Environmental Protection Agency
IPC Licensing
Received
20 FEB 2006
Initials

Office of Licensing and Guidance,
Environmental Protection Agency Headquarters,
P.O. Box 3000,
Johnstown Castle Estate,
Co. Wexford.

20th February 2006

OBJECTION TO IPPC PROPOSED DETERMINATION NO 672.

Name of Objector	Finsa Forest Products Ltd
Address of Objector	Scarriff,
	Co. Clare
Reference Number	672
Grounds for objection	See attached
Fee	€253 for an objection by the applicant

Dear Sir or Madam:

Having studied the proposed determination issued by the Agency, (licence registration number 672) and having discussed its contents and implications with our Parent Company we have concluded that certain provisions contained in the proposed determination will have serious implications for the continued viability of our Company.

We are committed to operating the plant in a manner that will minimise its environmental consequences but we cannot sustain the imposition of environmental conditions that are not imposed on any of our competitors within the European Union.

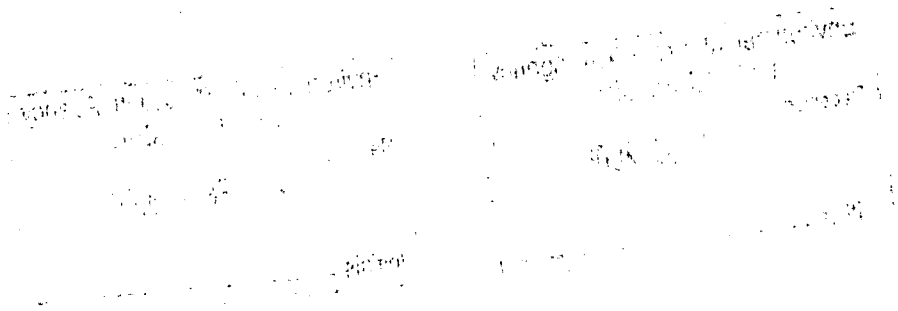
For the above reasons we ask the Agency to fully consider the attached objections.

Yours sincerely,

P.P.

Virgilio Romero Suárez
CEO

EPA
MAIN FILE ✓
PUBLIC FILE ✓ ✓
EVALUATION FILE ✓ AD
DATE 21/02/06 DC



OBJECTIONS TO PROPOSED IPPC LICENCE NO. 672

OBJECTION # 1: USE OF C+D WASTE AS A RAW MATERIAL

We object to condition 8.8 of the Proposed Determination. This deals with the types of wood waste that we will be licensed to use as fuel sources and as raw materials for our process.

GROUNDS FOR OBJECTION #1:

This condition excludes us from using wood contaminated with MDF as a raw material; however, MDF is a very clean material made from the same raw materials as particleboard and its use as either a fuel or a raw material poses no increased environmental risks. Our Company purchases MDF and processes it in our value added lines. Dust and off-cuts from these operations are currently used as boiler fuel and raw materials on the site.

This condition also excludes us from using wood derived from construction and demolition activities as a fuel or raw material. We have been using recycled wood as a raw material since 1995. Prior to this there was practically no wood recycling taking place in Ireland. We began working with one supplier and using small quantities. During the next four to five years we invested in cleaning and segregation equipment and we worked with new recycling Companies to establish quality parameters. This allowed us to use additional quantities of recycled wood and it also allowed the wood recycling Companies to expand, diverting material that was previously landfilled and using it to produce wood based panels.

Currently we use 35000 tonnes per annum of recycled wood in our process and this has become vitally important to the economic survival of our Company. The economic benefits associated with the use of recycled wood for our Company are as follows:

1) We have established a niche supply of raw material for which we don't have to compete with the larger board plants
2) Recycled wood is cheaper than virgin wood
3) Recycled wood is much dryer than virgin wood (approximately 30%atro versus120%atro). This has major benefits for us in that it dramatically reduces our energy costs and at the same time increases our drying capacity thereby increasing our production capacity and plant operating efficiency
4) The use of recycled wood reduces our green house gas emissions by about 2040 tonnes of CO_2 per annum.

5) We expect the available volumes of sawdust and other sawmill residues to decrease in the future as sawmills install combined heat and power plants and also divert these materials to the manufacture of wood pellets, which are used as a fuel.
6) We have established an efficient transport system with our hauliers whereby they deliver our products and then return to the plant with recycled wood.

Approximately 70% of the recycled wood that we use is derived from construction and demolition activities. The vast majority of this material is not contaminated with halogenated organic compounds or heavy metals as a result of treatment with wood preservatives or coatings and therefore does not come within the scope of the Waste Incineration Directive. We also note that there is a difference in the interpretation of the Waste Incineration Directive in Condition 8.8 and Schedule A3 Note 2 of the Proposed Determination. It appears that all particle board producers in the European Union use wood derived from construction and demolition activities as a raw material, in particular manufacturers in the UK, who are our direct competitors are using construction and demolition timber as a raw material. If we are not allowed to use construction and demolition wood as a raw material, we have calculated that the additional costs associated with replacing this material with virgin material and the procurement of the additional heavy fuel oil necessary to dry this material will amount to 790,000 euros annually (this can be independently verified). Also, there will be other negative environmental impacts for the country e.g. landfilling, and also impacts on employment and the supply chain.

We propose that we be allowed to continue using recycled wood derived from construction and demolition activities as a raw material on site with the proviso that we put in place procedures with the objective of excluding incoming wood containing halogenated organic compounds or heavy metals as a result of treatment with wood preservatives or coatings. Any contamination still present after these procedures have been implemented would be there as a results of natural, accidental or unintentional reasons.

These procedures will need to address the following:

1) The education, monitoring and auditing of suppliers.
2) The establishment of a list of approved suppliers
3) The modification of our purchasing specifications
4) The visual inspection and chemical testing of incoming loads of recycled wood.
5) The rejection of material deemed to be not suitable for our production process
6) The testing of our products for compliance with the European Panel Federation limits (see Appendix A attached)
7) The training of our purchasing and production staff

SUPPLIERS

We will have to educate our suppliers to exclude from their premises items coming from the following sources. Poles used in the distribution networks for electricity and phone signals, railway ties, fencing, items coated with creosote, landscaping wood. Where such items enter their premises they will have to be segregated and not used as feedstock for the production of recycled wood chips for either ourselves or other board producers.

- Each supplier will be visited at least once every three months by our forestry manager and their premises will be inspected
- Our forestry manager and another member of our management team will audit each supplier annually. These audits will be designed to check the supplier's controls, inspections and segregation of incoming materials to ensure knowledge of and compliance with our specifications.

As part of our quality management system, we have lists of approved vendors for all our materials. The vendor list for recycled wood chip suppliers will be reviewed to ensure that it deals adequately with:

1) The criteria used for adding new suppliers to the list
2) Supplier profiling as detailed in Condition 8.10 of the Proposed Determination.
3) The criteria used for removing suppliers from the list

PURCHASING SPECIFICATIONS

Our purchasing specifications will need to be modified with the objective of excluding from our production process the following materials:

1) Wood containing halogenated organic compounds or heavy metals as a result of treatment with wood preservatives or coatings
2) Wood derived from poles, railway ties, fencing or items coated with creosote
3) Wood derived from timber treatment processes
4) Wood contaminated with oil
5) Suppliers will be required to issue a signed certificate of compliance with our specifications.

VISUAL INSPECTION AND CHEMICAL TESTING OF INCOMING LOADS

Each load of recycled wood chip will be visually inspected prior to offloading in the timberyard. This inspection will be in accordance with the purchasing specification and will include:

1) Signs that the level of plastic contamination exceeds specification.
2) Signs that the level of stone and metal contamination exceeds specification.

3) Signs that the load contains material coated with creosote
4) Signs that the level of painted material exceeds specification.

If following the initial inspection the load appears to be within specification, unloading can proceed. Once unloaded the material is again inspected as above. If on either of the above inspections the material is deemed to contravene the specification, the load will be rejected and provisions will be made to return it to the supplier.

Copper is a key indicator metal for the presence of copper based preservative wood treatments such as copper-chrome-arsenate (CCA), copper-chrome-boron (CCB), copper-chrome-phosphate (CCP) and copper organics which are the predominant preservatives used in wood protection. An effective and simple indicator test for the presence of copper is the Chromazurol S Colour spray test. We will study the use of this indicator, and we will use it to randomly check incoming loads of recycled wood chip. Acceptance and rejection criteria will be established.

PRODUCT TESTING

As part of our quality control checks within the plant, board samples are taken from the production line and tested for their mechanical and physical properties. Samples of each board tested are maintained in the laboratory for a period of six months. Smaller samples can be removed from these samples and tested for the presence of a range of metals, fluorine, chlorine, pentachlorophenol and creosote. The European Panel Federation has adopted limits for these contaminants based on the CEN report CR 13387 "Child use and care articles- General and common safety guidelines" and also based on EN-71-3 "Safety of toys". Levels for fluorine, chlorine, pentachlorophenol and creosote were set taking environmental considerations into account. The EPF recommends testing a monthly composite sample for the listed contaminants except pentachlorophenol and creosote, which it recommends should be tested every three months. The EPF limits are attached in Appendix A. Samples of process dust will also be tested monthly.

Composite board samples for December 2005 and January 2006 have been sent to BHP laboratories for testing as per the Annex section 2.2 of Council Decision of 19 December 2002 establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC. The results are attached in Appendix B. We have also tested a range of metals in wood as per the above-mentioned Council Decision and found no significant differences between virgin wood, final product, process dust and MDF, these results are included in Appendix C. Additional metals monitoring can be undertaken if required by the Agency. Also, we have tested sanding dust against the EPF limits and these results are included in Appendix D. (The signed reports from BHP laboratories for the results in Appendices B, C and D can be made available on request, it was not possible to obtain them in the timeframe allowed for this objection).

STAFF TRAINING

All our staff whose jobs involve:

1) The purchase of raw materials or boiler fuels
2) The unloading and checking of incoming raw materials in our timber yard
3) The environmental management of the plant
4) Production managers, supervisors and operators
5) Quality management and quality control

will be trained on the use of these procedures, the reasons for establishing these procedures and the importance of ensuring that the provisions contained in these procedures are complied with. Records of all training will be maintained.

OBJECTION # 2: EMISSION LIMIT VALUE FOR BAG FILTERS

We object to the proposed Particulate Emission Values detailed in Schedule B.1 for emissions from our bag filters.

GROUNDS FOR OBJECTION:

The BATNEEC Guidance Note for Board manufacture published by the EPA in 1996 sets limits from emission sources other than wood driers and MDF plants at 50mg/m3.

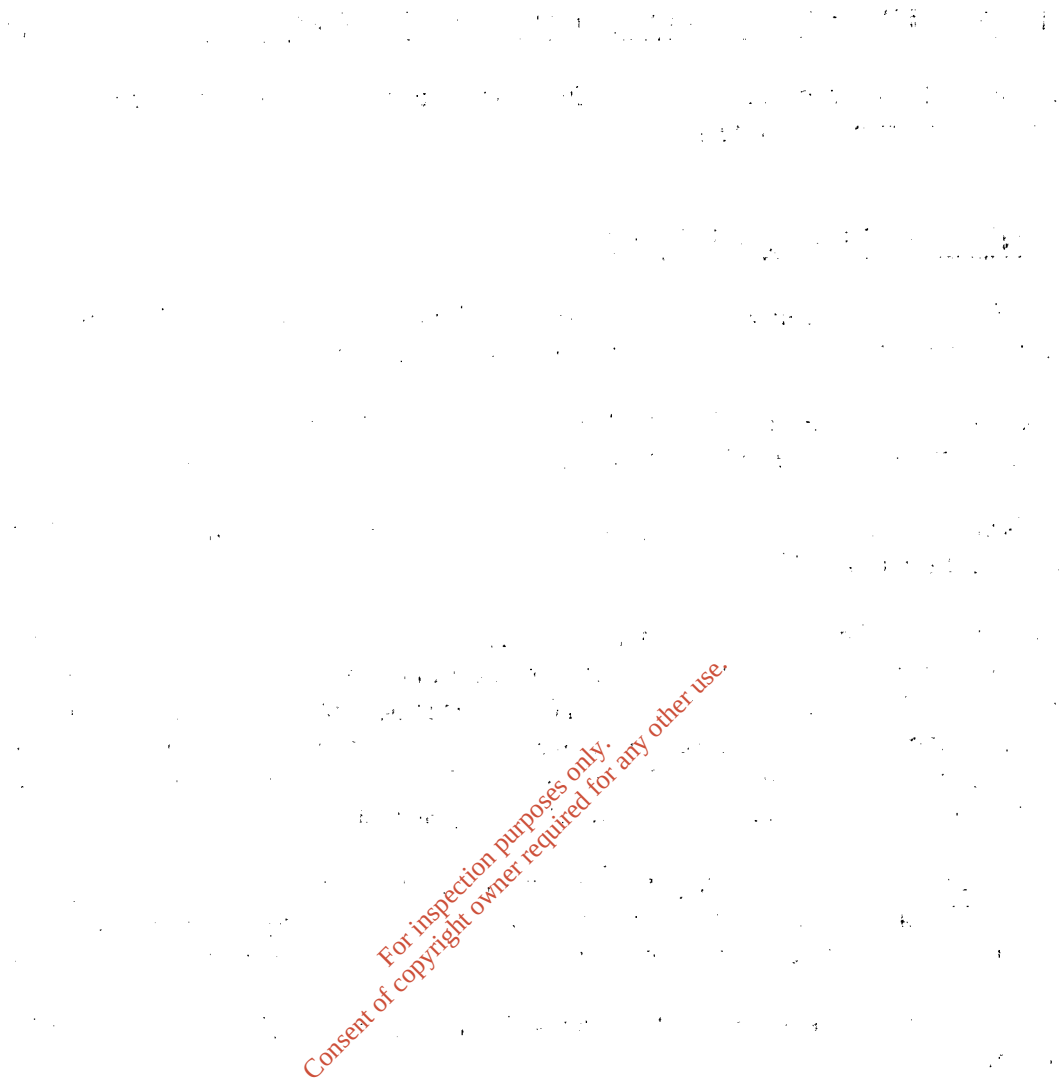
The Sector Guidance Note IPPC SG1 published by DERFA in June 2003 sets limits for all contained sources other than wood dryers and MDF production at 50mg/m^3.

Emission limit values set by the Agency for bag filters in another manufacturing plant within the sector are 20mg/m3.

We accept that the Agency has to take site specific details into account when setting ELV's, however setting limits which are far below manufacturers guarantees and which in the long term are probably not achievable is possibly not the best option for ensuring compliance with present or future air quality standards. We propose that our ELV's for bag filters remain at 10mg/m^3 and the ELV's for cyclones (EP12) remains at 50mg/m^3. To ensure compliance with air quality standards we will:

1) Conduct a detailed analysis of our most recent dispersion modelling study
2) Undertake additional dispersion modelling studies as may be necessary
3) Contract the services of environmental consultants who can propose solutions

We believe that these issues can be addressed under condition 6.9.1 of the proposed licence.



OBJECTION # 3: EMISSION LIMIT VALUES EP1

We object to the proposed ELV's from emission point EP1 in schedule B.1 for CVOCs, Formaldehyde, Total Aldehydes, Sulphur oxides and Ammonia.

GROUNDS FOR OBJECTION:

1) Condensable Volatile Organic Compounds emission limit value has been reduced from 130mg/m^3 in our original IPC licence to 55mg/m^3 in the proposed IPPC licence. The BATNEEC Guidance Note for Board manufacture published by the EPA in 1996 specifies an ELV of 130mg/m^3 for CVOCs. The Sector Guidance Note IPPC SG1 published by DERFA in June 2003 sets a limit of 130mg/m^3 for each emission point to air. A licence recently issued by the Agency to another manufacturing plant within the sector also specifies an ELV of 130 mg/m^3. We request that the limit of 130mg/m^3 be retained.

2) The Emission Limit Value for Formaldehyde has been reduced from 20mg/m^3 in our original IPC licence to a proposed level of 10mg/m^3 from January 2007. The BATNEEC Guidance Note for Board manufacture published by the EPA in 1996 specifies an ELV of 20mg/m^3 for formaldehyde. The Sector Guidance Note IPPC SG1 published by DERFA in June 2003 sets a limit of 20mg/m^3 for each emission point to air for existing installations. A licence recently issued to another manufacturing plant within the sector also specifies an ELV of 20 mg/m3. We request that the limit of 20mg/m^3 be retained

3) The Emission Limit Value for Total Aldehydes has been reduced from 20mg/m^3 in our original IPC licence to 10mg/m^3 from January 2007. The BATNEEC Guidance Note for Board manufacture published by the EPA in 1996 specifies an ELV of 20mg/m^3 for Total Aldehydes. The Sector Guidance Note IPPC SG1 published by DERFA in June 2003 sets a limit of 20mg/m^3 for each emission point to air from wood dryers. A licence recently issued to another manufacturing plant within the sector also specifies an ELV of 20mg/m^3. We request that the limit of 20mg/m^3 be retained.

4) The Emission Limit Value for Sulphur oxides (as SO_2) has been reduced from 200mg/m^3 in our original IPC licence to 115mg/m^3 in the proposed IPPC licence. While currently our monitoring results show that we are below this limit, in the future it may be necessary for us to use increased quantities of heavy fuel oil as a fuel source as competition is likely to increase for available boilerfuels and also additional production increases in the plant may require the use of additional quantities of heavy fuel oil. This may cause difficulties for us in meeting the proposed ELV. The Sector Guidance Note IPPC SG1 published by DERFA in June 2003 does not give a limit for sulphur dioxide in emissions to air but does give a limit of 1% wt/wt sulphur in fuel oil, as included in Condition 6.9.2 of the proposed IPPC licence. We request that the limit of 200mg/m^3 be retained.

5) The frequency of monitoring for Ammonia has been increased from annually to a monthly basis. We have no sources of ammonia at this emission point and historical monitoring shows very low results. The BATNEEC Guidance Note for Board manufacture published by the EPA in 1996 specifies an ELV of 70mg/m^3 for Total Aldehydes. The Sector Guidance Note IPPC SG1 published by DERFA in June 2003 does not consider Ammonia as a parameter to be tested in air emissions. We propose that the annual monitoring be maintained and that the emission limit value from the IPC licence of 70mg/m^3 be retained. Should problems arise the Agency can request additional monitoring.

OBJECTION # 4: EMISSION LIMIT VALUES MAIN PRESS EP6

We object to the proposed ELV's for particulates, flow rate and formaldehyde for emission point EP6 set out in Schedule B.1.

GROUNDS FOR OBJECTION:

1. The Emission Limit Value for Particulates has been reduced from 50mg/m^3 in our original IPC licence to 12mg/m^3 in the proposed IPPC licence. The BATNEEC Guidance Note for Board manufacture published by the EPA in 1996 specifies an ELV of 50mg/m^3 for particulates for emission points other than wood dryers. The Sector Guidance Note IPPC SG1 published by DERFA in June 2003 sets a limit of 50mg/m^3 for all contained sources other than wood dryers and MDF production. We request that the limit of 50mg/m^3 be retained.

2. The proposed licence sets a maximum flow rate from emission point EP6 of 48,000m^3/hour. The design capacity of the fan emitting at this point is 95,000m^3/hour. Previous flow monitoring has indicated figures closer to this value. Our current consultants are measuring the flow rate at approximately 48,000m^3/hour. We are currently investigating these flow rates as we haven't modified this emission point. We believe that the actual flow rates should be near to 95,000m^3/hour. To avoid future flow exceedances we request that the maximum flow rate be set at 96,000m^3/hour. The volume at this emission point was notified to the Agency on 18th March 1998.

3. The formaldehyde Emission Limit Value for EP6 has been reduced from 10mg/m^3 in the original IPC licence to 6mg/m^3 in the proposed IPPC licence. The BATNEEC Guidance Note for Board manufacture published by the EPA in 1996 specifies an ELV of 5mg/m^3 for formaldehyde for emission points other than wood dryers. However, the Sector Guidance Note IPPC SG1 published by DERFA in June 2003 sets a limit of 20mg/m^3 for existing installations. We request that the limit of 10mg/m^3 be retained.

OBJECTION # 5: EMISSION LIMIT VALUE EP7

We object to the proposed ELV for formaldehyde from EP7 set out in Schedule B.1.

GROUNDS FOR OBJECTION:

The ELV for formaldehyde from EP7 has been reduced from 20mg/m^3 in the original IPC licence to 7mg/m^3 in the proposed IPPC licence. The BATNEEC Guidance Note for Board manufacture published by the EPA in 1996 specifies an ELV of 5mg/m^3 for formaldehyde for emission points other than wood dryers. However, the Sector Guidance Note IPPC SG1 published by DERFA in June 2003 sets a limit of 20mg/m^3 for formaldehyde from existing installations. We request that the limit of 20mg/m^3 be retained.

OBJECTION # 6: EMISSION LIMIT VALUE EP11

We object to the volume flow emission limit on bag filter unit EP11 set out in Schedule B.1.

GROUNDS FOR OBJECTION:

During our review of the proposed determination and emission monitoring from our bag filters for 2005 we discovered that an error had been made in our original application in relation to the flow rate from our bag filter EP11 and this error was also contained in the information supplied for the review of our licence. The information supplied to the Agency stated a flow rate of 3,240m^3/h. The actual flow rate for this bag filter should be 28,000m^3/hour. This bag filter was installed during the time that we were submitting information for our original licence. We suspect that information relating to this area was submitted before this filter was installed and the information wasn't modified to reflect the change. We ask the Agency to correct this error. As part of condition 6.9.1 we will run the dispersion modelling study with these figures. Table 12A from the IPPC licence review application has been revised and is available in Appendix E.

OBJECTION # 7: FLOW LIMIT DS1

We object to the limit on flow rate for DS1 set out in Schedule B.2.

GROUNDS FOR OBJECTION:

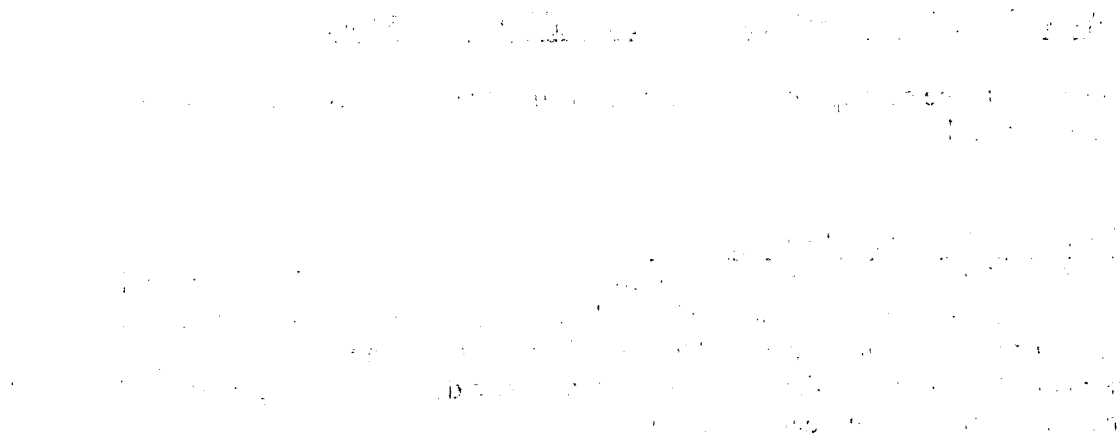
Schedule B2 sets a maximum daily flow rate of 500m^3 in any one day for emissions to water point reference no. DS1. However, sometimes during periods of heavy rainfall this limit is exceeded, on some occasions reaching up to 900m^3 per day. When this occurs these flow exceedances are outside of our control, the relationship between the flow rate and rainfall has been demonstrated to the Agency. Consequently, we would like to link flow rates from this emission point to rainfall. We can work with a general maximum flow rate of 500m^3 and during periods of heavy rainfall submit rainfall figures along with flow rates to explain any exceedance. Alternatively, if this were not to the satisfaction of the Agency we would ask that the flow rate limit at this point be increased to allow for the increased flow on very rainy days.

OBJECTION # 8: METAL RECOVERY FROM ASH

We object to the description of "metals destined for recycling recovered from ash" in Condition 8.11.2.

GROUNDS FOR OBJECTION:

Condition 8.11.2 refers to metals recovered from ash. We suspect that this should refer to metals recovered during boiler fuel cleaning. These metals are collected in skips and when full are transferred to the main metal skip to await collection by the recycling Company. We don't see the need to make a dedicated storage area for these metals within the boiler fuel storage shed.



OBJECTION # 9: QUANTITY OF ASH ALLOWED IN ONSITE LANDFILL PER ANNUM

We object to the limit on the quantity of ash that can be landfilled as set out in Schedule A.2.

GROUNDS FOR OBJECTION:

Schedule A2 of the proposed determination sets a maximum quantity of ash that can be landfilled on site of 740 tonnes per annum. During the last few years we have been trying to increase the quantities of wood used as boiler fuel and consequently the quantity of ash has increased to 1100 tonnes /annum. We request the Agency to increase the quantity of ash that we are allowed to landfill to reflect this.

OBJECTION # 10: FIREWATER RETENTION FACILITY

We object to Condition 3.11 Firewater Retention

GROUNDS FOR OBJECTION:

Currently on site we have a firewater retention facility covering fires in the HGG, dryer and screening sections as these were determined to be the high-risk areas. We have valves on the outlets of the storm water drains that can be closed in the event of an emergency. However, we don't have the facility to divert storm water from the site to the firewater retention facility. We request that Condition 3.11 reflect this.

OBJECTION # 11: TEMPERATURE LIMIT ON COOLING WATER

We object to the temperature limit for DS3 set out in Schedule B.2

GROUNDS FOR OBJECTION:

Schedule B2 sets a maximum temperature for water emissions from discharge point DS3. Achieving this may be very difficult for us during the summer. We suggest that a temperature difference of 10 degrees Celsius between the infeed and outfeed would be more manageable.

CORRECTIONS:

In the interest of clarity the following items need to be changed

1) Condition 3.6.6 should read UF80
2) On schedule B1 page 24, references to" back of boiler house" should now read " back of urea shed"
3) On schedule B1, EP4 should read bag filter and not cyclone.

REQUESTED ADDITIONS

1. Material removed from our glue blenders during cleaning is currently used as a boiler fuel on site. This material is a mixture of wood chips and hardened dust/glue lumps. Using this material as a fuel poses no environmental risks and it is the practice employed in other plants. It is licensed by the Agency in other plants (including a licence recently issued).

2. Our current licence allows us to use melamine papers as a source of boiler fuel. In our value added production lines pieces of melamine paper are trimmed and planed from the edges of boards. This material is then transferred to the dust silo at the HGG where it is used as a fuel along with other process dusts. Separating this material would be very difficult for us and also we believe that there are no environmental risks associated with using this as a fuel. Consequently we ask the Agency to allow us to continue using this material as a fuel.

3. One of the emission points to atmosphere that we have in our current licence is EP8.This is a boiler that we have for supplying process heat to some of our value added lines. During plant modifications in 1999 we connected these lines to the main heating system fed from the HGG and consequently we were able to shutdown this small boiler. We haven't used this during the past few years however, it remains on standby and will be used in the future if it is necessary to run the value added lines during periods when the HGG is not operation. We therefore ask the Agency to include this emission point in our new licence. Table 12A from the IPPC licence review application for EP8 is available in Appendix F.

4. The majority of the waste oil generated onsite is sent offsite for disposal to a properly licensed waste contractor. However, we are currently re-using some waste oil (hydraulic and lubricating oils) as lubricating oil. This is set out in Schedule 3(i) of IPC licence No 22 and we request permission to continue doing so.

GENERAL COMMENT

It should be noted that board plants currently don't come within the scope of the IPPC Directive and BREF Notes have not been established for the industry. We understand that a Technical Working Group is currently working on a draft BREF.

APPENDIX A

- Prepare sample and standard solutions by hexane extraction in acid environment, followed by methylisation.. The determination is done via gas liquid chromatography (GLC).

Creosote (Benzo(a)pyrene)

Use EN 1014-2 for sampling "Procedure for obtaining a sample of creosote from creosoted timber for subsequent analysis". Use hexane instead of toluene as a reagent. For determination, use EN 1014-3 "Determination of the benzo(a)pyrene content of creosote". High performance liquid chromatography (HPLC) is used.

Grit content

Grit content will be determined according to ISO 3340.

EPF

Annex A
(Informative)

Reference test methods for the analysis of recycled wood

Sample preparation, digestion or destruction and methods of analysis shall be performed according to recognised and calibrated procedures. For each analysis desired accuracy will be balanced with cost.

Cadmium (Cd), Chromium (Cr), Copper (Cu), and Lead (Pb):

Destruction via incineration and solution of ashes in HNO3 or, preferably, by acid solution in a microwave furnace. The determination is done via Induction Coupled Plasma (ICP), Flame Atomic Absorption Spectrometry (FAAS) or via Electro Thermal Atomic Absorption Spectrometry (ETAAS), depending on the concentration in the extract

Mercury (Hg)

Wet destruction in HCl, with the addition of H2SO4, followed by reduction of the solution to form Hg-vapour. The determination will be done by Cold Vapour Atomic Absorption Spectroscopy (CVAAS).

Arsenic (As)

Wet destruction via H_2SO_4 with the addition of HNO_3 and H_2O_2 until a clear solution is obtained. The determination is carried out via Hydride Flame Atomic Absorption Spectrometry (HFAAS), while reducing the solution to form AsH_3.

Fluorine (F) and Chlorine (Cl)

EN 24260: "Wickbold combustion method" may be used.

Pentachlorophenol (PCP)

recycled wood, listed in Annexe A shall be utilised. The cost of such testing in case of dispute shall be agreed upon between seller and buyer.

NOTE: Alternative test methods that guarantee a similar accuracy (repeatability and reproducibility), e.g. RAL-GZ 428, may also be used.

All loads shall be subject to spot checking on arrival to establish whether creosote is present. Loads containing creosote treated wood shall immediately be classified as unacceptable material.

NOTE 1: Creosote treated wood may only be used for energy recovery in appropriately equipped and licensed installations. Please refer to existing regulations when and where they apply.

NOTE 2: Test methods for spot testing to determine other wood preservatives are under development.

The samples to be examined shall be taken during unloading of the lorry or from running production, on a regular basis, but with a maximum batch size of 500 tonnes. Where possible sampling shall be carried out without contact by operational devices, such as drop hatches. The samples shall be transported and stored so as to exclude any chemical, physical or biological change of the sample material.

For each batch to be tested a laboratory sample shall be prepared. For this purpose individual samples shall be combined and homogenised by repeated mingling. A laboratory test sample of about 500 g shall be removed from the mixed sample with appropriate sample dividers or by coning and quartering. The laboratory sample shall be divided after drying. All analyses shall be performed on air-dry material samples.

24 October 2002

Elements / Compounds	*Limit values (mg/kg recycled wood)*
Arsenic (As)	25
Cadmium (Cd)	50
Chromium (Cr)	25
Copper (Cu)	40
Lead (Pb)	90
Mercury (Hg)	25
Fluorine (F)	100
Chlorine (Cl)	1000
Pentachlorophenol (PCP)	5
Creosote (Benzo(a)pyrene)	0,5

7. Delivery requirements

Deliveries shall be effected in line with the manufacturer's specification, e.g. in tipper or container vehicle. When required by the manufacturer, container vehicles shall have side opening facilities for side discharge. Vehicles shall be adequately covered at all times.

8. Acceptance of deliveries

Any action proposed by the buyer to downgrade or reject, or adjust the price of, any load for non-compliance with the general or special requirements of which the seller is aware, shall be preceded by established sampling and testing procedures. The buyer shall adopt a suitable procedure for recording all defaults, deficiencies and remedial actions.

9. Sampling and reference test methods

In case of dispute or for periodical supplier checking purposes, the reference test methods specified in the EPF industry standard for wood-based panels containing

Material shall be clean, free from rot and without degradation. It shall be free from chemical or other non-natural odour.

5.2 Cleanliness

The material shall be free from general contaminants such as soil, concrete, slate, stones, textile, plastic, rubber, waste paper, cardboard or metal. Excessive contaminant content (exceeding 2% of the total dry weight) shall entitle the buyer to a loss adjustment.

5.3 Moisture content

Moisture content shall normally not exceed 20%, subject to a tolerance of +/- 5%, relative to the dry weight. This implies that all appropriate steps shall be taken to prevent addition to natural moisture as a result of inadequate storage conditions or transportation. The additional weight in excess of 20% may be claimed back. The method of testing and sampling shall be agreed between buyer and seller.

5.4 Size

The size of the wood material (particles, fibres,..) shall be in line with the manufacturer's specification.

6. Chemical contamination

The limit values of chemical contamination in supplied material shall comply with existing regulations (example in bibliography: "Altholzvordnung"), when and where they apply or at least shall be as follows:

3.4 Treated wood

Wood that contains halogenated organic compounds or heavy metals as a result of treatment with wood preservatives.

3.5 Wood preservative

Products intended to prevent wood-destroying or wood-disfiguring organisms (fungi, insects and marine borers) from attacking wood and wood-based products

4. Classes of unacceptable materials

The following categories of reclaimed wood materials shall be considered as unacceptable for recycling for use in the manufacture of wood-based panels:

- Wood exceeding the limits for chemical contamination given in clause 6 of this standard
- Treated wood (e.g. poles, sleepers etc.).

Any other category of reclaimed wood materials (described by product type, wood species etc) not acceptable to a wood-based panel producer for purposes of his own production activity shall be identified in his conditions of purchase or delivery.

5. General requirements

If a wood-based panel producer requests a declaration from the supplier about the origin of the material, this declaration shall be given taking into account national regulations or standard requirements.

Recycled wood shall be produced to the following specification:

5.1 Quality

Locally, other requirements may be applicable to the quality of recycled wood for the production of wood-based panels. These requirements need to be complied with, when and where they apply.

2. Bibliography

- EPF standard on the use of recycled wood in wood-based panels
- RAL-GZ 428, Quality label for recycled wood and waste wood (Germany)
- Order on the Disposal of Waste Wood ("Altholzverordung"), Germany, Bundesgesetzblatt, 23 August, 2002

3. Definitions

For the purposes of this standard, the following definitions apply.

3.1 By-products from processing and manufacturing sites (pre-consumer recycled wood)

Wood material in the form of sawdust, fibrous wood, solid wood off-cuts or composite wood offcuts resulting from any wood transformation or manufacturing process and which may be reclaimed and recycled as raw material for a manufacturing process (e.g. from the manufacture of panelboards, assembled products, building structures). (Not to be confused with sawmill co-products or post-consumer recycled wood).

3.2 Post-consumer reclaimed and recycled wood

Wood material (e.g. pallets or other wood packaging material, demolition waste, used furniture) which after consumer use is reclaimed and recycled into the chain of commercial supply and reduced to a raw material form.

3.3 Wood-based panel (panelboard)

Manufactured panel, board or sheet made primarily from wood particles or wood fibres.

EPF standard for delivery conditions of recycled wood

Foreword

The wood-based panel industries are continuously improving their efforts to manage and use valuable resources in a sustainable manner throughout the life-cycle, ranging from Sustainable Forest Management to the recovery of pre- and post-consumer material, including CO_2-neutral energy recovery at the end of the useful lifetime of the materials.

Secondary raw materials represent an increasing proportion of the processed raw materials, as technology progresses. This is logical as recovery and recycling of wood residues form an integral part of an eco-efficient utilisation of resources. Wood-based panels are thus derived in an energy-efficient way from renewable raw materials, with a high and continuous recycling potential.

The use of wood-based panels helps mitigating climate change, by sequestrating carbon, not only during their primary lifetime, but even beyond, since they can also be recycled, so giving wood more than one life.

1. Scope

The present industry standard provides quality criteria to ensure the environmental sustainability and in particular the health & safety and the technical workability of the following classes of wood and wood-based materials used in the manufacture of wood-based panels:

- By-products from processing and manufacturing sites
- Post-consumer reclaimed and recycled wood

This industry standard comprises standard requirements for the types, origins, chemical, physical and other contamination limits, cleanliness and delivery conditions of these materials.

EPF

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EPF

Reference test methods suggested by EPF for the determination of:

Cadmium (Cd), Chromium (Cr), Copper (Cu), Lead (Pb) and Mercury (Hg):

Destruction via incineration. Thereafter, dissolve ash in HNO_3. The determination is done via Flame Atomic Absorption Spectrometry (FAAS) or via Electro Thermal Atomic Absorption Spectrometry (ETAAS), depending on the concentration in the extract. For Mercury, ETAAS is used.

Arsenic (As)

A wet destruction via H_2SO_4 or HNO_3 or H_2O_2. The determination is carried out via Atomic Absorption Spectrometry (AAS).

Fluorine (F) and Chlorine (Cl)

European Standard EN 24260 (Wickbold combustion method).

Pentachlorophenol (PCP)

Prepare sample and standard solutions. The determination is done via gas liquid chromatography (GLC).

Creosote (Benzo(a)pyrene)

Use the European Standard EN 1014-2 for sampling (Procedure for obtaining a sample of creosote from creosoted timber for subsequent analysis). Use hexane instead of toluene as a reagent. For determination, use the European Standard EN 1014-3 (Determination of the benzo(a)pyrene content of creosote). High performance liquid chromatography (HPLC) is used.

Alternative test methods that guarantee a similar accuracy (repeatability and reproducibility) may also be used.

EPF

EPF STANDARD

FOR DELIVERY CONDITIONS

OF RECYCLED WOOD

EPF

Reference test methods suggested by EPF for the determination of:

Cadmium (Cd), Chromium (Cr), Copper (Cu), Lead (Pb) and Mercury (Hg):

Destruction via incineration. Thereafter, dissolve ash in HNO_3. The determination is done via Flame Atomic Absorption Spectrometry (FAAS) or via Electro Thermal Atomic Absorption Spectrometry (ETAAS), depending on the concentration in the extract. For Mercury, ETAAS is used.

Arsenic (As)

A wet destruction via H_2SO_4 or HNO_3 or H_2O_2. The determination is carried out via Atomic Absorption Spectrometry (AAS).

Fluorine (F) and Chlorine (Cl)

European Standard EN 24260 (Wickbold combustion method).

Pentachlorophenol (PCP)

Prepare sample and standard solutions. The determination is done via gas liquid chromatography (GLC).

Creosote (Benzo(a)pyrene)

Use the European Standard EN 1014-2 for sampling (Procedure for obtaining a sample of creosote from creosoted timber for subsequent analysis). Use hexane instead of toluene as a reagent. For determination, use the European Standard EN 1014-3 (Determination of the benzo(a)pyrene content of creosote). High performance liquid chromatography (HPLC) is used.

Alternative test methods that guarantee a similar accuracy (repeatability and reproducibility) may also be used.

EPF

intended to be mouthed (sucked) by children, were also laid down in EN 71-3 "Safety of toys". In addition, taking environmental considerations into account, limits for Fluorine (F), Chlorine (Cl), Pentachlorophenol (PCP) and Creosote have been established.

Elements / Compounds	*Limit values (g/kg dry panel)*
Arsenic (As)	0,025
Cadmium (Cd)	0,050
Chromium (Cr)	0,025
Copper (Cu)	0,04
Lead (Pb)	0,09
Mercury (Hg)	0,025
Fluorine (F)	0,1
Chlorine (Cl)	1
Pentachlorophenol (PCP)	0,005
Creosote (Benzo(a)pyrene)	0,0005

Sampling and frequency of analyses

To ensure that the above quality requirements are met, all EPF member companies using recycled wood shall collect the samples they have used for evaluating compliance with the_EN specification requirements for internal bond (one sample per product type per production shift for each production line).

Alternative sampling procedures that ensure that at least 20 g of a representative sample are taken per production shift for each production line may also be used.

At the end of the month, all samples shall be added together, crushed and mixed, and a representative sample shall be tested to determine the content of the compounds mentioned in the above table. For practical reasons, the interval between tests for PCP and Benzo(a)pyrene has been set at once every three months.

European Panel Federation
Europäischer Holzwerkstoffverband
Fédération Européenne des Panneaux à Base de Bois

EPF INDUSTRY STANDARD

The use of recycled wood for wood-based panels

Recycling

Recycling is playing an increasingly important role in everyday life. More and more regulations are issued on this subject, also at the European level such as e.g. the packaging directive.

The particleboard industry took up this challenge already quite some time ago. The MDF manufacturers more recently started using recycled wood in their production processes. The amount of recycled wood that is being used for the production of wood-based panels has been strongly on the increase during recent years. In so doing, the wood-based panels industry is trying to respond positively to the aim of sustained industrial development, in other words to create more value with less environmental impact.

On the other hand, the particleboard and MDF industries want to adopt a "responsible care" attitude and look to it that the use of recycled wood in panels does not create problems with the safety in use of these products and their potential environmental impact.

Limits

Limit values for contaminants that may be present in recycled wood are an excellent tool for ensuring that wood-based panel products are safe to use. The table below contains a list of relevant maximum limit values for wood-based panels containing recycled wood. As a reference, the specific limits for the presence of certain elements as defined in the CEN report CR 13387 "Child use and care articles - General and common safety guidelines" dated October 1999 were chosen. These limits, referring to child contact articles

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APPENDIX B

Chemical Analysis Report for Finsa Forest Products Ltd

Client: Finsa Forest Products Ltd

Address: Scariff, Co.Clare

(Sheet 1 of 1) **Description:** L/S = 2 **Water analysis**

Parameter			Limit values L/S = 2 l/kg mg/kg dry substance	Analysis method / technique
BHP Reference	06/02/178A	06/02/179A		
Product Description	Rawboard Dec	Rawboard Jan		
Arsenic As	<0.002	<0.002	0.4	ICP-MS
Barium Ba	0.231	0.257	30	ICP-MS
Cadmium Cd	<0.001	<0.001	0.6	ICP-MS
Chromium total Cr	0.023	0.024	4	ICP-MS
Copper Cu	0.085	0.086	25	ICP-MS
Mercury Hg	<0.001	<0.001	0.05	ICP-MS
Molybdenum Mo	0.01	0.011	5	ICP-MS
Nickel Ni	0.056	0.048	5	ICP-MS
Lead Pb	<0.002	<0.002	5	ICP-MS
Antimony Sb	<0.001	<0.001	0.2	ICP-MS
Selenium Se	<0.002	<0.002	0.3	ICP-MS
Zinc Zn	0.269	0.568	25	ICP-MS
Chloride	46.76	70.71	10000	I.C
Fluoride	49.96	51.27	60	I.C
Sulphate	238.1	598.8	10000	I.C
Dissolved Organic Carbon	280	256	380	Photometric
Total Dissolved Solids	2260	5589	40000	Gravimetric
Thallium Tl	<0.01	<0.01		ICP-MS
Cobalt Co	0.008	0.007		ICP-MS
Manganese Mn	0.012	0.015		ICP-MS
Vanadium V	<0.01	<0.01		ICP-MS
Pentachlorophenol (PCP)	<1	<1		GC-MS
Benzo(a)pyrene	<0.1	<0.1		GC-MS

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Finsa Forest Products Ltd

Client: Finsa Forest Products Ltd

Address: Scariff, Co.Clare

(Sheet 1 of 1) **Description:** L/S = 10

Water analysis

Parameter			**Limit values L/S = 10 l/kg mg/kg dry substance**	**Analysis method / technique**
BHP Reference	06/02/178B	06/02/179B		
Product Description	Rawboard Dec	Rawboard Jan		
Arsenic **As**	<0.01	<0.01	2	ICP-MS
Barium **Ba**	3.26	3.45	100	ICP-MS
Cadmium **Cd**	<0.01	<0.01	1	ICP-MS
Chromium total **Cr**	0.11	0.12	10	ICP-MS
Copper **Cu**	5.23	5.89	50	ICP-MS
Mercury **Hg**	<0.01	<0.01	0.2	ICP-MS
Molybdenum **Mo**	0.86	0.74	10	ICP-MS
Nickel **Ni**	0.52	0.57	10	ICP-MS
Lead **Pb**	<0.02	<0.02	10	ICP-MS
Antimony **Sb**	<0.01	<0.01	0.7	ICP-MS
Selenium **Se**	<0.02	<0.02	0.5	ICP-MS
Zinc **Zn**	0.245	0.245	50	ICP-MS
Chloride	129.4	152.4	15000	I.C
Fluoride	93.7	112.9	150	I.C
Sulphate	860.3	970.4	20000	I.C
Dissolved Organic Carbon	760	600	800	Photometric
Total Dissolved Solids	7240	17520	60000	Gravimetric
Thallium **Tl**	<0.1	<0.1		ICP-MS
Cobalt **Co**	0.21	0.21		ICP-MS
Manganese **Mn**	<0.04	<0.04		ICP-MS
Vanadium **V**	<0.1	<0.1		ICP-MS
Pentachlorophenol (PCP)	<1	<1		GC-MS
Benzo(a)pyrene	<0.1	<0.1		GC-MS

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Finsa Forest Products Ltd

Client: Finsa Forest Products Ltd

Address: Scariff, Co.Clare

(Sheet 1 of 1) **Description:** L/S = C_0 (percolation)

Water analysis

Parameter			**Limit values C_0 (Percolation test)**	**Analysis method / technique**
BHP Reference	06/02/178C	06/02/179C	mg/l	
Product Description	Rawboard Dec	Rawboard Jan		
Arsenic **As**	<0.001	<0.001	0.3	ICP-MS
Barium **Ba**	0.145	0.156	20	ICP-MS
Cadmium **Cd**	<0.001	<0.001	0.3	ICP-MS
Chromium total **Cr**	0.002	0.002	2.5	ICP-MS
Copper **Cu**	0.056	0.087	30	ICP-MS
Mercury **Hg**	<0.001	<0.001	0.03	ICP-MS
Molybdenum **Mo**	0.015	0.018	3.5	ICP-MS
Nickel **Ni**	0.25	0.21	3	ICP-MS
Lead **Pb**	<0.001	<0.001	3	ICP-MS
Antimony **Sb**	0.002	0.002	0.15	ICP-MS
Selenium **Se**	<0.001	<0.001	0.2	ICP-MS
Zinc **Zn**	0.521	0.527	15	ICP-MS
Chloride	340.8	232	8500	I.C
Fluoride	17.4	23.6	40	I.C
Sulphate	1040.6	700	7000	I.C
Dissolved Organic Carbon	140	20	250	Photometric
Total Dissolved Solids	1640	3660		Gravimetric
Thallium **Tl**	<0.01	<0.01		ICP-MS
Cobalt **Co**	0.15	0.16		ICP-MS
Manganese **Mn**	<0.001	<0.001		ICP-MS
Vanadium **V**	<0.01	<0.01		ICP-MS
Pentachlorophenol (PCP)	<1	<1		GC-MS
Benzo(a)pyrene	<0.1	<0.1		GC-MS

Signed for and on behalf of BHP Laboratories Ltd.

APPENDIX C

Chemical Analysis Report for Finsa Forest Products Ltd

Client: Finsa Forest Products Ltd

Address: Scariff, Co.Clare

(Sheet 1 of 1) **Description:** L/S = 2

Water analysis

Parameter	**Results (mg/kg dry substance)**					**Limit values L/S = 2 l/kg mg/kg dry substance**	**Analysis method / technique**
BHP Reference	06/02/174A	06/02/175A	06/02/176A	06/02/177A	06/02/180A		
Product Description	Bark	White Chips	Sawdust	SandingDust	MDF		
Arsenic **As**	<0.002	<0.002	<0.002	<0.002	<0.002	0.4	ICP-MS
Barium **Ba**	0.084	0.123	0.052	0.048	0.31	30	ICP-MS
Cadmium **Cd**	<0.001	<0.001	<0.001	<0.001	<0.001	0.6	ICP-MS
Chromium total **Cr**	0.011	0.012	0.009	0.012	0.014	4	ICP-MS
Copper **Cu**	0.058	0.059	0.062	0.078	0.123	25	ICP-MS
Mercury **Hg**	<0.001	<0.001	<0.001	<0.001	<0.001	0.05	ICP-MS
Molybdenum **Mo**	0.009	0.01	0.011	0.008	0.021	5	ICP-MS
Nickel **Ni**	0.009	0.045	0.048	0.096	0.075	5	ICP-MS
Lead **Pb**	<0.002	<0.002	<0.002	<0.002	<0.002	5	ICP-MS
Antimony **Sb**	<0.001	<0.001	<0.001	<0.001	<0.001	0.2	ICP-MS
Selenium **Se**	<0.002	<0.002	<0.002	<0.002	<0.002	0.3	ICP-MS
Zinc **Zn**	0.245	0.174	0.189	0.258	0.587	25	ICP-MS
Chloride	4.29	5.48	9.78	21.56	85.59	10000	I.C
Fluoride	13.91	1.23	2.09	15.96	49.4	60	I.C
Sulphate	15.15	2.76	8.79	125.6	564.4	10000	I.C
Dissolved Organic Carbon	300	260	73	290	79	380	Photometric
Total Dissolved Solids	3710	172	180	5700	5945	40000	Gravimetric
Thallium **Tl**	<0.01	<0.01	<0.01	<0.01	<0.01		ICP-MS
Cobalt **Co**	0.008	0.01	0.012	0.009	0.008		ICP-MS
Manganese **Mn**	<0.004	0.005	0.01	0.011	0.024		ICP-MS
Vanadium **V**	<0.01	<0.01	<0.01	<0.01	<0.01		ICP-MS
Pentachlorophenol (PCP)	<1	<1	<1	<1	<1		GC-MS
Benzo(a)pyrene	<0.1	<0.1	<0.1	<0.1	<0.1		GC-MS

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Finsa Forest Products Ltd

Client: Finsa Forest Products Ltd

Address: Scariff, Co.Clare

(Sheet 1 of 1) **Description:** L/S = 10

Water analysis

Parameter	**Results (mg/kg dry substance)**					**Limit values L/S = 10 l/kg mg/kg dry substance**	**Analysis method / technique**
BHP Reference	06/02/174B	06/02/175B	06/02/176B	06/02/177B	06/02/180B		
Product Description	Bark	White Chips	Sawdust	SandingDust	MDF		
Arsenic **As**	<0.01	<0.01	<0.01	<0.01	<0.01	2	ICP-MS
Barium **Ba**	4.05	4.25	8.42	5.26	7.21	100	ICP-MS
Cadmium **Cd**	<0.01	<0.01	<0.01	<0.01	<0.01	1	ICP-MS
Chromium total **Cr**	0.03	0.04	0.05	0.05	0.09	10	ICP-MS
Copper **Cu**	1.25	1.58	2.54	1.56	4.12	50	ICP-MS
Mercury **Hg**	<0.01	<0.01	<0.01	<0.01	<0.01	0.2	ICP-MS
Molybdenum **Mo**	0.56	0.23	0.45	0.54	0.45	10	ICP-MS
Nickel **Ni**	0.25	0.48	1.23	1.56	0.23	10	ICP-MS
Lead **Pb**	<0.02	<0.02	<0.02	<0.02	<0.02	10	ICP-MS
Antimony **Sb**	<0.01	<0.01	<0.01	<0.01	<0.01	0.7	ICP-MS
Selenium **Se**	<0.02	<0.02	<0.02	<0.02	<0.02	0.5	ICP-MS
Zinc **Zn**	0.8	0.245	0.245	0.245	0.245	50	ICP-MS
Chloride	89.4	14.6	32.1	190	141.1	15000	I.C
Fluoride	71.6	7.9	9.6	119.4	122.3	150	I.C
Sulphate	31.1	20.1	36.6	1140.7	753.9	20000	I.C
Dissolved Organic Carbon	159	99	290	750	265	800	Photometric
Total Dissolved Solids	460	180	1280	13740	45820	60000	Gravimetric
Thallium **Tl**	<0.1	<0.1	<0.1	<0.1	<0.1		ICP-MS
Cobalt **Co**	0.08	0.25	0.32	0.41	0.56		ICP-MS
Manganese **Mn**	<0.04	<0.04	<0.04	<0.04	<0.04		ICP-MS
Vanadium **V**	<0.1	<0.1	<0.1	<0.1	<0.1		ICP-MS
Pentachlorophenol (PCP)	<1	<1	<1	<1	<1		GC-MS
Benzo(a)pyrene	<0.1	<0.1	<0.1	<0.1	<0.1		GC-MS

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Finsa Forest Products Ltd

Client: Finsa Forest Products Ltd

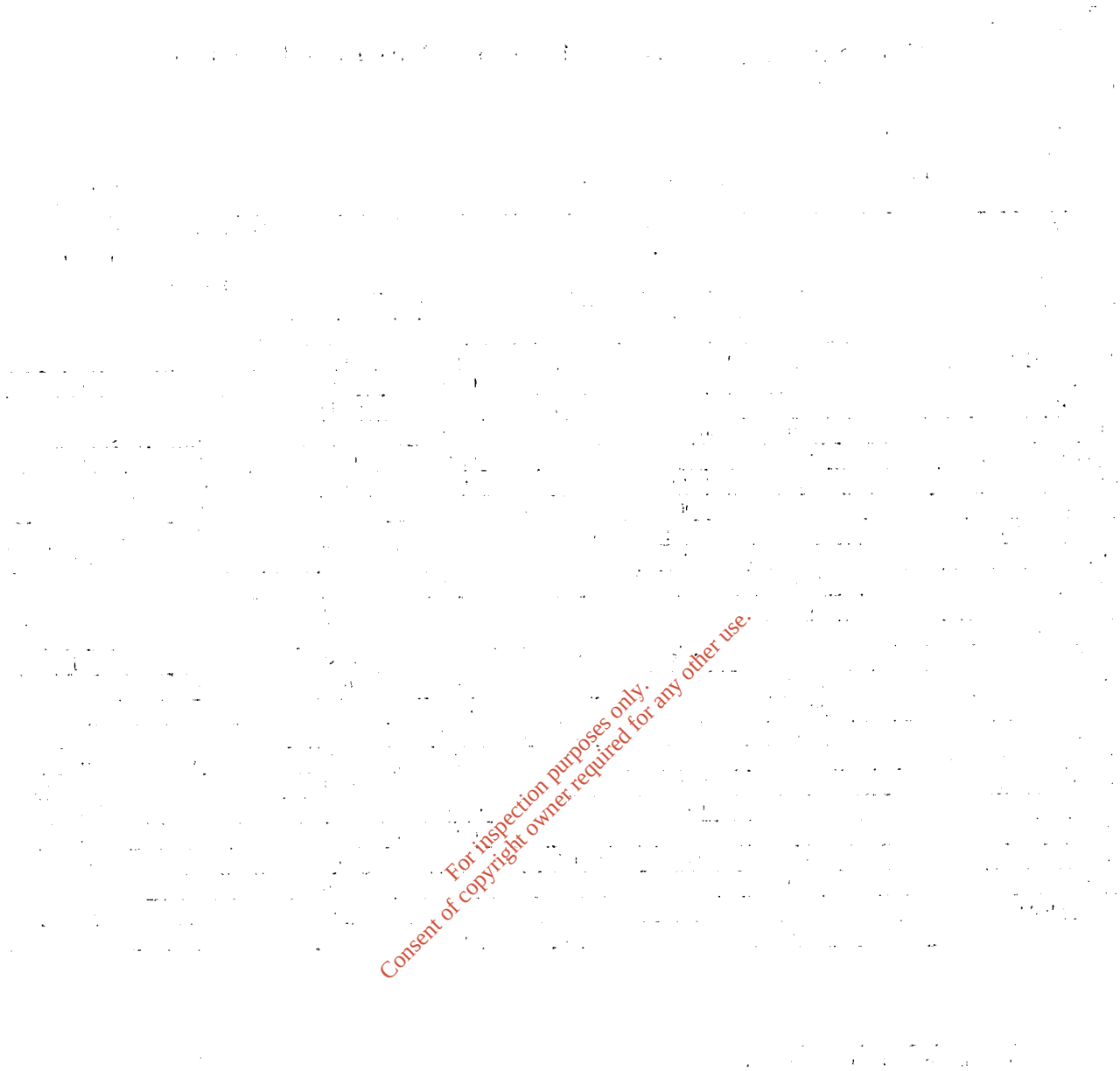
Address: Scariff, Co.Clare

(Sheet 1 of 1) **Description:** _____L/S = C_0 (percolation) _____

Water analysis

Parameter	**Results (mg/l)**					**Limit values C_0 (Percolation test) mg/l**	**Analysis method / technique**
BHP Reference	06/02/174C	06/02/175C	06/02/176C	06/02/177C	06/02/180C		
Product Description	Bark	White Chips	Sawdust	SandingDust	MDF		
Arsenic **As**	<0.001	<0.001	<0.001	<0.001	<0.001	0.3	ICP-MS
Barium **Ba**	0.058	0.124	0.189	0.124	0.014	20	ICP-MS
Cadmium **Cd**	<0.001	<0.001	<0.001	<0.001	<0.001	0.3	ICP-MS
Chromium total **Cr**	0.006	0.002	0.001	<0.001	<0.001	2.5	ICP-MS
Copper **Cu**	0.024	0.012	0.014	0.045	0.025	30	ICP-MS
Mercury **Hg**	<0.001	<0.001	<0.001	<0.001	<0.001	0.03	ICP-MS
Molybdenum **Mo**	0.002	<0.002	<0.002	0.004	0.009	3.5	ICP-MS
Nickel **Ni**	0.01	0.011	0.025	0.85	0.08	3	ICP-MS
Lead **Pb**	<0.001	<0.001	<0.001	<0.001	<0.001	3	ICP-MS
Antimony **Sb**	0.001	0.001	0.001	<0.001	<0.001	0.15	ICP-MS
Selenium **Se**	<0.001	<0.001	<0.001	<0.001	<0.001	0.2	ICP-MS
Zinc **Zn**	0.038	0.215	0.214	0.218	0.089	15	ICP-MS
Chloride	71.71	49.2	215.4	115.9	901.9	8500	I.C
Fluoride	29.35	2.16	11.5	27.1	12.4	40	I.C
Sulphate	12.74	2.49	421.6	581.2	557.7	7000	I.C
Dissolved Organic Carbon	62	57	153	13	192	250	Photometric
Total Dissolved Solids	2952	2400	210	45	2014		Gravimetric
Thallium **Tl**	<0.01	<0.01	<0.01	<0.01	<0.01		ICP-MS
Cobalt **Co**	0.1	0.09	0.12	0.14	0.08		ICP-MS
Manganese **Mn**	<0.004	0.006	0.007	0.012	0.021		ICP-MS
Vanadium **V**	<0.01	<0.01	<0.01	<0.01	<0.01		ICP-MS
Pentachlorophenol (PCP)	<1	<1	<1	<1	<1		GC-MS
Benzo(a)pyrene	<0.1	<0.1	<0.1	<0.1	<0.1		GC-MS

Signed for and on behalf of BHP Laboratories Ltd.



APPENDIX D

Chemical Analysis Report for Finsa Forest Products Ltd

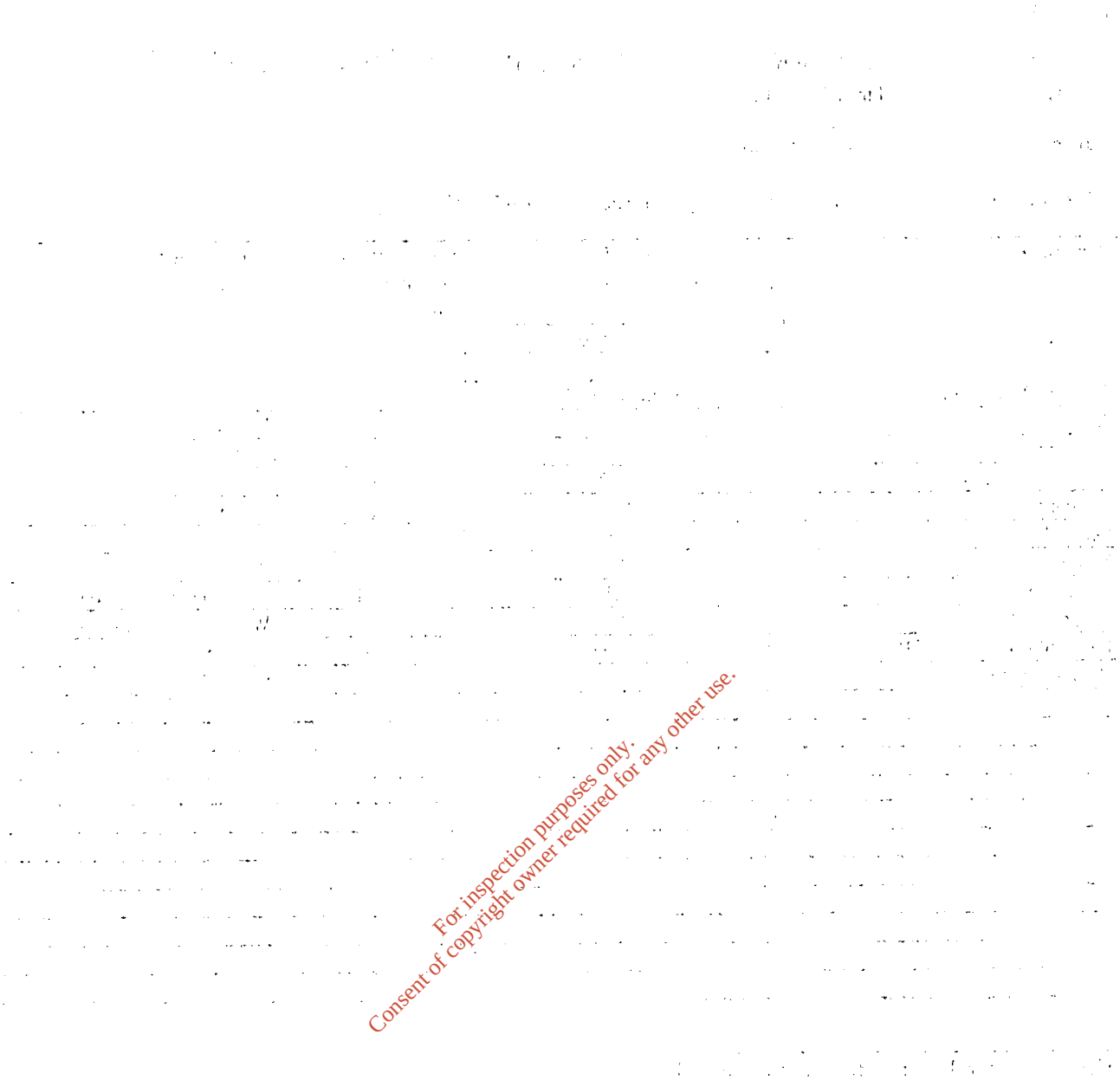
Client: Finsa Forest Products Ltd

Address: Scariff, Co.Clare

(Sheet 1 of 1) **Description:_____EPF Industry Specifications _____**

Parameter	**Results (g/kg dry substance)**	**Limit values g/kg dry substance**	**Analysis method / technique**
BHP Reference	06/02/186		
Product Description	SandingDust2		
Arsenic **As**	<0.01	0.025	ICP-MS
Cadmium **Cd**	<0.01	0.05	ICP-MS
Chromium total **Cr**	0.012	0.025	ICP-MS
Copper **Cu**	0.021	0.04	ICP-MS
Lead **Pb**	0.006	0.09	ICP-MS
Mercury **Hg**	<0.005	0.025	ICP-MS
Fluorine **F**	<0.1	0.1	Wickhold combustion
Chlorine **Cl**	<1	1	Wickhold combustion
Pentachlorophenol (PCP)	<0.005	0.005	GC-MS
Benzo(a)pyrene	<0.0005	0.0005	GC-MS

Signed for and on behalf of BHP Laboratories Ltd.



APPENDIX E

TABLE 12A(ii) MAIN EMISSIONS TO ATMOSPHERE (1 Page for each emission point)

Emission Point Ref. Nº:	EP11
Source of Emission:	Trim Saws
Location:	Across from rear entrance to warehouse.
Grid Ref. (12 digit, 6E,6N):	8°32.1773, 52°54.4991'
Vent Details Diameter: Height above Ground (m):	 6 * 500mm square vent 5 metres above the ground.
Date of commencement:	

Characteristics of Emission:

(i) Volume to be emitted:			
Average/day	480,000 Nm^3/d	Maximum/day	672,000 Nm^3/d
Maximum rate/hour	28,000 Nm3/h	Min efflux velocity	10 $m.sec^{-1}$
(ii) Other factors			
Temperature	°C (max)	°C (min)	18.8 °C (avg)
For Combustion Sources: Volume terms expressed as: wet. dry. ___ $\%O_2$			

(iii) Briefly describe the treatment/abatement and give a reference for details elsewhere in this application. A **clearly labelled** process flow diagram for each abatement system should be included in Attachment Nº 12A.

(iv) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up /shutdown to be included):*

Periods of Emission (avg)	60 min/hr 24 hr/day 350 day/yr Emissions are made continuously except during plant breakdown and holidays.

(v) Tables 12(iii) and 12(iv) should be completed as appropriate for each emission point

APPENDIX F

TABLE 12A(ii) MAIN EMISSIONS TO ATMOSPHERE (1 Page for each emission point)

Emission Point Ref. Nº:	EP8
Source of Emission:	Gas oil combustion
Location:	Boiler at value added building
Grid Ref. (12 digit, 6E,6N):	
Vent Details Diameter: Height above Ground (m):	 0.315m 16.8 metres above the ground (stainless steel).
Date of commencement:	May 1994

Characteristics of Emission:

(i) Volume to be emitted:			
Average/day	5,392 Nm^3/d	Maximum/day	8,088 Nm^3/d
Maximum rate/hour	337 Nm3/h	Min efflux velocity	1.2 $m.sec^{-1}$
(ii) Other factors			
Temperature	°C (max)	°C (min)	348 °C (avg)
For Combustion Sources: Volume terms expressed as: wet. dry. ___ $\%O_2$			

(iii) Briefly describe the treatment/abatement and give a reference for details elsewhere in this application. A **clearly labelled** process flow diagram for each abatement system should be included in Attachment Nº 12A.

(iv) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up /shutdown to be included):*

Periods of Emission (avg)	60 min/hr 16 hr/day 30 day/yr Emissions are made continuously except during plant breakdown and holidays.

(v) Tables 12(iii) and 12(iv) should be completed as appropriate for each emission point