and check purpose. T-5: The implementation of the check and inspection tend to be interrupted by other tasks.

Note: This shows results of the analysis concerning Sub-Department of EP and Inspection Division which are directly related to the environment protection.

5.3 Outside Constraints

On the other side, as seen from the SWOT analysis above, it should be recognized that there are a number of outside conditions in order for the check and inspection to give the effects. Namely, the activation of other environment management activities in the outside of the check and inspection must be realized, in order that the effects of the check and inspection may be exerted appropriately.

In this sense, other management activities (besides the inspection and check) include, representatively:

- Raising the environment awareness of pollution generators (to be addressed by DONRE),
- Consolidating financial support to the environment protection measures to be taken by pollution generators, (for example, by way of the environment protection fee of wastewater being managed by DONRE), and
- Setting up and applying more strict administrative sanctions (in monetary fines, the cease of wastewater discharge, etc.) against violations (to be addressed by MONRE).
- Setting up the minimum scale of pollution sources to make state management activities more effective and efficient from the viewpoint of the "administrative cost-benefit performance" (to be addressed by MONRE and DONRE)
- The alteration of EIA approval procedure to give more detail information on environment protection measures to be taken (to be addressed by MONRE and DONRE) .
- Setting up special training functions to provide officers with opportunities of specialized training (to be addressed by MONRE and DONRE)

All of these outside constraints listed above cannot be addressed by Sub-Department of EP and/or Inspection Division, though they may give serious influences to the effect of the inspection and check. In this wise, these constraints are outside conditions for Sub-Department and Inspection Division in this Project. Thus, MONRE and/or DONRE located at the upper layer must tackle and solve these national and/or provincial issues, so that the effects of the check and inspection are exerted, appropriately.

5.4 Weakness in Implementation of Check and Inspection

(1) Preamble

As the result of SWOT analysis, a number of visible weaknesses in the check and inspection by Inspection Sub-Department of EP and Division have been found. Especially, weaknesses related to the enforcement of the both units are enumerated as below:

(2) Frequencies of the check and inspection are too low.

The numbers of the check conducted by Sub-Department of EP in 2009 and 2010 are equivalent to only about 10 - 20%, to the total number of pollution source projects (assumed to be about 250 of the total pollution source in Quang Ninh Province). If the numbers of check in Vietnam are compared to those of advanced countries like Japan, it is obvious that Sub-department of EP have performed only very limited check. Similarly, the inspection conducted by Inspection Division is also very a few, in view of the total numbers of pollution sources in Quang Ninh Province.

(2) Systematic and reliable information system are not in place.

As for pollution source information, Sub-Department of EP has the existing database. However, this database cannot accumulate renewed information generated repeatedly, because of its construction is basically the plain spreadsheet type. Meanwhile, reports of check and inspection results are not accessible easily, because they are not archived, systematically. As such, information on pollution sources and inspection/check results are neither accessible nor reliable, making chronological review of their results difficult.

(3) Referential manuals (procedural and technical) are not in place.

Procedural and technical manual to support staffs engaged in the check and inspection are almost not in place. Therefore, the practices of check and inspection tends to be not unified and superficial (especially in case of younger staffs), missing out on potential problems in environment protection measures.

(4) Management resources are very limited.

Human resources for the implementation of check and inspection are limited in both the quantity and quality. The actual total number directly dedicated to the environmental check in ECD of Sub-Department of EP are only five (5) and this is main cause of the insufficient frequency of the check and inspection.

Because most of the staffs dedicated to the environment have only short work experiences in this filed, they don't have enough specialized knowledge, experience and skills, as clarified by themselves in the Technical Need Analysis. Thus, site examinations in the check and inspection tend to result to superficial ones, missing out possible violations.

Besides human resources, it has been identified out that necessary equipment (like computers, vehicles, etc.) is not enough for the implementation of the check and inspection.

5.5 Challenges and Necessary Actions for Improvement of Check and Inspection

(1) Overview

The environmental check and inspection are just parts of diverse state management activities taken by DONRE. From this reason, the effects of the check and inspection are influenced by other activities. In addition, there are a number of outside constraints to improve the implementation of the check and inspection. These conditions which cannot be dealt just by the check and inspection are enumerated in the section 5.2, as issues to be tackled, separately.

In this section, set of challenge are identified and necessary actions for the improvement of the implementation of check and inspection are proposed. They are comprised of:

- Realization of effective and systematic inspection and check (Challenge 1)
- Consolidation of partnership among units concerned in environment check (Challenge 2)
- Development and sharing of pollution source information (Challenge 3)
- Development of management resource for check and inspection (Challenge 4)

Series of actions must be taken by mainly Sub-Department of EP to overcome challenges identified in the above. WG-1 recommends to take the following actions:

(2) Realization of Effective and Systematic Check and Inspection (Challenge 1)

Objective: To realize effective check and inspection contributing to the improvement of environmental protection measures at sources.

Justification: Sub-Department of EP has performed a total of 85 environmental checks for the period from 2005 to 2010. This is only 30 % of the total pollution sources in Quang Ninh Province. Comparing that at least 100% a year are typical targets in the communities in Japan and other industrialized countries, it is obvious that the frequencies of the environmental check in Quang Ninh Province is overwhelmingly low. This low frequency is a prime reason for many violations, implying that the supervision by state management authority is far less than the standard.

Another feature of incompliances in Vietnam, violations is repeated many times by same pollution generators. In Vietnam, Inspection Division (to be exactly, chief inspectors and/or inspectors on duty) can impose administrative sanctions against violations. Although administrative sanctions can be imposed by Inspection Division, even based on check record in the environmental check, Sub-Department of EP has no legal power for sanctions.

At present, most of administrative sanctions imposed by Inspection Division are warning, and monetary fines which are defined to be very small amounts, grounded on the guideline decree. In Quang Ninh Province, cease of operation has never been applied. Likewise, sanctions are not so strict that pollution generators modify their protection measures. This is a main reason for repeated violations.

Effective environment check and inspection including administrative sanctions in terms of the frequency and sanctions should be developed and enforced, to prevent repeated violations.

Necessary actions: 1) **Action 1-1:** Setup of implementation criteria and planning of implementation of environmental check according to the criteria

Internationally, it is a common practice that the authority takes one time check for every generation source (at least). It is advised that Sub-Department of EP goes for to increase its enforcement capacity, to give more environmental check.

At the moment, criteria for implementation of environmental check is proposed as shown in **Table 11**, so that Sub-Department of EP calculates required the number of annual checks, and plans necessary man powers for that purpose.

For example, based on the Preliminary Pollution Source Inventory prepared by WG-1, about 250 are listed as pollution source projects which discharge wastewater (wastewater-discharging projects). Assuming that the risk level of projects are the level A with 20, the level B with 30, the level C with 100 and the level D with 100, the total number of necessary environmental check are calculated to be 170 annually.

It is recommended that Sub-Department of EP discusses and sets up the

criteria for check implementation, and calculate necessary frequencies of the check, thereby establishing required annual implementation plan of check.

On the basis of such required plan, Sub-Department of EP should consult necessary human resources expansion with DONRE.

Table 11 Criteria for Implementation of Environmental Check (Proposed)

Risk Level of Pollution Source	Frequency of Environment Check	Subject Pollution Source
Level A	Every seven (6) months	"High possibility of serious environment damages", based on characteristics, quantity of pollution loads, status of environment protection measures, surrounding conditions, etc.
Level B	Every 12 months	"Medium possibility of serious environment damages", based on characteristics, quantity of pollution loads, status of environment protection measures, surrounding conditions, etc.
Level C	Every 18 months	"Few Possibility of serious environment damages", based on characteristics, quantity of pollution loads, status of environment protection measures, surrounding conditions, etc.
Level D	Every 24 months	"Possibility of only minor environment damages", based on characteristics, quantity of pollution loads, status of environment protection measures, surrounding conditions, etc.

2) **Action 1-2:** Setup of clear criteria for implementing environmental inspection

Usually, Sub-Department of EP gives out some administrative instruction, when violations are found out in the environmental check. Even if these instructions are neglected by pollution enterprises, any penalties are not exerted.

In such cases, the imposition of administrative sanction (monetary fines, cease of operation, etc.) grounded on the Inspection Law and other regulations become necessary. To this end, the environmental inspection organized by Inspection Division is implemented.

Sub-Department of EP, as a leading unit of the environment protection, should set out clear criteria for the necessity of implementation of inspection and request to enforce it to Inspection Division. In this wise, the invocation of environmental inspection conducted by Inspection Division should be made by the leadership of Sub-Department of EP.

3) **Action 1-3:** Setup for criteria for imposing rigorous sanctions

Decree No. 117/2009/ND-CP (December 31, 2009) defines the regulation on the application of administrative sanctions. Administrative sanctions may be imposed by directors of PPC, district-level PCs and commune-level PCs as well as chief inspectors and inspectors. It is emphasized that Inspection Division and officers concerned in PPC examines criteria for imposing sanctions to prevent repeated violations, and imposes them with rigorous decision-making, including cease of operation.

Leading unit: Both Sub-Department of EP and Inspection Division

(3) Consolidation of Partnership among Units Concerned in Environmental Check (Challenge 2)

Objective: To consolidate and expand the partnership between Sub-Department and other units concerned.

Justification: The check and inspection have been carried out under the cooperation among units inside and outside DONRE, at present. Thus, besides Sub-Department of EP and Inspection Division, actual check and inspection are implemented in the participation of a number of units; Environmental Police, District PCs, EMAC, Water Resources Division and others, depending on subject pollution sources, as shown in **Figure 6**.

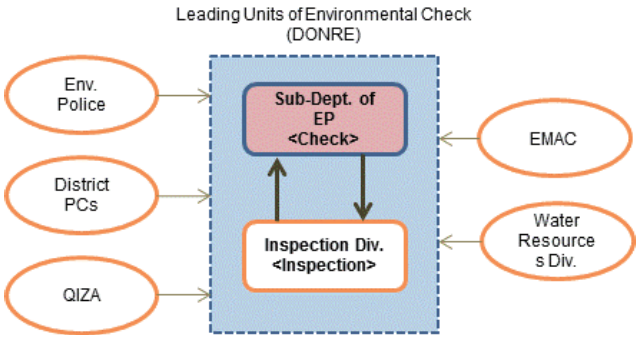


Figure 6 Concept of Partnership in Environmental Check

Considering that environment protection measures at sources are much delayed in Quang Ninh, the check and inspection must be strengthened much more in the coming future. The partnership being taken among units must be consolidated more to realize strengthened implementation of the check and inspection.

Necessary actions: 1) **Action 2-1:** Constructing of strong regime for environmental check by Sub-Department of EP

A number of units are involved in the environmental check. Among them, Sub-Department of EP, Inspection Department and Environmental Police are key players in view of administrative guidance given base on the check results. Their representative mandates on violations are:

- Sub-Department of EP: Release administrative instructions to correct and modify measures, as the state management authority to supervise and promote environmental protection measures.

- Inspection Division: Impose administrative sanctions (warning, monetary fines, cease of operation, etc.) as governmental inspectorate.

- Environmental Police: Be able to deal as criminal cases in addition to imposing administrative sanctions.

As seen from the above, Sub-Department of EP can give out instructions against violations but has no legal power to impose administrative sanction. In case of administrative sanctions are necessary, Sub-Department of EP have to rely on the power of Inspection Division and Environmental Police. Thus, the partnership among related units

must be secure to promote environmental protection.

All three (3) units are engaged in examining and supervising natural resources and environment as state agencies. As for the environment, Sub-Department of EP is a leading agency to enforce national and local environment protection policies. Thus, more strong leadership and regime of Sub-Department of EP in planning and implementing is essential to consolidate and expand the partnership on the environmental check.

To this end, ECD of Sub-Department of EP is in need of the expansion of human resources to fulfill their state management tasks.

Sub-Department of EP should consult with DONRE on this matter, indicating the implementation plan and necessary man-powers set up by way of the criteria of environmental check implementation (as mentioned Action 1-1).

2) **Action 2-2:** Setup of a standing committee for environment check and inspection

The environmental check must be enforced in close cooperation among participation units under the leadership of Sub-Department of EP. On the other hands, units concerned must be informed of environmental protection measures to fulfill their respective tasks in the check.

Considering the increasing numbers of the environmental check to be required in the coming future, a standing "Committee for Environmental Check and Inspection" (titled tentatively), as per **Figure 7**, should be set up in DONRE.

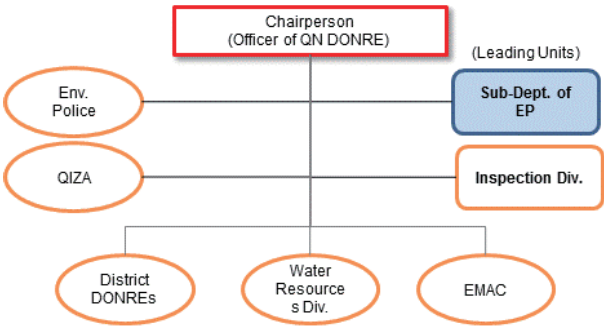


Figure 7 Concept of Committee for Environmental Check and Inspection

Leading unit: Sub-Department of EP

(4) Development of Pollution Source Information System and Data Sharing (Challenge 3)

Objective: To develop reliable information system of pollution sources and share related information to units concerned.

Justification: The environment check and inspection need a number of reliable information to make implementation plan and enforce it.

Major information required are:

- Pollution source inventory (covering all pollution source projects and prime information of each project)

- Basic information (contact, location, authorization type)
- Pollution facility (industrial category, main product, number of employee, factory lot area, annual turnover)
- Wastewater (flow-rate, type of treatment, discharge destination)
- Environment management status (designation of serious pollution facility, self-monitoring report, payment of wastewater fee, etc.)
- Record of inspection and check in the past

Sub-Department of EP has the existing database storing their check result and other information. However, this is not of the construction to accumulate data records continuously generated in regulars works. Now, WG-1 is trying to develop a new pollution source database.

The new database meeting the purpose of environment check must be accomplished and be updated continuously, following up the development in this Project.

Together, Sub-Department of EP must frequently share collected information to units concerned working under the partnership.

Necessary actions: 1) **Action 3-1:** Refining of pollution source database

WG-1 is now working for developing Quang Ninh Pollution Source Database System and the data collection is ongoing for the moment. Up to now, data of a total of about 540 pollution sources have been collected, as **Table 12**:

Table 12 Collected Data Record for Pollution Source Database

Name of Table	Data Contents	Numbers of Collected Data
Inventory of Pollution Sources	Key data to define the project (Data not changed even if EIA is amended).	534
Contact Table	Contact person and telephone number, etc. (possibly changed many times)	476
Project Information Table	Basic information of the project (possibly changed when EIA, EPC, EPP is amended)	535
Environmental Authorization Table	Information of legal authorizations (EIA, EPC and EPP)	535
Environmental Check and Inspection Table	Data showing the environmental check and inspection results.	170
Effluent Measurement Table	Data showing actual measurement result of water quality	77
Wastewater Information Table	Data showing planned or actual state of flow-rate and water qualities	624
Serious Pollution Facility Table	Data showing serious pollution facilities regulated by Decision No.64/2003/QD-TTg and Circular No.07/2007/TT-BTNMT	6
Environmental Monitoring Report Table	Data showing environmental monitoring report.	542
Wastewater Discharge License Table	Data showing wastewater discharge license regulated by Decree No.149/2004/ND-CP	50
Environmental Protection Fee Table	Data showing environmental protection fee regulated by Decree No.67/2003/ND-CP	523
Hazardous Waste Generator Table	Data showing hazardous waste generator	161
Hazardous Waste Transport Table	Data showing hazardous waste transport	4
Hazardous Waste Treatment Table	Data showing hazardous waste treatment	1
Hazardous Waste Management Table	Data showing hazardous waste management	445
Mineral Resources License Table	Data showing mineral resources license	23

Environmental Rehabilitation/Recovery Table	Data showing environmental rehabilitation/ recovery	23
Environmental Protection Expenditure Report Table	Data showing environmental protection expenditure report	57

After WG-1 constructs the database, Sub-Department of EP should follow up for refining it.

2) **Action 3-2:** Updating data record in the database

According to information provided by Sub-Department of EP, new EIAs of 50 to 70 projects have been approved, annually. This means that almost 10 to 15% of the entire EIAs are added and/or replaced annually, given the existing total EIAs numbers of 480.

In this sense, the important is that the pollution source database be updated continuously, otherwise it becomes useless shortly. WG-1 proposes that Sub-Department takes lead role to develop a "sustainable updating system of pollution source database system.

The proposed updating system is established under the partnership all district-level DONREs and all commune-level officers, ensuring data collection of not only EIA projects but also EPC projects. Sub-Department of EP is requested to discuss and make detail plan as a leading unit, initiating this sustainable updating system.

3) **Action 3-3:** Sharing of pollution source information to partner units

As for the database, the important is to be used for actual environmental check and inspection, and also for other purposes. Sub-Department of EP should be shared to units concerned, after processing according to the necessary.

Such information sharing should take place in by using the opportunities of the Committee for Environmental Check and Inspection proposed in Action 2-2.

Leading unit: Sub-Department of EP

(5) Enhancement of Human Resource for Check and Inspection (Challenge 4)

Objective: To enhance human resources for check and inspection.

Justification: Because much specialized experience and knowledge are requested to detect violations at site, the capacity building of staffs engaged in the check and inspection is important issues. According to the training needs analysis conducted by the Project, members of ECD (of Sub-Department of EP) shows strong training needs for the following (in the descending order):

- Knowledge and skills on wastewater environment protection measures
- Knowledge and skills on assessing environmental protection measures
- Knowledge and skills on checking and assessing legal dossiers
- Knowledge and skills on economic and financial aspect on environment protection
- Knowledge and skills on wastewater treatment technologies

Meanwhile, members of Inspection Division shows high training needs

for the following (in the descending order):

- Legal knowledge on administrative sanction
- Knowledge and skills on consolidating and concluding environmental inspection and check results
- Knowledge and skills on assessing environmental protection measures
- Legal knowledge on environmental standards and technical norms
- Legal knowledge on environmental protection and management

Both Sub-Department of EP and Inspection Division must response to such high needs of technical training, consulting with DONRE.

Furthermore, manuals and handbooks on related fields should be archived, so that any staff can access them and be shared common knowledge.

Necessary actions: 1) **Action 4-1:** Organizing of internal trainings

Among training needs, the survey of training needs shows that very basic and common items of check and inspection are located in the higher needs, like:

- Legal knowledge on environmental protection and management
- Legal knowledge on administrative sanction
- Legal knowledge on environmental standards and technical norms and others

Apparently, these results imply that many members of Sub-Department of EP and Inspection Division are in the younger generation with a short experience in this field.

Vietnam has its own legal regulations on environmental inspection and check, including Inspection Law, other decrees/decisions and inspection manuals. These documents specify many and diverse legal requirements and practices distinctive to Vietnam on the check and inspection.

It is presumable that trainings peculiar to requirements and practices in Vietnam should be effectively conducted by the Vietnam side through internal trainings (with central units concerned, specialized institutes concerned and/or within QN PPC). Thus, it is recommended that, in the cooperation with internal/external institutes, internal training opportunities should be organized for members concerned, especially the younger generation.

Such training plan should be planned and organized in the Committee for Environmental Check and Inspection proposed in Action 2-2.

2) **Action 4-2:** Organizing of technical trainings

In view of clarified magnitudes of training needs and appropriateness of training items, in this project, the technical training mainly for WG-1 members is under preparation. This training is aiming to transfer the following aspects:

- Knowledge and skills on wastewater environmental protection measures
- Knowledge and skills on assessing environmental protection measures

- Japanese experiences on legal matters and knowledge/skills on administrative management and inspections.

Specialized technical knowledge is crucial for precise and accurate examine environment protection measures. Therefore, such technical trainings should be organized, inviting lectures from specialized institutes and universities related to this field.

Such training plan should be planned and organized in the Committee for Environmental Check and Inspection proposed in Action 2-2.

Leading unit: Both Sub-Department of EP and Inspection Division

CHAPTER 6

RECOMMENDATION

6.1 Limitation of Current Environmental Check and Inspection

Situations of the environmental check and inspection in Quang Ninh DONRE at the time of "before this project" has been reviewed and analyzed, as follows:

1) The effects of environmental check and inspection for the improvement of environmental protection measures are limited.

The environmental check and inspection is a major instrument of the regulatory approach applied to environment management in Vietnam. Sub-Department of EP and Inspection Division are leading the check and inspection (pertained with administrative guidance), respectively, in the cooperation of other related units. At present, the implementation capacity of both Sub-Department of EP and Inspection Division are still under developing, and thus the effects of the check and inspection in the aspect of the promotion of environment protection measure are limited.

2) Numbers of environmental check by Sub-Dept. of EP are not sufficient.

Sub-Department of EP has enforced the environmental check according to its annual implementation plan and have given out administrative instructions, when necessary. The numbers of annual implementation in the last three (3) years, are equivalent to only 10 to 20% of the total pollution projects. Because administrative instructions against violations are of just request and recommendation without any penalty, there are many cases in which violators neglect them.

3) Strict sanctions against environment violations are not realized.

Inspection Division has enforced the environmental inspection along its annual implementation plan, grounded on the Inspection Law. While, Inspection Division (to be exactly, chief inspectors and inspectors on duty) can impose administrative sanctions (warning, monetary fines, order of remedies, operation cease, etc.) against violations, strict sanctions other than warnings and monetary fines have been not imposed in Quang Ninh Province, up to today. Most the inspections have been performed as one of subjects together with other fields (land-use and mineral resources), because inspectors specialized in the environment are only two (2).

4) Cooperative implementation of check and inspection among related agencies has not exerted visible effects in preventing violations.

The check and inspection based on the cooperation between Sub-department of EP and Inspection Division have been conducted, also including other related units (Environmental Police, Water Resources Division, EMAC, etc.). Despite such efforts, it is assessed that the check and inspection in Quang Ninh Province don't exert visible effects in preventing violations and promoting the environment protection measure at pollution sources.

6.2 Implementation Plan and Result of Environmental Check and Inspection in 2011

The environmental check and inspection in Quang Ninh have taken place along the annual implementation plan formulated and approved by DONRE, as follows:

1) Environmental Check by Sub-Dept. of EP

Sub-Department of EP has enforced the environmental check for a total of 86 entities in 2011

along the implementation plan for 2011. The numbers of implementation exceeded 84 entities which were set out in the plan. As the result of the environmental check, Sub-Department of EP requested that Inspection Division would impose appropriate administrative sanctions to four (4) entities which have been founded to violate environmental regulations concerned.

Sub-Department of EP has established the implementation plan of the environmental check for 2012 against a total of 88 entities.

2) Environmental Inspection by Inspection Division

Inspection Division issues the annual implementation plan for the environmental inspection every year, but the numerical target for inspection implementation is not described in it. In 2011, inspection Division has carried out the environmental-specialized inspection for a total of 18 entities. About 120 inspections including other fields have been enforced by Inspection Division in 2011. As a result, a total of 531 million VND have been imposed against a variety of infringements.

In 2011, Inspection Division has imposed administrative sanctions against four (4) entities which violated environmental regulations, in response to the request from Sub-Department of EP. The annual implementation plan of the inspection for 2012 includes the implementation plan for the environmental-specialized inspection to be undertaken by Inspection Division.

6.3 Challenges and Necessary Actions for Improvement

By analyzing current practices, a number of weaknesses and constraints in the check and inspection have been identified in the aspect of practices, planning, individual and organizational capacity, and outside conditions.

1) Major issues in terms of check and inspection have been identified, as follows:

- Frequencies of the check and inspection are too low,
- Systematic and reliable information system are not in place,
- Referential manuals (procedural and technical) are not in place,
- Management resources (in both the quantity and quality of human resources) are very limited,

2) Necessary Actions for improvement of check and improvement

Based on these, WG-1 has discussed and proposed necessary actions for improvement for the implementation of check and inspection. This improvement plan is focusing on establishing a consolidated regime of environmental check led by Sub-Department of EP, supported with consolidated partnership with Inspection Division and other related units. The actions raised for improvement are comprised of a total of 11 actions categorized to four (4) challenges, as shown in **Figure 8**.

6.4 Review of Improvement during JICA Project

During the period of this Project, series of activities to improve the environmental check and inspection have been taken along the schedule defined in the PDM. Based on these results, it has been assessed how and in what degrees the challenges enumerated in the framework have been dealt and improved. **Table 13** shows this assessment result.

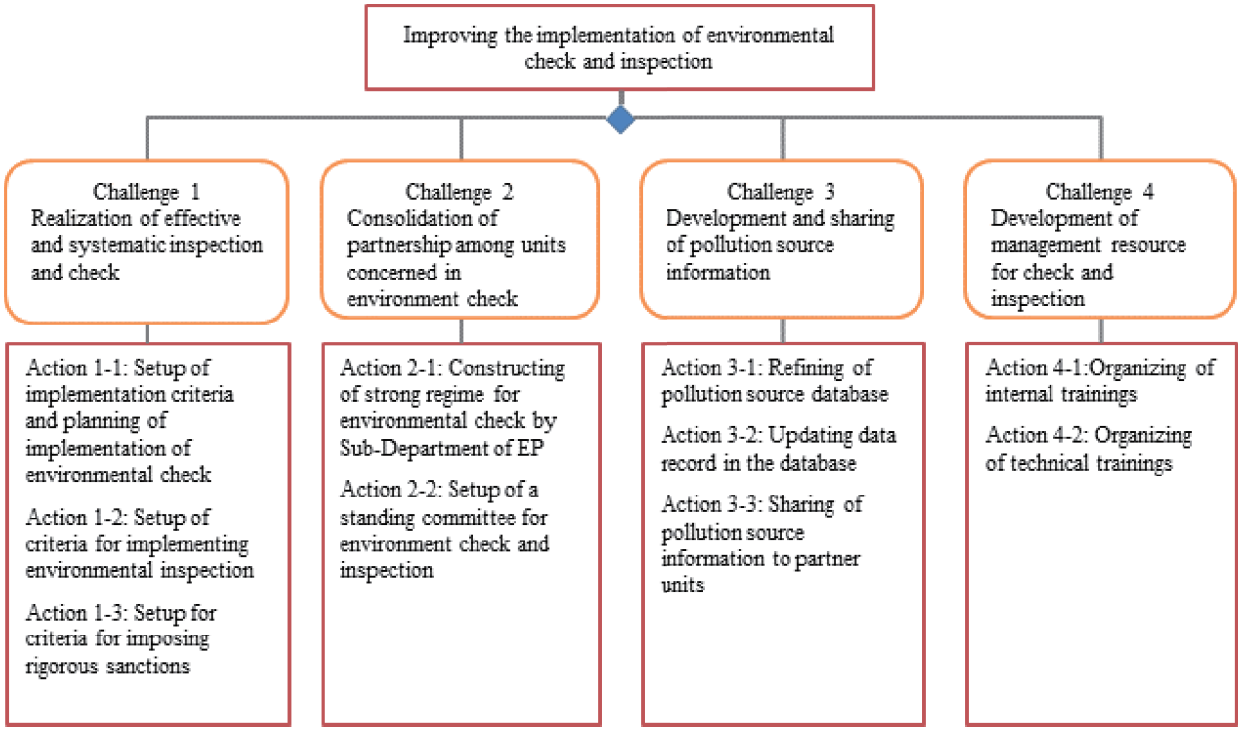


Figure 8 Framework of Necessary Actions for Improvement of Check and Inspection

Table 13 Assessment on Improvement during the Project Period

Challenge	Improvement during the Project Period
Challenge 1: Realization of effective and systematic implementation of check and inspection	- The annual implementation plans for check and inspection have been formulated every year. - The numbers of environmental check have been increased at the level of around 90 times a year. - The criteria for the implementation of check and inspection have become clear.
Challenge 2: Consolidation of partnership among units concerned with environmental check and inspection	- Necessary partnerships have come to be constructed, based on the communications among persons concerned, although special organizations were not formed.
Challenge 3: Development of pollution source information system and information sharing	- The pollution source information system (like PSD, PSI (or PST) and PSM) using computers have been developed, potentially resulting into helpful tools for the implementation of check and inspection.
Challenge 4: Enhancement of human resources engaged in check and inspection	- Training need analysis has been conducted, clarifying more opportunities for training to be necessary. - Numbers of relevant skill s and information have been transferred through lectures and OJTs during the project. - The wastewater management handbook has been compiled and distributed as resource information.

6.5 Focal Challenges in the Future

The environmental management in Vietnam is comprised of variety of management approaches like EIA approval, industrial wastewater fee, wastewater discharge licenses, etc. In light of the environmental management in Vietnam that is based on the regulatory approach, the

environmental check and inspection are important tasks to ensure various management approaches for pollution source control. Hence, it is obvious that the environmental check and inspection are an utmost important administrative task of DONRE to control pollution sources.

The strengthening of check and inspection by Sub-Dept. and Inspection Division has been progressing, recently. It is, however, advisable that more rigid regime of check and inspection be consolidated to upgrade the environmental management.

Major directions of further strengthening from now on are proposed, as follows:

1) To upgrade the quantity and quality of the environmental check and inspection

More frequent and strict check and inspection are crucial for promoting the environmental compliance of entities, by taking actions as below:

- To set up clear criteria for the implementation of check and inspection,
- To set up clear criteria for the imposition of sanctions in the shape of official documents,
- To set up and utilize internal training and other technical trainings to expand specialized knowledge and skills of persons concerned.

2) To utilize and upgrade the pollution source information system for the environmental management

Various data and information are crucial for implementing effective and efficient check and inspection. In such sense, it is very significant that the Quang Ninh PSD including the pollution source map (PSM) has been developed in the JICA Project.

Effective and efficient utilization of this information system for the check and inspection should be pursued, by taking actions as below:

- To start and ensure a sustainable operation of the PSD for Halong Area.
- To update the database, supplementing additional data on pollution sources, especially sources located outside Halong Area.
- To upgrade the function of the PSD so as to cover all pollution sources including sources with EPC registration.
- To identify unauthorized pollution sources and input relevant data.

End

ANNEX

1. Annual Implementation Plan of Environmental Check for 2012 (by Sub-Department of EP
2. Annual Implementation Plan of Environmental Inspection for 2012 (by Inspection Division)
3. Observation Report of Inspection on Mao Khe Coal Company

Annex 1.

Annual Implementation Plan of Environmental Check for 2012 (by Sub-Department of EP

DONRE **SUB-DEP FOR ENVIRONMENTAL PROTECTION** No. 05/KH-BVMT	SOCIALIST REPUBLIC OF VIETNAM Independence- Freedom-Happiness ---------- *Ha Long, 6th January 2012*

WORK PLAN FOR CHECKING ENVIRONMENTAL PROTECTION TASK

AT THE PRODUCTION, BUSINESS AND SERVICE UNITS IN QUANG NINH, 2012

To: Leader of DONRE

- Pursuant to Environmental Protection Law 2005 and the guiding documents of enforcement

- Pursuant to Regulation of Environment Protection was issued together with Decision of QNPPC 3076/2009/QD-UBND dated 8th October 2009 by QNPPC.

- Pursuant to Decision No.1116/QD-UBND dated 19 April 2010 of QNPPC on "Regarding function, tasks and authority and organization structure of Sub-Dep. for EP of QN DONRE.

- Based on the check results of environmental protection task in 2011 of Sub-Dep. for Environmental Protection of DONRE.

Sub-Dep for Environmental Protection makes plan for checking tasks of environmental protection of the manufacturing, business and service units in the Province in 2012 including annexes attached with this plan.

So, Sub-Dep for Environmental Protection submits to Director of DONRE for approval.

PP Director of DONRE	**Proposed by Head of Sub-Dep for EP**
Deputy Director	
By Mr. Luong Y Duoc	*By Mr. Hoang Viet Dung*
Signed and stamped	Signed
and stamped	

Attachment-1

LIST OF EXPECTED UNITS WILL BE CHECKED ON ENVIRONMENTAL PROTECTION TASK- 2012 (BY FIELD)

Attached to work-plan 05 /KH-BVMT dated 6th January 2012 of Sub-Dep. for EP)

No.	Checking field	Quantity of Unit	Name of Facility or Project will be checked	Name of Company will be checked	Note/ Explanation
1	2	3	4	5	6
	Total units will be checked	88			
I	Coal mining field	21			
		1	Coal Mine of Khe Cham	Khe cham Coal Company	
		2	Coc 6 Coal Mine	Coc 6 Coal Company	Checked in 2011
		3	Tay Lo Tri, Yen Ngua area	Thong Nhat Coal Company	
		4	Nga Hai Coal Mine	Quang Hanh Coal Company	Checked in 2011
		5	Wastewater treatment stations	Construction Company for Mining Environment Works	
		6	Tay Khe Sim Coal Mine, Dong Bac Nga Hai Coal Mine	Khe Tam Coal Mine Enterprise of Halong Coal Company	Checked in 2011
		7	Cua Ong Coal Selection Factory	Cua Ong Coal Selection Company	Checked in 2011
		8	Km-6 Port of Cam Pha	Coal Processing-Business Company-Dong Bac Corporation	Checked in 2011
		9	Ha Tu Coal Mine	Ha Tu Coal Company	Checked in 2011
		10	Nui Beo Coal Mine	Nui Beo Coal Company	
		11	Thanh Cong Coal Mine	Thanh Cong Coal Enterprise- Hon Gai Coal Company	
		12	Bac Vang Danh Coal Mine, Cai Da Coal Mine	Cao Thang Coal Enterprise- Hon Gai Coal Company	
		13	Km-6 Port, Cua Ong Port	Cam Pha Store and Transport Company	Checked in 2011
		14	Lang Khanh Port, Viet Hung Port, Doi Cay Port, Nam Cau Trang Port	Hon Gai Store and Transport Company	Checked in 2011
		15	Quang La Mine, Dan Chu Mine	Thang Long Company- Dong Bac Corporation	
		16	Tan Dan Mine	Hoanh Bo Coal Mine Enterprise – Uong Bi Coal Company	
		17	Hong Thai Mine	Hong Thai Coal Company	Checked in 2011
		18	Dong Vong- Uong Thuong Coal Mine	Vietmindo Company	Checked in 2011
		19	Dien Cong Port, Ben Can Port	Da Bac Store-Transport Company	Checked in 2011

No.	Checking field	Quantity of Unit	Name of Facility or Project will be checked	Name of Company will be checked	Note/ Explanation
		20	Ho Thien Mine, Khe Chuoi Mine	Company-91- Dong Bac Corporation	
		21	Mao Khe Coal Mine	Mao Khe Coal Company	Checked in 2011
II	Others Mineral Exploitation	17			
		1	Stone Mine at Km-15, Quang Hanh Ward, Cam Pha Town	Ngan Son JSC	
		2	Stone Mine C2 at Ha Phong Ward, Halong City	Huong Phong JSC	
		3	Dong Be Limestone Mine, Son Duong, Hoanh Bo District	Son Duong Construction Material Production Cooperative	
		4	Limestone Mine, Hoa Binh Commune, Hoanh Bo District	Quy Mui JSC	
		5	Dan Chu Commune Limestone Mine, Hoanh Bo District	Hung Thinh Co., Ltd.	Checked in 2011
		6	Vu Oai Commune Limestone Mine, Hoanh Bo District	Luong Son Co., Ltd.	
		7	Thong Nhat Commune Limestone Mine, Hoanh Bo District	Bai Tho Construction Material Company	
		8	Nui Rua Limestone Mine, Phuong Dong, Uong Bi City	Phuong Dong stone production Enterprise	
		9	Km-6 Stone Mine, Quang Hanh Ward, Cam Pha	Cam Pha Stone Exploitation & Construction Material Production JSC	Checked in 2011
		10	Sand Exploitation at Quan Lan Commune, Van Don District	Van Hai Viglacera One Member Co., Ltd	
		11	Ore Exploitation at Khe Chim, Duong Huy, Cam Pha	Antimon Duong Huy Joint State & Private Company	Checked in 2011
		12	Clay Exploitation for Brick production at Binh Duong Commune, Dong Trieu	Dat Viet Ceramic JSC	
		13	Thong Nhat Commune Limestone Mine, Hoanh Bo District	Huu Nghi Construction Material JSC	Checked in 2011
		14	Thong Nhat Limestone Mine, Hoanh Bo District	Dung Huy Trade JSC	
		15	Clay Exploitation at Phuong Dong Commune, Uong Bi City	Tan Thanh Cong JSC	
		16	Mat Rong Clay Mine, Phuong Dong Commune, Uong Bi City	Quang Ninh Cement and Construction Company	
		17	Clay Exploitation at Thuong Yen Cong Commune, Uong Bi City	Xuan Lam Corporation Co., Ltd	

No.	Checking field	Quantity of Unit	Name of Facility or Project will be checked	Name of Company will be checked	Note/ Explanation
III	Infrastructure Field	9			
		1	Kim Son Industrial Cluster	Hoang Ha Corporation JSC	
		2	Viet Hung Industrial Park	Viet Hung Industrial Park Development JSC	Checked in 2011
		3	Central Urban Area of Yen Thanh Ward	Quang Ninh Investment & Construction JSC	
		4	New Urban Area of Hung Thang	Ha Long Investment & Production Development Company	Checked in 2011
		5	Urban-Residential Area at T5 Hill of Hong Ha Ward, Halong City	Licogi-2 Investment & Construction Company	
		6	Lan Be-Cot 8 Urban Area	LICOGI Construction & Infrastructure Development Company	
		7	Phuong Hoang Urban Area	Duyen Hai Quang Ninh One Member Co., Ltd.	
		8	Tay Kalong Urban Area	Ngoc Ha Co., Ltd.	
		9	The Projects for Urban Area	Branch of Construction Company 507 at Quang Ninh	Checked in 2011
IV	Industrial Field	20			
		1	Automotive Engineering Factory	Uong Bi Automotive Engineering JSC	Checked in 2011
		2	Ha Long Shipbuilding Factory	Halong Shipbuilding One Member Co., Ltd	Checked in 2011
		3	Shipbuilding Factory	Dong Bac Ship Building JSC	
		4	Ore Refinement & Slab steel Production Plant	Dong A Corporation JSC	Checked in 2011
		5	Uong Bi Thermoelectric Plant	Uong Bi Thermoelectric JSC	Checked in 2011
		6	Quang Ninh Thermoelectric Plant	Quang Ninh Thermoelectric JS C	Checked in 2011
		7	Cam Pha Thermoelectric Plant	Cam Pha Thermoelectric JSC	Checked in 2011
		8	Ha Long Cement Plant	Ha Long Cement JSC	Checked in 2011
		9	Thang Long Cement Plant	Thang Long Cement JSC	Checked in 2011
		10	Lam Thach 1, 2 Cement Plants	Quang Ninh Cement and Construction JSC	Checked in 2011
		11	Cam Pha Cement Plant	Cam Pha Cement JSC	Checked in 2011
		12	Tunnel Brick Plant	Vinh Thang JSC	
		13	Tunnel Brick Plant in Hoang Que	Hoang Que Construction Ceramic Join-venture Co., Ltd.	Checked in 2011
		14	Tunnel Brick Plant in Hoang Que	Viet Duc Co., Ltd	
		15	Food Production Plant	Thai Lan Food Technology JSC	
		16	Pine Resin Processing Plant	Quang Ninh Pine JSC	
		17	Thang Long Beer Plant	Thang Long Beer Enterprise	
		18	Ha Khau Glass Plant	Ha Khau Glass JSC	

No.	Checking field	Quantity of Unit	Name of Facility or Project will be checked	Name of Company will be checked	Note/ Explanation
		19	Waste oil Recycling Workshop	TCN Recycling Co., Ltd	Checked in 2011
		20	Sao Vang Leather Shoes Plant	Sao Vang Co.,Ltd	
V	Medical Field	4			
		1	Cam Pha Health Center	Uong Bi Health Center	
		2	Vang Danh Health Center	Vang Danh Health Center	
		3	General Hospital of Yen Hung	General Hospital of Yen Hung	
		4	General Hospital of Bai Chay	General Hospital of Bai Chay	Checked in 2011
VI	Tourism, Service, Import-Export	7			
		1	Tuan Chau Tourism and Entertainment Area	Au Lac Co., Ltd	Checked in 2011
		2	Cong Doan Ha Long Hotel	Cong Doan Ha Long Hotel	
		3	Sai Gon- Ha Long Hotel	Sai Gon- Ha Long Hotel	
		4	Investment Project for Bai Tu Long Tourism Area	Viet My Co.,Ltd	
		5	Project for Port-Wharf, Import-Export in Mong Cai	Project for Port-Wharf, Import-Export in Mong Cai	
		6	Halong-I Market	Management Board of Halong-I market	
		7	Halong-II Market	An Hung Plaza JSC	
VII	Aquaculture, fisheries processing, Animal Husbandry Field	10			
		1	Aquaculture Farm in Minh Thanh, Yen Hung	G & A Joint-venture Company	
		2	Minh Thanh Industrial Shrimp-culture Area in Yen Hung	Ha Long Investment for Production Development Company	
		3	Seed Rearing and Commercial Production Culture of Otter Clam species on the sea	Do To Co., Ltd	
		4	Sea food Processing	Quang Ninh Seafood Export-Import JSC	Checked in 2011
		5	Project for relocation and expansion of Fish meal -Food processing Plant for animal	Van Don Co., Ltd	
		6	Fisheries Production	Fisheries Product Export JSC Number-2	
		7	Pig Production Farm	Thien Thuan Tuong Co., Ltd	
		8	Fisheries Production	Phu Minh Hung Fisheries JSC	
		9	Livestock Farm	Thanh Ngoc Livestock Co., Ltd	
		10	Project for original-new breeder with high technology	Minh Chau Co., Ltd	Checked in 2011

Attachment-2

LIST OF EXPECTED UNITS WILL BE CHECKED ON ENVIRONMENTAL PROTECTION WORK- 2012 (BY AREA)

Attached to work-plan 05 /KH-BVMT dated 6th January 2012 of Sub-Dep. for EP)

No.	Checking Area	Quantity of Unit	Name of Facility or Project will be checked	Name of Company will be checked	Time of check
1	2	3	4	5	6
Total units will be checked		88			
I	Cam Pha Town	19			
		1	Coc 6 Coal Mine	Coc 6 Coal Company	First Quarter
		2	Wastewater treatment stations	Construction Company for Mining Environment Works	First Quarter
		3	Cam Pha Thermoelectric Plant	Cam Pha Thermoelectric JS Company	First Quarter
		4	Tay Khe Sim Coal Mine, Dong Bac Nga Hai Coal Mine	Khe Tam Coal Mine Factory of Halong Coal Company	Second Quarter
		5	Ore Exploitation at Khe Chim, Duong Huy, Cam Pha	Antimon Duong Huy Joint State & Private Company	Second Quarter
		6	Km-6 Port of Cam Pha	Coal Processing-Business Company- Dong Bac Corporation	Second Quarter
		7	Tay Lo Tri, Yen Ngua area	Thong Nhat Coal Company	Third Quarter
		8	Recycling Waste Workshop	TCN Recycling Co., Ltd	Third Quarter
		9	Nga Hai Coal Mine	Quang Hanh Coal Company	Third Quarter
		10	Shipbuilding Factory	Dong Bac Shipbuilding Industrial Company	Third Quarter
		11	Km-6 Port, Cua Ong Port	Cam Pha Store and Transport Company	Fourth Quarter
		12	Coal Mine of Khe Cham	Khe cham Coal Company	Fourth Quarter
		13	Cua Ong Coal Selection Factory	Cua Ong Coal Selection Company	Fourth Quarter
		14	Stone Mine at Km-15, Quang Hanh Ward, Cam Pha Town	Ngan Son JSC	Fourth Quarter
		15	Km-6 Stone Mine, Quang Hanh Ward, Cam Pha	Cam Pha Stone Exploitation & Construction Material Production JSC	Fourth Quarter
		16	Cam Pha Cement Plant	Cam Pha Cement JSC	Fourth Quarter
		17	Cam Pha Health Center	Cam Pha Health Center	
		18	Livestock Farm	Thien Thuan Tuong Co.,Ltd	Fourth Quarter
		19	Livestock Farm	Thanh Ngoc Livestock Co., Ltd	Fourth Quarter
II	Halong City	22			
		1	Lang Khanh Port, Viet Hung Port, Doi Cay Port, Nam Cau Trang Port	Hon Gai Store and Transport Company	First Quarter

No.	Checking Area	Quantity of Unit	Name of Facility or Project will be checked	Name of Company will be checked	Time of check
		2	Food Production Plant	Thai Lan Food Technology JSC	First Quarter
		3	Ha Tu Coal Mine	Ha Tu Coal Company	Second Quarter
		4	Nui Beo Coal Mine	Nui Beo Coal Company	Second Quarter
		5	Limestone Mine C2 at Ha Phong Ward, Halong City	Huong Phong JSC	Second Quarter
		6	Cong Doan Ha Long Hotel	Cong Doan Ha Long Hotel	Second Quarter
		7	Sai Gon- Ha Long Hotel	Sai Gon- Ha Long Hotel	Second Quarter
		8	Tuan Chau Tourism and Entertainment Area	Au Lac Co., Ltd	Third Quarter
		9	Halong-II Market	An Hung Plaza JSC	Third Quarter
		10	Halong-I Market	Management Board of Halong-1 market	Third Quarter
		11	Thanh Cong Coal Mine	Thanh Cong Coal Factory- Hon Gai Coal Company	Third Quarter
		12	Bac Vang Danh Coal Mine, Cai Da Coal Mine	Cao Thang Coal Factory- Hon Gai Coal Company	Third Quarter
		13	Viet Hung Industrial Park	Viet Hung Industrial Park Development JSC	Fourth Quarter
		14	Urban-Residential Area at T5 Hill of Hong Ha Ward, Halong City	Licogi-2 Investment & Construction Company	Fourth Quarter
		15	New Urban Area of Hung Thang	Ha Long Investment & Production Development JSC	Fourth Quarter
		16	Lan Be-Cot 8 Urban Area	LICOGI Construction & Infrastructure Development Company	Fourth Quarter
		17	The Projects for Urban Area	Branch of Company 507 for Construction at Quang Ninh	Fourth Quarter
		18	Ha Long Shipbuilding Factory	Halong Shipbuilding Company	Fourth Quarter
		19	Quang Ninh Thermoelectric Plant	Quang Ninh Thermoelectric JS Company	Fourth Quarter
		20	General Hospital of Bai Chay	General Hospital of Bai Chay	Fourth Quarter
		21	Sea food Processing	Quang Ninh Seafood Export-Import JSC	Fourth Quarter
		22	Project for original-new breeder with high technology	Minh Chau Co., Ltd	Fourth Quarter
III	Hoanh Bo	11			
		1	Thang Long Cement Plant	Thang Long Cement JSC	First Quarter
		2	Ha Long Cement Plant	Ha Long Cement JSC	First Quarter
		3	Quang La Coal Mine, Dan Chu Mine	Thang Long Company- Dong Bac Corporation	Second Quarter
		4	Tan Dan Coal Mine	Hoanh Bo Coal Mine Enterprise – Uong Bi Coal Company	Second Quarter
		5	Limestone Mine in Hoa Binh Commune, Hoanh Bo District	Quy Mui JSC	Third Quarter

No.	Checking Area	Quantity of Unit	Name of Facility or Project will be checked	Name of Company will be checked	Time of check
		6	Limestone Mine in Dan Chu Commune, Hoanh Bo District	Hung Thinh Co., Ltd.	Third Quarter
		7	Dong Be Limestone Mine, Son Duong, Hoanh Bo District	Son Duong Construction Material Production Co-operative	Third Quarter
		8	Limestone Mine in Vu Oai Commune, Hoanh Bo District	Luong Son Co., Ltd.	Third Quarter
		9	Limestone Mine in Thong Nhat Commune, Hoanh Bo District	Bai Tho Construction Material JSC	Third Quarter
		10	Limestone Mine in Thong Nhat Commune, Hoanh Bo District	Huu Nghi Construction Material Production JSC	Third Quarter
		11	Limestone Mine in Thong Nhat Commune, Hoanh Bo District	Dung Huy Trade JSC	Third Quarter
IV	Uong Bi	15			
		1	Lam Thach 1, 2 Cement Plant	Quang Ninh Cement and Construction JSC	First Quarter
		2	Uong Bi Thermoelectric Plant	Uong Bi Thermoelectric JS C	First Quarter
		3	Dong Vong- Uong Thuong Coal Mine	Vietmindo Company	Second Quarter
		4	Pine Resin Processing Plant	Quang Ninh Pine JSC	Second Quarter
		5	Sao Vang Leather Shoes Plant	Sao Vang Co., Ltd	Second Quarter
		6	Hong Thai Coal Mine	Hong Thai Coal Company	Second Quarter
		7	Dien Cong Port, Ben Can Port	Da Bac Store-Transport Company	Checked in 2011
		8	Vang Danh Health Center	Vang Danh Health Center	Third Quarter
		9	Nui Rua Limestone Mine, Phuong Dong, Uong Bi City	Phuong Dong stone production Factory	Third Quarter
		10	Clay Exploitation at Phuong Dong Commune, Uong Bi City	Tan Thanh Cong JSC	Third Quarter
		11	Mat Rong Clay Mine, Phuong Dong Commune, Uong Bi City	Quang Ninh Cement and Construction Company	Fourth Quarter
		12	Clay Exploitation at Thuong Yen Cong Commune, Uong Bi City	Xuan Lam Corporation Co., Ltd.	Fourth Quarter
		13	Central Urban Area of Yen Thanh Ward	Quang Ninh Investment & Construction JSC	Fourth Quarter
		14	Automotive Engineering Factory	Uong Bi Automotive Engineering JSC	Fourth Quarter
		15	Thang Long Beer Plant	Thang Long Beer Company	Fourth Quarter
V	Dong Trieu	8			

No.	Checking Area	Quantity of Unit	Name of Facility or Project will be checked	Name of Company will be checked	Time of check
		1	Mao Khe Coal Mine	Mao Khe Coal Company	Second Quarter
		2	Ho Thien Coal Mine, Khe Chuoi Coal Mine	Company-91- Dong Bac Corporation	Second Quarter
		3	Clay Exploitation for Brick at Binh Duong, Dong Trieu	Dat Viet Ceramic JSC	Second Quarter
		4	Ore Refinement & Slab steel Production Plant	Dong A Corporation JSC	Second Quarter
		5	Kim Son Industrial Cluster	Hoang Ha Corporation JSC	Fourth Quarter
		6	Tunnel Brick Plant	Vinh Thang JSC	Fourth Quarter
		7	Tunnel Brick Plant in Hoang Que	Hoang Que Construction Ceramic Join-venture Co., Ltd.	Fourth Quarter
		8	Tunnel Brick Plant in Hoang Que	Viet Duc Co., Ltd	Fourth Quarter
VI	Van Don	2			
		1	Sand Exploitation at Quan Lan Commune, Van Don District	Van Hai Viglacera One Member Co., Ltd	Second Quarter
		2	Investment Project for Bai Tu Long Tourism Area	Viet My Co.,Ltd	Second Quarter
VII	Yen Hung	7			
		1	General Hospital of Yen Hung	General Hospital of Yen Hung	Second Quarter
		2	Aquaculture Farm in Minh Thanh, Yen Hung	G & A Joint-venture Company	Third Quarter
		3	Minh Thanh Industrial Shrimp-culture Area in Yen Hung	Ha Long Investment for Production Development Company	Third Quarter
		4	Seed Rearing and Commercial Production Culture of Otter Clam species on the sea	Do To Co., Ltd	Third Quarter
		5	Project for relocation and expansion of Fish meal-Food Processing Plant for Animal	Van Don Co., Ltd	Third Quarter
		6	Fisheries Production	Fisheries Export JSC Number 2	Third Quarter
		7	Fisheries Production	Phu Minh Hung Fisheries JSC	Third Quarter
VIII	Mong Cai	4			
		1	Phuong Hoang Urban Area	Duyen Hai Quang Ninh One Member Co.,Ltd	First Quarter
		2	Tay Kalong Urban Area	Ngoc Ha Co.,LTd	First Quarter
		3	Ha Khau Glass Plant	Ha Khau Glass JSC	Second Quarter
		4	Project for Port-Wharf, Import-Export in Mong Cai	Project for Port-Wharf, Import-Export in Mong Cai	Second Quarter

Attachment-3 LIST OF UNITS WERE CHECKED IN 2011

Attached to check-plan 05 /KH-BVMT dated 6th January 2012

No.	Name of Checked Unit	Checked Time	Presided Agency
1	Vietnam Everbest Co., Ltd	5th January 2011	Water Natural Resources-Hydro-meteorological Division, DONRE
2	Uong Bi Thermoelectric One Member Co., Ltd	15th January 2011	DONRE
3	Cam Pha Thermoelectric JSC	21st February 2011	Inspection Division, DONRE
4	Cam Pha Cement JSC	21st February 2011	Inspection Division, DONRE
5	Da Bac Store-Transport Company, Vinacomin	10th March 2011	Sub-Dep. for EP, DONRE
6	Coc 6- Coal JSC	15th March 2011	Sub-Dep. for EP, DONRE
7	Port Company- Dong Bac Corporation	16th March 2011	Sub-Dep. for EP, DONRE
8	One member Co., Ltd-507 for Work Construction	16th March 2011	Water Natural Resources-Hydro-meteorological Division, DONRE
9	Hon Gai Store-Transport Company, Vinacomin	17th March 2011	Sub-Dep. for EP, DONRE
10	Management Board for Sport-Cultural Works	28th March 2011	Inspection Division, DONRE
11	Duong Huy Antimony Joint-venture Company	30th March 2011	Inspection Division, DONRE
12	Dong A Corporation JSC	6th April 2011	Sub-Dep. for EP, DONRE
13	Hung Thinh Co., Ltd.	7th April 2011	Sub-Dep. for EP, DONRE
14	Hoa Binh JSC	7th April 2011	Sub-Dep. for EP, DONRE
15	Huu Nghi Construction Material Production JSC	8th April 2011	Sub-Dep. for EP, DONRE
16	Hoang Que Construction Ceramic Joint-venture Company	13th April 2011	Sub-Dep. for EP, DONRE
17	Mao Khe One Member Co., Ltd.-Vinacomin	14th April 2011	Mineral Division
18	TCN Recycling Co., Ltd.	15th April 2011	Sub-Dep. for EP, DONRE
19	PT Vietmindo Energitama Company	27th April 2011	Inspection Division, DONRE
20	General Hospital-Bai chay Area	11th May 2011	Sub-Dep. for EP, DONRE
21	Thanh Nam General Clinic Room Number-11	12th May 2011	Sub-Dep. for EP, DONRE
22	Hai Phuc General Clinic Room	12th May 2011	Sub-Dep. for EP, DONRE
23	General Hospital –Cam Pha Town	17th May 2011	Sub-Dep. for EP, DONRE
24	Ha Long Shipbuilding One Member Co.,Ltd.	17th May 2011	Sub-Dep. for EP, DONRE
25	Medical Center, Dam Ha District	18th May 2011	Sub-Dep. for EP, DONRE
26	Uong Bi Automotive Engineering JSC	18th May 2011	Sub-Dep. for EP, DONRE
27	Lifting Equipment Manufacture Plant, Quang Trung Mechanical Enterprise	18th May 2011	Sub-Dep. for EP, DONRE
28	Vietnam-Sweden Hospital	19th May 2011	Sub-Dep. for EP, DONRE
29	Automotive Industrial JSC-Vinacomin	19th May 2011	Sub-Dep. for EP, DONRE

No.	Name of Checked Unit	Checked Time	Presided Agency
30	Nam Mau Coal One Member Co., Ltd	20th May 2011	Sub-Dep. for EP, DONRE
31	Uong Bi Thermoelectric One Member Co., Ltd	20th May 2011	Office-64
32	Coc-6 Coal JSC	20th May 2011	Office-64
33	PT Vietmindo Energitama Company	26th May 2011	Inspection Division, DONRE
34	Quy Hanh Trade & Service Co., Ltd.	27th May 2011	Inspection Division, DONRE
35	Halong Cement JSC	28th April 2011	Inspection Division, DONRE
36	Work Construction Company No.507	7th June 2011	Sub-Dep. for EP, DONRE
37	Dong Trieu Ceramic Production Enterprise	9th June 2011	Inspection Division, DONRE
38	Ha Long URENCO	10th June 2011	Sub-Dep. for EP, DONRE
39	Viet Hung Industrial Park Development JSC	14th June 2011	Sub-Dep. for EP, DONRE
40	Royal International JSC	14th June 2011	Sub-Dep. for EP, DONRE
41	Halong Investment-Production Development Co., Ltd	15th June 2011	Sub-Dep. for EP, DONRE
42	Au Lac Co., Ltd	15th June 2011	Sub-Dep. for EP, DONRE
43	Thang Long Cement JSC	15th June 2011	Inspection Division, DONRE
44	Viet Duc Beer Plant	15th June 2011	Sub-Dep. for EP, DONRE
45	Quang Ninh Electric Company	15th June 2011	Sub-Dep. for EP, DONRE
46	Halong –I Market Management Board	16th June 2011	Sub-Dep. for EP, DONRE
47	Quang Ninh Sea Food Export-Import JSC	16th June 2011	Sub-Dep. for EP, DONRE
48	Phuong Dong Oyster Pearl Co., Ltd.	20th June 2011	DONRE
49	Tan Viet Hung JSC	21st June 2011	Inspection Division, DONRE
50	Royal International JSC	21st June 2011	Sub-Dep. for EP, DONRE
51	Lam Thach-I Cement Plant	21st June 2011	Sub-Dep. for EP, DONRE
52	Quang Ninh Electric Company	28th June 2011	Sub-Dep. for EP, DONRE
53.1	Halong Beer and Beverage JSC	29th June 2011	Inspection Division, DONRE
53.2	Quang Hanh Coal One Member Co., Ltd.	6th July 2011	Water Natural Resources-Hydro-meteorological Division, DONRE
54	Cam Pha Industrial College	6th July 2011	Water Natural Resources-Hydro-meteorological Division, DONRE
55	Khe Sim One Member Co., Ltd.	7th July 2011	Sub-Dep. for EP, DONRE
56	Cua Ong Coal Selection Company	7th July 2011	Water Natural Resources-Hydro-meteorological Division, DONRE
57	GULF JASH Ship	11th July 2011	Inspection Division, DONRE
58	Ha Long Tourism JSC	13th July 2011	Water Natural Resources-Hydro-meteorological Division, DONRE
59	Vietnam-Sweden Hospital	20th July 2011	Water Natural Resources-Hydro-meteorological Division, DONRE
60	Ha Tu Coal JSC	22nd July 2011	Water Natural Resources-Hydro-meteorological Division, DONRE

No.	Name of Checked Unit	Checked Time	Presided Agency
61	Minh Anh JSC	27th July 2011	Sub-Dep. for EP, DONRE
62	Construction and Development JSC for Western Region	29th July 2011	Sub-Dep. for EP, DONRE
63	Quang Ninh Mine Chemical Industrial Company	3rd August 2011	Sub-Dep. for EP, DONRE
64	General Hospital, Mong Cai Area	3rd August 2011	Sub-Dep. for EP, DONRE
65	Mong Cai Environment & Urban Work JSC	3rd August 2011	Sub-Dep. for EP, DONRE
66	Youth Trade and Tourism JSC	8th August 2011	Sub-Dep. for EP, DONRE
67	Duc Ngoc Co., Ltd.	9th August 2011	Sub-Dep. for EP, DONRE
68	Mao Khe Mechanical JSC	16th August 2011	Sub-Dep. for EP, DONRE
69	Enterprise-296	17th August 2011	Sub-Dep. for EP, DONRE
70	Van Don Enterprise	17th August 2011	Mineral Division
71	Coc 6 Coal JSC	20th August 2011	Vietnam Environmental Administration
72	Uong Bi Coal Enterprise	10th August 2011	Sub-Dep. for EP, DONRE
73	Uong Bi Coal Production and Trade JSC	23th August 2011	Sub-Dep. for EP, DONRE
74	Hanoi Export-Import JSC-GELEXIMCO	24th August 2011	Sub-Dep. for EP, DONRE
75	One Member Co., Ltd No.86	25th August 2011	Sub-Dep. for EP, DONRE
76	One Member Co., Ltd No.397	26th August 2011	Sub-Dep. for EP, DONRE
77	Coc 6 Coal JSC	30th August 2011	Sub-Dep. for EP, DONRE
78	One Member Co., Ltd No.35	31st August 2011	Sub-Dep. for EP, DONRE
79	Giap Khau Coal Enterprise	1st September 2011	Sub-Dep. for EP, DONRE
80	Dong Trieu Coal Exploitation & Business Enterprise	6th September 2011	Sub-Dep. for EP, DONRE
81	Dong Trieu Viglacera JSC	7th September 2011	Sub-Dep. for EP, DONRE
82	Shipbuilding Mechanical Company-Vinacomin	7th September 2011	Sub-Dep. for EP, DONRE
83	Lam Thach-I Cement Plant	13th September 2011	Sub-Dep. for EP, DONRE
84	One Member Co., Ltd No.790	14th September 2011	Sub-Dep. for EP, DONRE
85	Machine Manufacturing JSC- Vinacomin	14th September 2011	Sub-Dep. for EP, DONRE
86	Vietnam-Sweden Hospital	16th September 2011	Sub-Dep. for EP, DONRE
87	Medical Center, Dam Ha District	20th September 2011	Water Natural Resources-Hydro-meteorological Division
88	Hon Gai Store-Transport Company	21st September 2011	Sub-Dep. for EP, DONRE
89	Lam Thach Cement Plant	27th September 2011	Inspection Division, DONRE
90	Quang Ninh Cement & Construction JSC	27th September 2011	Inspection Division, DONRE
91	Cam Pha Cement Company	29th September 2011	Sub-Dep. for EP, DONRE
92	Khe Tam Coal Enterprise	29th September 2011	Mineral Division, DONRE

No.	Name of Checked Unit	Checked Time	Presided Agency
93	Deo Nai Coal JSC and Coc 6 Coal JSC	3rd October 2011	Sub-Dep. for EP, DONRE
94	Cua Ong Coal Selection Company	5th October 2011	Sub-Dep. for EP, DONRE
95	Integral Material Investment Co., Ltd	12th October 2011	Sub-Dep. for EP, DONRE
96	Ha Long Cement JSC	12th October 2011	Inspection Division
97	Hong Thai Coal One Member Co., Ltd	19th October 2011	Sub-Dep. for EP, DONRE
98	New Century Chemical Fiber Co., Ltd	19th October 2011	Sub-Dep. for EP, DONRE
99	Uong Bi Coal One Member Co., Ltd	1st November 2011	Sub-Dep. for EP, DONRE
100	Dam Ha Tunnel Brick Factory	1st November 2011	Sub-Dep. for EP, DONRE
101	General Hospital, Mong Cai Area	2nd November 2011	Sub-Dep. for EP, DONRE
102	Metro Supermarket	8th November 2011	Sub-Dep. for EP, DONRE
103	Cam Pha Stone Exploitation Company	3th October 2011	Mineral Division, DONRE
104	Quang Ninh Thermoelectric JSC	11th November 2011	Sub-Dep. for EP, DONRE
105	Cai Lan Vegetable Oil Co., Ltd	15th November 2011	Sub-Dep. for EP, DONRE
106	Vietnam-Sweden Hospital	8th November 2011	Sub-Dep. for EP, DONRE
107	Investment of House & Infrastructure Development One Member Co., Ltd	22nd November 2011	Sub-Dep. for EP, DONRE
108	Quang Ninh Cement & Construction JSC	24th November 2011	Sub-Dep. for EP, DONRE
109	Thang Long Cement Plant	29th November 2011	Department of Industry–Trade
110	Ha Long Cement Plant	29th November 2011	Department of Industry–Trade
111	Thanh Tam Co., Ltd No.668	30th November 2011	Sub-Dep. for EP, DONRE
112	Ha Tu Cement Plant	10th November 2011	Sub-Dep. for EP, DONRE
113	Coal Processing and Business Company	1st December 2011	Sub-Dep. for EP, DONRE
114	JSC for Project Development of East Sea	6th December 2011	Sub-Dep. for EP, DONRE
115	Mineral Exploitation One Member Co., Ltd.	7th December 2011	Sub-Dep. for EP, DONRE
116	Work Construction Company-507	8th December 2011	Sub-Dep. for EP, DONRE
117	Hon Gai Store-Transport Company	1st December 2011	Sub-Dep. for EP, DONRE
118	Hon Gai Coal Selection Company	8th December 2011	Sub-Dep. for EP, DONRE
119	Petro-Oil Company-B12	13th December 2011	Sub-Dep. for EP, DONRE
120	Nam Mau Coal One Member Co., Ltd	15th December 2011	Sub-Dep. for EP, DONRE
121	Quang Trung Chemical Enterprise	28th December 2011	Sub-Dep. for EP, DONRE
122	Provincial Hospital	28th December 2011	Ministry of Health
123	Tuberculosis Hospital	28th December 2011	Ministry of Health
124	Vietnam- Sweden Hospital	29th December 2011	Ministry of Health

No.	Name of Checked Unit	Checked Time	Presided Agency
125	General Hospital, Dong Trieu Area	29th December 2011	Ministry of Health
126	TCN Recycling Co., Ltd.	30th December 2011	Sub-Dep. for EP, DONRE
127	Vietnamese-Japanese Paper Material Production Co., Ltd.	26th December 2011	Management Board for Economic Zone
128	Vietnam Shipping Agent JSC	26th December 2011	Management Board for Economic Zone
129	North Star International Co., Ltd.	27th December 2011	Management Board for Economic Zone
130	Hoai Nam Co., Ltd	27th December 2011	Management Board for Economic Zone
131	Vina Forest Product- Wood chips Processing Co., Ltd.	28th December 2011	Management Board for Economic Zone
132	Vinh Phong Paper Material Co., Ltd.	28th December 2011	Management Board for Economic Zone
133	Halong 12/11 JSC	28th December 2011	Management Board for Economic Zone
134	Halong Trade & Forestry Production JSC	28th December 2011	Management Board for Economic Zone
135	Hoang Lam Ha Long Co., Ltd.	28th December 2011	Management Board for Economic Zone

Annex 2

Annual Implementation Plan of Environmental Inspection for 2012 (by Inspection Division)

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT OF QUANG NINH Inspection No. 110/KH/TTr	Quang Ninh November 30, 2011

PROGRAM AND PLAN OF INSPECTION OF 2012

- Basing on the Inspection Law of 2010;
- Basing on Functions, Tasks, Authority and Organization Chart of the Inspection Section of DONRE;
- Implementing direction of the Director of Quang Ninh DONRE; orientation of Program and Plan of Inspection of 2012 of Quang Ninh Inspection Dept. at the Official Letter No. 538/TTr-VP dated 2/11/2011.

The Inspection Section of QN DONRE builds up the Inspection Program and Plan of 2012 as the following:

I. AIMS

- Strengthen the inspection of responsibility for State management in the field of natural resources and environment of the State administrative agencies at all levels, thereby detecting and timely handling of violations. Make proposals for correction of the State management activities to overcome the weakness and defects for limiting of the damages.
- Promote the work of meeting the people, handling complaints, settling of denunciations, timely settling of claims of many people, beyond levels and basically resolving the outstanding and long-lasting cases, keeping and stabilizing the order, facilitating conditions for economic development.
- Speed up the activities of prevention and fighting against corruptions in the Section, make propaganda, implement measures for prevention and combating against corruptions in order to contribute to improving the effectiveness of fighting against corruptions.
- Through the specialized inspection and check on legal aspects of natural resources and environment to the subject organizations to guide and facilitate them to quickly complete the legal procedures in management and use of resources and environmental, for detecting, preventing and handling of violations according to their jurisdiction or proposing the competent agencies to handle these violations according to the law.

II. OBJECTIVES AND MAIN TASKS OF THE PLAN OF 2012

1. Inspection activities.

a. Inspection on Administration:

- Organize two (2) inspections on the State Management activities regarding the performance of the functions and tasks of the Center for Technology and Informatic, and the Center for Land Resources Development. Time of implementation: Quarter IV/2012.

b. Specialized Inspection

***Inspection on Land:**

- Check the Land Use Management of the organizations which were allocated and leased land by the State in the whole Province area. Time of implementation: Quarter I/2011.
- Organize two (2) inspections on Issuing of Land Use Right Certificates:
  + In Mong Cai City. Time of implementation: Quarter II/2012.
  + In Dong Trieu District: in two communes of the District. Time of implementation: Quarter III/2012.

***Inspection on the fields of Environment and Water Resources:**

- To inspect the observance of laws on environmental and water resources protection in the minerals mining activities (coal mining) and food production in the whole province. Time of implementation: Quarter II + III /2012.
- Check the waste treatment of the units for oil business in the province. Time of implementation: Quarter II/2012.
- **Check the wastewater treatment of markets in Halong City and Cam Pha Town. Time of implementation: Quarter III/2012.**

***For the field of Minerals**

- Check the observance of Minerals Law of the Units performing minerals mining for construction materials (Post check the implementation of check conclusions made by the Multi-sectoral Check Team under the Decision No. 2947 QD/UBND of the QN PPC on 19/9/2011, regarding "Establishing the Multi-sectoral Check Team, to perform general check of minerals mining for construction materials in the province"). Time of implementation: Quarter III/2012.

*** Implementing Inspections under the PPC guidance**

c. Inspection, check on the legal responsibility to make complaints and denunciations against corruptions

Organize one (1) check on implementation of law on prevention and combating with corruptions in the Cadastral Technique Center. Time of implementation: Quarter IV/2012.

2. Activities of meeting with People, handling of complaints and solving with denunciations

Assign staff for meeting people, receive, handle and settle the complaints and denunciations according to the provisions of law, not to have situation of outstanding of complaining letters leading to prolonged complaints.

- Carry out the implementation exactly according to the contents, time schedule and requirements of the Scheme on Renewing the Meeting with People (Decision No. 858/QD-TTg).
- Focus in settling definitively the complaints and denunciations of many people, beyond levels, reaching 90% or more for newly arising cases and 80% or more for the outstanding and long-lasting cases.
- Implement satisfactorily the Decisions on settling with complaints, denunciations with legal efficiency and strengthen rules and disciplines in handling of complaints and denunciations.

3. Prevention and combating with corruptions

- Focus in propaganda on prevention and combating with corruption.
- Continue implementation of the Governmental Plan to implement the UN Convention on International Anti-Corruption
- Improve efficiency in grasping situations, detecting corruptions especially the corruptions in field of land.
- Strengthen preventive measures of corruptions, associating the activities of anti-corruptions with enhancing the renewing of administrative procedures.

4. The work of Building up the Inspection Sector

- Focus to complete the system of organization for inspection following the new mechanism.
- Carry out reviewing the provisions on the functions, organizational structures, regulations of work, work coordination, standards of inspection titles etc. .. striving to propose for appointment of 03 inspectors in 2012. Propose the higher level to appoint two (2) comrades for attending training about principal professional inspection, appoint three (3) comrades for

attending training on professional inspection, appoint two (2) comrades to learn intermediate politics and one (1) comrade to attend the high-grade class for politics.

5. Other activities:

- Well implement the inspections and checks according to the urgent orders, under the direction of the PPC and assignments of the Department Leaders.

The above is work plan of the Inspection Section of DONRE for 2012, for submission to the DONRE Leaders for approval.

APPROVAL OF DONRE LEADERS DIRECTOR **(signed and stamped)**	CHIEF INSPECTOR (signed and stamped)

Annex 3:
Observation Report of Inspection on Mao Khe Coal Company

OBSERVATION REPORT
OF
ENVIRONMENTAL CHECK AND INSPECTION ON MAO KHE COAL COMPANY

1. General

The observation of the environmental check and inspection has been taking place as one of activities to strengthen the environmental check and inspection of Quang Ninh DONRE.

DONRE has been carrying out the check and inspection for Mao Khe Coal Company (belonging to VINACOMIN, located in Mao Khe, Dong Trieu District), which is an industry of coal mining and processing. This inspection and check have been initiated by the complaint on water pollution which were made by residents living along the Cau Lim Stream.

The check and inspection have been started on February 8 by an Inspection Team. Though a wrapping-up meeting were held on February 15, it is expected that further related works will be continued.

Findings coming from JET Expert's observation and information relating to the administrative actions undertaken by DONRE are summarized as below.

Photo 1 Inspection Meeting

2. Survey of Wastewater Treatment Site

2.1 Overview

We surveyed a wastewater treatment facilities called "+30 groundwater treatment plant" which works for the treatment for wastewater generated in coal exploitation pits and rainwater in the coal processing yard. According to the design plan, the treatment capacity of the facilities is 600 m^3/hr.

The location of this water pollution case is shown in **Figure 1**.

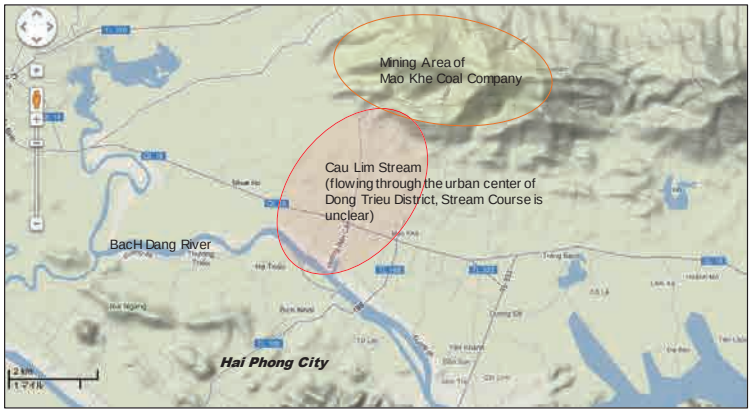
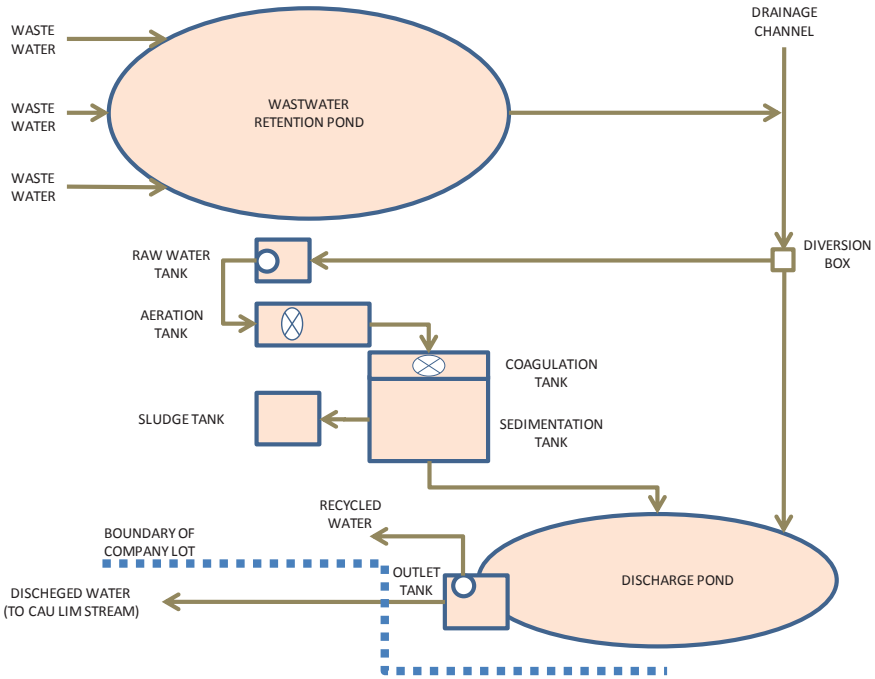


Figure 1 Site Location of Water Pollution Case

The wastewater treatment facilities are comprised of: a wastewater retention pond, a set of drainage channel, a main wastewater treatment plant, a discharge pond, an outlet tank and related equipment and others, as shown in **Figure 2**.

The main wastewater treatment plant employing the process of air oxidation and sedimentation with coagulant injection are organized by a raw water tank, an aeration tank, a coagulation tank, a sedimentation tank, a sludge tank and related equipment.



Source: JET

Figure 2 Whole Wastewater Treatment Facilities

2.2 Overall Impression of Performance

(1) Treatment Capacity

- An extreme large amount of the rainwater should be generated in the yard, because the coal processing yard is very wide. Meanwhile, the volume of the wastewater retention pond looks to be insufficient and the effective volume of the pond has been seriously reduced by the accumulation of coal sludge due to inappropriate dredging.

Photo 2 Coal Processing Yard

- The diversion box set in the route of the drainage channels works to diverse extra wastewater from the treatment facilities, when much wastewater comes.
- As judged from the above, the facilities are suspected not to have enough treatment capacity, especially in the heavy rainfall. Thus, the plan and design of the facilities should be reviewed and checked carefully, and as a result, some modification should be undertaken to ensure necessary capacity.

(2) Operation and Maintenance

- The facilities don't have appropriate care for the operation and maintenance on a daily basis and/or a periodical basis. Because of that, the retention ponds have been accumulated by sludge, the sedimentation tank causes carry-over of sludge, pH meter set in the aeration tank is left broken, etc.

- The facilities don't have the flow-rate measurement device to record the volume of discharged water. Besides, appropriate monitoring of discharged water is not practiced.
- As seen from the above, the company should make a proper plan of the operation and maintenance to improve its practices.

2.3 Conditions of Component Equipment

(1) Wastewater Retention Pond and Drainage Channels

- The size of the wastewater retention pond is huge, but all zones have been full of settled coal sludge. This shows that sludge removal from the pond has not been carried out for a long time.
- Under such condition, the pond has lost the capacity of separating incoming coal sludge as a preliminary treatment, no more.
- The set of drainage channels are laid down in the site to lead wastewater into the main treatment plant.
- A diversion box is set just before entering to the raw water tank and a part of wastewater is by-passed to the discharged pond, directly without treatment. It is suspected that this diversion box is functioned to diverse wastewater beyond the capacity of the main treatment plan.

Photo 3 Wastewater Retention Pond

(2) Aeration Tank

- PH control is not in operation due to the breakdown of pH meter.
- Oxidation with aeration appears not to be effectively working due to very small aeration. Thus, the removal of iron (Fe) and manganese (Mn) are not expected.

(4) Coagulation Tank, Sedimentation Tank and Sludge Tank

- Coagulation appears not to be realized. Consequently, suspended solids with coal particles are not settled enough.
- The sedimentation tank is not equipped with automatic device for sludge draw-off. Though manual operation to remove sludge is necessary, such operation does not appear to be practiced appropriately.

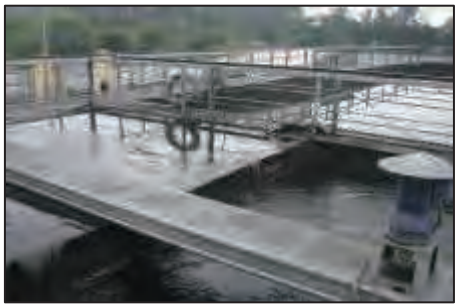


Photo 4 Coagulation Tank

(5) Discharge Pond and Outlet Tank

- Much sludge appears to accumulate in the discharge pond, resulting into the reduction of retention capacity as a final safeguard.
- There is no device to measure the flow-rate and water quality of discharged water.

Photo 5 Discharge Pond

3. Survey of the Cau Lim Stream

The Inspection Team surveyed the situation of water pollution along the Cau Lim Stream. The stream

originates from the outlets of wastewater generated from the site of Mao Khe Coal Company and pours to the Bach Dang River through the urban center of Mao Khe.

The survey result is shown in **Figure 2**.

The situations of water pollution along the stream may be summarized, based on the JET Expert's observation.

- Up-stream from the outlets to the meeting point

  The stream from No.1 outlet does not look polluted. Meanwhile, the stream from No.2 outlet to the meeting point looks seriously polluted with black color, clearly indicating that the pollution is caused by the wastewater discharge from the Mao Khe Coal Company. In the course of the stream, small dams have been built to collect waste coal.

- Mid-stream after the meeting point

  The water looks polluted with black color, clearly showing that the pollution is caused by inlet water from the up-stream of No. 2 outlet side.

- Down-stream before pouring to the Bac Dang River

  While the stream flows through the urban center, the water color turns from black to gray. Presumably, the change of water color is caused by entering domestic wastewater coming from the urban area nearby.

  According to the explanation of residents, the down-stream areas have suffered from flooding damages. The modification works of the Cau Lim Stream have been completed already in the up-stream and middle-stream, but yet to be done in the down-stream.

4. Administrative Actions by DONRE

This environmental check and inspection have been started by the complaint by residents living in the down-stream of the Cau Lim Stream. In response, QN PPC has enforced the environmental check and inspection, organizing the Inspection Team led by Chief Inspector.

The check and inspection by the Inspection team have been started on February 8, 2012 and the wrap-up meeting was held on February 15, 2012.

Detail chronology is shown in **Table 1**.

According to the minute of wrap-up meeting, the Inspection Team has conveyed the following requests to Mao Khe Coal Company:

- To strengthen the monitoring to ensure the proper operation of wastewater treatment,
- To implement the dredging of the up-stream of No.2 outlet side of the Cau Lim Stream, and to ensure through treatment of wastewater generated from mechanical workshop, workshop service, etc., and
- To complete and submit several legal documents.

Table 1 Chronology of Check and Inspection on Mai Khe Coal Company

Items	Descriptions	Remarks
1. Request for Settlement from Resident (Official No. 8199, dated Dec. 16, 2011)		
	Title: Request for Settlement regarding Wastewater of Mao Khe Coal Mine and Project for Renovation of Cau Lim Stream Phase 3 Sender: Mr. Nguyen Huu Hop (Resident in Mao Khe) Destination: Secretary of Party Committee of QN Province Main Contents: ● I am a resident in Vinh Hai Area as a representative of 50 households nearby. ● The upstream of the Cau Lim Stream receiving water from coal mining and coal processing areas have heavy environmental pollution. The areas of both banks are often flooded in heavy rains. ● The water pollution has given negative impacts crops (rice) and livestock. Many households have been forced to suspend fish-culture in their ponds. The damage by the flood of June 5, 2011 is estimated at 400 million VND. At the moment, we have not received any compensation against these situations. ● We request that officials of People's Committee of Mao Khe Town and of Mao Khe Coal Company come and check the site. ● According to our opinion: - The environmental pollution has been caused by wastewater discharge from Mao Khe Coal Mine, - Phase 1 and 2 of the modification work for the upstream have been completed but Phase 3 from the downstream of the Lim Bridge has not been implemented. These conditions have led the flooding in the downstream area. ● This request is accompanied by signatures of 35 residents living in the both bank of the stream. ● This request is accompanied by the other complain of 4 residents living near the Lim Bridge on the damage of rice cultivation.	Annex 1
2. Administrative Order of QN PPC (PPC No.153/UBND-MT, dated Jan. 13, 2012)		
	Title: Resolution of Complain by Households of Mao Khe Township of Dong Trieu District Sender: Mr. Tran Nhue Long, for Chief Secretary of QN Provincial PC Destination: DONRE and PC of Dong Trieu District Main Contents: ● To assign DONRE to chair and coordinate for checking and solving the current status of wastewater discharge from Mao Khe Coal Mine, ● To assign PC of Dong Trieu District for checking and settling the situations of Phase 3 modification works and dredging for Cau Lim Stream which have not been implemented and have been causing flooding in rainy seasons.	Annex 2

Items	Descriptions	Remarks
3. Decision on Inspection Team Formation (DONRE No. 24QD/TNMT-TTr, dated Jan. 31, 2012)		
	Title: Decision on Inspection Team Formation to Inspect the Observance of the Law on Environmental Protection and Law on Water Resources by Mao Khe Coal Mine Company. Sender: Mr. Dang Dinh Lop, for Director of DONRE Main Contents: ● Chief Inspector of DONRE, as Team Leader ● Chief Inspector of DONRE, as Deputy Team Leader ● As Team Member (6): Deputy Head of Water Resources and Hydro-Meteorology Division, Deputy Director of Sub-department of EP, Inspector (1) of DONRE, Inspector (2) of DONRE, Representative of Dong Trieu District PC, Representative of VINACOMIN ● Inspection period: 10 working days	Annex 3
4. Inspection Work Plan (DONRE No. 01/KH/TNMT-TTr, dated Jan. 31, 2012)		
	Prepared by Team Leader and approved by Director of DONRE. Inspection takes place from Feb. 8, 2012 to Feb. 15, 2012.	Annex 4
5. Report on Implementation of Environment and Water Resources Protection of Mao Khe Coal Mine Company (No. 574BC-TMK-MT, dated Fe. 3, 2012)		
	Prepared and explained by Mao Khe Coal Mine Company in the first day of the inspection. Main Contents: ● Explained that the company ha taken necessary legal procedures. ● Explained that the company is equipped with wastewater treatment facilities (2 locations).	Annex 5
6. First Day of Inspection (at 13:00, Feb. 8, 2012)		
	● The Team Leader of the Inspection Team declared the inspection with 10 days, based on the complaint from the residents. ● The company explained their environmental protection measures.	
7. Second Day of Inspection (at 9:00, Feb. 9, 2012)		
	● The site inspection took place in one of wastewater treatment facilities in the coal processing site.	
8. Third Day of Inspection (at 9:00, Feb. 10, 2012)		
	● The survey took place along all stream of the Cau Lim Stream from the outlet of wastewater to outlet of the stream. ● The company has agreed that the pollution and coal sediment in the upstream are caused by the discharge of wastewater from the company. ● It has been confirmed that sapling and discussion will be carried out, later.	
9. Wrap-up Meeting (Feb. 15, 2012)		
	● Based on survey results, the wrap-up meeting was held and, as a result, the Inspection Team conveyed set of official requests to the company. ● It has been confirmed that the measurement results of sampled water will be issued, later.	Annex 6

5. Postscript

5.1 Continuing following Up

The strengthening of environmental check and inspection is one of major agenda of WG-1. Thus, this water pollution case will be continued to be followed by the observation of JICA Experts till the final end.

Although actions at the site in the check and inspection have ended by holding the wrap-up meeting, DONRE will continue to deal with this case to solve related matters, presumably. WG-1 will continue to follow up this case, especially taking notice on:

- How and what administrative sanctions will be imposed by DONRE or PPC to the company?
- How does DONRE manage and supervise the environmental recovery works of the stream and necessary wastewater treatment measures to be undertaken by the company?
- How does DONRE or PPC manage to deal with the compensation requested by the residents?

5.2 Challenges Coming up

It is considered that a number of challenges for DONRE have been emerged from the water pollution case by Mao Khe Coal Company. From the standpoint of activity targets set up for WG-1, the following challenges have been found:

- What criteria to select subject entities should be applied in the planning of annual implementation of environmental check and inspection?
- How technical abilities of staffs concerned should be reinforced to have the insight to detect insufficient environmental protection measures?
- How do the environmental check and inspection based on complaints by general citizens should be strengthened so as to response more effectively?

The challenges identified above will be discussed in the subsequent activities of WG-1in the next period, aiming to take specific actions within this project.

End

Appendix:

1: Request for Settlement regarding Wastewater of Mao Khe Coal Mine and Project for Renovation of Cau Lim Stream Phase 3 (Official No. 8199, dated Dec. 16, 2011)

2: Resolution of Complain by Households of Mao Khe Township of Dong Trieu District (PPC No.153/UBND-MT, dated Jan. 13, 2012)

3: Decision on Inspection Team Formation to Inspect the Observance of the Law on Environmental Protection and Law on Water Resources by Mao Khe Coal Mine Company (DONRE No. 24QD/TNMT-TTr, dated Jan. 31, 2012)

4: Inspection Work Plan (DONRE No. 01/KH/TNMT-TTr, dated Jan. 31, 2012)

5: Report on Implementation of Environment and Water Resources Protection of Mao Khe Coal Mine Company (No. 574BC-TMK-MT, dated Fe. 3, 2012)

6: Minute of Wrap-up Meeting (Dated February 15, 2012)

7: Conclusion from Inspection of Environment and Water Resources Protection (DONRE Inspectorate, dated February 2012)

Figure 2: Environmental Situation around Cau Lim Stream

Appendix 1

OFFICE OF STANDING COMMITTEE OF PROVINCIAL PARTY

ARRIVAL OFFICIAL DOCUMENT NO. 8199

DATE: 16th December 2011

PETITION FOR SETTLEMENT

Regarding Wastewater of Mao Khe Coal Mine and Project for Renovation of Cau Lim Stream, Phase 3

To: Secretary of Party Committee of Quang Ninh Province

My name is **Nguyen Huu Hop** to be born in 1960

I am resident in: Vinh Hai Area, Mao Khe Township, Dong Trieu District, Quang Ninh Province.

I am representative of 50 households living in residential areas of Vinh Hai, Vinh Sinh, Vinh Thong, Area-1 and Area-2 of the Mao Khe Township, Dong Trieu District to write this petition sending to the competent authorities concerning following problems:

Currently, the water runs from coal mining and processing areas, upstream area of the Cau Lim Stream causing heavy pollution for environment and bad impaction for crops and livestock in this area. Area of the two banks of the Cau Lim Stream always is flooded from 0.5 to 1 m in heavy rainy days. Whole rice field is deep in mud and sand. Failure of crops has been happened in many years. The farms of the downstream area where my family and some tens of households live are flooded often due to the narrow stream. Recently, many households have been stopped fish-culture in their ponds. For my family, since 1990, we have been bid a pond to culture fish for a living. Recent years, we have been damaged continuously. Especially, on June 5th 2011, the flood water made the whole finger fish and commercial fish of my pond died. Damage is estimated to be 400 million. I invited some officials of People's Committee of Mao Khe Township and Mao Khe Coal Company to come to check and make the records on the spot. So far, my family still has not received any compensation.

According to my family and people in the area, there are two following causes:

1. Wastewater discharges from Mao Khe Coal Mine into stream causing environmental pollution.

2. Project for renovation, dredging the Cau Lim Stream Phase 1 and Phase 2 for upstream area was completed long ago. But the Phase 3, dredging section from the Lim Bridge to downstream area still has not been implemented. Because the stream bed is narrow so it is flooded easily in rainy and storm days. Flood water overflows into the rice farms and fish ponds as well as house of families who live in two banks of Cau Lim Streams.

So, I write this petition. I hope my petition to be considered and solved by the competent agencies in order to people living on the two banks of the Cau Lim Stream could be secure about production and life.

Thank you very much.

Mao Khe, 2011.

Signed by representative of Households living on two banks of the Cau Lim Stream

Claimant/complainant

By Mr. Nguyen Huu Hop

Mr. Tran Van Kieu
Mr. Nguyen Van Thien
Ms. Le Thi Cuc
Ms. Nguyen Thi Thuy
Ms. Dinh Thi Huong
Ms. Nguyen Thi Vang
Mr. Luu Manh Ha
Mr. Hoang Duc Tam
Mr. Thang
Mr. Bui Duc Trung
Ms. Nguyen Thi Oanh
Ms. Do Thi Huoc
Mr. Nguyen Van Trieu
Mr. Nguyen Van Khiet
Mr. Nguyen Van Dip
Ms. Nguyen Thi Yen
Mr. Trinh Van Tien
Mr/Ms. Binh Heu
Mr. Tran Van Hue
Mr. Nguyen Van Chinh
Mr. Nguyen Van Quyet
Mr. Hoang Van Trieu
Mr. Pham Trung Hieu
Ms. Nguyen Thi Hau
Ms. Dang Thi Lien
Mr. Nguyen Van Hua
Mr. Nguyen Quang Nhat
Ms. Nguyen Thi Binh
Mr. Pham Van Quynh
Mr. Nguyen Anh Hai
Ms. Pham Thi Dao
Mr. Nguyen Van Do
Mr. Nguyen Van Mau
Ms. Mai Thi Tam
Ms. Nguyen Thi Mai

Complaint by Mr. Nguyen Van Thinh

I am Nguyen Van Thinh living in the residential area of Vinh Thong 2

My family has the largest rice farm in the area. I am representative of more than twenty households that have cultivated rice in many years. Before renovation of stream, flood water made less damage for crops. But during the last 2 years, incompletion of renovation progress caused flood entire rice farm. Sand and pebble was taken arbitrarily from area of house of Ms. Hoe and Mr. Cai. Currently, some households who have been cultivated rice for a living must be stopped farming. Their rice farms become the wasteland by sand filling. Their petitions have been sent to the People's Committee. The PC promised to compensate for their damage but so far, complaint of local people still has not yet been solved. After completion of the Phase 2 of the renovation project, flood water is less than before but it still overflows into the two gates. So the rice farm still is in a danger of water pollution. The rice always is rotten.

Representative of people living near the Lim bridge
Signed by Mr. Nguyen Van Cai
Signed by Ms. Hoang Thi Oanh
Signed by Ms. Pham Thi Nho

Signed by Mr. Nguyen Van Thinh

Appendix 2

QNPPC	**SOCIALIST REPUBLIC OF VIETNAM**
----------	Independence- Freedom-Happiness
No. 153/UBND-MT	----------
"Regarding the resolution of complaint by households of Mao Khe Township of Dong Trieu District"	*Quang Ninh, 13th January 2012*

To:

- DONRE
- PEOPLE'S COMMITTEE OF DONG TRIEU DISTRICT

Quang Ninh Province Office received the official document No. 390-CV/VPTU dated January 5th 2012 "Regarding petition settlement" (The photocopies petition letters are attached with this document). Provincial People's Committee directs as follows:

1. Regarding reflected content of the current status of wastewater discharging from Mao Khe Coal Mine into the Cau Lim Stream causing seriously pollution for environment and bad impaction for crops and livestock of the people: QNPPC assigns DONRE to chair and coordinate with relevant agencies to check and resolve as prescribed.

2. Regarding reflected content of the project for renovation and dredging Cau Lim Stream- Phase 3 which has not been implemented making flooding in rainy season due to narrow stream, major damage to property of local people: QNPPC assigns Dong Trieu District People' Committee of to check and settled according to regulations.

By order of the QNPPC, Office of PPC informs DONRE, Dong Trieu DPC and the concerned agencies to implement and report to the Standing Committee of Provincial Party and QNPPC on performance result.

Recipients	BY ORDER OF THE QNPPC
-Standing Committee of Provincial Party (To report)	PP CHIEF OF THE SECRETARY
-Leaders of QNPPC (To report)	DEPUTY CHIEF
-As above (To implement)	Signed and sealed by Mr. Tran Nhu Long
-Departments of Planning & Investment, Dep. of Construction (To collaborate)	
-V0, V1, V2, V3, MT	
-Archives at VT, MT1	
16 copies, M-CV01	

Appendix 3

QNPPC
DONRE
No. 24 QD/TNMT-TTr

SOCIALIST REPUBLIC OF VIETNAM
Independence- Freedom-Happiness
Quang Ninh, 31st January 2012

DECISION ON

Inspection Team Establishment
To Inspect the Observance of the Law on Environmental Protection, Law on Water Resources of Mao Khe Coal Company

- Pursuant to Inspection Law, 2010

- Pursuant to Law on Environmental Protection, 2005 and Law on Water Resources, 1998

- Pursuant to Decree No. 61/1998/ND-CP dated 15th August 1998 of the Government on the Inspection and Check task for the Enterprises.

- Pursuant to Decision No.2788/QD-UBND dated 29th August 2008 of QNPPC Regulating function, tasks, authority and organization structure of QN DONRE.

- Based on Official Document No. 153/UBND-MT dated 13th January 2012 of QN PPC on the solution of petition by households in Mao Khe Town, Dong Trieu District.

- Upon proposal by the Chief Inspector of DONRE

HEREBY DECIDES:

Article-1: To establish the Inspection Team to inspect the observance of the Law on Environmental Protection and Law on Water Resources of Mao Khe Coal Company including the Mr. (Ms.) as follows:

1. Mr. Luu Van Thanh, Chief inspector of DONRE: Team Leader
2. Mr. Dang Dinh Bieng, Deputy Cief inspector of DONRE: Deputy Team Leader
3. Mr. Doan Duy Vinh, Deputy Head of Water Resources and Hydro-Meteorology Division, DONRE: Member
4. Mr. Pham Quang Vinh, Deputy Director, Sub-dep. for EP of DONRE: Member
5. Mr. Tran Thanh Tung, Inspector of DONRE: Member
6. Mr. Tran Thanh Binh, Inspector of DONRE: Secretary of the Inspection Team.
7. Representatives of Dong Trieu District PC and Vinacomin are invited to participate in the Inspection Team.

Article-2: The Inspection Team is responsible for:

1. To inspect the observance of the Law on Environmental Protection, Law on Water Resources by Mao Khe Coal Company; handling of administrative violations (If any) in the fields of Environment, Water resources in accordance with the legislation.

2. Inspection time is 10 working days from the date of information of Inspection Decision.

Team Leader of Inspection Team makes the work-plan as well as schedules for inspection to submit to Director of DONRE for approval and to inform to concerned organizations and individuals.

Article-3: During the inspection, the Inspection Team is used powers and responsibilities as prescribed in Article-49, Article-50 of the Inspection Law. The inspected target has rights and obligations as regulated in Article-53 and Article-54 of Inspection Law.

Article-4: This Decision shall take effect from the date of signing. Chief Inspector and Chief of the Secretariat of DONRE, the Heads of the concerned agencies, Mr. (Ms) is named in Article-1 shall be responsible for implementation of this Decision.

Recipients
- As the above
- Provincial Inspection
- PC of Dong Trieu District
-Vinacomin
- Leaders of DONRE
- Inspected Unit
- Members of Inspection Team
- Archives at Office of Sub-dep. for EP and Inspection Division

PP DIRECTOR
DEPUTY DIRECTOR
Signed and stamped by
Mr. Dang Dinh Lop

Appendix 4

QN DONRE INSPECTION TEAM ----------	SOCIALIST REPUBLIC OF VIETNAM Independence- Freedom-Happiness ----------
No. 01/KH/TNMT-TTr	*Quang Ninh, 31st January 2012*

INSPECTION WORK-PLAN
According to Decision No. 24 QD/TNMT-TTr dated 31st January 2012
By the Director of DONRE

To implement the Decision No. 24/QD/TNMT-TTr dated 31/01/2012 of the Director of Quang Ninh DONRE, the Inspection Team of Quang Ninh DONRE makes the program and work-plan to conduct the inspection as follows:

I. Content of Inspection

1. Legal document

A. Check legal documents concerning Environment Protection tasks

- Feasibility Study Project, Report on Investment for Project which is under implementation;
- Environment Impact Assessment Report which is approved by competent authority;
- Periodical Environment Monitoring Reports (Quarter III, IV of 2011)
- Declaration for payment of Environment Protection Fees for Industrial Wastewater according to provisions of the Governmental Decree No. 67/2003/ND-CP dated 13/6/2003 regarding Environment Protection Fees for Industrial Wastewater (*payment balance or receipts of payment*).
- Implementation of Registration for Hazardous Waste Sources under provisions of Circular Letter No. 12/2006/TT-BTNMT dated 26/12/2006 of MONRE regarding "*Instructions on Conditions of Practices and Procedures for dossiers preparation, registration, permit issuance and management code of Hazardous Waste" (attached with receipts of 6 slips)*;
- Contracts for solid waste and hazardous waste treatment with the competent units.

B. Check documentations regarding wastewater discharging into water bodies

- License of wastewater discharge into water source;
- Reports on discharging wastewater in water source;
- Map on locations of wastewater discharge into water source.

2. Site check

A. Check the system of collection and treatment of wastewater, position of discharging wastewater into water bodies.

B. Check the equipment for collection, storage and treatment methods for hazardous waste.

C. Check the management and treatment measures for normal wastes.

D. The public posting at the location of the project about summarized EIA report which was approved by competent authorities in accordance with regulation.

E. Work plan, measures and necessary conditions to deal with environmental incidents

II. Order of inspection

1. For Inspection Team

- The Inspection Team implements the public information of Inspection Decision, to work with concerned agencies, units and individuals to collect and examine the dossier, documents and explanatory report relating to the content of inspection.
- Require involved agencies, units and individuals providing contents related to inspection content (In written letters or by direct information during work process).
- During inspection process, the Inspection Team will collaborate closely with related agencies and individuals. The Team can require the measurement, monitoring, assessment and dialogue to clarify the matters in necessary case.
- Making records on administrative violations, decision on fine handling or submit to competent authority to fine handling (if any) as prescribed by laws.

2. For Inspected Unit and concerned agencies and individuals

- Appointing officials, arrange the time, place and means to work according to request by Inspection Team.
- Making written report and provide all documents, records relating to the content of the inspection as request by Inspection Team.
- To reflect promptly comments relating operation process of inspection to the Chief Inspector.

3. The inspection time

- Inspection period is 10 working days from the date of public information of the Inspection Decision. Work schedule as follows:

+ 14:00, 8 February 2012, at the headquarters of Mao Khe Coal Company

* Public information/announcement of the Inspection Decision, information of inspection work plan.

* Representative of Mao Khe Coal Company reports in summary on the inspected contents, agreement of work schedule.

+ From 8th to 15th February 2012: The Inspection Team will conduct review of records and documents, work with relevant agencies, site inspection, data synthesis and draft report as well as have approval of the inspection results in the units under the Mao Khe Company.

+ 14:00, 15th February 2012, at the headquarters of Mao Khe Coal Company: The Inspection Team approves the Inspected Result Records and draft report on Inspected Result.

Conclusion of the Inspection will be informed concrete to related agencies after inspection.

(Mao Khe Coal Company is requested to provide related reports and documents to Inspection Division of DONRE before February 6th 2012).

III. Organization of implementation

1. Inspection Team works according to operation regulation of the Inspection Team. Team Leader is responsible for general inspection. Each member of the Team is assigned to undertake in each suitable field.
2. Reporting and information regime: Members of Inspection Teams report progress of tasks that is assigned to the Team Leader.
3. Work schedule will be set up in detail by the Inspection Team after having agreement with Mao Khe Coal Company on 8th February 2012 (Afternoon).
4. Vinacomin and Dong Trieu DPC are proposed to direct the Mao Khe Coal Company and local departments to assign staff, arrange the time and location, prepare the related reports and document to provide as demand of the Inspection Team as well as facilitate the Inspection Team to complete their tasks.

Quang Ninh January 19th 2012
Approved
PP Director of DONRE
Signed and stamped by Deputy Director
Mr. Dang Dinh Lop

Prepared by Team Leader of Inspection Team
Chief Inspector:
Signed and stamped by Mr. Luu Van Thanh

Appendix 5

No. 574/BC-TMK - MT

Mao Khe Feb. 3, 2012

REPORT

ON IMPLEMENTATION OF ENVIRONEMNT AND WATER RESOURCES PROTECTION OF THE MAO KHE COAL COMPANY

To: Inspection Team of DONRE Quang Ninh

Implementing the Plan No. 01/KH/TNMT-TTr, dated 31/01/2012 of the Quang Ninh DONRE reg."Inspection on Compliance of Environment and Water Resources Protection Law of the Mao Khe Coal Company – Vinacomin", the Mao Khe Company makes the report as the following:

I. Regarding Legal Documents

1. Documents regarding Environment Protection activities:

- Report on the Investment Project for Coal Exploitation which the company is implementing: Decision No. 1944/QD-HDQT, dated 13/9/2005 of the Management Board of the Vietnam Coal Corporation, now called Vinacomin, regarding "Expansion of Production of the Mao Khe Coal Company with capacity of 1.6 million tons of coal per year",
- Exploitation License No. 2496/GP-BTNMT, dated 28/11/2008 of MONRE,
- Decision No. 1915/QD-BTNMT, dated 18/12/2006 of MONRE regarding "Approval for the EIA of the project on "Adjustment and expansion of Production of the Mao Khe Coal Company, Quang Ninh Province",
- Report on Environment Monitoring Results of Quarter III and IV of 2011,
- Declaration Sheet for payment of Environment Protection Fees for Industrial Wastewater and receipts of the fee payments in 2011, implemented fully as regulations,
- The Company registered as a source of hazardous waste and the certificate was issued by DONRE on 8/5/2007, with the code of hazardous waste management of 22.000030.T.
- Contracts for transportation and treatment of solid waste and hazardous waste as regulations, specifically in 2011:

+ Contract No. 9319/HD-TMK-KHZ, dated 18/12/2010 between the Mao Khe Coal Company and the Hai Yen Co. Ltd. on "Sweeping of roads, collection and transportation of solid waste for the first 6 months of 2011"; Contract appendix dated 17/6/2011; Contract appendix dated 19/8/2011.
+ Contract No. 51/HD – TMK-KHZ, dated 4/1/2011 between the Mao Khe Coal Company and the CPTM Hai Dang Co. on transportation, treatment and burning of industrial hazardous waste; Contract appendix No. 01/PLHD – TMK – KHZ dated 10/9/2011.

2. Documents on discharge of wastewater into water sources

- License of Waste discharge No. 1568/GP-BTNMT, dated 8/8/2008 of MONRE
- Periodical reports on Wastewater discharge as regulations.

II. Implementation of Environmental Protection Activities

- Based on the actual production situations and yearly environmental happenings, the Company made plans aiming to implement measures for environmental protection, specifically in 2011, the Company got approval by the Vinacomin for yearly budget for regular environmental protection activities of 12.4 billion VND; an environmental protection project with the concentration fund source of 29.4 billion VND.

- Organized for land reinstatement, environmental rehabilitation of the previous open mining sites, planted trees to cover entirely the waste dump sites which are now stable as regulations.

- Activities of handling with dust

+ Inside the mining pits:

Drilling, water spraying to damp the coal mine faces before mines explosion; investing to construct anti-dust systems in the branches mine pits where there are high concentration of dust and at the coal conveying points inside the pits.

+ Outside the mining pits:

Water spraying to stop dusts in the coal mine internal transportation roads with frequency between 2 – 20 times per day depending on dampness of the air. Investing into the systems of fog spraying in the Coal screening Plant.

+ Completed construction of coal tube conveying from the Coal screening Plant to the Ben Can Port.

Activities of collection and treatment of wastewater:

+ Invested in construction of channels system to collect industrial wastewater and domestic wastewater:

+ At the site at +30m elevation, wastewater from Coal screening Plant has been collected for leading to sedimentation tanks before discharging to the treatment system.

+ Completed upgrading of 2 industrial wastewater treatment stations at the Coal screening Plant and at front of -80 m pit mine, with treatment capacity of the two treatment stations of 1,800 m^3/h.

+ Source of wastewater: the entire wastewater of the Company is collected and treated by the two wastewater treatment stations, one is at the Coal screening Plant and the other is at the +17m site, reaching environmental standards before discharging into the Non Dong stream and then to the Lim Bridge stream.

+ Environment monitoring results for wastewater before discharging into receiving sources in the 4 quarters of 2011 satisfied the allowable limits.

+ Activities of solid waste and hazardous waste treatment:

+ Normal solid waste: is collected and disposed into the planned landfill sites. The Company stopped mining at the open coal beds from 2008. At the Non Dong stream, the company carried out mud and soil dredging every year. Furthermore, the company built embankments at the two side of the Non Dong stream and built 2 dams for prevention of runoff sand and soil flowing down to the downstream.

+ Activities of treatment of hazardous waste: The Company had been granted by DONRE to register the hazardous waste source. The hazardous waste was sorted and temporarily stored at the storages and hired capable units to transport and dispose the waste for treatment.

+ Propaganda and Education activities:

+ Organize well the responding activities for National Week of Clean Water and the International Environment Day by promotion to each subordinate unit to instruct the environmental protection activities, promotion through Radio system of the company.

+ Renewal of technology:

+ Has been investing in to coal mining technology by Coal mining equipment, hydraulic pole system replacing wood.

+ Environmental protection facilities according to EIA have been implemented fully by the Company

+ The Mao Khe Coal Company wishes to make this report to the Inspection Team of QN DONRE.

Addressees:

- As the above (report)

- File

FOR THE DIRECTOR

DEPUTY DIRECTOR

(signed and stamped)

Pham Van Minh

Appendix 6

DONRE
INSPECTION TEAM
Under decision No. 24/QD/TNMT-TTr dated 31st January 2012 by Director of DONRE

SOCIALIST REPUBLIC OF VIETNAM
Independence- Freedom-Happiness

Quang Ninh, 15th February 2012

(Draft)

MINUTES OF INSPECTION

On the observance of Environmental Protection Law, Water Resources Law of the Mao Khe Coal Co., Ltd. – Vinacomin

To implement the Decision 24/QD/TNMT-TTr dated 31st January 2012 by the Director of DONRE, from 9th February 2012, the Inspection Team has carried out checking the tasks of environmental protection, operation of wastewater treatment and waste discharge into waters by the Company. Inspection activity has been implemented at specific areas including elevation (level ground) +30, coal screening house, pipe conveyor, wastewater treatment plant with capacity of 600m3/h, area of elevation +17, wastewater treatment plant with capacity of 1,200 m3 /h, car repair workshop, mechanical – electricity –water workshop, life – service section and two petrol business stations as well as areas along Non Dong Stream (Cau Lim Stream).

I. Participants:

1. Inspection Team

- Mr. Luu Van Thanh, Chief Inspector of Department – Team Leader;

- Mr. Pham Van Cung – Head of Environmental Control Section, Sub-Dep. For EP, Member;

- Mr. Doan Duy Vinh – Deputy Head of Water Resources & Hydro-Meteorology, Member;

- Mr. Tran Thanh Binh – Expert of Inspection Division – Secretary of the Team

Other participants from involved agencies:

* Representative of Vinacomin

- Mr. Do Thien Bang, Deputy Head of Environment Division

* Representative of Dong Trieu District People's Committee:

- Mr. Vuong Van Thong, Deputy Head of DONRE of Dong Trieu District

- Ms. Tran Thi Huyen, Specialist of Dong Trieu DONRE

2. Representative of Mao Khe Coal Co., Ltd., Vinacomin

- Mr. Nguyen Ngoc Co - Director of the Company;

- Mr. Pham Van Minh - Deputy Director of the Company;

- Mr. Pham Tien Khieu - Head of Environment Division

II. Check results

1. For the legal documents

Following documents have been checked by the Inspection Team:

- EIA report on Project for adjustment and expansion of Mao Khe Coal Company (With mining capacity of 1.6 million tons / year) which has been approved and attachment of approved decision;

- License to discharge wastewater into water sources No. 1586/QP-BTNMT &MT, dated on 8th August 2008 by the MONRE; The average discharge volume is 7,590 m3/day, the biggest discharge volume is 11,720 m3/ day, Regular reports on discharge of wastewater into water source;

- Decision No. 2276/QD-TKV dated 13th October 2009 by Vinacomin regarding the funding approval from the environmental fund of Vinacomin to implement the investment project for work construction of wastewater treatment station with capacity of 600 m3 / h, Mao Khe Coal Mine, Dong Trieu District, Quang Ninh Province;

- Decision No. 2534/QD- TKV dated 9th November 2009 by Vinacomin regarding approval of capital source to carry out the investment project on work construction of coal mine wastewater treatment station with capacity of 1,200 m3 /h, Mao Khe Coal Mine Company, Dong Trieu District, Quang Ninh Province;

- Dossier of hazardous waste management; Documents of domestic waste management;

- Environmental Monitoring Reports in Quarter-3 and Quarter-4, 2011.

2. Field check results

2.1. Checking wastewater treatment station with capacity of 600 m3/ h

- The wastewater treatment station with capacity of 600m3/h at the area of elevation +30 was constructed to treat the wastewater of underground pit at elevation levels of +30, -25 and runoff water (Rain-water) and wastewater before coal selection at the elevation + 30.

- At the time of inspection, the automatic meter for measuring the pH of the input wastewater did not work.

- According to the evaluation of the Team, the treatment capacity of the station did not meet request for treatment of total amount of collected run-off water.

2.2. Checking the area of coal screening house, elevation +30

-At the area of the screening house: The run-off water in this area is collected in the sedimentation tank to be treated before transfer into the treatment station with capacity of 600m3 /h. Water for wet-selection at elevation +30 is taken from preliminary sedimentation tank (Collecting input wastewater) with capacity of 3,150 m3/day (150m3/h). Wastewater from coal selection process is collected into sedimentation tank at the elevation for mechanical sedimentation before transfer into the treatment system of station with capacity of 600m3/h. At the time of inspection, the sediment tank at elevation +30 was not dredged regularly. The water jet-spray system for anti-dust was operated normally.

- The road for coal transport to Ben Can Port did not have system to collect the surface water for treatment (Company reported that currently, the road is under improvement to return to residential areas, so at some positions, the wastewater still run into residential areas).

2.3. Checking at the wastewater treatment station with capacity of 1.200 m3/h

- The wastewater treatment station with capacity of 1.200m3 /h at elevation +17 serves wastewater treatment for underground pits at elevation -80, -150 and entire the elevation area +17. At the inspection time, the treatment station operated normally, effluent water after treatment was transparent and did not have the smell. However, the automatic pH meter was not installed at the tank which collected the input wastewater.

The check results at two waste water treatment stations and related document showed that total biggest wastewater flow is discharged by 2 stations (Data in January 2012) to be 18,610 m3/day (19th January. The smallest wastewater flow was 12,070 m3/day (29th January).

2.4. Checking at the workshops of Mechanical- Power-Water, Auto repair and the Life service at elevation +17

- At the inspection time, the treatment station to treat the domestic wastewater for dining room and bathing-washing water of workers did not operate. The wastewater sewer was not dredged regularly.

2.5. Area of incident coal storage

- There was not collection system and wastewater treatment on the area. Coal and waste-coal spilled over the fence and discharged into Non Dong Stream. As reported by the Company, this area related to the project for open pit mining which was waiting for licence granting by MONRE. So the Company did not make plan to use this area. The company has stopped using this area for long time.

2.6. Checking along the Non Dong Stream (Cau Lim Stream)

- There were 3 outlets at the wastewater treatment station with capacity of 600m3 /h. At the time of inspection, there was an outlet which is discharging the treated water. The water after treatment was transparent. However, at the area of stream where received effluence (treated water) there was so much deposit of mud-coal.

- At Vinh Lap Bridge, T-junction where is confluence of two streams branches receiving effluent from the western branch had the black colour. The check results along the western branch of the Stream showed that area of house of Ms. Bui Thi Nhien, group 5, the Vinh Lap area (Coordinates: 21004'22.3 "- 106036'17.4") had many deposit of mud-coal. At the stream section which received effluence of wastewater after treatment by treatment station with capacity of 600m3 /h, the water had black colour and mixed with mud-coal. There are 3 small dams blocking across the stream for mud-coal dredging. The amount of muddy coal still deposited at the dams blocking on the stream-bed.

At the area by the Mao Khe Health Center and point of Cau Lim Bridge which located on the National Road of 18A, in the down stream area, the wastewater had black colour and foul odor. Because beside to wastewater with muddy coal, this section of stream also received additional domestic wastewater discharging from the residential areas at several points along the stream.

2.7. Checking at two petroleum business stations

- At the two petroleum stations of the company, environmental protection and fire prevention-safety work was ensured as regulation.

3. The analysis result of wastewater samples

The inspection team asked EMAC of DONRE to take samples and analyze 7 samples of wastewater at the outlets of the two treatment stations along the Non Dong Stream (The conclusion for this content will be provided after having the analysis results).

III. Recommendations of Inspection Team

The Inspection Team requested Mao Khe Coal Company- Vinacomin to implement immediately solutions to remedy the shortcomings:

- Requested the Company to increase monitoring for the proper operation of environmental treatment works (The treatment stations for mining wastewater and domestic wastewater);

- To implement the measures to redress the environmental pollution (Particularly: right dredging the stream branch where received the wastewater discharging from treatment station with capacity of 600m3 /h and sedimentation pond at elevation +30. To connect suitably the wastewater sources into stations with capacity of 600m3/h and 1200 m3/h according to the design of these treatment plants. The concentrated wastewater treatment plant in the elevation +17 must be constructed to ensure thorough treatment of wastewater that generated/discharged from the operation of mechanical workshop, life service workshop and runoff water in this area. Besides, collection of coal and coal waste at the coal storage area where was occurred the incident to ensure the coal and coal waste will not overflow into Non Dong Stream in the first quarter 2012.

- The company must have official document soon to submit to the MONRE, Water Resources Management Department to get the license for discharge of wastewater into water sources according to regulation Point 1, Article 2 No. 1586/QP-BTNMT dated 8th August 2008 of the Ministry of Natural Resources and Environment.

- The company must prepare the project/scheme on environmental protection for appraisal, approval completion for wet coal sorting systems. It must be completed in the second quarter 2012;

- The minutes was agreed at 16:30, 15th February 2012 by the participants and made to 06 copies with the same content and the legal value. One copy is kept by each participating party and one copy is attached to the inspection dossier.

Representative of Mao Khe Coal Company	Representative of Inspection Team
Mr. Nguyen Ngoc Co	Mr. Luu Van Thanh
Representative of VINACOMIN	Representative of Dong Trieu DPC
Mr. Do Thien Bang	Mr. Vuong Van Thong

Appendix 7

QUANG NINH PPC
DONRE

SOCIALIST REPUBLIC OF VIETNAM
Independence – Freedom - Happiness

No. /KL – TNMT

Quang Ninh February 2012

CONCLUSIONS FROM INSPECTION OF ENVIRONMENT AND WATER RESOURCES PROTECTION

- Mao Khe One Member Company – VINACOMIN

- Based on the Environmental Protection Law of 2005; Water Resources Law of 1998;
- Based on the Minutes of Inspection of the Inspection Team under the Decision No. 24/QD/TNMT-TTr dated 31/01/2012 of the Director of the Department of Natural Resources and Environment Quang Ninh (QN DONRE) on the inspection for the observance of environmental law, water resources law of Mao Khe One Member Coal Co., Ltd. - VINACOMIN;

QN DONRE has the following conclusions:

1. Situations of Operations – Protection of Environment and Water Resources

Mao Khe Coal Company Limited - TKV was established on 15/11/1954. The present number of employees in the company is over 4,500 people. In 2011, the Company achieved targets of: Raw coal: 1,780,497 tons; Sold amount: 1,428,259 tons of different types of coal; Coal revenue of 1,500 billion Dong and total profit of above 52 billion Dong. Every year, the Company prepares implementation plans for environmental protection measures. In 2012, the Company gets approved funding by VINACOMIN for the frequent environmental protection budget of 12.4 billion Dong and environmental protection projects funded by the concentration fund of 29.4 billion Dong.

Currently, the Company is doing business under Project which was approved in Decision No. 1944/QD-HDQT dated 13/09/2005 of the Management Board of VINACOMIN for production expansion of the Mao Khe Coal Company, to capacity of 1.6 million tons/year. The company has been granted the mining license No. 2496/GP-BTNMT, dated 28/11/2006 by MONRE, the EIA for Project on Adjustment and Expansion of Production of the Mao Khe Coal Co. (the mining capacity of 1.6 million tons / year) has been approved by MONRE; fulfilled or improperly implemented the environmental monitoring programs periodically, declared and fully paid environmental protection fees for industrial wastewater as provisions of regulation.

The Company had been granted by MONRE the Wastewater Discharge Permission No. 1586/QP-BTNMT dated 08/08/2008 into water source with average discharge flow of 7,590 m3/day; maximum flow of 11,720 m3/day. The Company registered as a hazardous waste generator and had been granted with Hazardous Waste Book by DONRE QN, code 22.000030.T; signed contract number 51/HD-TMK-KHZ dated 04/01/2011 with the Hai Dang Trading Joint Stock Co. for transport, treatment or disposal of industrial hazardous waste.

Inspection process at production site of the company found that: at the time of inspection, automatic measuring equipment of pH of wastewater at inlet to the wastewater treatment station 600 m^3/ h did not work; at the input wastewater tank of waste water treatment station 1,200 m^3/h has no pH automatic measuring equipment installed. Total maximum flow of the two wastewater stations (data as Jan.2012) was: 18,610 m^3/day (on Jan.19), and the lowest flow was 12,070 m^3/day (Jan. 29).

Runoff rainwater in the Coal Selection Plant is collected to the Sedimentation tank for depositing before discharging to the treatment station 600 m^3/h. Water serving wet-selection of coal at +30 elevation ground is taken from the primary sedimentation tank (wastewater collection tank) with 3.150 m^3/day (150 m^3/h), the used water after washing of coal is collected to the sedimentation tank on site for mechanical depositing before discharging into the treatment systems 600 m^3/h. At the time of inspection, the +30 ground tank has not been regularly dredged; there is no system of surface water collection for treatment on the route to the Ben Can Port.

Domestic wastewater treatment station for the dining area and for washing wastewater of the workers is not in operation, the wastewater channels have not been dredged regularly. The Incident Coal yard area is without wastewater collection system and treatment on the ground, coal and coal waste poured over the fence and spilled off down to bank of Non Dong stream (the yard is about 10 meters away from the stream).

Check on site along the Non Dong stream (Lim Bridge stream), at Vinh Lap Bridge, where the confluence of two tributaries junction streams receiving wastewater effluent of the company showed that: The stream water from the western branch is of black color; Along the western branch has many peat deposition. On the stream, there are 3 crossing small dams for collection of peat. Volume of deposited peat at the dams on the stream is high.

By results of the inspection showing that the Company has violation acts by: (1) No updating of EIA when renewing of the coal selection technology from dry selection to wet selection. (2) Not regularly operating the wastewater treatment system for the wastewater from the dining area and washing of the workers; (3) the Company was discharging wastewater into the water sources with the volume exceeding the provisions prescribed in the Permit for from 5.000 m^3/day or more.

Analysis results of wastewater samples of the Company at the Vinh Lap Bridge – Non Dong Stream comparing to the QCVN 08: 2008/BTNMT, column B1 show that: Value of parameters: TSS = 225 mg/l, 4.5 times over allowable limit (QCVN $\leq$ 50 mg/l).

2. Violations

- Failing to comply, not fully comply with contents of the approved EIA and other requirements in the decisions approving the EIA report (coal transport route to Ben Can Port has no surface water collection systems for treatment; wastewater channels into the wastewater treatment station for the dining area and workers have not been dredged regularly; no collection system and wastewater treatment on the Incident Coal ground yard; equipment of pH automatic measure of wastewater to the treatment station 600 m^3/h not in operation, wastewater tank to the treatment station 1.200 m^3 / h is without pH meter installed); violates the Paragraph 3, Article 8 of Governmental Decree No. 117/2009/ND-CP dated 31/12/ 2009 on handling of law violations in the field of environmental protection (monetary fine from 40,000,000 to 70,000,000 VND).

- Not operate regularly the Environmental Treatment Works according to contents of the EIA which was approved (not regularly operate the domestic wastewater treatment lakes for the Dining Area and the washing wastewater of workers); violates the Paragraph 5, Article 8 of Governmental Decree No. 117/2009/ND-CP (monetary fine from 130,000,000 to 170,000,000 VND).

- Discharging wastewater of volume exceeding the allowable limit from 2 to 5 times in the Discharge Permit, from 5,000 m^3 or more; violates the Paragraph 5, Article 9 of Governmental Decree No. 34/2005/ND-CP dated 17/3/2005 regulating the administrative sanction in the field of water resources (monetary fine from 20,000,000 to 25,000,000 VND).

3. Remedial measures

3.1 Measures by administrative sanction

Monetary fine is applied according to sanction framework at Governmental Decree No. 117/2009/ND-CP dated 31/12/ 2009 on handling of law violations in the field of environmental protection for the cases as stated above.

3.2 Remedial measures

- Request the Company to strengthen monitoring for proper operation of the environmental treatment works (the mine and domestic wastewater treatment stations);

- Implement measures to remedy the environmental pollution situations (specifically: implement immediately dredging of the stream branch where receiving wastewater from station 600 m^3/h and sedimentation lake at +30 ground; connect the flows of wastewater to the stations of 600 m^3/h and 1,200 m^3/h as appropriate, in accordance with design documents of the treatment stations; construct concentrated wastewater treatment plant at +17ground, ensure to treat completely the wastewater sources generated form mechanical workshops, living services workshops, surface run-off water; collection of coal, coal waste at the incident coal yard to prevent overflowing to the Non Dong stream) in the 1st quarter of 2012.

- Request the Company to prepare, submit for appraisal and complete the Environmental Protection Schemes for the System of Wet Coal Selection in the second quarter of 2012.

- Request the Company soon to prepare the reporting paper to MONRE, to the Department of Water Resources Management following the provision at Point 1, Article 2, Permits to discharge wastewater into water source No. 1586/QP-BTNMT dated 08/8/2008 of MONRE.

- These conclusions take effects since the date of signing. The Mao Khe One Member Coal Company Limited – VINACOMIN is eligible to lodge complaints about contents of inspection conclusions but must still comply with the requirements and recommendations outlined in the conclusions.

- After the inspection conclusions made, the Mao Khe One Member Coal Company Limited - VINACOMIN must report in writing the results of implementation of the inspection conclusions to DONRE before 10/03/2012 for making the general report to PPC. /.

Addressees:

- QN PPC
- District PCs of Dong Trieu, Mao Khe Township
- Mao Khe One member Coal Co.
- VINACOMIN
- Filing

FOR THE DIRECTOR
VICE-DIRECTOR
(Inspectorate)

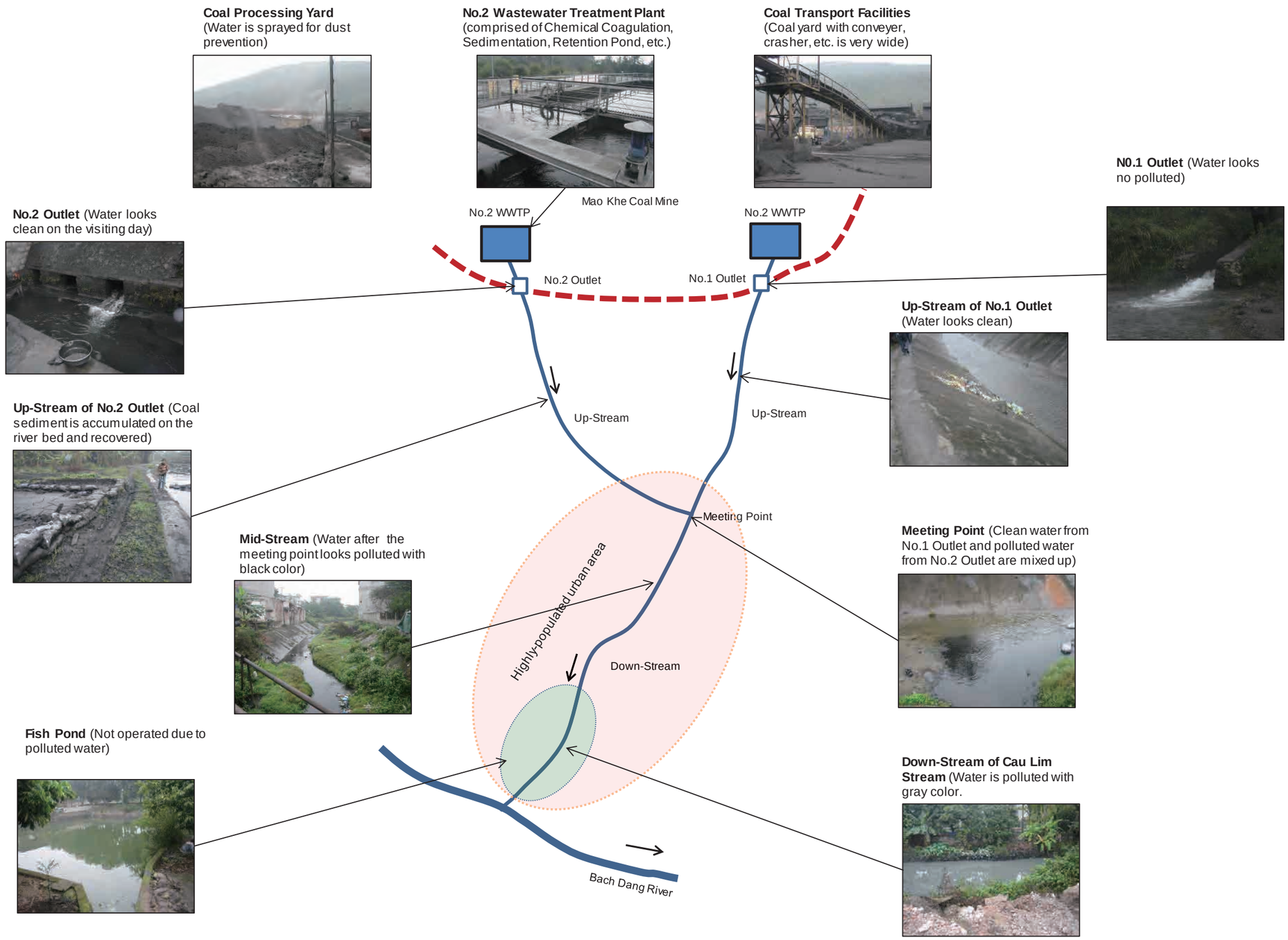


Figure 2 Environmental Situation around Cau Lim Stream

(Note: Map shows just conceptual image.)

Part C
Study Report on Environmental Incidents in Halong Area

THE PROJECT FOR ENVIRONMENT PROTECTION IN HALONG BAY
OUTPUT-2: ENVIRONMENTAL MANAGEMET

STUDY REPORT
ON
ENVIRONMENTAL INCIDENTS IN HALONG AREA

FEBRUARY 2013

WORKING GROUP OF ENVIRONMENTAL MANAGEMENT (WG-1)
JICA EXPERT TEAM (JET)

Table of Content

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Abbreviation

DARD	Department of Agriculture and Rural Development
DONRE	Department of Natural Resources and Environment
DOSTE	Department of Science Technology and Education
JICA	Japan International Cooperation Agency
MONRE	Ministry of Natural Resources and Environment
NOSRCEN	Northern Oil Spill Response Center
PC	People's Committee
PPC	Provincial People's Committee

Summary

1. Introduction

1.1 WG-1 has studied measures against environmental incidents in the Halong Area, collecting relevant data/information from associated institutes located in not only the Halong Area but also Hai Phong and Hanoi City, as the Activity 2-7 defined in Output-2. As a result of analysis and examination, preliminary suggestions have been made on measures against environmental incidents. This activity does not intend to make detail and deep survey, and specific countermeasures, due to the limitation of time and man-hour allocated. In this context, following up this study, DONRE is requested to formulate specific plan for the implementation.

1.2 In the Halong Area, the prevention of water pollution is very crucial to preserve the water environment quality of the area of Halong Bay designated as the world heritage and its surrounding water courses. While the water pollution is caused by pollution sources continuously discharging polluted water, the environmental incidents happening unexpectedly is another cause for pollution.

1.3 This study has focused on the environmental incidents like oil spills, coal mudslides and hazardous substance leaks, excluding just natural disasters like flooding, landslides, etc. During this study, we encountered difficulties in collecting data/ information, because reliable information sources are not in place.

2. Situations of Environmental Incidents

2.1 In Halong Area, many possible sources of oil spill incidents comprising fixed and moving sources are existing in B12 oil port, sea and river port and fish port and anchoring area. Representatively, B12 port annually receives 130 to 150 oil transport ships with a total amount of 1.8 to 2.0 million tons.

2.2 Based on the Pollution Source Table in Halong Area, there are a number of projects which might belong to industrial and economic categories for possible pollution sources, regarding coal mudslides and hazardous substance leaks. Exact numbers of projects with possible risk must be identified through surveys and examinations from now.

2.3 As far as we could collect, the total numbers of incidents in the Halong Area were 10 cases in terms of total environmental incident over the past 14 year.

2.4 It has been known that certain preventative measures against environmental incidents have been already taken as routine tasks of competent authorities in respective sectors. They are vessel inspection against ship, oil-related facilities, etc. performed in the port area, environment check and inspection against coal mines and hazardous substance production and storage firms.

2.5 Meanwhile, in the event of oil spills, combat forces takes action for emergency responses, mobilizing special equipment and materials. Historically, coal mudslides have been dealt by emergency response organized mainly by PPC in Halong Area.

3. Legal Setup for Environmental Incidents

3.1 The Law on Environment Protection stipulates series of legal guidance in the chapter 9 (Prevention of and Response to Environmental Incidents; Remedying Environmental Pollution and Rehabilitation of Environment). In localities, provincial and district people's committee are responsible for planning of, preventing of and responding to the incidents, and leading remedy and rehabilitation.

3.2 In the aspect of legal and institutional matter, Quang Ninh Province has set up the Provincial Command Board based on the decree (No.1379/QD-UBND, May 2011). It appears that this Command Board focuses on mainly natural disasters like flooding, unlike the case of Hai Phong City. It is not clear whether the environmental incidents (oil spills, coal mudslides and hazardous substance leaks) are governed by this Command Board. DONRE is not assigned as a constituent member of this Command Board.

3.3 In terms of coal mudslides and hazardous substance leaks, regulations dedicated to the emergency response against incidents are not in place in Quang Ninh Province, at present.

4. Analysis of Environmental Incidents and Measures

4.1 Based on the collected data/information, several risk zones of environmental incidents have been identified in Halong Area. Zones of Cai Lan Port and industrial park, and Hong Gai are in the risk with oil spills and zones of Ha Khanh and Cam Pha are in the risk with coal mudslides. Off shore zones of Halong Bay is in the risk with both coal refuse disperse and oil spills.

4.2 Although incident of hazardous substance leaks has not been reported up to now, this does not necessarily imply that the Halong Area has no risk of hazardous substance leaks, because a number of production and storage facilities handling hazardous substances exist in this area.

4.3 In terms of preventative measures to contain the

occurrence of environmental incident, competent authorities (Department of Transport, Port Authority, DONRE and other sector departments) have already set up certain supervision and/or inspection against possible pollution sources (facilities and vessels) as their routine tasks.

4.4 At the present, Quang Ninh Province has no systematic contingency plan against oil spills but it has been preparing the "Plan of Oil Spill Response in Quang Ninh Province" to get the approval from MONRE. It is expected that this emergency response plan against oil spill will be launched as soon. However, in terms of coal mudslides and hazardous substance leaks, regulations dedicated to the emergency response against environmental incident are not in place in Quang Ninh Province, at present.

5. Discussion on Measures against Environmental Incidents

5.1 Concerning oil spill incident, DONRE (specifically, Sub-Department of Sea and Islands as a responsible unit) has been completing the "Plan of Oil Spill Response in Quang Ninh Province", and now the approval work from MONRE is under way. Because this plan is the result of decision-making made by Quang Ninh PPC, and is of the comprehensive character, encompassing necessary measures against oil spills, this study report does not repeat the discussion on oil spills.

5.2 The working hours allocated to the survey and study of this environmental incident in the Output-2 are so limited that precise and deep baseline survey and examination are not allowed. Therefore, this section indicates preliminary directions and approaches for solving current issues. DONRE is expected to formulate specific and detail strategies to push forward with necessary approaches suggested here for the implementation.

5.3 Measures against environmental incident are divided to two (2) approaches; preventative measures to control the outbreak of incidents, and emergency response in the event of incident outbreak to contain to the minimum damage, as set forth below:

5.4 **Action 1:** Recording System for Environmental Incident; to designate a unit in charge and to keep records of data/information on environmental incidents (coal mudslide and hazardous substance leak) happening. Action 1 includes component actions: 1) Assigning a unit and officer in charge, 2) Forming the data sheet for recording, and 3) Recording data/information of incident in the past.

5.5 **Action 2:** Identification of Risk Pollution Sources; to identify possible pollution sources of environmental incident with risk (of coal mudslides and hazardous substance leaks) which are strictly supervised in the environmental check. Action 2 includes components actions: 1) Setting up criteria for selecting risk projects, and 2) Identifying projects with risk.

5.6 **Action 3:** Review and Improvement of Environmental Check Items; to review and improvement a present environmental check list, by examining the inclusion of environmental check items necessary for preventative measures against environmental incidents. Action 3 includes specific action: Review and modify the environmental check list.

5.7 **Action 4:** Regulations Associated with Environmental Incidents; to establish regulations enabling emergency response against environmental incidents. Action 4 includes component actions: 1) Regulation specialized in environmental incidents, and 2) Extending the coverage of Provincial Command Board for Natural Disaster Prevention and Response.

5.8 **Action 5:** Emergency Response Plan against Environmental Incidents; to develop and implement an emergency response plan to environmental incidents. Action 5 includes component actions: 1) Development of an integrated plan for emergency response to incidents, 2) Provision of facilities and materials for emergency response, and 3) Conducting drills for emergency response.

1. INTRODUCTION

1.1 General

In the Halong Area, the prevention of water pollution is very crucial to preserve the water environment quality of the area of Halong Bay designated as the world heritage and its surrounding water courses. While the water pollution is caused by pollution loads continuously discharging polluted water, the environmental incidents happening unexpectedly is one of another event which may cause water pollution.

In the Halong Area (including Halong City, Cam Pha Town and Hoanh Bo District) of the subject area for this study, it is presumed that oil-related facilities and vessels (stationary and moving), hazardous chemical production, storage and transport facilities, coal waste piles resulting from open-cut mining, etc. are possible sources of the environmental incidents.

In response to the Activity 2-7 defined in Output-2 (Environmental Management) of this Project, this is a report for the study on environmental incidents in the Halong Area, aiming to clarify actual situations of the incidents and analyze the organizational and regulatory regime, and, as a result, to study and suggest basic directions and approaches for preventative measures against environmental incidents in the Halong Area. This activity does not intend to make detail and deep survey, and specific countermeasures, due to the limitation of time and man-hour allocated. In this context, following up this study, DONRE is requested to formulate specific plan for the implementation.

1.2 Scope of the Study

The Law on Environment Protection (No. 52, enacted in 2006) defines that the “Environmental Incident” means any catastrophic event or risk which occurs in the course of human activities, or any sudden natural occurrence which causes serious environmental pollution, degradation or change (Article 3-8).

In this project, the environmental incidents are defined as follows, considering that the Output-2 (Environmental Management) of this Project focuses on just the water environment management relating with socio-economic activities, excluding natural disasters. Hence, the environmental incident is, in this study, defined to be environmental incidents occurring caused by oils, toxic chemicals, hazardous waste, residues (including coal waste), etc. which seriously threaten to human lives, property, environment and people's daily life.

Along with the definition of the environmental incident, this study has specifically examined the incidents, belonging to the following categories:

- Oil spills from ships, storage tanks and other related facilities,
- Mudslides of coal waste piles, and
- Hazardous substance leak from production, transport and storage facilities.

While the Halong Area is subject to this study, the port area of Hai Phong City has been surveyed as the typical area facing at the Risk of oil leakage. Together, legislative matters on environmental incidents in Hanoi City have been surveyed, because it has been discussing the setup of the regulation for prevention of and response to incidents, in recent.

Based on the definition of the environmental incidents, natural disasters like flooding, inundation and landslides are basically excluded from this study. However, some of major events are listed in this study as reference information in parallel with the environmental incidents; because it is obvious that they give serious impact also to the water environment.

1.3 Methodology of the Study

Different kinds of institutes relating to the environment incidents have been visited to collect necessary data/information. They are mass media, state management authorities, emergency response institutes, research institutes, etc., as enumerated in **Table 1**.

Through these visits, data/information like records of environment incidents in the past and plans and regulations of prevention against and response to the environment incident have been collected. As a result of analysis of collected data/information, characters and tendencies of the environmental incidents in the Halong Area have been clarified. Based on this, the direction of measures against the environmental incident has been discussed.

Table 1 List of Visited Institutes

No.	Institutes	Collected Data/Information
1	Quang Ninh Newspaper	Records and documents on environmental incidents in the Halong Area
2	Quang Ninh Television	
3	New articles on internet websites	
4	Board of Natural Incident Prevention of Quang Ninh	Regulation on the function of Provincial Command Board for Natural Disaster Prevention and Rescue
5	VINACOAL	Recovery activities for mud slide incident
6	Peoples Committees of Halong, Cam Pha and Hoanh Bo	Actions and countermeasures against environment incidents
7	Quang Ninh Port Authority	Actions and countermeasures against oil spill incidents
8	Petrol B12 Company	Actions and countermeasures against oil spill incidents
9	Quang Ninh DONRE	Actions and countermeasures against environment incidents
10	Hai Phong Port Authority	Actions and countermeasures against oil spill incidents in the Hai Phong
11	Hai Phong DONRE	Actions and countermeasures against oil spill incidents in the Hai Phong
12	Institute of Maritime Research	Actions and countermeasures against environment incidents

Concerning oil spill incidents, QN DONRE (specifically, Sub-Department of Sea and Islands is in charge) has been working to get the approval from MONRE for the Response Plan against Oil Spill Incidents in Quang Ninh Province. Because many and diverse data/ information regarding oil spill incidents are available, they are conveniently used for this study.

2. SITUATIONS OF ENVIRONMENTAL INCIDENTS

2.1 Background

1) Oil Spills

Quang Ninh Province has great potential for economic development, especially for sea port and tourism development. Cai Lan Port is a traffic node of waterway with high density of vessels into the Port. In addition, operations of hundreds of tourism boat in Halong Bay increase the risk of collision and incident, possibly causing oil spills.

Along with the above activities, there are other activities including trade, transportation and oil transshipment at sea. Management of these activities are difficult, because they take place on

wide range of waters, while human resources, facilities and conditions for prevention and response to the environmental incidents of sectors and localities are very short and weak. In addition to oil spills at the sea, there are oil spills on river system, in mainland and in the gas pipelines that located along the coast.

In Halong Area, possible sources of oil spill incidents comprising of fixed and moving sources are as follows:

- B12 Oil Port: Every year, 130 - 150 ships, receiving 1.8 - 2.0 million tons/year.
- Sea and River Port: Cai Lan, Cua Ong, Hon Net, Cam Pha, Hong Gai and Tourist wharf in Bay Chay.
- Petrol Retailing Ships: Halong City 10 ships, Cam Pha 8 ships and Hoanh Bo 3 ships.
- Fish Port and Anchoring Areas: Halong 970 ships, Cam Pha 322 ships and Hoanh Bo 37 ships.

2) Coal Mudslides

The Halong Area (especially Halong City and Cam Pha Town) is a leading producing site of coals in Vietnam. Therefore, many waste coal piles are found in sites of coal mines. It has been reported that several coal mudslides happened in the past, influencing physical assets and human lives in nearby areas.

Exact numbers of sites with actual risk of coal mudslides have not been known. Based on the Pollution Source Table prepared by WG-1, the numbers of coal mines and coal processing firms possibly discharging waste coals have been identified to be a total of 101 entities, as shown in **Annex 1**. Projects with actual risk of environmental incidents must be surveyed from now on.

3) Hazardous Substance Leaks

Internationally, groups of oils and hazardous substances (like cyanide, acid/alkali, heavy metals, pesticides, etc.) are dealt as possible causative substances for the environmental incidents.

Exact numbers of projects with actual risk of hazardous substance leak in Halong Area have not been identified at the present. Based on the experience, industrial groups possibly handling these substances are: Food processing, pulp production, oil and lubricant producing, chemical manufacturing, fabricated metal manufacturing and hospital. Based on the data outputted from the Pollution Source Table, a total of 33 projects belong to these categories, as shown in **Annex 1**. Projects with actual risk must be surveyed from now on.

It has been known widely that coal mines and coal-related industries discharge wastewater containing heavy metals. However, these industries are excluded from possible sources of hazardous substance leak, because the environmental pollution incidents are considered to be the pollution incidents caused accidentally.

2.2 Environmental Incidents in Halong Area

There are no reliable information sources for the environmental incidents in the Halong Area. Even Quang Ninh DONRE which has vast responsibilities for the environmental management is not endowed with reliable records of environmental incidents happening in the Halong Area in the past. By aggregating all of data and information collected from various visited institutes, a total of 10 incidents have been identified since 1998, as shown in **Table 2**.

Among them, 6 incidents are oil spill and 4 are coal mudslides. If other incidents (like flooding, land slide, fire, etc.), as shown in **Annex 2**, besides the environmental incidents are added, the total numbers come to be 28 incidents.

Internationally, groups of hazardous substances (like cyanide, acid/alkali, heavy metals, pesticides, etc.) are dealt as possible causative substances for the environmental incidents. In the Halong Area, any report on such incidents caused by hazardous substances has been not found at present.

Figure 1 and **2** shows representative incident scenes of oil spill incidents and coal mudslide.

Table 2 List of Environmental Incidents in Halong Area

Title	Incident Category	Date of Incident	Site of Occurrence	Causative Unit	Incident Scale	Cause and Responses
1. Vegetable oil leakage	Oil leakage (Vegetable oil)	Sep. 7, 1998	Water area near the old ferry station	Hoan Chau Ltd Company	About 1,000 m^2 of surface water near the office of Port Authority was polluted by vegetable oil.	The ship discharging oil was arrested based on the request from DOSTE, thereby receiving an administrative sanction with amount of 1.5 Million. Rescue team and equipment from B12 company was mobilized to clean the area.
2. Oil leakage at Cua Luc Straight	Oil leakage	Oct. 18, 1998	Water area around B12 and Cai Lan Port	Not identified	About 10,000 m^2 of surface water from Cai Lan Port to B12 Port was contaminated by discharged oil.	B12 Petrol Company participated in cleaning operation by the request from DOSTE. Afterward, B12 requested for the payment of expenses from the provincial budget.
3. Oil leakage around water body of Petrol B12 port.	Oil leakage	Nov. 21, 1998	Water area around B12 Port	Not identified	Oil leakage with thin layer covered about 6,000 m^2 around the B12 Port.	B12 company participated in cleaning operation by the request from DOSTE.
4. Oil leakage at B12 Storage	Oil leakage	Mar 10, 1999	B12 Oil storage area	B12 Company	About 10 m^3 of diesel oil were spilled, causing oil pollution around B12 port and Cua Luc Bay	B12 company respond to the incident by using floating net and chemical spray to dissolve oil leakage.
5. Oil leakage at Port Authority area	Oil leakage	June 7, 1999	Water area around office of Port Authority	Not identified	About 500 m^2 from Ben Doan to Old Ferry Station	The DOSTE and the Port Authority formulated 3 working teams including: investigation of pollution source; damage assessment and treatment. While checking several ships in the area, no polluter was found. Rescue team form B12 was mobilized and about 200 litters oil were collected.
6. Sink of Bach Dang Giang Cargo	Oil leakage (by cargo sinking)	Jan. 31, 2003	Hon Phao Dai Island in Halong bay area, about 13 nautical miles from Bai Chay side.	Vinashin	A thin layer oil leakage covered about the area of 500 m^2.	Quang Ninh PC mobilized a rescue team form B12 to the site. The team was equipped with two tug boat, 300 m floating net, floating storage 70 m^3, chemical, oil absorption materials, etc. After 12 days, the ship was rescued. Diesel tanks with capacity of 1.600 tons were in safety condition.
7. Waste rock slide from Cao Son Coal Mine	Coal mudslide	Sep. 17, 2005	Group 68 Area 4 Mong Duong Commune, Cam Pha	Cao Son Coal Mine	Waste rock from Cao Son Coal Mine slide to residential areas due to heavy rain. As a result, garden of 5 households were damaged, the stream was stuck, and water flew into the houses.	Cao Son Coal Mine has paid compensations, Although its amount was not enough, reportedly.
8. Mud slide at Khe De area Cua Ong, Cam Pha	Coal mudslide	Jul. 31, 2006	Area 1 Cua Ong Commune Cam Pha	Coc 6 Coal Mine	Dyke No 1, 2,3 of Khe De were broken. About 1.000 m^3 mud slide was caused over the dyke. 6 houses were collapsed; 7 cows were killed; and	Coc 6 Coal Mine gave initial compensation for 7 damaged houses with amount of 3 million each. A new dyke with investment of 22 billion was constructed to protect resident area.

Title	Incident Category	Date of Incident	Site of Occurrence	Causative Unit	Incident Scale	Cause and Responses
					some motorbikes were damaged.	
9. Waste rock slide at Cao Son Coal Mine	Coal mudslide	Aug. 19, 2006	G9 Coal Seam Cao Son Coal Mine	Cao Son Coal Mine	500,000 m^3 waste rock slide destroyed the supporting dyke and the coal transportation system	This accident cost about 10 billion according to Vinacoal.
10. Run-off from Coc 6 Mine	Coal mudslide	July 1, 2007	Group 67 area 5, Cam Phu Commune, Cam Pha	Coc 6 Coal Mine	Water run from Coc Sau Coal mine broken a wall and collapsed the house. 3 people died.	

Source: Survey Note prepared by JET (December 2011, employing a local expert, Hoang Vinh Khuyen).
Note: This table shows results aggregated from different sources enumerated in Table 1.

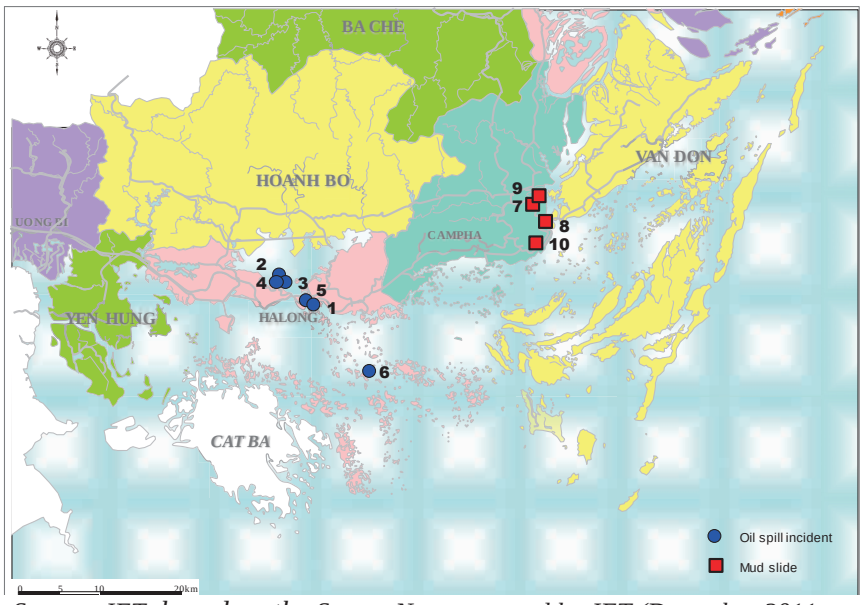
Source: Collected by JET

Figure 1 Scene of Oil Spill in Sinking of Bach Dang Giang Cargo (No.6)

Source: Collected by JET

Figure 2 Scene of Coal Mudslide at Cao Son Coal Mine (No.9)

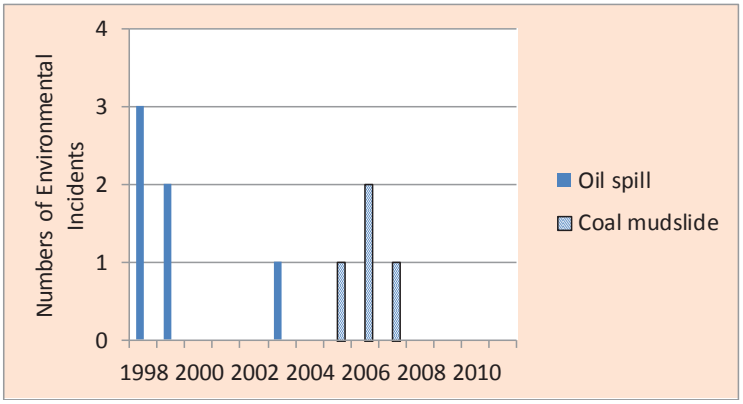
Figure 3 shows locations where environmental incidents happening in the past in the Halong Area. The entrance of Bay Chay Bay is a place where frequent oil spill incidents happen. It is presumed that pollution sources for these oil spills are oil facilities and vessels for fuel, lubricant and vegetable oil used in Cai Lan Port Area, Cai Lan Industrial Park, commercial areas in Hong Gai. Oil spill incident has been found in the offshore zone of Halong Bay caused by oil reshipment in Halong Bay. Meanwhile, the coastal zone along Cam Pha Town has suffered from several coal mudslides caused by coal waste piles nearby.



Source: JET, based on the Survey Note prepared by JET (December 2011, employing a local expert, Hoang Vinh Khuyen)

Figure 3 Locations of Environmental Incidents in Halong Area

As shown in **Figure 4**, this survey result means that there have been no oil spill incidents since 2004, and no coal mudslides since 2008. While these data shows no any incident since 2008, there are no realistic measures whether this reflects the true fact or not.



Source: Using data from Survey Note prepared by JET (December 2011, employing a local expert, Hoang Vinh Khuyen)
Note: This graph shows results examined collected dat inthe survey note.

Figure 4 Numbers of Environmental Incidents in Halong Area

Lake Yen Lap and the Dien Von River are major sources for domestic water for urban centers of the Halong Area. Fortunately, no environmental incident has not been reported around these water source areas. Thus, it is assessed that no urgent pollution risk exists in such water sources in the Halong Area, at present.

2.3 Oil Spill Incidents in Hai Phong Port Area

Hai Phong Port with larger scale than Cai Lan Port is located in the same economic zone of Northern Vietnam as the Halong Area. Hai Phong Port Area is selected as the subject area to learn lessons on measures against oil spills, because it is presumed that Hai Phong Port Area is in the similar situation on the occurrence of and response to oil spill incidents to the Halong Area encompassing Cai Lan port.

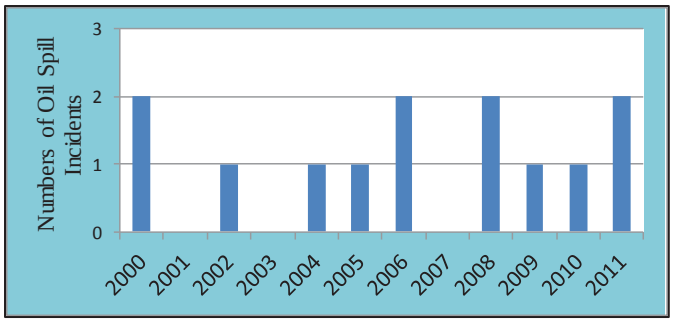
According to the collected records from Hai Phong Port Authority, Hai Phong Port Area has

experienced a total of 13 oil spill incidents since 2000, as shown in **Table 3** and **Figure 5**.

Table 3 List of Oil Spill Incidents in Hai Phong Port Area

Title	Date	Site	Incident Scale	Response
1. Oil spill from the Grace Ship (Korea)	Mar 31, 2000	Hai Phong Port	4 m^3 of wastewater oil was discharged out without any treatment.	Hai Phong Port Authority has carried out inspection and applied the sanction against the violation
2. Oil spill from Kirovs Klees (Russia)	May 8, 2000	Water way to Cua Cam Port, Hai Phong	3 m^3 oil spill was happened, during the demolition of the ship.	Hai Phong Port Authority has carried out inspection and applied the sanction against the violation
3. Oil spill from the ship Zinzin	Jul. 2, 2002	Hai Phong Port	6 m^3 of oil contaminated wastewater was discharged out, because of miss operation.	Hai Phong Port Authority has carried out inspection and applied the sanction against violation.
4. Oil spill from the My Dinh ship sunk on the way from Hai Phong to Quang Ninh	Dec. 22, 2004	Near Cat Ba Island	A part of 200 m^3 diesel and fuel oil were leaked.	An urgent meeting of Commander Board for rescue and disaster prevention of Hai Phong was organized. They requested the ship owner and authorities to pull out all diesel and then taken up the ship.
5. Oil spill from the ship Zo Myong (DPR Korea)	Aug. 16, 2005	Hai Phong Port	2.5 m^3 of oil contaminated wastewater was discharged out.	Hai Phong Port Authority has carried out inspection and applied the sanction against violation
6. Oil spill from the ship Van My (Vietnam)	Apr. 15, 2006	Hai Phong Port	2.0 m^3 of oil contaminated waste water was discharged out because of miss operation.	Hai Phong Port Authority has carried out inspection and applied sanction against the violation
7. Waste oil illegal discharging of HB2 Ship- Hai Binh Co. Ltd from Thai Binh Province	May 18, 2006	Kinh Thay River, Dai Yen commune, An Duong, Hai Phong City	About 2 tons of waste oil was discharge to the river.	The ship was arrested and the penalty was imposed (no information on the amount of penalty).
8. Oil spill from XITONA (Mongolia)	Aug. 19, 2008	Hai Phong Port	2.5 m^3 of oil contaminated wastewater was discharged out.	Hai Phong Port Authority has carried out inspection and applied sanction against the violation
9. Oil spill from the ship HADACO 15 (Mongolia)	Nov. 7, 2008	Hai Phong Port	3.0 m^3 of oil contaminated wastewater was pumped out because of miss operation.	Hai Phong Port Authority has carried out inspection and applied sanction against the violation
10. Oil spill from PIONEER SEA (Malta)	May 15, 2009	Hai Phong Port	Ballast water contaminated with oil was discharged out.	Hai Phong Port Authority has carried out inspection and applied sanction against the violation
11. Oil spill from incident of Shun An Xing Ship sunken (Chinese)	May 14, 2010	5.5 km from Hon Dau Island, Do Son Hai Phong	Oil leakage covered the sea area of about 10,000 m^2. The ship carried 70 ton of diesel oil and lubricant when it sunk to the sea.	Hai Phong PC issued an urgent letter to request the North Oil Spill Response Center (NOSRCEN), Military force, and Rescue Force of Hai Phong port to participate on response activities. The NOSRCEN has sent 3 rescue ships, 52 rescue mans with absorbs material to the site. They collected 700 liters oil.
12. Oil spill from Thinh Hung Ship (Viet Nam)	Jan. 31, 2011	Bach Dang River, near Hai Phong Port	90 tons of diesel oil spilled out while the ship was hit on rock	Hai Phong Port Authority has carried out inspection and applied sanction against violation
13. Oil spill from the Ship Bach Dang 01 sunken by hitting with Minh Tuan Ship	Jul. 17, 2011	Floating signal No 41and 42. Water way to Dinh Vu Island, Hai Phong City	100 m^3 of diesel were spill out.	The Authority of Haiphong has mobilized rescue team to the site. Detail of response action was not recorded. On 18 July 2011, the Bach Dang ship was taken up.

Source: Survey Note prepared by JET (December 2011, employing a local expert, Hoang Vinh Khuyen), based on collected data from Hai Phong Port Authority in this survey.



Source: Using data from Survey Note prepared by JET (December 2011, employing a local expert, Hoang Vinh Khuyen).
Note: This graph shows results examined data collected from Hai Phong Port Authority in this survey.

Figure 5 Numbers of Oil Spill Incidents in Hai Phong Port Area

2.4 Emergency Response for Environmental Incidents

(1) General

Mitigation measures against environmental incident are taken by two (2) ways; one is preventative measure before the incident, and another is emergency response in the event of incident outbreak.

Concerning oil spills in the port area, periodical site inspections to vessels and other facilities are carried out as a routine task of Port Authority. Meanwhile, on coal waste piles at open-cut mines, DONRE (and other management agencies) and other competent authorities conduct supervisions on the routine base, providing the instruction on preventative countermeasures. Production, storage and transport facilities handling hazardous substances are subject to the periodical environmental inspection and check of DONRE (and other environment management authority).

As understood from the above, preventative measures against environmental measures are carried out by competent authorities as routine tasks. Meanwhile, combat force and equipment have been mobilized as emergency responses in the event of incident outbreaks, as below.

(2) Halong Area

As for oil spill incidents in the Halong Area, Petrol Company B12 works as a leading force for emergency response against oil spill, based on the instruction of Command Board of Natural Disaster Prevention and Response of Quang Ninh or Quang Ninh Port Authority. In response to the degrees of incidents, Company 128 located in Hai Phong City that belongs to Northern Oil Spill Response Center (NOSRCEN) participates in the joint action, if necessary.

Meanwhile, DOSTE used to play a role in the surveillance of oil spills at the site to measure and assess incidents in the past. In the event of oil spill incident happens, Petrol Company B12 takes actions at the site, mobilizing their equipment as shown in **Table 4**. Besides these, Provincial Military Command, Provincial Boarder Military Command and Quang Ninh Port Authority owns equipment and facilities to be used for oil spill response.

To prevent from coal mudslides from waste piles, owners of mine operations install drainage ditches around waste piles and carry out tree planting on the slopes, etc., as preventative measures. In the event of coal mudslides, Provincial (or District People's Committee) and/or Command Board of Natural Disaster Prevention and Response mobilize task forces and equipment.

Table 4 List of Oil Spill Response Equipment of Petrol Company B12

No.	Items	Dimensions
1	700m pipes	For water and bubble supply for fuel tank and barges
2	Pumps	3 sets with flow capacity of 162 m^3/h
3	Fire –fighting water tank	500 m^3
4	Bubble tanks	2 sets, capacity 50 m^3
5	Fire trucks	2 sets
6	Tug boat with anti-fire	1 set
7	Canoe	1 set, capacity 30 CV
8	Floating	2sets, 560m
9	Boat	With 7 men
10	Oil absorbent and dispersant	
11	Oil skimmer	
12	Communication equipment	Telephone communication equipment, camera monitoring equipment

Source: Survey Note prepared by JET (December 2011, employing a local expert, Hoang Vinh Khuyen)

(3) Hai Phong Port

In Hai Phong Port Area, NOSRCEN located in Hai Phong City is a main force against oil spill combat at the site. NOSRCEN is organized by mainly forces of Company 128 and is situated in the office of Company 128.

NOSRCEN works for oil spill responses in not only Hai Phong but also Northern Vietnam including Quang Ninh and Quang Binh. Recently, it has been reinforced to the large extent with the provision of modern equipment and its manpower is well educated with regular drills.

3. LEGAL SETUP FOR ENVIRONMENTAL INCIDENTS

3.1 Provisions in Law on Environment Protection

The Law on Environment Protection (No. 52, enacted in 2006) defines that environmental incident means any catastrophic event or risk which occurs in the course of human activities, or any sudden natural occurrence which causes serious environmental pollution, degradation or change (Article 3). As seen from this definition, the Law on Environment Protection aims to deal with environmental incidents defined in the broader sense, including ones caused by natural disasters.

With respect to environmental incidents, the Law on Environment Protection stipulates series of legal guidance in the chapter 9 (Prevention of and Response to Environmental Incidents; Remedying Environmental Pollution and Rehabilitation of Environment). Responsibilities of bodies related to environmental incidents may be summarized as follows:

Responsibilities of causative (or potential causative) body are as follows. The Law applies the rule of "Polluters-Pay-Principle (PPP)" in the economic aspect to the environmental incidents:

- To prepare plans of prevention of and response to the incidents in its territories,

- To take urgent measures at the site,
- To inform promptly a competent administrative unit,
- To take measures to remedy environmental pollution and rehabilitate the environment, complying with administrative unit's requests, and
- To compensate for damage.

Governments at all levels have series of responsibilities, within the scope of their respective duties and powers. In localities, provincial and district people's committee are responsible for planning of, preventing of and responding to the incidents, and leading remedy and rehabilitation:

- To prepare plans of prevention of and response to the incidents in its region,
- To mobilize manpower and equipment to response the incident in its region, and
- To lead the assessment of environmental damages, remedying the pollution and rehabilitating the environment.

As understood from the above, the Law on Environment Protection indicates general guidance for environmental incidents. However, it is assessed that the Law does not refer to such clear and specific stipulations that entities and governmental units at all levels can immediately take measures against incidents.

3.2 Regulations Associated with Environmental Incidents

(1) Quang Ninh Province

Quang Ninh PC has enacted the Decision of "Organizing of Provincial Command Board for Natural Disaster Prevention and Response" (No.1379/QD-UBND, May 2011), as shown in **Annex 3**. Department of Agriculture and Rural Development (DARD) submitted the proposal for this Decree. This decree is mainly based on not the Law on Environment Protection but the flood control ordinances (dated August 24, 2000).

This Board (headed by Vice President of Quang Ninh PC), as the General Commander, has designated a total of 27 officers. All the officers are mainly engaged in natural disaster causing flooding, and no officer engaged in the environment (like DONRE officer) is placed. Thus, it may be assessed that this Command Board is of a character focusing on just natural disaster like flood protection, landslide, etc.

As understood from the above, specific regulations and institutions dedicated to environmental incidents have not been established yet, in Quang Ninh Province.

(2) Hai Phong City

In Hai Phong City, the Decree for Command Board of Natural Disaster Prevention and Response (No.800/QD-UBND, May 2009) has been enacted. This Command Board is comprised of three (3) units, as follows:

- Flood and storm prevention,
- Search, prevention and rescue of earthquake and tsunami, and
- Oil spill prevention

The unit of oil spill prevention is led by Vice Head of Navy Force and Vice Director. Vice Director of DONRE is assigned as Vice Head of this unit. Some members of the unit come from Company 128 belonging to NOSRCEN.

As obvious from the above, unlike Quang Ninh Province, Hai Phong City has set up specific

institutions dedicated to oil spill incidents.

(3) Hanoi City

Hanoi City is now preparing a draft document, as attached in **Annex 4**, to issue the regulation specialized in prevention of and response to environmental incident.

This draft regulation specifically defines respective responsibilities of organizations relating to environmental incidents like causative units, establishments, people's committee at all levels, fire-fighting department, police, etc.

In this draft regulation, DONRE is positioned to play a leading role in the locality in the prevention of and response to environmental incidents. The major tasks of DONRE are summarized, as follows:

- To lead and guide People's Committees of districts, towns to develop plans for the prevention of, response to, and remedy and handling of environmental incidents.
- To instruct professional knowledge and skills in investigation and verification of environmental incidents, assessment and determination of damages, completion of legal documents; to request owners of establishment causing environmental incidents to compensate for damages caused at the request of the People's Committees of districts and towns.
- To preside over the organization of education, professional training on the plans for prevention, response to, and remedy of environmental incidents for specialized forces of district-level People's Committees; to organize the propaganda, public education, dissemination of knowledge on risks, threats of environmental incidents for proactive prevention and response.
- To preside over and coordinate with other departments, sectors and related agencies for handling environmental incidents occurred in the area of inter-districts, inter-provinces and report to the City People's Committee.
- To promptly report to the City People's Committee and MONRE on the serious and extremely serious environmental incidents for their direction, and propose emergency measures to respond to the incidents; Periodically every 6 months and annually, report the implementation status and results of implementation of plans for prevention, response to, and remedy and handling of environmental incidents by the People's Committees of districts, and of inter-provincial environmental incidents.

4. ANALYSIS OF ENVIRONMENTAL INCIDENTS AND MEASURES

4.1 General

As discussed in the section 1.2, this study covers the environmental incident associated with the water environment management, excluding ones caused by natural disaster. Thus, three (3) categories of incidents are considered in view of causative substances, as follows:

- Oil spills	Fuel oils, crude oils, lubricant oils, vegetable oils and others
- Coal mudslides	Waste coal piles
- Hazardous substances leaks	Oils, cyanides, acids and alkalis, heavy metals, pesticides and others

Among them, mudslides might be, in general, not considered to be an environmental incident. It is, however, included in this study, taking account of: i) mudslides are one of frequent incidents in the Halong Area, and ii) they tend to be caused by anthropogenic activities and to

impose great influences to the water environment nearby.

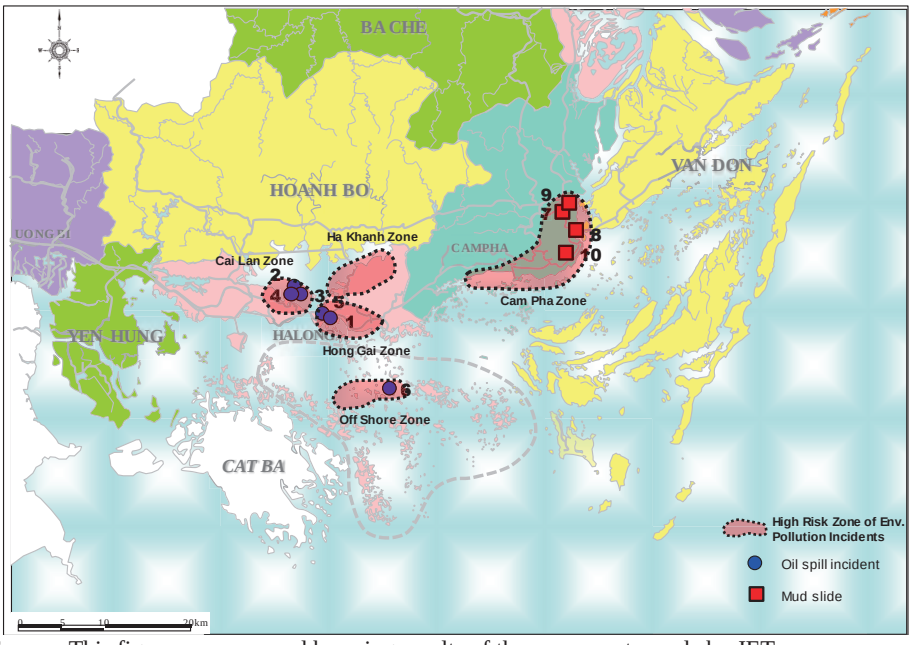
In terms of preventative measures to contain the occurrence of environmental incident, competent authorities (Port Authority, DONRE and other sector departments) have already practiced certain supervision and/or inspection as their routine tasks. Hence, the important is that these regulatory tasks need to be strengthened to ensure their effects.

4.2 Geographical Distribution of Environmental Incidents

Reliable data/information sources on past environmental incidents are not in place at the present, thereby resulting into no archive for incident records. Nevertheless, numbers of incidents have been found out through interviews with mass-media and associated agencies in this survey.

Based on the analysis on collected data/information and the result of the pollution source survey conducted by Output-2, a number of risk zones, as shown in **Figure 6**, have been found, as follows:

- Cai Lan Port and Industrial Zone — Risk of oil spills from oil transport and storage facilities and vessels in the port, and of hazardous substance leakage to be caused by production and transport industries
- Ha Khanh Zone — Risk of mudslides from coal waste piles of coal mines
- Hong Gai Zone — Risk of oil spills from oil transport and storage facilities and vessels for port and commercial.
- Off shore Zone — Risk of oil spills and coal refuse disperse to be caused by reshipment at the offshore
- Cam Pha Zone — Risk of mudslide from coal waste piles of coal mines



Source: This figure was prepared by using results of the survey note made by JET.

Figure 6 Risk Zones in Environmental Incidents in Halong Area

As seen from this figure, risk zones in environmental incident are located along the coat of Halong Bay. These water courses are one of important resources for the tourism. In these risk zones, the environmental incidents are caused by oil spills and mudslides of coal waste piles, according to incident records in the past.

At present, there is no report of environmental incident in the areas of Lake Yen Lap and the Dien Von River which are major sources for domestic water supply in the Halong Area.

It has been known internationally that hazardous substances are a potential cause for environmental incidents, in case they leak in the course of production, transportation and storage. In the meantime, no report in the Halong Area has been found in this account.

4.3 Current Measures against Environmental Incidents

(1) Overview

As a result of the analysis of collected data/information, it is assessed that response against environmental incidents (coal mudslides and hazardous substance leaks) are not activated satisfactorily, at present. Together, Quang Ninh Province does not setup regulations specialized in prevention of and response to environmental incident, at the present.

Specific analysis results are set forth below:

(2) Oil Spills

Management activities to prevent oil spill are carried out. They are the periodical inspection on oil-related facilities conducted by DOT and DONRE and the inspection on vessels by Port Authority. Although it is not clear if current periodical inspections conducted by DONRE and Port Authority are appropriate or not, it is the fact that, some incidents among oil spill incidents in the past were caused by miss-operation and/or physical deficiency of related facilities.

Oil spills generated from transport and storage facilities and vessels have been responded by mainly Quang Ninh Port Authority and Petrol Company B12. They can be also supported by the mobilization of NOSRCEN, if incident scales are beyond their capacity.

At the present, Quang Ninh Province has no clear and authorized contingency plan against oil spills. As of July 2012, Quang Ninh Province has been preparing the “Plan of Oil Spill Response in Quang Ninh Province” to get the approval from MONRE.

(3) Coal Mudslides

Coal waste generating from open-pit mining causes different environmental problems in the Halong Area. This is because some of urban centers in the region are sited next to mining zones. In a long history, the region has suffered from several cases of mudslide of coal waste piles. In case of coal mudslide, damage of human lives and properties are a serious problem rather than water pollution.

Thus, certain preventative measures like the installation of the installation of safe slope and scarcement for waste coal piles, rain ditches, tree planting, etc. have been already taken to reduce incidents since the past. DONRE is involved in such preventative measures, conducting periodical environmental check and inspection.

(4) Hazardous Substance Leaks

In the Halong Area, there is no report registered up to today, regarding environmental incidents caused by hazardous substance leak. Actually, the management of hazardous wastes is one of routine tasks of provincial DONRE and district DONREs.

(5) Legal Setup for Emergency Response

Quang Ninh Province has the regulation for the Provincial Command Board for Natural Disaster Prevention and Response (No.1379/QD-UBND, May 2011). In this regulation, prevention and response against incidents are focusing on mainly flooding, landslides, etc. caused as natural disaster. Even so, in the Halong Area, certain parts of environmental

incidents (like oil spills and coal mudslide) have been responded historically by means of available equipment and materials, mobilizing necessary manpower from associated institutes and agencies.

5. DISCUSSION ON MEASURES AGAINST ENVIRONMENTAL INCIDENTS

5.1 Issues to be Addressed

As mentioned in the above, different issues have been identified in environmental incidents of three (3) categories. The purposes of measures against environmental incidents are to minimize the occurrence of and damages brought by environmental incidents in the Halong Area, thereby to preserve the water environment of rivers, coasts and bays. This report discusses measures and basic approaches responding to environmental incidents which Quang Ninh PC and DONRE should tackle.

Concerning oil spill incident, DONRE (specifically, Sub-Department of Sea and Islands as a responsible unit) has been completing the "Plan of Oil Spill Response in Quang Ninh Province", and now the approval work from MONRE is under way. Because this plan is the result of decision-making made by Quang Ninh PPC, and is of the comprehensive character, encompassing necessary measures against oil spills, this study report does not repeat the discussion on oil spills. For reference, the outline of the "Plan of Oil Spill Response in Quang Ninh Province" is shown in **Annex 5**.

As for coal mudslides and hazardous substance leaks, different problems and constraints have been emerged based on the analysis of current situation and practices, as follows:

- Data/information on environmental incidents (coal mudslides and hazardous substance leaks) which happened in the Halong Area have not been recorded appropriately.
- Possible sources with a Risk of environmental incident (coal mudslides and hazardous substance leaks) have not been clarified.
- Environmental checks which aim the prevention of environmental incident (coal mudslides and hazardous substance leaks) have not been enforced enough.
- Regulation to promote the emergency response against environmental incidents (coal mudslides and hazardous substance leaks) is not in place.
- Manual for emergency responses against environmental incident (coal mudslides and hazardous substance leaks) has not been established.

5.2 Measures against Environmental Incidents

(1) Overview

As for coal mudslides and hazardous substance leak, problems and constraints in measures against environmental incidents have been clarified in the section 5.1. Based on these results, series of basic measures to strengthen response against environmental incidents have been examined.

The working hours allocated to the survey and study of this environmental incident in the Output-2 are so limited that precise and deep baseline survey and examination are not allowed. Therefore, this section 5.2 raises preliminary directions and approaches on measures for solving current weaknesses in the response against environmental incident. In this context, following up this study, DONRE is requested to formulate specific plan for the implementation.

In such view, series of actions to strengthen response against environmental incidents are suggested as below, aiming to encourage the starting-up of actual activities by DONRE for working on environmental incidents. From such context, DONRE is expected to supplement some actual and detail schemes to push forward with these actions suggested here, if necessary

in the course of the implementation.

Measures against environmental incident are divided to two (2) approaches; preventative measures to control the outbreak of incidents, and emergency response in the event of incident outbreak to contain to the minimum damage.

For preventative measures:

- Recording System for Environmental Incident (Action 1)
- Identification of Possible Risk Pollution Sources (Action 2)
- Review and Improvement of Environmental Check Items (Action 3)

For emergency response:

- Regulations Associated with Environmental Incidents (Action 4)
- Development and Implementation of Emergency Responses Plan against Environmental Incidents (Action 5)

It is assumed that all the measures examined here will be completed within about five (5) years.

(2) Recording System for Environmental Incident (Action 1)

Objective:	To designate a unit in charge and to keep records of data/information on environmental incidents (coal mudslide and hazardous substance leak) happening.
Justification:	Through the data gathering of this study, it has been clarified that data/ information of environmental pollution incidents in the past have not been recorded systematically. This data recording is necessary as a minimum condition for measures to learn many things from past incidents and manage environmental incidents.
Component activities:	1) Assigning a unit and officer in charge Sub-Department of EP assigns a unit and officer in charge of keeping records of data/information on environmental incidents. 2) Forming the data sheet for recording An officer in charge forms the data sheet for recording, including; place, data/time, size of incident, effect of incident, response taken, environmental influence and so forth. 3) Recording data/information of incident in the past By using the prepared data sheet, an assigned officer makes the records for incidents in the past. *Remark:* By using the format prepared as above, the task of recording keeping data/information of incidents will be performed by an assigned officer, as a regular work.
Leading unit:	Sub-Department of EP
Period for action:	About 10 months
Necessary expenses:	Man-hour 10 man-month

(3) Identification of Possible Risk Pollution Sources (Action 2)

Objective:	To identify possible pollution sources of environmental incident with risk (of coal mudslides and hazardous substance leaks) which are strictly supervised in the environmental check.
Justification:	In this project, the preliminary study have selected a number of possible pollution sources, based on the data/information collected in the PSD: As preventative measures against coal mudslides and hazardous substance leaks, projects containing special risks must be identified and be supervised with special cares in the environmental check conducted by DONRE. The identification of possible pollution sources with Risk is necessary to select possible projects with special Risks.
Component activities:	1) Setting up a criteria for selecting special Risk projects Considering the enforcement capacity of DONRE in the environmental check, certain numbers of risk projects requiring special supervisions should be identified, according to a certain criteria. Thus, a criteria for selecting risk projects should be first developed, containing; category of pollution risk, estimated scale of pollution, estimated frequencies of pollution, surrounding environmental conditions, influence to the environment and human health, economic damages and so forth. 2) Identifying projects with risk By using the criteria developed, DONRE identifies projects with risk. This selection should be made, based on data/information stored in the PSD. Site surveys to supplement data/information on projects and others should be made, if necessary.
Leading unit:	Sub-Department of EP
Period for action:	About 24 months
Necessary expenses:	Man-hours 18 man-month

(4) Review and Improvement of Environmental Check Items (Action 3)

Objective:	To review and improvement a present environmental check list, by examining the inclusion of environmental check items necessary for preventative measures against environmental incidents.
Justification:	By identifying possible sources with special Risk, prioritized environmental check will be implemented. Commonly, DONRE conducts the site investigation of the environmental check, using the Check List enumerating different items to be checked at the site. Considering the check for possible sources of incident, the present check list for site investigation should be reviewed and modified, if necessary.
Component activities:	1) Review and modify the environmental check list Considering the check for possible sources with Risk, the present

check list for site investigation should be reviewed. The check list should contain series of data/ information necessary for preventing incidents and should be modified, if they are not enumerated in the present list.

Check items to be surveyed at the site are representatively, as follows:

- For coal mudslides: Height, slope angle, etc. of waste piles, installation and dimensions of drain ditch, scarcement and tree planting and so forth.

- For hazardous substance leaks: Properties and volume of substances, status of storage, status of legal registrations and so forth.

Leading unit: Sub-Department of EP

Period for action: 12 months

Necessary expenses: Man-hour 6.0 man-month

(5) Regulations Associated with Environmental Incidents (Action 4)

Objective: To establish regulations enabling emergency response against environmental incidents.

Justification: Based on past experiences, it has been known well that emergency response against environmental incidents must be taken in the full cooperation of many concerned units, like Provincial PC, DONRE, District PC, Police Department, Military Unit and so forth. While the Law on Environment Protection (No. 52) defines only general roles and responsibilities of units concerned in the chapter 9, detail involvements of various units should be defined depending on the characters, scales, sites, etc. of the incident actually happening.

Meanwhile, Quang Ninh Province has already enacted the Decree on the Provincial Command Board for Natural Disaster Prevention and Response (No.1379/QD-UBND, May 2011). However, this command board does not appear to include the response against environmental incidents.

As set forth above, appropriate legislation system is required to clearly define organizations involved in emergency response and respective roles.

Component activities: 1) Regulation specialized in environmental incidents

Hanoi City has been discussing the setup of the regulation specifying emergency measures against environmental incidents. In draft regulation of Hanoi City, roles of different units are defined specifically, depending on the scales of incidents. In Quang Ninh Province, such regulation is necessary to ensure respective roles and responsibilities of Quang Ninh PC, DONRE, district PCs, commune PCs, Fire-fighting Department, other related departments, etc. So, DONRE should work on to establish new regulations to govern emergency response against environmental incident.

2) Extending the coverage of Provincial Command Board for Natural Disaster Prevention and Response

In the Decree on the Provincial Command Board for Natural Disaster

Prevention and Response (No.1379/QD-UBND, May 2011), it is not defined that a representative of DONRE is participated in this command board, unlike the case of Hai Phong City organizing a unit specialized in oil spills. In this connection, it is advisable that the regulation on the Provincial Command Board be re-examined in view of its scope of incidents and constituent members.

Leading unit: DONRE and Sub-Department of EP

Period for action: About 18 months

Necessary expenses: Man-hour 30 man-month

(6) Emergency Response Plan against Environmental Incidents (Action 5)

Objective: To develop and implement an emergency response plan to environmental incidents

Justification: Emergency response plan against environmental incidents is not in place at present in Quang Ninh Province, except for the "Plan of Oil Spill Response" that are now under preparation by Sub-Department of Sea and Islands.

Prime objectives of emergency response against environmental incidents are to minimize the damages of environment and human health caused by incidents. To this end, an integrated plan of how to respond to incidents is necessary to ensure the emergency actions in the event of the incident outbreak.

The development of the emergency response plan and its implementation are called for avoiding serious damages to be caused by environmental incidents.

Component activities: 1) Development of an integrated plan for emergency response to incidents

First of all, an emergency response plan should be developed. Specific response operations applied to actual incidents are different, depending on the characters and scales of incidents and surrounding conditions. In view of three (3) categories incidents (hazardous substance leaks and mudslides), contents of integrated plan commonly adopted are enumerated in the table below, as example, and should be subject to the detail examination at the time of initiating this undertaking, taking account of various conditions of the Halong Area.

Table 5 Representative Structure of Emergency Response Plan

Stage of Incident and Measure		Specific Item
1. At the normal time		
	a. Establishing the notification route and communication system	- Communication and notice system with associated units, administrative units, general citizen groups, etc.
	b. Implementing preventative measures of environmental incidents	- Awareness raising on prevention of incident for general citizens, enterprises and associated organizations
	e. Provision of equipment and materials for response operations	- Oil fence, skimmers, adsorbent, chemicals, pumps, trucks, etc.
	f. Drills for emergency	- Periodical drills for trainings and inspections

	responses	of equipment and materials
2. At the time of incident (emergency response at site)		
	a. Carrying out communication and notice	- Hearing from a detector, person in charge of causative enterprise and persons associated with incident - Notification to up-layer units, cooperating units, etc.
	b. Investigating incident	- Identifying causative substances and pollution sources by means of various database - Taking and measuring/analyzing samples - Checking continuous monitoring results
	c. Assessing the incident's influence	- Assessing the area to be affected by incident - Predicting the expanded influential area
	d. Carrying out containing measure	- Selecting a containing measure in response to the character and scale of incident, and surrounding conditions - Carrying out the selected containing operation - Safety control during the containing operation at site
3. At the time of post-incident		
	a. Assessing the environmental effects at the time of the post-incident	- Assessing the environmental effects at the time of post-incident by eye-observation and/or measurement/analysis
	b. Estimating the expenses necessary for remedy and rehabilitation	- Calculating the expenses required for response operation, the economic damages caused by the incident and the expenses to recover the environment - Consulting the charge and compensation for the expenses among related parties.
	c. Recording the incident and response operation	- Keeping the record, including the cause, situations, applied response operation, etc. and archiving it

Source: JET

Not only Quang Ninh Province but also districts and other administrative units need to formulate an integrated plan to be adopted for their respective areas. Because the preparation of an emergency response plan requests certain specialized knowledge and skills, first of all, DONRE leading the measures against environmental incidents in the locality should fulfill in formulating the model version for the whole province. This will help other local agencies establish promptly respective integrated plan for prevention of and response to incident for their respective areas.

2) Provision of facilities and materials for emergency response

Equipment and materials for hazardous substance leak are not in place, at present. Thus, chemicals necessary for treating hazardous substances and equipment to be used for the treatment should be provided.

The following table shows typical treatments applicable for hazardous substance leak in Japan. As implied from this, response against hazardous substance leak are dealt by applying diverse treatment technologies, taking account of conditions at site. Therefore, it is considered that associated institutes need to learn knowledge and skills related to handling of hazardous substance at site in the event of leakage.

Table 6 Applicable Technologies for Hazardous Substance Leaks

Category		At Incident Source	In Inlet	In Main River or Water Body
Oil spills		Oil skimmer Oil adsorbent Gelation agent	Oil fence Oil adsorbent Oil skimmer Gate operation (shut-open)	Oil fence Oil adsorbent
Hazardous substance leak	Cyanides	Chemical treatment	Chemical treatment	Dilution
	Acid & alkali	Chemical treatment	Chemical treatment	Dilution
	Heavy metals	Chemical treatment Adsorption treatment	Chemical treatment Adsorption treatment	Dilution
	Pesticides	Adsorption treatment	Adsorption treatment	Dilution

Source: JET

3) Conducting drills for emergency response

In actual emergency response against incidents, appropriate activities of persons concerned including communications among persons are the most important for dealing with incident effectively. This is because emergency responses are usually taken in the cooperation of several units and are taken flexibly in response to specific conditions at the site. Meanwhile, some response operations require very specialized knowledge and skills with employing special equipment and chemicals. To ensure appropriate response operations at site in the event of incidents, it is recommendable that periodical drills be conducted in the cooperation of associated units.

Leading unit: DONRE and Sub-Department of EP

Period for action: About 3 years

Necessary expenses: Man-hour 30 man-month (plus 60 man-month of sub-contractor)

About 100,000 USD for equipment and materials for hazardous substance leak.

End

ANNEX

Annex 1: Projects for Survey on Possible Pollution

Annex 2: List of Natural Disasters in Halong Area

Annex 3: Decree on Organization of Provincial Command Board for Natural Disaster Prevention and Response (No 137/QD-UBND, May 2011)

Annex 4: Regulation (Draft) on Prevention, Response to and Remedy of Environmental Incidents in Hanoi City

Annex 5: Profile of Plan of Oil Spill Response in Quang Ninh Province

Annex 1 Projects for Survey of Possible Pollution Source

Project ID	Project Name (EN)	Project Name (VN)	District Level	Commune Level	Product or Service	Possibility of Oil Spills	Possibility of Hazardous Substance Leak
11	Automobile industrial JS Company- Vinacomin	Công ty Cổ phần Công nghiệp Ô tô - TKV	Cam Pha	Cam Phu	Machinery & equipment		Yes
14	Viet Duc Beer factory	Nhà máy bia Việt Đức	Cam Pha	Cam Thuy	Beer & beverage		Yes
15	Quang Ninh Beer and Beverage Company	Công ty Bia và NGK Quảng Ninh	Halong	Yet Kieu	Beer & beverage		Yes
18	Vegetable-oil factory in Cai Lan	Nhà máy dầu thực vật Cái Lân	Halong	Bai Chay	Food products & processing		Yes
19	Activities for improving capa of oil manufacture from 400	Hoạt động nâng công suất xưởng tinh chế dầu từ400	Halong	Bai Chay	Food products & processing		Yes
20	Wheat flour production Join Venture of Vima Flour	Liên doanh sản xuất bột mỳ Vima Flour	Halong	Bai Chay	Food products & processing		Yes
23	Project for expanding the coal mine of Cao Thang to un	Dự án mở rộng mỏ than Cao Thắng khai thác hầm lò	Halong	Ha Khanh	Coal mining	Yes	
27	Coal mine of 917	Mỏ than 917	Halong	Ha Khanh	Coal mining	Yes	
28	Project for expansion of coal mine of 917	Dự án mở rộng mỏ than 917	Halong	Ha Khanh	Coal mining	Yes	
29	Work expansion of open pit mine at T.I - T.IV, thick-bed	Mở rộng công trường khai thác than lộ thiên (khu vực	Cam Pha	Quang Hanh	Coal mining	Yes	
33	Coal mine bed of 14 Khe Cham	Cụm vỉa 14 Khe Chàm	Cam Pha	Mong Duong	Coal mining	Yes	
34	Maintain and extension to exploit the coal of the bed-cro	Duy trì và mở rộng khai thác cụm vỉa 14 Khe Chàm	Cam Pha	Mong Duong	Coal mining	Yes	
43	Expansion of Cua ong processing company	Mở rộng nhà máy tuyển than Cửa Ông	Cam Pha	Cua Ong	Coal mining	Yes	
58	Coal mine of Dong Vong	Mỏ than Đồng Vông	Hoanh Bo	Tan Dan	Coal mining	Yes	
61	Improving capa of the lay on acrosspit of Dong Vong co	Đầu tư mở rộng nâng công suất tầng lò bằng - Mỏ th	Hoanh Bo	Tan Dan	Coal mining	Yes	
64	Construction investment of warehouse, processing and	Dự án đầu tư xây dựng bến bãi chứa, chế biến và tiê	Cam Pha	Mong Duong	Coal processing	Yes	
66	Construction opencast mining at zone II seam 11	Dự án đầu tư xây dựng công trình khai thác lộ thiên k	Halong	Ha Lam	Coal mining	Yes	
70	General Hospital of Cam pha area	Bệnh viện đa khoa khu vực Cẩm Phả	Cam Pha	Cam Thanh	Hospital		Yes
72	General Hospital of Hoanh Bo	Bệnh viện Đa khoa huyện Hoành Bồ	Hoanh Bo	Troi	Hospital		Yes
77	Coal mine of Central Nga Hai	Mỏ than Trung tâm Ngã Hai	Cam Pha	Duong Huy	Coal processing	Yes	
81	Western north and on the west of Da Mai coal mine	Dự án duy trì sản xuất dưới mức +40 khu Tây Bắc Đ	Cam Pha	Cam Tay	Coal processing	Yes	
82	Well-pit coal mining at Ha Rang mine	Dự án Đầu tư xây dựng công trình khai thác than lò g	Cam Pha	Duong Huy	Coal processing	Yes	
83	open pit exploitaion at coal-bed 12,13,14 and16 of Ha R	Dự án mở rộng khai thác than lộ thiên ở các vỉa 12, 1	Cam Pha	Duong Huy	Coal processing	Yes	
84	Coal mine of Ha Rang	Mỏ than Hà Ráng	Cam Pha	Quang Hanh	Coal processing	Yes	
85	Coal mine in Dong Bac Nga Hai	Đầu tư xây dựng công trình mỏ than Đông Bắc Ngã H	Cam Pha	Duong Huy	Coal mining	Yes	
91	Solid waste treatment factory which collected from house	Nhà máy xử lý rác thải sinh hoạt Hạ Long	Halong	Ha Khanh	Waste disposal		Yes
93	Improving and repairing the Ha Tu Cement factory	Cải tạo, sữa chữa nhà máy xi măng Hà Tu	Halong	Ha Phong	Construction materials		
96	Investment project of Nguyen Phu fresh food processing	Dự án đầu tư xây dựng nhà máy Nguyên Phú chế biế	Halong	Viet Hung	Food products & processing		Yes
110	Coal mine of Cao Thang	Mỏ than Cao Thắng	Halong	Ha Khanh	Coal mining	Yes	
111	Tan Lap coal mine	Mỏ Tân Lập	Halong	Ha Tu	Coal mining	Yes	
112	Exploitation of coal mine of Bac Coc Sau	Đầu tư khai thác mỏ than Bắc Cọc Sáu	Cam Pha	Mong Duong	Coal mining	Yes	
114	open pit exploitaion at coal-bed 1 Khe Hum	Khai thác lộ thiên vỉa 1 Khe Hùm (Khu vực T.VI - T.X	Halong	Ha Phong	Coal mining	Yes	
116	Project for coal mining under ground + 20 of the Giap K	Dự án khai thác hầm lò dưới mức + 20 -xí nghiệp tha	Halong	Ha Khanh	Coal mining	Yes	
117	Coal processing factory of Nam Cau trang	Nhà máy tuyển than Nam Cầu trắng	Halong	Hong Ha	Coal processing	Yes	
120	Coal production and business on coal processing of Nan	Mở rộng sản xuất kinh doanh than Nhà máy tuyển th	Halong	Hong Ha	Coal processing	Yes	
121	Construction Investment of muddy water treatment on co	Đầu tư xây dựng công trình xử lý bùn nước nhà máy	Halong	Hong Ha	Coal processing	Yes	
142	Coal mine of Khe Cham	Mỏ than Khe Chàm	Cam Pha	Mong Duong	Coal processing	Yes	
143	Coal mining exploitation of Khe Cham III	Dự án đầu tư khai thác mỏ Khe Chàm III	Cam Pha	Mong Duong	Coal processing	Yes	
149	Machine manufacture company-Vinacomin	Công ty CP chế tạo máy-TKV	Cam Pha	Cam Thuy	Machinery & equipment		Yes
167	Coal procductionat Dong Bac Khe Cham	Phương án sản xuất năm 2006 đến 2010 tại mỏ Đôn	Cam Pha	Mong Duong	Coal mining	Yes	
172	Coal mine of Mong Duong	Mỏ than Mông Dương	Cam Pha	Mong Duong	Coal mining	Yes	
175	Improving capa of Mong Duong coal mining	Đầu tư nâng công suất mỏ than Mông Dương	Cam Pha	Mong Duong	Coal mining	Yes	
176	Coal exploitation at Mong Duong mine-Phase II	Dự án đầu tư khai thác giai đoạn II mỏ than Mông Du	Cam Pha	Mong Duong	Coal mining	Yes	
184	Lime stone exploitation for construction	Khai thác đá vôi làm vật liệu xây dựng tại phường Hà	Halong	Ha Phong	Construction material exploitation		
185	Expanding and improving the exploitation capa of the lim	Dự án mở rộng và nâng công suất mỏ đá vôi Km 15,	Cam Pha	Quang Hanh	Stone quarrying		
189	Steel prodution formated U, I, L for under ground mining	Đầu tư dây chuyền cán thép vì lò, thép hình U, I, L đặ	Cam Pha	Cam Thuy	Machinery & equipment		Yes
197	Cua ong Port	Cảng Cửa Ông	Cam Pha	Cua Ong	Coal processing	Yes	
205	Maintaining production from 2003 to 2005 at coal mine in	Duy trì sản xuất 2003 - 2005 tại mỏ than Ngã Hai	Cam Pha	Duong Huy	Coal mining	Yes	
206	Improving of the Nga Hai coal mine	Đầu tư xây dựng điều chỉnh mở rộng nâng công suất	Cam Pha	Duong Huy	Coal mining	Yes	
207	Moving and improving the system for coal screen and se	Dự án di chuyển và nâng cấp hệ thống sàng tuyển th	Cam Pha	Quang Hanh	Coal mining	Yes	
208	Exploitation in Nga Hai of Quang Hanh - TKV	Đầu tư khai thác xuống sâu dưới mức -50 mỏ than N	Cam Pha	Duong Huy	Coal mining	Yes	
212	Coal mine of Binh Minh	Mỏ Bình Minh	Halong		Coal mining	Yes	
213	Tay Bac Da Mai coal enterprise	Xí nghiệp than Tây Bắc Đá Mài	Cam Pha	Cam Thuy	Coal mining	Yes	
216	Warehouse for vegetable oil in Cai Lan	Kho dầu thực vật Cái Lân	Halong	Bai Chay	Food products & processing		Yes
217	Explosive production for open pit	Phân xưởng sản xuất thuốc nổ lộ thiên	Halong	Ha Khanh	Paper & paper products		Yes
218	Coal exploitation for experiment at the Tay Yen Ngua	Khai thác than thực nghiệm cánh Tây Yên Ngựa	Cam Pha	Mong Duong	Coal mining	Yes	
220	Explosive materials production in Quang Ninh	Cơ sở sản xuất vật liệu nổ khu vực Quảng Ninh	Halong	Ha Khanh	Paper & paper products		Yes
222	Improving of container depot No. K130	Mở rộng sức chứa kho K130	Halong	Ha Khau	Oil & petroleum product		Yes
234	Khe Tam coal mine	Mỏ Khe Tam	Cam Pha	Duong Huy	Coal mining	Yes	
235	Stone exploitation for construction at Vu oai, Hoanh bo	Khai thác đá làm vật liệu xây dựng tại xã Vũ oai và H	Hoanh Bo	Vu Oai	Construction material exploitation		
236	Work construction of waste oil recycling from engine ope	Xây dựng xưởng tái chế dầu thải động cơ	Cam Pha	Quang Hanh	Oil & petroleum product		Yes
250	Northern steel factory construction	Đầu tư xây dựng nhà máy thép phía Bắc	Halong	Bai Chay	Fabricated metal products		Yes
251	Lime-stone exploitation to supply the material for contruc	Khai thác đá làm VLXD phường Quang Hanh - thị xã	Cam Pha	Quang Hanh	Construction materials		
255	Paper production works at Van Yen hamlet, Viet Hung	Phân xưởng sản xuất giấy tại thôn Vạn Yên, xã Việt H	Halong	Viet Hung	Paper & paper products		Yes
256	Coal exploitation in Cam Pha	Khai thác than khu vực Cẩm Phả	Cam Pha	Cao Son	Coal processing	Yes	
257	Food processing Factory in Ha Khau	Nhà máy chế biến lương thực thực phẩm Hà Khẩu	Halong	Ha Khau	Food products & processing		Yes
258	Factories agar seaweed	Phân xưởng sản xuất thạch rau câu	Halong	Ha Khau	Food products & processing		Yes
266	Coal mine of Thanh cong	Mỏ Thành Công	Halong		Coal processing	Yes	
273	Under ground coal mining at Thong Nhat Company	Nâng công suất khai thác hầm lò xuống sâu khu lộ trí	Cam Pha	Cam Dong	Coal mining	Yes	
274	Coal mine of Thong Nhat	Mỏ than Thống Nhất	Cam Pha	Cam Dong	Coal mining	Yes	
281	Exploitation and taking all of coal at coal Bed No.10 &11	Khai thác tận thu than vỉa 10 và vỉa 11 trong giới hạn	Halong	Ha Khanh	Coal processing	Yes	
295	Coal mining on the north of Khe Cham	Mỏ than bắc khe Chàm	Cam Pha	Cam Phu	Coal processing	Yes	
308	Maintaining and expanding the bed cluster of No.14, Khe	Khai thác duy trì và mở rộng cụm vỉa 14 Khe Chàm	Cam Pha	Cao Son	Coal processing	Yes	
319	Deo Nai coal mine	Mỏ than Đèo Nai	Cam Pha	Cam Dong	Coal mining	Yes	
330	Warehouse works of Nam Cau Trang port	Phân xưởng kho cảng Nam Cầu Trắng	Halong	Hong Ha	Coal processing	Yes	
332	Improving the capa of Cai Lan wheat flour production in	Nâng công suất nhà máy sản xuất bột mỳ Cái Lân tại	Halong	Bai Chay	Food products & processing		Yes
348	Warehouse and processing coal in Mong Duong	Kho bãi chứa và chế biến than phường Mông Dương	Cam Pha	Cam Thinh	Coal mining	Yes	
349	Warehouse and processing coal in Cam Thach	Kho bãi chứa và chế biến than phường Cẩm Thạch,	Cam Pha	Cam Tay	Coal mining	Yes	
350	Ground for coal strore and delivery	Bến bãi xuất chứa than	Cam Pha	Cam Tay	Coal mining	Yes	
363	Coal processing and receiving warehouse in Tay Khe Sir	Kho chế biến và tiếp nhận than Tây Khe Sim	Cam Pha	Quang Hanh	Coal mining	Yes	
364	Coal mine of Tay Bac Khe Cham	Mỏ than Tây Bắc Khe Chàm	Cam Pha	Mong Duong	Coal mining	Yes	
365	Coal mine on the western- North of Nga Hai	Mỏ than Tây Bắc Ngã Hai	Cam Pha	Quang Hanh	Coal mining	Yes	
367	Coal mining of Nam Khe Tam	Mỏ than Nam Khe Tam	Cam Pha	Mong Duong	Coal mining	Yes	
368	Coal mine on the northern Quang Loi	Mỏ than Bắc Quãng Lợi	Cam Pha	Cua Ong	Coal mining	Yes	
370	Investing for exploitation of the Western -Notrhern in Ng	Đầu tư khai thác mỏ than Tây Bắc Ngã Hai	Cam Pha	Quang Hanh	Coal mining	Yes	
371	To improving the capa of the mine at Dong Da Mai	Cải tạo nâng công suất mỏ đông Đá Mài	Cam Pha	Mong Duong	Coal mining	Yes	
372	Coal mine of Dong Da Mai	Mỏ than Đông Đá Mài	Cam Pha	Mong Duong	Coal mining	Yes	
373	Expansion and raising the capa of coal exploitation at op	Dự án mở rộng nâng công suất khai thác lộ thiên vỉa	Cam Pha	Duong Huy	Coal mining	Yes	
375	Expanding the Khe Day coal port of Dong Bac compan	Dự án mở rộng cảng Khe Dây của Tổng Công ty Đôn	Cam Pha	Mong Duong	Coal mining	Yes	
376	Expanding the capa of coal mining of Nam Khe Tam	Đầu tư xây dựng công trình mở rộng nâng công suất	Cam Pha	Duong Huy	Coal mining	Yes	
377	Under ground pit exploitation at coal mine of Tay Nam K	Khai thác hầm lò mỏ than Tây Nam Khe Tam	Cam Pha	Duong Huy	Coal mining	Yes	
378	Mining to the depth and improving the exploitation capa	Khai thác lộ thiên xuống sâu nâng công suất mỏ Tây	Cam Pha	Duong Huy	Coal mining	Yes	
381	Coal mining of bed of No. 9, on the westwing of Bac Qua	khai thác than vỉa 9 cánh Tây khai trường Bắc Quảng	Cam Pha	Cua Ong	Coal mining	Yes	
383	Warehouse for receiving and coal processing	Kho tiếp nhận và chế biến than	Cam Pha	Mong Duong	Coal mining	Yes	
384	Expanding the open pit mining of Dong Khe Sim	Mở rộng khai thác lộ thiênVỉa dày Đông Khe Sim	Cam Pha	Quang Hanh	Coal mining	Yes	
385	Under ground mining on western of Tay Khe Sim	Khai thác hầm lò khu Tây Khe Sim	Cam Pha	Cam Thach	Coal mining	Yes	
392	Ha Lam coal mine	Mỏ Hà Lầm	Halong	Ha Lam	Coal processing	Yes	
393	Construction of mine warehouse with capa 03 tons and	Dự án xây dựng kho mìn 03 tấn và Kho mìn 02 tấn c	Halong	Ha Lam	Coal processing	Yes	
414	Expansion of Nui Beo coal mine	Mở rộng mỏ Núi Béo	Halong	Ha Tu	Coal mining	Yes	

Project ID	Project Name (EN)	Project Name (VN)	District Level	Commune Level	Product or Service	Possibility of Oil Spills	Possiblity of Hazardous Substance Leak
415	Moving the mechanical factory of Hon Gai to the new loc	Dự án di chuyển nhà máy cơ khí Hòn Gai đến địa điể	Halong	Hong Ha	Machinery & equipment		Yes
430	Nui Beo coal mining	Mỏ Núi Béo	Halong		Coal mining	Yes	
440	Screen work +38 Khe Tam	Xưởng sàng + 38 Khe Tam - Công ty than Dương Hu	Cam Pha	Duong Huy	Coal mining	Yes	
441	Coal mine of Duong Huy company	Công ty than Dương Huy	Cam Pha	Cam Phu	Coal mining	Yes	
445	Improvement and expansion of coal production and busi	Dự án cải tạo và mở rộng sản xuất kinh doanh Công	Cam Pha	Cao Son	Coal processing	Yes	
446	Coal mine of Cao Son	Mỏ Cao Sơn	Cam Pha	Mong Duong	Coal processing	Yes	
447	Coal mine of Coc 6	Mỏ than Cọc 6	Cam Pha	Cam Phu	Coal processing	Yes	
448	Construction investment Coal mine of Coc 6	Đầu tư xây dựng công trình Mỏ than cọc 6 - Công ty (	Cam Pha	Cam Phu	Coal processing	Yes	
449	Expanding of coal mine at Coc Sau	Mở rộng mỏ than Cọc 6	Cam Pha	Cam Phu	Coal mining	Yes	
452	Inland coal Company	Công ty than nội địa	Cam Pha	Cao Son	Coal mining	Yes	
457	Quang Hanh dock warehouse at Quang Hanh , Cam Pha	Kho cảng Quang Hanh tại phường Quang Hanh, thị x	Cam Pha	Quang Hanh	Coal mining	Yes	
460	Viet Nam AIDI high- grade candle production	Dự án nhà máy sản xuất nến cao cấp AIDI Việt Nam	Halong	Bai Chay	Chemicals and paints		Yes
467	Producing wire and cable	Sản xuất dây điện và cáp điện các loại	Halong	Bai Chay	Electronic equipment		Yes
478	Industrial explosive material warehouse	Kho vật liệu nổ	Halong	Ha Tu	Chemicals and paints		Yes
479	Construction of coal processing warehouse level +36 La	Xây dựng kho chế biến than mặt bằng +36 Lán Khá	Halong	Ha Khanh	Coal mining	Yes	
481	Expanding and upgrade Genaral hospital Bai Chay area	Nâng cấp, mở rộng Bệnh viện đa khoa khu vực Bãi (	Halong	Gieng Day	Hospital		Yes
483	Exploitation and processing Stone - Work C2	Khai thác và chế biến đá xây dựng - Công trường đá	Halong	Ha Phong	Coal mining	Yes	
484	Project for coal mining under ground -75 of the Binh Min	Khai thác hầm lò sâu dưới mức -75 mỏ Bình Minh	Halong		Coal mining	Yes	
485	Project construction traditional medicine	Dự án xây dựng bệnh viện Y học cổ truyền	Halong	Hong Ha	Hospital		Yes
488	Project for coal mining at coal bed 4 (9) in TKV's Urban	Dự án khai thác thu hồi than vỉa 4(9) trong dự án khu	Halong	Ha Khanh	Coal mining	Yes	
489	Under ground mining at 14 Tay Phay F.K2 -, Giap Khau	Khai thác than hầm lò vỉa 14 Tây Phay F.K2, Khoáng	Halong	Ha Khanh	Coal mining	Yes	
490	Construction work infection department	Xây dựng Công trình Khoa truyền nhiễm thuộc Bệnh	Halong	Tran Hung Da	Hospital		Yes
499	Investment development for mining - Ha Tu coal mining J	Đầu tư phát triển mỏ Công ty Cổ phần than Hà Tu	Halong	Ha Tu	Coal mining	Yes	
500	Improving production - Ha Tu coal mining JSC	Dự án cải tạo sản xuất - Công ty than Hà Tu, khai thá	Halong	Ha Tu	Coal mining	Yes	
512	Construction of solid waste treatment facility by land fill	Dự án thoát nước và vệ sinh môi trường thành phố H	Halong	Ha Khau	Waste disposal		Yes
513	Opencast mining thick seams (T.IA-T.IV) West Khe Sim	Khai thác lộ thiên khai trường vỉa dày tuyến (T.IA-T.I	Cam Pha	Cam Thuy	Coal mining	Yes	
514	Investment in construction of factory prepared - Khe Cha	Đầu tư xây dựng công trình Nhà máy sàng - tuyển th	Cam Pha	Mong Duong	Coal mining	Yes	
515	Investment explosives storage pits 5 tons of industrial zo	Đầu tư kho chứa vật liệu nổ công nghiệp hầm lò 5 tấ	Cam Pha	Cam Phu	Chemicals and paints		Yes
526	Hospital nursing and rehabilitation	Bệnh viện điều dưỡng và phục hồi chức năng Sở Y t	Cam Pha	Quang Hanh	Hospital		Yes
528	Investment in mining from -50 to expose seams North-Ea	Đầu tư khai thác hầm lò từ mức -50 đến lộ vỉa phía T	Cam Pha	Duong Huy	Coal mining	Yes	
529	Investment in mining Hoa Binh zone (West subdivision N	Đầu tư khai thác hầm lò khu Hòa Bình (phần khu Tây	Hoanh Bo	Hoa Binh	Coal mining	Yes	
530	Specializing in coal transport route from Dong Vong, Uor	Tuyến đường chuyên vận tải than từ Đồng Vông, thị	Hoanh Bo	Tan Dan	Coal mining	Yes	
531	Construction of production operation	Xây dựng nhà điều hành sản xuất	Cam Pha	Cao Son	Coal mining	Yes	
532	Investment in construction of production line of emulsion	Đầu tư xây dựng công trình dây chuyền sản xuất thu	Cam Pha	Mong Duong	Coal mining	Yes	
518	Investment in construction of warehouse storage,	Đầu tư xây dựng kho, bãi chứa, hệ thống sàng tuyển	Cam Pha	Mong Duong	Coal mining	Yes	
519	Slaughter cattle, poultry and pig farming focused lean co	Giết mổ gia súc, gia cầm, tập trung chăn nuôi lợn hư	Cam Pha	Mong Duong	Food products & processing		Yes
520	Investment in construction of coal transport system Lep	Đầu tư xây dựng công trình hệ thống vận tải than Lé	Cam Pha	Quang Hanh	Coal mining	Yes	
524	Expansion plan opencast mining thick seams, bedding W	Phương án mở rộng khai thác lộ thiên vỉa dày, phân	Cam Pha	Quang Hanh	Coal mining	Yes	
525	10-10 and Khe Day ports	Cảng 10-10 và cảng Khe Dây	Cam Pha	Cam Phu	Coal mining	Yes	
541	Investment in renovation works Km6 ports in Quang Han	Đầu tư cải tạo công trình cụm cảng km6 tại phường (	Cam Pha	Quang Hanh	Coal mining	Yes	

Note: This table that is picked up from the Pollution Source Table in Halong Area shows projects which are subject to surveys as possible pollution sources, because these projects belong to economic or industrial sectors which possibly cause environmental incidents.

Annex 2 List of Natural Disasters in Halong Area

Incident	Category	Date	Place	Causative Unit	Scale and Impact
1. Three tourist boats sink due to Ice rain and storm	Storm	Nov. 22, 2006	Halong Bay area	Bien Ngoc boat; Boat QN 1456 and QN 1250	5 people on the boat were died.
2. Land slide	Mud slide	Jul. 1, 2007	The access road to Bai Chay Bridge - Hon Gai side	Natural disaster	There was a crack with 5 cm in wide and 30 m in long at the access road to Bai Chay Bridge. 18 households were temporary relocated to avoid land slide.
3. Fire at oil boat at Cua Ong Port	Fire	Nov. 16, 2007	Fish port of Cua Ong Ward, Cam Pha	Son Lam Ltd, Area No 8 Cua Ong Ward	A man died, the boat was totally burned.
4. Flooding at group 7, Lan Ga Area, Cam Dong commune, Cam Pha District due to heavy rain water run from Thong Nhat Coal Company	Flooding	May. 19, 2008	Group 7, Lan Ga Area, Cam Dong Commune, Cam Pha District	Thong Nhat Coal Company	10 houses were being in un-safe condition, two houses were collapsed; a man was injured.
5. Fire at the boat when it just loaded 1000 liter of diesel	Fire	June. 23, 2009	Petrol station No 7, Hai Tan Commune, Hai Ha District	Le Van Kim - the Boat's owner	The boat was completely fired. The fuel supply station was damaged. Two men were injured. It was estimated about 100 million lost.
6. Flooding at Cao Xanh Area	Flooding	May. 10, 2010	Resident area No. 3 and Lo Bat Resident area, Cao Xang Ward	Natural disaster	Water run into the house, because the drainage was stuck
7. Land slide at area 1 bai chay ward	Land slide	May 10, 2010	Group 4 Area 1 Bai Chay Ward	Halong Tourist and Service JSC	path walk, handrail and courtyard of 6 house were collapsed. People have to move away temporary.
8. Fire at the oil board (empty tank) when the board was repairing	Fire at oil board	May 29, 2010	Cualuc Bay, Yetkieu Commune, Halong City which is 400 meter from Bai Chay Bridge	The Boat QN 3018 of Bach Dang Company	The boat was broken. The other nearby boat was sunk. One man died and three others were injured.
9. Flooding at Hong Hai and Bach Dang Ward, Halong City	Flooding	June 7, 2010	Group 8 area 2 Hong Hai Ward and Cau Dat area Bach Dang Ward	Drainage stuck due to construction at Halong High school and construction at Lanbe Cot 8 Road	Water deep 1 m in resident area. Some furniture and electric equipment were damaged, water run into the house.
10. Flooding at Gieng day area	Flooding	June 7, 2010	Resident area 1, 4 and 6 of Gieng Day Ward	Project management Unit of Major Project of Quang Ninh and Quang Ninh Cement JSC	Rain water run into the resident houses because soil from construction site load over the drainage system.
11. Land slide and support wall was broken due to heavy rain	Land slide	Aug. 16, 2010	Group 2 Area 7, Hong ha Commune, Halong City and Area 4 Cam Thanh Commune, Cam Pha District	Natural disaster	Three people died, two people were injured. Two houses were corrupted.
12. Flooding at Ha Long	Flooding	Aug. 18, 2010	Hong Hai, Bach Dang and Cao Thang Ward	Natural disaster	Road to Group 1, area 71, Hong Hai, Kenh Liem and Bai Muoi were dipped 1m in water. Flooding over many houses.

Incident	Category	Date	Place	Causative Unit	Scale and Impact
13. Flooding at Ha Long due to heavy rain	Flooding	Aug. 25, 2010	Cao Thang, Bai Chay, Hong Ha, Bach Dang	Natural disaster	Bai Muoi area Cao Thang Ward was dipped 40 cm in water. Many household goods damaged.
14. Flooding at Hatu Ward	Flooding	Aug. 30, 2010	Area No 4, 7 and 9 along Sec Lo Stream, Ha Tu Ward	Nui Beo Coal Company	Mud and water run over the bank of the stream. Houses and road along the stream were deep in water.
15. Fire on tourist boat at Halong	Fire	Jan. 10, 2011	Hon Gai Harbor	Thanh Hung boat QN4339	All furniture was burned. The lost estimated about 100 million dong.
16. Flooding at Area 1 Cua Ong Commune Cam Pha Town due to rain water run from dumping site of Coc 6 Coal Mine	Flooding	Sep. 13, 2011	Area 1 Cua Ong Commune Cam Pha Town	Coc 6 Coal mine and the Hanoi Construction Company - the contractor of the Road 18 A improvement project.	The stream was stuck because the gate is nearly close as a result of recently road construction 7 households were deep in water. Most of equipment like TV, Refrigerator and electric equipment were damaged.
17. Flooding at Area 1 Cua Ong Commune Cam Pha Town due to rain water run from dumping site of Coc 6 Coal Mine.	Flooding	Oct. 1, 2011	Area 1 Cua Ong Commune Cam Pha Town	Coc 6 Coal mine	The stream was stuck because the gate is nearly close as result of recently road construction. More than 10 house hold was flooded and have to remove (Temporary Relocate) form the site
18. Mud slide at Bai Chay	Mud slide	Nov. 5, 2011	Group 6 Area 6 Bai Chay Halong	Viet My - Halong JSC	Nearly 30 m^3 mud was slide into resident area. Mud flowed over the road and the garden of 3 households.

Source: Survey Note prepared by JET (December 2011, employing a local expert, Hoang Vinh Khuyen)
Note: This table shows results aggregated from different sources enumerated in Table 1.

Annex 3: Decree on Organization of Provincial Command Board for Natural Disaster Prevention and Response

(No 1379/QD-UBND, issued by The Quang Ninh People Committee.)

Date: 19 May 2011

Decree

On Organization of Provincial Command Board for Natural Disaster Prevention and Response

Pursuant to the Law on Organization of People Council and People committee

Review to the request of Department of Agricultural and Rural Development by document No 455/NN-PTNT dated 13/ April 2011

Decide:

Article 1: To consolidate and assign the duty for member of the Provincial Commander Board for Natural Disaster Prevention and seeking – recurring, as attached here with.

Article 2: Every year, members of Provincial Command Board for Natural Disaster Prevention and Response responsible for arranging time to check preparation campaign against storm and flood, together with committee to campaign against and overcome the consequence of disaster (storm, flood, erosion)

This decision come in to effect since the singed date and will be change for decisions No: 664/QĐ-UBND; 1728/QĐ-UBND; 3159/QĐ-UBND and 1032/QĐ-UBND.

Article 3: Head of the office of the Provincial people committee, Director of Provincial Departments; Chairmen of Local Districts and person listed above carry out their duty as regulated in this decision

List of members of the Provincial Command Board for Natural Disaster Prevention and Response

1. Mr. Do Thong, Vice-President of the People committee, Head in charge of general command.

2. Mr. Chu Van Tuyen, Director of Department of Agriculture and Rural Development, Vice head in charge of Campaign against storm and flood.

3. Mr. Tran Thanh, Commander of Provincial Military Force, Vice head in charge of Rescue Finding

4. Mr. Chu The Ky, Deputy General Provincial Border Guard, Vice head in charge of checking and guiding board on sea to the storm preventing place in case of storm, directly monitor Co To District...

5. Mr. Nguyen Minh Hong, Director of Information and Communication, commissioner, in charge of ensuring communication for Commander Board for Natural Disaster Prevention and Risking rescue of Quang Ninh.

6. Mr. Hoang Cong Dang, Deputy Director of Department of Agriculture and Rural Development, commissioner in charge of natural disaster prevention in forestry field.

7. Mr. Dinh Trong Ly, Deputy Director of Department of Agriculture and Rural Development, commissioner in charge of natural disaster prevention in fishery field, directly monitor Van Don District.

8. Mr. Vuong Dinh Viet, Deputy Director of Department of Agriculture and Rural Development, commissioner in charge of natural disaster prevention in irrigation field, directly monitor Yen Hung District.

9. Mr. Tran Duc Dien, Deputy Director of Department of Agriculture and Rural Development, commissioner in charge of disaster prevention in agricultural field.

10. Mr. Nham Ngoc Tam, Deputy Provincial Police Department, commissioner in charge of ensuring security before, during, and after natural disaster, directly monitor Ha Long city.

11. Mr. Nguyen Tuan Phuong, Deputy Director of Provincial radio and televisions station, commissioner in charge of communicating in Provincial radio and televisions station about weather news, public powers from The Quang Ninh People committee, from Commander Board for Natural Disaster Prevention and Risking rescue of Quang Ninh. , update changes in disaster areas, directly monitor Dam Ha district.

12. Mr. Dang Hung, Deputy Director of Department of Transportation and, commissioner in charge of Campaign against storm and flood in transportation field, ensure against erosion, bridge, ferry, board safety after disaster, and directly monitor Binh Lieu District.

13. Mr. Nguyen Xuan Ky, Secretary of Ho Chi Minh Provincial Communist Youth Union, commissioner in charge of youth work, ready to rescue and dykes protection, directly monitor Dong Trieu District.

14. Mr. Tran Thai Tuan, Vice-President of Provincial Red cross, commissioner in charge of relief and donations supporting disaster areas, directly monitor Hoanh Bo District.

15. Mr. Nguyen The Thinh, Director of Department of Labour Invalid and Social Affair, commissioner in charge of works related to institutional policies for disaster areas, directly monitor Ba Che District.

16. Mr. Vu Dinh Tan, Deputy Director of Department of Power of Quang Ninh, commissioner in charge of ensuring electricity for producing activities, ensuring electricity when necessary, directly monitor Cam Pha town.

17. Mr. Nguyen Tien Hung, Deputy Director of Health Department, commissioner in charge of ensuring prophylactic and disease prevention and treatment after flood, directly monitor Uong Bi town.

18. Mr. Nguyen Ba Luan, Vice-President of Provincial Association of Farmers, commissioner in charge of monitoring and guiding farmers prevent flood and reduce disaster, directly monitor Tien Yen District.

19. Mr. Nguyen Van Minh, Director of Finance Department, commissioner in charge of ensuring finance and budget for Commander Board for Natural Disaster Prevention and Risking rescue of Quang Ninh. and solve, overcome consequence of flood and natural disaster, directly monitor Hai Ha District,

20. Mr. Vu Thanh Lam – Vice General Director of Vietnam Mining – Mineral Corporation, commissioner in charge of ensuring secure of Disaster prevention in companies member, in cooperate with committee to secure for citizen around Mining dumping site.

21. Mr. Nguyen Trong Len – Deputy Director of Department of Plan and Investment, commissioner in charge of planning to recover damage after disaster, directly monitor Mong Cai city.

22. Mr. Truong Cong Ngan – Head of New Rural Building, commissioner in charge of disaster prevention in new rural building field.

23. Mr. Nguyen Tien So, Director of Provincial Hydro meteorological Centers, commissioner in charge of weather forecast, flood forecast, provide information for Provincial radio and televisions station and Commander Board for Natural Disaster Prevention and Risking rescue of Quang Ninh. .

24. Mr. Do Ba Son, Director of Diving Rescue and Underwater Sport Center, belong to Department of Culture, Sport and Tourism, commissioner in charge and take part in underwater rescue.

25. Mr. Vu Hai San, Chief of Provincial military Commander, commissioner in charge of rescue finding, is responsible for general provincial rescue finding for monitoring by Commander Board for Natural Disaster Prevention and Risking rescue of Quang Ninh. .

26. Mr. Vu Dinh Thanh, Vice Director Viettel branch in Quang Ninh, commissioner in charge of communicating for online meeting between Organization for General environment incident Response and Commander Board for Natural Disaster Prevention and Risking rescue of Quang Ninh. .

27. Mr. Pham Dinh Hoa, Director of Irrigation, commissioner and Head of Administration of Commander Board of Commander Board for Natural Disaster Prevention and Risking rescuing of Quang Ninh. , in charge of: giving direction, organize “online team 24/24”, receiving information from the center government and transfer information to all the members. Make annual report to the People committee of Quang Ninh and Commander Board for Natural Disaster Prevention and Risking rescuing of Quang Ninh.

End

Annex 4: Regulation (Draft) on Prevention, Response to and Remedy of Environmental Incidents in Hanoi City

HANOI CITY PEOPLE'S COMMITTEE

SOCIALIST REPUBLIC OF VIETNAM

Independence – Freedom – Happiness

No. /2011/QD-UBND

Ha Noi, date ……2011

DECISION

On promulgation of the Regulation on prevention, response to and remedy of environmental incidents in Hanoi city

HANOI CITY PEOPLE'S COMMITTEE

Pursuant to Law on Environmental Protection dated 29 November 2005;

Pursuant to the Law on Organization of People's Council and People's Committee dated 26 November 2003;

Pursuant to the Ordinance on Hanoi Capital dated 28 December 2000;

Pursuant to the Decree No. 92/2005/ND-CP dated 12 July 2005 of the Government detailing the implementation of a number of articles of the Ordinance on Hanoi Capital;

At the proposal of the Director of Hanoi DONRE in the Statement No. /TTr-STNMT dated…….2011 regarding the promulgation of the "Regulation on prevention, response to and remedy of environmental incidents in Hanoi city"; Appraisal Report by Department of Justice at the document No. 1147/STP-VBPQ dated 26 June 2010;

DECIDES:

Article 1: To promulgate together with this Decision the "Regulation on prevention, response to and remedy of environmental incidents in Hanoi city".

Article 2: This Decision will take effect after 15 days from the date of signing.

Article 3: The Chief Administrator of the Hanoi City People's Committee Office; Directors of departments, agencies and sectors in Hanoi City; Chairpersons of People's Committees of districts, towns; Heads of organizations and individuals concerned shall be responsible for implementing this Decision.

ON BEHALF OF HANOI CITY PEOPLE'S COMMITTEE

FOR CHAIRMAN

VICE CHAIRMAN

HANOI CITY PEOPLE'S COMMITTEE SOCIALIST REPUBLIC OF VIETNAM

Independence – Freedom – Happiness

REGULATION

On prevention, response to and remedy of environmental incidents in Hanoi city

(Promulgated together with Decision No…… / 2011/QD-UBND dated…… 2011 of the Hanoi City People's Committee)

CHAPTER I
GENERAL PROVISIONS

Article 1. Scope of Application

This Regulation prescribes the contents of activities and responsibilities of organizations and individuals in the prevention of and response to environmental incidents, and remedy of their consequences in Hanoi City.

Article 2. Subjects of application

1. Organizations and individuals inside and outside Vietnam, directly or indirectly cause environmental incidents, in addition to the implementation of the provisions in this Regulation must also comply with the provisions of the laws on chemical safety management, fire prevention, nuclear safety and radiation safety of the Socialist Republic of Vietnam. In cases where international treaties which the Socialist Republic of Vietnam has signed or acceded to provide otherwise, the provisions of such international treaties shall be applied.

2. The central and local State agencies based in Hanoi City directly or indirectly causing environmental incidents are also subject to the provisions of this Regulation and other relevant regulations.

Article 3. Interpretation of terms

In this Regulation, the following terms shall be construed as follows:

1. Extremely serious environmental incidents mean environmental incidents occurring in large quantities caused by the storage, fire, transportation, production, leakage of toxic chemicals, hazardous waste, radioactive substances on a large scale, involving multiple districts or dense populated urban areas which seriously threaten to human lives, property, environment and people's daily life.

2. Response to environmental incidents means the implementation of immediate, urgent measures and the use of resources, facilities/means, equipment to timely handle with, eliminate or minimize the spreading and leakage of contaminants into the environment to minimize the risk of environmental damage.

3. Remedy of the consequences of environmental incidents means the activities to clean up major parts of soil, water, air environment, regional ecosystems that are under pollution and measures to limit damages, restore living environment and the environment after environmental incidents.

4. Establishments mean production, business and services establishments, transportation means, and equipment having potential to cause environmental incidents.

5. Owners of establishments mean the heads of organizations, agencies, units, fully responsible for legal aspects of all activities of the establishments.

6. Field Commanders/On-site Commanders mean the persons assigned or appointed directly to the command of all rescue operations at the place of environmental incidents. Rights and responsibilities

of Field commanders are specified in the plan for rescue/response to environmental incidents of each establishment; concentrated industrial parks, clusters; local authorities and the units participating in the rescue and remedy of environmental incidents.

7. Priority areas for protection mean dense residential areas; city center area, water source area for living and production activities; historical places rated; ecological tourist areas; entertainment areas; aquaculture zones, and national security and defense area.

CHAPTER II
ORGANIZATION OF THE PREVENTION OF AND RESPONSE TO ENVIRONMENTAL INCIDENTS

Article 4. Prevention of environmental incidents

The implementation of measures to prevent environmental incidents of organizations and individuals in Hanoi City shall be carried out in accordance with Article 86 of the Law on Environmental Protection.

Article 5. Receiving and processing information on environmental incidents

1. Focal point agencies to receive information on environmental incidents:

The establishments causing environmental incidents or detecting environmental incidents shall promptly report to one of the following agencies:

a) City level:

- The city People's Committee;

- Department of Natural Resources and Environment (focal point is Environmental Protection Agency);

- The city Police (focal point is the Environmental Police Department).

b) District and Town levels:

- People's Committees of districts and towns (focal point is DONREs of districts and towns);

- District Police (focal point is Environmental Police Team);

c) Commune, Ward, Township levels:

- People’s Committees of communes, wards, townships where environmental incidents occur;

- Commune/ward/township Police

d) Coordination units:

- Fire Fighting and Protection Police;

- Road traffic police and waterway traffic police;

- The military units located in the city.

2. Processing of information on environmental incidents:

a) After receiving information on environmental incidents, the agencies receiving such information shall be responsible for appointing staff to conduct field investigation at the location of incidents; being proactive in coordinating rescue operations with the establishments and other agencies involved according to their available capacity, and at the same time, timely report to and advise People's Committees at district, town and commune levels and the City People's Committee for their direction

and coordination of rescue operations and remedy of consequences.

b) Providing accurate information in time so that organizations, communities, religious institutions and people in the affected areas can actively prevent environmental incidents and coordinate to remedy the consequences.

Article 6. Organization and implementation of the response to environmental incidents

Based on the scope and extent of the environmental incidents occurred, the organization and implementation of the rescue/response to environmental incidents will be conducted at two levels, as follows:

1. Rescue/response to environmental incident occurring at an establishment – Establishment level:

a) Owner of establishment causing environmental incident shall have to urgently mobilize and direct their manpower, means, equipment, or manpower, means, equipment specified in the contract for response to environmental incidents to promptly respond to it.

Owner of establishment causing environmental incident shall have to take urgent measures to ensure safety for persons and property; organize the rescue of persons and property and promptly inform such to People's Committees of commune, ward, town or police station where the incident occurs.

b) In case environmental incidents exceed abilities and resources of establishment, Owner of establishment must urgently report them to their superior management agencies, People's Committees of communes, wards and towns for their support.

c) In case of serious environmental incidents or incidents occurred in the priority areas for protection, to promptly respond to such incidents, Owner of establishment shall have to mobilize necessary forces and means to rescue immediately, at the same time report to People's Committees of districts, towns where environmental incidents occur to be directed for the rescue in time.

d) If an environmental incident occurs on a scale involving two or more establishments or communes, wards, townships, the owners of such establishments, heads of People's Committees of communes, wards of the localities where such incident occurs shall have to collaborate with one another in responding to it.

2. Rescue/response to environmental incidents occurring outside of the establishment causing the incidents - Regional level:

a) If environmental incidents occur beyond the area of the establishment causing the incidents, exceed the response capacity of the establishment; incidents occur due to natural disasters, vehicle crashing incidents/accidents; incidents occurred in other provinces causing direct effect, Chairman of the City People's Committee shall be responsible for directly presiding over or immediately appointing field commanders for organizing rescue actions as planned, and urgently mobilize necessary resources of establishments, ministries, branches, sectors in the area, and military forces to timely rescue the incidents and remedy their consequences.

b) In the event of serious environmental incidents or incidents occurred in the priority areas for protection, or incidents related to the areas of two districts, townships, for timely rescue, Heads of agencies in charge of field commanders are allowed to mobilize necessary forces and means for prompt rescue, and at the same time, report to the City People's Committee for their direction and coordination of the rescue operation.

c) In the event of extremely serious environmental incidents, the City People's Committee is to promptly report to the National Committee for Search and Rescue for their direction and coordination with concerned agencies to organize the rescue response and remedy of consequences. The organization of the rescue/response to extremely serious environmental incidents shall comply with the provisions of the law on state of emergency.

d) If environmental incidents occur due to collision, sinking of ships, boats, barges, oil transportation vehicles, and hazardous chemicals in rivers, especially for the types of oil with light components, Risk of fire, oil spill occurred near the coast, special attentions should be paid to the plan for coordination, organization/mobilization of forces and means to ensure fire and explosion protection and evacuation of people out of danger area.

e) In the course of organization of the response to environmental incidents at the above-said levels, field commanders must actively handle and timely report the development of incidents, and propose necessary recommendations to competent authorities and take responsibility for their decisions.

Article 7. Development of emergency response forces to environment incidents

1. The functional agencies as stipulated in Clause 1, Article 5 of this Regulation shall be responsible for building up forces, equipment, facilities for forecasting and warning of environmental incidents as assigned.

2. Production, business, services establishments are responsible for formulating, developing plans for prevention of and response to environmental incidents at establishments.

CHAPTER III
REMEDY OF CONSEQUENCES OF ENVIRONMENTAL INCIDENTS

Article 8. Responsibility for assessment and determination of damages caused by environmental incidents

1. Environmental incidents occurred in the area of districts, towns shall be handled by People's Committees of districts, towns in coordination with concerned agencies and owners of establishments causing environmental incidents to carry out assessment, determination of damages and settlement of damage compensation.

2. Environmental incidents occurred in the area of two or more districts, towns shall be handled by the City People's Committee in coordination with concerned agencies and owners of establishments causing environmental incidents to carry out assessment, determination of damages and settlement of damage compensation.

3. Environmental incidents occurred in the city area related to an adjacent province shall be handled by the City People's Committee in coordination with the People's Committee of the province affected by such environmental incidents and owners of establishments causing environmental incidents to carry out assessment and determination of damages and settlement of damage compensation.

4. For extremely serious environmental incidents, the City People's Committee in coordination with MONRE, relevant agencies, along with owners of establishments causing environmental incidents shall carry out assessment, determination of damages and require the owners of establishments to pay indemnities for damages; for special cases, it is recommended to establish the State-level Appraisal Council and report to the Prime Minister for consideration and decision.

Article 9. Determination of damages and settlement of damage compensation

1. The settlement of damage compensation should be conducted expeditiously, strictly; specialized consultants may be hired for this work, including international consultants in case the party causing environmental incidents is a foreign legal entity. Where necessary, the City People's Committee shall propose the National Committee for Search and Rescue to direct, instruct functional agencies to apply the measures prescribed by the law to deal with the consequences, compensation of damages caused by environmental incidents.

2. The City People's Committee is to request the ministries, agencies, sectors, and the governing unit of establishments located in the city area to be responsible for coordinating with the City People's Committee to request the owners of establishments causing environmental incidents to implement fully, promptly the responsibilities for compensation of damages as stipulated in Section 2 of Chapter

XIV of the Law on Environmental Protection, the Civil Code and other related provisions of law.

CHAPTER IV
RESPONSIBILITIES OF ORGANIZATIONS AND INDIVIDUALS FOR ENVIRONMENTAL INCIDENTS

Article 10. Responsibilities of owners of establishments

1. To prepare plans for responding to environmental incidents which may occur at the establishments and submit to competent authorities for approval. To sign agreement or contract for the response to environmental incidents with other appropriate agencies, units.

2. To take responsibilities for environmental incidents caused by their establishments; initiatively mobilize resources, self-organize and command the rescue in time and effectively when incidents occur. Promptly report to the People's Committees of communes, wards, townships or police station where the incidents occur.

3. To take responsibility for compensation of damages when causing environmental incidents as prescribed in Clause 2, Article 7 of this Regulation.

4. Owners of vehicles and equipment that have the potential to cause environmental incidents are required to buy insurance for environmental pollution; insurance rates are corresponding to the level of damages caused by environmental incidents or in accordance with the law on insurance.

Article 11. Responsibilities of People's Committees of communes, wards and townships

1. To develop plans for prevention of, response to, and remedy and handling of environmental incidents (annually) in their area and submit to People's Committees of districts and towns for approval. To organize the dissemination of the plans to owners of establishments and residents for them to actively prevent and rescue/respond to environmental incidents, and publicize in-charge phone numbers so that residents can timely inform about environmental incidents occurred in their area.

2. Upon receiving the information from establishments, owners of transportation vehicles causing environmental incidents in the area, promptly and initiatively mobilize necessary forces to respond to incidents; to organize the evacuation of people out of the environmental incident-affected area, and immediately report to People's Committees of districts and towns for their direction and coordination in the rescue/response to and remedy of environmental incidents.

Article 12. Responsibilities of People's Committees of districts and towns

1. To develop plans for coordination of the prevention of, response to, and remedy and handling of environmental incidents (annually) in district area and the priority areas for protection under their management and submit to the City People's Committee for approval. To organize the dissemination of the plans to establishments and residents for them to actively prevent and rescue/respond to environmental incidents, and publicize in-charge phone numbers so that residents can timely inform about environmental incidents occurred in their area.

2. Upon receiving the report of People's Committees of communes, wards, townships or information from owners of establishments, owners of transportation vehicles causing environmental incidents and of the organizations and citizens in the area, timely and initiatively mobilize necessary forces to respond to incidents; to organize and direct People's Committees of communes, wards or townships to carry out the plan for rescue and remedy of incidents, and at the same time, immediately report to the City People's Committee for their direction and coordination in the rescue/response to environmental incidents and remedy of their consequences.

3. To direct the investigation and verification of environmental incidents occurred in the area of districts, towns, or request to the competent local authorities; to give proposal to the City People's Committee and concerned departments, sectors on measures to prevent and rescue, to minimize damages caused by environmental incidents. To announce to people the results of remedy of

environmental incidents and damage compensation rates by the owners of establishments causing incidents for their information, monitoring and check.

4. To actively coordinate with other departments, agencies, sectors of the City and authorized agencies to handle environmental incidents occurring in their area or areas bordering adjacent districts; to report to the City People's Committee in case of exceeding the authorization given.

Article 13. Responsibilities of relevant departments

1. Department of Natural Resources and Environment:

a) To lead and guide People's Committees of districts, towns to develop plans for the prevention of, response to, and remedy and handling of environmental incidents.

b) To instruct professional knowledge and skills in investigation and verification of environmental incidents, assessment and determination of damages, completion of legal documents; to request owners of establishment causing environmental incidents to compensate for damages caused at the request of the People's Committees of districts and towns.

c) To preside over the organization of education, professional training on the plans for prevention, response to, and remedy of environmental incidents for specialized forces of district-level People's Committees; to organize the propaganda, public education, dissemination of knowledge on risks, threats of environmental incidents for proactive prevention and response.

d) To preside over and coordinate with other departments, sectors and related agencies for handling environmental incidents occurred in the area of inter-districts, inter-provinces and report to the City People's Committee.

e) To promptly report to the City People's Committee and MONRE on the serious and extremely serious environmental incidents for their direction, and propose emergency measures to respond to the incidents; Periodically every 6 months and annually, report the implementation status and results of implementation of plans for prevention, response to, and remedy and handling of environmental incidents by the People's Committees of districts, and of inter-provincial environmental incidents.

2. Other Departments, sectors: to base on their functions and duties to coordinate with DONRE and People's Committees of districts to timely mobilize forces/manpower, means, equipment for handling and remedy of the consequences of environmental incidents occurred in the city area.

3. Socio-economic organizations: organizations and individuals in the country and abroad investing in equipment, facilities for the rescue, response to environmental incidents and environmental protection in Vietnam under the provisions of law shall be responsible for implementing the mobilization of the City People's Committee and People's Committees of districts and towns; People's Committee of communes, wards and townships.

CHAPTER V
IMPLEMENTING PROVISIONS

Article 14. Commendation and Reward

Organizations and individuals having achievements in the response to and handling of environmental incidents shall be commended and rewarded in accordance with the relevant regulations.

Article 15. Handling of violations

Organizations and individuals defined in Article 2 of this Regulation if failed to implement the responsibilities prescribed in this Regulation shall, depending on the nature and seriousness of the violation, be handled according to regulations of the law.

Article 16. Implementing Provisions

During the implementation of this Regulation, if any difficulties arise, the Departments; People's Committees of districts and towns; People's Committees of communes, wards, townships, and organizations and individuals concerned are requested to reflect to DONRE for their review, summary and report to the city People's Committee for consideration, amendments and supplements in accordance with the actual situation.

ON BEHALF OF THE HANOI CITY PEOPLE'S COMMITTEE

FOR CHAIRMAN

VICE CHAIRMAN

Annex 5 Profile of Oil Spill Response Plan in Quang Ninh Province

1. Classification of Oil Spill Incidents and Responses

1) General

Pursuant to Decision No. 129/2001/QD-TTg (dated 29th August 2001) and Decision No. 103/2005/QD-TTg (dated 12th May 2005) of the Prime Minister, oil spill incidents have been classified into 3 levels from Level I to Level III, based on the volume of spilled oil into the environment, as follows:

- Level I: Less than 100 tons
- Level II: From 100 to 2,000 tons
- Level III: Over 2,000 tons

According to statistics of occurred oil spill incidents in waters in Quang Ninh Province so far, oil spill incidents often occurs at the Level I and the Level II. Oil spill incident with the Level III may happen, possibly.

Based on the 3 levels of oil spill incidents, series of responses against oil spill incidents are implemented, as follows:

2) Oil Spill Incident at the Level I

When oil spill occurred at the entity, the entity owner must organize and mobilize the manpower, facilities and equipment of the entity or contracted manpower, facilities and equipment from other unit to response the incident, promptly.

In case the oil spill exceeds the capacity of the entity, or the local human resources do not meet to responding the spill by itself, the entity must promptly report to the managing agency and QN PPC for support. The entity should make a plan for the mobilization of facilities for such incident and the entity owner is responsible for the site commanding of oil spill.

In case of serious oil spill or the oil spill occurred in priority areas for protection, in order to respond promptly, a head of the agencies that are responsible for the site commanding to be allowed to mobilize necessary forces and means to respond immediately, and report to PPC and the NSRC to have a timely direction and coordination.

2) Oil Spill Incident at the Level II

In case oil spill occurred is exceeding capacity of response of entity or it is not belongs to direct responsibility of entity such as natural disasters and collision incidents or due to oil from other places drifted to the locality, the chairman of PPC is responsible to command or assigns another person to command response on the spot according to planned scheme. At the same time, the chairman of PPC requests to urgently mobilize the necessary resources of the enterprises, units and the sectors in the Province as well as Oil Spill Response Center in Northern Area for responding.

Responsible agency to assist the chairman of PPC for oil spill incidents is DONRE.

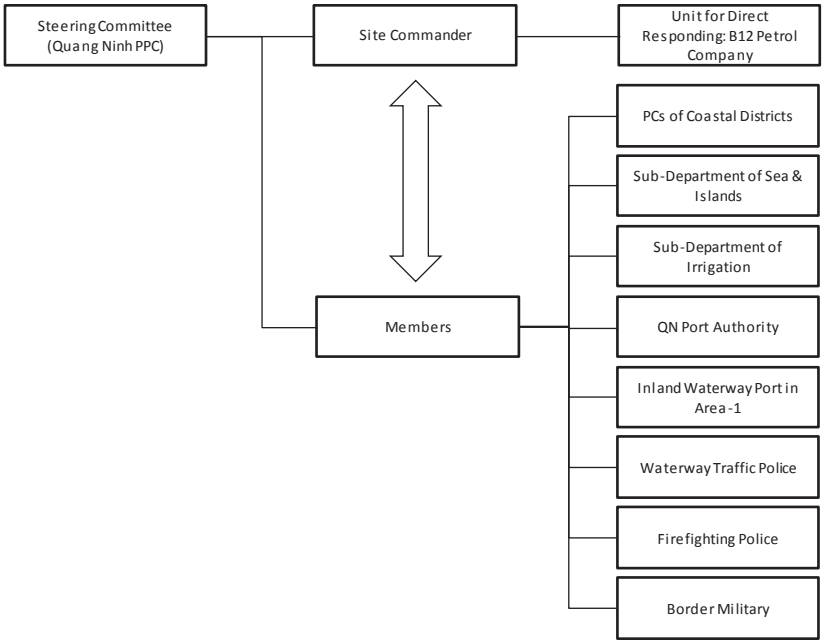
3) Oil Spill Incident at the Level III

In case of oil spill occurred particularly serious, PPC must report promptly to the National Committee for Search and Rescue. The NSRC directs, and coordinates with concerned agencies to organize response. At the same time, to mobilize the responding forces under several ministries, industries and enterprises in locality together for response.

In case of oil spill is exceeding the responding capacity of the domestic forces, the NSRC requests Prime Minister for consideration and decision to get support from regional or international responding organizations.

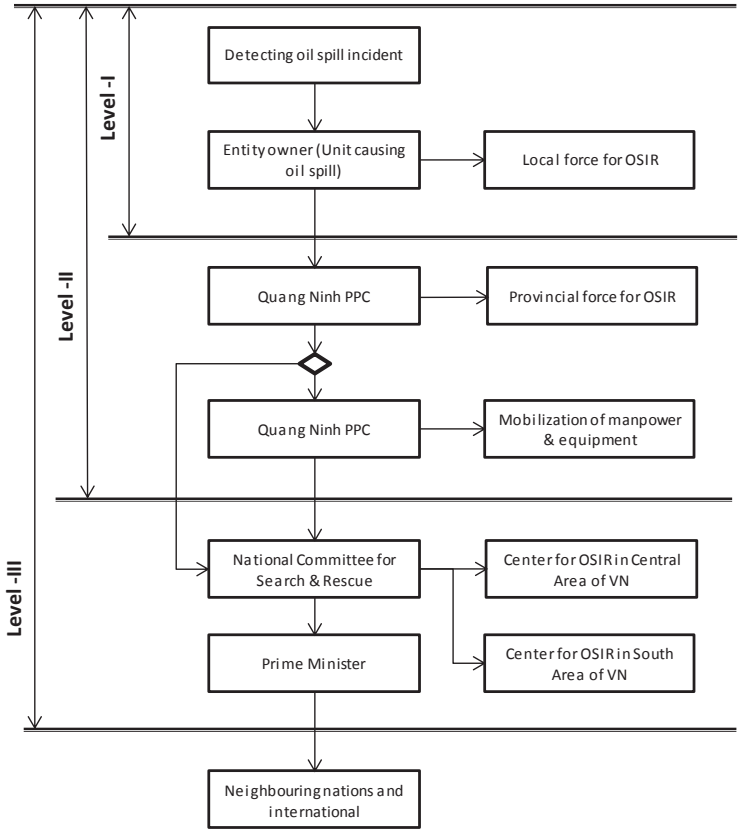
2. Provincial Organization for Responding Oil Spill Incident

Quang Ninh Province establishes the following organization under the PPC, to respond against oil spill incidents:



3. Mobilization Flow of Oil Spill Incident Response

Mobilization against oil spill incident is made according to the classification of regional, provincial and national levels as follows, depending on the level of oil spill:



4. General Site Response Activities against Oil Spill

The site response activities against oil spill are taken, generally according to the following procedures:

<1> Determine precisely location of the incident.

<2> Determine location of oil spill source and immediately stop leaking from the oil source.

<3> Evaluate impacted area caused by oil spill.

<4> Dispatch response forces (B12 Petroleum Company, etc.) for oil collection.

<5> Report to Quang Ninh DONRE on oil spill incident response activities.

<6> For collision incidents, the owner of the facility has to act under instructions of the provincial SC for ROSI during the incident (e.g. pumping oil to other storage facility).

<7> Control the moving direction of spilled oil out of affected area that largely influences the environment and ecosystem (mangroves, agriculture production, aquaculture area, etc.).

<8> Response operation is completed when all spilled oil has been fully collected and simultaneously absolute stop is done at oil spill source.

<9> Assessment of environment damages after the incident, cleaning the environment.

<10> Consider expenses of incident handling and carry out relevant compensation, handling under the provision of the law.

5. Investment Plan for Equipment Procurement for Oil Spill Incident Response

The Oil Spill Response Plan in Quang Ninh Province has developed the following investment plan for procuring necessary equipment with a total amount of 3,690 million VND.

No.	Equipment	Quantity	Unit in Charge	Procurement Year	Cost (million VND)
1	Oil containing buoy for inshore and offshore	2,000 m	B12 Oil Port	2012	950
2	Water spray equipment of high-pressure type	2 sets		2012 to 2015	800
3	Oil sucking equipment and accessories	4 sets		2012 to 2015	400
4	Oil absorbent materials	4 packages		2014 to 2015	100
5	Canvas	10 sets		2012	150
6	Safety shirt, hat. glove	200 sets	Provincial Border Military, Provincial Military Command	2012 to 2013	
7	Handy Talkies	20 sets		2012	40
8	Special Cloths	50 sets			250
9	Oil Storage Tank	4 sets		2012 to 2013	800
10	Phone, Fax, Laptop C/P, Movie Camera, GPS	1 set	DONRE	2012	200

6. Operation Schedule of Oil Spill Response Plan

The Oil Spill Response Plan in Quang Ninh Province is going to start along the following operation plan:

No.	Activity	Start	Completion	Unit in Charge	Estimated Expense (million VND/year)
1	Dissemination of Oil Spill Response Plan to related institutions and units	2012	2012	DONRE	300
2	Procurement of equipment and device for response activities	Starting from 2012	To be conducted on a regular basis.	DONRE, Financial Department, Border Guard Military, Local PCs, Port Authority	600
3	Training of key forces for response operation	Starting from 2012	To be conducted Annually.	DONRE, Boarder Guard Military, District DONREs, Entities with possible oil spills.	150

Note: This profile is formulated by WG-1, by extracting core parts from Plan of Oil Spill Response in Quang Ninh Province (developed by Quang Ninh DONRE, 2012).