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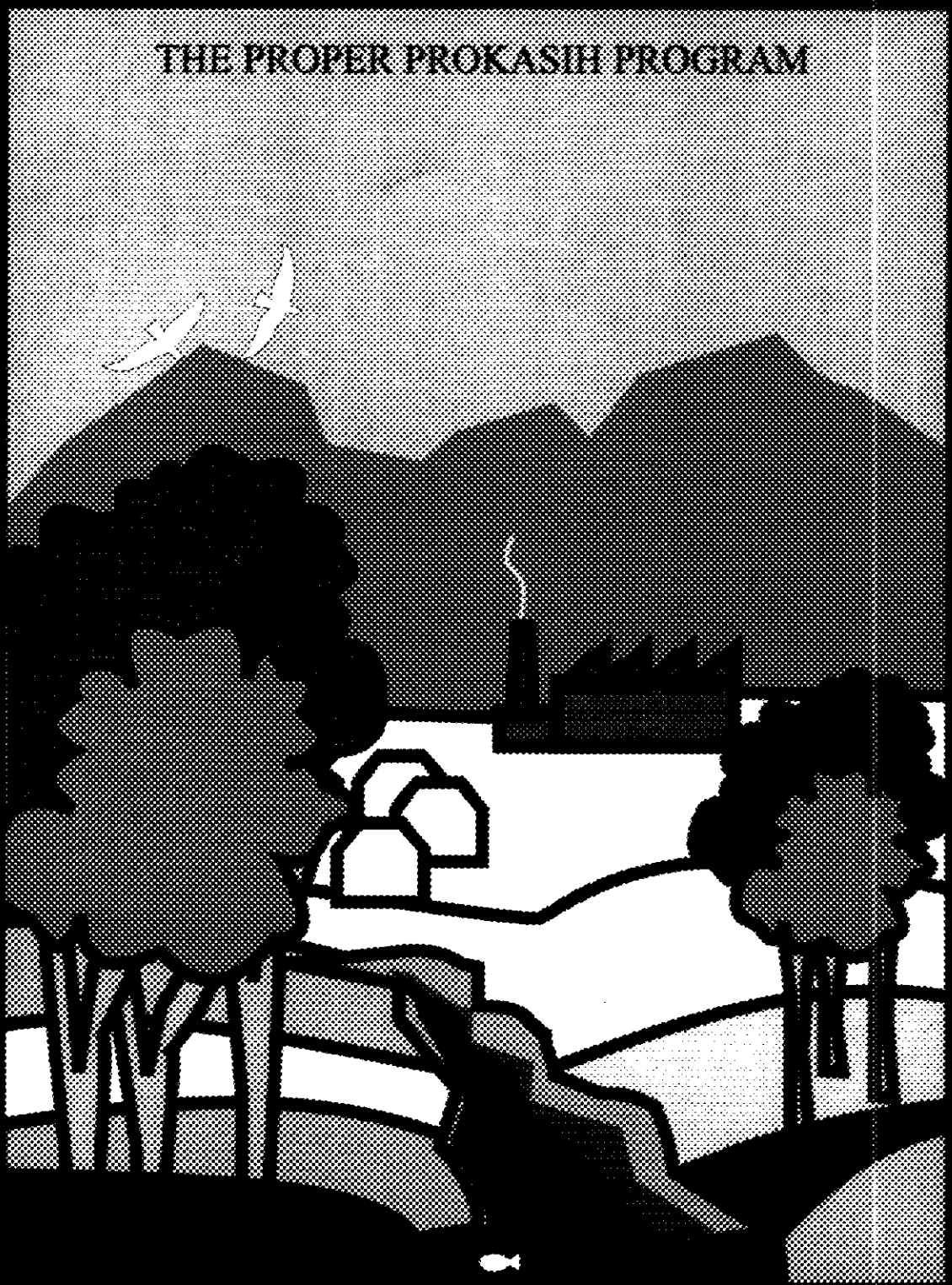
COMMUNITY GUIDEBOOK FOR ENVIRONMENTAL MONITORING

THE PROPER PROKASIH PROGRAM



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COMMUNITY GUIDEBOOK FOR ENVIRONMENTAL MONITORING

The PROPER PROKASIH Program

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FOREWORD

The United States Asia Environmental Partnership Program is pleased to be a participating sponsor of this information kit.

The non-governmental sector worldwide plays an active and increasingly important role in encouraging environmentally responsible business behavior and promoting environmentally sound development. Non-governmental organizations are key players in empowering local communities, promoting popular participation, and fostering practical solutions to environmental problems. For these reasons, NGOs are the logical group for us to work with to encourage greater public participation in constructive (positive) environmental action in Indonesia.

The enclosed materials are designed to supplement and support your local efforts to encourage industries to be environmentally responsible members of your communities. We hope that these materials will help you effectively and constructively exert public pressure on industries within your local communities to change the environmental management decisions and attitudes. We also hope these materials can be used to educate citizens in your communities to better understand the relationships between their environment and their family's health and well-being, and to assist them in constructively participating in encouraging firms to improve their environmental performance.

We hope that the materials presented herein will assist you in working effectively in partnership with BAPEDAL and with industries to bring about cleaner, healthier communities.

Vicki MacDonald

PREFACE

What you are reading now is a rare example of a process which involved government, business, NGOs and the community working to encourage greater public participation in the PROPER PROKASIH program. This was how it happened.

In early 1998, I was asked if EcoLink Center for Business and Environment could prepare some materials and present a few workshop for communities and NGOs on 1) how to work with BAPEDAL to contribute to PROPER ratings, 2) how communities can help to monitor businesses, 3) how communities can submit a claim to BAPEDAL and 4) how to work with RED and BLACK rated firms to improve their ratings.

I thought the best way to achieve these aims was to develop a self-teaching information kit that would present the material in a simple and easy-to-use way so that anybody (even myself) could understand and make use to it.

Since then, as you well know, we have had a new president, a new government and a continuing economic and political crisis. But even before the crisis, the key role of community participation in improving the environment had been recognized and included in our environmental law. Our post-New order period demands even more credible and responsible community participation. We hope this information kit will help to achieve this.

So, despite the obstacles raised by the crisis, here it is. I hope it works for you. If it does, it is because I had nothing to do with producing it. It is the product of a very talented and hardworking team at EcoLink. I would like to thank Asti B. Larasati for achieving the difficult task of both directing the process and contributing to the content. Ruska Prima Putra did everything and did

it well and amazingly fast. The technical part of what you are reading is his work. Tiene Erlina was the glue in administering the process.

But of course, no matter how talented and hardworking, the EcoLink team could not have done it without the support and contribution from many quarters.

We appreciate the funding support from USAEP. Vick MacDonald, the USAEP coordinator, who was unfailingly there with her help and support. And to Shakeb Afsah, International Resource Group, USAEP technical advisor to Bapedal, who made an outstanding professional contribution to the design and development of the PROPER system from its inception.

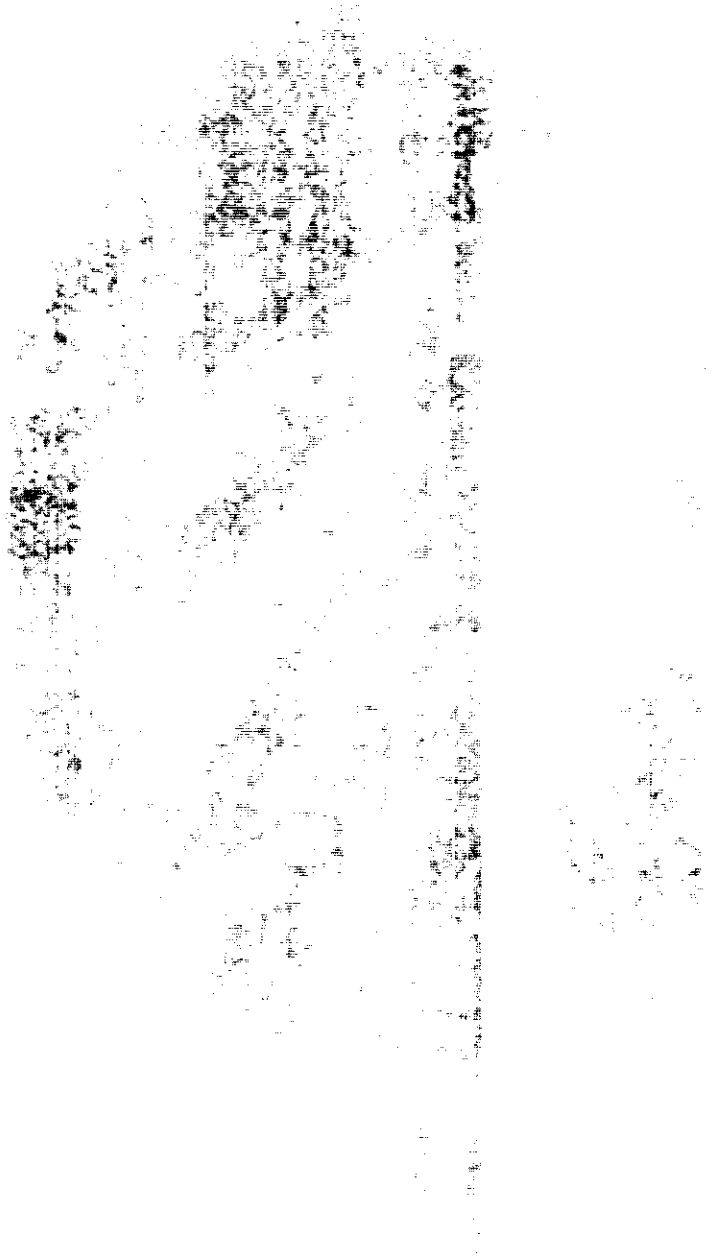
Our thanks go to BAPEDAL for their invaluable contribution and support. Special thanks go to Made, Damayanti, and of course, Nabiel Makarim, BAPEDAL Deputy for Pollution Control.

Two very creative people drew the comics, Stefanus Pramartadjie and Joni Hartono. We hope you enjoy their work as much we do. Thanks to Amanda Katili-Niode from the Syarifa Foundation for helping to edit the comic draft. Also to all those people in the communities at factory sites who have commented on the comic draft. We hope it measures up to your high standards.

In our workshop, many people from business and NGOs worked together and contributed their time, enthusiasm, comments and ideas to make this kit better. There are too many of them to mention here by name but their names are listed elsewhere in the kit. Thank you all. You were great. One of the main aims of EcoLink is to provide a forum in which business and NGOs can work together constructively, so it is always satisfying when it succeeds-as it did on this occasion.

But the process is just beginning. This kit is for you to use - not just to read. If and when you use it, let us know how it works by sending back the feedback form. We will use your input and experience to make it better in the future. We thank you in advance.

A. Derry Habir



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INTRODUCTION

INTRODUCTION

The aim of this guidebook is to empower the community by providing useful information to the public on the PROPER program showing the ways a community can help to safeguard their environment in Indonesia, through citizen monitoring efforts of their environment.

The monitoring of a company's environmental practices by the community does not have to be limited to the companies already in the PROPER program. It also can include those companies that are not yet in the program, so that the PROPER team can obtain information on companies that could be included in the program. In this way, a two-way communication flow can be developed between BAPEDAL and the public, so that BAPEDAL can also be more responsive to its stakeholders, the public in general, the NGOs (non-governmental organizations) and the companies that are the focus of this PROPER program.

In a number of pollution cases, it has been shown that community pressure can be a critical force that can considerably influence the behavior of companies on their environmental management practices. It is for this reason that ways is being sought to include community participation in PROPER by making the program as transparent as possible for the public. This guidebook hopes to provide a set of tools for communities to develop monitoring programs by providing advice on how a community can work constructively with a company so that the company is motivated to improve their environmental management techniques and ultimately their PROPER ratings.

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BACKGROUND ON *PROPER*

(Program for Pollution Control Evaluation and Rating)

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OUR ENVIRONMENTAL PROBLEMS

Environmental degradation in Indonesia is a continuing and growing problem. As in other developing countries, where the level of awareness and understanding of environmental issues is often very low, environmental protection is still regarded as a luxury in Indonesia. The current economic crisis has pushed environmental concerns to an even lower priority level as companies struggle desperately to survive.

A number of misperceptions must be addressed before the long-term consequences and resulting costs of ignoring environmental issues are too great to overcome or ignore:

- The business community, by and large, still believes that environmental management and pollution prevention and the treatment systems and technology needed require high levels of investment. No cost or low cost technology solutions in many cases are available and effective. The time and costs of addressing community complaints and claims are seldom taken into consideration or deemed important.

- Government has been unwilling to apply existing sanctions to companies, fearing that this will slow economic growth and exports if these environmental sanctions and regulations are enforced. Government budgets for environmental management and oversight are, consequently, extremely low and reinforce the current business perception of inefficient environmental enforcement.

In Indonesia, negative impacts of industrial processes on surrounding communities have occurred for many

years. In Jakarta and West Java alone, a 1998 study by WALHI estimated that 2.2 million tons of toxic and hazardous waste is discharged into rivers every year. Additional studies demonstrate that the industrial sector is the largest contributor of toxic and hazardous substances.

For 14 years the industrial waste from PT Semarang Diamond Chemical, which produces raw materials for the beverage industry, was discharged into the Tapak River without proper pre-treatment. Drastic rice, fish and shrimp harvest failures forced farmers to sell lands since they were no longer productive. Through the intervention of the then Environment Minister Emil Salim, compensation was made to the community and a waste treatment plant was built.

According to ICEL (Indonesian Center for Environment Law), in 1996 alone, there were no less than 205 legal environmental disputes in Indonesia (ICEL Bulletin, 1997). Of those, 63 cases received particular attention from the community and NGOs, both national and international. In a number of extreme cases, the community, not satisfied with the response from the company or the government department handling the affair, took matters in its own hand and damaged or burnt company facilities. These documented cases show that companies that do not take environmental pollution seriously may have to bear higher costs (in comparison with investment in machines or physical facilities). These costs include not only the time and effort to handle the claims of the community, but also the associated expenses to improve their environment processes arising from the community's claims.

Because of the extremely weak legal system and the fact that traditional approaches used by the government also proved to be ineffective, Indonesia's Environmental Impact Management Agency (BAPEDAL) developed a public disclosure program: Program for Pollution Control, Evaluation and Rating (PROPER) in 1995. This program, ratified by an Environment Ministry Decree, #35 A/MENLH/7/1995 was designed to both motivate companies to perform better and to empower communities to be able to provide accurate and dependable data that could be used to facilitate improved environmental practices at these companies. The dissemination of ratings through the mass media is intended to be both a promotional tool for well-rated companies and a tool to be used by communities to encourage greater compliance by companies.

WHAT IS "PROPER"?

The PROPER Program, created in 1995, is an innovative government-public sector partnership whose goal is to encourage cleaner environmental practices through a publicized rating system. This rating system now includes nearly 500 firms. Companies participating in the program are rated yearly, based on regular inspections by BAPEDAL. The program also includes the analysis of regular monthly monitoring reports on effluent levels that participating companies are required to submit. The inspections by BAPEDAL are unannounced in order to minimize the possibility of companies improving temporarily in order to obtain a better rating. Trained BAPEDAL staff collects and interprets the data, releasing regular reports on the participating companies to the media.

Because of limited resources, both in manpower and funds, the PROPER Program has evaluated only wastewater emissions. Hazardous waste factors have only been recently added and will be included in subsequent ratings. Evaluations of solid waste, air emissions, gas and evaluation of AMDAL (Environmental Impact Assessment) documents are for the moment only done for the companies in the Green category (see page 5)and in the future will be included in Gold rating criteria. However, in the future, it is hoped that the other criteria will be included in all ranking levels.

Data from the factories are entered into the computer and analyzed by the PROPER team. The results are submitted to the PROPER-PROKASIH Council made up of nine public figures representing NGOs, media, business, and the Ministries of Health, Labor, Internal Af-

fairs, and Environment as well as BAPEDAL. This Council provides non-technical input, after which the BAPEDAL/PROPER team determines the final ratings. The ratings are submitted to the Environment State Minister who then reports the results to the President. Finally, the ratings are disseminated to the public through the media. The last step is crucial, as it is basic to achieving the aim of PROPER, which is to increase the motivation of companies to comply with current environment regulations through educating the public in their community.

Companies participating in PROPER are divided into three categories:

1. Companies obliged to participate in PROPER because of their participation in the Clean River Program (PROKASIH). There are about 350 companies in this program. However, currently not all companies in PROKASIH can be included in PROPER due to insufficient data provided for effective evaluation.

2. Companies who voluntarily apply to join the program. These generally are those who are confident that their environment performance is good enough that they are willing to be evaluated.

3. Companies that are required to join the program because their levels of pollution are determined to be at danger levels. Information on this group is obtained by BAPEDAL through reports from the public, the BAPEDAL case management task force, (JAGA NUSA), news reports, etc. Communities have the right to submit their suggestions for companies to be included in this category, with the expectation that they can join in monitoring the environmental performance of the company they have suggested.

Questions often arise regarding the fairness of comparing the pollution of the variety of companies that are included in the PROPER program. For example, how can a textile company whose industrial processes discharge large amounts of untreated wastewater compare to a pharmaceutical company discharging relatively small amounts of pollution? The answer is simple: the government sets appropriate effluent standards for each industry, based upon internationally accepted levels for that industry.

The environmental performance of companies in the program are rated as follows:

1. GOLD for companies that have implemented cleaner production technology, waste recycling processes leading to 'zero emissions'; that have made serious efforts to control air pollution, have fulfilled all the criteria for a Green rating and have achieved a high level of achievement so as to be a model for other companies.

2. GREEN for companies that fulfilled waste minimization standards and have made other environmental management efforts such as sludge pre-treatment, good housekeeping as well as good management of factory waste treatment units.

3. BLUE for companies that have made efforts to control environmental impacts and that those efforts have been evaluated as reaching the minimum standards set by existing Indonesian or regulations.

4. RED for those companies that have made efforts at environmental management but have not reached the minimum standards set by existing regulations.

5. BLACK for those companies that do not make any effort to control environmental impacts such that they damage the environment or cause negative impacts in their community.

To clarify the above criteria, BAPEDAL has produced a summary guidebook on determining the ratings that explains:

A. A company will get a BLACK rating if it has committed one of the following:

   1. The company discharges wastewater (all or part) without using appropriate systems, OR

2. The company has a hidden bypass used to discharge wastewater, OR discharges by illegal dumping even if done only once during the evaluation period,

3. If the company has discharged effluents using pre-treatment before discharge, and does not have a hidden bypass BUT

   a. Based on monitoring in the last 3 months, the waste water discharged has a concentration of effluents five times higher than the standard already set, OR

   b. Based on monitoring in the last 3 months, the waste discharged has an average load of pollution 5 times higher than the established standard.

B. If the company has passed the requirements for the BLACK rating but has committed at least one of the following then the company receives a RED rating:

1. The company is not analyzing its wastewater on a regular basis, that is, at least once a month, OR

2. The company does not have a functioning/operating flowmeter, an instrument measuring the flow of waste emissions, OR

3. The measurement of the flow of waste emissions is not done on a regular basis, that is, at least once every 20 days, OR

4. The results of measuring the flow of waste emissions is not reported to BAPEDAL on a regular basis, that is, at least every three months (quarterly) OR

5. The company does not have the proper permit for land use OR

6. The monitoring data in the last 6 months show that effluent concentration is higher than the established standard.

7. Monitoring data in the last 6 months show that the pollution load per unit (product) is still 5 times higher than the standard set.

If the company can overcome all of the seven points above, then the company can receive a BLUE rating.

C. If the company can fulfill all the requirements for a BLUE rating and fulfill the following requirements then the company has earned a GREEN rating:

1. The company is not facing legal claims or complaints from the community, AND

2. Monitoring data for the last 12 months show that the concentration of effluent is at or below the existing standards, AND

3. Monitoring data in the last 6 months show that the pollution load per unit (product) is 50% lower than the existing standard, AND

4. The company adheres to the regulations related to toxic and hazardous waste, AND

5. The company adheres to all the AMDAL regulations.

ADVANTAGES OF "PROPER" FOR COMPANIES

What are the advantages for companies participating in the PROPER program?

- A good reputation for environmental management practices makes the company a 'good neighbor' to the citizens who live in the community. It can also impact positively on cost and/or profits. This is based on evaluation and perception of shareholders, suppliers, and (particularly) consumers of the company's environment performance. It is now accepted practice that such "green" consumers or buyers (international and national) submit a questionnaire to their producer/supplier to obtain clarification on the company's environmental management practices as well as social management issues even before viewing the products to be ordered.

- Ecolabeling has become a standard for consumers in countries that import forest-based products from

developing countries. Even if many companies in forestry-based industries feel unprepared to implement ecolabeling consistently, they have little choice if they wish to retain those consumers. Besides that, ISO 14000 (the standardized environmental dimension for management systems) is now becoming an integral part of product specifications from buyers from industrial countries. A transparent and careful evaluation of a company's performance on environmental practices such as PROPER can become an opportunity to enter a select and more financially viable category of companies that are viewed positively, particularly by consumers/ buyers from industrial countries.

- In the long-term high initial investment costs in pollution prevention equipment can actually be a source of cost savings. For example, the installation of an exhaust gas boiler not only decreases air pollution but also decreases fuel costs.

- Investment in pollution prevention and pre-treatment equipment can, in the end, be less costly than costs associated with the actions taken by a community suffering from that company's environmental pollution.

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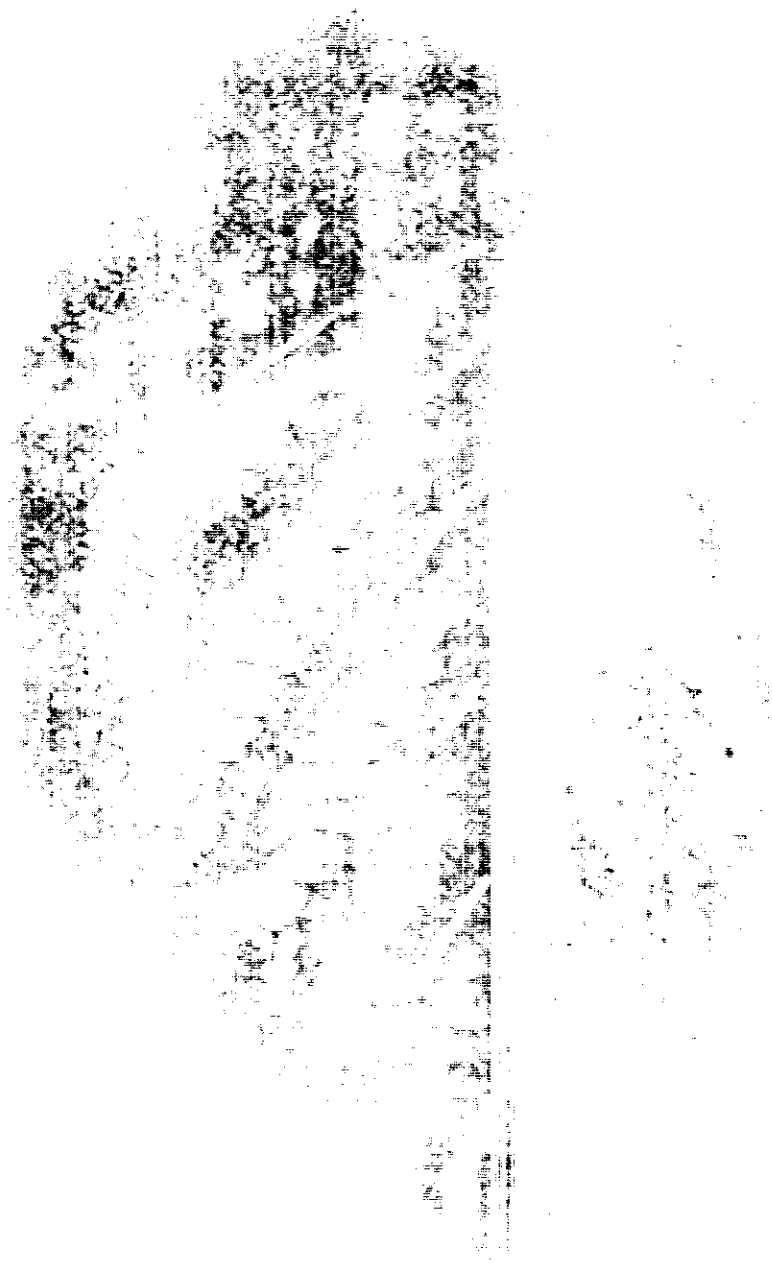

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THE IMPORTANCE OF COMMUNITY AND NGOs PARTICIPATION IN ENVIRONMENTAL PROGRAMS

THE IMPORTANCE OF COMMUNITY AND NGOs PARTICIPATION IN ENVIRONMENTAL PROGRAMS

BACKGROUND

The primary objective of public participation is to get input, perceptions and reactions from citizens and community groups in order to increase the quality of both decision-making and implementation of government or private-sector programs. Wingert in (Arimbi and Santosa, 1993) emphasizes that government's role is to serve society and as a consequence, any decision on a project or program that impacts a community should consider and hopefully incorporate the views and wants of that community.

Indonesian laws and regulations support these beliefs. For example, Section 5 Article 3 of Law (Undang Undang) No. 23, Year 1997, on the Environment, states that each person has the legal right to participate in environmental protection in accordance with prevailing statutes. Section 7 of the same Article goes on to state that the community has the same opportunity to participate in environmental protection in all its aspects. These goals, if practiced, can increase community self-reliance and empowerment; develop community capabilities; and increase their pioneering spirit. They can also increase the public's initiative to protect society through the use of voicing a collective public opinion, as well as through providing access to information and reports.

Professor Koesnadi Hardjasoemantri, a leading figure on Indonesian environmental law, states that a decision that takes into account the concerns and objections of the public reduces the chances of bringing any problems arising from the decision to court (Koesnadi, 1990). Community participation can, through attempts

to reach consensus, also reduce conflicts. The exchanges of views, which accompany consensus-reaching exercises, tend to increase understanding, tolerance and trust between conflicting parties. This guidebook is designed to help you to put into action these ideals, to better understand and work with your community's industrial community so that each of you can live in harmony with the other.

BENEFITS TO PARTICIPATING IN A DECISION-MAKING PROCESS

The community can directly or through NGOs representation, participate in the decision-making process. For example, in the planning stages of establishing (design, siting and construction) a factory, or in the implementing stages (when the factory is beginning or updating an operation), the community can be involved constructively through various activities which will mutually benefit both parties. Remember, community involvement should not always be perceived as a threat to a company.

For example, in the case of PT. Sari Husada in Yogyakarta, who worked together with the community to develop an "early warning" system which enabled the community to warn the company when the waste disposal of the factory resulted in a smell that exceeded the standards that were set and agreed upon. In this way, the company benefits because it avoids a situation of conflict with the community. Another advantage is that the company can take immediate steps for prevention before the situation worsens

Another positive experience of proactively involving the community in environmental management decision-making has shown PT Sari Husada, (which has achieved the GREEN (Hijau) Status in the PROPER program), that with the right intentions, a company and the community and its NGOs need not have to be at loggerheads to co-exist. In fact, if cooperation exists, the community can actually be a partner to industry contributing positively to that company. Please keep in mind that the community itself can and should learn and practice ways of protecting their community's environment, for example, by not disposing of household waste carelessly, and by using washing ingredients and other cleaning solutions that do not harm the environment.

PRECONDITIONS FOR COMMUNITY PARTICIPATION IN THE PLANNING STAGES OF A PROJECT

For effective community participation, Professor Koesnadi (1990) suggests a number of prerequisites need to be present:

1. The project initiator must inform concerned community groups regarding their proposed development plans in the community. For example, communities surrounding the planned location of a paper factory should be informed, or likewise, plans for factories to be built on or near rivers should be disseminated to surrounding riverbank communities. Keep in mind that environmental problems do not recognize man-made geographical or political boundaries and that environmental problems occurring in one area, such as forest fires or floods, could impact neighboring regions and countries. Therefore, the rapid availability of inter-regional information is extremely important to both preventative measures and to rapid and effective actions a community make take during the environmental problem event.
2. The community must have access to accurate, reliable and current information before any final decisions regarding development affecting them are made. Therefore adequate time for evaluation and proposal of alternatives, should it be included in the planning process.
3. The community should be able to propose and discuss with industry, possible and realistic alternatives. Therefore comprehensive information on (a) forthcoming projects as well as (b) possible alter-

native steps should be made available prior to siting and construction of the industry.

4. Information provided by both industry and the community should be clear and understandable. Environmental decision-making involves issues that are often complex, technical and scientific in nature. Every effort must therefore be made to have all necessary information clearly presented to the general public.

All the above are preconditions for community participation to be effective. However even if the preconditions are met, effective community participation is not guaranteed. Other obstacles may need to be addressed as well. We must remember that community participation is voluntary in nature, depending on social awareness and self-motivation rather than on funding. Such voluntary community participation is therefore difficult to sustain for long periods, particularly for participation requiring continuous activities, such as monitoring of factory waste disposal. It is important when a community develops and implements a monitoring program that they think about developing a modest budget and locate funding, especially if the monitoring activities are to increase in scope or sophistication (more advanced -requiring more training and or equipment).

Community participation based on social awareness is effective when appropriate government agencies respond to communities requests in a timely manner. Consequently, a slow or no response from government departments to monitoring reports from the community, could lead to public disappointment and skepticism, perhaps threatening the longevity of the monitoring program (In certain extreme circumstances, anger and frustration could give rise to violence, causing damage to the factory being monitored or to local government department offices). It is therefore crucial that efforts to increase effective community participation go hand-in-hand with efforts to strengthen the government's capacity to respond in a timely manner to community concerns. Without strong consistent (long-term) political commitment, community participation will only be a slogan, to be voiced but never to be implemented effectively.

COMMUNITY PARTICIPATION AND ITS ROLE IN INCREASING COMPANY MOTIVATION TO IMPROVE ENVIRONMENTAL PERFORMANCE

Monitoring the environmental behavior of a company can be an effective tool to promoting positive changes in a company's environmental practices. The community most aware of a company's behavior and whose interests are most effected by the environmental waste disposal methods or lack of, is almost always the community located nearest to the company. So community participation in monitoring a company's environmental performance is often a key success factor in reducing industrial pollution, particularly in the areas around the company. Remember that there are companies who strive to be 'good neighbors' to the surrounding community, so it is important to always approach companies in a friendly manner when beginning a dialogue with them.

To motivate companies to perform better in their environmental management, the community can, either directly or with the help of NGOs, take the following steps:

A. Complete regular visual monitoring of waste disposal practices of the company, for example, noting on your form, the location, the form of the waste, how often it is discharged, approximate amounts and at what time of day or night it is discharged.

CAUTION: Handling wastes that are not identifiable can cause health problems, including skin irritations and breathing problems. It is important to AVOID handling ANY waste unless you have received the proper training and equipment. If it is determined that waste samples are needed, please contact your local NGO or local University for such services as they will be qualified or know who is qualified to collect such samples. Samples

often need special sterile containers and refrigeration to insure that they are in the proper state for acceptable examination and identification.

Because such environmental monitoring can be complex and technical in nature, EcoLink has developed a monitoring form that simplifies data collection. Copies of this form are to be used by the community (individuals or group) as well as by NGOs. A copy of the Waste Monitoring Form and instructions for completing it are found in the next section of this guidebook.

The completed community monitoring forms should be sent to:

PROPER TEAM- BAPEDAL
Wisma Arthaloka LT 6
Jl. Jend Sudirman No. 2
Jakarta 10220
or
PROPER TEAM - BAPEDAL
PO BOX 5678
Jakarta 100056

B. Please remember that your visual monitoring efforts do not have to be restricted to companies currently participating in the PROPER program. Indeed, any company whose environmental performance impacts directly or indirectly on your community can be monitored and should be informed of the PROPER program and kindly encouraged to apply.

C. Remember, please try and use positive persuasion when communicating with companies (especially ones suspected of low environmental performance). This increases the chance of effective communication and reduces the incidence of a company becoming defensive and possibly uninterested in working with the community towards a reasonable and safe solution that benefits both the community and the company. One idea is to involve the company in community efforts at environment protection. The community could help the company to organize an informational day or workshop on methods of good environment practices (for example, disposal and recycling of household and market waste). Such information could be presented in person, through the district office (Kelurahan) or through the media. Such efforts could lead to more comprehensive discussions on and implementation of environmental protection measures for the community at large, including increased effective environmental management in the company involved.

D. The community should also report on positive developments to the government and media if, for example, a company in the community is known to have consistently used good or have improved waste disposal methods, or has worked with the community to maintain good environmental recycling practices. Such letters of appreciation will encourage other companies in their environmental protection efforts Letters of commendation should also be sent to BAPEDAL as such letters can be incorporated into the ranking criteria for company environmental performance. These letters can also be forwarded to the press as ALL companies enjoy being recognized for any good management ideas that they put into place.

SOLUTION ALTERNATIVES TO ENVIRONMENTAL DISPUTES

Communities can suffer from serious pollution and health problems stemming from companies ignoring basic good environmental practices, such as disposing of wastewater without pre-treatment and illegally dumping solid wastes improperly. In such cases, communities should consider the following options.

1. First, try to approach the company directly, requesting it to enter into non-threatening discussions with the community. Participants in EcoLink workshops on community participation related

positive results experienced by community groups using this approach.

2. A letter can be sent to the company detailing the nature of the pollution problem faced by the community. Models of such letters are presented in the next chapter. NGOs sxecializing in legal and environmental problems can also assist. (perhaps provide contacts of NGOs specializing in legal and environmental problems here or in an annex section) The contents of this letter might include the following:

   - an introduction of your organization, a description of and visual evidence reports of the pollution caused by factory waste (format is available in the Waste Analysis section of this book);
   - a request to meet with the company executives to discuss the problem; and
   - a request (with a timeframe) for improvements in the factory's waste disposal system so that the community no longer suffers from the factory's pollution.
   - If, the community sends an initial letter to the company and there is no response, the same letter should be sent one to two weeks after the first mailing, in case the first letter had not been received or had been misplaced etc. If there is still no response, the letter could then be sent to the district environmental bureau, BAPADEL, with a copy to the company. Depending on the further response of the company, the steps as described in this section would apply.

In meetings with companies, the community may be asked to present data or evidence to substantiate their claims. If the results of the visual environmental monitoring conducted by the community (using the waste monitoring guide provided in this book) is not considered sufficient evidence, the community will need evidence using experts. These experts can come from the regional BAPEDAL, departmental environmental laboratories, (for example, environmental laboratories under the Department of Health, Department of Public Works, etc,) or (3) the nearest university laboratory that has appropriate equipment and expertise. Evidence from such expert sources can useful in determining a successful outcome following discussions with companies. Conversely, the lack of such evidence could weaken the case of the community. See the expert contact list provided of laboratory and government departments.

3. If the company is willing to meet with the representatives of the community, three outcomes are possible after consideration of the evidence and requests from the community for improvements are presented:

   a. The company may agree to make some/all the waste handling and disposal improvements that the community has requested. This option provides better future environmental security than just compensation (see b.) for past damages to the environment and decreases the likelihood of further pollution activities by the factory.

   b. The company may offer the community compensation ONLY for past or current environmental and health damages. This option is not ideal because, while satisfactory compensation by the company may be made, it has not addressed the pollution problem, which will likely recur if the company does not take effective steps towards reducing or eliminating the source of that pollution.

   c. The company may agree to improve its waste disposal system AND compensate the community. Arguably, if only the former is agreed upon, it is still better than option, since it provides future environmental security than just compensation for past damages. Ongoing working relationships formed with the company are far more beneficial to the health and well being of the community than a one-time financial contribution will ever be.

   d. To ensure compliance to the agreements, the community may want to urge the parties concerned that a written agreement be drawn up

with the company concerned for a) the implementation of the environmental improvements within the time frame agreed upon, and or b) any compensation agreed upon. The community should continue to monitor resulting actions of the agreement. If results are acceptable, (i.e. there is a significant decrease in pollution and improved waste handling methods), the company could be considered to have met its obligations and the community can then close the case. However, if the company reneges on the agreement or is not capable of implementing the agreement, (i.e. there is no decrease in the amount of pollution created), the community can bring the case up to the district environmental bureau, the regional or central BAPEDAL and, last but not least, the press

e. The company may not wish to comply with any of the community's requests. In this event, the community could bring the case to the district environmental bureau, regional or central BAPEDAL (c/o JAGANUSA) and inform the media, with copies of their case sent to the company.

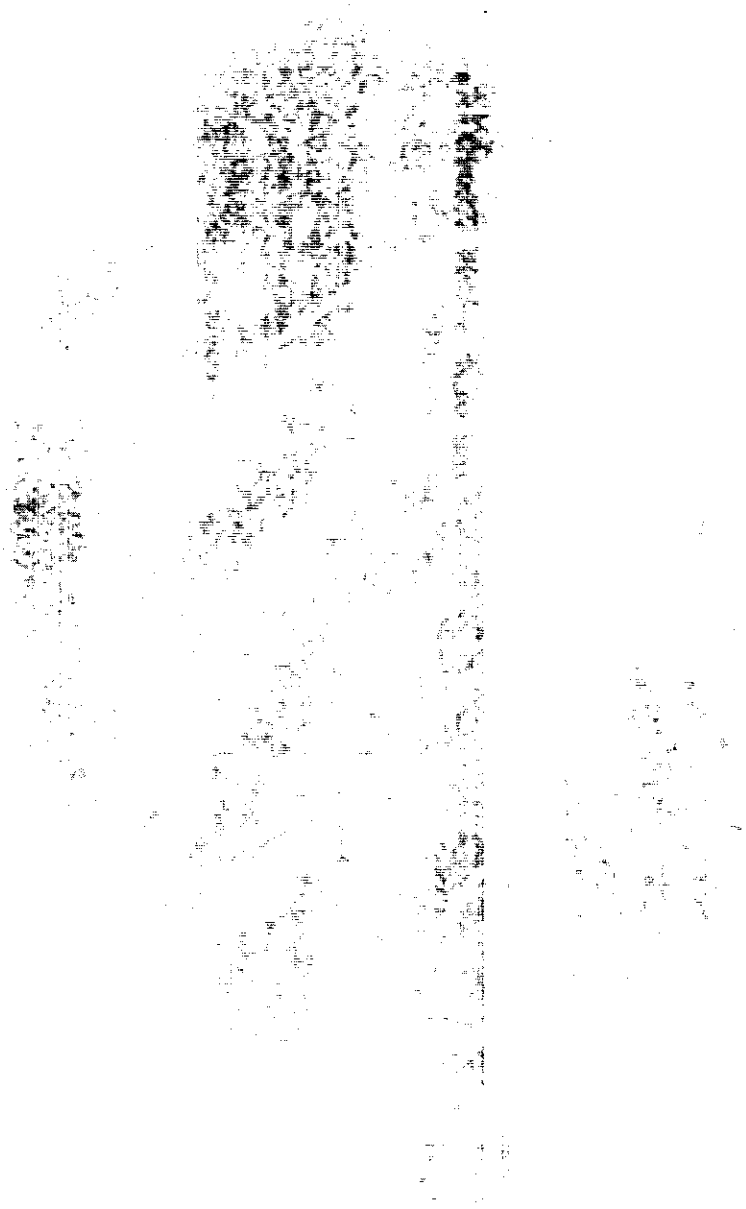
4. The dissemination of the community claims to the various parties above is meant to apply gentle but persistent and fair pressure on the company to respond to the community's concerns. The company could then agree to environmental improvements and or compensation. As mentioned earlier, monitoring of these agreements is needed to ensure proper implementation. However, if the pollution continues unabated, or if the company does not respond to the communities' urging, then the community should consider bringing the case to court, possibly with the assistance of an appropriate NGO.

5. It is important to remember that every effort should be made to settle a dispute without going to court. Why? Because taking legal action through the courts is often a difficult, expensive and long process. For example, it can be costly to obtain the necessary scientific evidence needed to support community claims. It requires the involvement of many parties, such as laboratories, government agencies, and NGOs. This means costs of lab research and testing, travel and miscellaneous expenses that add up quickly during the often long and drawn out time which legal matters tend to take. In the end, there is no guarantee of a positive outcome. Much time, money and energy would have been wasted in the event of an unfavorable ruling and any future relationship with the company may have been damaged or severed.

REFERENCES

Arimbi HP, SH L.L.M and Mas Achmad Santosa SH L.L.M, 1993. Community Participation in Environmental Management. Jakarta:WALHI

Hardjasoemantri, Koesnadi, 1990. Legal Aspects and Community Participation in Environmental Management. Yogyakarta: Gadjah Mada University Press.



4

GUIDE TO MONITORING FACTORY WASTE DISPOSAL

GUIDE TO MONITORING FACTORY WASTE DISPOSAL

I. FACTORY WASTE DISPOSAL

Most factories that manufacture goods also produce waste in the form of a solid, liquid, smoke or dust. The total amount of waste from each factory depends on the type and size of the production process. Aside from waste, factory processes can also produce noise and vibrations.

The form, size and color of waste can usually be visually identified. Other waste can be identified through smell. Thus, the muddy brown color and extremely pungent smell can identify a paper factory's liquid waste. Other types of liquid waste have no smell but are muddy coloured such as from the metal plating industry. The community can observe most waste products and the resulting pollution. However, some waste products cannot be seen or smelt. Such waste can also pollute the environment without being identified by the community.

Untreated waste or any waste that exceeds safety standards disposed by a factory can cause health and other damages to people, animals and the environment surrounding the factory. If the pollution is not adequately treated and disposed of, the costs related to health, and safety programs, could become prohibitive. Since the effects of pollution can result in the negative impacts on living beings and the environment (see 5a and 5b for more detail), we must work together to put in place and into practice, measures that reduce, reuse and treat wastes before they are released into the surrounding community.

To prevent pollution and resulting health hazards, the

government has issued regulations that determine levels considered safe or acceptable to living entities and standards for waste and disturbances caused by industry. Some of these regulations are listed in Appendix C. Although there are government regulations, many factories still ignore them. They dispose of their waste above acceptable limits and standards set, thereby polluting and damaging the environment and the community.

Because most of the waste water resulting from industry in Indonesia is disposed into rivers, the primary areas for community observation are water channels (river, lakes, wastewater disposal pipes etc.) and mud or soil deposits around factories. However, the community can also help monitor other areas, such as air or forests for noise and vibration disturbances, etc. This guide explains how the community can help BAPEDAL enforce government regulations, by monitoring factory waste disposal and associated disturbances. This guide also includes a "Pollution Monitoring Report Form" in Appendix A, which should be completed and then a copy sent to PROPER PROKASIH BAPEDAL. Completing the form is very easy, needing only an "X" for the appropriate response to each question. Each question may have multiple answers depending on the results of the monitoring. This form should be reproduced or photocopied as needed and, if possible, copies of completed forms should be kept as records by community NGOs.

These community observations provide BAPEDAL with supplementary but important information on waste management practices in factories. They may also be used as part of the evaluation criteria for those factories participating in the PROPER program. If the reports indicate pollution levels at dangerous levels, BAPEDAL can take appropriate regulatory or legal action based on the existing statutes. The community acts as BAPEDAL's eyes and ears, especially during difficult economic times when the numbers of industry inspectors may be lower than the number actually needed to be most timely and effective.

II. GUIDELINES FOR MONITORING FACTORY WASTE DISPOSAL

These guidelines will help the community monitor the waste disposal activities of their communities' factories. They explain the steps needed for the monitoring process, the results of which will be entered into the "Pollution Monitoring Report Form".

1. Continuous Monitoring

Before filling in the form, find out how many times the factory has been monitored if at all and then fill in the current number in (Monitoring number: #). If you believe the monitoring is the latest in a series, compare it to the last monitoring done. If the result of the current monitoring shows an increase in pollution, circle the word "up". If the latest monitoring shows a decrease in pollution, circle the word "down". If it appears that there is no change, circle the word "same". Ignore this item if the factory is being monitored for the first time.

2. The Monitored Location

The location of the pollution source is as important a factor as identifying the causes of the pollution. The location details that would be most helpful include: the names of the Neighborhood or Village (kelurahan/desa), Sub-district, and Province and the location of the pollution (example : if it is deposited nearby the factory, say on a riverbank or vacant lot, please provide as much information about that location as possible).

3. Prevailing Conditions During Monitoring

Besides observing the waste disposed, certain conditions in the area need to be identified, in the event that the data is needed as evidence in an investigation. Conditions that need to be accounted for are:

a. Source of Waste

The source of waste refers to the origins of the waste monitored. A factory can dispose of more than one type of waste. For example, a pulp and paper factory not only disposes of waste water into the river through pipes, but also emits smoke through chimneys as well as solid waste sediment that is usually just dumped on

land. A monitor should first try to find the source or sources of the waste responsible for pollution in the area. This step is to confirm which factory or factories are responsible for the polluting waste disposal. Not all factories dispose waste that pollutes the environment. For more details on determining waste sources, see 4a, 4b, 4c and 4d of this guide.

b. Time, Date and Day of Monitoring

Time is an important factor and therefore should be recorded. For example, if regular monitoring is conducted, time data can be utilised showing whether the pollution monitored is continuously or sporadically being dumped. This provides information as to whether waste materials are dumped during hours with the fewest likely observers taking note (example : late evenings or early morning hours).

c. Weather

Noting the weather conditions is important for data analysing patterns of pollution by factories. A factory can, for example, dispose of more waste than usual during a rain event when stronger than usual river currents can push pollution away faster from the factory. The pollution impact around the factory may be less in this situation but will accumulate faster in and may adversely affect the downstream area of the river.

4. Methods to Identify Waste Disposal

The physical qualities of a factory's waste can be used as the first step in identification. These qualities are solid, liquid, ashes (smoke) and dust. The color, cloudiness, and smell of each type of waste should be noted. Smell can also be used for waste that cannot be seen.

a. Liquid Waste

For liquid waste, first compare water conditions (color, smell, and cloudiness (water clarity)) about 50-100m upstream of the waste disposal pipes to those conditions less than 300m downstream of the waste disposal pipes. If there is a change downstream in one of the factors, for example, the river water turning cloudy or black, or the smell in the air more pungent (note wind direction here), then the factory waste disposal has the potential to pollute the environment. Monitoring can take place directly at the waste disposal pipes by observing the color, smell, and cloudiness there.

If there are more than one factory around the river area, the monitoring protocol is the same as stated above. Comparison is made upstream and downstream of each factory's waste disposal pipes or channels, making sure that downstream observations are made on the upstream side of the next factory in order to, as accurately as possible, identify the actual source of the pollution.

b. Solid Waste

Solid waste exists in many forms, including metal pieces, plastic, wood, rubber, or as mud or sediment. Solid waste can be hazardous and toxic, or it can be harmless. Factories meeting government regulations for threshold limits and standards on waste disposal, specifically for toxic and hazardous waste, store the treated waste properly, for example in drum containers that would be, periodically or when reaching specified volumes, sent to a special safe and approved dump or incinerator.

However, many factories dispose of their solid waste, whether hazardous and toxic or not, by dumping them in areas within or around the factories. Close attention must be paid to waste in the form of sludge or sediment as well as metal easily rusted because pollution from such sources can be rapid. Toxic and hazardous waste contained in such forms can seep into the soil and/or groundwater. Seepage of untreated wastes into the ground is most easily identified because it is often accompanied by the wilting and dying of vegetation. For example, a factory situated near rice field areas can dump solid waste in the form of common salt on the ground. Rain carries away the salt to the fields around the factory. If the salinity levels go above threshold limits for rice fields, rice harvests would be greatly damaged or diminished.

Monitoring water wells in an area can also assist in identifying the possibility of seepage of hazardous and

toxic material arising from solid waste. Here too changes in color, muddiness, smell and taste can be important indicators of pollution. Remember, work with your University laboratory or NGO to properly take and test water samples in wells suspected of being polluted by dumping of waste materials.

c. Smoke and Dust

Smoke and dust are the most easily monitored since these types of waste are usually visible from factory chimneys. Monitoring should be done at a minimum radius of about 500-m from the factory's chimney. The density and color of the smoke and dust particle sizes should be noted as well as the effects on the population, animals, and plants in the surrounding area. Plants may begin to wilt and die, animals may avoid the area, or people may experience difficulty in breathing or have re-occurring coughs. Such conditions indicate smoke and dust could be reaching unhealthy levels.

d. Other Monitoring Factors

Other factors can be used to measure the evidence of pollution. One important factor is the health conditions of factory workers. If workers experience coughing, skin problems and weight loss, this may suggest that the factory is using materials or producing waste materials that endanger the health of its workers. Such conditions warrant close monitoring and working with the factory to implement healthier plant operation procedures.

For noise and vibration disturbances, note the periods of such disturbances (day, night or continuously) and the sound and level of sound that the factory emits.

For more information on the identification of factory waste disposal, see Appendix B.

5. Effects of Pollution

We know that waste polluting our environment can have considerable effects on people, animals, and plants. Monitoring and reporting such effects is extremely important so the appropriate agencies like BAPEDAL can take the necessary action.

a. Impact on People and Animals

The impact on people and animals depends on where the waste is deposited and what lives nearby. For example:

1. In a river area near a factory, the fish population in the river may drastically decline. This results in a smaller catch for area fishermen. Fish husbandry (fishponds and breeding aquaculture) which uses river water may experience reduced yields. People using the water for bathing and washing may experience skin rashes and irritations. Animals drinking the river water may become ill.
2. Well water located near a factory may taste differently and exude unpleasant smells. This could be due to contents of sludge or sediment seeping into the earth making the well water undrinkable and even unsuitable for washing and bathing.
3. Smoke and dust can cause sickness related to breathing difficulties for people living and working near the factory.

b. Impact on Surrounding Areas

Pollution can impact on the surrounding area of factories in various ways. For example:

1. Rice paddies using river water can experience stunted growth and reduced harvests. Factory waste is not only making river water dirty and smelly but is also damaging plants and animals living on or near riverbanks.
2. Sludge and sediment from a factory if washed into rivers, lakes or neighbourhoods by rain could damage plants and animals.
3. The air around a factory if dusty and smoky could damage plants and animals.

6. Waste Disposal Through Dumping

a. What dumping means and examples of dumping:

Dumping refers to the practice of improperly disposing of untreated waste, i.e. without reducing or removing

toxic effects, (often directly onto areas surrounding the factory or away from the factory). The waste can be solid or liquid. It can be harmful to the environment and to living things. Financial costs for its proper treatment and disposal are assumed to be high. The objective of illegal dumping is to reduce the costs associated with waste disposal in accordance with government statutes. Examples of dumping are:

1. Tank trucks clandestinely dispose of liquid waste onto deserted main roads at night or into rivers or land far from factory premises and the watchful eyes of a community.

2. Untreated waste is disposed of at night through hidden pipes leading to the river, particularly during heavy rainfall, which speeds up the removal of evidence of the untreated waste.

3. Untreated liquid waste is disposed of in ditches or pools with earth walls within the confines of the factory. This type of dumping is often difficult to monitor until such time as the waste seeps into the ground and pollutes groundwater and possibly surrounding water wells of the community around the factory.

b. Monitoring Environmental Dumping

Monitoring dumping of wastes requires a long-term community commitment and effort. Steps to follow if a community undertakes a monitoring program can include:

1. Note and pay close attention to tank trucks driving in and out of suspected factories. If a member of the community sees a tank truck stopping at the edge of rivers or at an isolated place, the truck's plate numbers and a description of the truck driver should be noted.

2. Try to locate the waste disposal pipes (that maybe hidden in the side of the river) near the suspected factory. They are normally covered by overgrown vegetation or disguised in some other way. Once the pipes are discovered, monitoring could begin (at night). If there are sounds of flowing water that may indicate the factory is disposing of its untreated waste through the pipes.

See Appendix B for further information on dumping.

7. Where to Send the Monitoring Form

After filling out the monitoring report form, including if possible the name of the monitor, either individual or group, fold, place a stamp on it and mail to:

PROPER PROKASIH BAPEDAL
PO BOX 5678
Jakarta 10056

If the monitor, whether individual or group, does not wish to write a monitor name, then they should attach a copy of the identity card, either individual or a representative of a group. The names will be kept confidential.

If there is a company that exhibits good environmental management practices in your community, BAPEDAL should be informed of their activities as well.

It is hoped that monitoring by the community will be conducted regularly so that the PROPER ratings can be improved through inclusion of such reports.

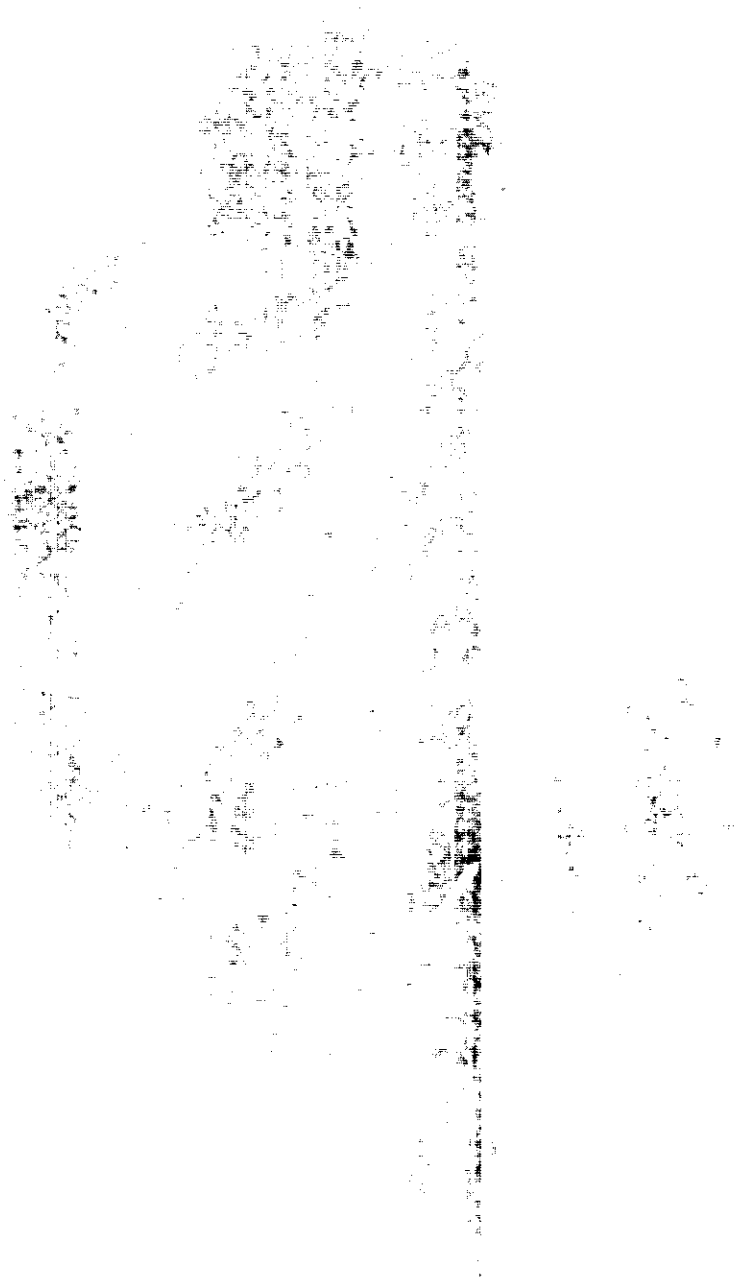
REFERENCES

1. Maya Shah & Nadrad Zain Muhamad, "Buku Panduan Bahan Berbahaya dan Beracun" (Guidebook to Hazardous and Toxic Materials), Wahana Lingkungan Hidup Indonesia, 1997, page 6.

2. State Minister of Environment Decree "KEP-51/MENLH/10/1995 on Liquid Waste Standards for Industrial Activities, BAPEDAL Deputy for Pollution Control, 1997.

FURTHER READINGS

- Government Regulation of the Republic of Indonesia
  No. 19 Year 1994 and No. 12 Year 1995 on toxic and hazardous waste
- State Minister of Environment Decree EP-13/MENLH/3/1995 on standards for emissions from fixed (non-moving) sources
- State Minister of Environment Decree KEP-51/MENLH/10/1995 on standards for industrial liquid waste
- State Minister of Environment Decree KEP-48/MENLH/11/1996 on noise level standards
- State Minister of Environment Decree KEP-49/MENLH/11/1996 on standards for vibrations
- State Minister of Environment Decree KEP-50/MENLH/11/1996 on standards for odor levels
- State Minister of Environment Decree KEP-45/MENLH/10/1997 on the standard index of air pollution



APPENDICES

Appendix A

Completing this Observation Form is very simple, just answer the question by marking an "X" in the square next to the most appropriate answer in the multiple choice answers. For this type of questions, it is okay to give more than one answer. If there is no appropriate answer, then fill in your own answer in the empty space provided next to each question.
After completing the form, fold it at different arrow marks on the questionnaire (instructions to fold). Stamp it and mail it via the post office to the pre-addressed location- PROPER PROKASIH BAPEDAL.
To learn how to complete the form, please refer to the Community Guide to help in the Monitoring Process in the PROPER Program at Section 3, Part II, and pages 25-35

The monitoring NGO

Stamp

To
PROPER PROKASIH BAPEDAL
PO BOX 5678
Jakarta 10056

Observation Form

Report Form for the Monitoring of Environmental Practices By the Community through PROPER PROKASIH BAPEDAL

Fill in the form according to the actual condition. For multiple choice answers, mark an X next to the appropriate answer/answers. (For accuracy, there may be more than one answer).
Observation No.:

I. Information about monitoring area and time of monitoring

1. Address :
Village:
Subdistrict:
Area/Municipality:

2. Date :
3. Time (monitoring activity took place):
4. Weather Conditions
   a. Bright and Clear
   b. Cloudy
   c. Rainy (heavy or light rain):
   d. Windy
   e. Calm
   f. _____

II. Information about the Company/Factory

1. Source of Waste disposal/disturbance
Name of the Factory (and type of products manufactured there):
Address:

2. Type of Waste/Disturbance
   a. Liquid waste
   b. Solid waste
   c. Ashes and dust
   d. Noise vibrations/movements

III. Liquid waste

1. How and where the liquid waste is disposed
   a. Into the river/lake through visible disposal pipes
   b. Into the river/lake through hidden disposal pipes
   c. In a landfill (sunken area in the land) inside/outside the area of the factory
   d. Into the river through the tank trucks
   e. On the ground using tank trucks
   f. _____

2. Name of the River/Lake :

3. Smell of the waste :
   a. Stinking (describe odor)
   b. No noticeable odor
   c. _____

4. Color and thickness of the waste
   a. Muddy
   b. _____
   c. _____

5. Visible impact on humans, plants and animals

6. Visible impact on the river/lake water and surrounding area

IV. Information about the Reporter

Name of the Reporter (or NGO or University group):

Appendix B

METHOD OF MONITORING WASTE DISPOSAL

"Method of Monitoring Waste Disposal" shows the possibilities of what a factory might do, as discussed by our source, Drs. Adnan Rahman, from PUSARPEDAL BAPEDAL.

CAUTION

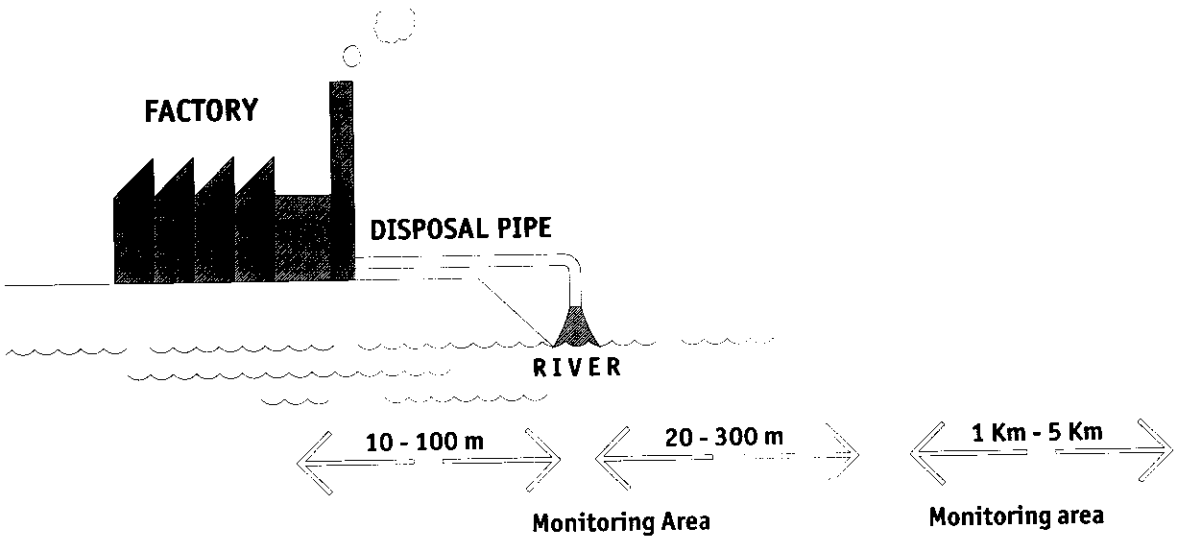
In conducting the observations for factory waste disposal through disposal pipes, it is enough to see and smell the waste from a safe distance. If a sample of the waste is needed for its color, cloudiness, smell and temperature, do not attempt to take the sample yourself. Contact your University lab or the NGO who provided this manual for a list of properly trained individuals who can assist you. Waste sampling can cause health problems if not done by trained scientists or lab technicians.

I. Liquid waste

1. Liquid waste from one factory

From the onset of the observation, please pay attention to the waste that is discarded directly from the disposal pipes. Compare the river water at a distance of 10-100m before the pipes with the water after the pipes at a distance of 20-300m. What must be noted are the color, muddiness, and smell, of the waste. Then take note of the condition of the river water at a further distance (1-5km); see the effects on the fish, the people who have been using the river water for bathing, washing, watering their crops, and the fields along the river. Figure 1.1 shows in a simple manner, the condition of a factory in an observation

Figure 1.1



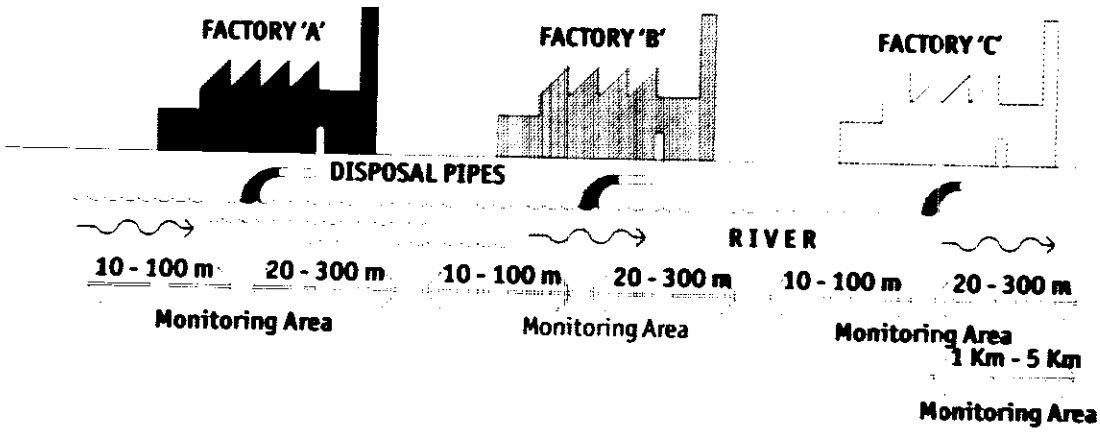


Figure 1.2

2. Liquid Waste from various factories

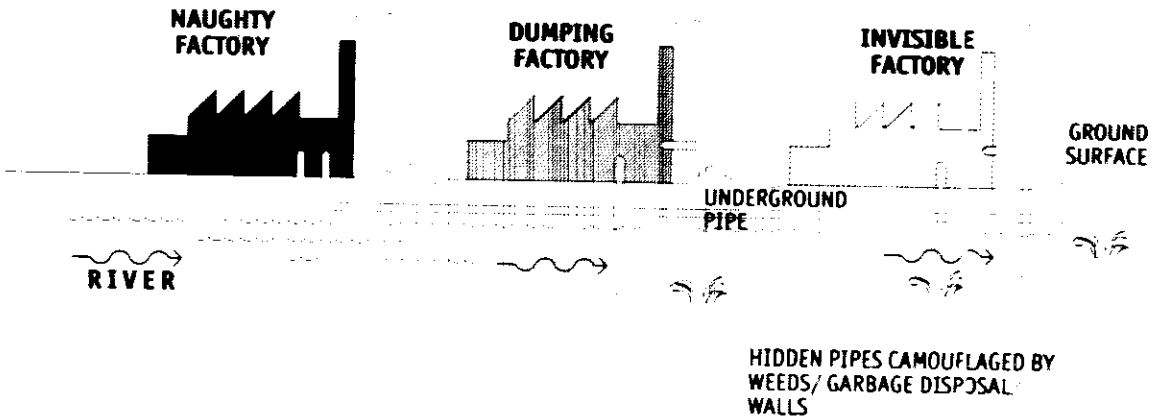
If the liquid waste is from more than one factory, conduct a separate observation for each factory as described in point 1 above (Liquid waste from one factory). Each factory may cause a different type of pollution. Looking at each factory separately is important when determining the type and amount of waste being produced by each factory and which one is contributing the largest environmental pollution and vice versa. Refer to Figure 1.2 for an observation area for more than one factory.

3. Liquid Waste that is improperly disposed

a. Disposing through hidden pipes

Hidden pipes are usually camouflaged so that they are difficult to find. These pipes can be hidden by coarse grass, trees, shrubs, waste, and at times, decorative statues or stones. To find these pipes, you must search suspected points on the edges of the river. Looking for these pipes should be done during the day, and the observation may be done during the day or night (depending when dumping is occurring). The disposal of waste by dumping methods like these is often occurring at night, especially when it is raining. Using a torch, observe the color, muddiness, and smell of the waste coming from the pipes. Make sure that the waste does not touch any of your body. After that conduct the observation as per described in point one (Liquid waste from one factory) as mentioned above or as per point 2 (liquid waste from many factories). Figure 1.3a shows where the possibilities of hidden pipes can be found.

Figure 1.3a



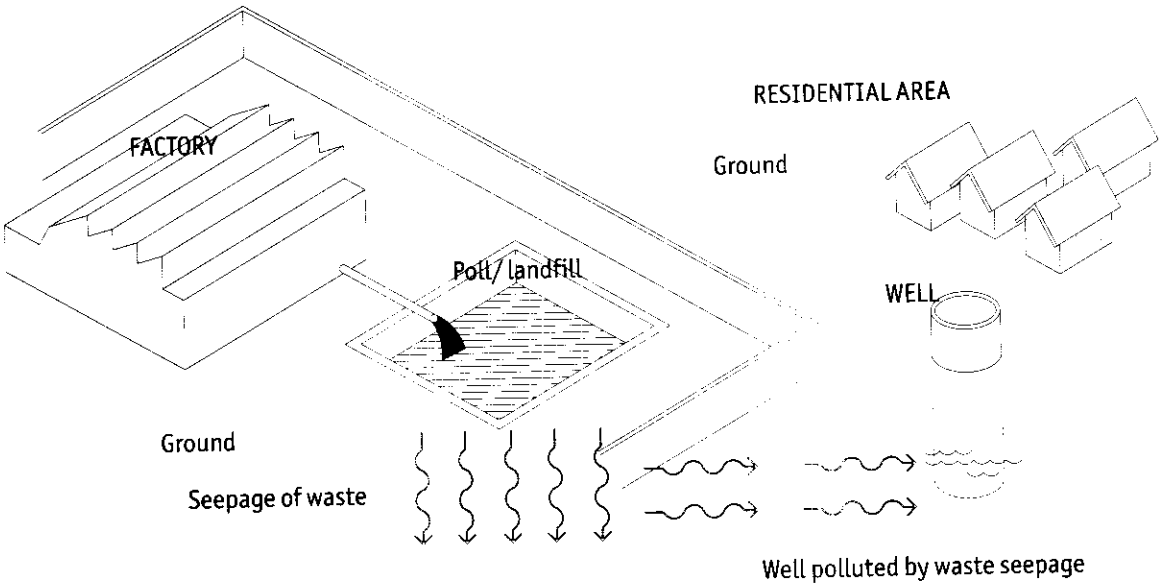


Figure 1.3b

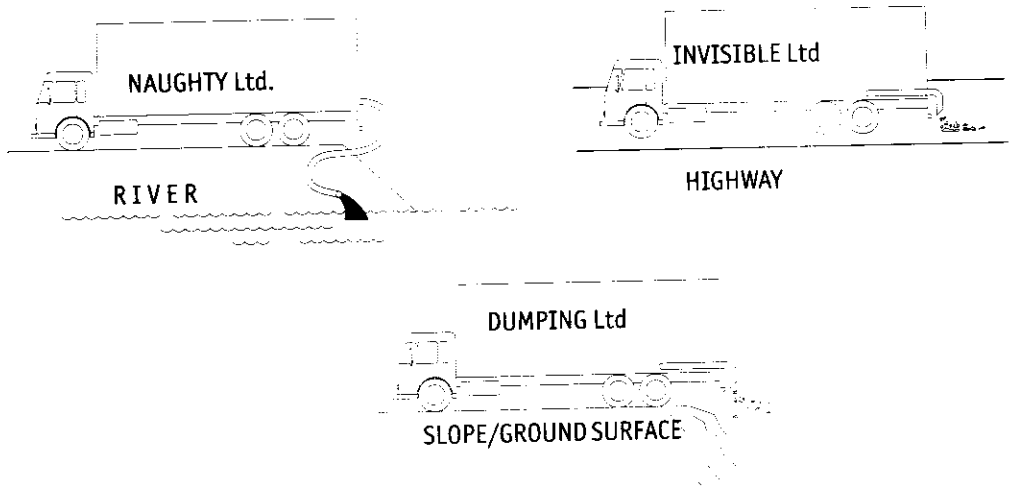
b. Thrown/stored in a landfill (sunken pool) in the surface of the land

This landfill (pool) has its floor and ceiling of mud, therefore, the liquid waste stored in such a place can and often does seep into the ground, thereby polluting the land, groundwater as well as the drinking wells in the area. Usually the location of such landfills is behind or at the sides of the factories and even hidden in the factories, at times. Figure 1.3 b shows the condition of the waste, which is stored in the landfills and the pollution that can result.

c. Dumping taking place away from watchful eyes, using tank trucks

This disposal method of waste is done in quiet and deserted locations, without anybody's knowledge. To investigate this, one must pay close attention to tank trucks driving in and out of the factory, where they go and follow them if deemed necessary. If they dispose of their waste through improper dumping, it may end up in the river, on roads, on open land surfaces, or on steep slopes of rivers and mountains. Figure 1.3c shows the possibility of waste disposed of by improper dumping using tank trucks.

Figure 1.3c



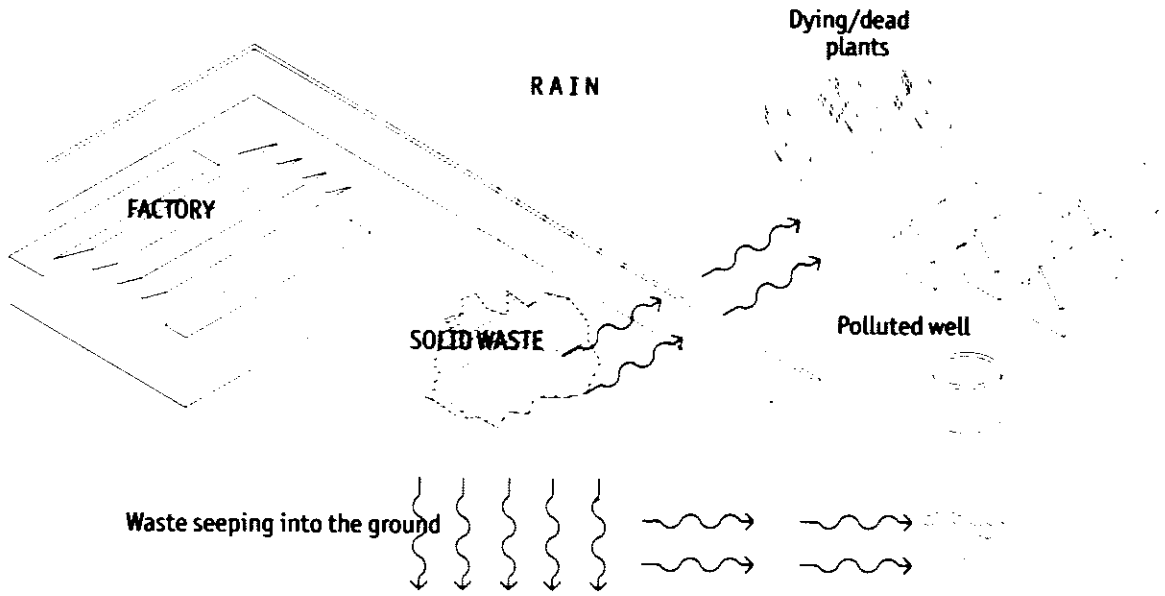


Figure 2.1

II. Solid Waste

Factories may keep their solid waste on adjoining land areas near the factory, outside the vicinity of the factory, or at places where waste is disposed of. At the factory, a landfill may be located at the back of or on the side of the factory. The potential pollution process that occurs is similar to that one of storing liquid waste in improperly built landfills (point 1.3b). The piled up waste, (in the form of mud, plastic, rubber, wood and metal), when soaked by the rain, can seep into the ground in the area. Figure 2.1 shows how solid waste improperly deposited in the factory area impacts the area by polluting the groundwater and or land areas.

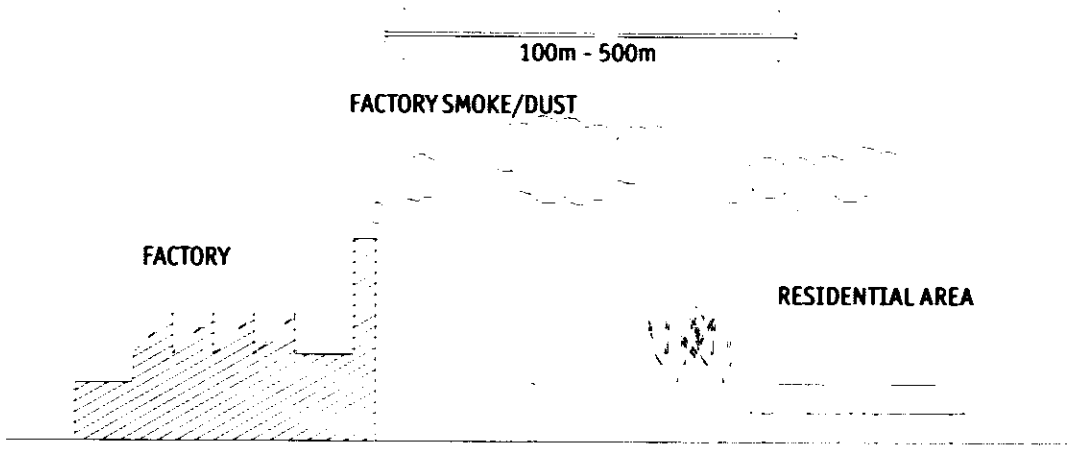


Figure 3.1.

III. Smoke and Dust

This type of waste is easy to locate because it usually comes out of a chimney. Note the smoke and dust blowing in the air and its wind direction at a radius of 100m - 500m from the chimney. Also note the air around the factory (smoky or dusty causing poor vivibility or a stinging smell). Note the wind velosity as well as high wind velocity can blow pollution away faster than slow wind velocity. Note impacts on people, animals, plants and the surrounding area (see figure 3.1.)