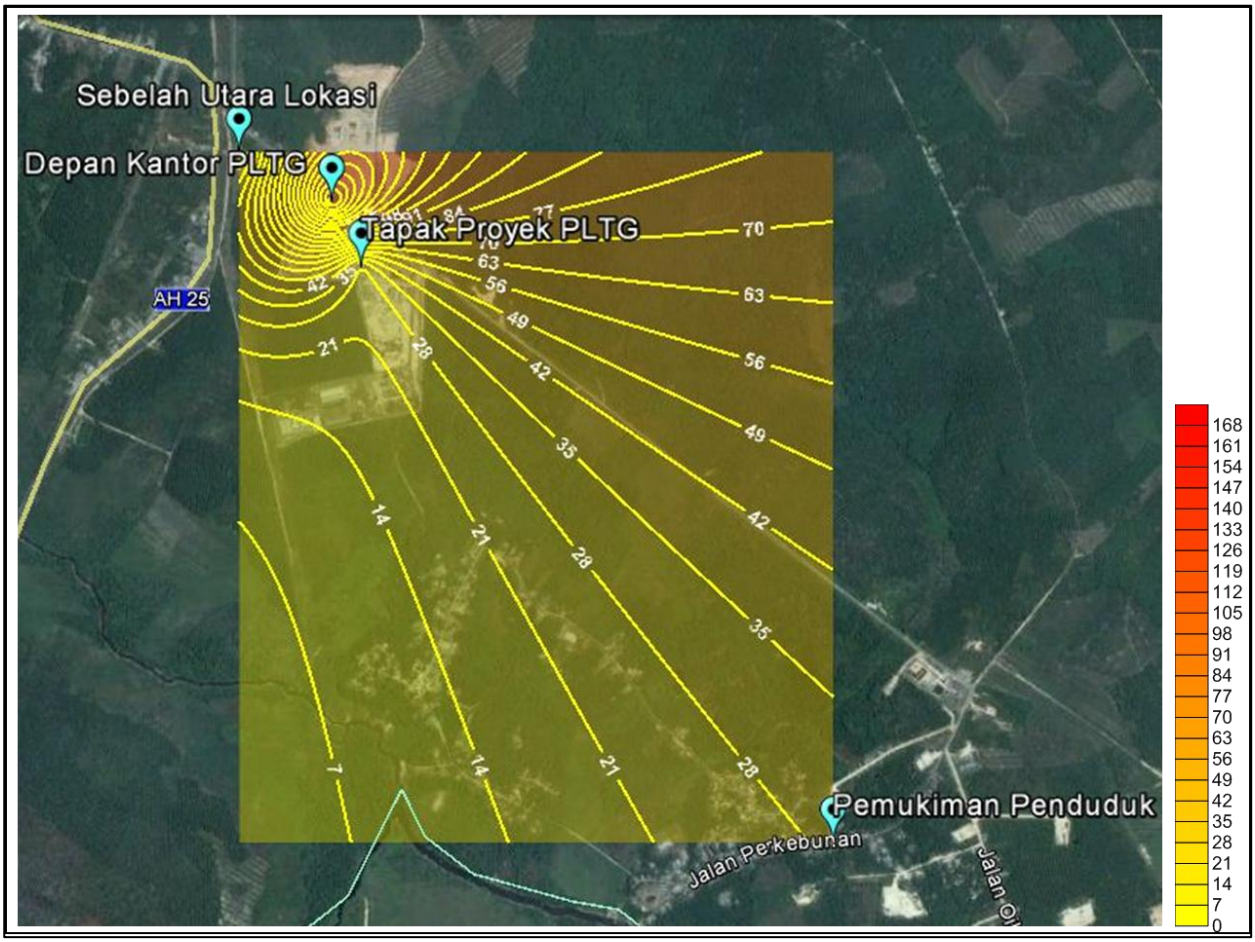
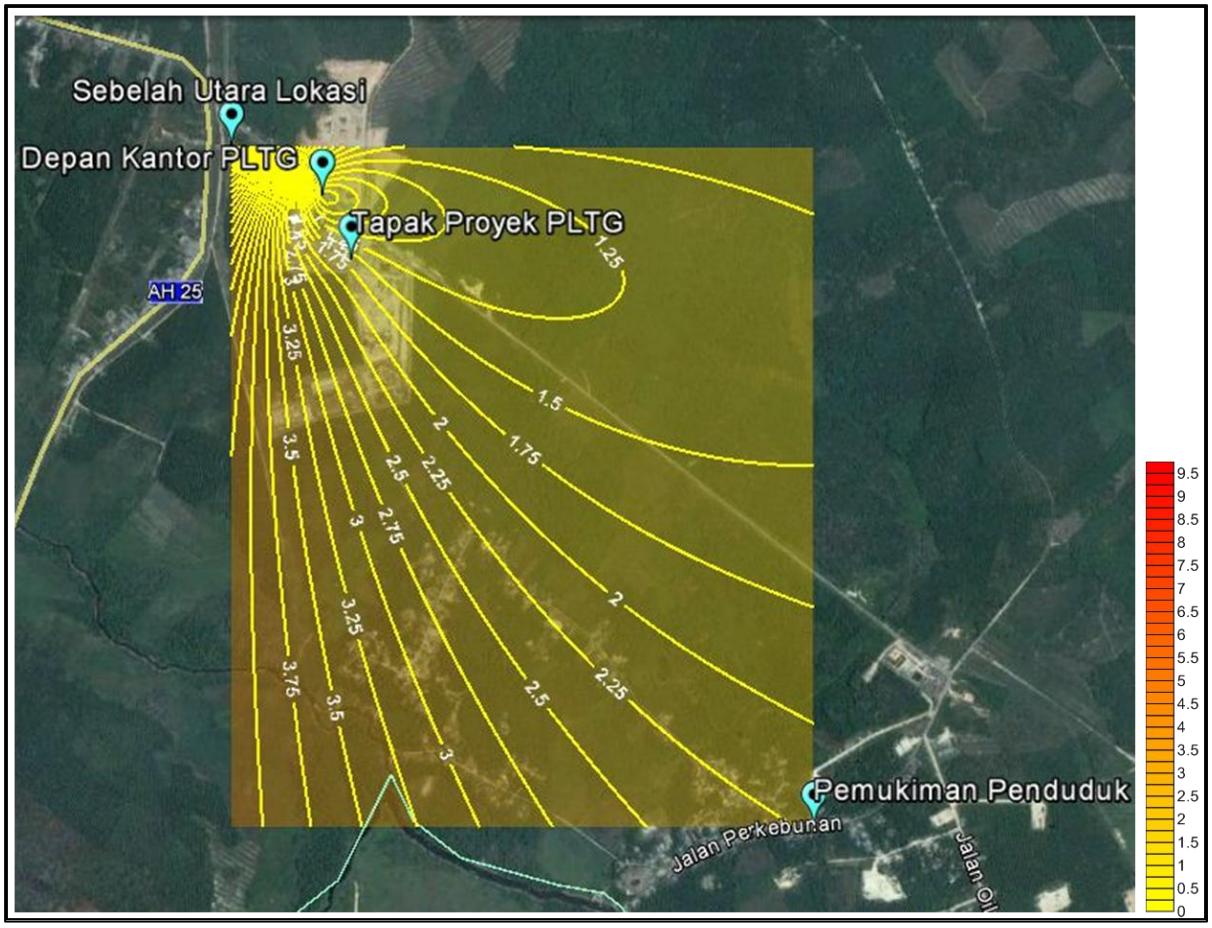
The table above shows the results of laboratory analysis of the ambient air was measured at several locations, both on-site Power Plant PLTG/PLTMG and off site (settlement), where all the measured parameters is still in accordance with the quality standards set PP 41/1999 on Air Pollution Control. The results of the monitoring of ambient air measurement in March 2014 is compared to the baseline and monitoring in December 2013 has not shown any influence on the activities of the Power Plant PLTG/PLTMG.

From the measurement results were also seen their content variation of several parameters between periods of ambient air quality measurements, such as the parameters of SO_2, NO_2, O_3, noise. However, all parameters measured air quality is in accordance with the standard set. It can be concluded that to date monitoring activities of the Power Plant PLTG 2014 period March PLTG/PLTMG Duri not produce significant impacts on ambient air quality deterioration. Parameter distribution pattern of dust, SO_2, NO_2 and O_3 environmental baseline measurement results (generating capacity of the Power Plant PLTG/MG of 160 MW) will be described below.



Picture 2. 1.
The distribution pattern parameter Dust Nearby Power Plant PLTG/MG Duri

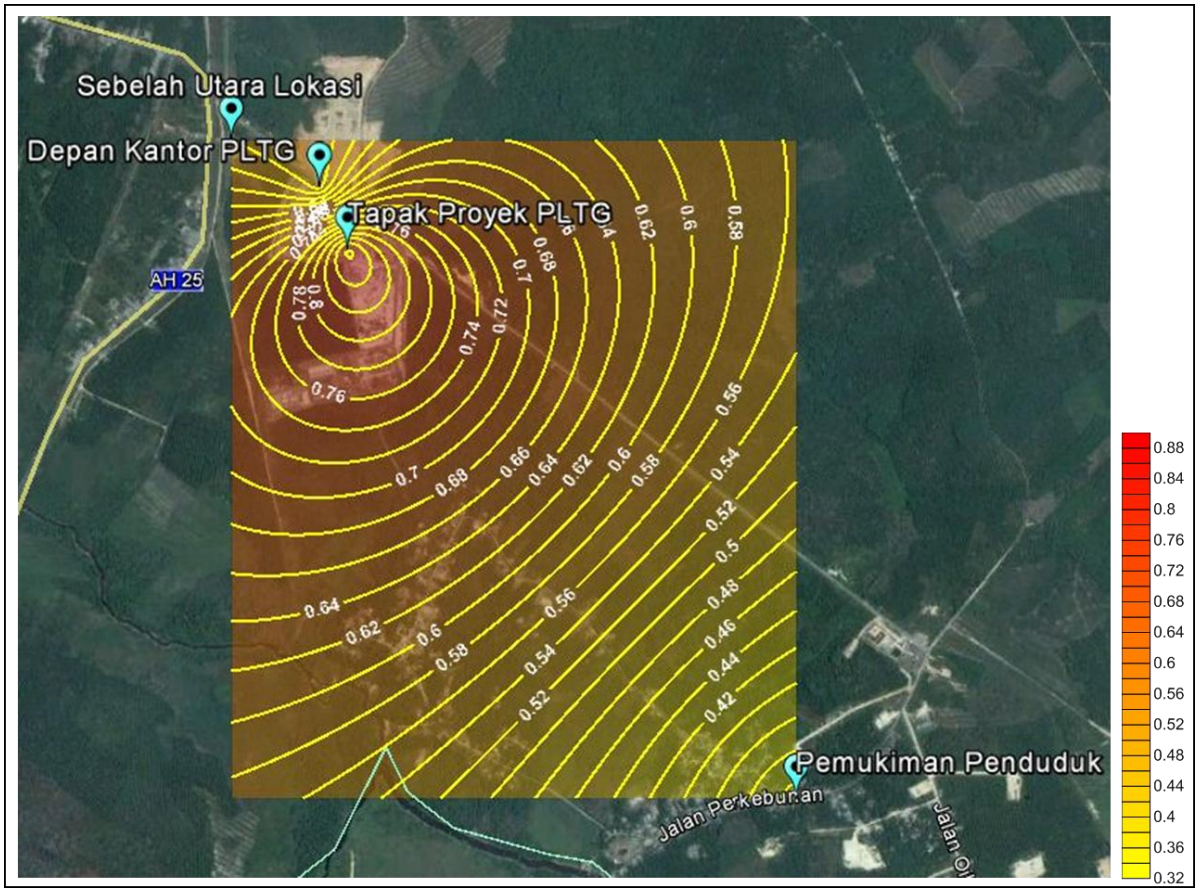
Picture 2.6. shows the distribution pattern parameters of dust in the vicinity of the Power Plant PLTG/MG Duri. In the Picture visible if the distribution of the largest dust comes from front office Power Plant PLTG/MG Duri. The value of the dust is spread to several locations in the vicinity of the Power Plant PLTG/MG Duri ie a location at a Power Plant PLTG/MG Duri, north Power Plant PLTG/MG Duri and surrounding residential areas. The amount of the distribution from the front office due to the Power Plant PLTG in front of a Power Plant PLTG/MG Duri is a normal road traversed by the surrounding community. Besides the distribution of dust can also be affected by wind direction and speed. And when seen from the distribution pattern of the dust parameter, then the wind direction at the time of measurement is to the southeast.



Picture 2. 2.
The distribution pattern parameters Nearby Power Plant PLTG SO2 / MG Duri

For SO_2 parameter distribution pattern can be seen in Picture 2.3. Picture shows if the distribution pattern of SO_2 parameter similar to the parameter distribution pattern of dust. Wherein the further sampling locations starting from locations north Power Plant PLTG/MG Duri, front office Power Plant PLTG/MG Duri, the Power Plant PLTG/MG Duri and settlements around, look if the value of the parameter SO_2 getting smaller. It shows if the influence of the Power Plant PLTG/MG spines on the surrounding environment does

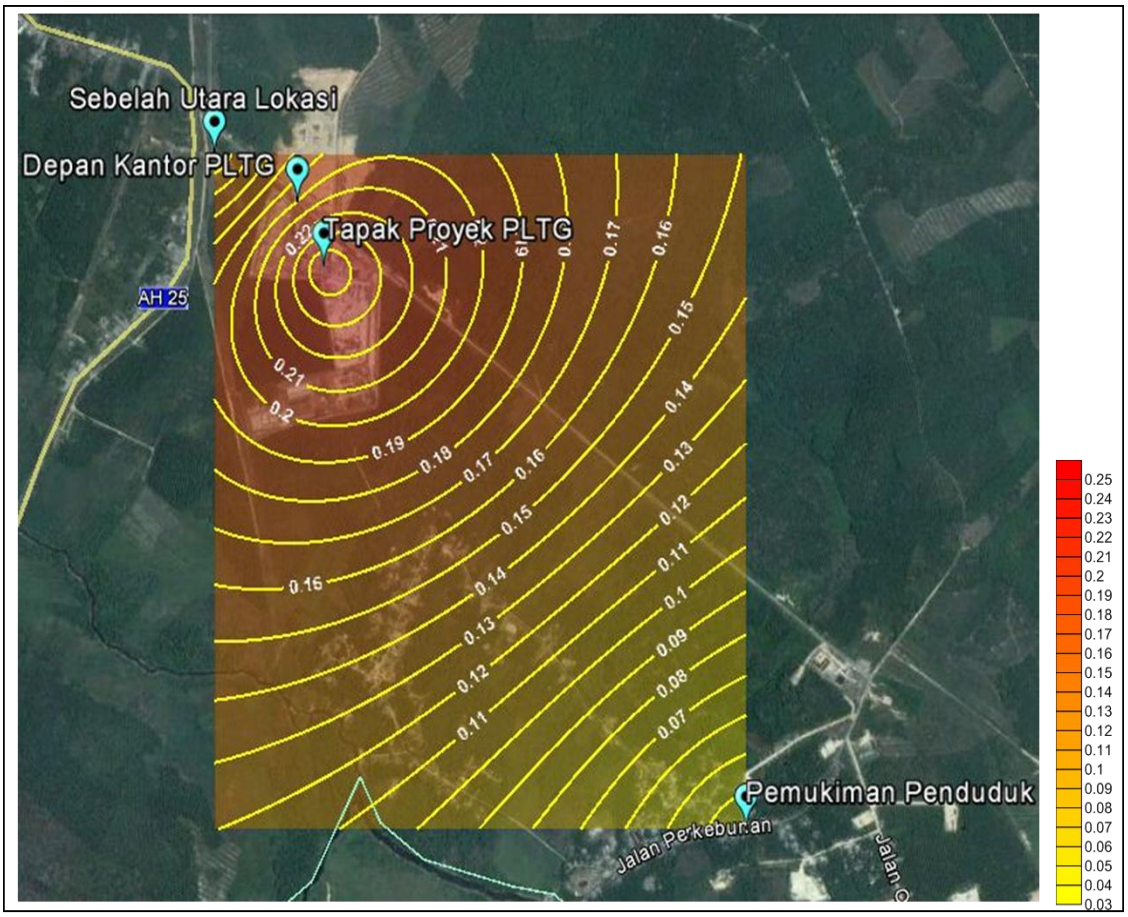
not impact too great. Similarly, the distribution pattern of the parameters of dust, SO_2 distribution pattern is also affected by wind direction and speed, where the wind direction at the time of measurement is to the southeast.



Picture 2. 3.
The distribution pattern Parameter NO_2 Nearby PLTG/MG Duri

NO2 distribution pattern of parameters can be seen in Picture 2.4. Picture of distribution patterns can be seen if the value of the largest NO_2 is on site at the Power Plant PLTG/MG Duri. Then the value of the spread to locations around the power plant, namely the front office PLTG/ MG Duri, next to the north Power Plant Power PLTG/MG Duri and residential areas surrounding the location of the Power Plant power plant/MG Duri. From the distribution pattern can be seen if the location of the settlement value of the parameter distribution of NO_2 is smaller than the other sites. With these values, the impact of the Power Plant PLTG/MG Duri to the location of settlements is not too big.

O_3 distribution pattern of parameters shown in Picture 2.5 has a distribution pattern similar to the distribution of NO_2 parameter. Where the value of the largest concentrations of O3 parameter distribution is at the location of the Power Plant PLTG/MG Duri. And for the smallest value of the concentration distribution of O_3 is at a location parameter settlements. Thus, the same as other parameters (Dust, NO_2 and SO_2), the value of the distribution of the parameters of the Power Plant PLTG/MG Thorns also has little impact on the surrounding environment too large, mainly residential neighborhood.



Picture 2. 4.
The distribution pattern parameter O_3 Nearby Power Plant PLTG/MG Duri

Based on the pattern of distribution of air over several parameters, it can be said if the Power Plant PLTG/MG Duri no effect (impact) is large (significant) around the location, especially the location of settlements. Thus, the air quality around the location of the Power Plant PLTG/MG Duri for the parameters dust, SO_2, NO_2 and O_3, said to be good and remains below the threshold (standard quality) in accordance with Regulation No. 41 Year 1999 on Control Air Pollution.

2.1.3. Geologi Regional

Based Regional Geological Map Sheet Dumai and Bagan Siapi fire skala1: 250,000, consists of sedimentary rock units ranged from age to age Quarter.formasi tertiary rocks are the oldest Farmers Formation (Tup), formed by the deposition of gray-green to gray stone bioturbated carbon Mud, tufaceous localy. Grained silt small stones and sand. Wood fragments of greenish-gray clay stone ash. Formasi Farmers are the Pliocene age.

Formation Minas (Qpmi) Kaolintte, limonite softmud veined stone, silt stone. sand and gravel. Major events in the region Bangko, Duri area, Pick up/Tandun Field and depositional environment paralikke Fluviatile. Formation Minas is a Pleistocene age. Unitalluvium Lama (Op) consists of recycled and partly lithified clay, silt, sand, gravel local. Major events in the southern coastal plain and field Pingir.

Morphology undulating hills located in the northern part of the action plan, with a ground surface ranging from 50 m to 400 m above sea level, the Farmers Formation.

2.1.4. Geotechnical Conditions

Generally, the top layer around a depth of 0 m to 30 m is dominated by a layer of sand soil loose to medium density clay or sandy clay layers and stiff to very stiff. Below a depth of 30 m, a layer of hard clay till very loud expected to become the barrier bearing pile foundation.

2.1.5. Water Quality

Mandau River is located in the southern part of the location of the Power Plant PLTG/MG Duri, who has a width of the river ranges from 20-30 meters in depth during the rainy season reaches ± 5-7 meters, while in the dry season only ± 3-5 m. Creeks Mandau found around the site such activities Pelintai River

.a. Groundwater

The results of the measurement of groundwater quality in the vicinity of the Power Plant PLTG/MG spines on observations in December 2013 and March 2014 can be seen in the table below.

Tabel 2. 1.
Ground Water Quality Measurement Results At Observations Month of December 2013 and March 2014

No.	Parameter	Unit	BM*	Measurement Results		Rona Home
				December 2013	March2014	
I	**Physics**					
1	Temperature	°C	± 3°C	25	28 - 32	25,0
2	TDS	mg/L	maks. 500	92 - 138	60 - 74	100
3	TSS	mg/L	-	14 - 20	16 - 18	-
II	**Chemistry**					
1	pH	-	6.5 – 9,0	5,8 - 6,8	5,4 - 7,1	5
2	Sulfat	mg/L	400	2 - 3	2 - 15	3
3	Nitrit	mg/L	1,0	0,004	<0,0002 - 0,0003	0,7
4	Nitrat	mg/L	10	0,4 - 2,0	<0,0025 - 0,1	1
5	Sianida	mg/L	0,1	0,002 - 0,006	0,002 - 0,006	0,02
6	Kadmium	mg/L	0.005	<0,0031	0,001	ttd
7	Timbal	mg/L	0.05	<0,0017	<0,0017	ttd
8	Zinc	mg/L	15	<0,0121	<0,0121	15
9	Copper	mg/L	-	<0,0172	<0,0172	<0,02
10	Iron	mg/L	1,0	<0,0195 - 0,8	<0,0195 - 0,5	0,6
11	Mangan	mg/L	0,5	<0,0248 - 0,004	<0,0248 - 0,004	<0,02

Source: Implementation Report RKL-RPL Power Plant PLTG/MG Duri (March 2014)
Information :
EQ = Environmental Quality Standards
* = Drinking Water Quality Standard Quality Permenkes No. 416/Per/IX/1990

Based on the results of laboratory analysis of ground water samples, most of the key parameters is still below the threshold value set. The measurement results on the ground water quality monitoring in March 2014 is compared to the baseline and monitoring in December 2013 has not shown any influence on the activities of the Power Plant PLTG/PLTMG.

From the table above shows the variations in the levels of some parameters of groundwater quality in the vicinity of the location of activities, such as TDS, pH, and nitrate. However, all water quality parameters measured soil still in accordance with the specified standard. It can be concluded that the monitoring period until March 2014, activities of the Power Plant PLTG/PLTMG Duri not produce significant impacts on groundwater quality degradation.

b. River Water (Water Agency Recipient)

River water quality measurements performed at Mandau River and River Pelintai which is the recipient body impact water quality around the location of the Power Plant PLTG/MG Duri. The results of measurements of water quality (Water Agency Recipients) are presented in Table 2.8. and Table 2.9.

Table 2. 2.
Measurement Results At Saber River Water Quality Observations Month of December 2013 and March 2014

No	Parameter	Satuan	BM	Hasil Pengukuran		Rona
				Des 2013	Maret 2014	
I	PHYSICS					
1	Temperature	^{o}C	dev 3	25	30	25
2	Turbidity	NTU	-	4 - 10	5 - 7	8 - 19
3	TDS	mg/L	1000	78 - 88	58 - 78	66 - 154
II	CHEMISTRY					
1	pH	-	6 - 9	5 - 7	5 - 6	5
2	BOD	mg/L	6	0,2 - 44	0,2 - 0,5	0,8 - 28
3	COD	mg/L	50	<1,9 - 129	41 - 101	<1,9 - 71
4	P Total	mg/L	1,0	0,01 - 0,1	0,1	0,02 - 2,2
5	Nitrat	mg/L	20	0,7 - 5,0	1 - 4	1 - 9
6	Khrom (VI)	mg/L	0,05	0,007 - 0,02	<0,0005 - 0,006	-
7	Copper	mg/L	0,02	< 0,0172	< 0,0172	<0,02
8	Timbal	mg/L	0,03	< 0,0017	< 0,0017	ttd
9	Zinc	mg/L	0,05	<0,0121	<0,0121	-
III	ORGANIC CHEMISTRY					
1	Oils & Fats	µg/L	1000	1000 - 17800		2200 - 85800

Source: Implementation Report RKL-RPL Power Plant PLTG/MG Duri (March 2014)

Tabel 2. 3.
River Water Quality Measurement Results Pelintai On Month observations in December 2013 and March 2014

No	Parameter	unit	BM	Measurement Results	
				December 2013	March 2014
1	Temperature	^{o}C	dev 3	25	30
2	Turbidity	NTU	-	6 - 10	4 - 6
3	TDS	mg/L	1000	70 - 84	94 - 94
1	pH	-	6 - 9	5	6
2	BOD	mg/L	6	5 - 44	5 - 44
3	COD	mg/L	50	30 - 129	15 - 38
4	P Total	mg/L	1,0	0,1	0,01 - 0,02
5	Nitrat	mg/L	20	1 - 5	0,4 - 1,0
6	Khrom (VI)	mg/L	0,05	0,007 - 0,02	<0,0005 - 0,003
7	Copper	mg/L	0,02	< 0,0172	< 0,0172
8	Timbal	mg/L	0,03	< 0,0017	< 0,0017
9	Zinc	mg/L	0,05	<0,0121	<0,0121
1	Oils & Fats	µg/L	1000	1000 - 17800	1800 - 4200

Source: Implementation Report RKL-RPL Power Plant PLTG/MG Duri (March 2014)
Information
SQ = Standard Quality (PP No. 82 year 2001 Class III)

From the table above shows the variations in the levels of some parameters of water quality around the location of activities, such as BOD and COD. However, all water quality parameters measured river still largely in accordance with the standard set, so it was concluded that the current monitoring period until March 2014 has not been a significant impact on the water quality of the river, both river and river Mandau Pelintai.

c. Wastewater

To determine the quality of waste water, Power Plant PLTG/MG Duri, then do the sampling and analysis in the laboratory. Wastewater quality measurement results are presented in the table below.

Tabel 2. 4.

Results Measurement of Water Quality Waste Gas Power Plant PLTG/PLTMG Thorns On Month observations in December 2013 and March 2014

No	Parameter	Unit	BM*)	Measurement Results	
				December 2013	December 2013
1.	TOC	mg/L	110	30,0	18
2.	Oils & Fats	mg/L	10	9,0	0,6

Source: Implementation Report RKL-RPL Power Plant PLTG/MG Duri (March 2014)
Information
SQ = Standard Quality (LH Candy No. 08 of 2009 Lamp III)

TP1 = Outlet Liquid Waste Oil Catcher Power Plant PLTG/PLTMG Duri

From the table above shows that the quality of the waste water monitoring in March 2014 showed a decrease when compared to the period of December 2013. This was due to the efforts undertaken by the management of PT. PLN (Persero).

d. Domestic Wastewater

Measurement of domestic wastewater done at Outlet 2 Pos Security Catcher wastewater and water quality measurement results of domestic waste are presented in the table below.

Table 2. 5.
Results of Air Quality Measurement Domestic Waste Gas Power Plant PLTG/PLTMG Duri
On Observation Month December 2013 and March 2014.

No.	Parameter	Unit	BM*)	Measurement Results	
				December 2013	December 2013
1.	pH	mg/L	6 - 9	8,0	7,0
2.	Oils & Fats	mg/L	10	1,0	3,0
3.	BOD	mg/L	100	0,3	3,0
4.	COD	mg/L	-	<1,9	18
5.	TSS	mg/L	100	15	18

Source: Implementation Report RKL-RPL Power Plant PLTG/MG Duri (March 2014)
Information
SQ = Standard Quality (LH Candy No.112 of 2003)
TP1 = Outlet 2 Pos Security Catcher Liquid Waste Gas Power Plant PLTG/PLTMG Duri

From the table above shows that the quality of domestic waste water in the monitoring of March 2014 is varied when compared to the period of December 2013. However, the quality is still below the quality standard that has been set.

2.1.6. Topography

Site development plan Gas Power (power plant) is located on an area of ± 20.6 hectares area and the topography is relatively flat to hilly and has a slope class condition is quite varied (flat-ramps, ramps-wavy-hilly) with slope 0-30 %, the height ranges from 25-50 m above sea level.

2.2. Biological components

2.2.1. Vegetation Land Army

Naturally, the type of ecosystem in the area of the Power Plant PLTG/MG Duri and its surroundings was the formation of lowland tropical rain forest. However, his condition is now transformed into crops such as oil palm and rubber, and a bit of a scrub around the creek. This change is estimated to have occurred>50 years, according to the results of interviews with the local community. Lodging in the area of activity, this change occurred ±20 years.

Observation of the biological aspects of land in this study consists of ground flora and fauna land. For more details, description of each of these aspects can be seen below.

Terrestrial flora observation carried around the construction site of the Power Plant PLTG/MG Duri, Balai Pungut Village, Pingir District. Observations made by the method of browsing and sampling by making plots at locations considered to represent the structure of the existing vegetation. Browsing is intended to determine the distribution of vegetation protected by the government/law and the structure of the existing vegetation. Browsing is done in areas that are expected to be directly affected the condition of the landscape and vegetation, which center around the Power Plant PLTG activity. Since most of the vegetation is cultivated plants and shrubs, the sampling using the plot is limited to observation strata trees and poles. Plot created with nested arrangement of sampling, with a plot size of 20 x 20 m for observation strata trees and 10 x 10 m for strata pole. The number of plots were made by 4 units are distributed proportionally to the type of vegetation.

Species of flora (Vegetation) that grow and are found in the vicinity of the Power Plant PLTG/MG Duri is generally cultivated plants and shrubs. The type of crops cultivated by the society is: palm (Elaeis guineensis) and rubber (Hevea braziliensis). In strata trees, the dominant species are palm oil (NP=259.6%), while the strata poles is dominated by rubber (NP = 108.5%) and Mahang (NP=78.5%), Almost same condition is also found in strata stake dominated by rubber and Mahang. Oil palm plantations located in the project area aged 8-10 years. Existing garden well maintained, but still found wild plants in the shade canopy. The results of the analysis of vegetation strata trees and poles in the area of the Power Plant PLTG project in full can be seen in Table 2.12. and Table 2.13.