

# **Phase I ESA of E-PLA, Netherlands**

**March 19th, 2010**







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## **Phase I ESA of E-PLA, Netherlands**







## Responsibility

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|------------------------|-----------------------------------|
| <b>Title</b>           | Phase I ESA of E-PLA, Netherlands |
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| <b>Project number</b>  | 4698857                           |
| <b>Number of pages</b> | 34 (excluding appendices)         |
| <b>Date</b>            | March 19th, 2010                  |
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## Colophon

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## Executive Summary

At the request of Desch HC in The Netherlands, Tauw in The Netherlands ('Tauw') carried out a Phase I Environmental Site Assessment of E-PLA in Ter Aar, Netherlands. The ESA was carried out in conjunction with the contemplated acquisition of the site.

Tauw's work entailed an evaluation of the present state of the site and its activities from an environmental perspective, identifying liabilities and situations which are not in compliance with applicable legislation and regulations, assessing past and present practices and determining relevant business consequences. The ESA was conducted in general accordance with the methodology and procedures prescribed by the ASTM Standards on Environmental Site Assessments, as far as can practically be applied in The Netherlands.

The site is used for production of plastic plant pots and covers approximately 3.0 hectares located in a rural area. In 1988, the site was constructed on land that was previously used for market gardening and has gradually been expanded since. The site is owned by E-PLA. No observations were made of site neighbours that are likely to impact the site.

The site was observed to be in good condition with reasonably good housekeeping standards obeyed, the main point of concern being space constraints. In general terms, the potential environmental impact of the current operations of E-PLA are considered to be low. In more detail, the results of the assessment and the environmental status of the site can be described as follows:

### *Environmental permits*

The operations are covered by the relevant environmental permit with undefined validity. Available inspection reports from the authorities did not indicate major non-compliance issues with the permit.

As formal non-compliance issue, however not anticipated to have practical or legal impact on the site operations, the unauthorised storage of finished products in the greenhouse tunnels was identified.

Site management explained that the authorities, even though they are likely to be aware of the tunnels still being present and used today, have never requested the removal of the tunnels. This can be explained by the authorities anticipating on the forthcoming renewal of the municipal zoning plan making the future extension of the facility possible and the tunnels redundant.

► No action.



#### *Hazardous substances*

Limited volumes of hazardous substances are stored on site, including hydraulic oils, lubricants and waste oils, maintenance products and outdoor storage of gas cylinders. Hazardous products were observed to be stored under appropriate storage conditions, only housekeeping in the oils and lubricants storage room could be improved. Here oil stains were observed on the concrete floor.

- Housekeeping in the oils and lubricants store could be improved. This concerns a housekeeping issue of no material concern.

#### *Waste management*

Waste is separated in several fractions and includes general industrial waste, cardboard and foils, waste oils and cleaning rags. Plastic wastes are recycled on site.

Waste is frequently disposed of by professional and authorised waste contractors.

- No action.

#### *Water*

The site obtains approximately 200 m<sup>3</sup> of drinking water from the public mains. Waste water is discharged into the municipal sewer system, passing an oil separator. No waste water measurement data were available and none are required.

Storm water from the roofs and outdoor paved areas is discharged onto the neighbouring surface water passing filter boxes to trap plastic granules.

- No action.

#### *Air and odour emissions*

Relevant air emission sources from the site are limited to the emissions of a number of gas-fired installations. Installations are reportedly annually maintained and inspected as required.

Dust emissions from the site are limited and covered by general requirements in the environmental permit that will only become relevant in case of dust nuisance experienced by site neighbours, which is considered unlikely.

E-PLA is not likely to cause any odour nuisance.

- No action.



*Noise*

Noise compliance could not be assessed because no noise measurement data were available. The noise immission levels indicated in the environmental permit have not been based on actual acoustic survey, but rather on a general, subjective impression from the authorities. The nearest residential house is at close distance from the site and although no complaints have been filed and noise levels seem to be fairly low, there is a certain risk that future noise nuisance issues may arise e.g. with the anticipated extension of the production unit. Generally there appears not to be much noise space available at the site, especially during the night period when production is at similar capacity as during the day.

- Potential issue: the site should secure enough noise space in the framework of the future environmental permit for the anticipated extension of the production unit after the new municipal zoning plan will be in force.

*Soil and groundwater*

Subsurface conditions are unknown because no soil and groundwater investigation reports were available. Site management stated not to be aware of any soil contamination issues, incidents or spills that could have impacted the subsurface conditions.

The environmental permit from 2007 required the performance of a baseline soil and groundwater survey within 6 months from the issue of the permit. This baseline survey has not been performed to date and this represents a formal non-compliance, however not anticipated to have legal consequences.

A number of current and historical activities were identified that could have impacted the site and as such it could be considered to perform Phase II intrusive soil and groundwater survey in order to obtain a snapshot of these conditions at the time of the transaction and to fulfil the permit requirement on the performance of baseline soil and groundwater survey.

- Cost for baseline soil and groundwater investigation: EUR 15,000.

*PCBs*

Transformers are present in a transformer house adjacent to the facility. According to site management, the transformers were installed in 2005 and are maintained and managed by the electricity company. Considering the construction period of both the transformers and the injection moulding machines, it is considered unlikely that PCB containing (cooling or hydraulic) oils is present in one of these installations.

No other appliances were observed to have the potential to contain PCBs.

- No action.



#### *Ozone depleting substances*

The site is equipped with one domestic-type of air conditioning unit at the offices containing the cooling agent R22 which is considered ozone-depleting and should be replaced by 2015. Production is also equipped with three industrial cooling units applied for the cooling water of the injection moulding machines. These cooling units contain R407C which is an ozone-friendly alternative.

All cooling units are under a maintenance contract with the contractor Könst, which is a STEK certified contractor, as required in The Netherlands.

- The replacement of the domestic-type R22 air conditioning unit by 2015 is considered an issue of regular business. Maintenance of log books should be improved as a matter of good housekeeping.

#### *Asbestos*

No asbestos survey or inventory was available for review and none is required in the Netherlands. Site management was not aware of the presence of asbestos containing materials, apart from corrugated roof sheets that are suspected of containing asbestos. These roofs were observed on the moulds storage facility and the neighbouring small shed and were estimated to cover a total area of 200 m<sup>2</sup>. The materials were observed to be in good condition and as such, health risks associated with the release of asbestos fibres are not anticipated as long as the material remains untouched.

Generally it is expected that the risk of large-scale asbestos containing applications within the building construction is low.

- No action.

#### *Fire safety*

The facility is fitted with a fire alarm system covering the entire facility including the moulds storage room, as required by the fire insurer and the fire brigade. The installation is annually checked and the latest inspection of November 2009 revealed some minor deviations from the standards, however nothing material. Based on the inspection report, the installation was considered to be in accordance with applicable requirements and the assessed deviations should be considered as opportunities for improvement.

The site has space constraints and as such a number of emergency routes were observed blocked.

- For best practices, emergency routes should be kept free at all times and emergency exit signs should be upgraded to illuminated signs. Associated costs are not material.



- ▶ Moulds were observed to be stored in a room constructed of combustible materials. This freestanding room is connected with the main facility through a corridor constructed of hard-plastic sheets which could act as a conduit spreading fire and soot in case of a fire incident in one of both areas. It should be considered to remove the corridor, or alternatively, to construct a proper fire door.
- ▶ It should also be considered to remove wood blocks that are stored in the adjacent privately used greenhouse, as these blocks can be a source of fire incidents or may spread fire in case of an incident somewhere else.







## 1 Introduction

At the request of Desch HC in The Netherlands, Tauw in The Netherlands ('Tauw') carried out a Phase I Environmental Site Assessment of E-PLA in Ter Aar, Netherlands. The ESA was carried out in conjunction with the contemplated acquisition of the site.

The site is used for production of plastic plant pots.

Tauw's work entailed an evaluation of the present state of the site and its activities from an environmental perspective, identifying liabilities and situations which are not in compliance with applicable legislation and regulations, assessing past and present practices and determining relevant business consequences.







## 2 Assessment Methodology

### 2.1 Approach of the assessment

The Environmental Site Assessment (ESA) was conducted in general accordance with the methodology and procedures prescribed by the ASTM Standards on Environmental Site Assessments, as far as can practically be applied in The Netherlands. The ESA focussed on addressing liabilities and the site's regulatory compliance situation by means of a site visit and a review of relevant documents. Relevant business consequences associated with identified issues were determined, including capital expenditure needed to mitigate these issues.

The assessment included a preparatory phase, a site visit and an evaluation and reporting phase. The site visit was conducted by Mr Wilco van der Last of Tauw on 29 January 2010. The site visit comprised:

- Review of documentation and records made available on site
- Inventory of site activities and associated environmental impacts
- Site tour, during which also a photo report was prepared
- Interviews with key personnel:
  - Mr Erik de Jong, Technical Director
  - Mr Arjen Akerboom, Financial and Sales Director

During the site visit, all relevant areas were accessible and could be inspected for the purpose of this assessment. Two leased-out residential houses, their gardens and a sheepfold have only been inspected from the outside.

Environmental issues were identified by testing the information against the set criteria (i.e. the applicable regulatory requirements). Where appropriate, business consequences related to the identified issues, either financial or otherwise, were determined. Financial estimates presented in this report are not based on engineering studies but merely on our own expert judgement, unless stated otherwise.



## 2.2 Scope of the assessment

The following broad areas of interest were included in the assessment:

- Environmental regulatory compliance with requirements based on applicable national and regional legislation and permits
- Environmental key-aspects:
  - Permit situation
  - Storage of hazardous materials (and external safety aspects)
  - Waste management
  - Atmospheric emissions (air, odour and noise)
  - Water intake and discharge
  - Soil and groundwater contamination
  - Deleterious materials (PCB, ODS and asbestos)
  - Fire safety
- Health and safety key aspects, in brief review only and in as far as related to the applicable environmental permit(s)
- The need for capital expenditure to maintain regulatory compliance or to solve assessed non-compliances and liabilities

## 2.3 Definitions

In this assessment a materiality threshold level of EUR 5,000 per issue was applied for both value and operability of the assets. The following definitions have been applied in this assessment:

### *Material issue*

Environmental compliance or liability issue that may have substantial business consequences and that represents, in the context of this assessment, a liability above the materiality threshold level of EUR 5,000 per single issue.

### *Relevant other issue*

Environmental issue that is likely to have substantial business consequences, however, the cost and/or impact of these consequences cannot be assessed on the basis of the present data or without further investigation.

## 2.4 Reservations

This report presents the results of the assessment and has been prepared with utmost care. The report was based on documentation that was made available and on verbal information from E-PLA management. Our conclusions were based on our expert observations made during the site visit. The information obtained was only verified where practicable through, for example, a review of available documentation. Tauw assume that all relevant information and documents for this assessment were disclosed to us without any restriction.



## **2.5 Contents of the report**

The results of the environmental assessment are presented in Chapters 3 and 4. Site characteristics and the site profile are described in Chapter 3, whereas Chapter 4 elaborates on the environmental status of the site and the identified (potential) environmental issues and liabilities.

Appendix 1 includes a site layout map. A photographic record is enclosed in Appendix 2 and provides a detailed impression of the site and its operations.







## 3 Site Profile

### 3.1 Site location

The site is situated in the village of Ter Aar, located within the Nieuwkoop Municipality in the Province of Zuid-Holland, Netherlands. Ter Aar is located in the western part of the Netherlands, approximately 30 km southwest of the capital Amsterdam, as indicated on the site location plan in Appendix 1.

The site is situated in an agricultural area, located towards the northeast of the village centre with good access to the ring road of nearby Alphen aan den Rijn. The full address of the site is Oude Kerkpad 4e, 2461 EW Ter Aar, Netherlands.

### 3.2 Site features and current activities

E-PLA is a supplier of plastic pots for the horticulture sector and is specialized in the production of decorative pots, hanging pots, pot accessories, and adjoining rings and clips. Plastic products are manufactured by non-stop injection moulding machines supplied with plastic granules through vacuum transportation from bulk storage facilities. The plastics used on site mainly consist of polypropylene.

Appendix 1 includes a site layout plan. The site covers approximately 3.0 hectares and can roughly be divided into three different sections: a central industrial plot of about 0.5 hectares accommodating the production facility and associated constructions, and two open grassland plots of approximately 1.5 and 1 hectare respectively on the west and east side.

According to site management, the municipal zoning plan is currently under a renewal procedure and one of the aspects is to enlarge the industrial plot at the expense of the grasslands that are currently designated for agricultural use hence further expansion of the industrial constructions is not possible at this moment. Site management believed that the procedure will be completed within approximately a year from now (early 2011), which would make strongly-desired further expansion of the industrial site to the west possible.

The site accommodates various constructions, including the one-storey production building covering approximately 2,500 m<sup>2</sup> (refer to Appendix 2, picture 2.1 for an impression). The building accommodates the injection moulding machines covering the largest part of the facility, storage areas for granules bulk silos and packaging materials, some offices and a packaging and expedition area. Several smaller technical areas are spread over the facility, including a workshop and a plastics recycling area. Plastics recycling involves own materials only and no plastic waste is accepted from third parties.



The building was observed to be in good condition constructed of a steel frame with insulated corrugated metal sheets cladding the exterior. Indoor areas were equipped with concrete flooring. Housekeeping standards of the working areas was assessed as being reasonably good, the main point of concern being space constraints.

Other constructions on site include the following:

- A mould storage facility, a freestanding construction of wooden frame connected to the main production facility by means of a corridor (refer to Appendix 2, pictures 2.18 and 2.19). Site management reported to be willing to replace, enlarge and improve this facility however is awaiting the renewal of the municipal zoning plan
- A barn and adjoining greenhouse, older constructions that belonged to a previous market gardening and are currently used as private quarter of the company owners (refer to Appendix 2, picture 2.23)
- Plastic greenhouse tunnels, located at the back of the site and used for storage of finished products (refer to Appendix 2, pictures 2.24 and 2.25)
- A shed to locate bicycles, a single gas bottle and a trailer (refer to Appendix 2, picture 2.20)
- Another barn, used as a sheepfold (refer to Appendix 2, picture 2.28)
- Two residential houses under one roof, leased out (refer to Appendix 2, picture 2.2)

Improved areas were observed to surround the facility. The front areas are generally asphalted or paved whereas areas in the back were improved with concrete slabs. Minor damage to the paved areas was observed and is likely to be the result of ground subsidence that is common in this part of the Netherlands.

Considering the space constraints of the facility, outdoor areas are intensively used for storage purposes, especially on the side of the facility where raw materials are stored. Parking lots were observed in front of the main facility.

The site is serviced with natural gas from public supply and electricity from the public grid. The site has no own energy supply sources. The site obtains mains water that is applied without further purification. The facility is connected to the municipal sewer system and storm water is discharged onto a neighbouring ditch. There are no groundwater abstraction wells located on the site.

### **3.3 Historic use of the property**

Historical information of the site was limited, but site management stated that the site was originally used by a market gardening, that is likely to have started its operations somewhere in the 1960s. Production of plastic pots was started by this same company in later years and although site management had no knowledge of the precise locations, it was believed that the first production activities had taken place in the area that is now agricultural land.



It cannot be excluded that the operations of the former market gardening company involved activities that may have impacted the site, for instance as a result of fuel storage for heating or fuelling, or as a result of the mixing and application of fertilizers and pesticides. Information on these previous activities is however lacking and as such there is no evidence of an actual impact due to such activities.

In 1988, industrial operations at the site were started with the construction of the front part of the facility. The expedition area was constructed as an add-on in 1992. In 1995, the back of the facility was constructed and from that period on the site had attained its current shape and size. Operations on site have always been injection moulding of polypropylene plastics. E-PLA has always been serviced with natural gas and no fuels have reportedly been applied for heating or fuelling purposes.

### **3.4 Site surroundings**

The land uses immediately surrounding the site comprise:

- North: market gardening facility
- East: a farm
- South: agricultural land
- West: agricultural land and market gardening facility beyond

No industrial uses were observed at neighbouring sites and no observations were made suggesting any evidence that the surrounding land use would have a potential to impact the site where E-PLA is located.

### **3.5 Environmental setting**

The site is located in a rural area characterised by virtually flat, open meadow landscapes crossed by a network of ditches and waterways. Based on information from previous soil survey reports of sites in the neighbourhood of the site of E-PLA, the site is located at an elevation of 1 metre below sea level and underlain by 10 metres of sedimentary deposits of the so-called Westland Formation. This layer comprises low permeability clay and peat deposits. This upper layer is underlain by the first aquifer with a thickness of more than 30 metres comprising permeable sandy deposits.

The groundwater is encountered at about 0.5 metres below ground level. Groundwater level is maintained by water control measures and pumping to assure good ground conditions. Regional flow direction of the groundwater is likely to be to the east, but may be strongly influenced by local factors, especially the presence of nearby watercourses.



The E-PLA site is bordering a ring watercourse surrounding a neighbouring polder that is located at an elevation that is a few metres lower than the ring watercourse and the E-PLA site, which are at the same elevation (refer to Appendix 2, picture 2.27 for an impression). The ring watercourse is used for discharge of surplus water within the polder and its water level is continuously controlled.

Reportedly, the site has never faced any flooding, although site management stated that discharge of storm water may sometimes be difficult considering the high groundwater tables in the area.

The risk of flooding is not considered an issue for this site, as groundwater and surface water levels in the polders of the west of the Netherlands are generally well-controlled and The Netherlands, in general, is well-secured by an extensive network of embankments and waterworks.

The Netherlands are not considered a risk area for destructive earthquakes or hurricanes. Minor earthquakes may happen, but are rare.



## 4 Assessment results

### 4.1 Environmental Permits

The operations of the site are covered by a permit under the Environmental Management Act (*Wet milieubeheer*), which was issued by the Municipality of Nieuwkoop on 28 August 2007. The permit deals with a variety of aspects including hazardous substances, soil and groundwater, waste management, air emissions and noise emissions. The permit is the only environmental permit required for the operations of E-PLA and has an undefined validity.

Inspections by the municipal authorities have reportedly been undertaken periodically. According to site management the latest site inspection by the environmental authorities was undertaken more than two years ago. Only one inspection report of December 2004 could be made available. The report revealed that several minor issues were identified by the inspector, including inappropriate storage of gas bottles and storage of small volumes of unknown, probably hazardous, substances. Furthermore, the site was instructed to sign-post the gas cylinder storage and to make the storage area for hazardous products accessible. Also, it was reported that energy saving measures listed in an energy survey report were not implemented as was required by the environmental permit.

The latter issue was dealt with by providing the authorities with information on the increased energy efficiency, which according to a letter of 9 March 2005 was acceptable to the authorities.

#### *Issues*

One formal non-compliance was identified, but not anticipated to have practical or legal consequences and without risk of site closure by the authorities: site management informed that the storage of finished products in the greenhouse tunnels had been permitted in the past for a period of five years, however permission has expired in the meantime and storage in the tunnels should be regarded as an unauthorised activity.

Site management explained that the authorities, even though they are likely to be aware of the tunnels still being present and used today, have never requested the removal of the tunnels. This can be explained by the authorities anticipating on the forthcoming renewal of the municipal zoning plan making the future extension of the facility possible and the tunnels redundant.

### 4.2 Hazardous substances

Limited volumes of hazardous substances are stored on site, including:

- Storage of hydraulic oils, lubricants and waste oils (refer to Appendix 2, picture 2.3)
- Storage of hazardous maintenance products (refer to Appendix 2, pictures 2.6 and 2.7)
- Outdoor storage of gas cylinders (refer to Appendix 2, picture 2.20)



Hydraulic oils and lubricants were observed to be stored in one of the corners of the production building. Hydraulic oils and lubricants were stored in a number of six drums located on secondary containment. Waste oils were stored in a double-walled aboveground storage tank with a capacity of 3,500 litres. Flooring in the area was observed to be of concrete and in good condition, however housekeeping could be improved in this area considering the staining observed here.

A dedicated storage facility was used for the storage of hazardous maintenance and cleaning products. Quantities of these products were limited to approximately 100 litres and material Safety Data Sheets of the products were in place.

A small gas storage facility was constructed outdoors and was observed to contain two gas bottles most likely containing LPG and propane.

In addition to the storage of hazardous substances within the storage facilities described above, hazardous substances may be used in limited quantities in the workshop and, too the lesser extent, in production areas. No observations were made of inappropriate application or storage of such substances in these areas.

#### *Issues*

No material or relevant other issues were identified.

Housekeeping in the oil storage area was identified to require improvement to prevent the subsurface to be impacted on the long run.

### **4.3 Waste management**

The estimated volumes of the waste fractions generated annually at the site were reported to be roughly as follows:

- General industrial waste (weekly disposal, no volume disclosed)
- Cardboard and foils (11 tonnes)
- Waste oils (1.5 tonnes)
- Waste cleaning rags (400 litres)

Plastic wastes are recycled on site and are therefore not listed above.

The waste fractions mentioned above were disposed of by professional and authorised waste contractors, including AVR (Waste oil and cleaning rags), Sita (general industrial waste) and Pothuizen (cardboard and foils).

Waste is frequently disposed of and examples of waste transfer notes were made available for review.



*Issues*

No material or relevant other issues were identified.

**4.4 Water intake and waste water discharge**

The site obtains drinking water from the public mains without any further purification. Water is mainly used for sanitary purposes, cleaning and to fill up the closed-loop water cooling circuit. The volume of water taken in is limited to some 200 m<sup>3</sup> per year.

Waste water is discharged into the municipal sewer system, passing an oil-water separator first. The required KIWA installation certificate of the oil separator was made available for review. Reportedly, the oil separator is emptied and cleaned on demand. No waste water measurement data were available and none are required.

Storm water from the roofs and outdoor paved areas is discharged onto the neighbouring surface water. The storm water is led through filter boxes to catch plastic granules and prevent discharge onto the surface water (refer to Appendix 2, picture 2.26).

*Issues*

No material or relevant other issues were identified.

**4.5 Air and odour emissions**

Relevant air emission sources from the site are limited to the emissions of three gas-fired heaters, two domestic-type boilers and a shrink foil packing machine. The environmental permit regulates that these installations should be maintained annually, which was reportedly covered by a verbal agreement with a local contractor.

In addition to regular maintenance, the environmental permit also rules that a so-called SCIOS safety inspection has to be performed for the shrink foil packing machine considering its capacity of 400 kW. The latest SCIOS inspection was performed on 15 May 2008 and should be repeated by 15 May 2010, which is the regular interval for this type of inspections. The boilers and heaters are not subject to SCIOS inspections due to their capacity which is below the threshold level of 130 kW.

The site also has to comply with the general dust emission requirement from the NeR (Dutch Emission Guidelines), being 5 mg/m<sup>3</sup>. The preamble of the environmental permit stated that this requirement was only incorporated in order for the authorities to have a framework that allows them to undertake enforcement actions, in case needed, for instance future dust nuisance issues. According to site management no such nuisance issues have ever been filed. No obvious dust emissions or dust emission sources were observed during the site inspection.



The ventilation system of the recycling machines was observed to be a potential major dust emission source, however the ventilation is fitted with a cyclone that was constructed to ventilate indoors instead of to the outside. This cyclone is equipped with dust collection bags.

In conclusion, the likelihood of dust emissions above standard should be considered as low.

In general, the activities of E-PLA are not likely to cause any odour nuisance as no relevant odour emissions were observed during the site inspection.

#### *Issues*

No material or relevant other issues were identified.

### **4.6 Noise emissions**

The site is located in an area with few residential houses around, however the nearest house is located at a distance of 43 metres. The environmental permit includes noise immission levels at the façade of that house to protect the resident against noise nuisance.

These noise immission levels were based on previous environmental permits and were not based on acoustic survey. The preamble of the environmental permit stated that, considering the maximum indoor noise levels of 88 dB(A) at the production facility, it was reasonable to believe that the site would be able to meet the equivalent noise levels at the house of 45 dB(A) during the day, 40 dB(A) in the evening and 35 dB(A) in the night. Furthermore, it was reported that, considering the distance to the house, it was reasonable to believe that the site would also comply with the permitted values for maximum noise levels at the house of 70 dB(A) during the day, 65 dB(A) in the evening and 60 dB(A) in the night.

Seeing the fact that no external (e.g. roof top) ventilation cyclones are present at the site nor serious traffic movements, it can be assumed that these values are not or only slightly exceeded. Especially for the night period is questionable if noise immission limits can be fully respected. Site management stated not to be aware of any complaints from site neighbours with regard to noise nuisance.

#### *Issues*

Noise compliance could not be assessed because no noise measurement data were available. The noise immission levels indicated in the environmental permit have not been based on actual acoustic survey, but rather on a general, subjective impression from the authorities. The nearest residential house is at close distance and although no complaints have been filed and noise levels seem to be fairly low, there is a certain risk that future noise nuisance issues may arise e.g. with the anticipated extension of the production unit. Generally there appears not to be much noise space available at the site, especially during the night period when production is at similar capacity as during the day.



This is a point of attention for the site, i.e. the site should secure enough noise space in the framework of the future environmental permit for the anticipated extension of the production unit after the new municipal zoning plan will be in force.

#### **4.7 Soil and groundwater**

No soil and groundwater investigation reports were available. Reportedly, a soil and groundwater investigation was performed prior to the construction of the latest extension of the main building in 1995 as a requirement for obtaining a building permit. Site management believed that the results of this investigation were satisfactory revealing that soil and groundwater were not or only slightly impacted, meaning Dutch background levels for soil or reference levels for groundwater were exceeded, however intervention levels, marking serious contamination, were not exceeded. The investigation report was not available, but as the extension was actually built, it is reasonable to believe that a building permit was issued implying that soil and groundwater conditions were as described by management, i.e. not hindering building construction. Or, in case serious contamination would have been detected, remedial actions would have been imposed and taken prior to construction.

The municipal environmental databases include a number of soil and groundwater investigation reports of sites located nearby the E-PLA site, but none was considered relevant for the E-PLA site itself.

Observations of current operations suggest that the potential for the site to impact the soil and groundwater can be considered low. The facility does use hazardous substances, however storage conditions and housekeeping aspects were observed to be reasonably good. Furthermore, flooring was observed to be good-quality concrete throughout all relevant areas and secondary containment was observed to be applied where appropriate.

Nevertheless, a number of areas were identified where low risks of impacting the subsurface from current activities cannot be excluded, including:

- Production areas where hydraulic oil is applied in injection moulding machines. Site management reported that leakages of hydraulic oils were common in the past, although the situation was strongly improved by the installation of new machines
- The technical workshop where oils, lubricants and maintenance products are applied
- The storage room for oils, lubricants and waste oils where secondary containment was applied, but staining on the floor was observed
- The oil/water separator that may have fragile connections to the sewer, considering the general instability and subsidence of the clayey and peaty land



Information on historical activities that may have impacted the site was limited. Site management stated that no underground fuel storage tanks have been on site since 1988, but was not aware of any fuel tanks prior to 1988, either underground or aboveground. As fuel storage was common in market gardening in previous years, either for fuelling, for heating the greenhouse or for domestic use, there is a fair likelihood that fuel tanks were operational on this site.

Other historical activities that are common in market gardening, and that may pose a risk for subsurface conditions, are the mixing and application of fertilizers and pesticides, although no specific evidence or information was procured.

Finally, injection moulding activities had taken place for 10 years on site, prior to E-PLA being established. Reportedly these activities were part of the former market gardening facility, but no information could be made available as to the precise locations of these former activities.

Site management stated not to be aware of any soil contamination issues, incidents or spills that could have impacted the subsurface conditions.

#### *Issues*

Subsurface conditions are unknown due to the absence of soil and groundwater investigation reports, although the environmental permit from 2007 required the performance of a baseline soil and groundwater survey within 6 months from the issue of the permit. This baseline survey has not been performed to date and this represents a formal non-compliance, but any legal consequences are not anticipated.

A number of current and historical activities were identified that could have impacted the site and as such it could be considered to perform Phase II intrusive soil and groundwater survey in order to obtain a snapshot of these conditions at the time of the transaction and to fulfil the permit requirement on the performance of baseline soil and groundwater survey.

## **4.8 Deleterious materials**

#### *PCBs*

Transformers are present in a transformer house adjacent to the facility (refer to Appendix 2, picture 2.29). According to site management, the transformers were installed in 2005 and are maintained and managed by the electricity company. Furthermore, the oldest injection moulding machines were reported to be eight years old.

Considering the construction period of both the transformers and the injection moulding machines, it is considered unlikely that PCB containing (cooling or hydraulic) oils is present in one of these installations.

No other appliances were observed to have the potential to contain PCBs.



*Ozone depleting substances*

Ozone depleting cooling agents may be present within cooling units and are subject to a phasing out programme in Europe.

The site is equipped with one domestic-type of air conditioning unit at the offices containing 1.07 kg of the cooling agent R22. R22 is considered ozone-depleting and should be replaced by 2015. Production is also equipped with three industrial cooling units applied for the cooling water of the injection moulding machines. In contrary to R22, these cooling units contain R407C which is an ozone-friendly alternative, present in volumes of 16.2 kg (2 units) and 50 kg (one unit).

All cooling units are under a maintenance contract with the contractor Könst, which is a STEK certified contractor, as required in The Netherlands. Maintenance log books were available but in disorderly condition and housekeeping should be improved in that respect.

*Asbestos*

No asbestos survey or inventory was available for review and none is required in the Netherlands. Site management was not aware of the presence of asbestos containing materials, apart from corrugated roof sheets that are suspected of containing asbestos. These roofs were observed on the moulds storage facility and the neighbouring small shed and were estimated to cover a total area of 200 m<sup>2</sup>. The materials were observed to be in good condition and as such, health risks associated with the release of asbestos fibres are not anticipated as long as the material remains untouched (refer to Appendix 2, pictures 2.22 for an impression).

Other asbestos containing materials may have been applied within parts of the building construction as well as parts that have been constructed prior to 1993. The application of asbestos in building materials has been banned in the Netherlands from 1993 on. During the site tour, no observations were made of construction materials that were suspected to have the potential to be asbestos containing materials. As such, it is expected that the risk of large-scale asbestos containing applications within the building construction is low.

*Issues*

No material or relevant other issues were identified.

The replacement of the domestic-type R22 air conditioning unit by 2015 is considered an issue of regular business. Log books maintenance should be improved as a matter of good housekeeping.



## **4.9 Fire safety**

Management stated that fire incidents have never occurred on site.

The facility is fitted with a fire alarm system covering the entire facility including the moulds storage room, as required by the fire insurer and the fire brigade. The installation is annually checked and the latest inspection of 16 November 2009 revealed some minor deviations from the standards, however nothing material. Based on the inspection report, the installation was considered to be in accordance with applicable requirements and the assessed deviations should be considered as opportunities for improvement.

The installation was certified in accordance with applicable Dutch NEN standards, including NEN 2535 and 2575. The inspection certificate was issued by the reputable company R2B Inspecties BV on 8 December 2009 and has validity until 5 October 2010.

Fire fighting appliances were observed to be well distributed over the site and to be inspected annually. Substandard emergency routing and fire doors were observed in the entire facility.

According to site management, the local fire brigade has been on site for consultation occasionally, but no site inspections reports have ever been issued. The site is also under periodic inspection from the fire insurer, once every two years on average, but site management indicated that no inspection reports were made available. Reportedly, the fire insurer only made observations of housekeeping issues.

No information was available on explosion risks and ATEX zoning, hence potential dust explosion risks could not be assessed. Based on observations made during the site inspection, dust explosion risks seem to be low as dust emissions and dust layers were generally not observed on site. Only the cyclone of the recycling machines was observed to be covered with some dust, probably as this installation is ventilating indoors. Bulk storage tanks (silos) are filled by a jack screw generating negligible dust emissions.

### *Issues*

The site has space constraints and as such a number of emergency routes were observed blocked. For best practices, emergency routes should be kept free at all times and emergency exit signs should be upgraded to illuminated signs (refer to Appendix 2, pictures 2.10 and 2.11 to obtain an impression of the current state). Associated costs are minor.



Furthermore, moulds were observed to be stored in a room constructed of combustible materials. This freestanding room is connected with the main facility through a corridor constructed of hard-plastic sheets which could act as a conduit spreading fire and soot in case of a fire incident in one of both areas. It should be considered to remove the corridor, or alternatively, to construct a proper fire door.

Site management stated to be willing to replace the moulds storage facility by a larger and more dedicated storage facility, but to be awaiting the formal approval of a new zoning plan for the area (expected in 2011) as the current zoning plan does not allow further extension of constructions on site.

It should also be considered to remove wood blocks that are stored in the adjacent privately used greenhouse, as these blocks can be a source of fire incidents or may spread fire in case of an incident somewhere else.







# Appendix

## 1

Site plans







## Site location plan



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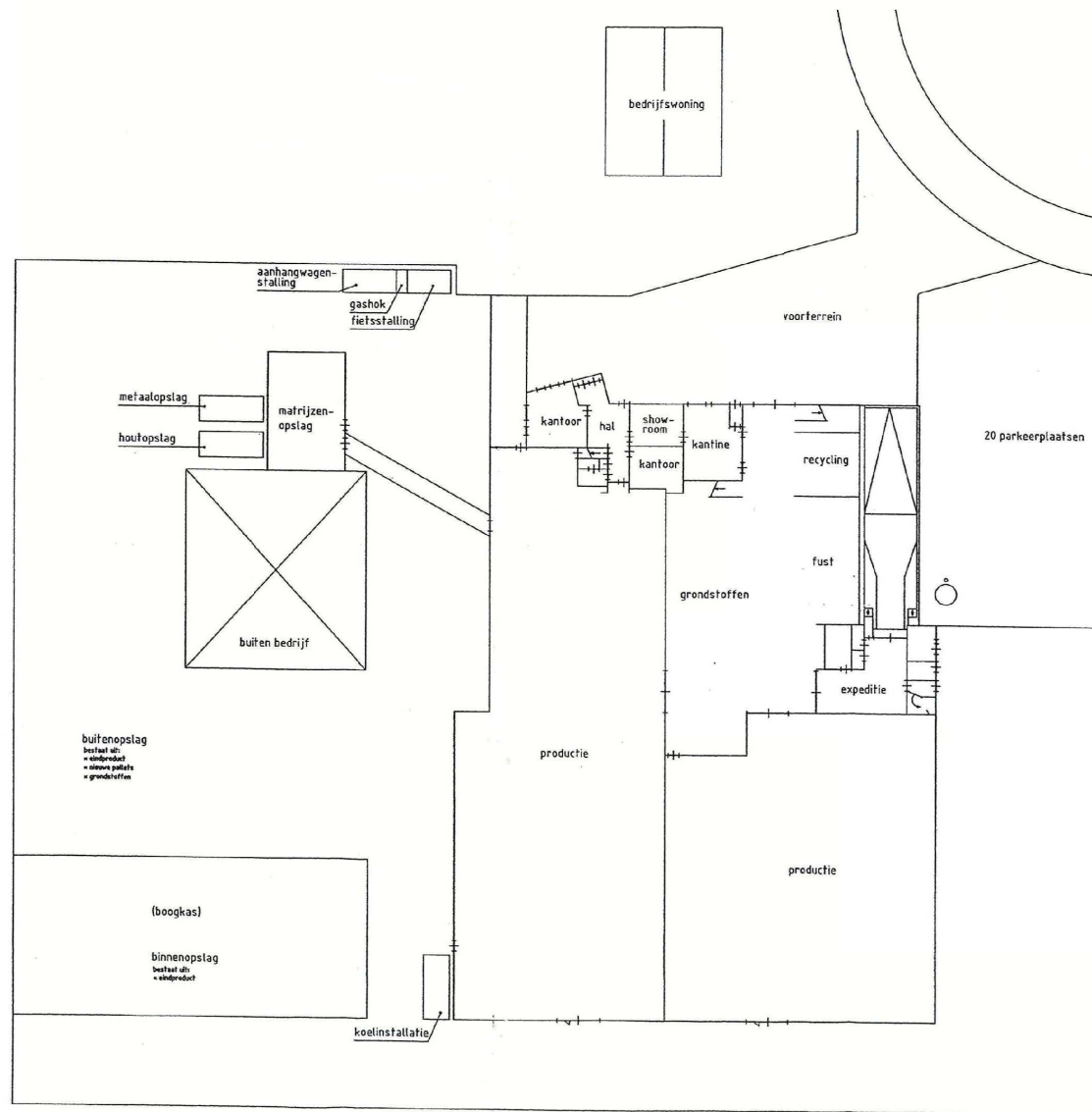


## Aerial view





# Site plan









# Appendix

## 2

Photographic record









**Figure 2.1 Front view of the facility**



**Figure 2.1 Residential houses, part of the E-PLA site**



**Figure 2.2 Oil and lubricants storage and storage tank in the back**



**Figure 2.3 Plastics recycling equipment**





**Figure 2.4 Bulk storage facilities of granules**



**Figure 2.5 Hazardous substances storage facility**



**Figure 2.6 Inside of the storage cabinet for hazardous products**



**Figure 2.7 Bulk storage of PP granules**





**Figure 2.8 Vacuum installation for transporting granules**



**Figure 2.9 Substandard fire door – 1 (no illuminated exit sign - best practice issue)**



**Figure 2.10 Substandard fire door - 2 (no illuminated exit sign - best practice issue)**



**Figure 2.11 View of one of the injection moulding machines**





**Figure 2.12 Proper fencing of an injection moulding machine**



**Figure 2.13 Cooling water unit of the injection moulding machines**



**Figure 2.14 Overview of the production area - 1**



**Figure 2.15 Overview of the production area - 2**





**Figure 2.16 Workshop**



**Figure 2.17 Inside of the moulds storage room**



**Figure 2.18 Corridor constructed of hard-plastic sheets from the main building to the moulds storage room**



**Figure 2.19 Shed with gas cylinder storage**





**Figure 2.20 Outdoor storage**



**Figure 2.21 Suspected asbestos roofing on the barn and the moulds storage room beyond**



**Figure 2.22 Remainder of the old greenhouse, now privately used, a/o for storage of wood blocks**



**Figure 2.23 Tunnels used for storage of finished products**





**Figure 2.24 Inside the storage tunnels**



**Figure 2.25 Filter box for capturing granules discharged through storm water**



**Figure 2.26 Neighbouring ditch with high water level**



**Figure 2.27 Sheepfold located on E-PLA grassland area (east side)**





**Figure 2.28 Transformer house**



**Figure 2.29 Overview of the grassland to the east of the production unit**



**Figure 2.30 E-PLA grassland plot on the west side of the production unit**



**Figure 2.31 Oil separator (see iron lid under pallets with orange coloured plant pots)**