Saltfleetby Wellsites

Environmental Permit Variation EPR/JB3107XB
Resource Management Plan

Angus Energy Weald Basin No 3 Limited

Project number: 60625790

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		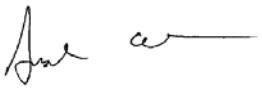	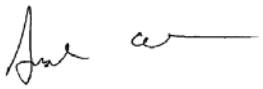
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Revision History

Revision	Revision date	Details	Authorized	Name	Position
00	25/02/2020	Initial Draft	20/04/2020	A Graham	Project Manager
01	15/01/2021	Final Draft	19/01/2021	A Graham	Project Manager
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1. Report Context

1.1 Introduction

AECOM have been commissioned by Angus Energy Weald Basin No3 Limited ("the Operator" or Angus Energy) to prepare an application to vary the existing environmental permit (EPR/JB3107XB/T001) for the mining, extraction and transportation of natural gas and gas condensate from proven underground reservoirs at Saltfleetby Wellsites.

The application is being submitted to cover changes at the existing Gasfield which will facilitate the processing of natural gas to ensure it meets the quality requirements necessary to export the gas into the National Transmission Service.

This report details the Resource Management Plan for the site and should be read in conjunction with the other application documents. The report provides an overview of how resources (raw materials, water and energy) are used and managed.

1.2 Existing Facility

Saltfleetby 'A' and 'B' ("SFA", "SFB") onshore production sites were established in 1999. Both sites produce natural gas, water and condensate with two 6" pipelines connecting the SFA and SFB sites. A 10" pipeline transported hydrocarbons to the nearby Theddlethorpe Gas Terminal (TGT) for processing. Gas production at the site was suspended by then Operator Wingas Storage UK Ltd in 2017 due to the closure of TGT.

In November 2019, Angus Energy farmed into the licence and became the Operator of the field with the intention to restart production from the field following the installation of a new pipeline connection to National Grid transmission system (NTS). To facilitate the resumption of operations, the intention is to:

- Keep suspended three of the remaining wells (SF 5, 6 and 7) with the potential for side-tracking any one or all of them.
- Evaluate the commercial case for continued production from Saltfleetby 8 either with or without side-tracking.
- Examine the possibility of the utilising any two of the remaining wells for geothermal heat recovery; and
- Return the existing two producing wells to natural gas and associated condensate production.

1.3 Proposed Changes

Since 2017, the processing operations at the nearby Theddlethorpe Gas Terminal (TGT) has ceased. Therefore, to ensure the produced natural gas can be exported into NTS, Angus Energy also intend to:

a) install natural gas and condensate processing facilities at SFB Site. This will indicatively include the modification to the existing first stage separator, a set of compressors, a passive dehydration system to remove water, a solid state Joule-Thomson valve allowing for a drop in pressure and temperature to remove heavy hydrocarbons, a condensate stabilisation tower, a new condensate storage unit, produced water storage, a metering and analysis skid, a fuel gas skid, an enclosed ground flare, and some associated pipework manifolding, comms and electrical ancillaries; and

b) install up to 750m of pipeline from the existing TGT entry point to the new NTS connection point which is beyond the scope of this permit variation and

c) Install power generation equipment to support the above facilities.

2. Raw Materials Management

2.1 Introduction

This section provides evidence of the existence of relevant controls for the management of raw materials to the standard indicated by the Environment Agency “Onshore Oil and Gas Sector Guidance” (January 2020).

2.2 Material Selection and Procurement Procedures

Procedures covering material selection and procurements are held within the Angus Energy Integrated Management System (IMS) which will ensure:

- The selection of materials will consider the environmental impact of each of them across their entire life cycle, including keeping the use of high-embodied energy materials to a minimum, while consideration will be given to such factors as degradability, bioaccumulation potential and toxicity;
- The consideration of the impact of raw materials on human health will be acknowledged by considering the harmful or hazardous nature of the material;
- That, where practical, materials will be specified from renewable and sustainable sources;
- That, where practical during construction and subsequent plant operation, materials will be specified from local sources and/or with a high recycled content; and
- As small a quantity as possible of each raw material required for the safe and efficient operation of the Facility enters the Facility, and that each is used as efficiently as is possible.

2.3 Raw Material Inventory

The raw materials that will be used as part of site operations are:

- corrosion inhibitor – this is a proprietary chemical dosed into kill fluids;
- biocide – this is a proprietary chemical which is dosed into kill fluids to discourage the proliferation of sulphur reducing bacteria;
- oxygen scavenger - this is a proprietary chemical dosed into kill fluids;
- methanol – used to prevent freezing of fuel gas pilot line; and
- lubricants (oils/greases) – these are used for plant maintenance.

2.4 Raw Material Management

All materials are stored with appropriate containment as identified in the inventory table in Appendix A. Relevant chemical data sheets will be retained on site.

Substances that will be used for well workovers or sidetrack activities will be confirmed to the EA in the WR11 notification.

The utilisation of raw materials will be closely monitored to ensure the materials are used efficiently, and in accordance with the manufacturer’s requirements and operational specifications.

2.5 Waste Minimisation

Raw material requirements for the site were initially determined by establishing site conditions during well commissioning by the previous operator. The content of the extracted gas will be continually monitored during the life of the site and raw material requirements adjusted to suit the gas composition to ensure that it can be exported to the national grid. In this manner an inventory of raw materials will be maintained and a review of their use will take place on a regular basis.

3. Water Management

3.1 Introduction

This section provides evidence of the existence of relevant controls for the management of water use to the standard indicated by the Environment Agency document “Guidance for Gasification, Liquefaction and Refining Installations” (EPR 1.02, Section 1.2).

3.2 Water Sources

3.2.1 Mains Supply

There is no mains water supply to the well sites.

3.2.2 Abstracted Supply

There are three water abstractions boreholes, one of each of the 3 wellsites comprising the Saltfleetby gasfield facilities. Cumulative maximum abstraction is estimated at 150 cubic meters per year, based on historic usage.

3.2.3 Wastewater

Discharge to Groundwater

There are no direct discharges to groundwater at the site.

Discharge to Surface Water

Surface water will be managed as follows:

- Surface water from the SFA flows overland and is captured by the filter drain which circles the perimeter of the site. Water in the perimeter drain will be tested and if quality parameters are met, water will be conveyed to the penstock valve which limits the discharge to the equivalent greenfield runoff rate prior to discharge via a Class 1 oil interceptor to the LMDB land drain;
- Surface water from western side of the SFB flows overland to the west and is captured by an open drain adjacent to the land bund. Any surface water not collected by the drain is discharged to filter drain with perforated pipe circling the perimeter of the site to the north, east and south. Water in the perimeter drain will be tested and if quality parameters are met, water will be conveyed to the northeast corner, where a penstock valve limits the discharge to the equivalent greenfield runoff rate prior to discharge via a Class 1 oil interceptor to the LMDB land drain; and
- Runoff within the eastern part of the SFB wellsite flows overland to a filter drain containing perforated pipe circling the perimeter of the part of the site. Water in the perimeter drain will be tested and if quality parameters are met, water will be discharged a penstock valve in the northwest corner which limits discharge from the filter drain to the equivalent greenfield runoff rate. Flows are then discharged to the central LMDB land drain via a Class 1 oil interceptor.

Discharge to Sewer

There are no discharges to sewer from the site operations. Sewage from welfare facilities will be collected separately in septic tank which will be routinely emptied by a waste contractor who will regularly collect any sewage by vacuum tanker and transport it to an EA approved offsite treatment plant.

3.3 Water Efficiency Measures

Water efficiency measures include:

- Installation of low water use appliances in welfare facilities; and
- Consumption monitoring will be undertaken and water leaks identified will be notified for maintenance as soon as possible.

4. Energy Management

4.1 Introduction

This section provides evidence of the existence of relevant controls for the management of energy to the standard indicated throughout the Environment Agency document “Guidance for Gasification, Liquefaction and Refining Installations” (EPR 1.02).

4.2 Energy Generation

The current site operations are powered by electricity from the national grid. A small diesel generator is also present on site which is only activated as a back-up in the event of a power failure from the national grid.

In relation to the new processing operations, A power generator will be installed in the southeast corner of the site with a thermal input capacity of up to 1.5 MW. The generator will combust site-won natural gas products in order to produce electricity which will be used to meet onsite electricity demands. There will be no surplus electricity generation.

4.3 Plant Energy Requirements

4.3.1 Plant Energy Demand

Energy demand for the site based on a 24/7 operational basis with short outages to facilitate plant maintenance. Energy demand on the basis of 8760 hours of operation is shown in Table 1.

Table 1 Plant Energy Demand

Plant	Annual Demand (MWh)	Fuel	Total Demand (MWh)
Power from National Grid -	155	Public Electricity	672
Power from back-up diesel generator	0.826	Diesel	0.826
New Power Generators	11,704	Natural Gas	11,704
New Compressor Generators	49,100	Natural Gas	49,100

4.3.2 Energy Export

There is no provision for energy export.

4.3.3 H1 Assess of Energy Use

An assessment of the energy consumption for the new processes based on an annual gas production rate was completed using the EA’s H1 software. This assessment is summarised in Table 4 below.

Table 2 H1 Assessment of Energy Consumption

Energy Source	Delivered Mwh	Primary Mwh	Emissions Co_2 Te/Yr
Electricity	155	372	61.75
Gas	60,804	60,804	11,553
Gas oil	0.826	0.826	0.2065

4.3.4 Overall Specific Energy Consumption

Table 3 Specific Energy Consumption

Activity	SEC	Description of SEC	Benchmark
Combustion Appliances	0.838 MWh/T Gas	Based on 200T gas/day of natural gas export and assumes 8760 hrs/year.	None

4.4 Energy Management

Energy management at the Saltfleetby wellsites includes:

- procedures for the maintenance of all process equipment (e.g. production equipment & pumping systems);
- the plant will be fitted with temperature indicators and controls including shut down systems to ensure correct operating conditions are maintained; and
- an inspection regime for pipework on site.

4.5 Energy Efficiency Management

4.5.1 Introduction

This section provides evidence of the existence of relevant controls for the management of energy to the standard indicated by the Environment Agency guidance in:

- *"Energy Efficiency Standards for Industrial Plants to Get Environmental Permits"* ; and
- *"Reference Document on Best Available Techniques for Energy Efficiency".*

4.5.2 Energy Policy

Angus recognises and accepts its responsibility for the environment as an integral part of its services and operations and will be committed to excellence and leadership in protecting the environment. In relation to energy efficiency, Angus is committed to:

- meeting all applicable compliance obligations;
- continually evaluating environmental risks and opportunities associated with aspects and impacts of its operations including those associated with energy consumption;
- addressing the use of energy, raw materials, water and emissions to the environment;
- identifying risks and opportunities and direct resources where it can make improvements in environmental performance, including where possible improvements in relation to resource efficiency, energy efficiency and water use.

4.5.3 Planning

As part of its management system, the Operator assesses environmental effects, preventive actions, targets, objectives and responsibilities including those with a focus on energy use and energy recovery

4.5.4 Implementation and Operation

Organisation and Responsibility

Responsibility for effective energy management will lie across various levels of the organisation, with the main areas being:

- Operations Director – will be responsible for the overall efficiency of the Saltfleetby operations with to regards energy consumption , ensuring that processes are operated in line with operational control procedures while optimising throughput;

- Maintenance personnel – will be responsible for maintaining all plant and equipment within the facility in efficient operating order, and for ensuring that energy efficiency considerations are undertaken when plant or equipment needs to be replaced.

It is also acknowledged that all staff will have a part to play in the successful implementation of the energy management system at the site**.**

Motivation and Training

The Company has established procedures to ensure that its employees, at all levels, are aware of their roles and responsibilities in:

- achieving compliance with the Environmental Permit and ensuring the correct implementation of management system procedures.

- the potential environmental effects of their work activities and the environmental benefits of improved performance; and

- the potential consequences of departure from agreed operating procedures.

The Operator will utilise team meetings and formal training sessions to ensure that individuals fully understand the energy management requirements for the site.

Control Measures

All plant and equipment will be operated by trained personnel, in accordance with management procedures defined within the site's management system. Where necessary, operational control procedures will be developed to ensure efficient operation of equipment particularly during start up and shut down when energy usage is at its optimum.

Energy Monitoring and Reporting

Effective monitoring of energy consumption is essential in order to achieve improvements across the site, and as such energy consumption will form one of the Key Performance Indicators (KPIs) set within the IMS. Performance against the KPIs will be reviewed on a monthly basis, to identify trends.

4.5.5 Control and Corrective Actions

Monitoring and Measurement

As part of the management system, the Operator has established and maintains documented procedures for monitoring and measuring the key characteristics of operations and activities which have a significant impact on energy efficiency.

Energy will be monitored monthly to identify trends and facilitate the prompt rectification of issues.

Corrective and Preventive Actions

As part of the management system, the Operator has established and maintains procedures for defining responsibility and authority for the management and investigation of non-conformance with permit conditions, legal requirements and IMS.

The outcome of such investigations will result in action to mitigate any impact along with corrective and preventive action to prevent a recurrence of the identified issue. Such action will be commensurate to the magnitude of the issue and the energy efficiency impact encountered.

Records and Reporting

As part of the IMS management system, reports on energy use and progress against specific KPI targets will be produced in line with the operator's benchmark reporting system.

Audits

A preliminary energy audit will be completed during the commissioning and testing phase of the new process operation in order to ensure the energy efficiency performance of the installation meets the design basis.

Subsequent energy audits will be undertaken in the following circumstances:

- When future performance of the facility indicates potential deterioration in efficiency then an energy audit may be initiated on either the installation as a whole or on a specific area of operation; or

- Following a major change to the facility in the future (e.g. changes to site processes), an energy audit may be carried out to ensure relevant performance measures are achieved.

4.5.6 Reviewing Performance

An annual management review is completed under the management system requirements during which the energy plan and performance against the previous year's KPI targets will be reviewed by site management. The review will include:

- Consideration of company policy;
- Comparison of quantitative performance against targets;
- Comparison with benchmark data where available; and
- Review of the implementation of energy efficiency improvements.

The energy plan will subsequently be revised to take account the results of this review.

4.6 Energy Efficiency Techniques

This section provides evidence of the existence of relevant controls for the management of energy to the standard indicated by the Environment Agency guidance in:

- *"Energy Efficiency Standards for Industrial Plants to Get Environmental Permits"* ; and
- *"Reference Document on Best Available Techniques for Energy Efficiency".*

4.6.1 Energy Efficient Design

For a plant of this type, the process technology is essentially pre-determined by the selected technology provider, although the design team will work with the suppliers to optimise any opportunity to improve on process efficiency. The energy efficiency considerations that have been assessed at the design phase include:

- The design and layout of individual items of plant and equipment has been optimised to provide as small a footprint for the facility as can be achieved, this means that transport systems have been designed in such a manner as to reduce distances travelled, thus reducing power consumption required to facilitate such material movement;

- Optimised operation and monitoring of the gas treatment process;

- Selection of energy efficient equipment (e.g. compressors and variable speed motors where appropriate);

- Real-time monitoring of electricity demand.

4.6.2 Efficient Process Control

Process Optimisation

This will be implemented in order to achieve benefits of improved operational throughput and improve the efficiency of the gas treatment processes by seeks to ensure that the optimum amount of gas is treated for every unit of energy utilised.

Process optimisation activities will commence during plant commissioning.

Encourage the Use of Operational Best Practice

Operational best practice will be encouraged at the site through the application of general common sense throughout the operations, in particular:

- Maintaining housekeeping standards across the plant will not only reduce environmental impact of related emissions but if the root cause is identified and addressed then issues such as spillage will be minimised;
- Operators will be encouraged to switch off non-essential plant and equipment when not in use, this is particularly important on planned maintenance days and during breakdown response;
- Operators will be encouraged to report faults promptly with respect to process control and general plant operation – this means that repairs to systems can be completed quickly and issues such as spillage and reduction of throughput are addressed; and
- Development and implementation of operational control procedures particularly covering plant start-up and shut-down – these procedures will be controlled within the process standardisation system and will be developed to ensure that energy is not wasted through over-extended start-up periods, while ensuring that other process conditions, such as minimum operating temperatures, are not compromised.

4.6.3 Maintaining Plant Reliability

This applies to all areas of the process and is aimed at reducing the number of stops on each item of plant. As energy drawn is generally higher during start-up/shut down, reducing the number of stops on an item of plant will assist with reducing overall energy consumption. This will be achieved by:

- Effective planned maintenance which will ensure that equipment is kept in good operational order, thus minimising energy consumption during operation, and also reducing the number of breakdown stops – the site will utilise a computerised system to assist tracking and monitoring of equipment condition and effectively plan maintenance;
- All maintenance will be undertaken by trained/experienced personnel, and particular areas which will benefit from regular maintenance with respect to energy management are:

  a) Lubrication of plant drives and motors on defined lubrication strategy supplemented by planned maintenance checks ensures the load on motors and drives is minimised as much as possible – this reduction of load, in turn assists in improving energy efficiency; and

  b) Regular cleaning and maintenance of filtration systems on the gaseous and liquid lines for plant instrumentation, ensures that the operating pressure drop and load on fans and pumps is minimised – this in turn assists in improving energy efficiency.

4.6.4 Specific Equipment Considerations

Cooling Systems and Air Compressors

Cooling systems and air compressors will be regularly maintained. Maintenance procedures such as cleaning, filter changing diagnosis and rebalancing, motor overhauls and drive/ fan belt changes will ensure that the energy efficiency of the systems is maintained.

Electrical Motors

Variable speed motors or soft starters will be provided on motor drivers to limit the start-up current where possible. The preventative maintenance programme conducted on site will ensure that the motor and drive systems remain in good condition and are properly adjusted. These systems will also be lubricated in order to avoid high-friction energy loss. Vibration monitoring will also be employed.

4.6.5 Building Services

Heating and Hot Water Systems

Administration, offices, meeting rooms, mess, kitchen, and shower areas for the site as a whole has suitable local heating and ventilation systems.].

Hot water systems for sanitary and domestic purposes will be heated by electricity which is controlled by thermostats.

Lighting

In general fluorescent lighting will be used extensively and on occasion light emitting diode (LED) lighting. In all cases the type and disposition of fittings will be selected to give a good uniformity. Certain lighting areas shall adopt automatic light level / PIR activated switches.

4.6.6 Future Energy techniques

The installation use a gas-fuelled generator for supplying the site's electrical needs.

Angus Energy has chosen not to enter into a climate change agreement but has implemented an integrated system for energy management which encompasses the indicative BAT requirements.

5. Waste Management

Waste management is not considered a significant issue due to the low volume of waste generated on site during operation although additional wastes may be generated during:

- well workover operations; and
- well abandonment and site closure.

These wastes will be managed in accordance with the mining waste requirements and a separate Waste Management Plan (part 5 of the application).

Appendix A Raw Material Inventory

ID	POTENTIAL RELEASE POINT	POTENTIAL SOURCES OF POLLUTION	TOTAL VOLUME	MAX TONNES	UN NO	CLP CLASSIFICATIONS	CHEMICAL COMPOSITION	CAS NO
001	10" Export Line (to Theddlethorpe Gas Terminal)	Natural Gas	354 m^3	0.252	1971	H220, H280	Mixture comprising of:	68410-63-9
							• Methane (80 – 99%)	74-82-8
							• Ethane (<12%)	74-84-0
							• Propane (<4%)	74-98-6
							• n-Butane	106-97-8
							• Isobutane (Σ<1%)	75-28-5
							• n-Pentane (<0.2%)	109-66-0
							• Nitrogen (<15%)	7727-37-9
							• Carbon Dioxide (<6%)	124-38-9
							• Hydrogen (≤2%)	1333-74-0
002	10" Export Line (to Theddlethorpe Gas Terminal)	Condensate (Natural Gas Liquids)	14,300 litres	12.870	3295	H350, H224, H372, H412	Mixture comprising of:	68919-39-1
							• Petroleum crude oil (% Grade dependent)	8002-05-9
							• Benzene (% Grade dependent, <1%)	71-43-2
							• n-Hexane (% Grade dependent)	110-54-3
							• Toluene (% Grade dependent)	108-88-3
							• Methane (% Grade dependent)	74-82-8
							• Hydrogen Sulphide (H2S) (<1%)	7783-06-4
							• Xylene (all isomers) (% Grade dependent)	1330-20-7
003	10" Export Line (to Theddlethorpe Gas Terminal)	Methanol	1,600 litres	1.267	1230	H225, H301, H311, H331, H370	Methanol (100%)	67-56-1
004	10" Export Line (to Theddlethorpe Gas Terminal)	Corrosion Inhibitor (EPT-2968)	6 litres	0.006	N/A	H315, H319	Mixture comprising of:	
							• Phosphated Tridecyl Ethoxylate Triethanolamine Salt (5 – 10%)	58855-61-1
							• Ethane-1,2-diol (5 – 10%)	107-21-1
							• 2-(2-Butoxyethoxy) ethanol (5 – 10%)	112-34-5
							• Ethanol, 2,2'oxybis-, reaction products with ammonia, morpholine derivs residues (<3%)	68909-77-3
005	10" Export Line (to Theddlethorpe Gas Terminal)	Water	3,200 litres	3.200	N/A	N/A	• Water (H2O) (100%)	7732-18-5
006	Saltfleetby A wellsite Production Equipment	Natural Gas	1.6 m^3	0.001	1971	H220, H280	Mixture comprising of:	68410-63-9
							• Methane (80 – 99%)	74-82-8
							• Ethane (<12%)	74-84-0
							• Propane (<4%)	74-98-6
							• n-Butane	106-97-8
							• Isobutane (Σ<1%)	75-28-5

ID	POTENTIAL RELEASE POINT	POTENTIAL SOURCES OF POLLUTION	TOTAL VOLUME	MAX TONNES	UN NO	CLP CLASSIFICATIONS	CHEMICAL COMPOSITION	CAS NO
							• n-Pentane (<0.2%)	109-66-0
							• Nitrogen (<15%)	7727-37-9
							• Carbon Dioxide (<6%)	124-38-9
							• Hydrogen (≤2%)	1333-74-0
007	Saltfleetby A wellsite Production Equipment	Condensate (Natural Gas Liquids)	40 litres	0.036	3295	H350, H224, H372, H412	Mixture comprising of:	68919-39-1
							• Petroleum crude oil (% Grade dependent)	8002-05-9
							• Benzene (% Grade dependent, <1%)	71-43-2
							• n-Hexane (% Grade dependent)	110-54-3
							• Toluene (% Grade dependent)	108-88-3
							• Methane (% Grade dependent)	74-82-8
							• Hydrogen Sulphide (H2S) (<1%)	7783-06-4
							• Xylene (all isomers) (% Grade dependent)	1330-20-7
008	Saltfleetby A wellsite Production Equipment	Corrosion Inhibitor (EPT-2968)	1.5 litres	0.001	N/A	H315, H319	Mixture comprising of:	
							• Phosphated Tridecyl Ethoxylate Triethanolamine Salt (5 – 10%)	58855-61-1
							• Ethane-1,2-diol (5 – 10%)	107-21-1
							• 2-(2-Butoxyethoxy) ethanol (5 – 10%)	112-34-5
							• Ethanol, 2,2'oxybis-, reaction products with ammonia, morpholine derivs residues (<3%)	68909-77-3
009	Saltfleetby A to B 6" Pipeline	Natural Gas	21 m^3	0.015	1971	H220, H280	Mixture comprising of:	68410-63-9
							• Methane (80 – 99%)	74-82-8
							• Ethane (<12%)	74-84-0
							• Propane (<4%)	74-98-6
							• n-Butane	106-97-8
							• Isobutane (Σ<1%)	75-28-5
							• n-Pentane (<0.2%)	109-66-0
							• Nitrogen (<15%)	7727-37-9
							• Carbon Dioxide (<6%)	124-38-9
							• Hydrogen (≤2%)	1333-74-0
010	Saltfleetby A to B 6" Pipeline	Condensate (Natural Gas Liquids)	850 litres	0.765	3295	H350, H224, H372, H412	Mixture comprising of:	68919-39-1
							• Petroleum crude oil (% Grade dependent)	8002-05-9
							• Benzene (% Grade dependent, <1%)	71-43-2
							• n-Hexane (% Grade dependent)	110-54-3
							• Toluene (% Grade dependent)	108-88-3
							• Methane (% Grade dependent)	74-82-8
							• Hydrogen Sulphide (H2S) (<1%)	7783-06-4

ID	POTENTIAL RELEASE POINT	POTENTIAL SOURCES OF POLLUTION	TOTAL VOLUME	MAX TONNES	UN NO	CLP CLASSIFICATIONS	CHEMICAL COMPOSITION	CAS NO
							• Xylene (all isomers) (% Grade dependent)	1330-20-7
011	Saltfleetby A to B 6" Pipeline	Corrosion Inhibitor (EPT-2968)	0.4 litres	0.0004	N/A	H315, H319	Mixture comprising of:	
							• Phosphated Tridecyl Ethoxylate Triethanolamine Salt (5 – 10%)	58855-61-1
							• Ethane-1,2-diol (5 – 10%)	107-21-1
							• 2-(2-Butoxyethoxy) ethanol (5 – 10%)	112-34-5
							• Ethanol, 2,2'oxybis-, reaction products with ammonia, morpholine derivs residues (<3%)	68909-77-3
012	Saltfleetby B wellsite Production Equipment	Natural Gas	4.1 m^3	0.003	1971	H220, H280	Mixture comprising of:	68410-63-9
							• Methane (80 – 99%)	74-82-8
							• Ethane (<12%)	74-84-0
							• Propane (<4%)	74-98-6
							• n-Butane	106-97-8
							• Isobutane (Σ<1%)	75-28-5
							• n-Pentane (<0.2%)	109-66-0
							• Nitrogen (<15%)	7727-37-9
							• Carbon Dioxide (<6%)	124-38-9
							• Hydrogen (≤2%)	1333-74-0
013	Saltfleetby B wellsite Production Equipment	Condensate (Natural Gas Liquids)	165 litres	0.148	3295	H350, H224, H372, H412	Mixture comprising of:	68919-39-1
							• Petroleum crude oil (% Grade dependent)	8002-05-9
							• Benzene (% Grade dependent, <1%)	71-43-2
							• n-Hexane (% Grade dependent)	110-54-3
							• Toluene (% Grade dependent)	108-88-3
							• Methane (% Grade dependent)	74-82-8
							• Hydrogen Sulphide (H2S) (<1%)	7783-06-4
							• Xylene (all isomers) (% Grade dependent)	1330-20-7
014	Saltfleetby B wellsite Production Equipment	Methanol	60 litres	0.0475	1230	H225, H301, H311, H331, H370	Methanol (100%)	67-56-1
015	Saltfleetby B wellsite Production Equipment	Corrosion Inhibitor (EPT-2968)	3 litres	0.003	N/A	H315, H319	Mixture comprising of:	
							• Phosphated Tridecyl Ethoxylate Triethanolamine Salt (5 – 10%)	58855-61-1
							• Ethane-1,2-diol (5 – 10%)	107-21-1
							• 2-(2-Butoxyethoxy) ethanol (5 – 10%)	112-34-5
							• Ethanol, 2,2'oxybis-, reaction products with ammonia, morpholine derivs residues (<3%)	68909-77-3
016	Saltfleetby B wellsite Production Equipment – Knockout Pot	Glycol (GP3 Antifreeze)	200 litres	0.226	N/A	H302, H373	Mixture comprising of:	
							• Mono Ethylene Glycol (60 – 100%)	107-21-1
							• Disodium tetraborate pentahydrate (1 – 2.99%)	12179-04-3

ID	POTENTIAL RELEASE POINT	POTENTIAL SOURCES OF POLLUTION	TOTAL VOLUME	MAX TONNES	UN NO	CLP CLASSIFICATIONS	CHEMICAL COMPOSITION	CAS NO
017	Saltfleetby B wellsite Production Equipment	Water	150 litres	0.150	N/A	N/A	Water (H2O) (100%)	7732-18-5
018	Saltfleetby B extension including Saltfleetby B to B extension pipeline	Natural Gas	2.3 m^3	0.001	1971	H220, H280	Mixture comprising of:	68410-63-9
							• Methane (80 – 99%)	74-82-8
							• Ethane (<12%)	74-84-0
							• Propane (<4%)	74-98-6
							• n-Butane	106-97-8
							• Isobutane (Σ<1%)	75-28-5
							• n-Pentane (<0.2%)	109-66-0
							• Nitrogen (<15%)	7727-37-9
							• Carbon Dioxide (<6%)	124-38-9
							• Hydrogen (≤2%)	1333-74-0
019	Saltfleetby B extension including Saltfleetby B to B extension pipeline	Condensate (Natural Gas Liquids)	95 litres	0.085	3295	H350, H224, H372, H412	Mixture comprising of:	68919-39-1
							• Petroleum crude oil (% Grade dependent)	8002-05-9
							• Benzene (% Grade dependent, <1%)	71-43-2
							• n-Hexane (% Grade dependent)	110-54-3
							• Toluene (% Grade dependent)	108-88-3
							• Methane (% Grade dependent)	74-82-8
							• Hydrogen Sulphide (H2S) (<1%)	7783-06-4
							• Xylene (all isomers) (% Grade dependent)	1330-20-7
020	Saltfleetby B extension including Saltfleetby B to B extension pipeline	Methanol	10 litres	0.008	1230	H225, H301, H311, H331, H370	Methanol (100%)	67-56-1
021	Saltfleetby B extension including Saltfleetby B to B extension pipeline	Corrosion Inhibitor (EPT-2968)	0.1 litre	0.0001	N/A	H315, H319	Mixture comprising of:	
							• Phosphated Tridecyl Ethoxylate Triethanolamine Salt (5 – 10%)	58855-61-1
							• Ethane-1,2-diol (5 – 10%)	107-21-1
							• 2-(2-Butoxyethoxy) ethanol (5 – 10%)	112-34-5
							• Ethanol, 2,2'oxybis-, reaction products with ammonia, morpholine derivs residues (<3%)	68909-77-3
022	Test Separator	Natural Gas	1.4 m^3	0.010	1971	H220, H280	Mixture comprising of:	68410-63-9
							• Methane (80 – 99%)	74-82-8
							• Ethane (<12%)	74-84-0
							• Propane (<4%)	74-98-6
							• n-Butane	106-97-8
							• Isobutane (Σ<1%)	75-28-5
							• n-Pentane (<0.2%)	109-66-0
							• Nitrogen (<15%)	7727-37-9

ID	POTENTIAL RELEASE POINT	POTENTIAL SOURCES OF POLLUTION	TOTAL VOLUME	MAX TONNES	UN NO	CLP CLASSIFICATIONS	CHEMICAL COMPOSITION	CAS NO
							• Carbon Dioxide (<6%)	124-38-9
							• Hydrogen (≤2%)	1333-74-0
023	Test Separator	Condensate (Natural Gas Liquids)	380 litres	0.342	3295	H350, H224, H372, H412	Mixture comprising of:	68919-39-1
							• Petroleum crude oil (% Grade dependent)	8002-05-9
							• Benzene (% Grade dependent, <1%)	71-43-2
							• n-Hexane (% Grade dependent)	110-54-3
							• Toluene (% Grade dependent)	108-88-3
							• Methane (% Grade dependent)	74-82-8
							• Hydrogen Sulphide (H2S) (<1%)	7783-06-4
							• Xylene (all isomers) (% Grade dependent)	1330-20-7
024	Test Separator	Methanol	120 litres	0.095	1230	H225, H301, H311, H331, H370	Methanol (100%)	67-56-1
025	Test Separator	Corrosion Inhibitor (EPT-2968)	0.05 litre	0.00005	N/A	H315, H319	Mixture comprising of:	
							• Phosphated Tridecyl Ethoxylate Triethanolamine Salt (5 – 10%)	58855-61-1
							• Ethane-1,2-diol (5 – 10%)	107-21-1
							• 2-(2-Butoxyethoxy) ethanol (5 – 10%)	112-34-5
							• Ethanol, 2,2'oxybis-, reaction products with ammonia, morpholine derivs residues (<3%)	68909-77-3
026	Test Separator	Water	260 litres	0.260	N/A	N/A	Water (H2O) (100%)	7732-18-5
027	Hydraulic control lines	ISO 10 Hydraulic Oil	35 litres	0.010	N/A	N/A	Mineral oils blended with various additives	N/A
028	Instrument Air	Killfrost K-400	6 litres	0.007	N/A	H302, H318, H319	Mixture comprising of:	
							• Ethanediol (30 – 60%)	107-21-1
							• Sodium Sulphonate (5 35 %)	N/A
							• Confidential component (1 – 5%)	N/A
029	Injection Pumps	Qualube Lithium EP Gearbox Oil	12 litres	0.001	N/A	N/A	Zinc Dialkyldithiophosphate (1.5%)	68649-42-3
030	Diesel Storage Tank	Diesel	1,000 litres	0.880	1202	H226, H304, H332, H315, H351, H373	Complex mixture of hydrocarbons consisting of paraffin's, cycloparaffins, aromatic and olefinic hydrocarbons with carbon numbers predominantly in the C9 to C25 range. May also contain several additives at <0.1% v/v each. May contain cetane improver (Ethyl Hexyl Nitrate) at <0.2% v/v. May contain catalytically cracked oils in which polycyclic aromatic compounds, mainly 3-ring but some 4- to 6-ring species are present.	
							• Fuels, Diesel	68334-30-5
							• Alkanes, C10 – 20, branched and linear	928771-01-1
							• Distillates (Fischer – Tropsch), C8 – 26 – Branched and Linear	848301-67-7
							• Biodiesel	67762-38-3
031	Hydraulic Control Lines	ISO 10 oil	35 litres	0.0343	N/A	N/A	Mineral oils blended with various additives.	