

# Notice of variation with introductory note

Environmental Permitting (England & Wales) Regulations 2016

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**Kronospan Limited**

**Chirk Particleboard Factory  
Holyhead Road  
Chirk  
Wrexham  
LL14 5NT**

Variation number

**EPR/BW99999IG/V007**

Permit number

**EPR/BW99999IG**

# **Chirk Particleboard Factory**

## **Permit number EPR/BW9999IG**

### **Introductory note**

#### **This introductory note does not form a part of the notice**

The following notice gives notice of the variation of an environmental permit.

Kronospan Limited operate a wood-based panels manufacturing facility at their site in Chirk. The nature of the manufacturing processes is such that it is energy intensive, involving the drying of wood and residues in large volumes. This, coupled with the historic fragility of the local electricity grid, has led to the operator aiming for self-sufficiency in terms of its energy needs. At the same time the objective has been to be energy efficient at the highest level by utilising what would otherwise be waste heat within the manufacturing processes, which require heat for direct drying.

This permit variation allows the operation of combustion plant comprising three thermal oil heaters (K1, K5 and K6), five gas engines and two gas turbines, all of which are fired on natural gas. The combustion plant is used for the production of electricity, heat and steam for use within the board manufacturing processes. The total rated thermal input of this combustion plant is approximately 180MW.

The main emissions to air associated with the combustion plant are oxides of nitrogen (NO<sub>x</sub>) and carbon monoxide (CO). During normal operation these emissions will be released via the MDF Drier Stacks (MDF Drier 1 and MDF Drier 2). If the MDF Driers are not operational, emissions from the combustion plant will be released from their own individual dedicated stacks. However a reduction in heat and electricity demand from the manufacturing facility will ultimately result in some or all of the combustion processes being shutdown. Releases to air from the combustion plant dedicated stacks are covered within the scope of this variation. However, releases to air from the MDF Drier stacks are outside the scope of this variation. This is because releases from the MDF Drier Stacks have first been used for direct drying in the board production process and therefore continue to be regulated by Wrexham County Borough Council, via permit WCBC/IPPC/03/KR(V3).

The K1, K5 and K6 thermal oil heaters and the gas turbines do not consume water. The boilers on the gas engines consume approximately 88,000 m<sup>3</sup> of water per annum which is abstracted from the Llangollen Canal. There are no process emissions to water associated with this variation. All emissions of process waters (e.g. boiler blowdown) are released to sewer.

The schedules specify the changes made to the original permit.

The status log of a permit sets out the permitting history, including any changes to the permit reference number.

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Application BW9999IG (EPR/BW9999IG/A001)	Received 28/11/03	Duly made, Supersedes withdrawn application BR7194
Additional information via Schedule 4	Request dated 23/02/04	Response in part dated 19/04/04
Additional information via Schedule 4		Noise survey 21/05/04
Re-submission of Schedule 4 response	Request dated 26/05/04	Information received on 30/06/04
Permit determined BW9999IG (EPR/BW9999IG/A001)	17/09/04	
Variation notice KP3735SC. Issued (EPR/BW9999IG/V002)	05/04/06	Re-issue of conditions to account for administrative errors and to change emission limits values from the original permit
Variation application EPR/BW9999IG/V003	Duly Made 02/12/08	
Variation application EPR/BW9999IG/V003 issued	28/04/09	
Variation application EPR/BW9999IG/V004	Duly Made 18/05/10	
Variation application EPR/BW9999IG/V004 issued	22/08/10	
Variation application EPR/BW9999IG/V005	Duly Made 28/10/10	
Variation application EPR/BW9999IG/V005 issued	08/12/10	
Variation application EPR/BW9999IG/V006	Duly Made 05/01/16	
Variation application EPR/BW9999IG/V006 issued	01/02/16	
Variation application EPR/BW9999IG/V007	Duly Made 13/01/17	Substantial variation to include combustion plant
Additional information requested	08/03/17	Schedule 5 Notice
Additional information received	28/03/17	Updated site plan, clarification regarding release of trade effluent to sewer from combustion plant, gas engine emissions monitoring point assessment and additional information on the air quality assessment.

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Additional information received	13/04/17	Information describing control of NO <sub>x</sub> and CO emissions from gas engines
Additional information requested	19/05/17	Schedule 5 Notice
Additional information received	26/05/17 & 09/06/17	Updated site plan, clarification regarding release of trade effluent to sewer from combustion plant, gas engine tuning settings, updating modelling for K7 at 6% O <sub>2</sub> reference oxygen content, & predicted impacts associated with half-hourly and daily NO <sub>x</sub> ELVs, when all driers are offline. Also, predicted NO <sub>x</sub> PCs and PECs at ecological receptors under "Limits Case".
Additional information requested	03/07/17	Email to: R.Flavell (Fichtner) (cc; K Baker, Kronospan)
Additional information requested	05/07/17	Email to: R.Flavell (Fichtner) (cc; K Baker, Kronospan)
Additional information received	12/07/17	Updated PCs and PECs for the "Limits Case" ecological assessment, following under-estimation for some modelling scenarios. Assessment of predicted impact on European Sites for Nutrient Nitrogen and Acid Deposition. Provision of modelling assessment for Berwyn SPA.
Additional information received	26/07/17	Revised acid deposition predictions for woodland habitats following error in previous calculations. Clarification on predicted releases from site when K7 and K8 are offline compared with releases when MDF2 is offline for the Likely, Limits and Worst Cases.
Additional information received	16/08/17	Provision of predicted impact on human health under the Limits Case when MDF2 is offline for annual and daily mean NO <sub>x</sub> . Also predicted daily mean NO <sub>x</sub> impact at Canal Wood LWS and Chirk Castle ancient woodland.
Variation determined EPR/BW9999IG/V007	30/11/17	

**Other Part A installation permits relating to this installation**

<b>Operator</b>	<b>Permit number</b>	<b>Date of issue</b>
Kronospan Limited	WCBC/IPPC/03/KR(V3)	17/10/14

End of introductory note

## Notice of variation

Environmental Permitting (England and Wales) Regulations 2016

The Natural Resources Body for Wales ("Natural Resources Wales") in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2016 varies

Permit number  
**EPR/BW9999IG**

issued to:  
**Kronospan Limited** ("the operator")

whose registered office is

**Kronospan Limited**  
**Maesgwyn Farm**  
**Chirk**  
**Wrexham**  
**LL14 5NT**

company registration number **981905**

to operate part of a regulated facility at

**Chirk Particleboard Factory,**  
**Holyhead Road**  
**Chirk**  
**Wrexham**  
**LL14 5NT**

to the extent set out in the schedules.

The notice shall take effect from 30/11/2017

Signed

Date

**Stephen Attwood**

**30/11/2017**

Stephen Attwood, Senior Permitting Team Leader

Authorised on behalf of Natural Resources Wales

## **Schedule 1 – conditions to be deleted**

None

## **Schedule 2 – conditions to be amended**

The following conditions are amended as a result of the application made by the operator:

Condition 2.2.1 shall be amended to:

### **2.2 The site**

- 2.2.1 The activities shall not extend beyond the site, being the land shown shaded in green on the site plan at schedule 2 to this permit, which is within the area edged in red on the site plan that represents the extent of the installation covered by this permit and that issued by Wrexham County Borough Council.



Table S1.1 shall be amended to:

<b>Table S1.1 activities</b>		
<b>Activity listed in Schedule 1 of the EP Regulations</b>	<b>Description of specified activity and WFD Annex I and II operations</b>	<b>Limits of specified activity and waste types</b>
4.1 A(1) (ii) producing organic chemicals containing oxygen	Manufacture of formaldehyde by catalytic oxidation of methanol	From receipt of raw materials to intermediate storage of formaldehyde production
4.1A(1) (viii) producing organic chemicals such as polymers	Manufacture of Urea-formaldehyde and melamine-urea-formaldehyde resin	From intermediate storage of formaldehyde and receipt of other materials to intermediate storage of resin products
1.1 A(1) (a) burning any fuel in an appliance with a rated thermal input of 50 or more megawatts	<p>Operation of natural gas-fired combustion plant comprising:</p> <p>1 x 2.25 MWth K1 thermal oil heater providing heat for the Kronoplus single daylight press plus space heating.</p> <p>1 x 14.1 MWth K5 thermal oil heater &amp; 1 x 16.5 MWth K6 thermal oil heater operated as standby plant for K7 and K8 biomass boilers (which provide the primary heat source for the MDF driers).</p> <p>5 x 21.28 MWth gas engines providing electricity supplied to site, steam production for MDF 1&amp; 2 process and heat to MDF driers 1 &amp; 2.</p> <p>2 x 20.5 MWth gas turbines operated as standby plant for gas engines 1 to 5 providing back up flue gas heat to MDF driers 1 and 2 during gas engine maintenance and back-up electricity supply to site.</p>	<p>From receipt of raw materials to combustion of fuel and release of exhaust gases to atmosphere.</p> <p>Distribution of heat, electrical power and steam to the installation. Disposal of wastes arising, including release of boiler blowdown to sewer.</p>
<b>Directly Associated Activity</b>		
Unlisted Directly Associated Activity	VITS Paper Impregnation process	From resin intermediate storage and receipt of other raw materials to intermediate storage of impregnated paper products

<b>Table S1.1 activities</b>		
<b>Activity listed in Schedule 1 of the EP Regulations</b>	<b>Description of specified activity and WFD Annex I and II operations</b>	<b>Limits of specified activity and waste types</b>
Unlisted Directly Associated Activity	Surface Water Lagoons 1 & 2	Receipt of site drainage from whole installation and effluent from formaldehyde plant, then discharged into the Afon Bradley via valve Penstock A. The effluent from the formaldehyde plant includes inputs from the process bunds, tank farm bunds and tanker loading bays. The lagoons also have 12 Kasco floating aerators per lagoon and floating reed beds on the outside of both lagoons.
Unlisted Directly Associated Activity	Surface Water lagoon 3	Receipt of site drainage from rail sidings until transferred to the canal water treatment plant or during abnormal conditions (heavy rainfall, flood conditions) discharge via other surface water lagoons into the Afon Bradley. The lagoon also has 12 Kasco floating aerators within the lagoon and floating reed beds on the outside of the lagoon.

Table S1.2 shall be amended to:

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Application for BW9999	The response to question 2.1 given in pages 7 – 10 and supporting document No1 of the application	28/11/03
Response to Schedule 4 notice dated 23/02/04	Response to question 10, 16, 17, 18, 21, 22 and 26	30/06/04
Variation application	Response to question 2a – e	Duly Made 02/12/09
Request for minor operational change dated 16/02/05. Replacement of VITS 2 with VITS 5	All	Accepted
Works instruction KC/WI/ENV006 relating to lagoon operation	All	16/04/09
Further response requested dated 12/03/09	All	26/03/09
Further information as request response dated 23/03/09	All	26/03/09
Technical/Water environmental management programme dated 21/10/04	9	Agreed 23/04/10
Letter of proposal for the replacement of Formalin plant 1 reactor dated 12/05/10 ref. KB/PSC/02	All except sections headed 'Kronospan Limited Drawings' and 'Project Timeline'	18/05/10
Variation application	Response given to question 2b, part C of the application form and supporting documents KB/PSC/04 and KB/PSC/05 including drawings as referenced	13/10/10
Additional information	Response to letter entitled 'additional information'	24/11/2010
Additional information	Response to letter entitled 'additional information' dated 7 December 2010	08/12/2010 – via email
Information from application EPR/BW9999IG/V006	Response to Part C, 2, 2b – Notification of permit change. Technical summary. Document ref: KB/10/06	21/12/2015
Information from application EPR/BW9999IG/V006	Response to Part C, 2, 2b – Description of activities and description of aeration and lagoon dynamics. Document ref: Living Water (1)	21/12/2015

**Table S1.2 Operating techniques**

<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Information from application EPR/BW9999IG/V006	Response to Part C, 2, 2b – Lagoons an updated pipe connections and diagrams. Document ref: PH1/H/002 (A1)	21/12/2015
Variation application EPR/BW9999IG/V007	Response to Part C3 of the application form, questions 3a, 3b, 3c and 3d (Appendix 1: Specific Questions for the combustion sector). Also: Fichtner “Kronospan Limited Chirk Particleboard Facility Supporting Information” Fichtner “Annex 3 – Air Quality Assessment”, Section 3 “Operating and Emissions Scenarios” Fichtner “Annex 4 – Environmental Risk Assessment”, (excluding hard copy of completed H1 Software Tool) Noise and Vibration Consultants Ltd “Annex 5 – Noise Assessment”, section 6 “Mitigation”. Fichtner “Annex 6 – Fire Prevention Plan”	16/12/2016
Response to Not Duly Made letter dated 22/12/16	Response to Q2b (non-technical summary) confirming that the 17.4MWth Loos boiler and 15.5MWth Babcock boiler will be permanently decommissioned.	13/01/2017
Response to Schedule 5 Notice dated 08/03/17	Fichtner “Kronospan Chirk Particleboard Facility Schedule 5 Response”, specifically: Section 3 – Monitoring Location Assessment including Appendix B “Extract from Wartsila Emissions Monitoring Report”; Section 4d – Air Quality Assessment confirming urea based SNCR NO <sub>x</sub> abatement system for K8 biomass plant;and Section 4e – Air Quality Assessment confirming that Press abatement system is not a source of NO <sub>x</sub> . Also: Wartsila scope of work for reducing NO <sub>x</sub> _CO.pdf; Wartsila 34SG engine tuning for different NO <sub>x</sub> emission levels.pdf; and Wartsila “Integrated CO control System Description”.pdf.	28/03/2017 & 13/04/2017
Response to Schedule 5 Notice 19/05/17	Fichtner “Kronospan Chirk Particleboard Factory Schedule 5 Response”, specifically: Section 2 – Releases to Sewer; and Section 3 – Justification for proposed Gas Engine tuning setting of half TA luft.	26/05/2017 & 09/06/2017

Table S4.1 shall be amended to:

Table S4.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Parameter	Source	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1 [on Site Plan in Schedule 4]	Formaldehyde	Emissions Control System – Formaldehyde Plant	5 mg/m <sup>3</sup>	30 minutes	Annually in triplicate	2, 4 DNPH impingement technique (NIOSH 2541 / 2539 procedures)
A2 [on Site Plan in Schedule 4]	No parameter set	Methanol Storage Tank (1A) Vent	No limit set	-	-	-
A3 [on Site Plan in Schedule 4]	No parameter set	Methanol Storage Tank (1B) Vent	No limit set	-	-	-
A4 [on Site Plan in Schedule 4]	No parameter set	Wet scrubber on Formaldehyde Storage Tanks	No limit set	--	--	
	Formaldehyde	NAIRB Wet Scrubber – Resin VITS 2, 3, 5, Paper Impregnation Plant	5 mg/m <sup>3</sup>	30 minutes	Annually in triplicate	As agreed <sup>(1)</sup>
A5 [on Site Plan in Schedule 4]	Total Volatile Organic Compounds (as Carbon) Class B	-	50 mg/m <sup>3</sup>	30 minutes	Annually in triplicate	As agreed in writing <sup>(2)</sup>
	Particulates	-	20 mg/m <sup>3</sup>	-	Annually in triplicate	BS 13284-1

**Table S4.1 Point source emissions to air – emission limits and monitoring requirements**

<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (including unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A6 [on Site Plan in Schedule 4]	Formaldehyde	NAIRB Wet Scrubber – Resin VITS 4 Paper Impregnation Plant	5 mg/m <sup>3</sup>	-	Annually in triplicate	As agreed <sup>(1)</sup>
	Total Volatile Organic Compounds (as Carbon) Class B	-	50 mg/m <sup>3</sup>	-	Annually in triplicate	As agreed in writing <sup>(2)</sup>
	Particulates	-	20 mg/m <sup>3</sup>	-	Annually in triplicate	BS 13284-1
A7 [on Site Plan in Schedule 4]	No parameter set	Exhaust fan for existing urea silo	No limit set	-	-	-
A8 [on Site Plan in Schedule 4]	No parameter set	Exhaust fan for urea tipping hopper	No limit set	-	-	-
A9 [on Site Plan in Schedule 4]	No parameter set	Exhaust fan for urea screw conveyor	No limit set	-	-	-
A10 [on Site Plan in Schedule 4]	No parameter set	Dust filter for melamine hopper feeding reactor R210 and R220	No limit set	-	-	-
A11 [on Site Plan in Schedule 4]	No parameter set	Exhaust fan for melamine bag station hopper	No limit set	-	-	-
A12 [on Site Plan in Schedule 4]	No parameter set	Dust filter for melamine hopper feeding reactor 4	No limit set	-	-	-
A13 [on Site Plan in Schedule 4]	No parameter set	Exhaust fan for urea silo	No limit set	-	-	-

**Table S4.1 Point source emissions to air – emission limits and monitoring requirements**

Emission point ref. & location	Parameter	Source	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A14 [on Site Plan in Schedule 4]	No parameter set	All pressure relief venting systems in formalin plant	No limit set	-	-	-
A15 [on Site Plan in Schedule 4]	No parameter set	All pressure relief venting systems in resin plant	No limit set	-	-	-
A16 [on Site Plan in Schedule 4]	Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	K1 Kronoplus (press and space heating)	90 mg/Nm <sup>3</sup> <sup>(3)</sup>	Periodic (average value of three consecutive measurements of at least 30 minutes each)	Annual	BS EN 14792
	Carbon monoxide		No limit set			BS EN 15058
A17 <sup>(4)</sup> [on Site Plan in Schedule 4]	Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	K5 Rawboard Thermal Oil to ContiRoll Presses (standby thermal oil heater)	200 mg/Nm <sup>3</sup>	Periodic (average value of three consecutive measurements of at least 30 minutes each)	Annual	BS EN 14792
	Carbon monoxide		No limit set			BS EN 15058
A18 <sup>(4)</sup> [on Site Plan in Schedule 4]	Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	K6 Rawboard Thermal oil to ContiRoll Presses (standby thermal oil heater)	200 mg/Nm <sup>3</sup>	Periodic (average value of three consecutive measurements of at least 30 minutes each)	Annual	BS EN 14792
	Carbon monoxide		No limit set			BS EN 15058

**Table S4.1 Point source emissions to air – emission limits and monitoring requirements**

Emission point ref. & location	Parameter	Source	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A19 <sup>(4)(6)</sup> [on Site Plan in Schedule 4]	Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	GT1 Heat to MDF1 drier (standby)	390 mg/Nm <sup>3</sup>	Periodic (average value of three consecutive measurements of at least 30 minutes each)	Quarterly	BS EN 14792
	Carbon monoxide		No limit set			BS EN 15058
A20 <sup>(4)(6)</sup> [on Site Plan in Schedule 4]	Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	GT2 Heat to MDF2 drier (standby)	390 mg/Nm <sup>3</sup>	Periodic (average value of three consecutive measurements of at least 30 minutes each)	Quarterly	BS EN 14792
	Carbon monoxide		No limit set			BS EN 15058
A21 <sup>(6)</sup> [on Site Plan in Schedule 4]	Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	Engine 1 providing electricity supply to site, steam production for MDF 1& 2 process and heat to MDF driers 1 & 2.	280 mg/Nm <sup>3(5)</sup>	Periodic (average value of three consecutive measurements of at least 30 minutes each)	Quarterly	BS EN 14792
	Carbon monoxide		No limit set			BS EN 15058



**Table S4.1 Point source emissions to air – emission limits and monitoring requirements**

Emission point ref. & location	Parameter	Source	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A22 <sup>(6)</sup> [on Site Plan in Schedule 4]	Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	Engine 2 providing electricity supply to site, steam production for MDF 1& 2 process and heat to MDF driers 1 & 2.	280 mg/Nm <sup>3(5)</sup>	Periodic (average value of three consecutive measurements of at least 30 minutes each)	Quarterly	BS EN 14792
	Carbon monoxide		No limit set			BS EN 15058
A23 <sup>(6)</sup> [on Site Plan in Schedule 4]	Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	Engine 3 providing electricity supply to site, steam production for MDF 1& 2 process and heat to MDF driers 1 & 2.	280 mg/Nm <sup>3(5)</sup>	Periodic (average value of three consecutive measurements of at least 30 minutes each)	Quarterly	BS EN 14792
	Carbon monoxide		No limit set			BS EN 15058
A24 <sup>(6)</sup> [on Site Plan in Schedule 4]	Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	Engine 4 providing electricity supply to site, steam production for MDF 1& 2 process and heat to MDF driers 1 & 2.	280 mg/Nm <sup>3(5)</sup>	Periodic (average value of three consecutive measurements of at least 30 minutes each)	Quarterly	BS EN 14792
	Carbon monoxide		No limit set			BS EN 15058

**Table S4.1 Point source emissions to air – emission limits and monitoring requirements**

Emission point ref. & location	Parameter	Source	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A25 <sup>(6)</sup> [on Site Plan in Schedule 4]	Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	Engine 5 providing electricity supply to site, steam production for MDF 1& 2 process and heat to MDF driers 1 & 2.	280 mg/Nm <sup>3(5)</sup>	Periodic (average value of three consecutive measurements of at least 30 minutes each)	Quarterly	BS EN 14792
	Carbon monoxide		No limit set			BS EN 15058

**Notes:**

- (1) A validated method which uses isokinetic sampling and an impingement technique using 2, 4 DNPH
- (2) Kronospan Letters dated 31<sup>st</sup> August 2005 and 1<sup>st</sup> November 2005
- (3) A16 emission limit value for oxides of nitrogen has been converted from 70 mg/Am<sup>3</sup> @ 3.8% exit O<sub>2</sub> content to approximately 90 mg/Nm<sup>3</sup> at the standard 3% reference O<sub>2</sub> content for gaseous fuels. This emission limit value will be reviewed as part of future variation application (EPR/BW9999IG/V008) which is expected to be submitted to Natural Resources Wales in November 2017.
- (4) Emission testing required when brought into use for periods which aggregate to >28 days
- (5) A21 – A25 emission limit value for oxides of nitrogen has been converted from 250 mg/Nm<sup>3</sup> @ 5% reference O<sub>2</sub> content to 280 mg/Nm<sup>3</sup> at the standard 3% reference O<sub>2</sub> content for gaseous fuels.
- (6) Emergency release point

Table S4.3 shall be amended to:

Table S4.3 Point source emissions to sewer, effluent treatment plant or other transfers off-site– emission limits and monitoring requirements						
Emission point ref. & location	Parameter	Source	Limit (incl. Unit)	Reference period	Monitoring frequency	Monitoring standard or method
E1	Formaldehyde	Formaldehyde Plant Effluent Tank Outlet	1 mg/l	-	Prior to each discharge	SCA The determination of formaldehyde, other volatile aldehydes and alcohols in water
	pH		6 - 9	-	Prior to each discharge	BS 6068-2.50:1995, ISO 10523:1994
	Oil and Grease		15 mg/l	-	Prior to each discharge	SCA The determination of Hydrocarbon oils in waters by solvent extraction IR absorption and gravimetry. ISBN 011751 7283
	Discharge Volume		No Limit Set	-	For each batch discharge	-
S1	No parameters set	Boiler blowdown (from Gas Engines 1 – 5) released to Middle Road Pit prior to final discharge to public sewer	No Limit Set	-	-	-

Table S5.1 shall be amended to:

<b>Table S5.1 Reporting of monitoring data</b>			
<b>Parameter</b>	<b>Emission or monitoring point/reference</b>	<b>Reporting period</b>	<b>Period begins</b>
Emissions to air Parameters as required by condition 3.5.1	A1, A5, A6, A16 – A20	Every 12 months	01/01/09
Emissions to air Parameters as required by condition 3.5.1	A21 – A25	Every 3 months	01/01/18
Emissions to water Parameters as required by condition 3.5.1	W1	Every 3 months	01/01/09
Emissions from Formaldehyde Plant Effluent Tank Parameters as required by condition 3.5.1	E1	Every 3 months	01/01/09

Table S5.4 shall be amended to:

<b>Table S5.4 Reporting forms</b>		
<b>Media/parameter</b>	<b>Reporting format</b>	<b>Date of form</b>
Air	Form Air 1 or other form as agreed in writing by Natural Resources Wales	30/11/17
Water and Land	Form Water 1 or other form as agreed in writing by Natural Resources Wales	04/02/09
Formaldehyde Plant Effluent Tank	Form FPET1 or other form as agreed in writing by Natural Resources Wales	04/02/09
Water usage	Form Water Usage 1 or other form as agreed in writing by Natural Resources Wales	08/12/10
Energy usage	Form Energy 1 or other form as agreed in writing by Natural Resources Wales	04/02/09
Other performance indicators	Form Performance 1 or other form as agreed in writing by Natural Resources Wales	04/02/09

## **Schedule 7 – Interpretation** shall be amended to:

*"accident"* means an accident that may result in pollution.

*"annually"* means once every year.

*"application"* means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

*"authorised officer"* means any person authorised by Natural Resources Wales under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

*"background concentration"* means such concentration of that substance as is present in: for emissions to surface water, the surface water quality up-gradient of the site; or for emissions to sewer, the surface water quality up-gradient of the sewage treatment works discharge.

*"biological oxygen demand"* means biological oxygen demand (BOD) measured after 5 days at 200C with nitrification suppressed by the addition of allyl-thiourea.

*"Class A or Class B"* in relation to volatile organic compounds is as defined in Natural Resources Wales Guidance for Large Volume Organic Chemicals S4.01, Appendix 3.

*"emissions to land"*, includes emissions to groundwater.

*"EP Regulations"* means The Environmental Permitting (England and Wales) Regulations SI 2016 No.1154 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

*"fugitive emission"* means an emission to air, water or land from the activities which is not controlled by an emission or background concentration limit.

*"groundwater"* means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

*"MCERTS"* means the Environment Agency's Monitoring Certification Scheme. *"quarter"* means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

*"triplicate"* means three separate replicates of a sample, taken one after the other.

*"year"* means calendar year ending 31 December.

Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

(a) in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 15% dry for liquid and gaseous fuels burned at gas turbines, 6% dry for solid fuels; and 11% for catalytic oxidation and incineration processes; and/or

(b) in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content

## Schedule 3 – conditions to be added

The following conditions are added as a result of the application made by the operator:

### 2.3 Operating Techniques

- 2.3.7 Any raw materials or fuels listed in schedule 3 table S3.1 shall conform to the specifications set out in that table.

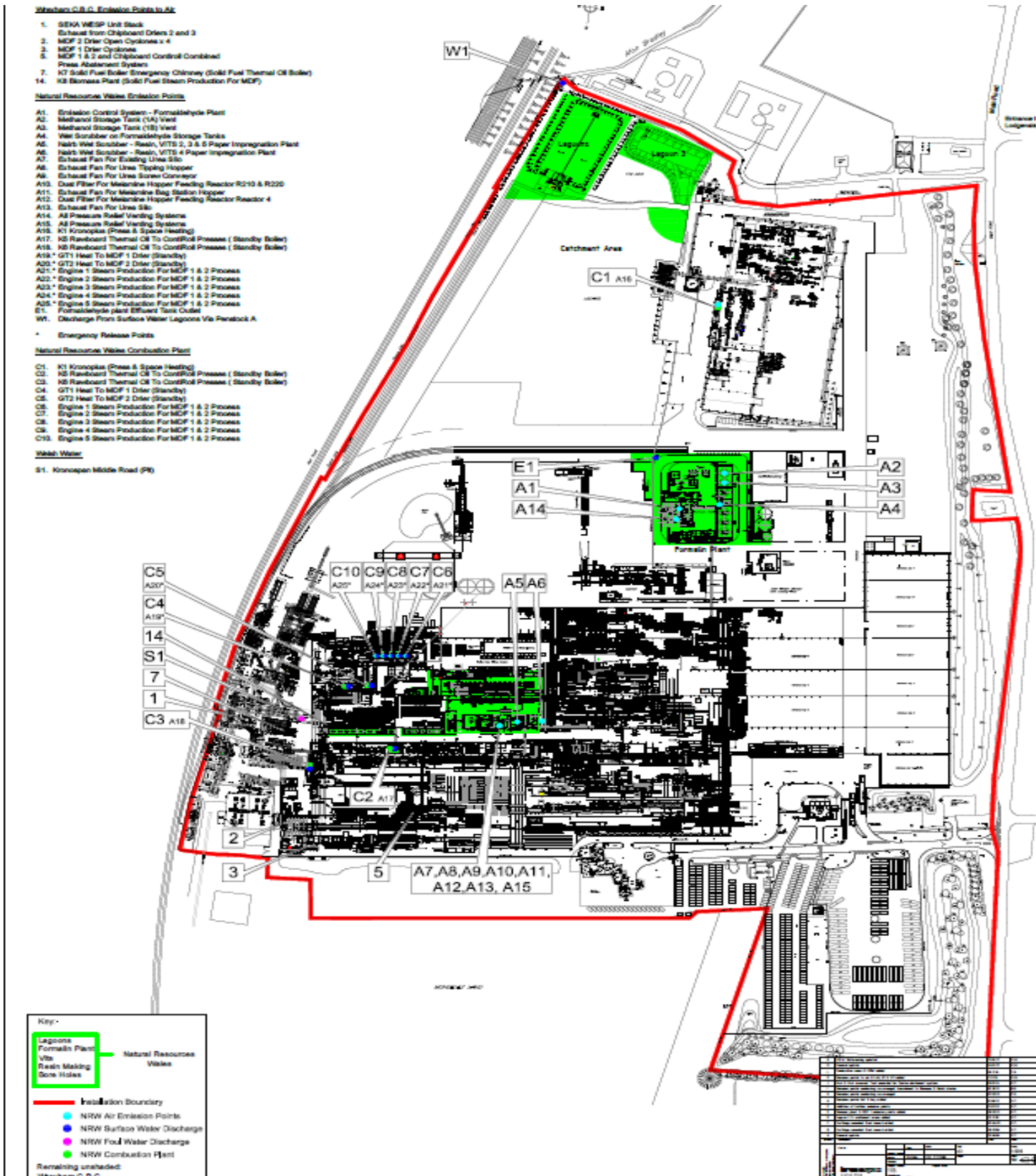
### 2.5 Pre-operational conditions

- 2.5.1 The operations specified in schedule 1 table S1.4 shall not commence until the measures specified in that table have been completed.

Table S1.4 Pre-operational measures for future development		
Reference	Operation	Pre-operational measures
PO1	Gas Engines 4 and 5	The Operator shall submit a written assessment of the sampling locations used to measure point source emissions to air for Gas Engines 4 and 5 (emission points A24 and A25 respectively). The assessment must use Natural Resources Wales Monitoring Technical Guidance Note M1: "Sampling Requirements for Stack Emission Monitoring". The assessment shall be submitted to Natural Resources Wales for approval at least 4 weeks before the start of operation of Gas Engines 4 and 5.

## Schedule 4 – amended plan

Schedule 2: The Site Plan is amended to include combustion plant items K1, K5, K6, Gas Engines 1 – 5, GT1 and GT2.



END OF VARIATION NOTICE