



HORSE HILL
DEVELOPMENTS LTD

Horse Hill Developments Ltd

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1. INTRODUCTION

Horse Hill Developments LTD (HHDL) is a Limited Company that was formed to manage the exploration and production activities at the Horse Hill Well Site. HHDL is a consortium of natural resource companies and owns a 65% interest and operatorship of Petroleum Exploration and Development Licence (PEDL) 137 within which the Horse Hill Well Site is located.

HHDL is the holder of a number of Environmental Permits issued by the Environment Agency in accordance with the Environmental Permitting (England and Wales) Regulations 2016. The current permitted activities at the Horse Hill Well Site allow the undertaking of the following activities:

EPR/BB3300XG - A mining waste operation for the management of extractive waste from prospecting mineral resources, not involving a mining waste facility.

A mining waste operation for the management of non-hazardous extractive liquid waste and gas, from prospecting for mineral resources not including a waste facility resulting from well testing operation. No more than 10 tonnes of natural gas may be flared each day.

EPR/BB3691NN - The discharge of clean surface water off-site during periods of non-operational activity. Discharges to surface water may not take place during drilling, flow testing or well testing.

EPR/SP3339YS - The loading, unloading, handling or storage of, or physical, chemical or thermal treatment of crude oil with a capacity of no more than 500 tonnes.


EPR/AB3498DZ - SR 2014 No4 Permit () for the Accumulation and Disposal of radioactive waste from the NORM Industrial Activity of the production of oil and gas.

As the development continues to progress, additional permitted activities have been identified as being necessary. As a result, HHDL have prepared an application to vary the environmental permits with the purpose of gaining permission to undertake the following activities:

- Construct up to four (4) new additional boreholes (HH-3/HH-4/HH-5/HH-6) in addition to the current two (2) boreholes (HH-1/HH-2) already constructed at the Horse Hill Well Site (**EPR/BB3300XG**);
- Harness at least one (1) of the six (6) boreholes as a reinjection well for the purpose of providing production support (**EPR/BB3691NN**);
- Undertake well treatments such as an acid wash and solvent treatments (**EPR/BB3300XG**);
- Undertake a 90 day well test for each of the additional wells (HH-3/HH-4/HH-5/HH-6) before later being added to the portfolio of production wells at the site or being abandoned (**EPR/BB3300XG**);
- Undertake an injectivity test within HH-2 (HH-2z) and any other wells as dictated by HHDL (**EPR/BB3691NN**);
- Incinerate natural gas at a rate not exceeding 10 tonnes per day during production operations, until such a time that it can be demonstrated that the incineration of natural gas is no longer considered Best Available Technique through a cost benefit analysis (**EPR/BB3300XG**);

HHDL will continue to undertake the following activities at the site in accordance with the current permissions presented within the permit:

- Store and handle crude oil up to a capacity of 500 tonnes within the existing infrastructure and within the current permitted boundary. Permit **EPR/SP3339YS** will not be the subject of a permit variation.

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2. SCOPE

This Vapour Recovery Plan is applicable to the Horse Hill Well Site and all operations conducted therein. It has been produced to present and outline the Vapour Recovery arrangements for the Horse Hill well site during the proposed drilling operations, production operations, well maintenance operations, well abandonment operations and well site restoration operations.

It is applicable to HHDL, its contractor and subcontractors and can be used in support of an application to the Environment Agency under the Environmental Permitting (England and Wales) Regulations 2016 (EPR2016), where there is a requirement to provide a Vapour Recovery Plan.

3. DEFINITIONS

EPR2016:	Environmental Permitting (England & Wales) Regulations 2016
HSE:	Health, Safety and Environmental
PEDL:	Petroleum Exploration and Development Licence
UK:	United Kingdom


Table 3.1: Definitions

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4. ROLES AND RESPONSIBILITIES

Role	Key Responsibilities
Chief Executive	<p>Overall responsible for all business activities and must ensure that suitable and sufficient systems, processes and resources are provided to adhere to the HSE Management System (HSEMS) and legislative requirements in relation to this plan. They shall:</p> <ul style="list-style-type: none"> • Apply HSEMS standards and procedures throughout the project; • Provide suitable and sufficient input and resources required to maintain an effective HSEMS; • Stipulate project requirements and conditions, e.g. budget, time constraints, milestones and feedback; and • Ensure a proactive and robust system is in place for the management of leaks during well site operations.
Commercial Director	<ul style="list-style-type: none"> • The communication of the HSEMS structure and responsibilities to the Well Site Supervisor; • Co-ordinate the implementation of the Vapour Recovery Plan; • Providing assistance and guidance in the update and approval of the Vapour Recovery Plan; • Ensuring that legislative compliance is maintained through the provision of adequate competent resources; • Ensuring competent personnel are available to monitor and assess the requirements of the Vapour Recovery Plan; • Ensuring that roles and responsibilities are identified and the assessment of individuals is recorded; • Selecting contractors who can meet all standards through a robust tendering and/or selection process and the monitoring of contractors to ensure that these standards are being met; • The development and training of staff or assessing the competence of contractors so that they are competent and capable of carrying out their work to the required standards; • Conducting periodic audits of compliance and communicating environmental performance, significant findings and non-conformances. • Ensuring that suitable and sufficient resources are provided to implement the Vapour Recovery Plan.
Well Site Supervisor	<ul style="list-style-type: none"> • The communication and implementation of the Vapour Recovery Plan to site operatives and contractors; • Providing assistance and guidance in the update of the Vapour Recovery Plan; • Ensuring that leadership is clearly established and promoting a high degree of HSE awareness through communication of HSE Policies and responsibilities; • Ensuring that defined practices and processes are communicated; • Ensuring that, where required, monitoring and reporting relating to regulatory compliance is carried out; • Ensuring that emissions are reported and investigated in accordance with HHDL's HSE policies; • Ensuring that where required, emissions are sampled to determine source and composition of the emission; • Ensuring that spillages are remediated as soon as reasonably practicable; • Ensuring that training is provided to all personnel on pollution prevention and pollution control; • Ensuring that all incidents, involving, or having the potential to cause, injury or harm to personnel, damage to infrastructure or the environment are thoroughly investigated; • Ensuring that emergency response plans are tested on a regular basis, recording the results, identifying, implementing and communicating corrective actions; • Ensuring that complaints are reported to HHDL and thoroughly investigated; • Monitoring compliance with the Vapour Recovery Plan; • Ensuring sufficient priority is placed on undertaking audits; and • Ensuring that performance and findings from audits, inspections and non-conformances is communicated.
All personnel	<p>All personnel are to follow the requirements of this Vapour Recovery Plan and cooperate fully with senior management. All personnel must take reasonable care to ensure that their actions do not have an adverse impact on the environment. Personnel must not intentionally or recklessly interfere with, or misuse anything that is provided in the interest of health, safety and the environment.</p>

Table 4.1: Roles and Responsibilities

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5. VAPOUR RECOVERY PLAN

This Vapour Recovery Plan covers the following operations to be conducted at the Horse Hill Well Site:

- Drilling operations;
- Production operations;
- Well maintenance operations;
- Well abandonment operations; and
- Well site restoration operations

5.1 Objectives of the Vapour Recovery Plan

The primary objective of this Vapour Recovery Plan is to prevent significant impacts from the emission of Volatile Organic Compounds (VOCs), whose emission to air could cause pollution on local amenities, human health and the environment. This objective will be achieved through:

- Assessment of risks;
- Management of vapour recovery;
- Arrangements for the recovery of VOCs;
- Implementation of pollution control measures;
- Containment of emissions;
- Maintenance and servicing procedures;
- Emergency response procedures;
- Arrangements for monitoring and recording;
- Training of personnel;
- Audit requirements; and
- Arrangements for reviewing and revising the Vapour Recovery Plan.

5.2 Distribution of the Approved Vapour Recovery Plan

HHDL will communicate the Vapour Recovery Plan to the Well Site Supervisor. The Vapour Recovery Plan may be issued as an electronic version or paper copy and a copy of receipt or transmittal will be recorded by HHDL. A copy of the Vapour Recovery Plan is to be held within the Well Site Supervisor's office and be available for review by regulatory bodies.


The Vapour Recovery Plan will be communicated to site personnel during site induction and a record of induction will be recorded. A copy of the Vapour Recovery Plan will be displayed and made available on site to all personnel during operations.

5.3 Alterations to the Vapour Recovery Plan

Any required changes or deviations from this Vapour Recovery Plan are to be referred to HHDL or to the Well Site Supervisor in the first instance. No changes to, or deviations from, this Vapour Recovery Plan are to be implemented until the required changes or deviations have been reviewed and approved by HHDL. Alterations to the plan will be submitted to the Environment Agency for approval; however, alterations may be implemented as an immediate control measure to resolve an identified odour problem prior to notification to the Environment Agency.

5.4 Changes to Operations, Processes or Equipment

In the event of significant or material changes to operations, processes or equipment during the proposed operations, HHDL will review the Vapour Recovery Plan and communicate a revised Vapour Recovery Plan to the Well Site Supervisor and forward a copy to the Environment Agency.

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6. ASSESSMENT OF RISK

6.1 Crude Oil Vapour Risk Assessment

In support of the Vapour Recovery Plan, a risk assessment of potential VOC vapours that may be generated during the transfer, loading and unloading of crude oil has been undertaken.

The Crude Oil Vapour Risk Assessment is qualitative and details the activities and events that may lead to environmental impact on one or more receptors.


The Crude Oil Vapour Risk Assessment has assessed the potential odour risks from the proposed Production and well testing operations to be undertaken and includes the following information:

- Potential release points;
- Potential sources of pollution;
- Operations being carried out which may lead to emissions;
- Receptors;
- Pathway;
- Probability of exposure;
- Consequence;
- Magnitude of Risk;
- Risk management to control or minimise vapour release;
- Residual Risk; and
- Responsible Person for monitoring release points.

For clarity, the Crude Oil Vapour Risk Assessment has assessed the volume of VOCs within vapours contained within crude oil storage tanks as 'Insignificant/Not Significant'. This was based on the following:

1. Natural gas and crude oil are separated by the three-phase separator;
2. A suite of mitigation measures shall be adopted to ensure that odour resulting from the VOC's is managed and reduced so far as reasonably practicable;
3. Oil transferred to the tank will have a relatively low flow and subsequently displaced air (containing trace VOCs following 3-phase separation) will also be of low flow;
4. Displaced air shall if deemed necessary by HHDL pass through a scrubber unit at slow rates ensuring efficient removal of residual VOC's from air;

A copy of the Crude Oil Vapour Risk Assessment is included in Appendix 1.

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7. ADDITIONAL CONTROL MEASURES

Vapours containing potential VOCs are generated from the agitation of crude oil as it is transferred in to crude oil storage tanks and road tankers.

During the transfer, loading and unloading of crude oil, there is the potential for VOCs to be emitted to atmosphere from storage tank vents and road tanker inspection hatches.

Details of the proposed vapour recovery measures to be implemented within the HHDL well site are detailed in Section 7.1.1 and Section 7.1.2.

7.1 Arrangements for the Recovery of VOC's

7.1.1 Recovery of VOCs from Oil Storage Tanks

Vapours within the crude oil storage tank will be vented to atmosphere from the storage tank vent stack.

Due to the necessity to mitigate against odour HHDL are proposing, where required, to connect a scrubbing unit to remove potential odorous / vaporous compounds to each individual storage tank or the common ventline.

The scrubber will be designed to allow the capture and recovery of VOCs from vapours being vented during the following operations:

1. Loading (filling) of crude oil storage tanks;
2. Transfer of crude oil between crude oil storage tanks; and
3. Back venting of vapours from loading (filling) road tankers used in the transportation of crude oil offsite to the local refinery.

For safety and environmental reasons, the scrubber to be installed must be capable of allowing air flow both in to, and out of, the crude oil storage tanks to prevent over-pressurisation and under-pressurisation of the crude oil storage tank.

- The Crude Oil Vapour Risk Assessment has assessed the risk from VOCs emitted to atmosphere with no VOC scrubber installed as 'not significant' and the risk of VOCs emitted to atmosphere with a VOC scrubber installed as 'Insignificant'.

7.1.2 Recovery of VOCs from Road Tankers

During the loading of road tankers used for the transportation of crude oil offsite, vapours within the road tanker are back vented to the crude oil storage tank. The vapours flow from the road tanker via a flexible hose, to the crude oil storage tank where they will be managed in accordance with Section 7.1.1.

The Crude Oil Vapour Risk Assessment has assessed the risk from VOCs emitted to atmosphere from the road tanker as 'not significant'.

The Crude Oil Vapour Risk Assessment has assessed the risk from VOCs emitted to atmosphere from the back venting of vapours to the crude oil storage tank with no VOC scrubber installed as 'not significant' and the risk of VOCs emitted to atmosphere with a VOC scrubber installed as 'insignificant'.


7.2 Process of Scrubber / Air Filtration

At surface, petroleum flows from the well, through the well test / production equipment, which includes three (3) phase separation of produced water, crude oil (including gas condensate) and hydrocarbon gas. Produced water and crude oil are diverted from the separator to individual storage tanks on site.

The storage tanks each have a vent outlet to allow gasses to flow out of, the storage tanks to prevent over-pressurisation of the storage tanks when filling.

Due to the necessity to mitigate against odour HHDL are proposing to connect a scrubbing unit, if required, to remove potential odorous / vaporous compounds to each individual storage tank.

Whilst the tanks are being filled with fluid, gasses will be displaced from the tanks and will flow through the vent line to the scrubber unit. When the storage tanks are being emptied there is a foreseeable risk of a vacuum being created

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within the storage tank. To mitigate against this risk HHDL are proposing to install a makeup gas line into the tank to feed in nitrogen to ensure a vacuum is not created within the system.

Appendix 2 provides a technical specification of the scrubber/air filtration unit that would be used. The manufactures have also confirmed that they are designed to remove Volatile Organic Compounds.


Whilst the scrubber(s) is capable of allowing air flow both in to and out of the tanks to ensure that over-pressurisation is avoided, the maximum working pressure is 7.5 psi, which is low.

The scrubber(s) works by allowing the vapours emitted from the storage tanks to pass filters which have been designed to remove certain compounds, such as organics, formaldehyde, ammonia, hydrogen sulphide and VOC's, by the process of physical adsorption. The removal efficiency of these compounds can vary depending on flow rates, however given that the flow rates from the storage tanks will be low, it is expected that a high removal efficiency will be achieved.

The emitted vapour will pass through the filter (carbon bed) and due to the highly porous structure of granular carbon, together with the anticipated low flow rates from the tank, high levels of contaminates will be absorbed. When the granular carbon becomes saturated with contaminants the material will be removed and replaced.

Procedures surrounding the scrubber include monitoring its effectiveness during the lifetime of the well operations. The scrubber will form part of the daily checks undertaken by the Well Site Supervisor. These checks include monitoring for odour emitted from the scrubber and the physical condition of the drum. It will be recorded on a Daily Environmental Checklist held onsite. A copy of the Daily Environmental Checklist is provided within Appendix 3.

Monitoring will be undertaken in the form of sniff testing to detect odour from the VOC's should they be released. If it becomes apparent that the scrubber is not as effective as it should be then additional scrubbers can be linked up to the vent line.

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8. IMPLEMENTATION OF POLLUTION CONTROL MEASURES

The Well Site Supervisor is ultimately in control of what activities are being undertaken at the well site. They will ensure that pollution control measures are implemented to prevent the emission of vapours containing VOCs, whose emission to air could cause pollution. Control measures to be implemented include, but are not limited to:

- Installation of a VOC scrubber or equivalent specification on each vent stack or single co-joined vent stack (per tank inventory);
- Tank levels monitored to prevent overfilling;
- Transfer of products to be monitored by well site personnel;
- Checks of containment and transfer systems to ensure integrity is maintained;
- Where possible, breaking containment to be undertaken at cessation of operations;
- Purge equipment prior to breaking containment;
- Plug / cap tanks, pipes, hoses etc. after breaking containment;
- Well site / vehicle spillage kits to be readily available;
- Spillages to be remediated immediately;
- All spillages to be reported;
- Emergency response plan established / tested; and
- Training on environmental awareness for well site personnel.

A procedure of each control measure is provided in Section 8.1 to Section 8.11.

8.1 VOC Scrubber

A VOC scrubber (Drum Filter Vessel (AAC DFV200)) or equivalent specification will be installed on each vent stack or single co-joined vent stack (per tank inventory) to prevent the emission of vapours containing VOCs, whose emission to air could cause pollution.

The manufacturer's information sheet, included within Appendix 2, identifies that it has been used for the following typical applications:

- Storage tank vents;
- Vacuum pump discharges;
- Road tanker transfer stations;
- Blood storage tanks;
- Animal rendering plants; and
- Odour removal within Dairies.

To ensure that the VOC scrubber is maintained and effective, it will be checked daily by the Well Site Supervisor or their nominated delegate and the check recorded on the Daily Environmental Checklist. Checks to be undertaken will include, but not limited to:

- Monitoring (by sniff test) of odour emissions from the VOC scrubber;
- Integrity of the VOC scrubber; and
- Integrity of the connecting hose from the vent stack to VOC scrubber.


A copy of the Daily Environmental Checklist is provided within Appendix 3.

In the event the scrubber is in need of maintenance, such as filter medium replacements then the manufacturer will be contacted to provide maintenance service.

8.2 Monitoring of Tank Levels

To ensure that the maximum capacity of storage tanks is not exceeded and that any potential losses are identified, the following checks will be undertaken:

- Tank levels monitored on a regular basis to ensure maximum levels are not exceeded / losses identified;

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Checks will be recorded on the Daily Environmental Checklist by the Well Site Supervisor or their delegate.

8.3 Product Transfer

To ensure that spillages from the transfer of products does not occur, the following checks will be undertaken:

- Prior to the commencement of transfer:
 - Check tank levels to ensure the volume of product to be transferred can be accepted;
 - Visual inspections of the integrity of:
 - Delivery / storage tanks prior to transfer; and
 - Ancillaries including pipework, hoses, valves, gauges etc.
- During transfer operations:
 - Visual inspections for leaks / emissions during transfer operations.
- At cessation of transfer operations:
 - Pipework, hoses, valves, gauges etc. are closed / capped / plugged etc.
- Monitoring of transfer operations will be undertaken by competent site personnel.

Checks will be recorded on the Daily Environmental Checklist by the Well Site Supervisor or their delegate.

8.4 Integrity Checks of Transfer and Containment Systems

To ensure that the integrity of transfer and containment systems is maintained throughout the operations, the following checks will be undertaken:

- Visual inspections of the integrity of:
 - Primary containment systems;
 - Secondary containment systems; and
 - Ancillaries including pipework, hoses, valves, gauges etc.

Checks will be recorded on the Daily Environmental Checklist by the Well Site Supervisor or their delegate.

8.5 Breaking Containment

Where practicable, the breaking of containment will be undertaken at the cessation of operations. Prior to the breaking of containment, the following checks are to be undertaken:

- Prior to breaking containment:
 - Where practicable, purging of the system has been undertaken; and
 - Pressurised systems have been depressurised.
- Following breaking containment:
 - Pipework, hoses, valves, gauges etc. are to be closed/capped/plugged etc.
- Spill response equipment is to be readily available.

Checks will be recorded on the Daily Environmental Checklist by the Well Site Supervisor or their delegate.

8.6 Purging of Equipment


Purging of equipment shall be undertaken prior to breaking containment by competent personnel in accordance with procedures using non-hazardous products.

The operator shall ensure that liquids used for purging shall be contained and disposed of in accordance with current legislation.

8.7 Plugging and Capping

Following breaking containment, pipework, hoses, valves, gauges etc. are to be closed / capped / plugged etc.

Prior to removal offsite, all pipework, hoses, valves, gauges etc. shall be checked by a competent person to ensure that they remain closed / capped / plugged etc. during transport.

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8.8 Spillage Response

All spillages are to be remediated immediately or as soon as practicable.

Used spillage equipment shall be disposed of in accordance with current legislation to an Environment Agency licenced waste disposal / waste treatment facility.

8.9 Reporting of Spillages

All spillages are to be reported to the Well Site Supervisor who will maintain a record of all spillages throughout the operation.


8.10 Emergency Response Plan

All personnel are to ensure that in the event of an incident occurring, the Emergency Response Plan shall be followed.

The Well Site Supervisor is to ensure that the plan is established, tested and any deficiencies documented and corrective action implemented.

8.11 Environmental Awareness Training

HHDL shall ensure that where required, site personnel shall receive environmental awareness training.

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9. CONTAINMENT OF EMISSIONS

There is the potential for vapours containing VOCs to be contained within pipes, hoses etc. used within crude oil transfer and loading operations.

Where practicable, pipes, hoses etc. will remain sealed until cessation of operations thus reducing the likelihood of potential emissions. Where possible, purging of the system is to be undertaken prior to breaking containment.

Tanks and pipework containing potential emissions are to be checked on a regular basis by the service provider and the Well Site Supervisor for leaks and / or damage to the containment system. All checks are to be recorded and a record held within the Well Site Supervisor's office and be available for review by regulatory bodies.

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10. MAINTENANCE AND SERVICING PROCEDURES

Maintenance and servicing of storage tanks, equipment, pipework, hoses etc. will be undertaken in accordance with the manufacturer's recommendations. HHDL will ensure that the risk of potential emissions from the breaking of containment during maintenance and servicing of equipment is reduced to a minimum and the potential for equipment failure is reduced.


Control measures to eliminate or reduce potential emissions include, but are not limited to:

- Purging equipment prior to breaking containment;
- Conducting maintenance or servicing inside buildings or covered areas where practicable;
- Containment of emissions; and
- Compliance with waste storage / disposal procedures.

The breaking of containment, specifically the breaking containment of pipework and the opening of stock tanks will ideally only be undertaken at the end of operations, to limit the potential for any odorous compounds to be emitted.

Pipework which has been the subject of transporting wellbore fluids and gasses will be subject to a purging process which will use either water or nitrogen. However, the exact method of purging and cleaning cannot be confirmed until an appropriate contractor has been appointed.

Stock tanks will also be subject to a purging and cleaning process. The purging process will be undertaken once the tank has been emptied, most likely at the end of operations and prior to cleaning. Again, the purging and cleaning process cannot be confirmed until the appropriate contractor has been appointed.

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11. EMERGENCY RESPONSE PROCEDURES

11.1 Emergency Action Plan

In the event of an incident occurring, the Well Site Supervisor is to comply with the Emergency Response Plan ensuring, if safe to do so, immediate action is undertaken to isolate, contain and prevent an emission of vapours from entering the atmosphere.


Spillages occurring during the transfer of crude oil are not to be hosed down or detergents used to remediate the spillage.

Remediation of the spillage is to be undertaken and the contaminated soil is to be removed, segregated and disposed of to an Environment Agency licensed facility as hazardous waste.

11.2 Spillage Response Equipment

Spillage response equipment is located onsite. During site inductions, personnel will be shown the location of spillage equipment, how to use the equipment correctly and how to store and use materials safely.

Spillage equipment is to be labelled and checked on a regular basis by the Well Site Supervisor and unserviceable items quarantined and replaced.

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12. MANAGEMENT ARRANGEMENTS

12.1 Monitoring and Recording

12.1.1 Daily Environmental Monitoring

The Well Site Supervisor is to undertake daily environmental monitoring and a record is to be held onsite. Environmental monitoring is to include checks on well site equipment, secondary containment systems and hazardous materials for visible signs of leaks, damage or contamination. The Environmental Checklist is to include components and equipment that have the potential to emit vapours containing VOCs including, but not limited to:

- Crude oil storage tanks, associated pipework and vent stacks;
- VOC scrubbers; and
- Pipes and hoses etc. used in the transfer of crude oil.

12.2 Training of Personnel

All personnel involved in the management of vapour recovery will receive training prior to commencement of their responsibilities. Training will be undertaken by HHDL and a record of training will be recorded and held on site.


12.3 Audit Requirements

Senior management will conduct periodic audits of compliance with the Vapour Recovery Plan and communicate environmental performance, significant findings and non-conformances.

The Well Site Supervisor will ensure sufficient priority is placed on undertaking audits and ensure that performance and findings from audits, inspections and non-conformances is communicated to site personnel and contractors.

12.4 Arrangements for Reviewing and Revising the Vapour Recovery Plan

HHDL will periodically review the Vapour Recovery Plan or when significant changes to operations or site equipment have occurred and amend where necessary in accordance with the HHDL document control procedure.

 HORSE HILL DEVELOPMENTS LTD	HORSE HILL DEVELOPMENTS LTD	HHDL-EPR-HHP-VRP-012	
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APPENDIX 1 - VAPOUR RECOVERY RISK ASSESSMENT

 HORSE HILL DEVELOPMENTS LTD	HORSE HILL DEVELOPMENTS LTD	HHDL-EPR-HHP-VRP-012	
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Scoring Criteria

In order to establish a risk rating for each Source-Pathway-Receptor (S-P-R) linkage both the Likelihood (Probability of Exposure) and Consequence have been issued a score.

The score is used in conjunction with Table 1.1 to provide an overall risk rating of the activity. All scores and risk ratings are provided on the basis that the mitigation measures are in place.

Likelihood	Descriptor
Very Low	Rarely encountered, never reported or highly unlikely.
Low	Infrequent Occurrences.
Medium	Can be expected to occur several times per year.
High	Repeated Occurrences.

Table 1.1: Scoring System - Likelihood

Consequence	Descriptor
Very Low	Slight environmental effect that does not exceed a regulatory standard.
Low	Minor environmental effect which may breach a regulatory standard but is localised to the point of release with no significant impact on the environment or human health.
Medium	Moderate, localised effect on people and the environment in the vicinity of the incident.
High	A major environmental incident resulting in significant damage to the environment and harm to human health.

Table 1.2: Scoring System - Consequence

The risk matrix presented in Table 1.3 derives a risk rating for each S-P-R linkage identified within this Crude Oil Vapour Risk Assessment.

Risk Rating		Consequence			
		Very Low	Low	Medium	High
Likelihood	Very Low	Insignificant	Not Significant	Low	Low
	Low	Not Significant	Low	Medium	Medium
	Medium	Low	Medium	Medium	High
	High	Low	Medium	High	High

Table 1.3: Risk Matrix

Crude oil vapour emission risks are assigned a Insignificant, Not Significant, Low, Medium or High risk rating and coded using a colour coded system. A description of each risk rating is presented in Table 1.4.

Risk Rating	Acceptable?	Descriptor
Insignificant	Acceptable	Near-certain that an incident will not occur. If it did occur the consequences would be too small to be worth consideration.
Not Significant	Acceptable	Near-certain that an incident will not occur. If it did occur the consequences would not be significant.
Low	Acceptable	Unlikely an incident will occur or give rise to anything more than a minor consequence on the immediate area.
Medium	Tolerable	The activity can only take place provided that any impacts remain localised and risk remediation is readily available.
High	Unacceptable	The risk must be further reduced before the activity can commence.

Table 1.4: Risk Rating Definitions


Horse Hill Well Site Receptors

ID	Potential Release Point (Hazard)	Potential Sources of Odour (Source)	Operations being carried out which may lead to odour emissions	Receptors	Pathway	Probability of Exposure	Consequence	Magnitude of Risk	Risk Management	Residual Risk	Responsible Person for Monitoring Release Point
HH-001	Crude oil storage tank vent stack - VOC scrubber not installed	Vapours containing VOCs (Vapours assessed as containing very low volumes of VOCs)	Storage of Crude Oil	RAMSAR Scheduled Ancient Monuments Special Protection Areas (SPA) Special Areas of Conservation (SAC) Local Wildlife Sites Sensitive Receptors: Households / Businesses Water Features Surrounding Environment (Wellsite Surface and Subsurface Soils & Groundwater Atmosphere	Air - Prevailing winds from south west (average statistics from the Met Office)	Low	Low	Low	<ul style="list-style-type: none"> Use of secondary containment systems / bunds. Monitor levels to prevent overfilling/spillage. Ensure connections to storage tanks fitted correctly. Pressure test equipment prior to use. Competent operators. Equipment to be serviced/maintained. Regular inspection of storage tank connections and pipes for failure or leaks. Personnel inducted/trained on emergency response procedures. 	Not Significant	Wellsite Supervisor
HH-002	Crude oil storage tank vent stack - VOC scrubber not installed	Vapours containing VOCs (Vapours assessed as containing very low volumes of VOCs)	Planned breaking of containment	RAMSAR Scheduled Ancient Monuments Special Protection Areas (SPA) Special Areas of Conservation (SAC) Local Wildlife Sites Sensitive Receptors: Households / Businesses Water Features Surrounding Environment (Wellsite Surface and Subsurface Soils & Groundwater Atmosphere	Air - Prevailing winds from south west (average statistics from the Met Office)	Low	Low	Low	<ul style="list-style-type: none"> Use of secondary containment systems / bunds. Where possible, plan for breaking containment operations at cessation of operations. Purge equipment prior to breaking containment. Plug/cap tanks, pipes, hoses etc. after breaking containment. Regular inspection of tanks, connections and pipes for failure or leaks. Competent operators. Personnel inducted/trained on emergency response procedures. 	Not Significant	Wellsite Supervisor
HH-003	Crude oil storage tank vent stack - VOC scrubber not installed	Vapours containing VOCs (Vapours assessed as containing very low volumes of VOCs)	Equipment failure	RAMSAR Scheduled Ancient Monuments Special Protection Areas (SPA) Special Areas of Conservation (SAC) Local Wildlife Sites Sensitive Receptors: Households / Businesses Water Features Surrounding Environment (Wellsite Surface and Subsurface Soils & Groundwater Atmosphere	Air - Prevailing winds from south west (average statistics from the Met Office)	Low	Low	Low	<ul style="list-style-type: none"> Use of secondary containment systems / bunds. Tanks and associated pipework protected. Equipment to be serviced/maintained. Regular inspection of connections and pipes for failure or leaks. Competent operators. Personnel inducted/trained on emergency response procedures. 	Not Significant	Wellsite Supervisor
HH-004	Crude oil storage tank vent stack - VOC scrubber installed	Vapours containing VOCs (Vapours assessed as containing very low volumes of VOCs)	Storage of Crude Oil	RAMSAR Scheduled Ancient Monuments Special Protection Areas (SPA) Special Areas of Conservation (SAC) Local Wildlife Sites Sensitive Receptors: Households / Businesses Water Features Surrounding Environment (Wellsite Surface and Subsurface Soils & Groundwater Atmosphere	Air - Prevailing winds from south west (average statistics from the Met Office)	Low	Low	Low	<ul style="list-style-type: none"> Use of secondary containment systems / bunds. Installation of VOC Scrubber. Monitor levels to prevent overfilling/spillage. Ensure connections to storage tanks fitted correctly. Pressure test equipment prior to use. Competent operators. Equipment to be serviced/maintained. Regular inspection of storage tank connections and pipes for failure or leaks. Personnel inducted/trained on emergency response procedures. 	Insignificant	Wellsite Supervisor
HH-005	Crude oil storage tank vent stack - VOC scrubber installed	Vapours containing VOCs (Vapours assessed as containing very low volumes of VOCs)	Planned breaking of containment	RAMSAR Scheduled Ancient Monuments Special Protection Areas (SPA) Special Areas of Conservation (SAC) Local Wildlife Sites Sensitive Receptors: Households / Businesses Water Features Surrounding Environment (Wellsite Surface and Subsurface Soils & Groundwater Atmosphere	Air - Prevailing winds from south west (average statistics from the Met Office)	Low	Low	Low	<ul style="list-style-type: none"> Use of secondary containment systems / bunds. Installation of VOC Scrubber. Where possible, plan for breaking containment operations at cessation of operations. Purge equipment prior to breaking containment. Plug/cap tanks, pipes, hoses etc. after breaking containment. Regular inspection of tanks, connections and pipes for failure or leaks. Competent operators. Personnel inducted/trained on emergency response procedures. 	Insignificant	Wellsite Supervisor
HH-006	Crude oil storage tank vent stack - VOC scrubber installed	Vapours containing VOCs (Vapours assessed as containing very low volumes of VOCs)	Equipment failure	RAMSAR Scheduled Ancient Monuments Special Protection Areas (SPA) Special Areas of Conservation (SAC) Local Wildlife Sites Sensitive Receptors: Households / Businesses Water Features Surrounding Environment (Wellsite Surface and Subsurface Soils & Groundwater Atmosphere	Air - Prevailing winds from south west (average statistics from the Met Office)	Low	Low	Low	<ul style="list-style-type: none"> Use of secondary containment systems / bunds. Installation of VOC Scrubber. Tanks and associated pipework protected. Equipment to be serviced/maintained. Regular inspection of connections and pipes for failure or leaks. Competent operators. Personnel inducted/trained on emergency response procedures. 	Insignificant	Wellsite Supervisor
HH-007	Crude oil storage tank vent stack - VOC scrubber not installed	Vapours containing VOCs (Vapours assessed as containing very low volumes of VOCs)	Back venting vapours containing VOCs	RAMSAR Scheduled Ancient Monuments Special Protection Areas (SPA) Special Areas of Conservation (SAC) Local Wildlife Sites Sensitive Receptors: Households / Businesses Water Features Surrounding Environment (Wellsite Surface and Subsurface Soils & Groundwater Atmosphere	Air - Prevailing winds from south west (average statistics from the Met Office)	Low	Low	Low	<ul style="list-style-type: none"> Use of secondary containment systems / bunds. Monitor levels to prevent overfilling/spillage. Ensure connections to storage tanks fitted correctly. Pressure test equipment prior to use. Competent operators. Equipment to be serviced/maintained. Regular inspection of storage tank connections and pipes for failure or leaks. Personnel inducted/trained on emergency response procedures. 	Not Significant	Wellsite Supervisor

ID	Potential Release Point (Hazard)	Potential Sources of Odour (Source)	Operations being carried out which may lead to odour emissions	Receptors	Pathway	Probability of Exposure	Consequence	Magnitude of Risk	Risk Management	Residual Risk	Responsible Person for Monitoring Release Point
HH-008	Crude oil storage tank vent stack - VOC scrubber installed	Vapours containing VOCs (Vapours assessed as containing very low volumes of VOCs)	Back venting vapours containing VOCs	RAMSAR Scheduled Ancient Monuments Special Protection Areas (SPA) Special Areas of Conservation (SAC) Local Wildlife Sites Sensitive Receptors: Households / Businesses Water Features Surrounding Environment (Wellsite Surface and Subsurface Soils & Groundwater Atmosphere	Air - Prevailing winds from south west (average statistics from the Met Office)	Low	Low	Low	<ul style="list-style-type: none"> Use of secondary containment systems / bunds. Installation of VOC Scrubber. Monitor levels to prevent overflowing/spillage. Ensure connections to storage tanks fitted correctly. Pressure test equipment prior to use. Competent operators. Equipment to be serviced/maintained. Regular inspection of storage tank connections and pipes for failure or leaks. Personnel inducted/trained on emergency response procedures. 	Insignificant	Wellsite Supervisor
HH-009	Road tanker used for the transfer of crude oil offsite	Vapours containing VOCs (Vapours assessed as containing very low volumes of VOCs)	Loading of Crude Oil	RAMSAR Scheduled Ancient Monuments Special Protection Areas (SPA) Special Areas of Conservation (SAC) Local Wildlife Sites Sensitive Receptors: Households / Businesses Water Features Surrounding Environment (Wellsite Surface and Subsurface Soils & Groundwater Atmosphere	Air - Prevailing winds from south west (average statistics from the Met Office)	Low	Low	Low	<ul style="list-style-type: none"> Use of secondary containment systems / bunds / drip trays. Ensure correct connections. Monitor levels to prevent overflowing/spillage. Ensure connections fitted correctly. Ensure inspection hatches closed prior to delivery. Pipes used within the transfer to be capped after use. Tanks sealed after transfer. Competent operators. Transfer operations monitored by site personnel. Equipment to be serviced/maintained. Regular inspection of connections and pipes for failure or leaks during transfer. Personnel inducted/trained on emergency response procedures. 	Not Significant	Road Tanker Operator / Wellsite Supervisor
HH-010	Road tanker used for the transfer of crude oil offsite	Vapours containing VOCs (Vapours assessed as containing very low volumes of VOCs)	Planned breaking of containment	RAMSAR Scheduled Ancient Monuments Special Protection Areas (SPA) Special Areas of Conservation (SAC) Local Wildlife Sites Sensitive Receptors: Households / Businesses Water Features Surrounding Environment (Wellsite Surface and Subsurface Soils & Groundwater Atmosphere	Air - Prevailing winds from south west (average statistics from the Met Office)	Low	Low	Low	<ul style="list-style-type: none"> Use of secondary containment systems / bunds. Where possible, plan for breaking containment operations at cessation of operations. Where possible, purge equipment prior to breaking containment. Plug/cap tanks, pipes, hoses etc. after breaking containment. Regular inspection of tanks, connections and pipes for failure or leaks. Competent operators. Personnel inducted/trained on emergency response procedures. 	Not Significant	Road Tanker Operator / Wellsite Supervisor
HH-011	Road tanker used for the transfer of crude oil offsite	Vapours containing VOCs (Vapours assessed as containing very low volumes of VOCs)	Equipment failure	RAMSAR Scheduled Ancient Monuments Special Protection Areas (SPA) Special Areas of Conservation (SAC) Local Wildlife Sites Sensitive Receptors: Households / Businesses Water Features Surrounding Environment (Wellsite Surface and Subsurface Soils & Groundwater Atmosphere	Air - Prevailing winds from south west (average statistics from the Met Office)	Low	Low	Low	<ul style="list-style-type: none"> Use of secondary containment systems / bunds. Tanks and associated pipework protected. Equipment to be serviced/maintained. Regular inspection of connections and pipes for failure or leaks. Competent operators. Personnel inducted/trained on emergency response procedures. 	Not Significant	Road Tanker Operator / Wellsite Supervisor
HH-012	Hoses and pipes used in the transfer of crude oil	Vapours containing VOCs (Vapours assessed as containing very low volumes of VOCs)	Planned breaking of containment	RAMSAR Scheduled Ancient Monuments Special Protection Areas (SPA) Special Areas of Conservation (SAC) Local Wildlife Sites Sensitive Receptors: Households / Businesses Water Features Surrounding Environment (Wellsite Surface and Subsurface Soils & Groundwater Atmosphere	Air - Prevailing winds from south west (average statistics from the Met Office)	Low	Low	Low	<ul style="list-style-type: none"> Use of secondary containment systems / bunds. Where possible, plan for breaking containment operations at cessation of operations. Where possible, purge equipment prior to breaking containment. Plug/cap tanks, pipes, hoses etc. after breaking containment. Regular inspection of tanks, connections and pipes for failure or leaks. Competent operators. Personnel inducted/trained on emergency response procedures. 	Not Significant	Road Tanker Operator / Wellsite Supervisor
HH-013	Hoses and pipes used in the transfer of crude oil	Vapours containing VOCs (Vapours assessed as containing very low volumes of VOCs)	Equipment failure	RAMSAR Scheduled Ancient Monuments Special Protection Areas (SPA) Special Areas of Conservation (SAC) Local Wildlife Sites Sensitive Receptors: Households / Businesses Water Features Surrounding Environment (Wellsite Surface and Subsurface Soils & Groundwater Atmosphere	Air - Prevailing winds from south west (average statistics from the Met Office)	Low	Low	Low	<ul style="list-style-type: none"> Use of secondary containment systems / bunds. Tanks and associated pipework protected. Equipment to be serviced/maintained. Regular inspection of connections and pipes for failure or leaks. Competent operators. Personnel inducted/trained on emergency response procedures. 	Not Significant	Road Tanker Operator / Wellsite Supervisor
HH-014	Various - within the site boundary	Vapours containing VOCs from spillages of crude oil (Vapours assessed as containing very low volumes of VOCs)	Spillages	RAMSAR Scheduled Ancient Monuments Special Protection Areas (SPA) Special Areas of Conservation (SAC) Local Wildlife Sites Sensitive Receptors: Households / Businesses Water Features Surrounding Environment (Wellsite Surface and Subsurface Soils & Groundwater Atmosphere	Air - Prevailing winds from south west (average statistics from the Met Office)	Low	Low	Low	<ul style="list-style-type: none"> Use of secondary containment systems / portable bunds / drip trays. Spillages to be remediated as soon as reasonably practicable. Where practicable, use of vacuums to remediate spillages. Notification to emergency services of commencement of operations on mobilisation. Used spillage equipment to be segregated and contained to prevent odour prior to offsite disposal. Competent operators. Personnel inducted/trained on emergency response procedures. 	Not Significant	Wellsite Supervisor

Horse Hill Well Site Receptors

Receptor Type	Search Radius	Name	Distance from Site	Direction from Site	Grid Reference	Name	Distance from Site	Direction from Site	Grid Reference
RAMSAR	10km								
Special Areas of Conservation (SAC)	10km	Mole Gap to Reigate Escarpment	8.00 km	North	TQ 25011 51693				
Special Protection Areas (SPA)	10km								
Marine Protection Areas (MPA)	10km								
Sites of Special Scientific Interest (SSSI)	2km								
Scheduled Ancient Monuments	2km								
National Nature Reserves	2km								
Local Nature Reserves	2km	Edolphs Copse	1.69 km	Southwest	TQ 23909 42410				
Local Wildlife Sites	2km								
Sensitive Receptors: Households / Businesses	2km	Wrays Farm House	0.32km	East	TQ 25610 43624	Wrays Wood	0.36km	North	TQ 25295 44030
		Five Acres	0.34km	East	TQ 25577 43493	Sunny Acres Farm	1.27km	Northeast	TQ 26030 44800
		High Trees	0.34km	North	TQ 25404 43948	Ingleside Dwellings	1.27km	Southeast	TQ 26465 43074
		Wrays Farm	0.39km	East	TQ 25708 43528	Sidlow Manor	1.28km	North	TQ 25525 44898
		Rushmeads	0.40km	Southeast	TQ 25708 43294	Duxhurst Lane	1.32km	North	TQ 25431 45019
		Rushmeads Cottage	0.42km	Southeast	TQ 25604 43287	Duxhurst Farm	1.33km	North	TQ 25479 44941
		Wrayswood	0.45km	North	TQ 25234 44087	Duxhurst Cottages	1.34km	North	TQ 25197 44980
		Lomond	0.49km	Southeast	TQ 25727 43456	Nuthurst Farm	1.37km	Northeast	TQ 26030 44800
		Phoenix Lodge	0.50km	Northwest	TQ 24838 43967	Rose Cottage Farm	1.37km	Northwest	TQ 23934 44139
		Oakwood	0.50km	North	TQ 25135 44137	Clifton Cottage Farm	1.37km	West	TQ 23842 43846
		Rowgardens Wood	0.53km	Northwest	TQ 24654 43804	Edolph Lodge	1.40km	Southwest	TQ 24490 42334
		Horse Hills Farm	0.54km	North	TQ 25127 44175	Edolphs Farm	1.40km	Southwest	TQ 24345 42370
		Brittleware Farm	0.63km	Southwest	TQ 24629 43274	Moat Farm	1.43km	Northeast	TQ 26348 44596
		Collendean Farm	0.65km	Northwest	TQ 24661 43997	Nutley Dean Business Park	1.44km	Northwest	TQ 24164 44635
		Lincoln Lodge	0.66km	North	TQ 25235 44302	Hookwood Manor	1.46km	Southeast	TQ 26538 42807
		North Lodge	0.71km	Northeast	TQ 25713 44213	Gatwick Business Park	1.47km	Southeast	TQ 26420 42624
		Ferriers Grange	0.72km	East	TQ 26021 43549	Ridgewood Stud	1.49km	North	TQ 25016 45106
		Greenstead Hall Farm	0.72km	Southwest	TQ 24671 43067	Horley	1.51km	Northeast	TQ 26684 44252
		Rowgarth	0.72km	West	TQ 24489 43707	Spartan Green Farm	1.52km	West	TQ 23737 43138
		Wrays	0.74km	Northeast	TQ 25784 44203	Crutchfield Cottages	1.53km	Northeast	TQ 26113 44950
		Witherow Farm	0.75km	North	TQ 25419 44380	Hookwood Lodge	1.54km	Southeast	TQ 26695 42927
		Woodland Farm	0.80km	East	TQ 26107 43744	Chantersluer Lodge	1.54km	Northwest	TQ 23706 43993
		Little Wrays	0.80km	Northeast	TQ 25861 44204	Hookwood	1.55km	Southeast	TQ 26586 42720
		Crutchfield Farm	0.81km	Northeast	TQ 25928 44137	Cams Farm	1.57km	Southeast	TQ 26391 42447
		Derrinabrin Farm	0.82km	Southwest	TQ 24558 43048	Horseshoe Farm	1.62km	Northeast	TQ 26145 45023
		Oaklodge	0.83km	East	TQ 26119 43663	Duxhurst	1.63km	Northeast	TQ 25802 45179
		Khan Yunus	0.86km	Northeast	TQ 26052 44049	Johnsons Common	1.66km	Southwest	TQ 24410 42095
		Ferriers Forge	0.87km	Southeast	TQ 26124 43311	Nutleydean Farm Cottage	1.66km	Northwest	TQ 23897 44653
		Rosewood Cottage	0.88km	Southeast	TQ 26123 43277	Green Farm Cottage	1.67km	Northeast	TQ 25875 45208
		Oakside	0.92km	East	TQ 26211 43517	Little Chantersluer	1.69km	West	TQ 23572 44031
		Crutchfield Brae	0.95km	Northeast	TQ 25672 44505	Whitegates	1.70km	Southeast	TQ 26859 42920
		Norwood Hill				Cherry Tree Farm	1.71km	Northwest	TQ 23603 44232
		• Dwelling off Collendean Lane	0.95km	West	TQ 24258 43690	Wolvers Home Farm	1.72km	North	TQ 25056 45353
		• The Morgans	1.03km	Southwest	TQ 24221 43248	Ridgefield House	1.77km	Southwest	TQ 23615 42767
		• Roundabout Cottage	1.36km	West	TQ 23839 43586	Hookwood Cottage	1.78km	East	TQ 26356 43397
		• Norwood Hill House	1.42km	West	TQ 23788 43235	Willowdene	1.79km	Southeast	TQ 26932 42869
		The Lodge	0.96km	East	TQ 26256 43525	Chantersluer Farm	1.79km	Northwest	TQ 23435 43878
		Roundwood Lodge	0.99km	North	TQ 25278 44637	Lower Duxhurst Farm	1.80km	Northeast	TQ 26107 45240
		Hops Lodge	0.99km	East	TQ 26293 43716	Ricketts Wood	1.80km	Southwest	TQ 23460 43069
		Dwellings on Reigate Road				Drummond House	1.82km	Southwest	TQ 23472 42993
		• Place of Worship	0.99km	East	TQ 26188 44032	Little Mynthurst Farm	1.82km	Northwest	TQ 23650 44586
		• 31 Reigate Road	1.23km	Northeast	TQ 26262 43883	Little Deeping Farm	1.86km	Southeast	TQ 26188 41938
		Spencers	1.03km	South	TQ 25022 42529	Wolvers Home	1.87km	North	TQ 24918 45483
		Roundwood	1.08km	North	TQ 25278 44721	Charwood Place	1.90km	Southwest	TQ 24357 41848
		Recycling Site	1.09km	Northeast	TQ 25960 44510	Povey Cross Farm	1.91km	Southeast	TQ 26692 42275
Westlands Farm	1.15km	Southeast	TQ 26332 43076	Ricketts Wood Cottages	1.95km	Southwest	TQ 23384 42859		
Hopps House	1.16km	East	TQ 26446 43718	Norwood Place Farm	1.96km	Northwest	TQ 23435 44495		
Hookwood House	1.17km	Southeast	TQ 26427 43279	Deanoak Cottage	2.00km	Northwest	TQ 24442 45461		
Farmfield Hospital	1.24km	Southeast	TQ 25788 42431	Longfield House	2.00km	West	TQ 23216 43317		

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APPENDIX 2 - SCRUBBER SPECIFICATION

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AAC DFV200 - Drum Filter Vessel

The AAC DFV200 Drum Filter Vessel is a low cost, simple-to-install, single-use Filter that is designed for VOC Abatement in vapour and low flow rate applications.

This simple-to-install Filter is ideal for the efficient removal of organic and inorganic odours, such as formaldehyde, ammonia and hydrogen sulphide from the air or gas streams.

The AAC DFV200 Drum Filter requires no maintenance and is manufactured in mild steel with optional pallet mounting for easy handling. Polypropylene units are also available for highly corrosive applications (can also be supplied in 316 stainless steel and ducted spigot connections).

*** NOTE:**

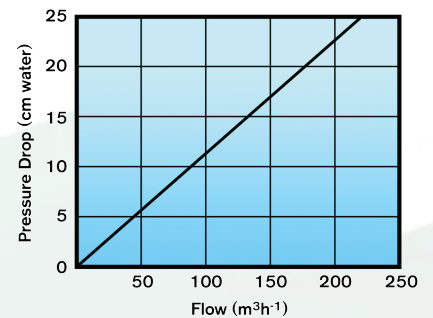
The AAC DFV200 Drum Filter Vessel can be installed in series for longer contact and higher efficiencies.



AAC DFV200 - Drum Filter Vessel

Features & Benefits:

- No maintenance required by the operator
- Suitable for use with a variety of specialist Activated Carbon
- Can be installed in series or parallel for longer contact and higher efficiencies
- Robust mild steel construction, internally lined for chemical resistance
- Polypropylene units are available for highly corrosive applications
- Optional pallet mounting for easy handling
- Low cost
- Easy to install
- Readily available
- Easy to dispose




Typical Applications:

- Storage Tank Vents
- Vacuum Pump Discharges
- Road Tanker Transfer Stations
- Blood Storage Tanks
- Animal Rendering Plants & Odour Removal in Dairies

We can supply low cost, project-specific coal and coconut-based Activated Carbon for the AAC DFV200 Drum Filter to provide the optimum performance for each application.

*** Absorber Data**

Maximum Flow	250m ³ /h
Height	90cm
Diameter	58cm
Gross Weight	120kg
Maximum Pressure	7.5 psi
Connections	2" BSP Female
Material of Construction	Mild steel/Propylene/ Stainless Steel

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APPENDIX 3 - ENVIRONMENTAL CHECKLIST

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Environmental Checklist				
No.	Equipment Checked:			
01	Signs of visible Damage/Leaks:	YES	<input type="checkbox"/>	NO
	Comments:			
No.	Equipment Checked:			
02	Signs of visible Damage/Leaks:	YES	<input type="checkbox"/>	NO
	Comments:			
No.	Equipment Checked:			
03	Signs of visible Damage/Leaks:	YES	<input type="checkbox"/>	NO
	Comments:			
No.	Equipment Checked:			
04	Signs of visible Damage/Leaks:	YES	<input type="checkbox"/>	NO
	Comments:			
No.	Equipment Checked:			
05	Signs of visible Damage/Leaks:	YES	<input type="checkbox"/>	NO
	Comments:			
No.	Equipment Checked:			
06	Signs of visible Damage/Leaks:	YES	<input type="checkbox"/>	NO
	Comments:			
No.	Equipment Checked:			
07	Signs of visible Damage/Leaks:	YES	<input type="checkbox"/>	NO
	Comments:			

No.	Equipment Checked:				
08	Signs of visible Damage/Leaks:	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
	Comments:				
No.	Equipment Checked:				
09	Signs of visible Damage/Leaks:	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
	Comments:				
No.	Equipment Checked:				
10	Signs of visible Damage/Leaks:	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
	Comments:				
No.	Equipment Checked:				
11	Signs of visible Damage/Leaks:	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
	Comments:				
No.	Equipment Checked:				
12	Signs of visible Damage/Leaks:	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
	Comments:				
No.	Equipment Checked:				
12	Signs of visible Damage/Leaks:	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
	Comments:				

Date:		Time:	
Service Company Supervisor:			
	<i>(Print Name)</i>		<i>(Signature)</i>
Wellsite Supervisor:			
	<i>(Print Name)</i>		<i>(Signature)</i>