



**APPLICATION FOR AN ENVIRONMENTAL PERMIT
VARIATION UNDER THE ENVIRONMENTAL
PERMITTING (ENGLAND AND WALES)
REGULATIONS 2016 (AS AMENDED)**

ENVIRONMENTAL RISK ASSESSMENT



**PRINCES SOFT DRINKS DIVISION - CARDIFF
PORTMANMOOR ROAD, EAST MOORS
CARDIFF, CF24 5HB**

**ECL Ref: ECL.046.01.01/ERA
Version: Issue 1
February 2021**

TABLE OF CONTENTS

1. INTRODUCTION	1
1.1. Overview	1
2. IDENTIFICATION OF RECEPTORS	2
2.1. Site Settings	2
2.2. Potentially Sensitive Ecological Receptors	3
2.3. Potentially Sensitive Human Receptors	6
2.4. Risk of Flooding	8
3. IDENTIFICATION OF THE RISKS	10
3.1. Amenity Risks	10
3.2. Accident Risks	10
4. ASSESSMENT OF RISKS	11
4.1. Methodology	11
5. SUMMARY	25
5.1. Results of the Assessment	25
5.2. Conclusion	25

LIST OF APPENDICES

Appendix I	Welsh Water Trade Effluent Consent
Appendix II	SHE Incident Investigation Form (F100)
Appendix III	Spill Procedure (PROD06)

LIST OF TABLES

Table 1: SACs, SPA and Ramsar within 10km of the Installation Permit Boundary	4
Table 2: Ecological Receptors within 2km of the Installation Permit Boundary	6
Table 3: Human Receptors within 1km of the Installation Permit Boundary	7
Table 3: Human Receptors within 1km of the Installation Permit Boundary (Cont.)	8
Table 4: Amenity Risk Assessment	12
Table 5: Accident Risk Assessment	20

LIST OF FIGURES

Figure 1: Indicative Site Location	2
Figure 2: SPA, Ramsar and SAC identified within 10km of the Installation Boundary	3
Figure 3: SSSIs identified within 2km of the Installation Permit Boundary	4
Figure 4: LNR identified within 2km of the Installation Permit Boundary	5
Figure 5: Sensitive Human Receptors Identified within 1km of the Installation	7
Figure 6: Long Term Flood Risk Map – Rivers and Seas	8
Figure 7: Long Term Flood Risk Map – Surface Water and Small Watercourses ⁵	9

ACRONYMS/TERMS USED IN THIS REPORT

AQMA	Air Quality Management Area
CCTV	Closed Circuit Television
Cd	Cadmium
COD	Chemical Oxygen Demand
DEFRA	Department for Environment, Food and Rural Affairs
EA	Environment Agency
EAL	Environmental Assessment Level
ECL	Environmental Compliance Limited
EHS	Environment, Health and Safety Manager
ELV	Emission Limit Value
EQS	Environmental Quality Standards
ERA	Environmental Risk Assessment
H ₂ O ₂	Hydrogen Peroxide
Ha	Hectares
Hg	Mercury
LNR	Local Nature Reserve
LWS	Local Wildlife Site
MAGIC	Multi-Agency Geographical Information for the Countryside
MCERTS	Monitoring Certification Scheme
MCPD	Medium Combustion Plant Directive
NGR	National Grid Reference
NNR	National Nature Reserve
NO ₂	Nitrogen Dioxide
NRW	Natural Resources Wales
Princes	Princes Limited
QHSE	Quality, Health, Safety and Environment
Ramsar	The Ramsar Convention on Wetlands of International Importance
SAC	Special Areas of Conservation
SHE	Safety, Health and Environment
SPA	Special Protection Areas
SSSI	Sites of Special Scientific Interest
SuDS	Sustainable Drainage System
The Installation	Area contained within the proposed Environmental Permit boundary at Princes Ltd Soft Drinks Division

1. INTRODUCTION

1.1. Overview

- 1.1.1. Environmental Compliance Limited (“ECL”) has been commissioned by Princes Limited (“Princes”) to prepare an Environmental Risk Assessment (“ERA”) to form part of the Environmental Permit variation application at their Soft Drinks Division, hereafter referred to as “the Installation” located on Portmanmoor Road, East Moor Industrial Estate, Cardiff CF24 5HB.
- 1.1.2. As part of a major site expansion, Princes is proposing to increase production capacity by installing additional production lines and associated ancillary plant. Princes is proposing an increase in production capacity from 26,400 litres per hour to 70,400 litres per hour of fruit juice excluding packaging.
- 1.1.3. Princes is proposing to install additional emission points as part of the variation application. This includes the installation of one new additional natural gas fired boiler and associated emission point, designated as A2.
- 1.1.4. The variation also includes the introduction of six new emission points (A3-A8) emitting condensate from each filler line and another six new emission points (A9-A14) from SIG mini fillers emitting hydrogen peroxide (“H₂O₂”) resulting from the packaging sterilisation process.
- 1.1.5. Princes also wish to relocate the foul sewer emission point, designated S1 and the associated sampling point which has resulted in the need to expand the Environmental Permit boundary. Additionally, due to the proposed increased production capacity, the associated effluent to foul sewer is anticipated to increase from 200m³/day to 1,200m³/day.
- 1.1.6. An ERA has been undertaken in accordance with Natural Resources Wales (“NRW”) *‘How to Comply with Your Environmental Compliance’* (Version 8, October 2014) and the relevant requirements of the current version of the Environment Agency (“EA”) online guidance¹, in order to:
- identify potential risks that site operations may present to the environment;
 - screen out any insignificant risks;
 - assess potentially significant risks in detail; and
 - decide on the appropriate control measures.
- 1.1.7. Accordingly, the assessment has addressed the potential risks relating to the operation of the proposed Installation, namely:
- amenity risks (e.g. point source emissions to air and water, fugitive emissions to air and water, noise, pests etc.); and
 - accidents (e.g. fire, loss of containment, loss of power, vandalism).

¹ EA online guidance – *‘Risk assessments for your environmental permit’*. Available at <https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit>, updated October 2020, accessed October 2020.

2. IDENTIFICATION OF RECEPTORS

2.1. Site Settings

- 2.1.1. The Installation is located on Portmanmoor Road within a large commercial and industrial area to the south east of Cardiff City Centre. The Installation occupies an approximate area of 2.5ha and is centred on National Grid Reference (“NGR”) 320369 175713.
- 2.1.2. The Site Location Plan (Drawing Reference ECL.046.01.01-001) details the Environmental Permit boundary (outlined in green) and is provided in Section 3 of this application submission.
- 2.1.3. Figure 1 provides the indicative location of the Installation (red outline) within the context of the surrounding environment.

Figure 1: Indicative Site Location

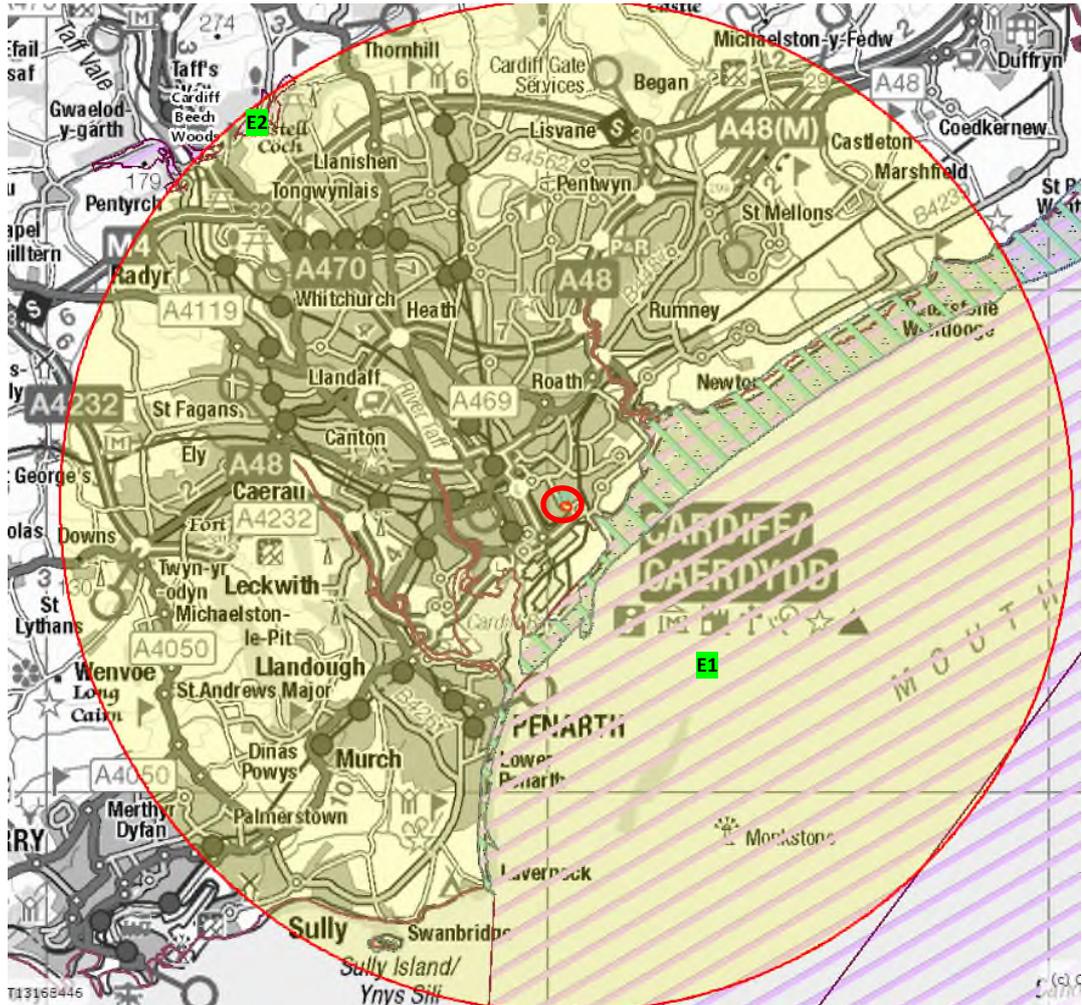


- 2.1.4. The immediate surroundings include industrial units and commercial buildings. The residential areas of Splotton, Tremorfa and Adamsdown are located approximately 0.46km, 0.72km and 1.02km to the north, respectively.
- 2.1.5. The Severn Estuary is located approximately 0.45km south east, Bute East Dock is located approximately 0.91km west, the operational Cardiff Docks located approximately 0.32km south and Cardiff Bay is located approximately 1.56km south west of the Installation. The main city centre is located 1.36km north west of the Installation.

2.2. Potentially Sensitive Ecological Receptors

- 2.2.1. A review of the area using the Multi-Agency Geographic Information for the Countryside² (“MAGIC”) online tool identified that the Installation is located within 10km of the Severn Estuary which is designated as a Special Protection Area (“SPA”), Ramsar Convention on Wetlands of International Importance (“Ramsar”) and Special Area of Conservation (“SAC”). Additionally, the Installation is located within 10km of Cardiff Beech Woods, which is also designated as a SAC. The indicative locations of the identified ecological receptors are shown in Figure 2.

Figure 2: SPA, Ramsar and SAC identified within 10km of the Installation Boundary



Note to Figure 2:
 Purple line - SAC
 Green line - Ramsar
 Grey shading with dots - SPA

² Department for Environment, Food and Rural Affairs (“DEFRA”) MAGIC Online Mapping Tool, available at: <https://magic.defra.gov.uk/magicmap.aspx>, accessed July 2020.

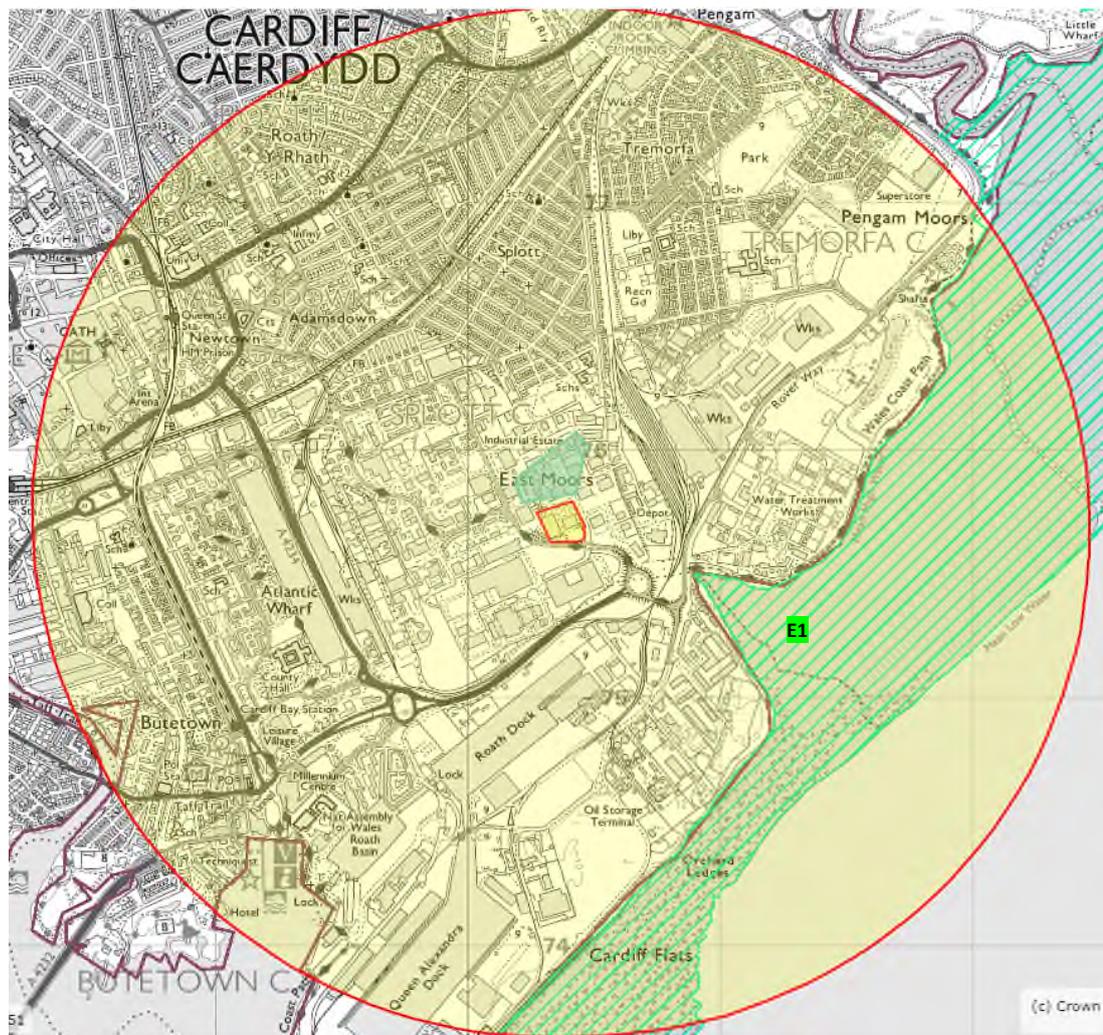
2.2.2. The NGR of the identified ecological receptors are listed in Table 1, together with their distance and direction from the Installation Permit boundary.

Table 1: SACs, SPA and Ramsar within 10km of the Installation Permit Boundary

Ref	Description	Designation	Easting	Northing	Distance from EP Boundary (km)	Direction
E1	Severn Estuary	SPA	320903	175509	0.45	S
		SAC				
		Ramsar				
E2	Cardiff Beech Woods	SAC	312796	181971	9.74	NW

2.2.3. The Severn Estuary is also designated as a Site of Special Scientific Interest (“SSSI”) which is located within 2km of the Installation Permit boundary as shown in Figure 3.

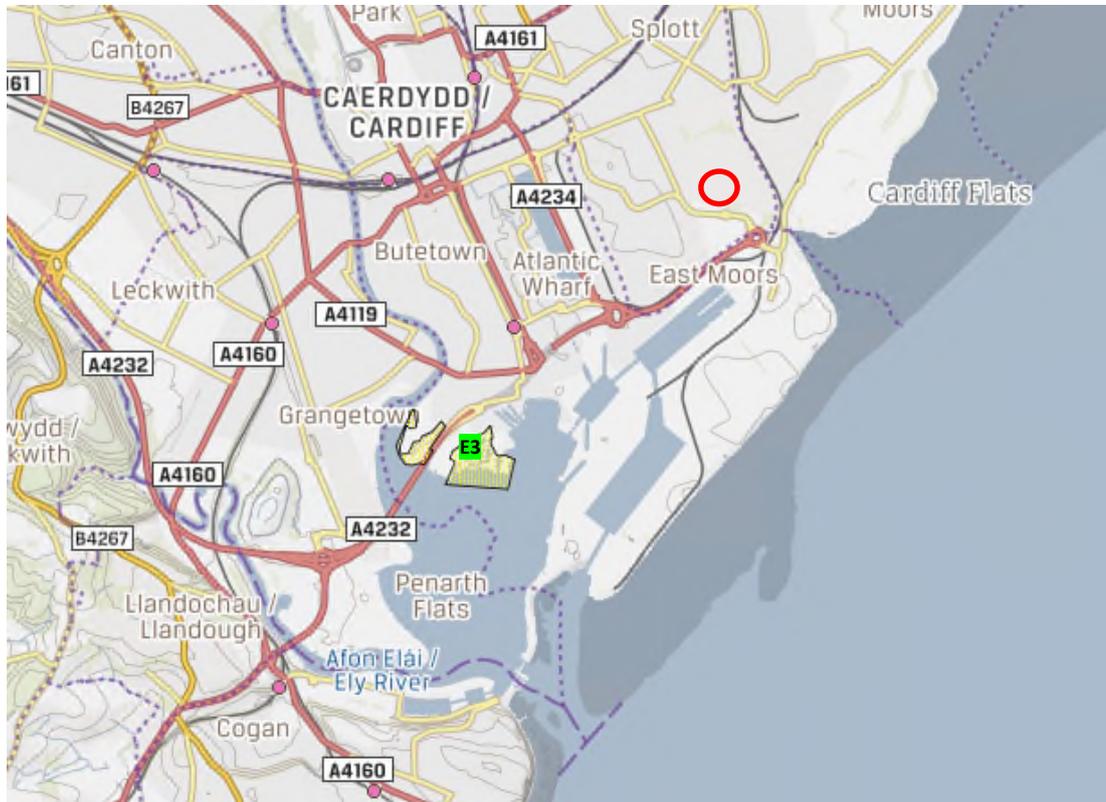
Figure 3: SSSIs identified within 2km of the Installation Permit Boundary



Note to Figure3:
Turquoise line - SSSI

2.2.4. According to the Lle Geo-Portal for Wales³, there are no National Nature Reserves (“NNRs”) or ancient woodland sites within 2km of the Installation boundary. However, Cardiff Bay Wetlands and Hamadryad Park is designated as a Local Nature Reserve (“LNR”) and is located within 2km of the Installation boundary as shown in Figure 4.

Figure 4: LNR identified within 2km of the Installation Permit Boundary



Note to Figure 4: Yellow shading - LNR

- 2.2.5. The Installation is also located within 2km of five Local Wildlife Sites (“LWS”) according to the City of Cardiff Council’s Green Infrastructure Plan Supplementary Planning Guidance: Ecology and Biodiversity Technical Guidance Note.⁴
- 2.2.6. The NGR of the identified ecological receptors within 2km are listed in Table 2, together with their distance and direction from the Installation Permit boundary.

³ Lle Geo-Portal for Wales Mapping Tool, available at: <https://lle.gov.wales/catalogue?t=1&lang=en>, accessed July 2020.

⁴ City of Cardiff Council, ‘Green Infrastructure Supplementary Planning Guidance’, available at: <https://www.cardiff.gov.uk/ENG/resident/Planning/Planning-Policy/Supplementary-Planning-Guidance/Documents/Consultation/Green%20Infrastructure%20SPG%20English%20June%202017.pdf>, published November 2017, accessed July 2020.

Table 2: Ecological Receptors within 2km of the Installation Permit Boundary

Ref	Description	Designation	Easting	Northing	Distance from EP Boundary (km)	Direction
E1	Severn Estuary	SSSI	320903	175509	0.45	S
E3	Cardiff Bay Wetlands and Hamadryad Park	LNR	318902	174259	1.93	SW
LWS1	Tidal Sidings	LWS	320700	175500	0.26	SE
LWS2	Ocean Park South	LWS	320500	175300	0.31	S
LWS3	Cardiff Heliport Fields	LWS	321100	175000	0.90	SE
LWS4	Beach Sidings	LWS	320500	174000	1.58	S
LWS5	Pengam Moors	LWS	321600	176900	1.63	E

2.2.7. In addition to the SACs, SPAs, Ramsar, SSSIs, NNRs, LNRs, LWS, ancient woodland, other potentially sensitive land uses within 1km of the Installation were also considered. A review of the area using the MAGIC tool and Lle Geo-Portal for Wales indicated that none of the following sensitive land uses are located within a 1km radius of the Installation:

- Areas of Outstanding Natural Beauty;
- Groundwater Source Protection Zones;
- Marine Conservation Zones;
- Scheduled Monuments;
- National Parks; and/or
- Nitrate Vulnerability Zone.

2.3. Potentially Sensitive Human Receptors

2.3.1. Fourteen potentially sensitive human receptors have been identified within 1km of the Installation which are displayed in Figure 5 and outlined in Table 3.

Figure 5: Sensitive Human Receptors Identified within 1km of the Installation



Table 3: Human Receptors within 1km of the Installation Permit Boundary

Ref	Name	Receptor Type	Easting	Northing	Distance from Permit Boundary (km)	Direction
H1	Industrial Estate – Pantmanmoor Road	Industrial/ Commercial	320284	175847	0.01	N, E & W
H2	Neptune Court	Commercial	320042	175649	0.11	W
H3	Industrial Estate – Off Ocean Way and A4232	Industrial/ Commercial	320168	175305	0.18	SW
H4	Cardiff Docks	Industrial/ Commercial	320504	174804	0.32	S
H5	Moorland Park	Recreational	320343	176219	0.32	N
H6	Moorland Road	Residential	320534	176345	0.38	N
H7	Industrial Estate - Tremorfa	Industrial/ Commercial	321213	175774	0.42	E
H8	Industrial Estate – Seawall Road	Industrial/ Commercial	320870	176261	0.45	NE
H9	Splott District	Residential	319972	176635	0.46	N

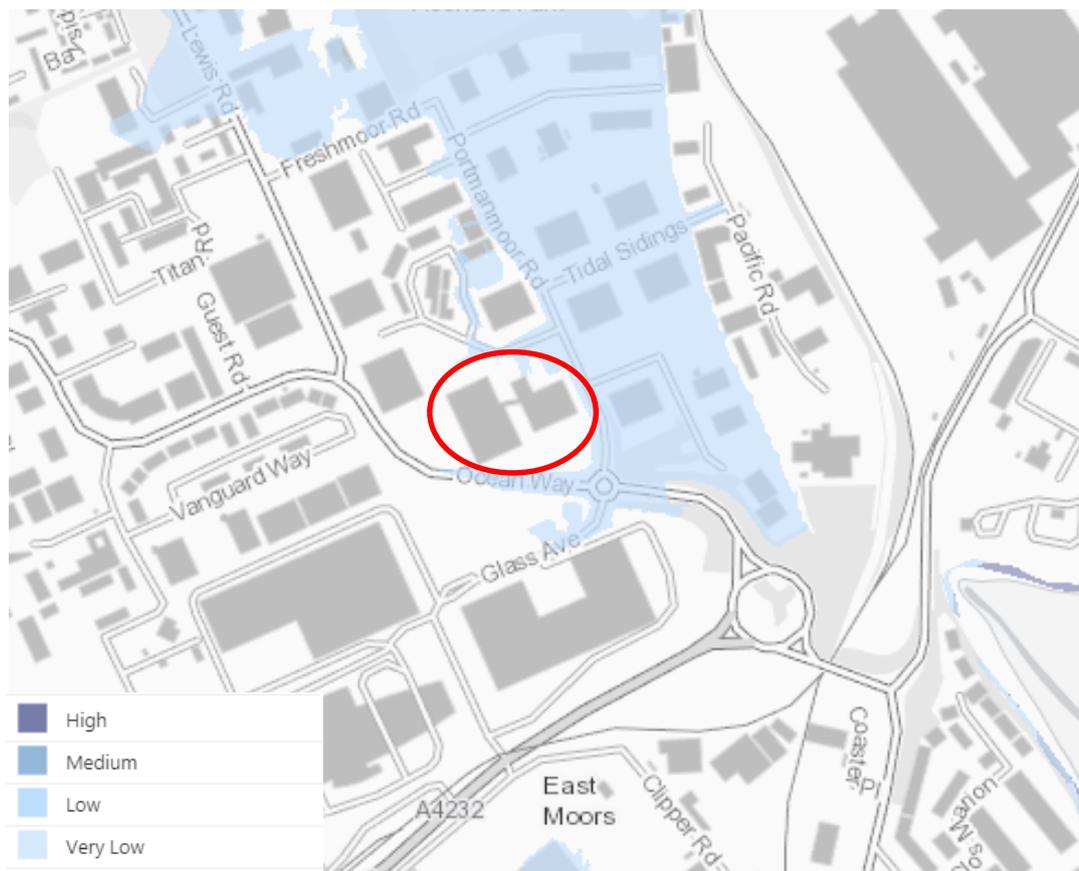
Table 3: Human Receptors within 1km of the Installation Permit Boundary (Cont.)

Ref	Name	Receptor Type	Easting	Northing	Distance from Permit Boundary (km)	Direction
H10	Moorland Primary School	Educational	320480	176293	0.46	NE
H11	Youth Centre and Sporting Grounds	Recreational	319702	175920	0.54	NW
H12	Industrial Estate – East Moors Road	Industrial/Commercial	319614	175538	0.71	W
H13	Splott Park	Recreational	320678	176629	0.76	NE

2.4. Risk of Flooding

2.4.1. As shown on the NRW Long Term Flood Risk Map⁵ provided in Figure 7, the Installation is predominantly not at risk from flooding from rivers and seas. Areas on the perimeter of the Installation are categorised as being at low risk which is defined as having 0.1% to 1% chance of flooding from rivers or seas.

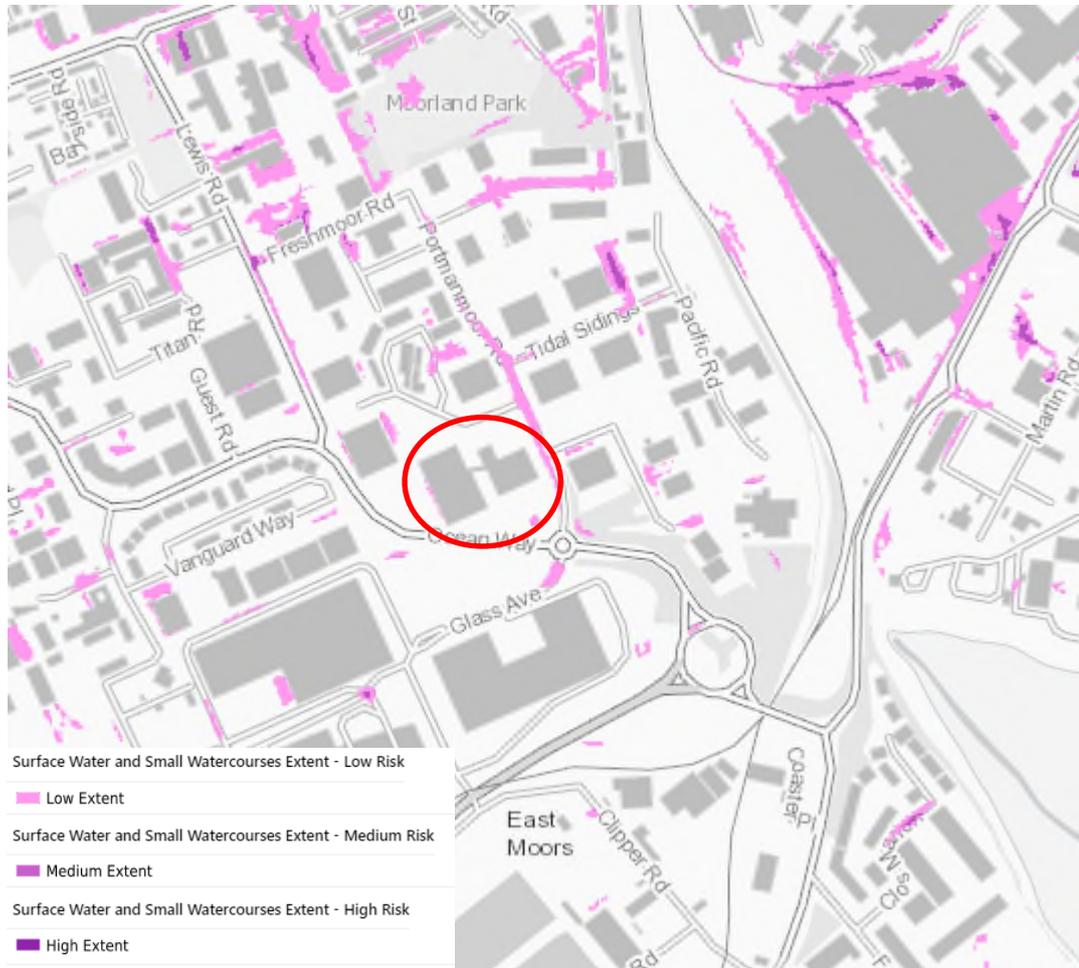
Figure 6: Long Term Flood Risk Map – Rivers and Seas



⁵ NRW Long Term Flood Risk Maps, available at: <https://naturalresources.wales/evidence-and-data/maps/long-term-flood-risk/?lang=en>, accessed July 2020.

2.4.2. As shown in Figure 8, the Installation is predominantly categorised as being at very low risk which is defined by NRW as having less than 0.1% of flooding from surface water and small watercourse flooding. Small areas within the Installation are categorised as possessing low surface water flood risk which is defined as having between 0.1% and 1% chance of flooding.

Figure 7: Long Term Flood Risk Map – Surface Water and Small Watercourses⁵



3. IDENTIFICATION OF THE RISKS

3.1. Amenity Risks

3.1.1. Taking into account the nature of the activities that will be undertaken at the Installation, the main amenity risks identified are as follows:

- point source emissions to air;
- fugitive emissions to air;
- point source emissions to water;
- fugitive emissions to water;
- noise; and
- general amenity risks (pests).

3.1.2. As the proposed activities do not involve any point source emissions i.e. process contributions to land, no assessment has been undertaken.

3.1.3. Fugitive releases to land and groundwater will be prevented by conducting all operations in areas sealed with an impervious barrier to prevent a pathway for migration to land and groundwater. Consequently, no further assessment has been undertaken.

3.1.4. Additionally, the proposed activities are not odorous in nature and therefore, the risk of odour considered unlikely and consequently, no assessment has been undertaken.

3.2. Accident Risks

3.2.1. The main potential accident risks have been identified as:

- fire;
- loss of power/system failure;
- loss of containment of potentially polluting materials; and
- vandalism.

4. ASSESSMENT OF RISKS

4.1. Methodology

4.1.1. The risk assessments have been undertaken using the following approach for amenity and accident risks:

- identification of hazards associated with the risk that have the potential to cause harm;
- identification of potential receptors i.e. what is at risk (for the purposes of this assessment, typical potential receptors have been identified)?
- pathway i.e. how can the hazard get to the receptor?
- risk management measures employed to reduce the risk to an acceptable level;
- probability of exposure i.e. how likely is this contact?
- consequence i.e. what is the harm that can be cause? and
- assessment of overall risk.

4.1.2. The assessments for the amenity and accident risks identified above are presented in Tables 4 and 5 respectively.

Table 2: Amenity Risk Assessment

Hazard	Receptors	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Emissions to Air						
<i>Point Source Emissions to Air</i>						
Release of nitrogen oxides (“NO _x ”) and carbon monoxide (“CO”) associated with the existing and proposed boilers	Ecological and human sensitive receptors in surrounding area (see Section 2.2 and 2.3 of this ERA).	Release to Air – windblown dispersion in atmosphere.	<p>Detailed air quality modelling has been undertaken to predict the impacts associated with stack emissions from both the existing boiler and proposed boiler running simultaneously at the Installation.</p> <p>The Air Dispersion Modelling Study (ECL.046.01.01/ADM), which is contained in Section 6 of this application, concluded that the emissions arising from the existing and the proposed boiler flues will not have a detrimental impact on local air quality, human health, sensitive habitat sites or the Air Quality Management Areas (“AQMAS”) assessed.</p>	<p>Low</p> <p>Risk management measures should prevent unauthorised releases from reaching the identified receptors</p>	Air Pollution	Not significant if risk management measures are strictly adhered to
Releases of hydrogen peroxide (H ₂ O ₂) associated with the packaging sterilisation process	Ecological and human sensitive receptors in surrounding area (see Section 2.2 and 2.3 of this ERA).	Release to Air – windblown dispersion in atmosphere.	<p>A H1 Assessment has been undertaken based on the worst case foreseeable emissions of H₂O₂ from proposed emission points A9-A14 associated with the packaging sterilisation process.</p> <p>The H1 Assessment (ECL.046.01.01_H1 – A9-A14), which is contained in Section 6 of this application, concluded that the proposed release does not exceed the 10% short term Environmental Assessment Level (“EAL”) provided by NRW. Although no long term EAL was provided for H₂O₂, the short term EAL has also been utilised for the long-term EAL. The H1 Assessment shows that the proposed release does not exceed 1% of this EAL. The short term EAL was used as the long term EAL in the interest of being conservative and to demonstrate the significance criteria will not be exceeded for either long term or short term process contributions.</p>	<p>Low</p> <p>Risk management measures should prevent unauthorised releases from reaching the identified receptors</p>	Air Pollution and potential health effects	Not significant if risk management measures are strictly adhered to

Table 3: Amenity Risk Assessment (Cont.)

Hazard	Receptors	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Emissions to Air						
<i>Fugitive Emissions to Air</i>						
Fugitive emissions from operation of the boilers	Ecological and human sensitive receptors in surrounding area (see Section 2.2 and 2.3 of this ERA).	Release to Air – windblown dispersion in atmosphere.	<p>The operation of the boilers will be in accordance with the manufacturer’s instructions.</p> <p>Servicing of the boilers and maintenance of the extraction systems and discharge points will be undertaken as part of the documented planned maintenance schedule or condition monitoring system which includes all plant and processing equipment. This will ensure optimal performance and to instigate any boiler tuning if deemed necessary.</p> <p>Emissions monitoring will be undertaken in accordance with Environmental Permit and new Medium Combustion Plant Directive (“MCPD”) requirements. This will ensure emissions are monitored, controlled and within the oxides of nitrogen Emission Limit Value (“ELV”).</p>	Low Risk management measures should prevent unauthorised releases from reaching the identified receptors	Air pollution and dust nuisance	Not significant if risk management measures are strictly adhered to
Fugitive emissions of H ₂ O ₂ during packaging sterilisation.	Ecological and human sensitive receptors in surrounding area (see Section 2.2 and 2.3 of this ERA).	Release to Air – windblown dispersion in atmosphere.	<p>Maintenance of the extraction systems and discharge points will be undertaken as part of the documented planned maintenance schedule or condition monitoring system. This will ensure optimal performance.</p> <p>The dosing of H₂O₂ is strictly controlled to achieve the required level of sterility in the process. Too little would compromise sterility levels whilst an excess would impact on product safety or organoleptic quality. The filler machine will produce an error message and stop if the dosing level recorded exceeds the upper limit, therefore, preventing fugitive emissions to air.</p>	Low Risk management measures should prevent unauthorised releases from reaching the identified receptors	Air pollution and potential health effects	Not significant if risk management measures are strictly adhered to

Table 4: Amenity Risk Assessment (Cont.)

Hazard	Receptors	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Emissions to Water						
<i>Fugitive Emissions to Water – Surface Water</i>						
Fugitive emissions to surface water	Controlled waters	Via site drainage system	<p>There are no point source emissions i.e. process contributions to surface water associated with the proposed activities. Only clean surface runoff (i.e. rainwater) will enter the surface water drainage system. A sustainable drainage system (“SuDS”) has been constructed to adhere to planning requirements. This involves an attenuation tank and interceptor.</p> <p>All processing activities are undertaken internally within the site buildings which benefit from impermeable surfacing. Processing activities are isolated from the surface water drainage system.</p> <p>Any spillages will be dealt with in accordance with the Princes’ spill procedure. More detail is provided in Table 5.</p> <p>The drainage arrangements are shown on the Drawing 13811 STR SA 92 0203 contained in Section 3 of this submission.</p>	Low	Contamination of controlled waters	Not significant if risk management measures are strictly adhered to
<i>Point Source Emissions to Water – Foul Sewer</i>						
Process effluent	Welsh Water Effluent Treatment Plant and subsequently, controlled waters	Via foul drainage system	<p>The process plant has been designed to capture a large proportion of the process effluent from product flushing during CIP and end of production flushes. This wastewater will be redirected to a 30,000 litre wastewater tank on site which will be periodically tankered off site for anaerobic digestion.</p> <p>Trade effluent volume being discharged is expected to increase due to the increase in site capability and the number of production lines operating. It is anticipated that the effluent sent to sewer will be in the region of 1,200m³/day.</p>	Low	Contamination of Welsh Water Effluent Treatment Plant and subsequent contamination of controlled waters	Not significant if risk management measures are strictly adhered to

Table 4: Amenity Risk Assessment (Cont.)

Hazard	Receptors	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Emissions to Water						
<i>Point Source Emissions to Water – Foul Sewer</i>						
Process effluent	Welsh Water Effluent Treatment Plant and subsequently, controlled waters	Via foul drainage system	<p>The caustic used for cleaning at the Installation is known to contain traces of cadmium (“Cd”) and mercury (“Hg”). Using the mass balance calculations used to determine concentrations as per current Permit requirements, based on the increased effluent proposed and the increased use of caustic, a H1 Assessment for the proposed emissions to sewer has been undertaken. The H1 Assessment concluded that the emissions will not be significant as both are below 100% of the Environmental Quality Standards (“EQS”) for estuaries and coastal waters. The H1 (ECL.046.01.01_H1 – S1) is contained in Section 6 of this application submission. The proposed emissions will continue to be below the emission limit values contained in Table 2.2.8. of the Environmental Permit.</p> <p>If determined necessary by systematic sampling and pH testing, Princes will design and install a neutralisation system to correct the pH of the effluent.</p> <p>Princes will monitor emissions to foul sewer in accordance with Environmental Permit requirements. Substances and parameters include effluent flow, pH, suspended solids and chemical oxygen demand (“COD”) and will be covered by an appropriate Monitoring Certification Scheme (“MCERTS”) certification or accreditation as appropriate. The MCERTS effluent flow monitor is inspected and audited annually.</p> <p>Princes will be required to adhere to Trade Effluent Consent limits and Welsh Water personnel will undertake periodic effluent testing on site. An amended Trade Effluent Consent will be obtained by Princes from Welsh Water to reflect the increased effluent discharge proposed. The current Trade Effluent Consent for the Installation is contained in Appendix I.</p>	Low	Contamination of Welsh Water Effluent Treatment Plant and subsequent contamination of controlled waters	Not significant if risk management measures are strictly adhered to

Table 4: Amenity Risk Assessment (Cont.)

Hazard	Receptors	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Emissions to Water						
<i>Fugitive Emissions to Water – Foul Sewer</i>						
Process effluent	Welsh Water Effluent Treatment Plant and subsequently, controlled waters	Via foul drainage system	<p>The processing activities to be undertaken are vigorously controlled and autonomous preventing fugitive emissions being discharged to foul sewer.</p> <p>As discussed above, the process plant has been designed to capture a large proportion of the process effluent from product flushing during CIP and end of production flushes which will be redirected to a 30,000 litre wastewater tank on site.</p> <p>Additionally, following improvement works by the process plant equipment supplier, the following effluent will either be redirected to rework or to the dedicated waste tank:</p> <ul style="list-style-type: none"> • inter-batch flushing of premix tanks; • any residual product in the rework tanks at the end of the production run; and • any scrapped carton contents from the packing lines. <p>Set quantities of caustic are used for cleaning at the Installation to control the concentrations of cadmium and mercury within the effluent.</p> <p>If determined necessary by systematic sampling and pH testing, Princes will design and install a neutralisation system to correct the pH of the effluent.</p> <p>See ‘Table 5 – Spillage of Potentially Polluting Substances’ for more detail regarding control measures</p>	Low	Contamination of Welsh Water Effluent Treatment Plant and subsequent contamination of controlled waters	Not significant if risk management measures are strictly adhered to

Table 4: Amenity Risk Assessment (Cont.)

Hazard	Receptors	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Noise						
Noise emissions from site operations	Ecological and human sensitive receptors in surrounding area (see Section 2.2 and 2.3 of this ERA).	Release to Air. Installation is close enough to human sensitive receptors for noise to be potentially audible.	<p>The Installation is located within an industrial setting and is surrounded by industrial units and manufacturing premises.</p> <p>All production lines are housed within the site buildings and equipment and machinery is operated and maintained by trained personnel in accordance with the documented planned maintenance schedule or condition monitoring system which includes all plant and processing equipment and is maintained by the Engineering Preventative Maintenance Coordinator. This ensures all equipment is in optimal operational condition.</p> <p>The maintenance requirements of new equipment are defined during commissioning as per MAN12 change control and the completion of the modification assessment review form F12 which form part of the Cardiff Site Quality, Health, Safety and Environment (“QHSE”) Management System.</p> <p>Princes has confirmed that operational noise levels will comply with the Control of Noise Regulations 2005 and relevant noise limits contained within the Planning Permission.</p> <p>The vehicle route has been designed to limit the need to reverse on site, reducing the need to sound intermittent reversing beepers. Additionally, doors are closed when not in use and noise generating activities are not undertaken during night-time hours where possible.</p> <p>In the event of elevated noise being experienced at the Installation, the safety, health and environment (“SHE”) Incident Investigation Record form will be completed. A blank copy is contained in Appendix II of this ERA. An investigation will be undertaken to establish the root cause and implement corrective actions. The relevant risk assessment will also be updated where necessary.</p>	Low. The risk management measures should prevent noise reaching the identified receptors	Possible noise nuisance	Not significant if risk management measures are strictly adhered to

Table 4: Amenity Risk Assessment (Cont.)

Hazard	Receptors	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
General Amenity Risks - Pests						
Attraction and infestation of pests	Human population in surrounding area (see Section 2.3 of this ERA)	Via air (birds/flies) or via land (vermin).	<p>Due to strict hygiene standards required for the preparation of drinks for human consumption, the Installation is kept immaculately clean with a regular cleaning and inspections programme undertaken.</p> <p>The Installation has implemented a pest management programme to minimise the risk of pests and subsequent contamination of products, raw materials or packaging.</p> <p>A competent pest control company undertakes regular inspections and treatment to deter and eradicate any infestation. The frequency of inspection is determined by a risk assessment and has been reviewed to take account of the site expansion.</p> <p>Employees are also trained to understand the signs of pest activity and the need to report any evidence of pest activity to a designated manager.</p> <p>Insect/fly-killing devices, pheromone traps and other insect monitoring devices are correctly sited and operational. Apple juice in wasp pots are used during wasp season. Bait stations or other rodent monitoring/control devices are appropriately located, secured and maintained. The site has adequate measures to prevent birds from entering buildings or roosting above loading/unloading areas.</p> <p>Records of inspections, pest proofing, hygiene recommendations and actions taken are maintained. Identified actions are discussed in the weekly meeting and recorded on the Pest Control Actions log.</p> <p>The pest management process is audited internally every three months with a six-monthly review with the contractor.</p>	Low	Possible adverse health effects and nuisance	Not significant if risk management measures are strictly adhered to

Table 4: Amenity Risk Assessment (Cont.)

Hazard	Receptors	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
General Amenity Risks - Pests						
Attraction and infestation of pests	Human population in surrounding area (see Section 2.3 of this ERA)	Via air (birds/flies) or via land (vermin).	An in-depth, documented pest control survey is undertaken by the pest control expert annually or if the risk changes. Results of pest control inspections are analysed for trends. Additional reviews of trends would be implemented in the event of an infestation. The analysis includes the results from trapping and monitoring devices to identify problem areas and the analysis is used as a basis for improving the pest management procedures.	Low The risk management measures should prevent pests reaching identified receptors	Possible adverse health effects and nuisance	Not significant if risk management measures are strictly adhered to

Table 5: Accident Risk Assessment

Hazard	Receptors	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Fire						
Fire at the site.	Ecological and human sensitive receptors in surrounding area (see Section 2.2 and 2.3 of this ERA).	Release to air – windblown dispersion in atmosphere	<p>The Princes Group Crisis Manual, MP21 Emergency Preparedness and Response plan and site Emergency Plan are designed to report and effectively manage incidents and potential emergency situations including fire. These documents form part of Princes’ QHSE Management System.</p> <p>The Environment, Health and Safety (“EHS”) Manager has overall responsibility for the production and maintenance of facility emergency response procedures and training the Cardiff incident controllers and evacuation wardens in their responsibilities under the procedure.</p> <p>Evacuation drills are undertaken to ensure all staff are aware of the emergency procedures.</p> <p>Fire extinguisher and fire alarms are located in strategic locations throughout the Installation and are tested and maintained periodically. All employees are made aware of the location of fire-fighting equipment and alarm call points and are conversant with their appropriate usage.</p> <p>Fire risk assessments are undertaken by the EHS Manager.</p> <p>Preventative maintenance on all equipment is undertaken to prevent any faults occurring.</p> <p>Designated smoking areas are in place with smoking prohibited in all buildings.</p>	<p>Medium</p> <p>The risk management measures should prevent any release from reaching the identified receptors.</p>	Combustion gases (smoke) and localised nuisance.	Not significant if risk management measures detailed in the FPP are strictly adhered to

Table 5: Accident Risk Assessment (Cont.)

Hazard	Receptors	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Fire (Cont.)						
Releases of potentially contaminated firewater.	Human and ecological sensitive receptors population in surrounding area (see Section 2.2 and 2.3 of this ERA)	Via surface water or foul water drainage networks	<p>Firewater will be contained using bunds and booms and the firewater would then be tankered off site to an appropriately licenced Facility.</p> <p>Drain mats will be deployed and the isolation system activated in order to prevent any firewater from entering the drainage system and leaving site.</p>	<p>Low</p> <p>Risk management measures should prevent any release from reaching the identified receptors</p>	Contamination of controlled waters	Not significant if risk management measures detailed in the FPP are strictly adhered to
Spillage of Potentially Polluting Substances						
Loss of containment during loading, unloading and storage of potentially polluting substances.	Local Watercourse Network	Via site drainage network or via overland flow.	<p>The Installation benefits from impermeable surfacing to prevent any downward migration of potentially pollution substances entering the ground or groundwater.</p> <p>Site Managers are responsible for ensuring Team Leaders supervise deliveries and loading and unloading at all times. Storage vessel levels are checked prior to unloading to prevent overfilling.</p> <p>Integrity testing of all storage vessels is undertaken by a qualified engineer annually to reduce the likelihood of tank failure or loss of containment. Any remediation action or repairs will be actioned immediately. If it is established that tank integrity is compromised and cannot be repaired, new tanks will be purchased and installed.</p>	<p>Low</p> <p>Risk management measures should prevent any release from reaching the identified receptors</p>	Contamination/ pH imbalance of Effluent Treatment Plant and/or subsequent contamination of controlled waters.	Not significant if risk management measures are strictly adhered to

Table 5: Accident Risk Assessment (Cont.)

Hazard	Receptors	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Spillage of Potentially Polluting Substances (Cont.)						
Loss of containment during loading, unloading and storage of potentially polluting substances.	Local Watercourse Network	Via site drainage network or overland flow.	<p>All potentially polluting liquids will be appropriately banded providing a minimum capacity of either 110% of the capacity of the largest storage vessel or 25% of the total capacity of all the storage vessels within the bund, whichever is greater.</p> <p>Due to site constraints and the size and number of fruit concentrate tanks, a bulk tank bund has been constructed with a capacity of 157m³, therefore, providing 260% of the largest 60,000 litre tank holding fruit juice concentrate.</p> <p>Princes is committing to installing an appropriate isolation system to prevent any uncontrolled releases to foul water.</p> <p>Barriers and signage will be in place to prevent the risk of vehicle collision with storage vessels and bunding.</p> <p>Regular site inspections are undertaken to observe any spillages and to inspect bund integrity. Any remedial action required is recorded in the Incident Log.</p> <p>Loss of containment will be dealt with in accordance with the Installation's spill response procedure (PROD06 Spill Procedure) which is contained in Appendix III. The SHE Incident Investigation Record form will also be completed.</p> <p>All employees are suitably trained in the procedure and spill kits are strategically located throughout the Installation.</p>	Low	Contamination/pH imbalance of Effluent Treatment Plant and/or contamination of controlled waters.	Not significant if risk management measures are strictly adhered to

Table 5: Accident Risk Assessment (Cont.)

Hazard	Receptors	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Loss of Power						
Major system failure/loss of process control	Local Watercourse Network	Via site drainage network or overland flow.	<p>Princes personnel are present at all times to supervise operations. The process equipment benefits from alarms and controls which enable any malfunctions to be identified immediately. Additionally, emergency stop buttons can halt the process immediately in case of serious failure or faults occurring. The Installation is capable of identifying, holding and preventing the release of any materials should equipment fail.</p> <p>The documented planned maintenance schedule or condition monitoring system details the required maintenance and inspection of all process equipment to ensure good working order to reduce the risk of complete system failure.</p> <p>If major system failure or loss of power occurs, all affected operations will be halted, faults will be addressed and repairs undertaken where necessary using specialist contractors. Competent personnel will then check all areas prior to recommencing operations.</p>	<p>Low</p> <p>Risk management measures should prevent any release from reaching the identified receptors</p>	<p>Contamination/pH imbalance of Effluent Treatment Plant and/or contamination of controlled waters.</p>	<p>Not significant if risk management measures are strictly adhered to</p>
Vandalism						
Any of the above.	Any of the above.	Any of the above.	<p>The Installation implements a Security Policy as part of the QSHE Management System.</p> <p>The Installation is secured by perimeter fencing and remote closed-circuit television (“CCTV”) monitoring system surveys all areas of the Installation.</p> <p>Security systems are in place to ensure that products, premises and brands are protected from malicious actions. Princes undertake an annual document assessment review at the Installation which includes site security and is collated into a Threat Assessment Plan. Identified actions and control measures to reduce risks are implemented.</p>	<p>Low</p> <p>Risk management measures should prevent any release from reaching the identified receptors</p>	<p>Any of the above.</p>	<p>Not significant if risk management measures are strictly adhered to</p>

Table 5: Accident Risk Assessment (Cont.)

Hazard	Receptors	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Vandalism						
Any of the above.	Any of the above.	Any of the above.	External storage tanks, silos and intake pipes with an external opening are secure through lock or restricted access. Staff are trained in site security procedures and are encouraged to report unidentified or unknown visitors.	Low Risk management measures should prevent any release from reaching the identified receptors	Any of the above.	Not significant if risk management measures are strictly adhered to

5. SUMMARY

5.1. Results of the Assessment

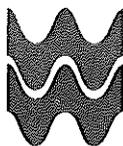
- 5.1.1. The results of both the amenity and accident risk assessments (Tables 4 and 5) indicate that none of the risks relating to proposed variation will be significant if the Installation is operated and managed in accordance with the risk management measures detailed and the Installation's QSHE management system.
- 5.1.2. An assessment of the impact of emissions from the existing boiler and proposed boiler operating simultaneously has been undertaken. The full assessment may be found in ECL Report ECL.046.01.01/ADM which is contained in Section 6 of this variation application.
- 5.1.3. A H1 Assessment (ECL.046.01.01_H1 -A9-A14) has been undertaken to assess the hydrogen peroxide emissions associated with the packaging sterilisation process. The H1 Assessment is contained in Section 6 of this variation application.
- 5.1.4. A H1 Assessment (ECL.046.01.01-S1) has been undertaken to assess the proposed increased emissions via S1 to foul sewer. The H1 Assessment is contained in Section 6 of this variation application.

5.2. Conclusion

- 5.2.1. The risks in terms of accident and amenity risk can be considered not significant providing all risk management measures are implemented and strictly adhered to.

APPENDIX I

TRADE EFFLUENT CONSENT



**Direction No:
(3) of TE341**

**DŴR CYMRU CYFYNGEDIG
THE WATER INDUSTRY ACT 1991
NOTICE OF DIRECTION VARYING A CONSENT
TO DISCHARGE TRADE EFFLUENT INTO A PUBLIC SEWER**

TO: Prince's Soft Drinks, Unit 68 Portmanmoor Road, East Moors, Cardiff CF24 5HB.

(1) A Consent ("the Consent") to discharge trade effluent into the public sewer subject to conditions was issued by **DŴR CYMRU CYFYNGEDIG** ("the Undertaker") (or its predecessors) on the 8th October 1985 from trade premises at Unit 68, Portmanmoor Road, Cardiff CF24 5HB.

(2) Notices of Direction ("the previous Directions") were given in respect of the said discharge on 9th September 1993 and 15th August 2001 by the Undertaker.

(3) Except in so far as they are varied by these Directions the conditions and provisions of the Consent and the previous Directions shall remain in force and shall apply to the discharge.

The Undertaker hereby gives Notice of its Direction that the conditions attached to the Consent [as varied by the previous Directions] shall be further varied with effect from the 1st February 2012 by:-

- (i) the revocation of the conditions contained in the Consent and the previous Directions, and
- (ii) the substitution for those conditions by the following conditions.



CONSENT No. TE341 of 2011

DWR CYMRU CYFYNGEDIG

WATER INDUSTRY ACT 1991

**CONDITIONAL CONSENT TO THE DISCHARGE
OF TRADE EFFLUENT TO THE PUBLIC SEWER**

TO: Prince's Soft Drinks, the Owner and/or Occupier of the trade premises (herein called the "Occupiers") - whose registered office is situate at the Royal Liver Building, Pier Head, Liverpool L3 1NX.

RECITALS

1. The 17th day of September 1985 you applied for consent under Section 119 of the Water Industry Act 1991 for consent to discharge trade effluent from the following trade premises known as Prince's Soft Drinks and situated at Unit 68, Portmanmoor Road, East Moors, Cardiff CF24 5HB (hereinafter, the Application) and which trade premises are for the purpose of identification only shown on the location plan attached hereto and marked "A" (hereinafter, "the said trade premises").
2. Compliance with the conditions hereunder shall be ascertained by reference to the method of analysis as from time to time employed by the Undertaker, its servants, agents or contractors, save where the said condition(s) otherwise expressly provide(s).

DWR CYMRU CYFYNGEDIG ("the Undertaker") in the exercise of its powers under Section 121 of the Water Industry Act 1991, and thinking it fit to impose conditions as hereinafter appear, **GIVES ITS CONSENT** to the discharge of trade effluent from the said trade premises into the Undertaker's public sewers, **SUBJECT TO THE FOLLOWING CONDITIONS AND NOT OTHERWISE.**

- (1) The public sewer into which the trade effluent may be discharged is the 3000mm more particularly identified by means of a line(s) coloured RED drawn on the plan attached hereto and marked "B".
- (2) The discharge of trade effluent shall be made at the point marked "X" on the said plan and the said trade effluent shall enter into the public sewer shown on the said plan at the point marked "Y" thereon and not otherwise. Further, no connection, linkage, conduit, pipe, channel or other communication whatsoever shall be made to the said sewer between the said points "X" and "Y" [without the prior approval in writing of the Undertaker].
- (3) The trade effluent to be discharged shall consist solely of that which was specified in the Trade Effluent Notice or application to discharge in respect of which the Consent [and/or previous Direction] was given as varied by any application made for the purpose of this Direction and derived [exclusively] from blending, pasteurisation and packing of fruit juices.
- (4) Without prejudice to condition 3 above, the nature and/or composition of the trade effluent which may be discharged is as specified in the FIRST SCHEDULE hereto.
- (5) The trade effluent shall not include any of the substances or properties listed in the SECOND SCHEDULE hereto in concentration greater than stated therein.
- (6) The maximum quantity of trade effluent discharged on any day (being any continuous 24 hour period) shall not exceed 600 cubic metres.

- (7) The highest rate at which trade effluent may be discharged shall not exceed 40 cubic metres per hour or 11 litres per second.
- (8) The trade effluent shall only be discharged into the public sewer(s) at any time.
- (9) No uncontaminated condensing water shall be discharged.
- (10) There shall be eliminated from the trade effluent before it is discharged the matters listed below:
 - (a) Effluent with a temperature in excess of 43° Celsius (110° Fahrenheit);
 - (b) Calcium Carbide;
 - (c) Petroleum Spirit within the meaning of Section 111 of the Water Industry Act 1991 and/or the Petroleum Act 1928, save as otherwise permitted herein;
 - (d) Other material forming a constituent of the trade effluent, whether alone or in combination with other materials, specified hereby as that which is explosive;
 - (e) Any other substance forming a constituent of the trade effluent which is hereby specified as that which is likely to injure the sewers or to interfere with the free flow of their contents or to affect prejudicially the treatment and disposal of their contents;
 - (f) Any other substance forming a constituent of the trade effluent which is hereby specified as that which in its pure state or in combination with other materials in the contents of the sewer(s) ("the sewage") is capable of producing toxic or flammable vapours or causing a nuisance.

- (11) No trade effluent shall be discharged the pH value of which is less than 6.0 or greater than 11.0.
- (12) No trade effluent shall be discharged the nature or composition of which includes a matter, substance, property or matters, substances or properties which would constitute the trade effluent as Special Category Effluent within the meaning of Section 138 of the Water Industry Act 1991.
- (13) The Occupier shall give to the Undertaker prior written notice of any change in the process of manufacture, materials, or other circumstances howsoever arising capable of altering the nature and/or composition of the trade effluent. No new substances or properties shall be discharged until the Undertaker has agreed thereto, either with or without imposing a limit and thereafter the said substance(s) and/or property(ies) shall be deemed incorporated into the SECOND SCHEDULE.
- (14) An inspection chamber or manhole shall be provided and maintained by the Occupier in a suitable position and/or at the point(s) marked "X" on the plan annexed hereto in connection with each pipe through which the trade effluent is discharged and such inspection chamber or manhole shall be constructed and maintained in accordance with the Undertaker's reasonable requirements as from time to time notified in writing to the occupier so as to enable a person readily at any time to take samples of the trade effluent being discharged.

- (15) A notch gauge, continuous recorder or some other apparatus suitable and adequate to the Undertaker for measuring and automatically recording the volume and rate of trade effluent so discharged shall be provided, such apparatus to be tested and maintained in accordance with the Undertaker's reasonable requirements as from time to time notified in writing to the Occupier.
- (16) Apparatus capable of accurately determining, measuring and recording the nature and/or composition of the trade effluent discharged shall be provided, such apparatus to be tested and maintained in accordance with the Undertaker's reasonable requirements as from time to time notified in writing to the Occupier.
- (17) The Occupier shall keep records of the volume, rate, nature and/or composition of the trade effluent discharged into the sewer(s) at all times available for inspection by any authorised officer of the Undertaker and copies of such records shall be sent to the Undertaker on demand.
- (18) (a) The Occupier shall pay to the Undertaker charges for the reception, conveyance, treatment and disposal of the trade effluent and the costs of sampling, measuring and/or analysis of the same under the Undertaker's trade effluent's functions, which charges shall be determined as set out below, and all sums payable under this condition shall be payable upon demand;
- (b) The charges under (a) above shall be calculated in accordance with Undertaker's Scheme of Charges as from time to time amended;
- (c) For the avoidance of doubt, the charge shall be payable by any person who is or was the Occupier of the said trade premises during the period of discharge of the trade effluent or at the time payment is due.
- (19) If the notch gauge, meter, recorder or other apparatus ceases to record or is suspected of not recording and/or measuring accurately, the quantity of trade

effluent discharged into the sewer(s) during the period from the date and/or time at which the records were last accepted by the Undertaker as being correct up to the date when the notch gauge, meter, recorder or other apparatus again registers accurately shall for the purpose of any payment to be made under these conditions be based on the average daily volume of trade effluent discharged during the preceding period over which the records were last accepted by the Undertaker as being accurate or during the month immediately after the notch, gauge, meter, recorder or other apparatus or means of measurement and recording has been accurate whichever is the higher.

YOUR RIGHT OF APPEAL

Section 126 of the Water Industry Act 1991 provides that:-

The owner or occupier of any trade premises may within 2 months of this Notice of Direction (or with the written permission of the Director General of Water Services at any later time) appeal to the Director against the Direction.

The Director has power to annul the Direction and to substitute for it any other Direction wherever more or less favourable to the appellant.

The address of the Director for the purposes of an appeal is (Centre City Tower, 7 Hill Street, Birmingham B5 4UA).

On an appeal in respect of a refusal to give consent, the Director may give the necessary consent either unconditionally or subject to such conditions as he thinks fit to impose.

On an appeal in respect of a condition the Director may take into review all the conditions whether appealed against or not and may substitute for them any other set of conditions (whether more or less favourable to the Appellant) or annul any of the conditions and may include provision as to the charges to be made in pursuance of any condition attached to a Consent for any period before the determination of the appeal.

On any appeal the Director may give direction that the trade effluent shall not be discharged until a specified date.

FAILURE TO COMPLY WITH CONDITIONS

If in the case of any trade premises a condition of the Consent or this Direction is contravened, the occupier of the premises will be guilty of an offence and liable on conviction by a Magistrates' Court to a fine not exceeding the statutory maximum or on conviction by the Crown Court to an unlimited fine.

DATED 19-12-11

Signed: **A. R. ANDREWS**

A. R. Andrews

Designation: **WASTEWATER REGULATION MANAGER**

Address: **DWR CYMRU-WELSH WATER**

NELSON OFFICES

PENTWYN ROAD

NELSON

TREHARRIS

CF46 6LY

First Schedule

The nature and composition of the trade effluent is:

Wastewater resulting from the blending, pasteurisation and packing of fruit juices and which may contain traces of the following:

Suspended Solids

Fruit Juices

Sugar

Caustic

Peracetic acid

Hydrogen Peroxide

Second Schedule

1. Total Suspended Solids of the trade effluent shall not exceed 600 milligrams per litre.
2. Total Chemical Oxygen Demand shall not exceed 1200 kilograms per day.

Third Schedule

Not applicable.

APPENDIX II

SHE INCIDENT INVESTIGATION RECORD FORM (F100)

SHE Incident Investigation Record

PRINCES CARDIFF

Investigator Details:

Name _____ Department _____ Position: _____ Date _____

Description of Incident (include location, date, time, individuals involved, environmental conditions at time and incident details):

Loss Potential:

Was the Hazard identified in a Risk Assessment? Yes No

If Yes , state the Risk Assessment Ref number: _____

Were specified Control Measures in place? Yes No N/A

Estimated cost of the Incident (GBP): _____

Potential for future loss from similar incident:

	Likelihood	Severity	Loss Potential
People			
Products			
Property			
Environment			

Is this Incident externally reportable? Yes No

If Yes, please specify:

- Local Authority
 Environmental Agency
 Health and Safety Executive
 Police
 Civil Defense
 Insurance
 Other, please specify: _____

Basic investigation details- root cause analysis:

Factors to consider:

- a) What engineering control deficiencies may have caused this incident?
- b) What administrative control deficiencies (procedures, records, signage) may have caused this Incident?
- c) What deficiencies in training management may have caused this Incident?
- d) What deficiencies in the monitoring and measurement program (inspections, audits, calibration and maintenance) may have caused this Incident?
- e) What deficiencies in PPE management may have caused this incident?
- f) What human factors may have caused this incident?

Prior to the Incident, identify what hazards were present and explain why they contributed to the Incident?

Hazard	Why it contributed?

Note: Corrective Actions should be generated for each hazard that is identified.

Some part(s) of the management system may have failed to allow the hazard(s) to be present. Please identify those parts of the safety management system that may have failed and explain why you think they contributed to the incident.

System Element	Why it contributed?

Note: Corrective actions should be generated for each gap in the management system that is identified.

Please tick the following as appropriate to indicate they were considered during the investigation?

- | | |
|--|--|
| <input type="checkbox"/> Abnormal Conditions | <input type="checkbox"/> Persons Present |
| <input type="checkbox"/> Abnormal Work | <input type="checkbox"/> Images |
| <input type="checkbox"/> Access/Egress | <input type="checkbox"/> Physical Conditions |
| <input type="checkbox"/> Air Quality | <input type="checkbox"/> Policy |
| <input type="checkbox"/> Audit Results | <input type="checkbox"/> PPE |
| <input type="checkbox"/> Biological Agents | <input type="checkbox"/> Previews Incidents |
| <input type="checkbox"/> Building Conditions | <input type="checkbox"/> Prior Warnings |
| <input type="checkbox"/> Chemical Agents | <input type="checkbox"/> Process Alarms |
| <input type="checkbox"/> Co-Operation | <input type="checkbox"/> Production Schedules |
| <input type="checkbox"/> Drawings | <input type="checkbox"/> Risk Assessment |
| <input type="checkbox"/> Equipment Conditions | <input type="checkbox"/> Security Reports |
| <input type="checkbox"/> Incident Times | <input type="checkbox"/> Sketches |
| <input type="checkbox"/> Fire Alarm System | <input type="checkbox"/> Spills |
| <input type="checkbox"/> Fire Detection System | <input type="checkbox"/> Statements |
| <input type="checkbox"/> Humidity | <input type="checkbox"/> Temperature |
| <input type="checkbox"/> Lifting Equipment | <input type="checkbox"/> Training Records |
| <input type="checkbox"/> Maintenance Records | <input type="checkbox"/> Weather |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Work Permits |
| | <input type="checkbox"/> (Other) Please indicate |

Relevant risk assessment has been updated? Yes No N/A

External notification completed & on file? Yes No N/A

Additional Investigation Details: (add or refer to additional witness statements, photographs, maps, sketches as appropriate to support)

Sign off for Incident Investigation Distribution:
(increase as required)

Name	Department	Position	Date

APPENDIX III SPILL PROCEDURE (PROD06)

Production Procedure	Date of Issue:	09/03/2020		
PROD06 Spill Procedure			Issue No:	1s

1. PURPOSE

Princes Limited Cardiff has a legal and moral obligation to ensure the safety of employees and visitors and to protect the environment from spillages to ground or water courses.

2. SCOPE

To ensure materials are stored appropriately to prevent accidental spillage and ensure that spills are dealt with effectively.

3. RESPONSIBILITIES

In the event of a spillage or leak of a harmful substance, all possible measures available will be used to mitigate the risk of damage to people and the environment.

3.1 **Site Managers** – to ensure that the procedure is followed, legislation is complied with and appropriate spillage response kits are provided.

3.2 **All staff** – to follow instructions below.

4. EHS **S**

Employees are under a general legal and moral duty in all work area activities to take reasonable care not to endanger the safety of themselves or others through their acts or omissions.

See risk assessment register form (F72)

4.1.1 Employees are under a general duty in all work area activities to take reasonable care not to endanger the health and safety of themselves or others through their acts or omissions at work.

4.1.2 Follow the correct access procedures at all times.

4.1.3 Only trained personnel can carry out these procedures.

4.2 PERSONAL PROTECTIVE EQUIPMENT (P.P.E.)

4.2.1 Ensure that Personal Protective Equipment (PPE) Hairnet, Bump cap and Company overalls are worn



4.3 ACCIDENTS AND INCIDENTS

4.3.1 All employees must report any incidents, accidents or near misses as soon as reasonably practicable to a Team Leader, Departmental Manager or Shift Manager.

4.3.2 In the event of any chemical coming into contact with an employee potential health hazards and treatment guidelines are available in the C.O.S.H.H./MSDS folder located in the Laboratory area.

4.3.3 In the event of an incident/accident the Shift Manager should refer to the emergency plan and contact relevant managers as required (Emergency Telephone contact list).

4.3.4 An incident/accident report form reference CAR-HS-FORM-04 (parts 2 & 3) must then be completed to document the incident/accident and the actions taken.

4.4 SPILLAGES

Any liquid spillages must be prevented from entering drains. Spillages must be cleared up using the spillage kits are available and ensure any waste to be removed from site in

Production Procedure	Date of Issue:	09/03/2020		
PROD06 Spill Procedure			Issue No:	1s

sealed container marked with contents by sites approved waste carrier (Ref: PROD 06). CAR-HS-FORM-04 Incident form needs to be completed on all cases.

4.5 WASTE

4.5.1 Bins are provided for general waste only. Drivers are not permitted to dispose of any other type of waste at Princes.

4.5.2 Debris generated from any breakages should not be allowed to enter the drainage system, as this can cause blockages in the effluent plant and lead to breach of consent.

5 QUALITY **Q**

5.1 If this procedure is not completed correctly, quality may be affected due to the risk chemical or allergen contamination.

6. EQUIPMENT

SPILL KIT INVENTORIES

Contents Chemical	Location A Yard shelter 1100ltr	Location B Caustic tank 1100ltr	Location C GEA 240ltr	Location D Infill 240ltr	Location E Warehouse Battery charging 240ltr	Location F 240ltr	Location G Cold store 240ltr	Location H Unit 72 Exit to reception 240ltr	Location I Unit 68 Interflon cabinets 240ltr	Location J Unit 68 Peroxide Uplift 240ltr
Pads	300	300	120	120	120	120	120	120	120	120
Socks 8cm by 3m	24	24	8	8	8	8	8	8	8	8
Cushions	20	20	5	5	5	5	5	5	5	5
Drain cover	4	4	1	1	1	1	1	1	1	1
Absorbent granules 20kgs	2	2	0	0	0	0	0	0	0	0
Disposal bags	10	10	5	5	5	5	5	5	5	5
Non-spark shovel	1	1	0	0	0	0	0	0	0	0
Instruction sheet	1	1	1	1	1	1	1	1	1	1

Absorbent pads and socks are yellow for chemical absorption – this will be reviewed & updated through change control

Replacement Equipment must be re-ordered if used. The equipment used should be documented on the accident form and a list handed in to the departmental manager.

Spill kits will have a tie fitted, once removed the Team Leader must check the contents as per the list to ensure all is in place for an emergency replacing the seal once replenished.

7. CHEMICALS

NA

Production Procedure	Date of Issue:	09/03/2020	
PROD06 Spill Procedure			Issue No: 1s

8. METHOD / INSTRUCTIONS

8.1 **Storage**

- 8.1.1 All wastes should be appropriately stored on site in accordance with the waste procedure.
- 8.1.2 Site Managers are responsible for ensuring that materials used on their sites are adequately stored in order to prevent accidental spillage and release.
- 8.1.3 All oils, fuels and chemicals in containers over 205 litres (a drum) are to be stored in bunded containment.
- 8.1.4 Bunds are to be checked on a regular basis, any faults should be recorded in the Incident Log.
- 8.1.5 A 'Material Safety Data Sheet' (MSDS) must accompany any chemical supplied. If a 'MSDS' does not accompany the delivery, contact the supplier to obtain one.
- 8.1.6 Chemicals that have hazard labels are controlled by the COSHH regulations, personnel handling hazardous chemicals should be given the appropriate training and provided with the correct personal protective equipment

8.2 **Delivery**

- 8.2.1 Site managers are responsible for ensuring that Team Leaders supervises deliveries at all times. Tanks and containers should be labelled with the nature and volume of their contents. Levels should be checked before delivery to prevent overfilling.
- 8.2.2 Where possible loading and unloading areas should be roofed and drained to foul sewer. If not, they should be clearly marked and isolated from the surface water drainage system.

8.3 **Spills**

- 8.3.1 In the event of oil and chemical spillage, if safe to do so, the spill should be contained using appropriate abatement materials. Small spillages may be cleaned using the absorbent materials supplied. Appropriate health and safety precautions must be taken. If a large or hazardous spill has occurred specialist contractors should be used.
- 8.3.2 Any absorbent material used to clean up a spill should be disposed of in accordance with the waste procedure. Some materials will be classed as Hazardous Waste. e.g. Oil soaked granules. These should be disposed of via specialist contractor using the relevant Hazardous Waste Consignment notes.
- 8.3.3 A spillage of an allergen (e.g. condensed milk, Pineapple & coconut) must be contained using absorbent material. Employees must wear the disposable green apron when cleaning up and use the allergen (green) cleaning equipment. Any packaging, product or raw materials in the area must be quarantined. Remove the contaminated absorbent material from the spillage area by placing in a bag and placing the bag in the general waste skip.
- 8.3.3 Any oil-contaminated land may need specialist contractors for the removal of the soil.
- 8.3.4 All staff are responsible for reporting any spillage to the EHS manager. The spillage will be entered into the incident file.

8.4 **Spillage Control and Clean Up**

Spills exceeding 2000ltr are classed as a major spill and the General Manager should be notified by the Shift Manager.

Production Procedure	Date of Issue:	09/03/2020		
PROD06 Spill Procedure			Issue No:	1s

- 8.4.1 Ensure you have the material safety data sheet for the chemical in use
8.4.2 Personal Protective Equipment must be used.

DO NOT ATTEMPT TO CLEAN UP (Spillage spread must be contained & EHS Manager informed) THE SPILL IF:-

- Two or more chemicals have been spilt
- The quantity spilt is greater than 25 ltr
- The substance is unknown or you are uncertain of the hazards
- You are uncomfortable with the situation

- 8.4.3 Alert people in the immediate area of the spill
8.4.4 If the material spilt is flammable turn off all ignition sources
8.4.5 Avoid breathing in vapours from the spill
8.4.6 Apply spill pillow/pads or other absorbent material, first around the outside of the spill, encircling the material, then absorb to the centre of the spill
8.4.7 Sweep/shovel up absorbent material and place into a sealed, leak-proof bag or container;
8.4.8 Dispose of all materials (gloves, brooms, paper towels) used to clean up the spill in a sealed container as well
8.4.9 Label and dispose of all bags or containers as hazardous waste. Contact Shift Manager for a hazardous waste collection.

8.5 Chemical spill on the body

- 8.5.1 Remove all contaminated clothing
8.5.2 Flood exposed area with running water from a faucet or safety shower for at least 15 minutes
8.5.3 Have another individual contact help
8.5.4 Report the incident to your Direct Manager.
8.5.5 **DO NOT** put the contaminated clothing back on including the shoes/boots.

8.6 Dealing with Bodily Fluid Spillage

- 8.6.1 Vomiting on site
- a. Norovirus can cause outbreaks of viral gastro-enteritis, which is spread by the faecal / oral route, by hand-to-hand transfer of infected vomit from the contaminated environment, and, possibly by ingestion of aerosolised vomit from an infected human. Food borne viral disease occurs when food is inadvertently contaminated by material from an infected human source.
 - b. The infectious dose of Norovirus is low (10 – 100 particles). Onset of symptoms is often very sudden and unexpected, with primary indications being:
 - Acute or mild, gastro-enteritis
 - Nausea, projectile vomiting
 - Abdominal cramp, diarrhoea
 - c. Vomiting incidents on site must be regarded as being caused by Norovirus and having potentially contaminated all food – raw material, work in progress and finished product – in the area and be regarded as Norovirus contaminated and not suitable for food production.

Production Procedure	Date of Issue:	09/03/2020		
PROD06 Spill Procedure			Issue No:	1s

- d. Control measures for Norovirus infection should be applied immediately in the event of a contamination incident occurring.
- e. Control measures must include:
 - Containment of infectious / infected individuals
 - Identification and quarantine of all potentially exposed foods, raw materials, work in progress and packaging
 - Factory decontamination
 - Protection of other (non-infected) personnel and personnel decontamination
 - Notification to customer if appropriate

8.6.2 Bodily fluid clean up (e.g. vomit, blood, urine)

- a) Any bodily fluid spillages incidents including blood loss & vomiting from any personnel (employee, visitor, contractor etc) must be treated immediately.
- b) In the event of a bodily spillage incident in an operational area, the person must be immediately taken out of the factory (by the most direct route) and then off site.
- c) Infected personnel (sickness) may continue to excrete virus particles for up to 48 hours after the last appearance of symptoms. Return is not permitted until at least 48 hours clear of all symptoms.
- d) All parts of the room / area where the bodily fluid spillage / vomiting incident occurred must be deemed contaminated. This includes:
 - I. adjoining rooms / areas where walls are incomplete.
 - II. The route by which the affected person was escorted out of factory must be considered to be contaminated.
 - III. All finished product, raw materials, work in progress and packaging in these areas must be considered contaminated.
- e) Gloves, aprons, all food and packaging must be bagged, tied and disposed of as waste material.
- f) Decontamination of the factory area affected must consist of:
 - Determination of and quarantine of the contaminated area.
 - Cleaning of vomit material
 - General cleaning of factory environment
 - Chlorine bleach disinfection of the factory environment (fully flushed away to prevent product Chloro-phenol taint)
 - People who carry out this cleaning should be kept to a minimum and these personnel should wear a disposable plastic apron, disposable gloves and a face mask.
 - The bodily fluid / vomit should be covered with paper towels or tissues to soak up excess liquid.
 - The material should then be scooped into a plastic bag before being sealed and disposed of as contaminated waste. The scoop should additionally be placed into the plastic bag before sealing and disposed of as contaminated waste.
 - When as much material as possible has been removed the immediate area (structure, equipment and utensils) should be thoroughly washed with neutral detergent and hot water.

Production Procedure	Date of Issue:	09/03/2020		
PROD06 Spill Procedure			Issue No:	1s

- All parts of the structure, equipment and utensils in the affected area must then be thoroughly cleaned following the factory cleaning work instructions. This must include walls and ceilings.
 - All surfaces (structure, equipment and utensils) should be cleaned using a chlorine bleach solution (1000 - 5000 ppm). This should only be carried out in a well-ventilated area as large amounts of chlorine gas will be produced and staff should wear eye protection. Production equipment must be cleaned using standard CIP procedures.
 - Staff must follow manufactures instructions when using chlorine bleach solution. After the primary clean up (i.e. removal of organic material) the detergent should be allowed a contact time of 30 minutes to allow for adequate kill.
 - Following the 30 minute contact time, all surfaces should be thoroughly rinsed with clean water and sanitised.
 - Once the cleaning task is complete, all PPE (including shoes) should be placed into sealable bags and disposed of. Staff must thoroughly wash and disinfect their hands after removing protective clothing.
- f. All staff working in the affected area and not involved in cleaning, should be removed from the factory.
- g. Protective clothing (including shoes) on personnel working in the affected area must be considered contaminated. This must be removed and stored separately for laundry. Staff must thoroughly wash and disinfect their hands after removing protective clothing.
- h. Staff must be re- briefed by the Shift Manager or relevant departmental managers on following the normal procedures to be followed for suspected sickness.
- i. The relevant customer Food or Hygiene Technologist must be immediately informed if such an incident occurs if required in their codes of practice.

8.7 Chemical spill in the eye

- 8.7.1 Immediately rinse eyeball and inner surface of eyelid with water continuously for 15 minutes. Forcibly hold eye lid(s) open to ensure effective wash behind eyelids
- 8.7.2 Have another individual contact help and or first aider.
- 8.7.3 Report the incident to your direct manager.

8.8 Bund Emptying

- 8.8.1 If liquid is present in a bund i.e. sump full or plastic bud pallet full then a deviation form F55 should be completed triggering an investigation.
- 8.8.2 The investigation must include:
- Testing of liquid pH to determine if rain water or chemical spill
 - If chemical spill – where has it come from, safe disposal method confirmation, corrective & preventative action to prevent repeat spillage.
- 8.8.3 If the liquid is water then the water can be pumped to factory effluent drain.

8.9 Disposing of waste

Disposal routes for used absorbency pads – Non-hazardous waste can be disposed of in the site bins and compactors. Absorbency pads used for hazardous substances like oils and greases must be disposed of through the sites waste contractor for hazardous waste, any pumped/shovelled up juice residues can be disposed of via the approved disposal company.