UNIVERSITAS NAHDLATUL ULAMA SURABAYA
LEMBAGA PENELITIAN DAN PENGABDIAN KEPADA MASYARAKAT
Kampus A Wonokromo : Jl. SMEA No.57 Tlp. 031-8291920, 8284508 Fax. 031-8298582 – Surabaya 60243
Kampus B RSIJemursari : Jl. Jemursari NO.51-57 Tlp. 031-8479070 Fax. 031-8433670 – Surabaya 60237
Website : unusa.ac.id Email: info@unusa.ac.id

SURAT KETERANGAN

Nomor: 254/UNUSA/Adm-LPPM/VI/2018

Lembaga Penelitian dan Pengabdian Kepada Masyarakat (LPPM) Universitas Nahdlatul Ulama Surabaya menerangkan telah selesai melakukan pemeriksaan duplikasi dengan membandingkan artikel-artikel lain menggunakan perangkat lunak Tunitin pada tanggal 21 Juni 2018

Judul	: Environmental Health Managemenet of Cement Industry
Penulis	: Muslikha Nourma Rhomadhoni, Friska Ayu, Rizka Novembrianto
Identitas	: Proceeding of Surabaya International Health Conference, Vol 1, No 1 (2017), hal 497-501
No. Pemeriksaan	: 2018.06.22.45

Dengan Hasil sebagai Berikut:

Tingkat Kesamaan diseluruh artikel (*Similarity Index*) yaitu **0%**

Demikian surat keterangan ini dibuat untuk digunakan sebagaimana mestinya

Surabaya, 22 Juni 2018
Ketua LPPM,

Dr. Istas Pratomo, S.T., M.T.
NPP. 1608107

muslikha-sihc-2017.docx

by

Submission date: 21-Jun-2018 11:49AM (UTC+0700)
Submission ID: 977453367
File name: muslikha-sihc-2017.docx (47.87K)
Word count: 2146
Character count: 11438

ENVIRONMENTAL HEALTH MANAGEMENT CEMENT INDUSTRY

Muslikha Nourma Rhomadhoni*, Friska Ayu *

***Correspondency:** Email: muslikhanourma@unusa.ac.id, Phone Number: 085655690928
Public Health Program, Faculty Of Health, Nahdhatul Ulama University Of Surabaya.

Background:
Increased development in Indonesia in line with the needs of raw materials for the construction of a building. Operational cement industry is done to meet the need for building materials such as cement. This will be directly proportional to the waste produced by the cement company. This study aims to examine the environmental management aspects of the Cement Company.
Method: *This study uses qualitative research that is an analytic survey*
Result: Potential impacts that arise in the cement industry are: wastewater, noise, and dust. Sources of waste water When the operation comes from the MCK employees. The quality of the waste water showed that the BOD content of 14 mg / L and COD was 35 mg / L. These results on the parameters of BOD and COD have met the quality standards of East Java Governor Decree no. 12 of 2013. Garbage generated is generally waste result of office activity and cement packing of cement damaged or returned by consumer. For B3 waste or B3 waste, cement indsutry has made storage or TPS B3, and in the process of obtaining Permit for temporary storage of B3 Waste. Operational air pollution management uses a bag filter controller that serves as a cement dust prevention so as not to fly anywhere. In addition, there is also a Dust Collector as a dust collector assisted blower in suctioning dust on each production machine that has the potential to produce cement dust. the noise levels occurring at some point do not meet the Permenaker's quality standard. 13 / Menaker / X / 2011. Noise comes from the activities of production machines and packing machines.
Conclusion: Waste management cement industry results is: Management and monitoring of wastewater and clean water has meets environmental quality standards, Solid Waste Management and Monitoring differentiated between organic and inorganic waste, Air Pollution Management and Monitoring : Results The ambient air quality in second semester (operational activities) is better than the ambient air quality in first semester (construction activity). The results of ambient air quality in first semester and second semester are still below the quality standard. Chimney emission quality results under environmental quality standards. Noise Management and Monitoring still exceeds the quality standard so that it is necessary to increase noise management effort arising from cement industry operational activities

Keywords**: **environmental health, management, cement industry.

INTRODUCTION

METHOD

This study uses qualitative research that is an analytic survey

RESULT AND DISCUSSION

Potential impacts that arise in the cement industry are: wastewater, noise, and dust. Sources of waste water When the operation comes from the MCK employees. In the processing is done in a temporary container which is then flowed to WWTP. To avoid wastewater pollution, routine monitoring and sampling of drainage channels are conducted. Other waste water (black water) produced is managed with septic tanks. In addition, in the management of liquid waste routinely monitor the sewer so that no deadlock occurs. Other liquid waste other than domestic activities is the handling of used olie. Olie used this is still needed and accommodated in the drum, then olie used for lubrication purposes machine machine located in the factory. The rest is returned to other parties who have authority in handling waste olie waste.

Table 1.1 Results of Quality Analysis of Domestic Wastewater

No.	Parameter	Result	Standard *	Units
1	pH	6,86	6-9	pH unit
2	BOD	14	30	mg/L
3	COD	35	50	mg/L
4	TSS	3	50	mg/L
5	Oil and Grase	<1	10	mg/L

Source: PT. Envilab Indonesia, 2016.

[#]Keputusan Gubernur Jawa Timur No. 12 Tahun 2013

The quality of the waste water showed that the BOD content of 14 mg / L and COD was 35 mg / L. These results on the parameters of BOD and COD have met the quality standards of East Java Governor Decree no. 12 of 2013. BOD shows the amount of oxygen required by microorganisms to decompose dissolved organic matter and some of the organic substances suspended in high water. The predominance of this oxygen demand indicates that domestic wastewater treatment is in accordance with the characteristics of the oraganic load. Monitoring is required every 3 months to know the quality of domestic waste water when operational remains monitored.

Garbage generated is generally waste result of office activity and cement packing of cement damaged or returned by consumer. Efforts are made to overcome is separated between organic and non organic, after separated Solid waste due to damaged cement packing specifically collected which will be recycled, reuse and reduce again by parties who use it. For organic waste result of cement industry collected for later taken to the TPS in the Area. For B3 waste or B3 waste, cement indsutry has made storage or TPS B3, and in the process of obtaining Permit for temporary storage of B3 Waste.

Operational air pollution management uses a bag filter controller that serves as a cement dust prevention so as not to fly anywhere. In addition, there is also a Dust Collector as a dust collector assisted blower in suctioning dust on each production machine that has the potential to produce cement dust. The room has been facilitated with adequate ventilation and no significant impact on air pollution. Testing of ambient air quality is tested on each semester. For workers' protection, every worker wears a mask and safety glasses as a protective device from dust. Air pollution control can

also be overcome by reforestation. Cement industry also do reforestation in the office area or work environment. This minimizes the impact on workers.

Ambient Air Quality Results at the first point that is in the area south can be seen in Table 1.2 and Table 1.3 of meteorological data when sampling the first point as follows:

Table 1.2 Results of Ambient Ambient Air Quality Analysis Area Truck Scale

No	Parameter	Result	Standard*	Units
	Ambien Air quality			
1	Nitorgen dioksida	<16	92,5	µg/Nm^3
2	Sulfurdioksida	<0.4	262	µg/Nm^3
3	Amonia	106	1360	µg/Nm^3
4	Hidrogen sulfida	<0,07	42	µg/Nm^3
5	Dust	0,073	-	mg/Nm^3
6	Hidrokarbon	23,9	160	µg/Nm^3
7	Karbon monoksida	<1000	22600	µg/Nm^3
8	Oksidan	20,3	200	µg/Nm^3
9	Timbal	<0,0004	-	mg/Nm^3

Source : PT. Envilab Indonesia, 2016.
[#] Keputusan Gubernur Jawa Timur No. 10 Tahun 2009

In Table 1.2 Indicates the overall parameters of Ambient Air Quality Analysis Area Truck Scale meets the quality standard. This means that the conditions for working in truck scale areas are safe for human health and the environment.

Table 1.3. Meteorological Data during Ambient Air Quality Analysis Area Truck Scale

No	Metheorology data	Value	Units
1	Themperatur	32,7	ºC
2	Relative Humidity	66,2	%
3	Wind direction	east	-
4	Wind velocity	0,1 – 0,7	m/s
5	Weather	Clear	-

Source : PT. Envilab Indonesia, 2016.

In addition to air pollution management is also done the management and monitoring of emissions in some chimneys contained in cement idnsutry. Monitoring is conducted to determine the significant impacts resulting from the chimney on air pollution. Testing is done by taking sampling from the chimney when the production machines operate. For workers' protection, every worker wears a mask and safety glasses as a protective device from dust. There are 3 stack emission testing points performed. Air Quality Results Emissions at all three points can be seen in Table 1.4 as follows:

Table 1.4 Emision Quality Result Analysis

No	Parameter	Result I	Result II	Result III	standard [#]	units
1	Amonia	<0,13	<0,13	<0,13	400	mg/m^3
2	Gas klorin	<0,003	<0,003	<0,003	10	mg/m^3
3	Hidrogen klorida	<0,5	<0,5	<0,5	5	mg/m^3
4	Hidrogen florid	<0,02	<0,03	<0,02	10	mg/m^3
5	Nitrogen dioksida	46	36	42	1000	mg/m^3
6	Debu	8,3	<1	1,5	350	mg/m^3
7	Sulfur dioksida	7	8	<6	800	mg/m^3
8	Total reduce Sulfu	9,6	12,9	<9,6	35	mg/m^3

	r					
9	Merc	<0,0	<0,0	<0,0	5	mg
1	ury	0006	0006	0006	8	/m³
0	Arse	<0,0	<0,0	<0,0	8	mg
1	nic	03	03	03	8	/m³
1	Anti	<0,0	<0,0	<0,0	50	mg
1	mon	007	007	007	12	/m³
2	Cad	<0,0	<0,0	<0,0	35	mg
1	miu	0002	0002	0002		/m³
3	m	<0,0	<0,0	<0,0		mg
1	Zinc	005	005	005		/m³
4	Timb	<0,0	<0,0	<0,0		mg
1	al	002	002	002		/m³
5	Kege lapan	<20	<20	<20		%

Source: PT. Envilab Indonesia, 2016.
#Keputusan Gubernur Jawa Timur No. 10 Tahun 2009

From Table 1.4 the result of monitoring the emission quality above, it can be seen that all parameters tested have fulfilled the environmental quality standard. This indicates that the production / combustion process occurs in an easy reaction so that the resulting emissions are very small. It is also supported by chimney emission controllers such as Bag House. However, regular monitoring and monitoring is necessary to avoid emission test results that exceed the quality standard.

Noise at operation comes from the activities of production machines and packers. In order to avoid the impact of disturbance to the surrounding community and operational on working hours only. Besides also doing the control of the power of noise (desible) in the surrounding environment in cooperation with the Office of Manpower. For workers' protection, workers wear ear plugs when noise levels are over the limit. At the time of noise measurement during the construction process, there is no noise which means / does not exceed the quality standard. Noise monitoring activities are conducted every 6 months.

Data of environmental noise haze during construction by way of noise sampling with Sound Level Meter method. The sampling shall be carried out by the accredited and regulated laboratory environment agency based on the Regulation of the State Minister of Environment Number 6 Year 2009.

Sampling location is done at 4 points as follows:

1. Point 1 Area Packer with a view to know the noise level at the working environment of employees in receiving noise disturbance at PT. X.
2. Point 2 at the location of Cement Silo area PT. X with the intention to know the noise level of work environment of the employees in receiving noise disturbance in PT. X.
3. Point 3 in Proportion area of PT. X with the intention to know the noise level of work environment of the employees in receiving noise disturbance in PT. X.
4. Point 4 in Mill area of PT. X with the intention of knowing the noise level The working environment in receiving noise interference

Tabel 1.5. Noise Result Analysis

No	Location	Results	Standard#	Units
1	Area Packer	84,9	85	dBA
2	Area Cement Silo	86,4	85	dBA
3	Area Proportion	87,6	85	dBA
4	Area Mill	85,4	85	dBA

Source: PT. Envilab Indonesia, 2016.
#Permenaker No. 13/Menaker/X/2011

Based on Table 1.5 the noise levels occurring at some point do not meet the Permenaker's quality standard. 13 / Menaker / X / 2011. Noise comes from the

activities of production machines and packing machines.

CONCLUSION

Waste management cement industry results is:

1. Management and monitoring of wastewater and clean water has meets environmental quality standards
2. Solid Waste Management and Monitoring differentiated between organic and inorganic waste
3. Air Pollution Management and Monitoring
   a. Results The ambient air quality in second semester (operational activities) is better than the ambient air quality in first semester (construction activity).
   b. The results of ambient air quality in first semester and second semester are still below the quality standard.
   c. Chimney emission quality results under environmental quality standards.
4. Noise Management and Monitoring still exceeds the quality standard so that it is necessary to increase noise management effort arising from cement industry operational activities

RECOMMENDATION

Perform ambient air monitoring for 24 hours during operation for a certain period, to ensure that the activities undertaken by industry is safe for the environment.

REFERENCES

Alaerts, G. dan Sri Sumestri S. 1987.*Metode Penelitian Air*.Cetakan pertama Surabaya.

APHA, 1976.*Standart Method for Examination of Water and Waste Water*.Fourteenth Edition.PHA-AWWA-WPFC Publishing Co., Washington D.C.

Fardiaz, Srikandi, 1992. *Polusi Air dan Udara.* Edisi I, Cetakan I, Yogyakarta: YayasanKanisius.

Mukono. J., 2000, *Prinsip dasar kesehatan lingkungan*, Airlangga University Press, Surabaya

Mukono.J., 2002, *Epidemiologi lingkungan*, Airlangga University Press, Surabaya

Nunung Prihatining Tias, 2009 Efektivitas Pelaksanaan AMDAL dan UKL UPL Dalam Pengelolaan Lingkungan Hidup Di Kabupaten Kudus Tesis Undip

Purba, J. 2002. *Pengelolaan Lingkungan Sosial*. Jakarta: Kantor MNLH-Obor.

Peraturan Pemerintah nomor 27 Tahun 2012 tentang Izin Lingkungan.

Peraturan Gubernur Jawa Timur Nomor 30 Tahun 2011 tentang Jenis Usaha dan/atau Kegiatan yang Wajib dilengkapi UKL-UPL.

Peraturan Bupati Gresik Nomor 1 Tahun 2013 tentang Jenis Usaha dan/atau Kegiatan Yang Wajib dilengkapi UKL-UPL serta SPPL.

Rump, H.H and H. Kirst. 1992. *Laboratory Manual For The Examination of Water, Waste Water, and Soils*. 2 nded, VCH.

Slamet Riyadi, Al. 1992. *Pencemaran Udara.* PenerbitUsahaNasional.

Supraptini. 2002. Pengaruh Limbah Industri Terhadap Lingkungan di Indosnesia. Jurnal Media Penelitian dan Pengembangan Kesehatan. Vol 12 No. 2 Edisi Juni tahun 2002. http://ejournal.litbang.depkes.go.id/index.php/MPK/article/view/1063.

Sucipto, C.D dan Asmadi, 2011, *Aspek kesehatan masyarakat dalam AMDAL*, Gosyen Publishing, Yogyakarta.

Undang-undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup.

muslikha-sihc-2017.docx

ORIGINALITY REPORT

0%	0%	0%	0%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

Exclude quotes	On	Exclude matches	< 1%
Exclude bibliography	On		