# Introduction

Locally sourced wheat is dry milled into flour, producing as a co-product bran which is pneumatically transferred and stored in dedicated storage where it is out loaded to be used within animal feed applications. The refined flour product is combined with water supplied from onsite boreholes (licence: NE/027/0024/021/R01), allowing extraction of starch and the wet separation of gluten.

Gluten is dried and segregated into dedicated vessels allowing for gluten to be loaded in bulk tankers or to be filled into 1 tonne bags within the dedicated ‘big bag filling station’, these products are used for food application within baking industries and also animal feeds.

Starch is graded for two uses; refined starch is dried, stored and out loaded into bulk tankers. Dried Native Starch is used within the paper industry, Modified Starch is predominantly used for applications such as corrugated cardboard. Residual starch; through use of enzymes and heat is converted into sugar and further into alcohol with the addition of yeast in a continuous fermentation process. This product is then distilled to obtain Potable Ethyl Alcohol, which is stored in dedicated bunded storages and sold within the spirits and liquor industry. Heads and tails of distillation are produced through distillation and stored to be sold within the refining industry. An evaporator is used to concentrate stillages produced through distillation, this co product is loaded into tankers, used for feed applications.

Contents

[Introduction 1](#_Toc78903223)

[1. Wheat Intake 2](#_Toc78903224)

[2. Fermentation tanks 3](#_Toc78903225)

[3. Distillery expansion 4](#_Toc78903226)

[4. Stillage storage 5](#_Toc78903227)

[5. Cooling Towers 6](#_Toc78903228)

[6. Denatured alcohol processing 7](#_Toc78903229)

[7. Starch processing line 8](#_Toc78903230)

[8. Yeast Propagation 9](#_Toc78903231)

# Wheat Intake

The creation of an additional wheat intake with precleaning section that allows for the screening of incoming raw product before storage in the 3 new additional storage silos for use in the dry mill process

## Infrastructure including tank/vessel specification, secondary containment, surfacing;

The minimum new storage capacity to achieve a viable buffer storage is equivalent to 4.3 days of production. The current buffer storage represents 3.4 days of production, which has proven to be marginal over weekends and during holiday periods.

Optimum capacity is achieved with 3 new silos to 36.6m AOD (top of cone). To reduce the visual impact of the silos they have been reduced in height by 3m to 33.6m AOD

The wheat intake will allow for the increased intake and storage of circa 2050 ton per silo. Storage tanks are galvanised steel and will only be used to store raw materials.

The new wheat silos must be located adjacent to the existing silos to allow the existing weighbridges, lorry parking and waiting areas, intake conveyors, elevators, dust extraction etc to be used efficiently

Site surfacing in all operational areas including storage areas is impermeable hardstanding tanks include fully bunded surround and drainage from operations is fed through to the site WWTP. Any surface water is also collected in a storage vessel and checked for permit parameters before being discharged. If necessary this water can be treated by the WWTP.



## Abatement techniques proposed for releases to the environment;

There are to be no point source releases to the environment from the wheat intake siles

## Energy usage and efficiency;

The conservative assumption is as follows:

Wheat intake 0.25 MW electricity (only to operate 10-12 hours per day, 6 days per week)

## Proposed monitoring of emissions including frequency, location, monitoring methods, MCERTS compliance;

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Report Type | Release Point | Name | Reporting Perion | Monitoring Standard |
| PM | A46 | Wheat Intake 2 Stack | 12 Months | BS EN 13284-1 |
| No parameters | A47 | 4th Wheat Storage tank vent | Not required |  |
| No parameters | A48 | 5th Wheat Storage tank vent | Not required |  |
| No parameters | A49 | 6th Wheat Storage tank vent | Not required |  |

# Fermentation tanks

Additional fermentation tanks in line with existing fermentation process

## Infrastructure including tank/vessel specification, secondary containment, surfacing;

The size of the fermentation tanks is dictated by the production capacity of the plant. The new tanks will be of similar dimeter and height to the existing tanks to promote a uniformity in the process conditions.

The new tanks will have a maximum height of 15.3m AOD to match the existing fermentation tanks. Storage tanks are 1300 m3 stainless steel and are within a bunded area of the site. The new bunding has been constructed to be 1100m2 surfaced with a capacity of 260m3.

 

The new fermentation must be located adjacent to the existing tanks to allow the process to operate efficiently, and to allow service and utility runs to be kept as short as possible.

Site surfacing in all operational areas including storage areas is impermeable hardstanding, tanks include fully bunded surround and drainage from operations is fed through to the site WWTP. Any surface water is also collected in a storage vessel and checked for permit parameters before being discharged. If necessary this water can be treated by the WWTP.



## Abatement techniques proposed for releases to the environment;

There are to be no additional point source emissions to air from this process. However the tanks are fitted with CO2 suction and a scrubber that can be employed if necessary.

## Energy usage and efficiency;

The conservative assumption is as follows:

0.2 MW electricity

2.7 MWt steam

## Proposed monitoring of emissions including frequency, location, monitoring methods, MCERTS compliance;

There are to be no additional point source emissions to air from this process.

# Distillery expansion

The additional distillery will be fed using the increased fermentation output to facilitate the increased production of potable ethyl alcohol and associated heads and tails for the spirits and liquor industry.

## Infrastructure including tank/vessel specification, secondary containment, surfacing;

Site surfacing in all operational areas including storage areas is impermeable hardstanding tanks include fully bunded surround and drainage from operations is fed through to the site WWTP. Any surface water is also collected in a storage vessel and checked for permit parameters before being discharged. If necessary this water can be treated by the WWTP.



## Abatement techniques proposed for releases to the environment;

VOC Scrubber system will be fitted.

## Energy usage and efficiency;

0.35 MW electricity

9.9 MWt steam

## Proposed monitoring of emissions including frequency, location, monitoring methods, MCERTS compliance;

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Report Type | Release Point | Name | Reporting Perion | Monitoring Standard |
| VOC | A67 | 2nd Distillery and Tanks Scrubber | 12 Months | BS EN 12619 |

# Stillage storage

The additional distillery will produce an increase in stillage as a by product of the distillation process which will be concentrated using the existing evaporator installation and stored in 4 new storage vessels before loading into dedicated tankers.

## Infrastructure including tank/vessel specification, secondary containment, surfacing;

The size of the stillages tanks is dictated by the production capacity of the plant. The new tanks will be of similar dimeter to the existing tanks, with the height varying to suit production capacity.

The two new tanks will have a maximum height of 17m AOD and 23m AOD. his enable them to provide 4.8 days and 15 hours respectively of storage, below the preferred capacity of 6.9 days and 20.4 hours respectively. The new tanks are stainless steel with a volume of 2910 m3 each. Bunding has been constructed to include a 1150m2 surface and 230m3 capacity.



The new bran silos must be located adjacent to the existing silos to allow the existing bran outloading facility, lorry parking and waiting areas, services and utilities to be used efficiently.

Site surfacing in all operational areas including storage areas is impermeable hardstanding tanks include fully bunded surround and drainage from operations is fed through to the site WWTP. Any surface water is also collected in a storage vessel and checked for permit parameters before being discharged. If necessary this water can be treated by the WWTP.

## Abatement techniques proposed for releases to the environment;

There are to be no additional point source emissions to air from this process.

## Proposed monitoring of emissions including frequency, location, monitoring methods, MCERTS compliance;

There are to be no additional point source emissions to air from this process.

# Cooling Towers

The additional distillery will be fed by the existing cooling tower infrastructure, which will be expanded with two further cooling towers added to the east of the current installation. All towers are registered with the local district council.

## Infrastructure including tank/vessel specification, secondary containment, surfacing;

## 

## Abatement techniques proposed for releases to the environment;

There are to be no additional point source emissions to air from this process.

## Proposed monitoring of emissions including frequency, location, monitoring methods, MCERTS compliance;

There are to be no additional point source emissions to air from this process.

# Denatured alcohol processing

## Infrastructure including tank/vessel specification, secondary containment, surfacing;

The proposal is to use existing infrastructure, pipework, on-site resources and trained personnel to carry out the process and for it to take place within the alcohol storage and loading area of the plant. Existing pipework will be modified to allow the addition of a premixed denaturant (Tertiary Butanol Bitrex) during the loading process. We will have a small on-site storage (50L tank at the loading point, in addition any IBC will be stored within a separate bunded area). There will be no additional on-site storage of alcohol, denatured or otherwise.

As the activity will take place within an area covered by closed drainage and collection tank, this will allow us to control mitigate any potential impact from spillages in line with existing site procedures.

The task will be performed infrequently and will be, in these early stages limited by normal production volumes. We expect an average of 1-2 tankers per week, until such time that the process is proven. If any of the information provided should change, we will be sure to contact yourselves.

## Abatement techniques proposed for releases to the environment;

There are to be no additional point source emissions to air from this process.

## Energy usage and efficiency;

Additional process to use existing distillation and as such will have a negligible impact on site energy use.

## Proposed monitoring of emissions including frequency, location, monitoring methods, MCERTS compliance;

There are to be no additional point source emissions to air from this process.

# Starch cooking

Additional processing line for starch cooking within existing fermentation area allowing for increased throughput and a reduction in downtime for cleaning.

## Infrastructure including tank/vessel specification, secondary containment, surfacing;

## 

Site surfacing in all operational areas including storage areas is impermeable hardstanding tanks include fully bunded surround and drainage from operations is fed through to the site WWTP. Any surface water is also collected in a storage vessel and checked for permit parameters before being discharged. If necessary this water can be treated by the WWTP.

## Abatement techniques proposed for releases to the environment;

There are to be no additional point source emissions to air from this process.

## Energy usage and efficiency;

Additional process to use existing distillation and as such will have a negligible impact on site energy use.

## Proposed monitoring of emissions including frequency, location, monitoring methods, MCERTS compliance;

There are to be no additional point source emissions to air from this process.

# Yeast Propagation

1. The additional onsite capacity for increased yeast propagation within existing fermentation area.

## Infrastructure including tank/vessel specification, secondary containment, surfacing;

## 

Site surfacing in all operational areas including storage areas is impermeable hardstanding tanks include fully bunded surround and drainage from operations is fed through to the site WWTP. Any surface water is also collected in a storage vessel and checked for permit parameters before being discharged. If necessary this water can be treated by the WWTP.

## Abatement techniques proposed for releases to the environment;

There are to be no additional point source emissions to air from this process.

## Energy usage and efficiency;

Additional process to use existing distillation and as such will have a negligible impact on site energy use.

## Proposed monitoring of emissions including frequency, location, monitoring methods, MCERTS compliance;

There are to be no additional point source emissions to air from this process.

## Raw material and waste inventories;

Please see H1 Risk Assessment for a full breakdown.

## Raw material efficiencies;

## SED-C3-6c Resource Efficiency and Climate Change and SED DISSOP-024 Alcoholic fermentation and distillation for details of process efficiency.

## Waste minimisation techniques;

Sedamyl adopt and apply the Waste Hierarchy accordance with the Waste (England and Wales) Regulations 2011. The site aim to prevent waste where possible as the production of waste often equates to loss of revenue for the site. Subsequently, the site monitor its largest waste streams monthly and record the figures in per tonne of finished product. These figures are recorded in the and inform environmental objectives and targets.

Where waste is produced as a result of activities, disposal is the least favoured option and, as per Sedamyl Group requirements, the site must be zero to landfill.

Non-hazardous liquid effluent is treated on site. The treated effluent will is disposed of via discharge to surface water in accordance with the permitted discharge consent.

## Change in the scale of the operation due to the additions/alterations proposed.

This Application is for the expansion of the existing plant capacity within the existing Sedamyl site. The expansion will take place across the site, but predominantly towards the west on areas of brownfield land remaining from former developments on the site.

This Application represents the first part of an ongoing process which will create an approximate doubling in capacity if the plant, therefore the buffer storage must increase by at least the same proportion to make the expansion viable without extending the days/hours over which deliveries and dispatch from the site must operate.

The Selby site operates continuously, 24 hours per day, 365 days a year. The site requires wheat deliveries as the raw material for the production of a number of products, and to minimise traffic at weekends, holidays and overnight, the plant must maintain a buffer storage to allow production process to continue over those periods where wheat is not delivered. The buffer storage must also allow for periods of inclement weather or traffic disruption when deliveries might be delayed.