Medite Europe Limited: Application for a revised IPPC Licence:

Attachment A1: NON TECHNICAL SUMMARY

THE INSTALLATION AND ITS ACTIVITIES

The Installation

Medite History:

- 1982 Medford Corporation, USA built the mill
- 1983 Production Line 1 commissioned. WIW 20-daylight press. Mill capacity 140,000m3/year
- 1984 Medford Corp acquired by Valhi Corp, Dallas, Texas
- 1994 Production Line 2 start up, 20 metre continuous production line
- 1994 Upgraded production line 1; line 1 production increased to 190,000m3/year. Mill capacity increased to 260,000m3/year
- 1996 Mill acquired by Willamette Industries Inc., Oregan, USA
- 2002 Production Line 1 upgraded, 40 metre continuous production line replaced WIW 20-daylight press. Mill capacity increased to 420,000m3/year
- 2002 Mill acquired by Weyerhaeuser Company, USA
- 2006 Mill acquired by Coillte Teoranta, Irish based forest estates and forest products company

Medite employs 150 people in its Clonmel plant and 15 people in its sales offices in the UK and Europe.

Activities at Medite Europe Limited are controlled by an Integrated Pollution Prevention Control Licence, Register number P0027-02 (formerly IPC Licence 593), dated and sealed by the Agency on 30th of November 2001.

Product Description

MDF is a wood based sheet material manufactured from wood fibre bonded together with a synthetic resin adhesive. Various grades are manufactured at Medite using different adhesives and additives –

Medite Premier, typically for furniture

Medite Plus, higher grade typically for powder coating industry

Medite MR, suitable for interior humid conditions

Medite FR (Flame –Retardant), suitable for use as wall linings, partitions, display panels, ceilings etc.

Medite Exterior used in a wide range of external applications

Medite Ecologique (Zero added formaldehyde) is an MDF panel developed specifically for use in environmentally sensitive interior applications.

Medite FQ (Flooring Quality) is an MDF panel developed specifically with a higher density and improved moisture resistance, making it ideal for use in laminated flooring applications.

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The Activity

Refer to Drawing No.EN/000-IPPC-001**:** Medite Europe Ltd. Site Location Plan for a general arrangement of the facility and to drawing no. EN/000-IPPC-003 (Plant process flow diagram) which provides a flow diagram of the activity

Medite Europe operates two production lines that operate in parallel. Both lines share the same chip processing facility and similar finishing facilities further downstream.

Line 1 produces an MDF product with three layers of wood fibre:

1. Face wood fibre (top face of the MDF board).
2. Core wood fibre (centre of the MDF board);
3. Face wood fibre (bottom face of the MDF board)

Line 2 produces a similar product to Line 1 but with one layer of wood fibre and a different product thickness range.
The processes that comprise the activity at Medite are summarised in the following paragraphs.

LOG AND CHIP HANDLING

Pulpwood logs arrive by truckload and are unloaded and stored in the logyard prior to use. An operator-driven grab machine loads the logs onto the debarker infeed conveyor. Bark is removed by friction in the Drum Debarker, and conveyed to storage for use as a fuel for Boilers and Energy Plant or as a product for the horticultural industry. The debarked logs pass directly through to a chipping machine, where chips are produced to a size suitable for optimum fibre production. A conveyor transports the chips to chip yard storage.

Truckloads of wood chips bought in from sawmills are offloaded through an automatic truck tipper: the truck is tilted on its side to an angle and the off-loaded chips are conveyed directly to the to the storage area.

A front-loader is used to feed chips from the storage area into the chip-infeed hopper. The chips are screened in the 'Classicleaner unit', overs are re-chipped, fines and metal objects removed and the chips are then conveyed to a storage silo.

REFINING

There are 3 of these systems, which run in parallel: -
Two in Production Line 1 - Face, Core wood fibre systems
One in Production Line 2 - One wood fibre system
The chips are conveyed from the wood chip silo, first to a pre-steaming vessel where the chips are softened and then through a Plug Feeder to a Steam Digester Column where the chips are subjected to high-pressure steam. As the chips are fed through the Plug Feeder, excess water is squeezed out and is sent to wastewater treatment plant. The softened chips are then passed through the refiner plates where the action of two grinding discs creates the wood fibre from the softened chips. This wet fibre is transported from the refiner to the dryer system via a 100-mm diameter 'Blowline pipe'
Resin and other additives as required (dyes, urea, MDI, fire retardant chemicals) are injected either straight after the refiners through a blowline, or after drying through a Blender in the case of Line 1 Core wood fibre. The resins and additive solutions are added in the required concentration.

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DRYERS

The wood fibre is conveyed and dried by hot air through tube dryers. Production Line 1, Face and Core (two stage dryers) are heated indirectly by steam from the Boilers, and directly by the Boiler flue gases. The energy plant flue gases heat line 2 Dryer (two-stage dryer). Outlet air from Stage 2 is recirculated back to Stage 1 Air inlet, in order to save energy and to minimise emissions to air. The dried fibre (3-14% moisture) passes over a continuous weigh belt and is conveyed to Fibre Storage Bins, ready for the next stage.

FORMING

A wood fibre mat is formed by even controlled spreading of the dried, resinated wood fibre through 3 Forming Heads on Production Line 1, and through 1 Forming Head on Production Line 2, onto a continuously moving wire mesh belt. The depth and width of wood fibre spread is pre-set according to the thickness, width and density required.

The mat is then compressed down to a more compact form. Excess wood fibre is trimmed off the edges of the mat and re-cycled back into the wood fibre forming system. A weight scanner measures the weight and evenness of spread across the mat width. Both Production Line 1 and Line 2 have a continuous press, therefore crosscutting occurs after pressing, prior to cooling.

PRESSING

LINE 1

The Hot Press is a continuous Press, which consists of an upper and lower continuously moving heated steel belt, through which the mat moves at a rate proportional to the thickness being produced. Press temperature varies, depending on the thickness being produced. The pressed board is cross-cut to the required length, then cooled, stacked and removed for either immediate storage or sanding.

Line 2

The Hot Press is a continuous Press, which consists of an upper and lower continuously moving heated steel belt, through which the mat moves at a rate proportional to the thickness being produced. Press temperature varies, depending on the thickness being produced. The pressed board is cross-cut to the required length, then cooled, stacked and removed by forklift for intermediate storage or sanding.

FINISHING

There is a separate sanding line for Production Line 1 and Line 2. The board is sanded to remove the pre-cure and any superficial blemishes from the surface by passing it through a series of sanding heads with varying grit sizes.

The Grader grades the sanded board depending on surface quality into one of three types: Industrial, Utility or Culls.

The sander dust generated is removed by pneumatic conveying system to boiler and energy plant for use as a fuel source.

The sanded board is cut at any one of two saws. The saw off-cuts generated are hogged and conveyed pneumatically to Boilers and Energy Plant for use as a fuel.

The packed units are loaded by forklift onto flatbed covered trailers and secured for protection for transport.

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Changes to the Activities

Since the IPC application was made to the Agency in 2001, changes were made to the activity. These changes are summarised in Table 3.1

TABLE 3.1 – SUMMARY OF CHANGES TO THE ACTIVITY SINCE THE ORIGINAL IPC APPLICATION

CHANGE	SUMMARY
Upgrade of Production line 1 Press	Information on this was submitted with the 2001 application. The modifications took place in 2002 and the IPC Licence No. 593 (IPPC P0027-02) incorporates the changes.
Operation of particulate skimmer fans on 3 dryer systems	Agency approval was received to discontinue operation of particulate skimmer fans on the 3 dryer stage 1 cyclones in 2005
New Bag Filters	- Wood chip cleaning HPS Filter: 2010 - Wood chip cleaning STS Filter: 2010 - Wood chip cleaning SAS Filter : 2010 - Wood chip fines silo filter: 2010 - Sander dust silo bag filter, Production line 1: replaced in 2007 - Clean up Cyclofilter, Production line 1: 2005 - Reject Cyclofilter, Production line 1: 2005
Changes to the WWTP	- 2011 Installation of following: MBBR Tank prior to existing aeration basin Extra Clarifier for additional clarification New Dissolved Air Flotation (DAF) - 2010 Increased operational capacity of biological plant by increasing liquid level in existing basin - 2010 Relocation of clarifier return sludge inlet pipe into biological basin - 2009 New secondary balance tank (1054m3) installed to regulate flow to DAF unit and onwards - 2009 Variable speed drive put on large aerator in biological plant - 2009 Installation of additional plate heat exchanger to help regulate the temperature of liquid inflow to DAF unit - 2009 Modelling study of biological effluent plant - 2006 Improved screening of effluent prior to DAF unit by installation of Fan screen separators and settlement tank - 2002 New Dissolved air flotation (DAF) unit, bulk lime and alum storage
Wood fibre optimisation project	2010 - Installation of wood chip cleaning unit 2009 - Wood chip radial stacker replaced with enclosed discharge chute 2009 - Production line 1 face and core wood chip infeed conveyor replace with enclosed conveyors 2009 - 2 Wood chip silos replaced by 1 wood chip bin unit with enclosed discharge 2008 - Replaced face and core L44 refiners with EVO56

CHANGE	SUMMARY
	refiners 2008 - Upgrade of holding devices on all inspection doors in fibre conveyance system 2007 - Production line 1 sander dust silo replaced
Agency Approved Amendments to IPPC Licence (Atmospheric emissions)	2003 - Emission point EP25 scrubber exhaust line 1 production emissions included as part of Core Dryer EP34 emission limit values 2003 – Monitoring frequency for metals reduced from quarterly to twice a year 2004 – Monitoring frequency for MDI reduced from quarterly to yearly 2005 – Particulate skimmer fans non operational on the 3 dryer cyclones as abatement control 2005 – Ambient Formaldehyde monitoring frequency reduced from monthly to twice a year 2006 – Pressure readings across bag filters monitoring programme replaced particulate monitoring requirement for all bag house filters 2007 – Monthly Ambient dust monitoring programme commenced 2009 – Formaldehyde monitoring frequency reduced from monthly to quarterly for all emission points 2009 – MCERT Accredited sampling methodology for airflow measurements from the 3 dryer cyclones employed
Agency Approved Amendments to IPPC Licence (Water emissions SW2)	2007 – Monitoring frequency for copper, chromium and zinc reduced from quarterly to twice a year
Agency Approved Amendments to IPPC Licence (Wood Ash)	2007 – Wood ash used as a daily landfill cover material at Clare County council landfill facility 2010 - Wood ash also used as a daily landfill cover material at South Tipperary County council landfill facility
Agency Approved Amendments to IPPC Licence (Waste)	2011 – reclassification of following waste materials from waste to a by-product : wood bark and chips / fines

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Normal Hours of Operation

Debarker: 07:00 to 23:00 – Monday to Thursday;
07:00 to 23:00 Friday
Weighbridge: 06:00 to 22:00 Monday to Thursday
06:00 to 20:00 Friday
Main Process: 24 hrs/day, 7 days/week
Finishing: 24 hrs / day, 7 days / week

The processes described above are supported by:

- An activated sludge treatment plant to treat domestic sewage and process effluent (mainly wood chip squeezing water);
- Surface water interceptor settling ponds;
- Maintenance area;
- Bulk and drum chemical storage;
- A laboratory;
- Administration offices;
- Engineering;
- Fire water storage ponds.

The Energy used in or Generated by the Installation

The facility's energy requirements are primarily met by:

1. Recovery of wood biomass, bark, dust, off cuts, reject product in two boilers and one Energy Plant to produce energy;
2. Electricity;
3. Natural Gas;
4. Liquefied Petroleum Gas (LPG);
5. Diesel fuel.

The energy **used** in the activities is summarised as follows. Figures for consumption are presented for the calendar year 2010.

Electricity
Electricity is taken from the national grid and arrives as a 110 kV alternating current (AC) supply. It is stepped down for the plant distribution network to 10 kV. AC in two 20 mW transformers. The main uses of the electricity are as follows:

- Motor control centre distribution;
- Plant lighting and utilities;
- Process drives (the largest being the refiners and the log chipper).

Total power demand is controlled to between 16 and 16.5 mW
Annual usage for 2010: 104,525,290 kWh

Natural Gas
Natural Gas is used to heat the thermal oil which in turn is used to heat the continuous steel belt in production line 1; natural gas is also used as a back-up fuel in the 2 boilers in production line 1
Annual usage for 2010: 29,141,512 kWh

LPG

LPG is used to power smaller forklifts and the pilot flame for the Line 1 Energy Plant (boiler system). The LPG is stored in two storage tanks. The total storage capacity of LPG on the site is 35 tonnes.
Annual Usage 2010: 176,442 litres

Diesel Fuel:

Diesel fuel is stored in two above ground mild steel storage tanks. The tank capacities are 22,000 litres and 2,750 litres. The storage location is identified in drawing no. EN/000-IPPC-010 bund and tank location, the diesel is used primarily to power the large site vehicles.
Annual Usage 2010: 219,577 litres

Medite Europe also **generates** energy for process purposes in its two Energy Plants. The plants are summarised as follows:

Energy Plant – Production Line # 1:

This plant consists of two solid fuel sloping grate boilers to generate steam for the production line # 1. The types of fuel used are:

(i) bark from the log debarker.
(2) hogged board trim from the saws.
(3) sander dust from the sanding operation
(4) other wood-based materials generated on-site
(5) wood biomass purchased in the form of recovered / recycled clean wood
(6) wood biomass in the form of wood residues purchased from sawmills.
(7) Forest recovered residue e.g. brash bundles

The sander dust is injected in a controlled fashion to the boilers. LPG and Natural Gas are used to keep the pilot burners lighting.

The hot air output from the boilers is used for:

1. generating 38tonne/hour of saturated steam (27bar gauge pressure) which is reduced to:
    a. 12 bar for each refiner (face 11tonne/hour and core 11tonne/hour)
    b. 12 bar for each dryer (face 5.5tonne/hour and core 5.5tonne/hour)
    c. 10 bar for office, workshop heating, line heaters, hot water etc. 5tonne/hour

The flue gases from the boilers are further used to heat the incoming air to the wood dryers on production line 1.The 2 boilers typically generate up to 36 MW of energy combined.

Attachment A1: NON TECHNICAL SUMMARY

Energy Plant – Production Line # 2

A falling grate solid fuel furnace is used to generate hot gas through the burning of the same solid fuels as used in the solid fuel boilers. The hot air out put is used for:

1. generating saturated steam (12bar gauge pressure) for the Production Line # 2 refiner;

2. heating thermal oil fluid to 270^0C for steam generation and to heat the Production line # 2 continuous steel belt;

3. line 2 dryers.

Thermal oil is heated by 4 thermal heat exchangers to approximately 270^oC by the hot air generated from the furnace. It is a closed loop system - the hot oil is circulated at a rate of 400 m3/hr to heat the continuous press on line 2 and to generate steam at 12 bar (6 tonne/hour) for the refining process

The total heat output from the line 2 Energy Plant is approximately 19 MW.

Attachment A1: NON TECHNICAL SUMMARY

THE RAW AND AUXILIARY MATERIALS AND OTHER SUBSTANCES USED OR GENERATED:

Table 3.2 is a summary table of the raw and auxiliary materials and other substances used on site.

TABLE 3.2 – SUMMARY TABLE OF RAW AND AUXILIARY MATERIALS

MATERIAL or SUBSTANCE	ANNUAL USAGE (tonnes)
Main raw materials	
Logs / Purchased Chips	300,000 (dry tonnes)
Resins for adhesion (Urea Formaldehyde, Melamine Urea Formaldehyde)	50,000
Waxes (Paraffin and Montan)	3,500
Urea	2,000
Fire Retardants	650
Colorants (water based)	15
Fuels / Heating media	
Wood Biomass (purchased and generated on site)	110,000 tonnes
Liquified Petroleum Gas (LPG)	200,000 litres
Thermal Fluid for heat transfer	Minimal – closed loop
Gas Oil (diesel oil)	220,000 litres
Utilities Substances	
Hydrochloric acid	140 tonnes
Sodium Hydroxide	4,000 litres
Sodium Chloride (salt)	132 tonnes
"Betz" products (Biocides, Corrosion Inhibitors, Scale removers)	15,500 litres
Wastewater treatment chemicals	
Aluminium chloride (flocculant)	300
Polymers (for sludge dewatering)	7.6
Polymers (coagulant)	2
Anti Foams	3
Nutrifeed (nutrient)	14
Sodium Hypochlorite 15%	1
Hydrated lime	125
Maintenance Materials	
Oils (lubricating, hydraulic)	68,000 litres
Degreaser	1,600 litres
Others	
Laboratory Chemicals(toluene, acetone, COD reagent, acids, bases)	610 litres

Table 3.3 is a summary of the materials generated by the activity, including wastes and product.

TABLE 3.3 – SUMMARY TABLE OF MATERIALS GENERATED ON THE SITE

MATERIAL/SUBSTANCE GENERATED	**APPROX. ANNUAL QUANTITY (tonnes)**
Bark	20,000
Sander dust/ Board Trimmings	30,000
MDF Product	350,000
Reject Product – used as fuel or pack supports	2
Wood Reject Fibre	200
Packaging – cardboard / plastic	13
Activated sludge from waste water treatment	5,000
Boiler Wood Ash	5,500

Attachment A1: NON TECHNICAL SUMMARY

SOURCES OF EMISSIONS FROM THE INSTALLATION

The emissions from the installation are to:

1. water;
2. air

Sources of emissions to water

There are two discharges to the River Anner from Medite, the Northern Discharge and the Southern Discharge. Surface water from the north end of the site, mainly from the log storage area, passes through a settling lagoon (pond) before discharge to a drain leading to the river Anner. This flow is intermittent, as it is largely dependent on rainfall.

Surface water from the main process yard areas are joined by other minor emissions from the process plant (such as refiner packing water). This water is subjected to both coarse and fine screening before discharge into two large interceptor settling lagoons. Surface water from these interceptor settling lagoons meets the clarified effluent from the process effluent treatment plant. The combined flow is then measured and monitored before discharge to the River Anner.

Process effluent consists mainly of effluent from the 3 refiner plug feeder screws and wash water from the debarker rock drop. This effluent passes through a screening unit, a dissolved air flotation system, an activated sludge tank and clarification system. The treated effluent combines with the surface water described in the previous paragraph before discharge to the River Anner.

A diagram of the emissions to water is presented in drawing number EN/000-IPPC-005 surface water emission point locations. This drawing indicates all sources of emissions to water.

Sources of Emissions to Air

In all, there are 34 points of emission to air. These emissions are classed as either “Main Emissions”, “Minor Emissions” or boiler emissions (potential emission points). The emissions are summarised in Table 3.4:

TABLE 3.4 – SUMMARY OF SOURCES OF EMISSIONS TO ATMOSPHERE

DESCRIPTION	CLASSIFICATION	NUMBER OF EMISSIONS
Boiler/Energy emission	Boiler/Energy emission	4 Potential
Bag Filters emissions	Main Emissions	18
Press Vents	Main Emissions	5
Dryers	Main Emissions	3
Cooler Vents	Minor Emissions	4

Attachment A1: NON TECHNICAL SUMMARY

THE CONDITIONS OF THE SITE OF THE INSTALLATION

The site occupied by Medite is approximately 73 hectares (180 acres) in total area. The main production site, surrounded by an embankment, is approximately 12.6 hectares (31 acres) in area. The original land surface sloped from the northwest to the southeast across the site. This original topography was modified to form a level working area within the site which has resulted in steep embankments along the northwest of the site. Within the working area is located the main production plant buildings and materials storage areas. The surface is largely a mix of concrete and asphalt with green belts where appropriate.

Medite has a small landfill located approximately 50 metres to the northwest of the main working area and within the Medite site boundary. Medite historically disposed small quantities of the following non-hazardous wastes to the on-site landfill between 1983 and 1996. The materials placed in this landfill are summarised as follows:

- Settled solids from the surface water interceptors and lagoons;
- Wood dust;
- Culled MDF;
- Soil from site levelling;
- Dilute resin residue washes.

Up till February 2010 the landfill was occasionally used for the disposal of small quantities of inert materials (top soil, rocks, and stones). The size of the landfill is approximately 10,000 m^2 in area. The landfill is now closed.

Medite Europe operates an active landfill management programme. The Landfill Management Programme address:

- Landfill Management Plan;
- Groundwater Quality
- Monitoring Programme (groundwater, soil);
- Restoration Measures.

Geotechnical specialists are contracted to carry out annual landfill gas monitoring and regular groundwater monitoring. Groundwater monitoring from a total of 6 boreholes covering the entire Medite site indicates satisfactory groundwater quality with the exception of occasional elevated ammonia concentrations on the landfill. Landfill gas monitoring indicates low levels of methane gas generation and increasing carbon dioxide levels in the monitoring wells, indicating that the existing landfill cap is operating satisfactorily.

Attachment A1: NON TECHNICAL SUMMARY

THE NATURE AND QUANTITIES OF FORESEEABLE EMISSIONS FROM THE INSTALLATION INTO EACH MEDIUM

Emissions to Water

The sources of emissions of water have been described earlier. Table 3.5 summarizes the nature and maximum (or limit) quantities of foreseeable emissions to water from Medite. Figures are in kilograms per day (kg/d) unless otherwise indicated and except pH. All parameter values are obtained from Tables presented elsewhere in the IPPC Application review. Figures are in kilograms per day (kg/d) unless otherwise indicated and except pH.

TABLE 3.5 – SUMMARY OF CHARACTERISTICS OF EMISSIONS TO WATER

Parameter	SW2-Combined	SW1-North
Flow per day	1500m3	0 to 200 m3
pH	6 to 9	7 to 8
BOD	75	10
COD	600	250
Phenol	0.32	0.075
Ammonia	7.5	0.5
Suspended Solids	300	40
Orthophosphate	0.80	1
OFG	15	1
Toxicity	-	-
Nitrate	22.5	20

Emissions to Air

Table 3.4 summarises the sources of emissions to air from Medite Europe 2009.

TABLE 3.6 – SUMMARY OF CHARACTERISTICS OF EMISSIONS TO AIR

kg/hour

Parameter	Line 1	Line 2	Total
Particulates	2.95	1.65	4.60
Formaldehyde	1.28	0.45	1.73
MDI (NCO)	<0.01	<0.01	<0.01
Carbon Monoxide	44	19	68
Nitrogen Oxides	16	13	29
Condensable VOC'c (C)	0	0	0

Relationship between product output and formaldehyde emissions
Current relationship is as follows:

Overall site 0.035 kg formaldehyde per m^3 Product (MDF)

Attachment A1: NON TECHNICAL SUMMARY

IDENTIFICATION OF SIGNIFICANT EFFECTS OF THE EMISSIONS ON THE ENVIRONMENT

Emissions to Water

The receiving water body for emissions to water is the River Anner.

The Northern discharge is not expected to have any significant impact on the River Anner and monitoring data for this discharge has shown very low levels of BOD and suspended solids concentrations and negligible organics and pesticide concentrations.

The Southern Discharge is a combined flow of treated process effluent and the southern surface water discharge. AQUAFACT International Services Ltd was commissioned by Medite Europe Ltd to assess the impact on the river surface waters from the discharge from Medite in the context of S.I. No. 272 of 2009 European Communities Environmental Objectives (Surface Waters) Regulations 2009. The results of the report indicate that the changes in physico-chemical parameters of the surface water are negligible and will cause no significant deterioration in the composition of the river water. The following paragraph is taken from this report:
'It should be noted that the monitoring stations upstream at Thorny Bridge (Station No. 0900) and downstream at Anner House (Station No.1100) indicate that orthophosphate levels decrease downstream of the Medite facility. The area upstream of the Medite facility is used for agriculture and it is likely that levels of nutrients such as nitrates and phosphates in the stream may be elevated by fertilizer spread on the land, which is then partially washed into the river after a period of rain. This is supported by the high background levels of orthophosphates recorded from the EPA's monitoring station at Thorny Bridge, which indicates that nutrient levels are almost at breach point before passing the Medite Facility's effluent discharge point'.

Medite have continued to initiate a detailed improvement programme in the operation of its Wastewater Treatment Plant (as described in previous pages) and have plans to carry out further improvement upgrades and modifications to its plant over the next 2 year period. This planned upgrade will be concentrated in the Dissolved air flotation and biological treatment stages of the plant:

- new dissolved air flotation unit
- MBBR (moving biological bed reactor) tank prior to existing aeration basin
- Increased clarification post existing aeration basin

These modifications will further ensure that Medite continues to remain compliant with its licensed emission limits into the future. It should be noted as part of this licence application that Medite has lowered the requested emissions limit values for both orthophosphate and ammonia to 1.0 mg/l and 5.0 mg/l respectively. Medite feel confident that these limits can be achieved based on historical analysis of our effluent and the current upgrade to their wastewater treatment plant.

Emissions to Air

The significant emission to air is that of formaldehyde. The largest mass emissions occur from the three line dryers. Atmospheric dispersion modeling took place in May 2010; prepared by Environmental Resources Management Limited. The results of the assessment indicate that a number of air quality standards may not be achieved in

very close proximity to the plant. However, the Process Contribution decreases rapidly with increasing distance from the plant and is unlikely that air quality standards will be exceeded at nearby sensitive receptors when operating under actual operating conditions.

THE PROPOSED TECHNOLOGY AND OTHER TECHNIQUES FOR PREVENTING OR, WHERE THIS NOT POSSIBLE, REDUCING EMISSIONS FROM THE INSTALLATION

Prevention of Emissions:

The following technology and techniques are used to prevent emissions to atmosphere:

- All dryers are two stage systems with only one emission point for each dryer. Also, energy recovery from the Energy Plants (production line 1 and 2) is diverted to the dryers. This minimizes the number of emission points to atmosphere.

- Bulk chemical storage is provided with secondary containment for prevention of any sudden releases of chemicals to surface water. There is also a chemical store on site to provide secondary containment of drummed chemicals.

- Level control is employed on key waste water treatment plant sumps to prevent overflows and thus emissions to surface water.

Reduction of Emissions:

Air Abatement Technology

The following technology is employed at the site to reduce emissions to air:

- Filter bags on process vents and wood dust handling to reduce particulate emissions;
- Dryer emission cyclones.

Investigations into the use of low or no formaldehyde resins

The company has reduced the formaldehyde emissions from its raw MDF panel; it is now compliant with regulations set by the Californian Air Resources Board which are recognized world wide.

Emissions to Water Abatement Technology

The following technology is employed to reduce emissions to water:

- Wastewater treatment plant to remove BOD, suspended solids, phenols and nitrogen compounds from process effluent;
- Surface water interceptor settlement ponds to remove suspended solids and BOD from surface water;
- Bar and run down screens to remove gross solids and suspended solids from surface water;
- Oil booms to prevent the migration of oil related product to the River Anner.

WHERE NECESSARY, MEASURES FOR THE PREVENTION AND RECOVERY OF WASTE GENERATED BY THE INSTALLATION

Measures for the prevention and recovery of waste are presented in the company's Annual Environmental Reports, maintained under the terms of the current IPPC License**.** Site activities encompass the production of medium density fibreboard (MDF) only; therefore the operation does not produce a substantial quantity of waste on an annual basis. However, wastes arising are managed and controlled in accordance with Condition 7 and Schedule 3 of IPPC Licence Register No. P0027-02. The majority of waste produced at Medite is non-hazardous with less than 40 tonne of hazardous waste produced in 2010. The majority of this hazardous waste is waste oils. Non-hazardous waste is composed of reject MDF product, wastewater treatment plant sludge, scrap metal, wood ash, wastes packaging and mixed packaging/general waste. A significant portion of waste produced at Medite (>83%) is recovered on-site as an energy wood biomass fuel source in the combustion plant. Over 99% of the total waste produced at Medite is recovered – 83% on site and 16% off site.

Necessary measures taken to prevent accidents and limit their consequences

The following measures are employed at Medite Europe for the prevention of accidents and limit their consequences:

1. There are individual spark detection system and suppression system at key process steps where there may be the risk of dust explosion of fire;
2. There is a general sprinkler system that is constantly maintained and linked to on-site fire water supply lagoons;
3. There is a zoned fire alarm system and annual fire drills;
4. Periodic insurance inspections are carried out;
5. As required under current Irish Health & Safety legislation, there is a Safety Statement in place and associated risk assessments;
6. There is emergency response teams (one for each shift) on site to deal with emergencies with training supplied 3 - 4 times per annum.

Necessary measures are taken upon definitive cessation of activities to avoid any pollution risk and return the site of operation to a satisfactory state.

In order to assess measures required upon definitive cessation of activities at Clonmel, a detailed Residuals Management Plan was prepared in 2007 by outside consultants and is updated annually as part of the company's AER for the site.

Measures planned to monitor emissions into the environment

Details on the monitoring of emissions are presented for water and air in this IPPC Review application including a scaled plan indicating the position of the monitoring points.