# IPPC Permit Application for Metalco Ltd Waste Management Facility

Our Ref: PRJ-ENV125

Client Ref: IP0002/13

**IPPC Form B Report**

**Consolidated Application**

**July 2015**

ais ENVIRONMENT

# Quality Assurance

IPPC Permit Application for Metalco Ltd Waste Management Facility

Client: Metalco Ltd

## Revision Schedule

| | |
|---|---|
| Version | Consolidated Application |
| Date | July 2015 |
| Authors | Melissa Abdilla; Ruth DeBrincat Tabone; Mark Zammit* |

*Mark Zammit contributed to parts of this report but he is no longer employed with the Contractor.

## Amendment Record

| Issue | Amendment | Date |
|---|---|---|
| Issue 1 | First draft | 05/07/2013 |
| Issue 2 | Second draft- Amendments merged following feedback received from MEPA dated 31/01/2014 | 17/03/2014 |
| Issue 3 | Third draft – Amendments merged following feedback received from MEPA dated 30/06/2014 | 06/08/2014 |
| Issue 4 | Fourth draft – Amendments merged following feedback received from MEPA dated 19/09/2014 | 19/09/2014 |
| Issue 5 | Fifth draft – Amendments merged following feedback received from MEPA dated 20/11/2014 | 22/12/2014 |
| Issue 6 | Sixth draft – Amendments merged following feedback received from MEPA dated 25/02/2015 | 23/03/2015 |
| Issue 7 | Seventh draft – Amendments merged following feedback received from MEPA dated 25/02/2015 | 13/04/2015 |
| Issue 8 | Consolidated Application | 22/07/2015 |

## Signatures

| Approval Level | Name | Signature |
|---|---|---|
| Internal Check | Ruth DeBrincat Tabone |  |
| Internal Approval | Mario Schembri |  |

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# 1. Introduction

This report provides information on the activities and features at Metalco Ltd. waste management facility in their pursuit for an Integrated Pollution Prevention and Control (IPPC) Permit Application.

The requirement for an IPPC permit stems from the expansion of activities related to Categories of activities listed in Schedule I of LN 10 of 2013, namely:

- *5.3 (b)(iv) Recovery, or a mix of recovery and disposal, of non-hazardous waste with a capacity exceeding 75 tonnes per day involving treatment in shredders of metal waste, including waste electrical and electronic equipment and end-of-life vehicles and their components*; and
- *5.5 Temporary storage of hazardous waste not covered under point 5.4 pending any of the activities listed in points 5.1, 5.2, 5.4 and 5.6 with a total capacity exceeding 50 tonnes, excluding temporary storage, pending collection, on the site where the waste is generated.*

Other waste management activities are also carried out.

This report aims to provide the following details as pertinent to Part B of the IPPC Application:

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## 2. Non-Technical Description

Metalco Ltd. operates a waste management facility of a variety of waste streams with premises located in the outskirts of Luqa, Malta. Due to the continuous expansion of activities, an IPPC permit is required for the (i) treatment in shredders in the recovery of non-hazardous metal waste with a capacity exceeding 75 tonnes per day, and (ii) the temporary storage of hazardous waste that is expected to exceed the 50 tonnes capacity threshold. The metal to be shredded involves mainly non-ferrous metals, including waste electrical and electronic equipment (WEEE). The hazardous waste storage will consist of WEEE, liquid and powder soaps, creams, toothpastes and similar organic products, and spent batteries. The facility is however responsible for the management of other types of non-hazardous and hazardous waste.

The company is regularly entrusted by the Customs Authority and other local private companies for the destruction of sensitive consignments such as counterfeit items including cigarettes and clothes, and the destroyed materials are finally disposed of at Magħtab or Għallis landfills. The treatment of counterfeit or out-dated liquid and powder soaps, creams and toothpastes is also being planned, with waste products proposed to be incinerated or exported.

Mattresses are the only type of bulky waste treated on site. These are first shredded to separate different components. Metal parts are transferred with the metal waste stream, while foam is disposed of at Magħtab landfill.

End-of-life tyres are shredded to separate the rubber from the metal parts. The rubber granules are sold for flooring, while metal parts are transferred to other metal waste streams.

The processing of WEEE involves their dismantling and separation of the various components. PC boards, hard drives, power supplies and other components bearing hazardous components are temporarily stored for export. Wires are granulated and the metal parts are separated from the plastic covering. Each fraction is then transferred to its respective waste stream with materials from other sources. Fridges, freezers, air-conditioners and geysers are not processed, but only stored temporarily.

One of the most prominent activities carried out is the storage and processing of waste metals. Delivered waste metals are sorted into ferrous and non-ferrous materials, which are stored outdoors or in a steel shed. Non-ferrous metals include aluminium, copper, bronze and brass, which are processed according to type and grade. Different fractions of non-ferrous metals are shredded, baled or left unmodified until enough material is accumulated for export. Ferrous material is not processed but transported to another waste management facility for export. Metal parts from the processing of WEEE, end-of-life tyres and mattresses are also included in this waste stream.

Packaging waste consists of plastic, paper and cardboard, which are generally baled and sent for recycling. Paper and cardboard may also be sold to be used as animal bedding.

Spent batteries are temporarily stored indoors in containers acting as a bund, and then transported to an approved waste management facility.

The site is also served with two office spaces, a staff room and sanitary facilities.

# 3. Site maps and reports

## 3.1. Site history and uses

The waste management facility is located in the outskirts of Luqa, close to Marsa and operates at the address 48, Scrap Lane, Valletta Road, Luqa LQA 1764 as shown in Section 3.2. It has an area of approximately 5,070m² and forms part of a larger area of 18,100m² of land.

The facility was established in the early 1940s and has been in operation as Metalco Ltd since September 1987. It operates as an offshoot of Fenech & Cremona. Originally the firm was established by the late Anthony Cremona right after World War I where Antonio Cremona started recycling hides, glass and metals, which were exported to Italy. At that time, the company's name was Malta Scrap Iron and Metal Company. Following Antonio Cremona's death in 1963, his wife Lorenza included her brother Joseph Fenech as a partner in the firm and Fenech & Cremona was established.

Today, the company specialises in the management of various types of waste including ferrous and non–ferrous metal scrap, WEEE, textiles, mattresses, packaging waste, tyres, wood, toners, batteries, and the destruction of confidential and counterfeit products.

The site was originally occupied by a farmhouse with a garden and by inference from the surrounding land use it is likely that the land could have been used for agricultural purposes. The area towards the north, adjacent to the building also shows signs of surface quarrying.

The site layout consists of designated areas where sorting, processing and storage of different waste streams are carried out, both indoors and outdoors. The first area which is reached upon accessing Scrap Lane consists of a quadrangular shed with panel roofing and an internal courtyard. This structure is used for the storage of scrap, and the processing and storage of hazardous waste in separate areas. A cistern is also being proposed to be used for the processing of liquid soaps.

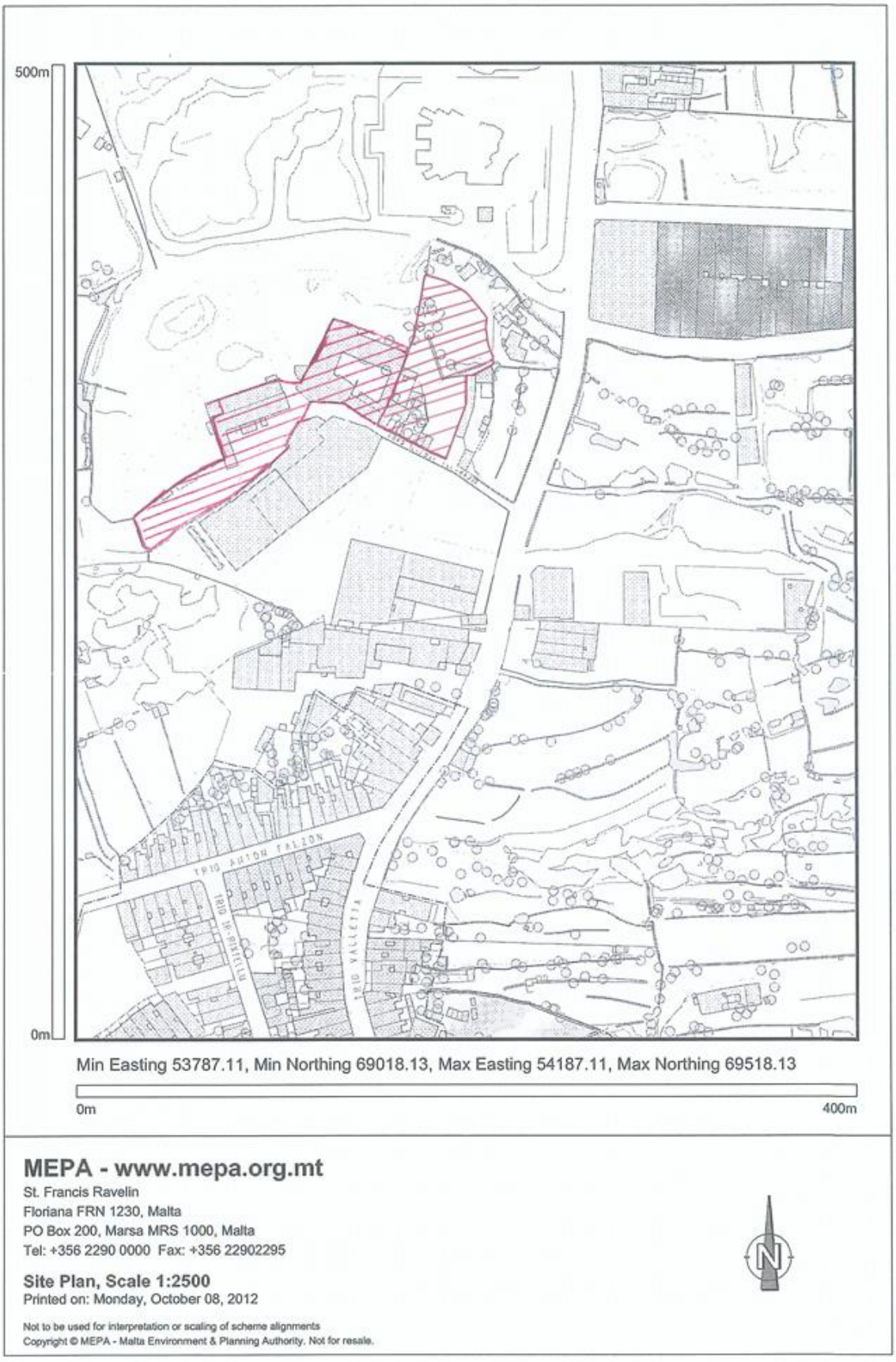
Further inside the premises, a building houses an office space and a staff room, and two separate internal areas dedicated for the storage of WEEE, and textiles and packaging wastes. Another office space is found opposite the building, with adjacent sanitary facilities.

The outdoor areas next to the building are largely used as a scrap storage area, and hold the generators and machinery used for shredding and baling.

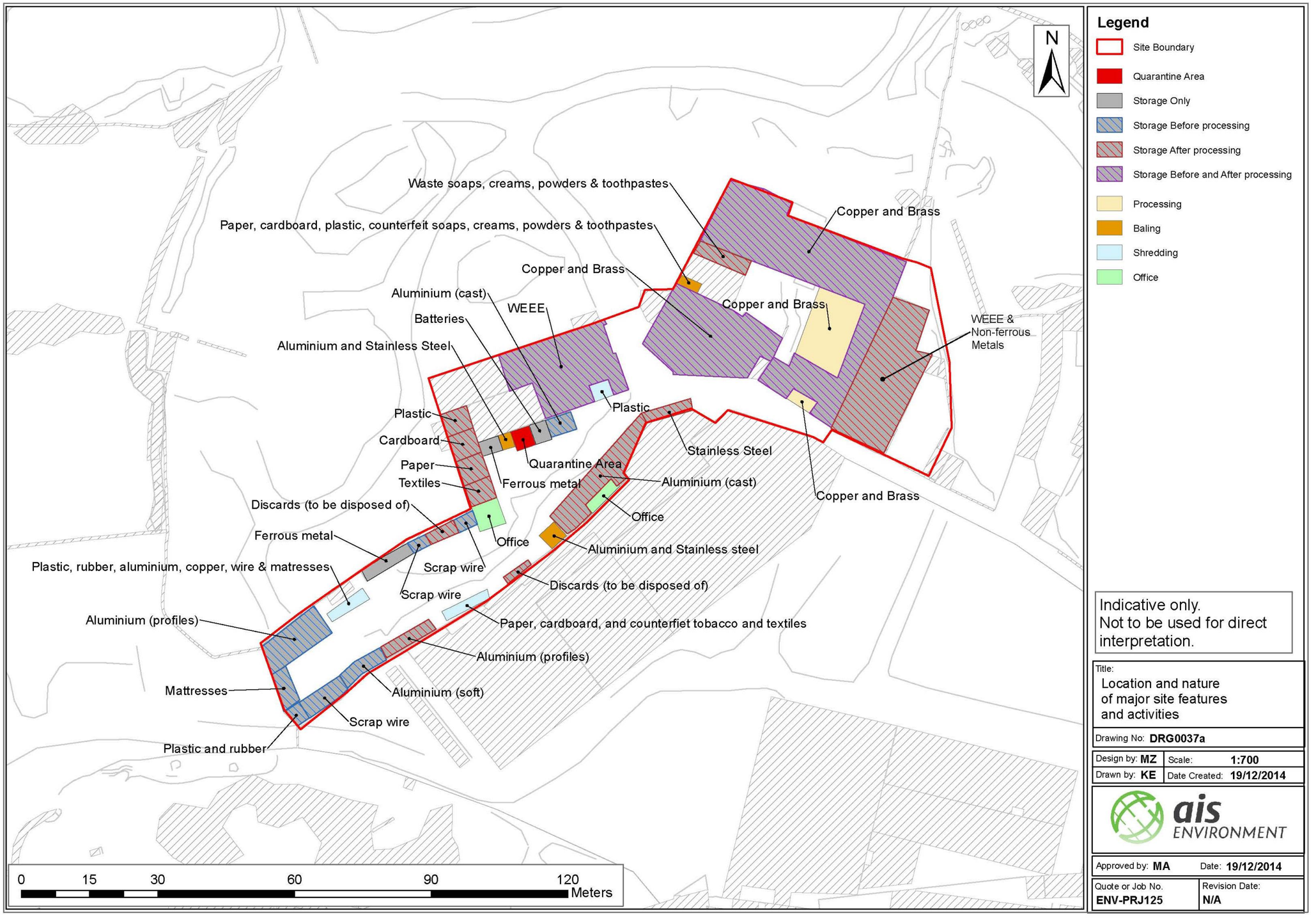
The ground of all parts of the development is covered with an impermeable concrete layer to prevent any contamination of the underlying rock strata and groundwater.

Site layout plans is provided in Section 3.3.

## 3.2. Site Plan showing location of installation



### 3.3. Site Layout Plans showing nature of major site features and activities



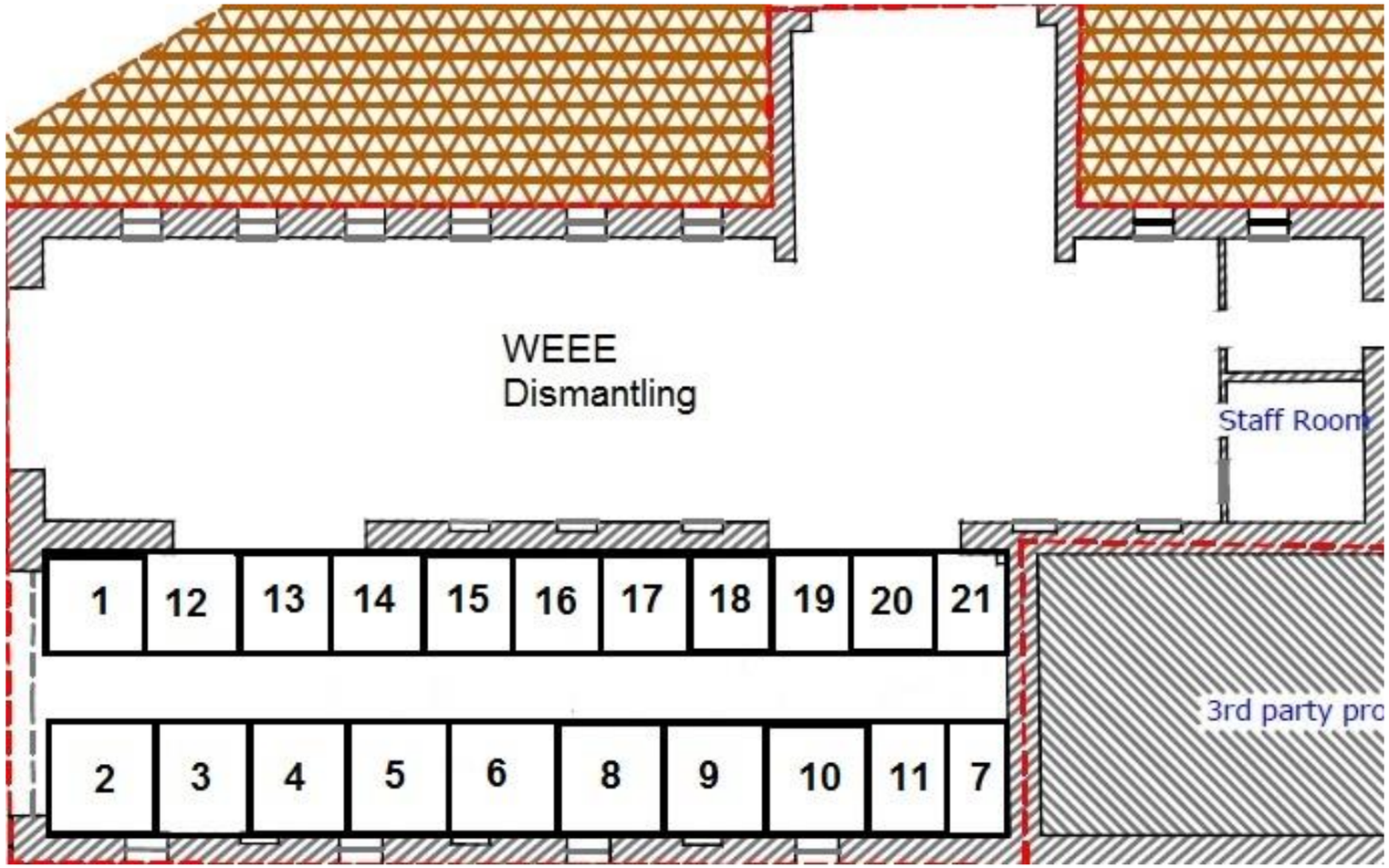
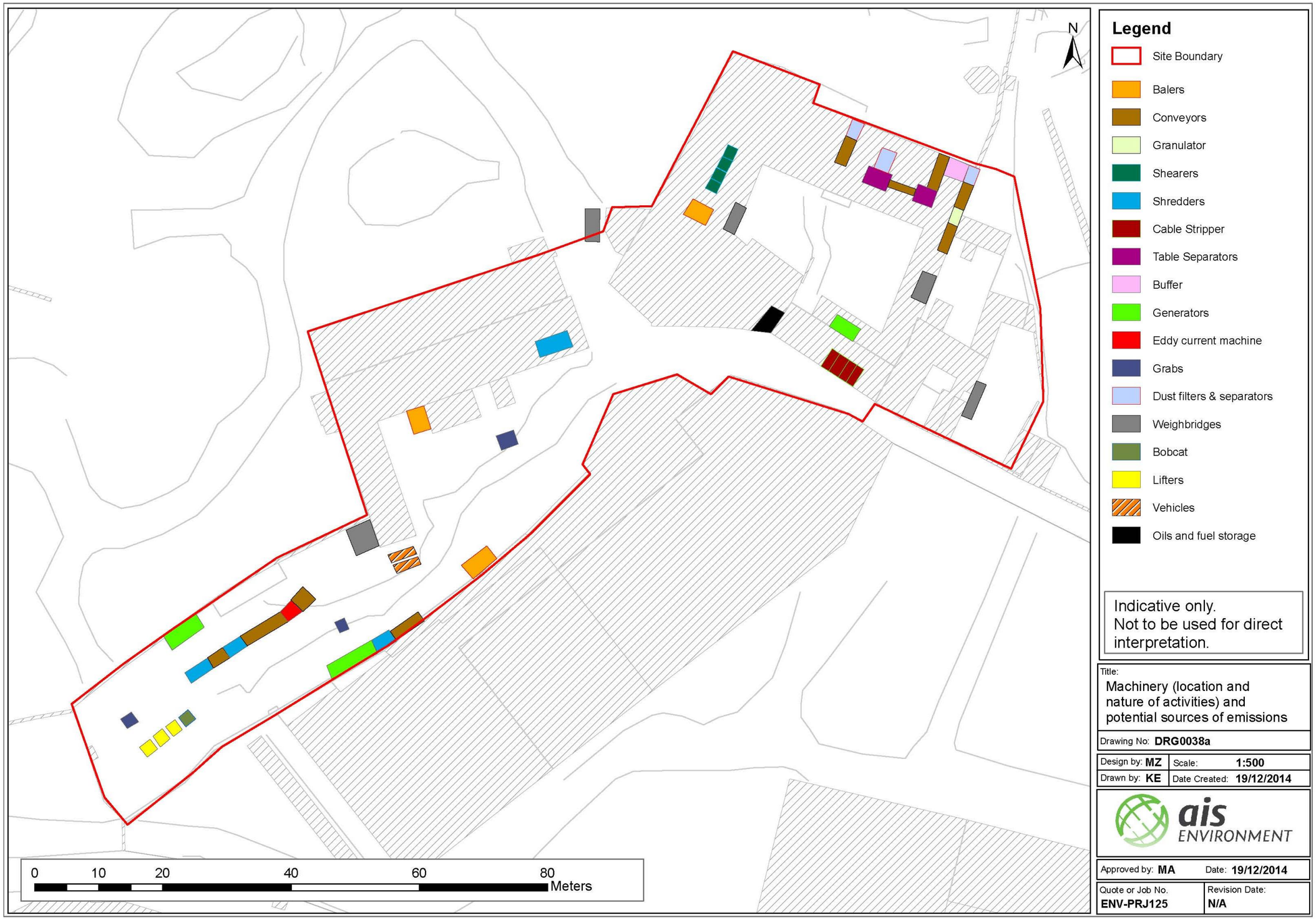
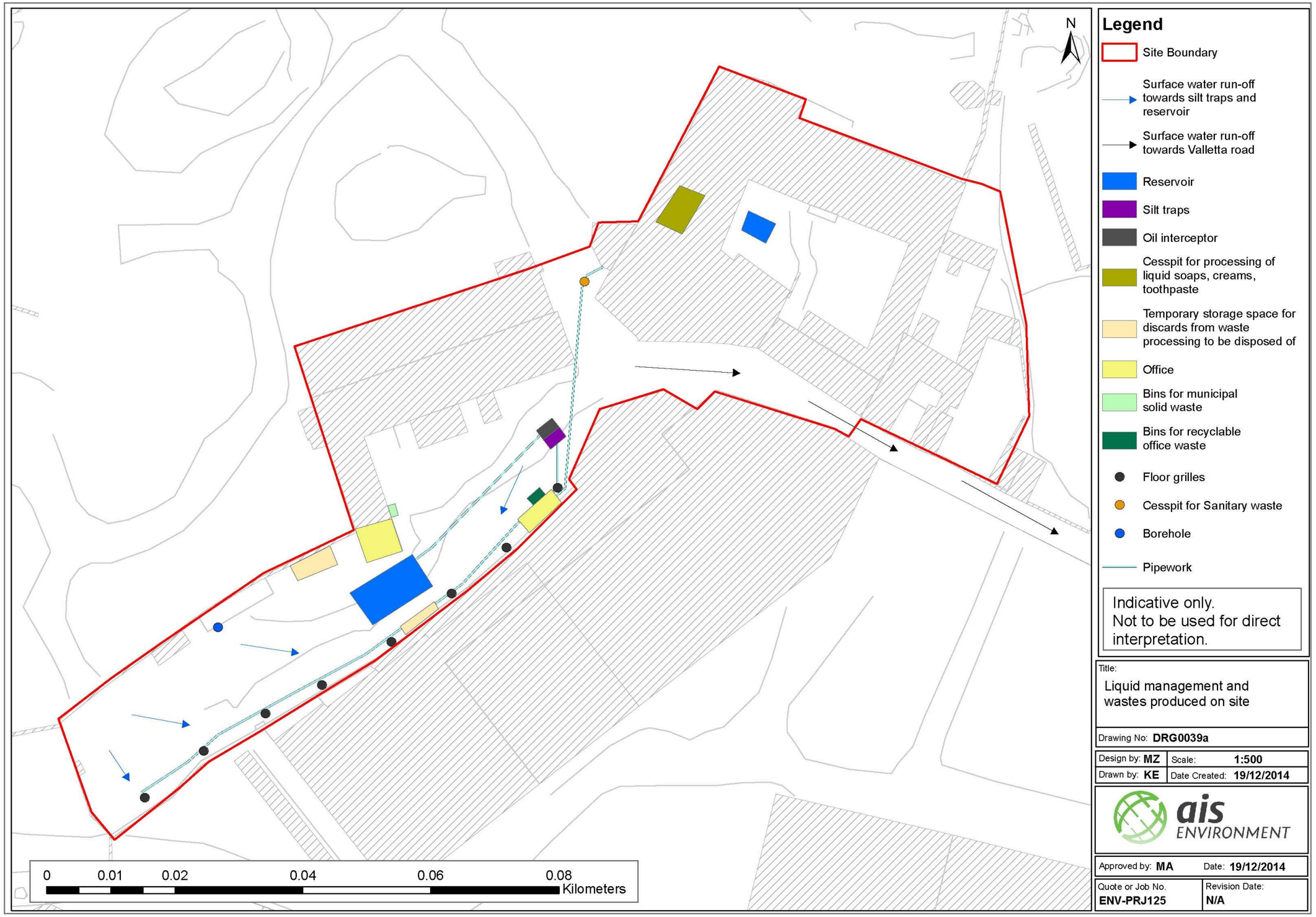



Figure 1 Site Layout Plans showing temporary storage only for WEEE

**Legend:**

1: Computer Towers
2: Monitors and televisions
3: Printers and Scanners
4: Washing Machines
5: Cookers
6: Fridges and freezers
7: UPS
8: Telephones
9: Servers
10: Heaters
11: Laptops and notebooks
12: Modems and routers
13: Large appliances which automatically deliver products or money
14: Geezers
16: Remote controls
17: Dishwashers
18: Electric Pumps
19: Large Printing machines
20. Clothes Dryers
21. Dehumidifying equipment
16: Remote controls


N
0
10
20
40
60
80
Meters
Legend
Site Boundary
Balers
Conveyors
Granulator
Shearers
Shredders
Cable Stripper
Table Separators
Buffer
Generators
Eddy current machine
Grabs
Dust filters & separators
Weighbridges
Bobcat
Lifters
Vehicles
Oils and fuel storage
Indicative only.
Not to be used for direct interpretation.
Title:
Machinery (location and nature of activities) and potential sources of emissions
Drawing No: DRG0038a
Design by: MZ
Scale: 1:500
Drawn by: KE
Date Created: 19/12/2014
ais ENVIRONMENT
Approved by: MA
Date: 19/12/2014
Quote or Job No.
ENV-PRJ125
Revision Date:
N/A


N
Legend
Site Boundary
Surface water run-off towards silt traps and reservoir
Surface water run-off towards Valletta road
Reservoir
Silt traps
Oil interceptor
Cesspit for processing of liquid soaps, creams, toothpaste
Temporary storage space for discards from waste processing to be disposed of
Office
Bins for municipal solid waste
Bins for recyclable office waste
Floor grilles
Cesspit for Sanitary waste
Borehole
Pipework
Indicative only.
Not to be used for direct interpretation.
0 0.01 0.02 0.04 0.06 0.08
Kilometers
Title:
Liquid management and wastes produced on site
Drawing No: DRG0039a
Design by: MZ
Scale: 1:500
Drawn by: KE
Date Created: 19/12/2014
ais ENVIRONMENT
Approved by: MA
Date: 19/12/2014
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ENV-PRJ125
Revision Date:
N/A

# 4. Environmental Management System

## 4.1. Management and Reporting Structure

The person who will be responsible for managing environmental aspects of the installation is Mr Mario Cremona, who is also a Director and the Technically Competent Person.

The Curriculum Vitae of Mr Cremona is provided in Appendix I.

Mobile number: +356 9901 7071

## 4.2. Environmental Policy

Metalco Ltd commits itself to protect the environment and to prevent and minimise any potential impact arising from the operations of the facility on the physical and social environment and in particular to take every appropriate action to:

- Make efficient use of resources (especially water and energy),
- Employ recycling practices as much as possible,
- Minimise the generated waste,
- Make use of biodegradable chemicals,
- Minimise use of solvents,
- Employ noise and vibration reduction measures,
- Control dust and odour emissions to the environment,
- Comply with relevant authorisations for discharges,
- Exercise caution when working in vicinity of areas of ecological, geological, cultural heritage and agricultural importance,
- Prevent pollution of land and incidents leading to pollution,
- Protect the surface and groundwater resources,
- Reduce the impact on the traffic.

In order to achieve this aim, Metalco Ltd shall motivate, train and empower the employees to apply this policy. This policy, driven by the Technically Competent Management, establishes a framework for a management approach designed to promote environmental excellence of work practices and performance. The employees and any sub-contractors shall undertake their responsibilities in compliance with the requirements of all applicable environmental legislation.

## 4.3. Environmental Objectives and Targets

1. The aim of Metalco is to extract the maximum resources out of the waste material delivered to their facilities both through their collection operations and from deliveries by third parties. This can be achieved through adequate processing, keeping in mind the waste

hierarchy with special attention to waste minimisation followed by reuse, recovery and recycling.

2. The aim of the facility is to have a zero waste operation whereby only unrecoverable material is sent for disposal. The level of performance of the facility is dependent upon the incoming material. Hence the first step to reduce waste is through the acceptance of good quality scrap for the purpose of their operation. This can be achieved through strict inspection for any oil contamination and for other unacceptable materials like stones, wood and glass prior to loading (in the case of internal collection operation) or prior to accepting the material at the gate.

3. Innovation also plays an important role in moving towards a zero waste operation. This can be achieved through the investigation of alternative reuse, reduction, recycling routes for current non-usable material currently being disposed of at landfill or incinerated.

4. Metalco aims to reduce sound pollution arising from its daily operations through noise abatement measures when purchasing any new equipment.

5. The applicant will adhere to local health and safety regulations and will ensure that employees will keep with all health and safety practices whilst carrying out work related to the activities of Metalco. In order to promote awareness within its team, Metalco will ensure that all employees attend health and safety courses.

### 4.4. Environmental Management Programme (EMP)

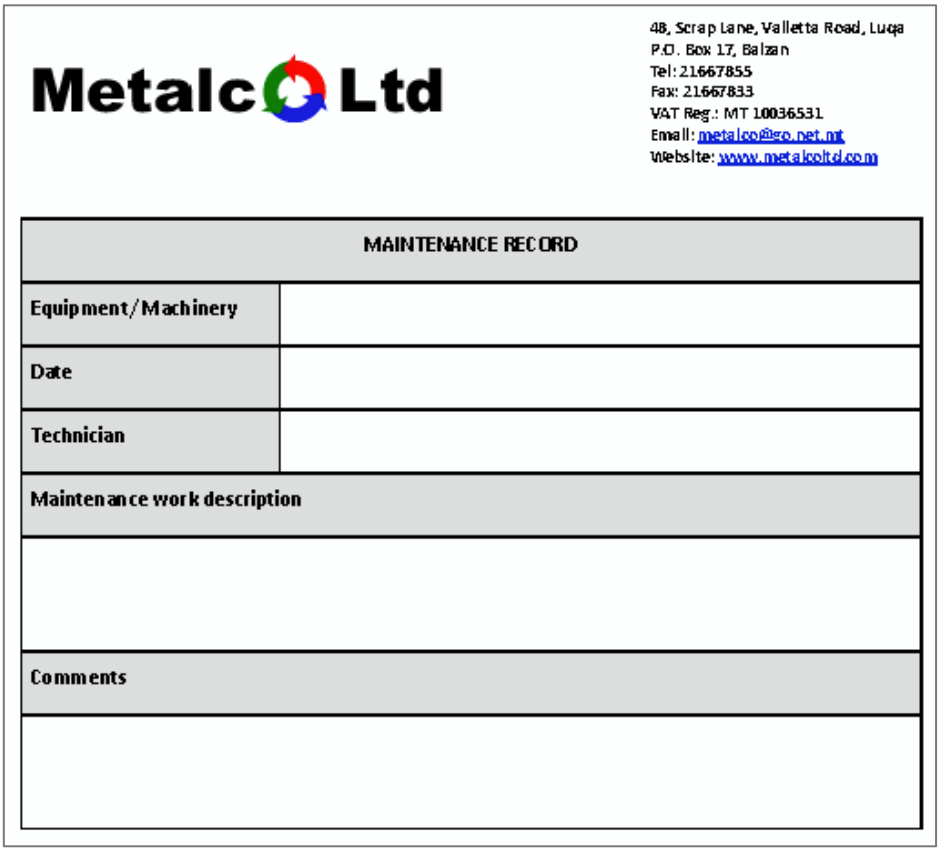
It is the responsibility of the directors of Metalco to ensure that the projected objectives are adhered to. These targets are to be reviewed and revised on an annual basis. Modifications from set objectives need to be flagged during the audit process with reasons pertaining to such modifications being made in writing.

### 4.5. Documentation

The following records shall be kept:

- Maintenance records,
- Staff training,
- Incidents and corrective action,
- Recording of environmental performance (fuel, water and electricity usage),
- Complaints,
- Movements of waste on and/or off the site.

Figure 2 till Figure 7 show templates for the above mentioned records.



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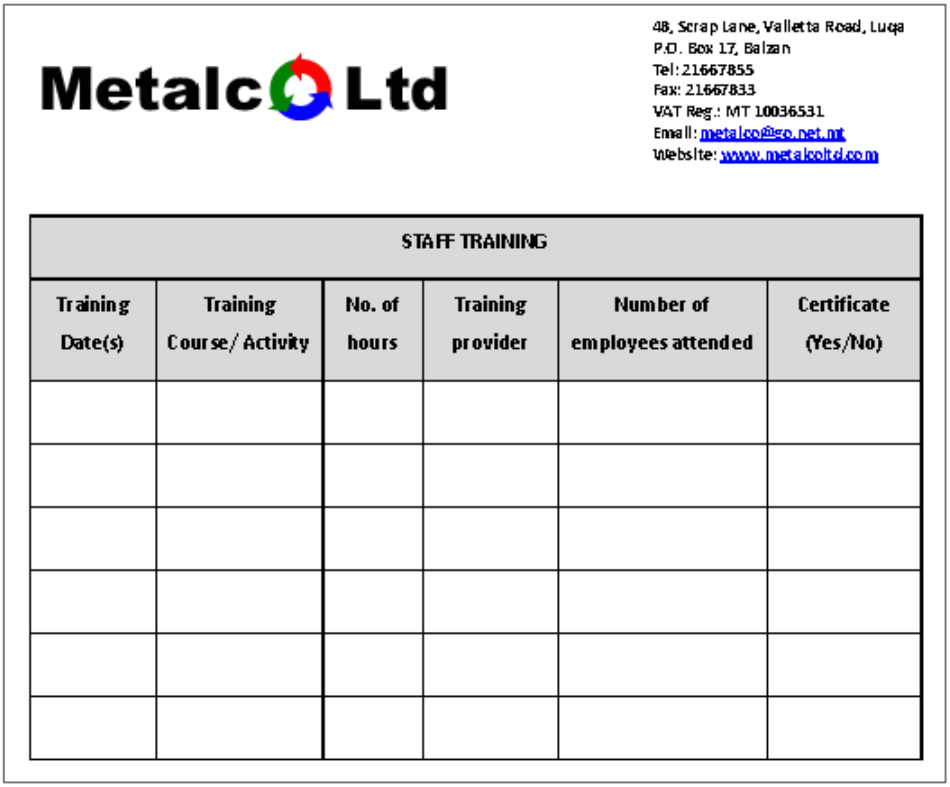
Email: metalco@go.net.mt
Website: www.metalcoltd.com

| MAINTENANCE RECORD | |
|---|---|
| Equipment/Machinery | |
| Date | |
| Technician | |
| Maintenance work description | |
| | |
| Comments | |
| | |

Figure 2: Templates for recording maintenance



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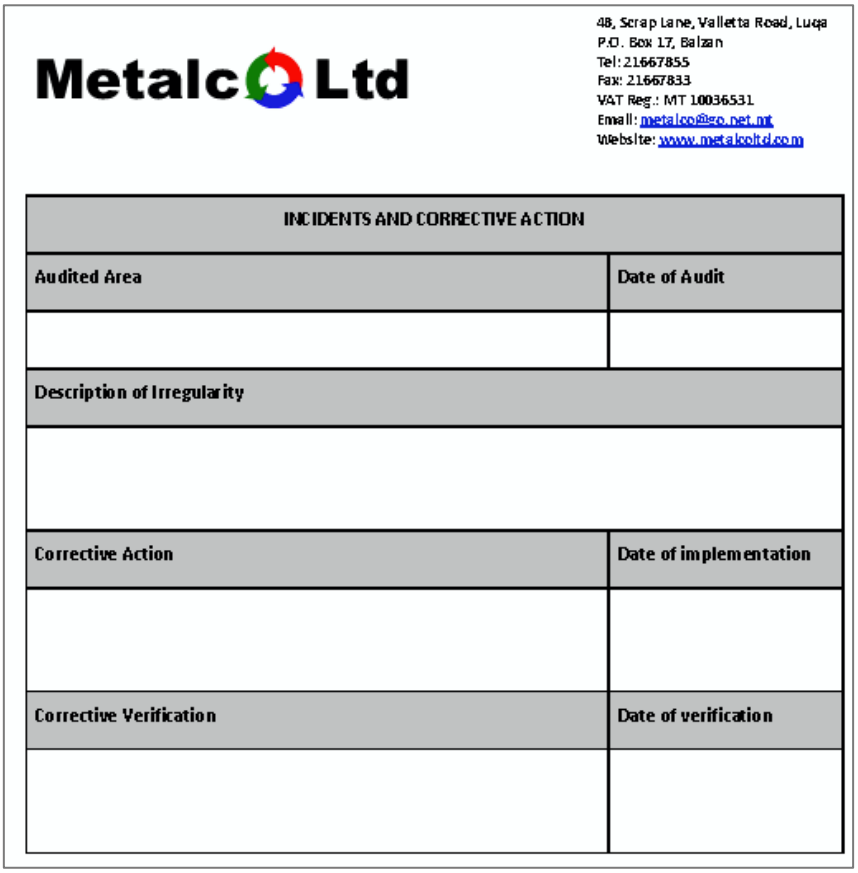
| STAFF TRAINING | | | | | |
|---|---|---|---|---|---|
| Training Date(s) | Training Course/ Activity | No. of hours | Training provider | Number of employees attended | Certificate (Yes/No) |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Figure 3: Templates for recording staff training



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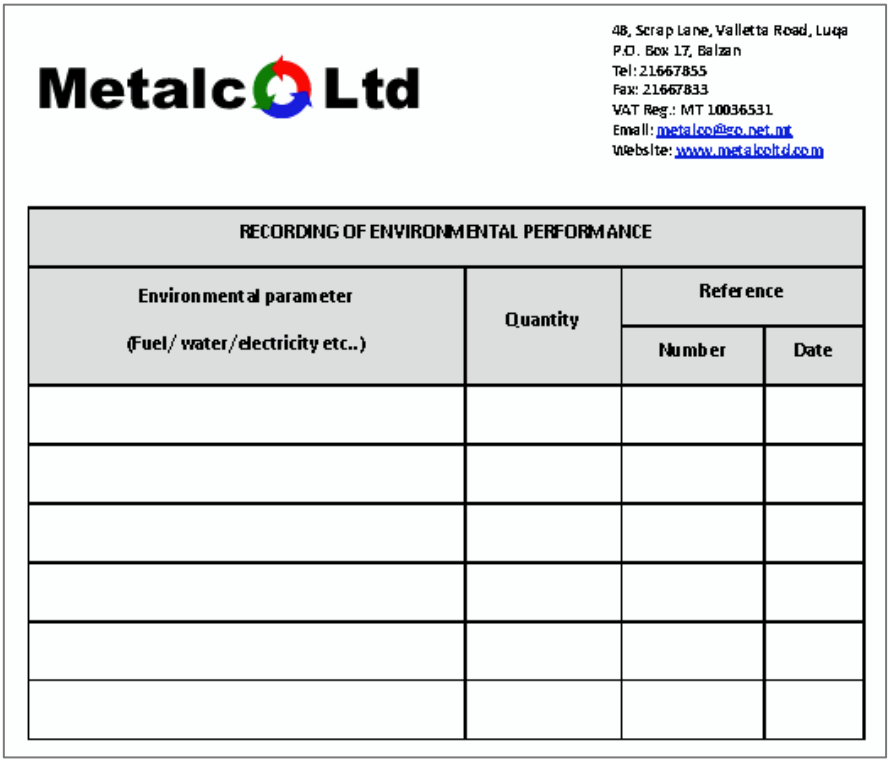
| INCIDENTS AND CORRECTIVE ACTION | |
|---|---|
| **Audited Area** | **Date of Audit** |
| | |
| **Description of Irregularity** | |
| | |
| **Corrective Action** | **Date of implementation** |
| | |
| **Corrective Verification** | **Date of verification** |
| | |

Figure 4: Templates for recording incidents and corrective action



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| RECORDING OF ENVIRONMENTAL PERFORMANCE | | | |
|---|---|---|---|
| **Environmental parameter (Fuel/ water/electricity etc..)** | **Quantity** | **Reference** | |
| | | **Number** | **Date** |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Figure 5: Templates for recording environmental performance

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| COMPLAINTS | |
|---|---|
| **Complainant** | **Date complaint received** |
| | |
| **Description of Complaint** | |
| | |
| **Corrective Action** | **Date of implementation** |
| | |
| **Corrective Verification** | **Date of verification** |
| | |

Figure 6: Templates for recording complaints

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| MOVEMENTS OF WASTE ON AND/OR OFF THE SITE | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Delivery/ Dispatch** | **Date** | **Reference/ Certificate number** | **Source of Material** | **EWC Code** | **Material Description** | **Quantity** | **Fate/Destination of material** |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Figure 7: Templates for recording movements of waste

## 4.6. Corrective Action

Should any irregularities in the specified requirements of the IPPC permit not be fulfilled and identified through the environmental audit process, the Technically Competent Management will be responsible to identify and implement appropriate corrective measures. The following procedure will be adhered to:

1. Identify the causes of irregularities,
2. Identify appropriate corrective actions,
3. Plan and implement corrective actions,
4. Monitor corrective actions to verify their effectiveness.

Figure 4 provides a template for recoding of corrective actions taken.

Where irregularities are identified outside the audit process, the same procedure should be applied.

The public authority responsible for IPPC should be informed on any irregularities and consulted on appropriate corrective actions prior to their implementation.

## 4.7. Awareness and Training

A training plan is provided in Section 8.

## 4.8. Maintenance Programme

A maintenance programme is provided in Section 6.

# 5. Proposed activities

## 5.1. Proposed installation activities

### 5.1.1. Transport of waste to and from the site

All the waste is delivered to and from the facility in trucks or in skips by MEPA-approved waste carriers. All the material reaching the premises is checked at the gate or the quarantine area, within which unpermitted waste may be temporarily held before entering the site. Following acceptance the loaded vehicles delivering waste are weighed over a weighbridge before unloading the waste in the operational area. The material is directed accordingly to designated areas and stockpiled separately according to waste stream for eventual processing.

If any material is sold or given to a third party, it is transferred to a waste management facility if still a waste, and end-of waste criteria are met prior to being sold or given as a product as per the Waste Framework Directive 2008/98/EC.

Metalco adheres to all relevant regulations regarding; the use of registered waste carriers for transfer of waste, consignment notes for transfer of hazardous waste, transfrontier shipment permits for export of hazardous waste, and the transfer of waste to authorised facilities.

Trucks entering and leaving the site are properly contained so as to avoid possible spills/escapements throughout their journeys.

### 5.1.2. Storage and Processing of waste

The waste management facility is authorised to carry out the following activities:

- Temporary storage and dismantling of WEEE;
- Temporary storage and shredding of textiles and mattresses;
- Temporary storage and shredding of separated paper and cardboard;
- Temporary storage of batteries;
- Storage and processing of scrap metal;
- Sorting, storage and processing of waste tyres;
- Temporary storage and shredding of counterfeit tobacco,
- Temporary storage and processing of waste creams, liquid soaps, powders, shampoos and toothpaste.
- Temporary storage and processing of wood
- Temporary storage of printing toners

The processes of the various waste streams are outlined in Table 1 to Table 11.

Table 1: Storage and processing of tobacco

| | |
|---|---|
| **Name of waste** | Cigarettes and tobacco |
| **Category of Waste (Inert, Non-Hazardous, Hazardous)** | Non-hazardous |
| **EWC code** | 02 03 04 Materials unsuitable for consumption or processing |
| **Quantity (maximum site capacity)** | 10 tonnes (including packaging) |
| **Projected quantity of waste to be processed annually** | 70 tonnes |
| **Method of storage and containment** | Stored temporarily in a hook loader steel box for processing on the same day to a maximum of 1 week from receipt of material. |
| **Method of processing and/or disposal** | The material will be delivered by truck on site.<br>The packaging containing the cigarettes will be removed.<br>The cigarettes/tobacco are shredded using a heavy rasper under a temporary tent outdoors, since they do not produce significant amounts of dust.<br>The shredded cigarettes/tobacco will be collected in a box which is then lifted by a hook loader and transported to Għallis landfill.<br>The packaging will be baled and transferred to U-Store which recycles cardboard and plastic. |
| **Waste carrier/ broker** | GBR041/08; GBR804/09 |

Table 2: Storage and processing of textiles

| | |
|---|---|
| **Name of waste** | Clothes, textiles and waste from processed textile fibres |
| **Category of Waste (Inert, Non-Hazardous, Hazardous)** | Non-Hazardous |
| **EWC code** | 04 02 22 Waste from processed textile fibres<br>15 01 09 Textile packaging<br>19 12 08 Textiles<br>20 01 10 Clothes<br>20 01 11 Textiles |
| **Quantity (maximum site capacity)** | 20 tonnes |
| **Projected quantity of waste to be processed annually** | 100 tonnes |
| **Method of storage and containment** | Stored temporarily in a hook loader steel box for processing on the same day to a maximum of 1 week from receipt of material. |
| **Method of processing and/or disposal** | The material will be delivered by truck on site.<br>Any packaging will be removed.<br>The clothes are shredded outdoors using a heavy rasper since they do not produce significant amounts of dust.<br>The shredded clothes will be collected in a box which is then lifted by |

| | |
|---|---|
| | a hook loader and transported to Magħtab landfill.<br>The packaging will be baled and transferred to U-Store which recycles cardboard and plastic. |
| **Waste carrier/ broker** | GBR041/08; GBR804/09 |

**Table 3: Storage and processing of paper and cardboard**

| | |
|---|---|
| **Name of waste** | Paper and cardboard |
| **Category of Waste (Inert, Non-Hazardous, Hazardous)** | Non-Hazardous |
| **EWC code** | 15 01 01 Paper and cardboard packaging<br>19 12 01 Shredded Paper and cardboard<br>20 01 01 Paper and cardboard |
| **Quantity (maximum site capacity)** | 6 tonnes |
| **Projected quantity of waste to be processed annually** | 50 tonnes |
| **Method of storage and containment** | Stored in a designated area in warehouse, for a maximum period of 3 weeks. |
| **Method of processing and/or disposal** | Paper is shredded outdoors since they do not produce significant amounts of dust. Both paper and cardboard are baled and sent to U-Store for recycling or sold as bedding for animals in animal husbandry farms. |
| **Waste carrier/ broker** | GBR041/08; GBR804/09 |

**Table 4: Storage and processing of plastic and rubber**

| | |
|---|---|
| **Name of waste** | Plastic and rubber |
| **Category of Waste (Inert, Non-Hazardous, Hazardous)** | Non-Hazardous |
| **EWC code** | 15 01 02 Plastic packaging<br>16 01 03 End-of-life tyres<br>16 01 19 Plastic<br>19 12 04 Plastic and rubber |
| **Quantity (maximum site capacity)** | 20 tonnes |
| **Projected quantity of waste to be processed annually** | 50 tonnes |
| **Method of storage and containment** | Stored in a designated area in warehouse for a maximum period of 4 weeks. |
| **Method of processing and/or disposal** | Plastic and plastic packaging is shredded indoors with a shredder equipped with dust suppression equipment, including dust filters and dust separators, baled and sent to U-store for recycling. |

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| | Tyres and rubber wastes are first shredded indoors by means of Super Chopper and equipped with dust suppression equipment, including dust filters and dust separators. During the shredding process the ferrous material within the tyre structure is separated and removed. No stockpiles are retained as all tyres delivered in any one day are processed on the same day. The shredded rubber granules are sold for flooring.<br>Ferrous metal parts are included in the respective waste stream to be processed and exported or given to DDE Attard Co Ltd. |
| **Waste carrier/ broker** | GBR041/08; GBR804/09 |

Table 5: Storage and processing of wood

| | |
|---|---|
| **Name of waste** | Wood |
| **Category of Waste (Inert, Non-Hazardous, Hazardous)** | Non-Hazardous |
| **EWC code** | 03 01 05 sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04<br>15 01 03 Wooden packaging<br>17 02 01 Wood<br>19 12 07 Wood other than that mentioned in 19 12 06<br>20 01 38 Wood other than that mentioned in 20 01 37 |
| **Quantity (maximum site capacity)** | 200 tonnes |
| **Projected quantity of waste to be processed annually** | 300 tonnes |
| **Method of storage and containment** | Stored in a designated area in warehouse, for a maximum period of 6 months. |
| **Method of processing and/or disposal** | Wood is shredded using a heavy rasper under a temporary tent outdoors, since they do not produce significant amounts of dust. The smaller pieces are shredded or compressed with a briquette machine. The shredded woods or briquettes are stored in jumbo bags for local disposal or exported. |
| **Waste carrier/ broker** | GBR041/08; GBR804/09 |

Table 6: Storage and processing of Waste Electrical and Electronic Equipment

| | |
|---|---|
| **Name of waste** | **Temporary storage and processing**:<br>Computer towers, mobile phones, televisions, computer monitors, washing machines, dish washers, electric and gas cookers, printers, scanners, heaters, air-conditioners, fridges, freezers, telephones, laptops and note books, dehumidifying equipment, large printing equipment, large appliances which automatically deliver products and money, routers and modems, clothes dryers, servers, electrical pumps, TV decoders, remote controls, gas heaters, UPS, electrical |

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| | wires and cables, and small equipment (Category 5) as defined in Annex 3 and Annex 4 of the WEEE Directive[1].<br><br>**Temporary storage only:**<br>Geysers, equipment which automatically delivers cold products, heat pumps, radiators containing oil and other temperature exchange equipment using fluids other than water for the temperature exchange, LCD photo frames, luminaires, equipment reproducing sound or images, musical equipment (exc. pipe organs installed in churches), knitting and weaving appliances, large coin slot machines, large medical devices, large monitoring and control instruments, photovoltaic panels, GPS, pocket calculators. |
| **Category of Waste (Inert, Non-Hazardous, Hazardous)** | Non-Hazardous and Hazardous |
| **EWC code** | • 16 02 11* Discarded equipment containing chloroflurocarbons, HCFC, HFC<br>• 16 02 13* Discarded equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12<br>• 16 02 15* Hazardous components removed from discarded equipment<br>• 16 02 16 Components removed from discarded equipment other than those mentioned in 16 02 15<br>• 17 04 11 Cables other than those mentioned in 17 04 10;<br>• 20 01 23* Discarded equipment containing chloroflurocarbons<br>• 20 01 35* Discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35<br>• 20 01 36 Discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35 |
| **Quantity (maximum site capacity)** | 150 tonnes |
| **Projected quantity of waste to be processed annually** | 250 tonnes |
| **Method of storage and containment** | Placed on pallet in warehouse until dismantled, then stored in jumbo bags (indoors). Hazardous waste is stored up to 5 months. |
| **Method of processing and/or disposal** | Shredding and other processing activities are carried out indoors with a shredder equipped with dust suppression equipment, including dust filters and dust separators. Site storage of WEEE shall be in accordance to Schedule 8 of Waste Management (Electrical and Electronic Equipment) Regulation, 2014.<br><br>Selective treatment for materials and components of WEEE shall be in accordance with Schedule 7 of Waste Management (Electrical and Electronic Equipment) Regulation, 2014.<br><br>Heaters are manually dismantled indoors. Oil is removed, placed in an IBC tank, processed, and stored prior to treatment locally or abroad. |

[1] Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE)

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| | Air-condition units, fridges and freezers are placed on pallets to be stored (indoors) prior dismantling. Manual dismantling of air-condition units, fridges and freezers is carried out indoors.<br><br>The degassing process is carried out indoors by a qualified individual. The refrigerant from air-conditioning, fridges and freezers units are pumped down by a compressor, the gas is cooled under high pressure into a liquid and it is then removed from the appliance. The degassing process is further explained in Appendix VIII.<br><br>Dehumidifying equipment are placed on pallets for storage (indoors) prior dismantling. Plastic is dismantled and placed into jumbo bags according to its category. Iron is dismantled and bailed prior to export. Radiator is removed and bailed prior to export. Electric motor is removed and stored prior to treatment at our waste management facility<br><br>Laptops and Note books are placed on pallets for storage (indoors) prior dismantling. Plastic is dismantled and placed into jumbo bags according to its category. Iron is dismantled and bailed prior to export. Wire is removed and stored prior tom treatment at our waste management facility. Hard drive is removed and stored in jumbo bags prior to export. Mother board and ram are dismantled and stored in jumbo bags prior to export. TFT screen is placed in IBC tanks and stored prior to export. Battery is removed, stored in special tanks before being transported to a MEPA approved waste management facility or exported.<br><br>Clothes dryers are placed on pallets for storage (indoors) prior dismantling. Plastic is dismantled and placed into jumbo bags according to its category. Iron is dismantled and bailed prior to export. Wire is removed and stored prior tom treatment at our waste management facility. Any printed circuit board are removed and placed in jumbo bags depending on their category prior to export.<br><br>Large printing machines are placed on pallets for storage (indoors) prior dismantling. Plastic is dismantled and placed into jumbo bags according to its category. Iron is dismantled and bailed prior to export. Wire is removed and stored prior tom treatment at our waste management facility. Any printed circuit board are removed and placed in jumbo bags depending on their category prior to export.<br><br>Large appliances which automatically deliver products and money are placed on pallets for storage (indoors) prior dismantling. Plastic is dismantled and placed into jumbo bags according to its category. Iron is dismantled and bailed prior to export. Wire is removed and stored prior tom treatment at our waste management facility. Any printed circuit board are removed and placed in jumbo bags |

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| | depending on their category prior to export. Stainless steal is removed and bailed prior to export. Aluminium is removed and shredded. Any glass is carefully dismantled and stored prior to export or sent to waste management facility approved by MEPA.<br><br>Routers and modems are placed on pallets for storage (indoors) prior dismantling. Received and placed on pallets for storage prior to dismantling process. Plastic is dismantled and placed into jumbo bags according to its category. Iron is dismantled and bailed prior to export. Wire is removed and stored prior to treatment at our waste management facility. Any printed circuit boards are removed and placed in jumbo bags depending on their category prior to export.<br><br>Telephones are placed on pallets for storage (indoors) prior dismantling. Plastic is dismantled and placed into jumbo bags according to its category. Wire is removed and stored prior to treatment at our waste management facility. Printed circuit boards are removed and placed in jumbo bags depending on their category prior to export.<br><br>Remotes are placed on pallets for storage (indoors) prior dismantling. Plastic is dismantled and placed into jumbo bags according to its category. Printed circuit boards are removed and placed in jumbo bags depending on their category prior to export.<br><br>Tv decoders are placed on pallets for storage (indoors) prior dismantling. Plastic is dismantled and placed into jumbo bags according to its category. Iron is dismantled and bailed prior to export. Wire is removed and stored prior to treatment at our waste management facility. Printed circuit boards are removed and placed in jumbo bags depending on their category prior to export.<br><br>UPS are placed on pallets for storage (indoors) prior dismantling. Plastic is dismantled and placed into jumbo bags according to its category. Wire is removed and stored prior to treatment at our waste management facility. Printed circuit boards are removed and placed in jumbo bags depending on their category prior to export. Battery is removed, stored in special tanks before being transported to a MEPA approved waste management facility or exported. Coil is removed and stored in jumbo bags prior to treatment at our waste management facility.<br><br>Dish washers are placed on pallets for storage (indoors) prior dismantling. Plastic is dismantled and placed into jumbo bags according to its category. Iron is dismantled and bailed prior to export. Wire is removed and stored prior tom treatment at our waste management facility. Any printed circuit board are removed and placed in jumbo bags depending on their category prior to export. Stainless steel is removed and bailed prior to export Aluminium is removed and shredded. Electric motor is removed and |

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| | stored prior to treatment at our waste management facility.<br><br>Electrical pumps are placed on pallets for storage (indoors) prior dismantling. Iron is dismantled and bailed prior to export. Wire is removed and stored prior tom treatment at our waste management facility. Aluminium is removed and shredded. Any printed circuit board are removed and placed in jumbo bags depending on their category prior to export. Coil is removed and stored in jumbo bags prior to treatment at our waste management facility.<br><br>Gas heaters are placed on pallets for storage (indoors) prior dismantling. Iron is dismantled and bailed prior to export. Brass is removed and stored in jumbo bags prior to export. Any plastic found is dismantled and stored into jumbo bags before being transported to a MEPA approved waste management facility.<br><br>Servers are placed on pallets for storage (indoors) prior dismantling. Plastic is dismantled and placed into jumbo bags according to its category. Iron is dismantled and bailed prior to export. Wire is removed and stored prior tom treatment at our waste management facility. Hard drive is removed and stored in jumbo bags prior to export. Mother board and ram are dismantled and stored in jumbo bags prior to export. Aluminium is removed, stored in jumbo bags prior to export. Copper is removed, stored in jumbo bags prior to export.<br><br>Iron is baled and exported. The metal (e.g. stainless steel, coil, brass and aluminium) components are separated and included in the respective waste stream. Copper is placed with other copper waste as described in Table 7. Ferrous material is exported or given to DDE Attard Co Ltd.<br><br>Plastic from WEEE is separated and treated like 16 01 19, it is shredded indoors, baled and sent at a recycling facility or used for bedding or flooring.<br><br>Radiators are removed, baled, stored on pallets and exported. Electrical motors are put into jumbo bags, stored in IBC tanks and treated locally or abroad.<br><br>Wires and cables are removed, shredded (indoors) and are stored in jumbo bags and exported. Fibre optic cables are shredded, stored in jumbo bags and disposed of at WasteServ.<br><br>16 02 15* and 16 02 16 (PC boards, hard drives, power supplies, etc) are stored in jumbo bags and exported. Mother board and ram are dismantled indoors and stored in jumbo bags prior to export.<br><br>Batteries are removed, stored in special tanks before being transported to a MEPA approved waste management facility or |

| | |
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| | exported.<br><br>Any glass is carefully dismantled and stored prior to export or sent to waste management facility approved by MEPA. If CRT monitors are received broken or are accidently broken on site, they will be disposed in a designated area where these are than processed immediately. Broken glass will be disposed in IBC tanks with jumbo bags for precaution for bits and pieces of broken glass, prior to export or disposal at a MEPA approved waste management facility. Broken plastic will be disposed in jumbo bags prior to export or disposal at a MEPA approved waste management facility.<br><br>Waste oils (from refrigeration compressor motors, oil heaters, washing machines and small generators) are removed manually indoors by a qualified person. The process is done either by removal of oil draining plugs found on the appliances or by drilling strategic holes. It is then drained by gravity or vacuum pumped into IBC tanks. Methodologies will be refined based on best practices that will be developed in the future. Generic anti-oil pollution methods e.g. bunding are followed during any manual processing. Any oil material will be transported to Waste Oils Co. Ltd. |
| **Waste carrier/ broker** | GBR041/08; GBR804/09 |

Table 7: Storage and processing of metals

| | |
|---|---|
| **Name of waste** | Ferrous and non-ferrous metals |
| **Category of Waste (Inert, Non-Hazardous, Hazardous)** | Non-Hazardous |
| **EWC code** | 16 01 17 Ferrous metal<br>16 01 18 Non-ferrous metal<br>17 04 01 Copper, bronze, brass<br>17 04 02 Aluminium<br>17 04 03 Lead<br>17 04 04 Zinc<br>17 04 05 Iron and steel<br>17 04 06 Tin<br>17 04 07 Mixed metals<br>15 01 04 Metallic Packaging |
| **Quantity (maximum site capacity)** | 350 tonnes |
| **Projected quantity of waste to be processed annually** | 1,350 tonnes |
| **Method of storage and containment** | Stored on pallet or in jumbo bag. The maximum storage time is 90 days. |
| **Method of processing and/or disposal** | Metal scrap is sorted manually. After sorting into different categories, the material is shredded, baled, packed in containers and |

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| | exported. The maximum storage time is 15 days.<br>Non-hazardous ferrous materials are processed, and aluminium, brass, bronze and copper components will be separated and collected in different parts of the premises.<br>Brass, bronze and copper waste are separated according to grade in jumbo bags, and then exported.<br>Metallic packaging is baled and stored on pallets and secured with a plastic wrap for export.<br>Different Aluminium products are processed differently as follows:<br>• Soft aluminium is shredded indoors using a shredder equipped with dust suppression equipment, including dust filters and dust separators, then baled and exported together with cans, wires and tubes<br>• Lyto is placed on pellet and tied for export<br>• Profiles – shredded outdoors and stored in jumbo bags for export. Small particles from shredding are separated using eddy current machine and collected in jumbo bags for recycling.<br>• Cast – stored unmodified temporarily and sent for export |
| **Waste carrier/ broker** | GBR041/08; GBR804/09 |

Table 8: Storage and processing of bulky waste

| | |
|---|---|
| **Name of waste** | Mattresses |
| **Category of Waste (Inert, Non-Hazardous, Hazardous)** | Non-Hazardous |
| **EWC code** | 20 03 07 Bulky waste |
| **Quantity (maximum site capacity)** | 30 tonnes |
| **Projected quantity of waste to be processed annually** | 280-300 tonnes |
| **Method of storage and containment** | Stored temporarily in a hook loader steel box for processing on the same day to a maximum of 7 days from receipt of material. |
| **Method of processing and/or disposal** | Mattresses are shredded outdoors since they do not produce significant amounts of dust.<br>Ferrous material is removed and included in the ferrous metal waste stream.<br>Foam is disposed of at Magħtab landfill |
| **Waste carrier/ broker** | GBR041/08; GBR804/09 |

Table 9: Storage of batteries

| | |
|---|---|
| **Name of waste** | Batteries |
| **Category of Waste (Inert, Non-Hazardous, Hazardous)** | Hazardous |
| **EWC code** | 16 06 01* lead batteries<br>16 06 02* NI-CD batteries<br>16 06 03* mercury-containing batteries<br>16 06 04 alkaline batteries (except 16 06 03)<br>16 06 05 Other batteries and accumulators<br>20 01 21* fluorescent tubes and other mercury-containing waste |
| **Quantity (maximum site capacity)** | 300 tonnes |
| **Projected quantity of waste to be processed annually** | 300 tonnes |
| **Method of storage and containment** | In a designated indoor area in apposite containers (measuring 1m by 1m by 1.5m) functioning as a bund. Capacity of each container is about 1 tonne of batteries (60-65 batteries). |
| **Method of processing and/or disposal** | Temporarily stored for a maximum of 3 weeks in a container with a bunding function, then transported to AGV Non-ferrous Ltd or exported. |
| **Waste carrier/ broker** | GBR041/08; GBR804/09 |

Table 10: Storage and processing of waste creams, liquid and powder soap, shampoos and toothpastes

| | |
|---|---|
| **Name of waste** | Creams, liquid soaps, powders, shampoos and toothpaste wastes |
| **Category of Waste (Inert, Non-Hazardous, Hazardous)** | Hazardous and Non-Hazardous |
| **EWC code** | 07 06 01* aqueous washing liquids and mother liquors<br>07 06 03* organic halogenated solvents, washing liquids and mother liquors<br>07 06 04* other organic solvents, washing liquids and mother liquors<br>07 06 08* other still bottoms and reaction residues<br>07 06 09* halogenated filter cakes and spent absorbents<br>07 06 10* other filter cakes and spent absorbents<br>07 06 11* sludges from on-site effluent treatment containing dangerous substances<br>07 06 12 sludges from on-site effluent treatment other than those mentioned in 07 06 11<br>16 03 05* organic wastes containing dangerous substances |
| **Quantity (maximum site** | 18 tons (including packaging) |

| | |
|---|---|
| **capacity)** | |
| **Projected quantity of waste to be processed annually** | 50 tons (estimate) |
| **Method of storage and containment** | Waste creams, liquid soap, powders, shampoos, soap and toothpaste are processed on the same day of receipt of material, and then stored temporarily in 1,000L IBC plastic tanks after processing.<br>Cardboard packaging and plastic packaging will be baled and stored indoors. Hazardous waste is stored indoors.<br>The storage period of all hazardous and non-hazardous material will not be more than 6 months. |
| **Method of processing and/or disposal** | The material will be delivered on site by truck and unloaded.<br>The non-contaminated cardboard and plastic (packaging) containing the waste will be separated, baled and stored until it is transferred to a recycling facility.<br>The containers filled with creams, liquid soap, powders, shampoos, soap and toothpaste will be crushed over a cesspit and the liquid collected in the cesspit. The liquid waste will then be pumped into 1,000L IBC plastic tanks using a submersible pump. The filled IBC plastic tanks will be stored indoors on the premises.<br>The 1,000L tanks will be stored separately according to different waste products and the final destination of the respective wastes, and shall not be mixed with other hazardous waste or with other waste, substances or materials.<br>The liquid wastes falling under the following EWC codes will be processed indoors and transported to Marsa Incinerator for destruction:<br>• 07 06 01* aqueous washing liquids and mother liquors<br>• 07 06 04* other organic solvents, washing liquids and mother liquors<br>• 07 06 08* other still bottoms and reaction residues<br>• 07 06 10* other filter cakes and spent absorbents<br>• 07 06 11* sludges from on-site effluent treatment containing dangerous substances<br>• 16 03 05* organic wastes containing dangerous substances<br><br>The crushed contaminated plastic containers (packaging) will be baled and stored indoors until transported to Marsa Incinerator for destruction.<br><br>WSM will reserve the right to carry out test analysis on the waste liquids and acceptance of waste for incineration is subject to test results and discretion of WSM. The unaccepted waste can then be processed as below. |

| | |
|---|---|
| | The liquid wastes falling under the following EWC codes will be stored until enough material is collected for export to a foreign approved waste management facility which accepts the respective EWC codes:<br>• 07 06 03* organic halogenated solvents, washing liquids and mother liquors<br>• 07 06 09* halogenated filter cakes and spent absorbents<br>• 07 06 12 sludges from on-site effluent treatment other than those mentioned in 07 06 11 |
| **Final destination of the wastes** | The liquid wastes falling under the following EWC codes will be transported to Marsa Incinerator for destruction:<br>• 07 06 01* aqueous washing liquids and mother liquors<br>• 07 06 04* other organic solvents, washing liquids and mother liquors<br>• 07 06 08* other still bottoms and reaction residues<br>• 07 06 10* other filter cakes and spent absorbents<br>• 07 06 11* sludges from on-site effluent treatment containing dangerous substances<br>• 16 03 05* organic wastes containing dangerous substances<br><br>WSM will reserve the right to carry out test analysis on the waste liquids and acceptance of waste for incineration is subject to test results and discretion of WSM. The unaccepted waste can then be processed as below.<br>The liquid wastes falling under the following EWC codes will be stored until enough material is collected for export to a foreign approved waste management facility which accepts the respective EWC codes:<br>• 07 06 03* organic halogenated solvents, washing liquids and mother liquors<br>• 07 06 09* halogenated filter cakes and spent absorbents<br>• 07 06 12 sludges from on-site effluent treatment other than those mentioned in 07 06 11<br><br>The crushed contaminated plastic containers (packaging) will be baled and transported to Marsa Incinerator for destruction.<br>Non-contaminated cardboard packaging will either be taken to U-store or exported.<br>Non-contaminated plastic packaging will be taken to a recycling facilty which accepts plastic. |
| **Waste carrier/ broker** | GBR041/08; GBR804/09 |

Table 11: Storage of printing toners

| | |
|---|---|
| **Name of waste** | Printing Toners |
| **Category of Waste (Inert, Non-Hazardous, Hazardous)** | Hazardous |
| **EWC code** | 08 03 17* waste printing toner containing dangerous substances<br>08 03 18 waste printing toner other than those mentioned in 08 03 17 |
| **Quantity (maximum site capacity)** | 25 tonnes |
| **Projected quantity of waste to be processed annually** | 70 tonnes |
| **Method of storage and containment** | In a designated indoor area in IBC tanks. |
| **Method of processing and/or disposal** | Temporarily stored for a maximum of 6 months and exported. |
| **Waste carrier/ broker** | GBR041/08; GBR804/09 |

Figure 8: Storage of scrap material

Figure 9: Storage of scrap material

Figure 10: Storage of baled metal packaging waste

Figure 11: Storage of baled metal and tied packaging waste

Figure 12: IBC Tanks to be used for the storage of waste soaps

### 5.1.3. Machinery

The facility makes use of a variety of machinery for the movement and processing of wastes. All stationary machinery is electrically operated. Electricity is provided by three diesel-fuelled generators.

The stationary machinery includes four weighbridges, used to weigh incoming and outgoing waste materials.

The rest of the machinery are mostly mobile, but many of them are stationed at a specific location where they are operated. Such machinery include four shredders, four shearers , four cable strippers and a granulator which tear up large materials into smaller pieces (Figure 13) and some also have ancillary parts (conveyors, table separators, eddy current and buffer machines) to separate and sort different materials (Figure 14). Dust filters and dust separators are also in place to minimise dust emissions from waste processing involving fine granulation and fine shredding which can cause emissions of small particulates.

Three baling units are used to compact materials in order to occupy a smaller space (Figure 15). Balers will also be used to crush containers of liquid soaps in order to release the contents (Figure 16). Three grabs are used to transfer materials from storage areas into machines for processing.

Mobile machinery, such as the three fork lifters, a bobcat, a truck and a van are used to transport waste fractions within and outside the facility.

**Figure 13: Shredding machine used for processing cigarettes, tobacco and wood**

Figure 14: Shredding machine used for processing mattresses, aluminium, wires and tyres

Figure 15: Baling machine


Figure 16: Baling machine for liquid soaps, creams, powders etc

## 5.2. Proposed techniques and measures to prevent and reduce waste and emissions of substances and heat

Being a waste management facility, the prevention and reduction of waste generation from other sites is the main function at the site. Nevertheless, the processing of these recyclable waste materials will also generate some wastes from materials which cannot be processed or recovered, and thus have to be discarded. Dust filters and dust separators are also in place to minimise dust emissions from waste processing involving fine granulation and fine shredding which can cause emissions of small particulates.

The waste deriving directly from the facility is recyclable waste and non-recyclable municipal solid (mixed) waste from office work and consumption of food. Onsite separation bins are in place so that different waste fractions are collected separately. Other wastes arising from the maintenance of machinery and equipment include waste oils, mechanical parts and batteries.

Table 12 lists the various waste and reject materials generated onsite from general activities and from the processing of waste raw materials.

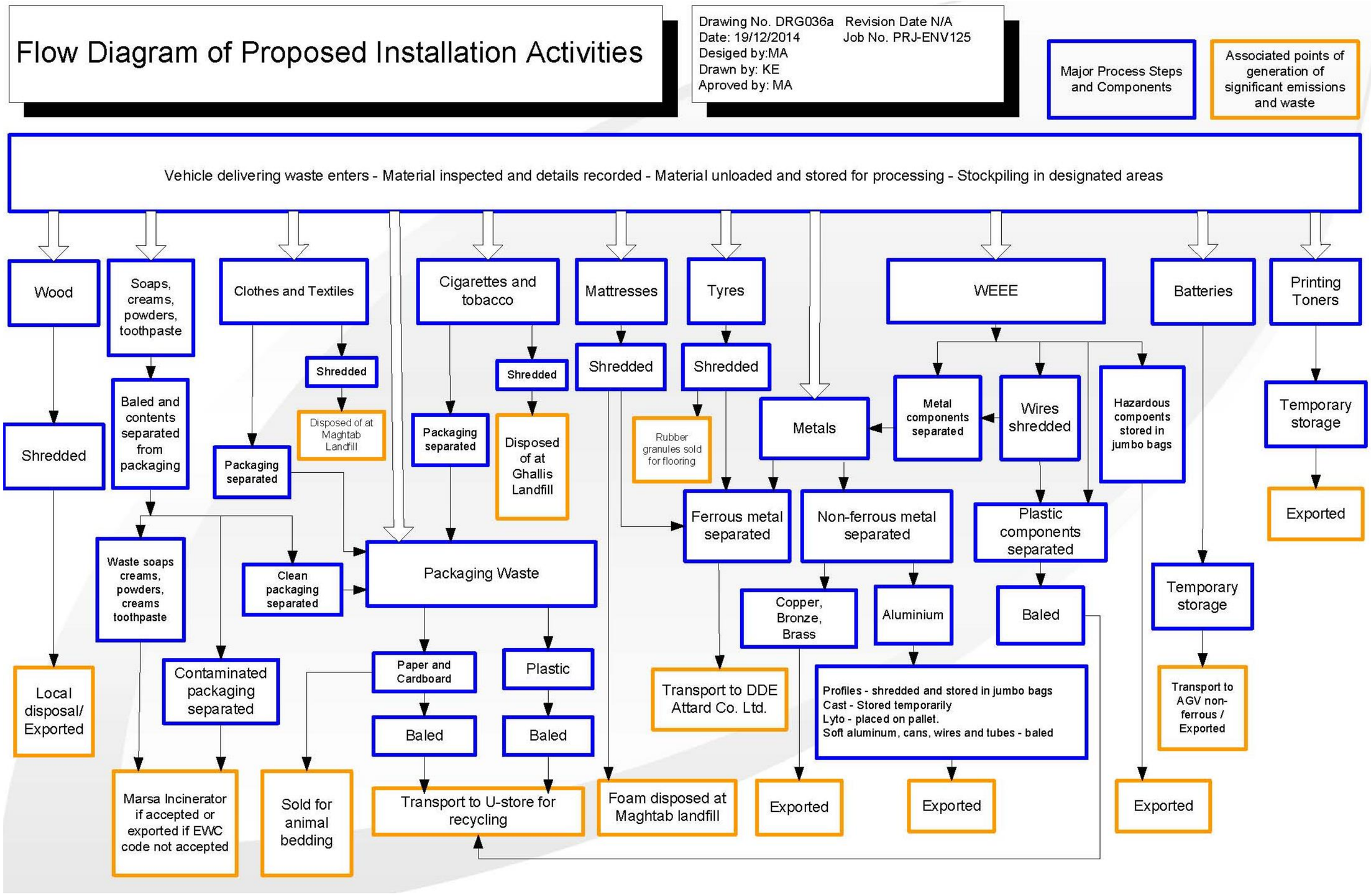
The main sources of emission derive from the machinery used is outlined in Sections 12 and 14. Possible energy saving measures are listed in Section 7.2.

Table 12: Wastes and reject material produced onsite

| EWC Code | Waste/ Reject material | Quantity produced annually | Method of storage and containment | Fate and destination of material |
|---|---|---|---|---|
| 15 01 01<br>15 01 02<br>15 01 04<br>15 01 06<br>15 01 06<br>20 01 01<br>20 01 02<br>20 01 39<br>20 01 40 | Office waste – recyclable waste | 1,120kgs | Stored in plastic bags in designated containers | Kerbside collection with dry recyclable waste (on scheduled days) using Refuse Collection Vehicles. Waste is transported to MEPA-approved waste management facility (e.g.: Sant'Antnin Material Recovery Facility) by the waste collectors. |
| 20 01 08<br>20 03 01 | Office waste – Non-recyclable municipal solid (mixed) waste | 920kgs | Stored in plastic bags in designated containers | Kerbside collection with mixed waste (on scheduled days) using Refuse Collection Vehicles. Waste is transported to MEPA-approved waste management facility (e.g.: Għallis Engineered landfill or Sant'Antnin Mechanical Treatment Plant with. Anaerobic Digester) by the waste collectors. |
| 13 01 10*<br>13 01 11*<br>13 02 05*<br>13 02 06* | Waste oils from facility's own machinery | 500kgs | Stored in IBC Tanks | Waste Oils Company Ltd |
| 16 02 15*<br>16 01 17<br>17 04 11 | Mechanical parts from facility's own machinery | 100kgs | Stored in IBC Tanks | Metalco Ltd |

| EWC Code | Waste/ Reject material | Quantity produced annually | Method of storage and containment | Fate and destination of material |
|---|---|---|---|---|
| 16 06 01* | Batteries from facility's own machinery | 100 - 200 batteries | Stored in appropriate containers | AGV Non-ferrous Ltd or exported |
| 04 02 09 | Foam from processing of mattresses | Up to 67 tonnes | Stored in designated area | Għallis Engineered Landfill |
| 16 02 14<br>16 02 16 | Concrete blocks from dismantling of washing machines | 17 tonnes | Stored in designated area | Depleted quarries with licence for inert backfilling particularly quarries HM29 and HM33 |
| 02 03 04<br>02 03 99 | Shredded counterfeit tobacco | 70 tonnes | Stored in a hook loader steel box | Għallis Engineered Landfill |
| 20 01 29*<br>20 01 30 | Counterfeit and out-dated creams, liquid soaps, powders, shampoos and toothpaste | 13-35 tonnes | Stored in IBC Tanks and bunded to the 1000L tanks | Incinerated at the Thermal Treatment Facility (Marsa Incinerator) |
| 15 01 10* | Contaminated packaging waste of counterfeit and out-dated creams, liquid soaps, powders, shampoos and toothpaste | 15-37 tonnes | Stored in designated area | Incinerated at the Thermal Treatment Facility (Marsa Incinerator) |

### 5.3. Flow diagram summarising proposed installation activities



## 5.4. Comparison of proposed activities with relevant Best Available Techniques (BAT)

Two documents on the comparison of the processes at Metalco Ltd with the BREF for Waste Treatments Industries and with the BREF for Emissions from storage are provided in Appendix VII.

## 5.5. Outline of main alternatives considered

No alternatives were considered in the technology, techniques and measures since the current status of the installation complies with BAT with regards to the storage of hazardous waste, separation and segregation of waste, and shredding and baling operations.

## 5.6. Raw materials

Being a waste management facility, the main raw materials processed on site are waste materials produced at other sites. As indicated in Section 5.1, the waste raw materials processed on site include:

- Cigarettes and tobacco;
- Clothes, textiles and waste from processed textile fibres;
- Paper and cardboard;
- Plastic and rubber (including end-of-life tyres);
- Wood;
- WEEE (Computer towers, mobile phones, televisions, computer monitors, washing machines, electric and gas cookers, printers, scanners, heaters, air-conditioners electrical wires and cables and other small equipment, fridges, freezers, and geysers);
- Scrap and metal packaging (Ferrous and non-ferrous metals);
- Mattresses;
- Batteries;
- Creams, liquid soap, powders, shampoos, soap and toothpaste;
- Printing toners.

Chemicals used on site include fuel and oils as indicated in Table 13. Material Safety Data Sheets (MSDS) of the chemical raw materials are included in Appendix II.

Table 13: Use of chemical raw materials

| Chemical | Maximum amount stored at any one time | Annual consumption | Use | Method of Storage and Containment |
|---|---|---|---|---|
| Diesel | 1,000L | 40,000L | Fuelling generator, lifters, excavators and other combustion engine machinery | 5,000L tank and bunding |
| Hydraulic oil | 220L | 660L | Maintenance of machinery | 45L Drum and bunding |
| Engine oil | 220L | 660L | Maintenance of machinery | 45L Drum and bunding |

Site plans showing major site features and activities are provided in Section 3.3.

Protective measures at the facility include a perimeter wall, front gate, two CCTV systems and alarms.

## 5.7. Ozone depleting substances and fluorinated greenhouse gases

No equipment using ozone depleting substances and fluorinated greenhouse gases with a fluid charge of 3kg or more are utilised on site

# 6. Maintenance

The management is committed to keep detailed maintenance records of all machinery found at the facility. Table 14 provides the proposed maintenance programme while Figure 2 shows a template form for keeping records of maintenance, which can be applied to any machinery.

Table 14: Proposed maintenance programme

| Check | Oil | Water | Greasing | Fuel | Filters | Blades |
|---|---|---|---|---|---|---|
| **Shearers** | Daily | N/A | Every 6 months | N/A | N/A | Monthly |
| **Lifters** | Daily | Daily | Every 6 months | Daily | Every 6 months | N/A |
| **Grabs** | Daily | N/A | Every 6 months | Daily | Every 6 months | N/A |
| **Balers** | Daily | N/A | Every 6 months | Daily | Every 6 months | N/A |
| **Shredders** | Daily | N/A | Every 6 months | N//A | Every 6 months | Fortnightly |
| **Generators** | Daily | Daily | Every 6 months | Daily | Every 6 months | N/A |

# 7. Energy and water

## 7.1. Energy

The daily consumption of electricity from public utilities is estimated to be around 57kWh and is used for the running of the offices (computers, air-conditioning, internal lighting, fridges, electric kettles and other appliances), external lighting and few machines such as the cable stripper and shearers.

The energy requirements of the remaining machinery are generated on site by three generators, which are not connected to the electricity grid therefore minimising the pressure on public energy production. All generators are fuelled by diesel and it is estimated that around 160L of diesel per day are needed to operate mobile machinery with combustion engines like lifters and grabs, and to provide electricity to operate the other machinery, such as shredders and balers.

The water demand for the whole facility is estimated to be around 0.53m³ per day. According to the 2008 Water Services Corporation Annual report, it is indicated that 130GWhr have been used to produce 30.8Mm³ of water. Taking this into consideration, it is calculated that the additional energy demand to supply the required water for the Metalco Ltd is approximately 2.236kWh.

## 7.2. Basic measures for improvement of energy efficiency

Energy generation and consumption has significant implications, both from an economical and environmental aspect. Energy efficiency and reduction in energy consumption is expected to be achieved by the following measures, according to practicality:

- Working hours are mostly restricted during the day;
- Most working spaces are illuminated by sunlight;
- Efficient luminaires equipped with energy saving lamps;
- Generators are operated depending on requirements;
- Baling and shredding machinery is used when a minimum threshold of material is stockpiled;
- Office spaces are enclosed, making air-conditioning more efficient;
- Generators and machinery with combustion engines are located outdoors or in well-ventilated areas eliminating the need for an electrically operated ventilation system.

## 7.3. Water

The facility is served with a mains water connection and water demand from public utilities for the whole facility is estimated to be around 0.53m³ per day. A borehole is also present on site.

Waste water from sanitary facilities is connected to a cesspit, not to the public sewerage system.

# 8. Training

Most of the employees at Metalco Ltd are manual workers and the company is committed to adhere to high safety standards and minimise possibility of avoidable accidents. All employees will be expected to attend health and safety courses by a professional training provider in order enhance their awareness on occupational health and safety issues and how they can tackle emergency situations.

Other courses which will be provided to selected individuals include fire-fighting and first aid courses.

The management staff shall strive to attend any available professional training courses or public information sessions on best practices in waste management, recycling and environmental permitting obligations.

Mr Mario Cremona, on his capacity as a director, will be the person responsible for the provision of training both in-house or from external training providers.

Figure 3 provides a template for keeping training records.

# 9. Cessation

Should decommissioning of the facility occur, the following procedure will be carried out:

- The waste materials which remain on site will all be processed according to material and grade. The graded material will then be packed accordingly and processed to be sold to local or foreign markets. If the material is exported this is loaded in either containers or trailers and shipped to the respective waste management facilities overseas. If the material is sold locally, this shall be transported to the respective waste management facilities using MEPA registered waste carrier trucks.
- All furniture, machinery and appliances will also be put up for sale on the local and foreign market either as second-hand equipment or as scrap material.
- Remaining usable fuel and oils will be used for alternative machinery, sold or donated for appropriate usage. Waste oils will be transported to approved waste management facilities using MEPA registered waste carrier trucks. Any remaining contaminated IBC tanks shall be transported for incineration.
- Any other material which cannot be processed for recycling will be disposed of appropriately according to the legal requirements at the time.
- A qualitative assessment of the potential land and groundwater contamination will be carried out to confirm that no contamination has occurred from the activities of the facility. If any contamination from the facility's activity is detected, a decontamination plan will be commissioned and implemented to return the site to its original condition.

# 10. Emissions to Groundwater

The facility uses low quantities of liquid chemicals, produces low quantities of liquid emissions and most waste material processed is solid and can be effectively contained. Hence, it is considered to have a low potential of risk of spillages or major pollution incidences to groundwater. The ground of all parts of the facility is covered with an impermeable concrete layer to prevent any contamination of the underlying rock strata and groundwater. All hazardous liquids and WEEE will be stored indoors with appropriate bunding.

A Risk Assessment will be carried out to determine the likelihood of events that could lead to a release of hazardous substances causing contamination to groundwater, and what pollution prevention measures are or will be in place. This is important, especially since the facility is located within the groundwater protection zone and at a distance of around 90m away from the Luqa Dump I BH.

One has to bear in mind that any contamination to groundwater cannot be confidently attributed solely to the operations of Metalco, due to other industrial and agricultural land uses in the surrounding area.

# 11. Rainwater

Rainwater runoff from the area of the facility will be captured in two reservoirs or allowed to flow towards the road. Surface water is gathered via a series of linked floor grills, which are then allowed to flow through a silt chamber, followed by an oil separator and then connected to the water reservoir. Harvested water is not used for human consumption or personal use. A site drainage map is provided in Section 3.3.

# 12. Emissions to Air

The main sources of air emissions at the facility are mainly caused by the operation of the three generators and other vehicles, whose location is indicated in Section 3.3.

Emissions of particulates from the facility are produced during fine granulation and fine shredding processes of certain wastes, namely cables and wires, tyres and aluminium profiles. All such waste processes are carried out indoors and the respective machinery is equipped with dust filters and separators. Other shredding activities, which do not involve fine treatment are carried out outdoors, and are not considered to produce significant amounts of aerial emissions.

Details of the emissions produced by the facility are provided in Table 15.

The operators also claim that external non-point sources of dust are predominant during particular wind conditions.

Table 15: Air emissions from generators

| Source of emission | Content of emission | Quantity of substances emitted | Treatment/ abatement measures |
|---|---|---|---|
| Point sources:<br>• Generators<br>• Bobcat<br>• Vehicles | Products from the combustion of diesel including products of incomplete combustion | The daily consumption of 160L of diesel is expected to produce around 250m³ of carbon dioxide.<br><br>Water vapour, Nitrogen oxides, Sulphur oxides, hydrocarbons, soot and particulates are also produced in the process. | Regular maintenance or replacement of broke equipment with more efficient and less polluting technologies |
| Point sources:<br>• Shredders<br>• Cable strippers | Particulate emissions during fine shredding | Cables, wires and tyres: 10-15% by weight released as particulates<br><br>Aluminium profiles: around 2% by weight is released as particulates | Dust filters and separators are in place for the shredding equipment<br><br>Eddy current is used during the shredding of aluminium profiles to separate the particulates produced to be collected and recovered for recycling |

# 13. Emissions to land

The absolute majority of material that enters the facility is processed or sent for reuse, recycling and recovery. Emissions to land include components of processed waste materials which are not suitable for reuse, recovery and recycling and are sent for to landfill.

The nature of wastes produced by the facility and their quantities are provided in Table 12, and their location within the boundary of the site is provided in Drawing 3 in Section 3.3.

A Risk Assessment will be carried out to determine the likelihood of events that could lead to a release of hazardous substances causing contamination to land, and what pollution prevention measures are or will be in place.

# 14. Noise

The main sources of noise at the facility are mainly caused by the operation of machinery and include the following:

- Generators,
- Balers,
- Shredders,
- Shearers,
- Lifters,
- Grabs,
- Trucks.

Such machinery is not operated continuously on a daily basis but would only be operated only when required, and if a minimum threshold of material is accumulated. Any use of machinery would be carried out during the weekdays and normal working hours. Since the site is close to an industrial area and in the vicinity of a main road, the operations at the facility are not expected to have a significant impact on the surrounding land uses and neighbours. Nevertheless, the nearest noise sensitive locations are considered to be the office buildings of Hili Group of Companies and TNT Courier Services.

All equipment used at the facility is regularly maintained to minimise noise resulting from inefficient operation. If any machinery is found to generate unacceptable noise levels, consideration will be given to replace the equipment or incorporate noise suppression equipment.

# 15. Monitoring

## 15.1. Air Quality Monitoring: Method Statement for deposition of $PM_{10}$ and TSP (total suspended particles)

$PM_{10}$ and TSP will be monitored simultaneously from two points shown in Figure 27 using low volume samplers over a period of 1 month, 24hrs a day. The monitoring points were chosen taking into consideration the closest sensitive receptors in the area and the prevailing wind direction, however these locations are subject to MEPA approval.

**Instrumentation**

Gravimetric sampling is considered as the reference method that shall be used for monitoring the $PM_{10}$ and TSP according to the EN12341. The main concepts of this method is to force a constant volume of air (2.3 $m^3$/h – flow rate determined by EN12341 for Low Volume Sampler) to pass through a filter and then derive the concentration of $PM_{10}$ and TSP by subtraction of the filter weight (before and after the sampling).

The specific characteristics of the sampling and measurement are given below.

- The type of instrument used for this campaign shall be the SKYPOST PM HV model (manufactured by TECORA Company), a particulate matter dedicated station for continuous sequential sampling. It is realized in a weather proof case for outdoor uses. Two SKYPOST PM LV shall be installed in each monitoring site, one for measuring the $PM_{10}$ and one for measuring the TSP.

Figure 17: SKYPOST PM HV sampler

- The sampling head is the main part of the instrument and has to be made with specific geometry. The construction features of the sampling head are fundamental because they allow only particulate matter with a diameter less than 10µm to enter the suction tube and consequently be captured on the filter. Conversely, the particulate matter with diameter bigger than 10µm remains on the impaction plate, placed below the nozzles. Because of this configuration, the impaction plate shall be cleaned and greased every 15 consecutive monitoring days. The incoming air enters the suction tube of 23 mm diameters and then passes through the filter membrane with a diameter of 47mm which is automatically substituted every 24 hours with a clean one.

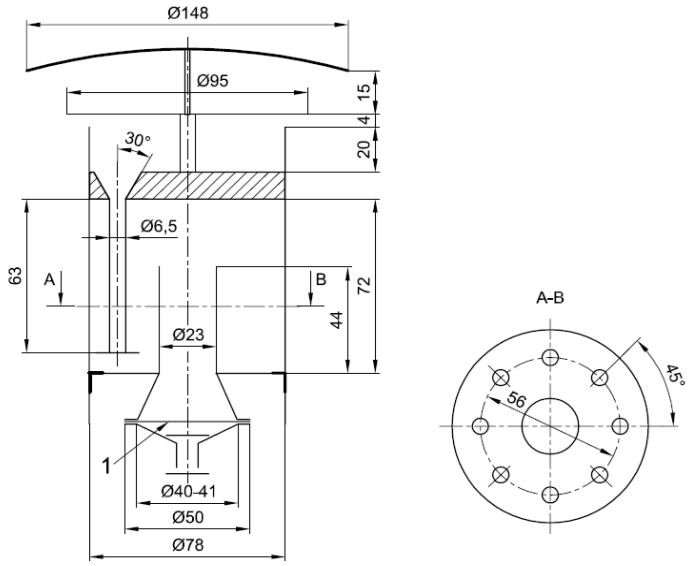
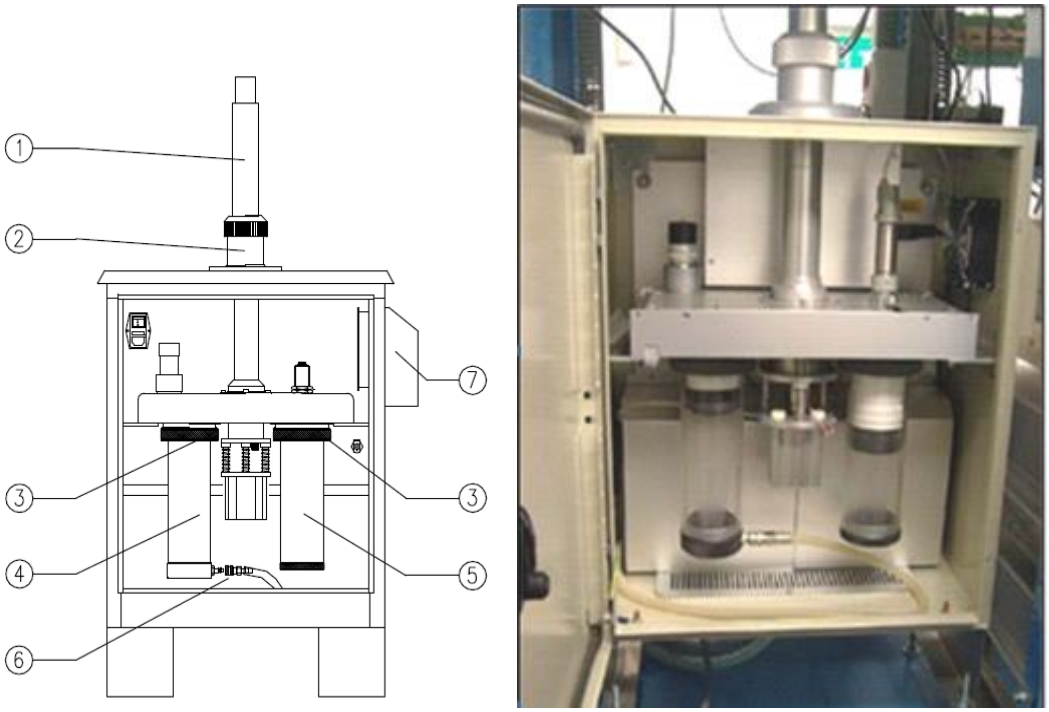



**Figure 18: Constructive features of the standard sampling head in compliance with EN 12341 (source EN12341)**

The SKYPOST PM is equipped with the following features:




1. Suction tube
2. Slide device for suction tube complete of a waterproof o-ring gasket
3. Filter reservoir tightening screwed rings
4. Clean filter reservoir
5. Exposed filter reservoir
6. Pneumatic quick connection for filter load
7. Internal ventilation air exit

**Figure 19: SKYPOST PM HV - front side detail**

The completely straight suction tube with its round shape and the separation of the storage filter zone from internal and radiant source of heat, allows collecting and keeping the integrity of the pollutants. The pneumatic tube serves to push up the clean filter in the mobile horizontal panel which, every time there is a change of the filter, it moves to the right to discharge the exposed filter in the exposed filter reservoir and, at the same time, to place the unexposed filter in the sampling position. Thus, the upper filter contained in the exposed reservoir represents the last day of sampling.

Internal ventilation system guarantees a differential temperature between the filter and the sample inlet of maximum 5°C.

The instrument measured also the instantaneous filter temperature (Θf) and the maximum difference from the instantaneous ambient temperature (Θa) and Θf.

The clean filter reservoir can contain up to 16 filter cassettes so that it can allow 16 days of monitoring without the need to go on-site and replace new filters. Filter cassette consisting of two plastic rings and a micro drilled filter screen in AISI 316 are used to handle the filter without compromising its integrity.

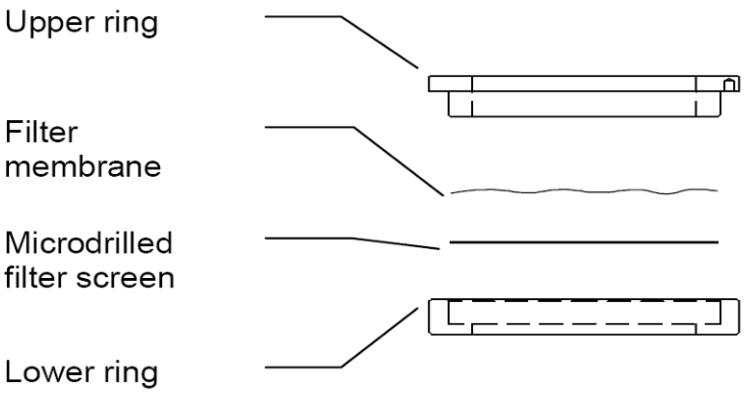



Figure 20: Filter cassette - assembling parts

Figure 21: Filter cassette without the filter

Since the sampler has to work with a constant flow rate of 2.3 $m^3/h$ ± 2% (EN 12341 and EN14907), the SKYPOST is equipped with a dry gas meter within 2% precision and it can electronically control the flow. SKYPOST is also equipped with a sensor to measure the atmospheric pressure and temperature and the pressure drop on filter. This sensor is installed on the suction tube and is protected against bad meteorological conditions (Figure 21). The data from the sensors and the volumetric measurements is automatically printed by the instruments but they can also be downloaded in the field by using the dedicated software and a RS 232 interface connection.


Figure 22: Particular of the atmospheric pressure and temperature sensor

The pump is placed on the rear side, below the front panel keyboard and printer. An hour- counter keeps the information of the total working hours of the pumps.


Figure 23: SKYPOST PM HV – backside detail

The next table summarizes the technical characteristics of the SKYPOST:

Table 16: SKYPOST technical characteristics

| TECHNICAL CHARACTERISTICS | |
|---|---|
| Autonomy | 16 filters |
| Filter diameter | 47mm |
| Power supply | 220 V 50Hz |
| Dimensions (b*b*h) | 400*250*600 mm |
| Box | In fire painted steel |
| Weight Kg | 42 Kg |
| Pump type | Rotary vane 6 $m^3$/h |
| Flow rate range | 0.6-3 $m^3$/h |

The SKYPOST PM can be set up for any sampling time interval and the exposed filters can easily be replaced without interrupting the sampling. In fact, the sampler is set up to change automatically the sample filter every 24 hours. The sampler can be paused for any reason (e.g. cleaning the sampling head, fix out a technical problem) and re-started again without losing data or compromise the sampling.

Before the beginning of the sampling campaign, a leak test and a flow rate calibration will be carried out in the manufacturer's laboratory. These instrument verifications will be repeated at the monitoring sites every three months by a technician.

The SKYPOST are furnished with a supplementary pump in case permanent damages occurred and a pump substitution is needed.

**Laboratory activities**

The laboratory activities can be subdivided in two main phases:

1. Preparation of the clean filters
2. Analysis of the clean filters

*Preparation of the clean filters*

For this monitoring campaign, filters made by quartz fibres shall be used, with an aerodynamic diameter of 0,22 µm. This type of filter is in compliance with the filter specifications stated in the reference methods.

In each laboratory activity, the filters will be handled using blunt tweezers to avoid contamination and damage. These filter characteristics are in compliance with the EN 12341, EN14907 and EN 14902. The laboratory activities for the filter preparation are the following:

- The filters are conditioned for at least 48 hours in cassettes, protected against possible dust or other particulate deposition, at 20 °C±1 and (50±5)% of relative humidity (reference to the below figures). All cassettes are placed on a multi-level rack, which is then located in a dedicated conditioning chamber, with controlled micro-climatic conditions equipped with a meteo station. Filters are at each stage protected from alien dust deposits as required by the Reference Method. It is also ensured that no electrostatic charges interfere with the filters.

**Figure 24: Multi-level rack conditioning technique**

- After the conditioning, each filter is weighed using a balance with a resolution of at least 10 µg, as stated in the EN12341 and EN14907. The filter weight is determined by averaging three consecutive measures and obtained following a stabilization of the weight determined by the balance (this is easily distinguishable because the scale display identifies the same constant weight). The laboratory is provided with the analytical balance Mettler Toledo XP6 that has the following characteristics:

| | |
|---|---|
| Nominal and guaranteed values | XP6 |
| Maximum capacity | 6.1 g |
| Readability | 0.001 mg |
| Repeatability - at nominal load | 0.0008 mg |
| - at low load (measured at) | 0.0006 mg (0.2 g) |
| Linearity | 0.004 mg |
| Eccentric load deviation (test load)[1)] | 0.005 mg (2 g) |
| Sensitivity offset | $7 \times 10^{-6}$ |
| Sensitivity temperature drift[2)] | 0.0001 %/°C |
| Sensitivity stability[3)] | 0.0001 %/a |
| Techical data - typical values[4)] | |
| Repeatability (sd) | 0.0004 mg+3 x (10–8)•R_gr |
| Differential linearity deviation (sd) | √1.5x($10^{-13}$)g·R_nt |
| Differential eccentric load deviation (sd) | 5 x ($10^{-7}$)•R_nt |
| Sensitivity offset (sd)[2)] | 1.5x($10^{-6}$)·R_nt |
| Minimum weight* (according to USP) | 1.2 mg+9 x ($10^{-5}$)•R_gr |
| Minimum weight* (@ U=1 %, 2 sd) | 0.08 mg+6 x ($10^{-6}$)•R_gr |
| Settling time | < 8 s |

*[1)]According to OIML R76*
*[2)]In the temperature range 10…30°C*
*[3)]Stability of sensitivity as from first installation with FACT*
*[4)]Can be used for the estimation of uncertainty sd: standard deviation Rgr: gross weight Rnt: net weight (sample weight) a: year (annum)*

**Repeatability and minimum weight can be improved and affected by the following measures: - choice of suitable weighing parameters, - moving to better location, - using smaller tare containers*

The laboratory is also equipped with a robotic arm for movement of the filters within the scale. The robotic arm passes on to the next filter. This automated equipment ensures that the weighing procedures are in compliance with the EN12341 and EN14907.

**Figure 25: Analytical balance Mettler Toledo XP6**

- The filters are then placed in a labeled sealed cassette. A laboratory report with the use of each filter (e.g. $PM_{10}$ and TSP), their position in the cylinder and the correspondence between cassette and filter weight (to avoid contamination, no marking is made on the filter surface) is written.
- After 15 filters are put in the clean reservoir, it is sealed and shipped to Malta, ready to be directly inserted in the SKYPOST sampler.

*Analysis of the exposed filters*

The returning cylinder, with the exposed filters is checked in their physical integrity and then stored in an uncontaminated weighing room to proceed with the laboratory analysis.

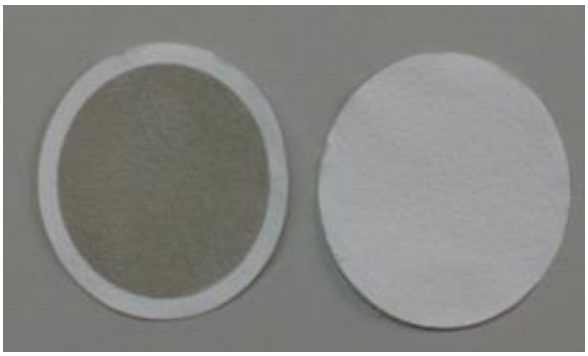


**Figure 26: Exposed filter (left) - unexposed filter (right).**

The filters are analyzed to determine the $PM_{10}$ and TSP concentrations by gravimetric method:

- *$PM_{10}$ and TSP determination:* filters are exposed, as for the unexposed filters, in a conditioning room at a temperature of 20°C and relative humidity of 50% for 120 hours in order to reach the equilibrium. After that, they are weighed using the analytical balance.

Finally, the $PM_{10}$ and TSP concentration is determined by the following formula:

$C_{PM} = (W_{EF} - W_{UF}) / V$

$_{P} = (W_{EF} - W_{UF}) / V$

*Where:*

$C_{PM}$ = PM concentration in (µg/$m^3$)

$C_{TS}$= TSP concentration in (µg/$m^3$)

$W_{EF}$= Weight of the exposed filter (µg)

$W_{UF}$= Weight of the exposed filter (µg)

$V$= Actual sampling volume ($m^3$)

Samples showing exceedance of $PM_{10}$ will be analyzed for the presence of iron or aluminum in order to determine whether this is due to operations of shredder at the plant. A maximum of 1 sample a week will be undertaken. If more than one sample would show exceedance in particulate matter then the one with the highest amount would be chosen. Furthermore, one would also take into consideration operation activities together with wind direction i.e. whether the shredder would have been operating and also whether the sample came from a point downwind or not.

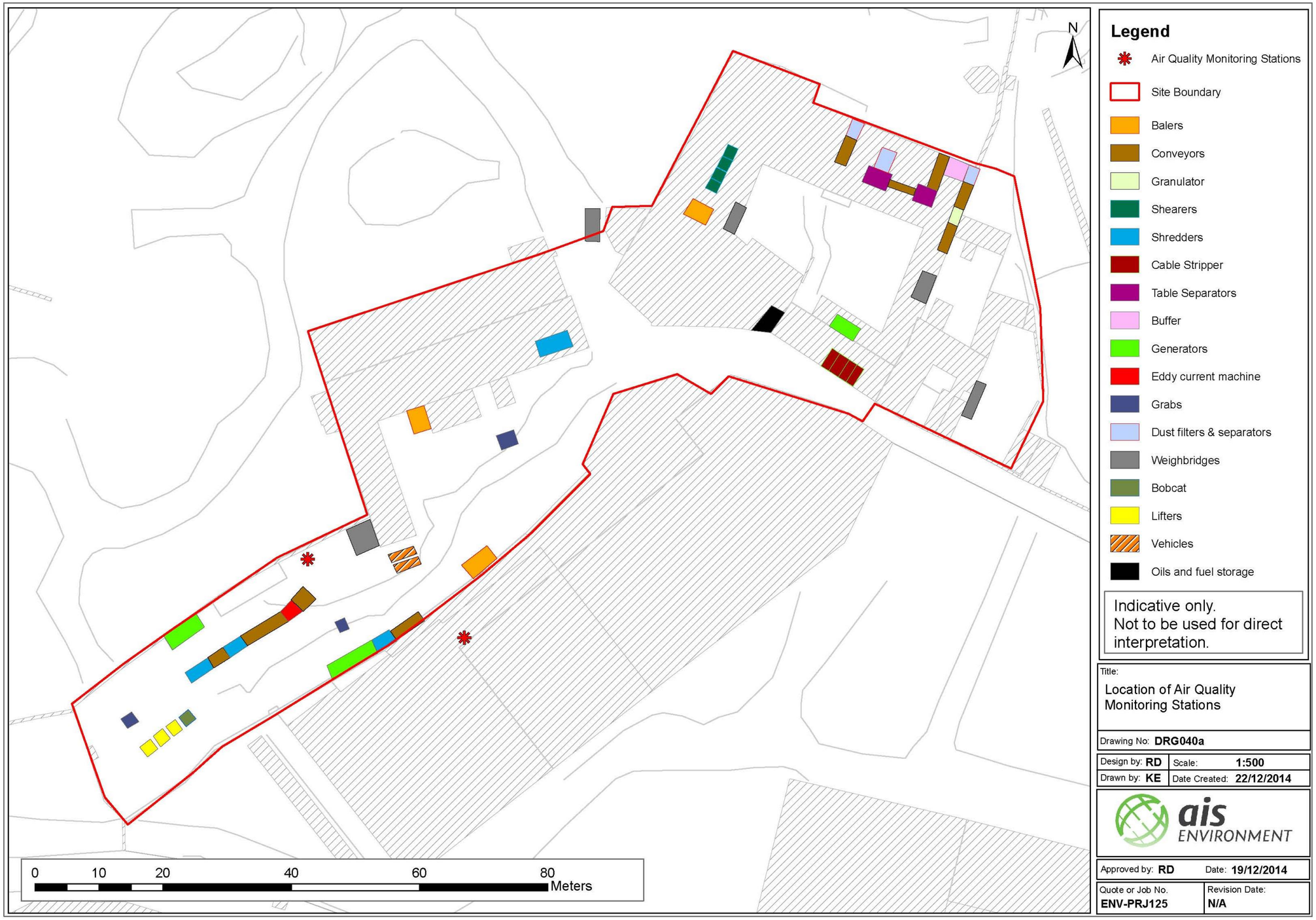



Figure 27: Air monitoring sampling points

## 15.2. Noise Monitoring

Since there is no baseline information on the current environmental noise at the Metalco facility and the noise produced by the facility itself, a noise monitoring programme is considered useful to plan future improvements in current operations.

The noise measurements will be carried out using a class 1 sound level meter, namely the CIRRUS C 821 C Class 1. Measurements will be taken at the nearest two noise sensitive receptors; the office buildings of Hili Group of Companies and TNT Courier Services in accordance with ISO 1996-2:2007 and the rating of industrial noise affecting residential areas shall follow the BS4142:1997.

The standard recommends that measurements at each sensitive receptor are taken at different time intervals. Therefore 1hour consecutive noise readings for a period of 24 hours will be taken at each sensitive receptor. This will enable the average noise level during the day ($L_{day}$), night ($L_{night}$), and a 24 hours period ($L_{den}$) to be calculated. The sound level meter will be calibrated immediately before and after each series of measurements.

Throughout all measurements the sound level meter will be set to a fast time weighting as this correlates better with the human perception of sound. The standard recommends that both $L_{eq}$ and $L_{max}$ measurements are taken.

As suggested by ISO 1996-2, the $L_{eq}$ values will be measured at continuous intervals of 10 minutes. This time frame is suggested in order to average weather-induced variations in the propagation path. Readings will be taken throughout the time periods that the proposed works will be carried out (work time-table). Meteorological effects will be minimised as much as possible, taking into consideration the following control measures:

1. Measurements will be carried out under the similar metereological conditions so that results are repreoducible as much as possible.
2. Measurements will be carried out when the wind is blowing from the dominant sound source to the receiver ($\pm$ 60° during the day)
3. Measurements corresponding to the wind speed between 2m/s and 5m/s (measured at a height of 3m to 11m above the ground) will be considered.

The measurements will take into consideration the frequency component of sound spectrum recorded. This will be done in line with ISO 1996-2 recommendations, specifically 63 Hz, 125 Hz, 250 Hz, 500 Hz, 1000 Hz, 2000 Hz, 4000 Hz, 8000 Hz.

$L_{max}$ refers to the is the RMS (root mean squared) maximum level of a noise source. $L_{max}$ will be recorded in parallel with $L_{eq}$.

Specific calculations will be carried out in order to add the sounds from different sources and attenuation. Throughout this noise assessment the ISO 9613 calculation methods will be used.

# 16. Impact on the Environment

## 16.1. Environmental Effects

Table 17 provides the definitions of the criteria used to qualify the environmental impacts of the activities carried out on site. Table 18 summarises the assessment of the impacts on the environment.

Table 17: Criteria for the impact significance

| Impact Significance | |
|---|---|
| **Level** | **Definition** |
| Insignificant | Negligible impact. |
| Minor Significance | Low order impact and therefore likely to have little effect on the environment. In the case of adverse impacts, mitigation is either easily achieved or little will be required, or both. |
| Moderate Significance | Impact on environment is not substantial in relation to other impacts that might take effect within the bounds of those that could occur. In the case of adverse impacts, mitigation is both feasible and fairly easily possible. |
| Major Significance | Of the highest order possible within the bounds of impacts on environment that could occur and resulting in a substantial change its condition. In the case of adverse impacts, there is little or no possible mitigation that could offset the impact. |

Table 18: Summary of environmental impacts

| Source of Impact | Impact | Sensitive Receptor | Description of Potential Negative Impact | Impact Significance | Mitigation Measures | Residual Impact |
|---|---|---|---|---|---|---|
| Storage of hazardous waste | Leakage; Contaminated surface water run-off | Air; Water; Land; Wildlife; Humans | • Contamination of surface and groundwater;<br>• Contamination of soil;<br>• Killing of animals, plants and aquatic life;<br>• Affect crop growth, and whether the produce can still be safely eaten;<br>• Hazardous waste can contribute to the development of cancer, respiratory problems, neurological and developmental disorders and birth defects | Moderate to Major, depending on quantities and toxicity of hazardous material involved | • Any spillages cleaned up promptly;<br>• All hazardous materials and components are bunded appropriately;<br>• All hazardous waste materials are all stored within a building or a steel shed with an impermeable concrete ground and a roof.<br>• Enforcement for proper management of hazardous waste from waste producers and waste management facilities:<br>– To reduce contamination of surface and groundwater, and soil,<br>– To reduce our reliance on landfill as a waste management option, and<br>– To minimise the environmental impact of landfill sites | Minor |
| Storage of non-hazardous waste | Leakage; Contaminated run-off | Air; Water; Land; Wildlife; Humans | • Contamination of surface and groundwater ;<br>• Contamination of soil;<br>• Killing of animals, plants and aquatic life; | Minor | Collection and recycling of non-hazardous waste aimed at reducing our reliance on landfill as a waste management option and minimise the environmental impact on land. | Minor |
| Storage of fuels | Emission of | Air; | Emission of Volatile Organic | Minor to Moderate, | • All tanks are bunded | Minor |

| Source of Impact | Impact | Sensitive Receptor | Description of Potential Negative Impact | Impact Significance | Mitigation Measures | Residual Impact |
|---|---|---|---|---|---|---|
| | volatile gases; Risk of fire | Water; Land; Wildlife; Humans | Compound (VOC); Fire | depending on quantities and toxicity of hazardous material involved | appropriately;<br>• Spill-kits and fire control measures available;<br>• Attention taken during filling of fuel tanks | |
| Machinery:<br>• Generators<br>• Lifters<br>• Excavators<br>• Bobcat | Smoke | Air; Humans | Emission of toxic and greenhouse gases | Minor | • Equipment maintained to optimum standards;<br>• Equipment replaced when necessary; | Minor |
| | Noise | Humans | Nuisance | Minor | • Machinery operated at reasonable times, wherever possible;<br>• Machinery and equipment sited as far as possible from neighbours;<br>• Voices not raised unnecessarily;<br>• Roads and tracks maintained to minimise noise produced | Minor |
| Machinery:<br>• Balers<br>• Shredders<br>• Shears<br>• Table Separator | Dust | Air; Humans | Emission of particulates | Minor | • Production of dust minimised at source;<br>• Equipment maintained to optimum standards;<br>• Equipment replaced when necessary;<br>• Dust filters and separators for shredding and baling indoors. | Minor |
| | Noise | Humans | Nuisance | Minor | • Machinery operated at reasonable times, wherever | Minor |

| Source of Impact | Impact | Sensitive Receptor | Description of Potential Negative Impact | Impact Significance | Mitigation Measures | Residual Impact |
|---|---|---|---|---|---|---|
| | | | | | possible<br>• Machinery and equipment sited as far as possible from neighbours<br>• Voices not raised unnecessarily<br>• Roads and tracks maintained to minimise noise produced | |

## 16.2. Effects on other Sites

As indicated in the previous sections, overall, the installation is unlikely to have any significant effect on other sites in the Maltese Islands.

Since the Metalco facility is committed to extract the maximum resources out of the waste material processed, only unrecoverable material is sent for disposal. As indicated in Table 12, most of the wastes produced are transported to other waste management facilities for further reuse, recovery and recycling. The environmental effects on other sites are mainly due to the waste types which are disposed of at landfills or incinerated, which have the indirect negative impact of leading to emissions to land and air quality in other areas. However, Metalco undertakes such disposal activities at MEPA-approved facilities with permits for such uses and the aforementioned land and air quality emissions at other sites are not considered to be significant.

Environmental effects on other sites may also occur from surface water run-off that is not collected in the water reservoirs, but diverted to the access road and away from the site. This environmental effect is not considered to be significant.

# 17. Expenditure plan

The draft expenditure Plan is based on potentially identified costs which could arise during the operational and decommissioning phases, even though certain costs are difficult to predict with confidence or be predicted at all.

## 17.1. Monitoring of emissions

Regular monitoring of the movements of wastes as indicated in Section 5.1.2 on and off site will be recorded using standard forms for waste transfer. Details recorded will include the EWC code, quantities, dates delivered on and off site, waste carrier and final destination. The monitoring of this data is an integral part of the commercial operations at the facility and can be carried out internally by the company. Therefore no additional external costs are envisaged.

Estimated external costs for environmental assessments and monitoring of air quality and environmental noise is not expected to exceed €5,000 in total.

However, a risk assessment on land and groundwater may conclude that environmental assessments and monitoring is also carried out for land and groundwater contamination.

## 17.2. Clearing installation

The installation would need to be completely cleared to reinstate the site in its original condition. Decommissioning is planned to be carried out as outlined in Section 9. Since decommissioning mainly involves the clearing of waste material, it is an integral part of the commercial operations at the facility and can be carried out internally by the company. Therefore no additional external costs are envisaged.

## 17.3. Remedial action in the event of the failure of pollution control systems

The facility is considered to have a low potential of risk of major pollution incidences since the facility uses low quantities of chemicals, produces low quantities of emissions and most waste material processed is solid and can be effectively contained. The facility also bears impermeable concrete ground and all hazardous waste storage areas are roofed. Remedial action for potential spillage or emissions depends on the volumes involved and the toxicity of the hazardous material, which are difficult to generalise. A contingency budget of around €5,000 is considered adequate for any eventual failure of pollution control system incident.

# Appendix I

## CV of person responsible for managing environmental aspects of the installation

# Mario Cremona

Curriculum Vitae as at June 01, 2013

## Personal Details


| | |
|---|---|
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| **Telephone** | **99017071** |
| **E-mail** | **cremona_m@hotmail.com** |
| **Nationality** | **Maltese** |
| **Date of Birth** | **1st November 1989** |


## Work Experience

| Period | Organisation | Position |
|---|---|---|
| 2011- | Metalco Ltd | Director |

## Education

| Period | Institution |
|---|---|
| 1992-2006 | San Andrea School - Mgarr |
| 2008-2011 | MCAST |

## Qualifications

### Ordinary Level Examinations

**MATSEC**

| Subject | Grade |
|---|---|
| Mathematics | 5 |
| English Language | 3 |
| English Literature | 5 |
| Physical Education | 2 |
| Home economics | 2 |
| Environmental Studies | 4 |

MCAST-BTEC Diploma in Sport

MCAST-BTEC Extended Diploma in Sport (Development, Coaching and Fitness)

Note:

Further results/ Original certificates / transcripts of the above-mentioned qualifications are available upon request.

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## Languages

- Maltese: Native language
- English: Fluently spoken
- Italian: Comprehension Ability

## Driving Licence

B 08-10-2014

# Appendix II

# MSDS of the Chemical Raw Materials

| | |
|---|---|
| **TOTAL UK LTD**<br><br>**MATERIAL SAFETY DATA SHEET** |  |

| | |
|---|---|
| **DERV** | **BS EN 590** |
| **ULTRA LOW SULPHUR DERV** | **BS EN 590** |
| **GAS OIL CI** | **BS 2869: CLASS A2 & D** |
| **ULTRA LOW SULPHUR GAS OIL** | **EN 590** |
| **MARINE GAS OIL** | **ISO 8217 : DMA** |
| **MARINE DIESEL OIL** | **ISO 8217 : DMB** |

## 1 IDENTIFICATION OF THE SUBSTANCE & OF THE COMPANY / UNDERTAKING

**IDENTIFICATION OF THE SUBSTANCE OR PREPARATION:**

All are middle distillate-type fuels. Derv is a gas oil for use in on-road automotive vehicles. Gas Oil CI and Marine Diesel and Gas Oils are used in stationary diesel engines in the industrial and marine markets, for off-road use and as a fuel for heating boilers and gas turbines.

Contains:
Fuels, Diesel: CAS No. 68334-30-5 EINECS No. 269-822-7

**COMPANY IDENTIFICATION:**

Total UK Ltd.
40 Clarendon Road
Watford
Herts
WD17 1TQ

Telephone No. (Watford) 01923 694000

**EMERGENCY TELEPHONE NO:** (Watford) 01923 694000

## 2 COMPOSITION / INFORMATION ON INGREDIENTS:

Complex mixtures of distillate hydrocarbons mainly paraffinic, naphthenic and aromatic in the range C10-C28. Catalytically and thermally cracked hydrocarbons may be present. Included may be small concentrations of cetane number improvers (organic nitrates), flow improvers (ethylene vinyl acetate copolymers), a lubricity additive (long-chain ester), silicone anti-foam additives and HM C&E markers/dye. These additives do not contribute any additional hazard.

## 3 HAZARDS IDENTIFICATION

These oils, particularly when catalytically and thermally cracked hydrocarbons are present, may contain polycyclic aromatic hydrocarbons (PCAs); some PCAs have been shown to have a potential to cause skin cancer (category 3 carcinogen). There are small concentrations of cetane no. improvers, flow improvers, anti-foam and detergent additives and marker/dye that are not considered to represent a health risk.

Injection of fuel under the skin may have serious medical effects.

Classified as dangerous for the environment.

## 4 FIRST AID MEASURES

| **TYPE OF EXPOSURE** | **FIRST AID MEASURES** |
|---|---|
| **Ingestion** | **Ingestion** |
| The swallowing of small amounts is unlikely to have adverse effects; larger amounts may cause irritation with diarrhoea and vomiting. | Wash mouth out with water and give water to drink. If a large amount has been swallowed get medical advice. DO NOT INDUCE VOMITING BECAUSE OF THE DANGER OF ASPIRATION. |
| **Skin** | **Skin** |
| Unlikely to cause irritation on single contact. Prolonged or repeated contact may cause dermatitis which could eventually lead to irreversible skin disorders. | Wash skin as soon as possible with soap and water. Change contaminated clothing and launder before reuse. Get medical advice if irritation persists. |
| Injection of fuel under pressure through the skin may have serious effects which at first may not seem serious but, within hours, may become very painful. | Any injection of fuel under the skin should be considered an EMERGENCY - get Medical Advice URGENTLY. |
| **Eyes** | **Eyes** |
| May cause irritation with short-term redness and stinging. | Wash out thoroughly with large amounts of water. If redness and/or irritation continues get medical advice. |
| **Inhalation** | **Inhalation** |
| Fumes or vapour may cause irritation to eyes and mucous membranes, and drowsiness leading to loss of consciousness. | If inhalation of vapour causes irritation or drowsiness remove to fresh air. Get medical advice if the symptoms continue. |

## 5 FIRE-FIGHTING MEASURES

Extinguish with Dry Powder, Foam or Water Fog. For small fires use $CO_2$

Do not use water jets

Note - Flash Point 60°C.

Fires in closed or confined spaces should be tackled by trained personnel who should wear breathing apparatus.

## 6 ACCIDENTAL RELEASE MEASURES

Treat any spillage as a fire hazard. Spray, vapour or mist can be a potential fire or explosion hazard.

May cause damage to surfaces making them SLIPPERY.

Contain spillage - do not wash spillage down drain. Absorb using absorbent clay, diatomaceous clay or other suitable absorbent.

## 7 HANDLING AND STORAGE

### 7.1 Handling

Gas Oils and derv are designed to be used in closed systems. Avoid skin contact when refuelling vehicles or working on fuel system components. Where exposure is likely PROTECTIVE CLOTHING should be worn including impervious GLOVES and EYE PROTECTION. Ensure good ventilation.

### 7.2 Storage

The design, construction and maintenance of bulk storage and handling facilities are covered by codes of practice published by the Institute of Petroleum, British Standards Institution and the Health and Safety Executive.

Drums should be stored on their sides on racks preferably under cover, out of direct sunlight, in well ventilated conditions.

Other types of containers should be stored under cover out of direct sunlight, in well ventilated conditions. Care should be taken to avoid over-stacking.

## 8 EXPOSURE CONTROL / PERSONAL PROTECTION

Where prolonged or repeated exposure is likely PROTECTIVE CLOTHING should be worn including impervious GLOVES and EYE PROTECTION.

**Respiratory protection** - Unlikely to be required in normal use but ensure good ventilation - note Flash Point 60°C min. It is suggested that exposure is kept well below the level of Oil Mist quoted in the current HSE Guidance Note EH40:

**Long term exposure limit** - (8 hour TWA reference period) 5 milligrams per cubic metre.

**Short term exposure limit** - (15 minute reference period) - 10 milligrams per cubic metre.

**Hand and skin protection** - Hand and skin protection recommended at all times. Where exposure is likely protective clothing must be worn, including nitrile gloves approved to BS EN 374 with a breakthrough time of >360 minutes.

**Eye protection** - Eye protection approved to BS EN 166 is recommended at all times

## 9 PHYSICAL AND CHEMICAL PROPERTIES

**Typical properties:**

| | |
|---|---|
| Appearance | Straw to amber fluid; may be dyed red |
| Odour | Characteristic |
| pH | not applicable |
| Boiling Range °C | 160 - 375 |
| Flash Point (PMC) °C | 60 min |
| Flammability Limits % vol | 1 - 6 |
| Auto ignition temperature °C | approx. 220 |
| Explosive properties | not applicable |
| Oxidising properties | not applicable |
| Reid Vapour Pressure at 37.8 °C kPa | < 0.1 |
| Density at 15°C | 0.82 - 0.87 |
| Solubility - water | Very low |
| - fat | Not available |
| Partition coefficient - Log Pow | 3 - >6 for components |
| Viscosity cSt @ 40°C | 1.5 - 7 |
| Vapour density (relative to air) | > 5 |
| Evaporation rate | Extremely low |

## 10 STABILITY AND REACTIVITY

**Conditions to Avoid -** heat (Note: Flash Point 60°C min).

**Materials to Avoid -** may react with strong oxidising materials.

**Hazardous Decomposition Products -** thermal decomposition may lead to the formation of a multiplicity of compounds some of which may be hazardous. With incomplete combustion smoke and hazardous fumes and gases, including carbon monoxide may be formed.

## 11 TOXICOLOGICAL INFORMATION

Toxicity following single exposure (orally, dermally or by inhalation) to gas oils is of a low order. When gas oils contain cracked components they are classified as category 3 carcinogens. With the use of good occupational and hygiene practices any risk will be minimal.

## 12 ECOLOGICAL INFORMATION

Expected to harm aquatic organisms, may cause long-term effects in the aquatic environment. May bioaccumulate; films formed on water may affect oxygen transfer and damage organisms. Likely to biodegrade slowly.

## 13 DISPOSAL CONSIDERATIONS

Dispose by incineration or by methods approved by Local Authority.
Do not discharge into the public drainage system, or marine and inland waterways.
**Marine Fuels should be disposed of in accordance with MARPOL Regulations.**

## 14 TRANSPORT INFORMATION

TRANSPORT CLASSIFICATION

HAZCHEM Code: 3/Z Symbol: Flammable Liquid

UN: Flammable liquid, Class 3 (III)
UN Number (Substance Identification Number): 1202
UN Packing Group: III IMO Hazard Class: 3.3
ICAO Hazard Class: 3.3 IATA Hazard Class 3
ADR/RID Hazard Class: 3 - 32 (c)

## 15 REGULATORY INFORMATION

LABELLING

Symbol: Black St. Andrew's cross on orange square (Xn)
Dead fish and tree (N)

Classification: Harmful.
Dangerous for the environment

R40 - Limited evidence of carcinogenic effect
R65 - Harmful: May cause lung damage if swallowed
R66 - Repeated exposure may cause skin dryness or cracking
R51/53 - Toxic to aquatic organisms, may cause long term effects in the aquatic environment

[S2] - Keep out of the reach of children
S43 - In case of fire use foam/dry powder/$CO_2$ /Halon. Never use water.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show label where possible)
S36/37 - Wear suitable protective clothing and gloves
S61 - Avoid release to the environment. Refer to special instructions/Safety Data Sheet
S62 - If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label

## 16 OTHER INFORMATION

Further information can be found in Health and Safety Executive publications, a list of which may be made available on request from HSE Books - Tel: 01787 881165.

This data sheet has been prepared in accordance with the requirements of the Data Sheet Directive 91/155/EEC as amended by Directive 2001/58/EC.

**LEGAL NOTICE**

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Issued: May 2003 Gas Oil / Derv

# Safety Data Sheet

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

**1.1 Product identifier**

## TEXACO URSA SUPER TD 15W-40

**Product Number(s):** 024843

**1.2 Relevant identified uses of the substance or mixture and uses advised against**
**Identified Uses:** Diesel Engine Oil

**1.3 Details of the supplier of the safety data sheet**
Chevron Belgium NV
Technologiepark-Zwijnaarde 2
B-9052 Gent
Belgium
email : eumsds@chevron.com

**1.4 Emergency telephone number**
**Transportation Emergency Response**
Europe: 0044/(0)18 65 407333
**Health Emergency**
Europe: 0044/(0)18 65 407333
Poison Control Center: Belgium: 0032/(0)70 245 245
**Product Information**
FAX number: 0032/(0)9 293 72 22

## SECTION 2 HAZARDS IDENTIFICATION

**2.1 Classification of the substance or mixture**
**DSD/DPD CLASSIFICATION:** R52/53 |

**2.2 Label elements**
Under the criteria of Directive 1999/45/EC (dangerous preparations):

- contains: Calcium long chain alkaryl sulfonate. May produce an allergic reaction.
R52/53; Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S61; Avoid release to the environment. Refer to special instructions/safety data sheets.

**2.3 Other hazards** Not applicable.

## SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

**3.1 Mixtures**

This material is a mixture.

| COMPONENTS | EC NUMBER | SYMBOL / RISK PHRASES | AMOUNT |
|---|---|---|---|
| Highly refined mineral oil (C15 - C50) | * | None | 70 - 99 %weight |
| Polyolefin polyamine succinimide, polyol | Polymer | R53 | < 5 %weight |
| Zinc alkyl dithiophosphate | 272-028-3 | Xi/R41, N/R51/53 | < 2.5 %weight |
| Calcium long chain alkaryl sulfonate | Polymer | R53 | < 5 %weight |
| Phenol, dodecyl-, branched | 310-154-3 | Xi/R38, Xn/Repro. Cat. 3/R62, N/R50/53 | < 0.25 %weight |

*Contains one or more of the following EINECS numbers: 265-090-8, 265-091-3, 265-096-0, 265-097-6, 265-098-1, 265-101-6, 265-155-0, 265-156-6, 265-157-1, 265-158-7, 265-159-2, 265-160-8, 265-161-3, 265-166-0, 265-169-7, 265-176-5, 276-735-8, 276-736-3, 276-737-9, 276-738-4, 278-012-2. The full text of all R-phrases is shown in Section 16.

| COMPONENTS | CAS NUMBER | EC NUMBER | REGISTRATION NUMBER | CLP CLASSIFICATION | AMOUNT |
|---|---|---|---|---|---|
| Highly refined mineral oil (C15 - C50) | Mixture | * | ** | None | 70 - 99 %weight |
| Polyolefin polyamine succinimide, polyol | Trade secret | Polymer | ** | Aquatic Chronic 4/H413 | < 5 %weight |
| Zinc alkyl dithiophosphate | 68649-42-3 | 272-028-3 | 01-2119657973-23-0000 | Aquatic Chronic 2/H411; Eye Dam. 1/H318 | < 2.5 %weight |
| Calcium long chain alkaryl sulfonate | Trade secret | Polymer | ** | Aquatic Chronic 4/H413 | < 5 %weight |
| Phenol, dodecyl-, branched | 121158-58-5 | 310-154-3 | ** | Aquatic Acute 1/H400; Aquatic Chronic 1/H410; Repr. 2/H361; Skin Irrit. 2/H315 | < 0.25 %weight |

The full text of all CLP H-statements is shown in Section 16.

*Contains one or more of the following EINECS numbers: 265-090-8, 265-091-3, 265-096-0, 265-097-6, 265-098-1, 265-101-6, 265-155-0, 265-156-6, 265-157-1, 265-158-7, 265-159-2, 265-160-8, 265-161-3, 265-166-0, 265-169-7, 265-176-5, 276-735-8, 276-736-3, 276-737-9, 276-738-4, 278-012-2.
**Not available or substance is not currently required for registration under REACH.

## SECTION 4 FIRST AID MEASURES

### 4.1 Description of first aid measures

**Eye:** No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.
**Skin:** No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
**Ingestion:** No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.
**Inhalation:** No specific first aid measures are required. If exposed to excessive levels of material in the air,

move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

**4.2 Most important symptoms and effects, both acute and delayed**
**IMMEDIATE SYMPTOMS AND HEALTH EFFECTS**
**Eye:** Not expected to cause prolonged or significant eye irritation.
**Skin:** Contact with the skin is not expected to be harmful.
**Ingestion:** Not expected to be harmful if swallowed.
**Inhalation:** Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

**DELAYED OR OTHER SYMPTOMS AND HEALTH EFFECTS:** Not classified.

**4.3 Indication of any immediate medical attention and special treatment needed**
Not applicable.

## SECTION 5 FIRE FIGHTING MEASURES

**5.1 Extinguishing media**
Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

**5.2 Special hazards arising from the substance or mixture**
**Combustion Products:** Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form oxides of: Zinc, Calcium, Phosphorus, Sulfur .

**5.3 Advice for firefighters**
This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

## SECTION 6 ACCIDENTAL RELEASE MEASURES

**6.1 Personal precautions, protective equipment and emergency procedures**
Eliminate all sources of ignition in vicinity of spilled material. Refer to Sections 5 and 8 for more information.

**6.2 Environmental precautions**
Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater.

**6.3 Methods and material for containment and cleaning up**
Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil and dispose of in a manner consistent with applicable requirements. Place other contaminated materials in disposable containers and dispose of in a manner consistent with applicable requirements. Report spills to local authorities as appropriate or required.

**6.4 Reference to other sections**
See sections 8 and 13.

## SECTION 7 HANDLING AND STORAGE

**7.1 Precautions for safe handling**
Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Do not taste or swallow.

**7.2 Conditions for safe storage, including any incompatibilities**
**General Handling Information:** Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
**Static Hazard:** Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.
**Container Warnings:** Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

**7.3 Specific end use(s):** Diesel Engine Oil

## SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**GENERAL CONSIDERATIONS:**
Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances. Refer to appropriate CEN standards.

**8.1 Control parameters**
No applicable occupational exposure limits exist for this material or its components.

**8.2 Exposure controls**
**ENGINEERING CONTROLS:**
Use in a well-ventilated area.

**PERSONAL PROTECTIVE EQUIPMENT**
**Eye/Face Protection:** No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
**Skin Protection:** No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.
**Respiratory Protection:** No respiratory protection is normally required. If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.

**ENVIRONMENTAL EXPOSURE CONTROLS:**
See relevant Community environmental protection legislation or the Annex, as applicable.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

**Attention: the data below are typical values and do not constitute a specification.**

**9.1 Information on basic physical and chemical properties**
**Appearance**
**Color:** Light to Brown
**Physical State:** Liquid
**Odor:** Petroleum odor
**Odor Threshold:** No data available
**pH:** Not Applicable
**Melting Point:** Not Applicable
**Freezing Point:** Not Applicable
**Initial Boiling Point:** >315°C (599°F)
**Flashpoint:** (Cleveland Open Cup) 215 °C (419 °F) Minimum
**Evaporation Rate:** No data available
**Flammability (solid, gas):** No Data Available
**Flammability (Explosive) Limits (% by volume in air):**
Lower: Not Applicable Upper: Not Applicable
**Vapor Pressure:** <0.01 mmHg @ 37.8 °C (100 °F)
**Vapor Density (Air = 1):** >1
**Density:** 0.9 kg/l @ 15°C (59°F) (Typical)
**Solubility:** Soluble in hydrocarbons; insoluble in water
**Partition coefficient: n-octanol/water:** No data available
**Auto-ignition temperature:** No data available
**Decomposition temperature:** No Data Available
**Viscosity:** 108.4 mm2/s @ 40°C (104°F) (Min)
**Explosive Properties:** No Data Available
**Oxidising properties:** No Data Available
**9.2 Other Information:** No Data Available

## SECTION 10 STABILITY AND REACTIVITY

**10.1 Reactivity:** This material is not expected to react.
**10.2 Chemical Stability:** This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
**10.3 Possibility of hazardous reactions:** Hazardous polymerization will not occur.
**10.4 Conditions to Avoid:** Not applicable
**10.5 Incompatible materials to avoid:** May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
**10.6 Hazardous decomposition products:** Hydrogen Sulfide (Elevated temperatures)

## SECTION 11 TOXICOLOGICAL INFORMATION

**11.1 Information on toxicological effects**
**Serious Eye Damage/Irritation:** The eye irritation hazard is based on evaluation of data for product components.

**Skin Corrosion/Irritation:** The skin irritation hazard is based on evaluation of data for product components.

**Skin Sensitization:** The skin sensitization hazard is based on evaluation of data for product components.

**Acute Dermal Toxicity:** The acute dermal toxicity hazard is based on evaluation of data for product components.

**Acute Oral Toxicity:** The acute oral toxicity hazard is based on evaluation of data for product components.

**Acute Inhalation Toxicity:** The acute inhalation toxicity hazard is based on evaluation of data for product

components.

**Germ Cell Mutagenicity:** The hazard evaluation is based on data for components or a similar material.
**Carcinogenicity:** The hazard evaluation is based on data for components or a similar material.
**Reproductive Toxicity:** The hazard evaluation is based on data for components or a similar material.

**Specific Target Organ Toxicity - Single Exposure:** The hazard evaluation is based on data for components or a similar material.
**Specific Target Organ Toxicity - Repeated Exposure:** The hazard evaluation is based on data for components or a similar material.

**ADDITIONAL TOXICOLOGY INFORMATION:**
In accordance with the Directive 94/69/EC (21st ATP to DSD), Nota L, reference IP 346/92: "DMSO Extraction Method", we have determined that the base oils used in this preparation are not carcinogenic. During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.

## SECTION 12 ECOLOGICAL INFORMATION

**12.1 Toxicity**
This material is expected to be harmful to aquatic organisms. The product has not been tested. The statement has been derived from the properties of the individual components.

**12.2 Persistence and degradability**
This material is not expected to be readily biodegradable. May cause long-term adverse effects in the aquatic environment. The product has not been tested. The statement has been derived from the properties of the individual components.

**12.3 Bioaccumulative potential**
Bioconcentration Factor: No Data Available
Octanol/Water Partition Coefficient: No data available

**12.4 Mobility in soil**
No data available.

**12.5 Results of PBT and vPvB assessment**
This product is not, or does not contain, a substance that is a potential PBT or a vPvB.

**12.6 Other adverse effects**
No other adverse effects identified.

## SECTION 13 DISPOSAL CONSIDERATIONS

**13.1 Waste treatment methods**
Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.
In accordance with European Waste Catalogue (E.W.C.) the codification is the following: 13 02 05

## SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult appropriate Dangerous Goods Regulations for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

**ADR/RID**

NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT
**14.1 UN number:** Not applicable
**14.2 UN proper shipping name:** Not applicable
**14.3 Transport hazard class(es):** Not applicable
**14.4 Packing group:** Not applicable
**14.5 Environmental hazards:** Not applicable
**14.6 Special precautions for user:** Not applicable

**ICAO**

NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT
**14.1 UN number:** Not applicable
**14.2 UN proper shipping name:** Not applicable
**14.3 Transport hazard class(es):** Not applicable
**14.4 Packing group:** Not applicable
**14.5 Environmental hazards:** Not applicable
**14.6 Special precautions for user:** Not applicable

**IMO**

NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT
**14.1 UN number:** Not applicable
**14.2 UN proper shipping name:** Not applicable
**14.3 Transport hazard class(es):** Not applicable
**14.4 Packing group:** Not applicable
**14.5 Environmental hazards:** Not applicable
**14.6 Special precautions for user:** Not applicable
**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:** Not applicable

## SECTION 15 REGULATORY INFORMATION

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
**REGULATORY LISTS SEARCHED:**
01=EU. Directive 76/769/EEC: Restrictions on the marketing and use of certain dangerous substances.
02=EU Directive 90/394/EEC: Carcinogens at work.
03=EU Directive 92/85/EEC: Pregnant or breastfeeding workers.
04=EU Directive 96/82/EC (Seveso II): Article 9.
05=EU Directive 96/82/EC (Seveso II): Articles 6 and 7.
06=EU Directive 98/24/EC: Chemical agents at work.
07=EU Directive 2004/37/EC: On the protection of workers.
08=EU Regulation EC No. 689/2008: Annex 1, Part 1.
09=EU Regulation EC No. 689/2008: Annex 1, Part 2.
10=EU Regulation EC No. 689/2008: Annex 1, Part 3.
11=EU Regulation EC No. 850/2004: Prohibiting and restricting persistant organic pollutants (POPs).
12=EU REACH, Annex XVII: Restrictions on manufacture, placing on the market and use of certain dangerous substances, mixture & article.
13=EU REACH, Annex XIV: Candidate List of Substances of Very High Concern for Authorization (SVHC).

No components of this material were found on the regulatory lists above.

**CHEMICAL INVENTORIES:**
All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), KECI (Korea), PICCS (Philippines), TSCA (United States).

One or more components is listed on ELINCS (European Union). Secondary notification by the importer may be required. All other components are listed or exempted from listing on EINECS.

One or more components does not comply with the following chemical inventory requirements: ENCS (Japan).

**15.2 Chemical safety assessment**
No chemical safety assessment.

## SECTION 16 OTHER INFORMATION

**REVISION STATEMENT:** This revision updates the following sections of this Material Safety Data Sheet: 1-16
**Revision Date:** FEBRUARY 14, 2012

**Full text of R-phrases:**
R38; Irritating to skin.
R41; Risk of serious damage to eyes.
R51/53; Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52/53; Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R53; May cause long-term adverse effects in the aquatic environment.
R62; Possible risk of impaired fertility.

**Full text of CLP H-statements:**
H400; Very toxic to aquatic life
H410; Very toxic to aquatic life with long lasting effects
H411; Toxic to aquatic life with long lasting effects
H413; May cause long lasting harmful effects to aquatic life
H318; Causes serious eye damage
H361; Suspected of damaging fertility or the unborn child
H315; Causes skin irritation

**ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:**

| | |
|---|---|
| TLV - Threshold Limit Value | TWA - Time Weighted Average |
| STEL - Short-term Exposure Limit | PEL - Permissible Exposure Limit |
| CVX - Chevron | CAS - Chemical Abstract Service Number |
| NQ - Not Quantifiable | |

Prepared according to the criteria of Regulation (EC) No 1272/2008

**The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.**

# SAFETY DATA SHEET

| Document number | First issued | Revision date | Revision | Issued by | Page |
|---|---|---|---|---|---|
| 6120418604-ENG-02 | 2005-01-04 | 2012-12-01 | 1 | Christine Diedrich | 1 of 11 |

# Texaco Rando HD 22,32,46,68,100

## 1. Identification of the substance/mixture and of the company/undertaking

**1.1 Product identifier**

Texaco Rando HD 22,32,46,68,100

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

**Are of use:** Hydraulic oil

**1.3 Details of the supplier of the safety data sheet**

**Supplier:**
ALFA LAVAL Tumba AB
Hans Stahles väg
SE-147 80 Tumba
Sweden
Tel: +46 8 53 06 50 00
Fax: + 46 8 53 06 52 59

**Manufacture:**
Preem AB (publ)
Warfvinges väg 45
S-112 80 Stockholm
Sweden
Tel: +46(0)10-450 10 00

**e-mail:** sds.question@alfalaval.com

**1.4 Emergency telephone number:** Dial in case of emergency poisoning and ask for Poison Information both day and night. Dial + 46 (0) 8-331231 if you have other questions concerning acute poisonings mon-fri 9.00-17.00

## 2. Hazards identification

**2.1 Classification of the substance or mixture**

This product is not classified as hazardous according to current regulations.

**2.2 Label elements**

This product is not labelled.

**2.3 Other hazards**

Prolonged contact may cause defatting of the skin and cause irritation.
Repeated skin contact may cause a persistent irritation or dermatitis.
Contact with eyes may cause slight irritation, experienced as temporary discomfort. High-pressure injection under the skin may cause serious damage including local necrosis.
Could possibly cause respiratory irritation or other effects on the lungs for prolonged or repeated inhalation of airborne mists above recommended limits for exposure to mineral oil mist.

## 3. Composition/information on ingredients

**3.2 Mixtures**
**Declaration of the constituents according to CLP 1272/2008/EC**

| Substances | Registration No. | Weight - (%) | CAS No. | EC No | Classification |
|---|---|---|---|---|---|
| Highly refined mineral oil (C15 - C50) | - | 60-100 | * | * | |

**Declaration of ingredients constituents to 1999/45/EC**

| Substances | Registration No. | Weight - (%) | CAS No. | EC No | Classification |
|---|---|---|---|---|---|
| Highly refined mineral oil (C15 - C50) | - | 60-100 | * | * | |

Note on ingredients: The product contains no ingredients in high enough concentration for classification as a health or environmental hazard under current legislation. Not classified as a carcinogen by note L in KIFS 1999:3 when the substances contains <3% DMSO extract, IP 346.

* Contains one or more of the following mineral oils: EC No 265-090-8, CAS No. 64741-88-4. EC No 265-091-3, CAS No. 64741-89-5. EC No 265-096-0, CAS No. 64741-95-3. EC No: 265-097-6, CAS No: 64741-96-4. EC No: 265-098-1, CAS No: 64741-97-5. EC No 265-101-6;. CAS No. 64742-01-4. EC No: 265-155-0 and CAS: 64742-52-5. EC No 265-156-6, CAS No. 64742-53-6. EC No 265-157-1, CAS No. 64742-54-7. EC No: 265-158-7, CAS No: 64742-55-8. EC No: 265-159-2 and CAS: 64742-56-9. EC No. 265-160-8, CAS No. 64742-57-0. EC No: 265-161-3, CAS No: 64742-58-1. EC No 265-166-0, CAS No. 64742-62-7;. EC No 265-169-7, CAS No. 64742-65-0;. EC No 265-176-5; CAS No. 64742-71-8. EC No 276-735-8, CAS No. 72623-83-7. EC No 276-736-3, CAS 72623-85-9 n,. EC No 276-738-4, CAS 72623-87-1,. EC No 276-737-9, CAS 72623-86-0,. EC No 278-012-2, CAS No. 74869-22-0;.

See section 16 for explanation to R-phrases and/or Hazard statements

## 4. First aid measures

**4.1 Description of first aid measures**

**General recommendations** — Consult a physician. Show this safety data sheet to a physician.

**First aid – eye contact** — Rinse immediately with plenty of water or eye fluid. Ideally lukewarm water with soft water/shower. Keep your eyes wide open. Remove any contact lenses before rinsing eyes.

**First aid- skin contact** — Wash skin with plenty of soap and water for several minutes. Remove contaminated clothing and shoes, wash before reuse. Obtain medical attention if skin irritation develops or persists.

If the product have been injected under the skin at high pressure – immediately to the hospital.
Oil under high pressure, as leakage from hydraulic systems, leaking hoses etcetera, can penetrate the skin and cause severe damage if not treatment correctly. Most damage occurs

| | |
|---|---|
| | during the first hours. Failure to clean wounds/removal of oil can result in disfigurement, loss of function, even amputation of the affected area. The extent of the damage cannot be determined visually. Examination by X-ray may be necessary. Immediate medical attention must be sought even if the injury seems minor. |
| **First aid- ingestion** | Do not induce vomiting. Get medical attention as a precaution. Never give anything by mouth to an unconscious or to a person with seizures. |
| **First aid- inhalation** | If irritation, headache, nausea, or drowsiness occurs, remove to fresh air. Get medical attention if breathing becomes difficult or symptoms persist. |
| **4.2 Most important symptoms and effects, both acute and delayed** | Prolonged contact may cause defatting of the skin and cause irritation.<br>Repeated skin contact may cause a persistent irritation or dermatitis.<br>Contact with eyes may cause slight irritation, experienced as temporary discomfort.<br>Symptoms of respiratory irritation, for example, coughing and difficulty breathing. |
| **4.3 Indication of any immediate medical attention and special treatment needed** | No specific treatment. Treat symptomatically. |

## 5. Firefighting measures

| | |
|---|---|
| **5.1 Extinguishing media**<br>**a) Suitable extinguishing media** | Water spray, foam, carbon dioxide and dry powder. |
| **b) Unsuitable extinguishing media** | Do NOT use water jet. |
| **5.2 Special hazards arising from the substance or mixture** | No information. |
| **5.3 Advice for firefighters** | The protective equipment required depends on the size of the fire, fire limitation and the natural ventilation available. Fire-resistant clothing and breathing unit is recommended for fires in confined spaces and poorly ventilated areas. Full fire-proof clothing is recommended for any large fire involving this product. In case of fire - Always call the fire department. Small fires, such as those capable of being fought with a hand-held extinguisher, can normally be fought by a person who has received instruction on the hazards of flammable liquid fires. Large fires should only be fought by persons trained in this. |

## 6. Accidental release measures

| | |
|---|---|
| **6.1 Personal precautions, protective equipment and emergency procedures** | Use personal protection clothing according to section 8. Risk of slipping on spilled product. Eliminate all sources of ignition. |
| **6.2 Environmental precautions** | Prevent discharge of product to sewers or watercourses. |
| **6.3 Methods and material for containment and cleaning up Large/Small spills** | Stop the source of the release if it can be done without risk. Contain the release to prevent further contamination of soil, surface water or groundwater. Clean up spills as soon as possible during the observation of safeguards. Use appropriate techniques such as non-combustible absorbent materials or pumping. Remove contaminated soil and dispose in accordance with laws and regulations. Spills should be reported to local authorities as appropriate or required. |
| **6.4 Reference to other sections** | Personal protection, see section 8.<br>Disposal, see section 13. |

## 7. Handling and storage

| | |
|---|---|
| **7.1 Precautions for safe handling** | Avoid prolonged or repeated contact with skin. Avoid breathing vapor or mist.<br>Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. |
| **7.2 Conditions for safe storage, including any incompatibilities** | Keep container closed when not in use. Store at room temperature.<br>Warning: Container is not designed to contain pressure. Does not use pressure to empty container or it may rupture with explosive force. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly. |
| **7.3 Specific end use** | No information |

## 8. Exposure controls/personal protection

### 8.1 Control parameters

*National occupational exposure limit values that correspond to Community occupational exposure limit values in accordance with Directive 98/24/EC, including any notations as referred to in Article 2(1) of Commission Decision 95/320/EC*

| Substance | CAS No | Limit value – Short term ppm | Limit value – Short term mg/m³ | Limit value - 8 h ppm | Limit value - 8 h mg/m³ | Notifications |
|---|---|---|---|---|---|---|
| Oil mist, metal working fluids | - | | | | 1 | - |

Reference: GESTIS United Kingdom

### 8.2 Exposure controls

| | |
|---|---|
| **Appropriate engineering controls** | Ensure adequate ventilation. |
| **Eye/face protection** | In case of direct contact with the product or where splashing is possible, wear face shield or goggles to protect against chemicals. |
| **Hand protection** | Wear gloves (nitrile rubber) for prolonged or repeated contact. |
| **Respiratory protection** | Airborne concentrations should be kept to a minimum. If vapors or mists are generated, use appropriate certified respirators. Self-contained air supply is to be used for cleaning large spills or upon entry into tanks, vessels, or other confined spaces. |
| **Other protection** | When handling chemical products exposed persons should always apply reasonable personal cleanliness, this involves washing exposed skin with soap and water several times a day. Remove and wash contaminated clothing before reuse.<br>In an accident involving high-pressure equipment, this product may be injected under the skin. Take precautionary measures to prevent this. |
| **Environmental exposure controls** | See section 6. |

# Texaco Rando HD 22,32,46,68,100

## 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Appearance** | Light to brown liquid. |
| **Odour** | Mineral oil |
| **Odour threshold** | No information |
| **pH (X ºC)** | No information |
| **Melting point/freezing point** | No information |
| **Initial boiling point and boiling range** | No information |
| **Flash point** | > 165 °C (COC) |
| **Evaporation rate** | No information |
| **Flammability (solid, gas)** | No information |
| **Upper/lower flammability or explosive limits** | No information |
| **Vapour pressure** | >1 |
| **Vapour density** | No information |
| **Relative density** | No information |
| **Solubility(ies)** | Soluble in organic solvents |
| **Partition coefficient: n-octanol/water** | No information |
| **Auto-ignition temperature** | No information |
| **Decomposition temperature** | No information |
| **Viscosity** | See product name cSt (40 °C) |
| **Explosive properties** | No information |
| **Oxidising properties** | No information |
| **9.2 Other information** | Density: 844-893 kg/m³ (15 °C)<br>For additional and more specific physical data see product data sheet for each product on www.preem.se. |

## 10. Stability and reactivity

| | |
|---|---|
| **10.1 Reactivity** | May react with strong oxidizing agents, such as chlorates, nitrates, peroxides, etc. |
| **10.2 Chemical stability** | Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. |
| **10.3 Possibility of hazardous reactions** | No information. |
| **10.4 Conditions to avoid** | No information. |
| **10.5 Incompatible materials** | Strong oxidizing agents, such as chlorates, nitrates, peroxides, etc. |
| **10.6 Hazardous decomposition products** | What combustion products are formed depends on the combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be developed in the combustion of this product. |

# Texaco Rando HD 22,32,46,68,100

## 11. Toxicological information

### 11.1 Information on toxicological effects

| | |
|---|---|
| **Acute toxicity** | No information |
| **Irritation** | Can be irritating through inhalation, skin and eye contact. See description below. |
| **Corrosivity** | No information |
| **Sensitisation** | No information |
| **Repeated dose toxicity** | Repeated skin contact may cause a persistent irritation or dermatitis. |
| **Carcinogenicity** | No information |
| **Mutagenicity** | No information |
| **Toxicity for reproduction.** | No information |
| **Inhalation** | Vapors or mists over permissible concentrations, or in unusually high concentrations generated from heating the material or by exposure in poorly ventilated areas or confined spaces, may cause irritation of the nose and throat, headaches, dizziness, nausea, and drowsiness. |
| **Skin** | Prolonged contact, as with clothing wetted with material, may have degreasing effect on the skin and cause irritation, seen as local redness and possibly some discomfort. |
| **Eyes** | May cause slight irritation, experienced as temporary discomfort. |
| **Ingestion** | Unlikely to cause harm if accidentally swallowed in small doses, though larger quantities may cause dizziness, nausea, vomiting and diarrhea. |

## 12. Ecological information

| | |
|---|---|
| **12.1 Toxicity** | No values. |
| **12.2 Persistence and degradability** | According to the EC's criteria: Not readily biodegradable. |
| **12.3 Bio accumulative potential** | Not expected to bio accumulate. |
| **12.4 Mobility in soil** | Release of the product can contaminate soil and groundwater. |
| **12.5 Results of PBT and vPvB assessment** | No information. |
| **12.6 Other adverse effects** | Spills may form a film on the water surface. The film may cause physical damage to aquatic organisms and reduce oxygenation. |

## 13. Disposal considerations

**13.1 Waste treatment methods**

Do not allow waste from the product to contaminate soil or water, or be released into the environment. Oil residues, waste, etc. are classified as hazardous waste.

**EWC code:**

According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

Proposals for waste codes and disposal: 13 01 10 mineral-based non-chlorinated hydraulic oils.
Waste oil from the product is suitable for regeneration.

Packaging
Discharge instructions: Place the package up and down slightly tilted, about 10 degrees, for runoff in such a way that the lowest point of the package is the exit. An extra hole has to be made on some packages. Drainage should be at room temperature (min 15 ℃). Wait until the container is drip dry. Do not reconnect the package after runoff.
Note risks involved when emptying the packages and containers containing flammable liquids. After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion. Do not puncture, cut or weld uncleaned packaging, containers or drums.
Proposals for waste codes for packing:
15 01 02 plastic packaging
15 01 04 metallic packaging
Packaging containing product residues not drip dry should be handled as hazardous waste and disposed of properly sealed.
Proposals for waste code:
15 01 10 packaging containing residues of or contaminated by dangerous substances.

## 14. Transport information

| | ADR/RID-S | IMDG | IATA |
|---|---|---|---|
| **14.1 UN number** | Not classified as dangerous goods. | Not classified as dangerous goods. | Not classified as dangerous goods. |
| **14.2 UN proper shipping name** | Not relevant. | Not relevant. | Not relevant. |
| **14.3 Transport hazard class(es)** | Not relevant. | Not relevant. | Not relevant. |
| **14.4 Packing group** | Not relevant. | Not relevant. | Not relevant. |

| | | | |
|---|---|---|---|
| **14.5 Environmental hazards** | Not relevant. | Not relevant. | Not relevant. |
| **14.6 Special precautions for user** | Not relevant. | Not relevant. | Not relevant. |
| **14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** | Not relevant. | Not relevant. | Not relevant. |

## 15. Regulatory information

| | |
|---|---|
| **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture** | Gestis, International Limit Values<br>European Waste Catalouge and Hazardous Waste List |
| **15.2 Chemical safety assessment** | No. |

## 16. Other information

| | |
|---|---|
| **Hazard statements/Risk phrases** | - |
| **Important changes have been made in section** | General update according to EU 453/2010. |

## LIMITATION OF LIABILITY

This document is only intended to be used as guidance as regards the risks of which we are aware that are associated with the product. Every individual who works with the product or in close proximity of it must receive suitable training. Individuals who come into contact with the product must be capable of using their own judgement as regards conditions or methods for handling, storing and using the product. Alfa Laval is not liable for demands, losses or damage of any kind that arise from flaws or deficiencies in this document or from using, handling, storing or disposing of the product unless it can be proven that Alfa Laval has acted in a grossly negligent manner. **Beyond what has been agreed upon and specified in writing with Alfa Laval in the individual case, Alfa Laval makes no promises or assumes any liability, including but not limited to implicit guarantees regarding marketability or appropriateness in terms of both the information provided in this document and the product to which the information refers.**

# Appendix III

# Technical information of Machinery used

# List of Machinery

## Fork Lifters:

- **Hyster Lifter**

| | |
|---|---|
| **Model** | H 2.5 xm |
| **Year of manufacture** | 2004 |
| **Equipment type** | Counter balance ICE |
| **Basic lift capacity** | 2,500kg (5,512lbs) |
| **Max lift heigh** | 4,300mm (169 ") |
| **Tyre type** | Pneumatic and/or puncture proof |
| **Mast type** | Container entry |
| **Mast lowered** | 2,050mm (81 ") |
| **Machine hours** | 7500 |
| **Power source** | (battery, diesel, LP gas, petrol) - Diesel |

- **Caterpillar DP25N**

| | |
|---|---|
| **Manufacturer's model designation** | DP25N |
| **Year of manufacture** | 2000 |
| **Characteristics** | Cat Lift Trucks |
| **Load capacity** | 2,500kg (5,512lbs) |
| **Operator type** | pedestrian, (operator)-standing, -seated |
| **Power source** | (battery, diesel, LP gas, petrol) - Diesel |

- **Toyota**

| | |
|---|---|
| **Year of manufacture** | 1990 |
| **Characteristics** | Toyota Lift Trucks |
| **Load capacity** | 2,500kg (5,512lbs) |
| **Operator type** | pedestrian, (operator)-standing, -seated |
| **Power source** | (battery, diesel, LP gas, petrol) - Diesel |

- **Toyota**

| | |
|---|---|
| **Year of manufacture** | 1992 |
| **Characteristics** | Toyota Lift Trucks |
| **Load capacity** | 2,000kg |
| **Operator type** | pedestrian, (operator)-standing, -seated |
| **Power source** | (battery, diesel, LP gas, petrol) - Diesel |

- **New Holland bobcat**

| | |
|---|---|
| **Manufacturer's model designation** | Ls 150 |
| **Year of manufacture** | 2000 |
| **Characteristics** | Skid loader |
| **Load capacity** | 1,225kg |
| **Operator type** | pedestrian, (operator)-standing, -seated |
| **Power source** | (battery, diesel, LP gas, petrol) - Diesel |

**Shears:**

- **Lefort 600**

Year of manufacture: 2013

Maximum working pressure: 3000 PSI

Power source: (battery, diesel, LP gas, petrol) - Electricity

- **Lindemann**

Year of manufacture: 1995

Maximum working pressure: 2000 PSI

Power source: (battery, diesel, LP gas, petrol) - Electricity

- **Lindemann**

Year of manufacture: 1998

Maximum working pressure: 3000 PSI

Power source: (battery, diesel, LP gas, petrol) - Electricity

**Shredders:**

- **Super chopper**

Technical Spec.:  SC1412/160

Electrical motor: 160 kW

Hägglund motor: CB400

Rotor: 1 400 mm/0-28 rpm

Knives: 12 flying/7 static

Capacity/hour:  Up to 12000 kg/hour

Weight: c.15000 kg

Length/ width/ height: 1700 x 3 000 x 3 500 mm

- **Heavy Rasper**

Technical Specifications Model: R1207

Rotor : 800 mm 120 rpm

Knives: 12 flying/3 static

Capacity/hour : Up to 2000 kg/production hour

Motor : 90 kW, 1400 rpm

Weight: 6900 kg

Length/ width/ height: 1750 x 3250 x 3200 mm

- **Rasper**

Technical Specifications Model: R807

Rotor : 800 mm / 120 rpm

Knives: 8 flying/2 static

Capacity/hour: Up to 1200 kg/production hour

Motor : 75 kW, 1400 rpm

Weight : 5500 kg

Length/ width/ height: 1750 x 2850 x 3200 mm

- **Eddy Current Separator**

Year of manufacture: 2013

Motor: 4 kw

Weight: 1800kg

Screening dimension: 8mm

Production: 3mt per hour

- **Wire Granulator and Separator**

Year of manufacture: 2009
Weight: 910 kg
Production rate: 2.5 MT per hour
Motor: 75 kw

**Excavators:**

- **Poclain with rubber tyres 61**

| | |
|---|---|
| **Year** | 1989 |
| **Manufacturer** | CASE POCLAIN |
| **Model** | 61P |
| **Hours** | 12,000 |

- **Poclain with rubber tyres 61**

**Year** 1989

**Manufacturer** CASE POCLAIN

**Model** 61P

**Hours** 15,000

- **Poclain crawler 125**

**Year** 1989

**Manufacturer** CASE POCLAIN

**Model** 125B

**Hours** 16,325

- **Atlas 1404**

**Year** 1999

**Manufacturer** Atlas

**Model** 1404

**Hours** 5, 061

**Generators:**

- Perkins Rolls-Royce – Capacity 630kw
- Alister Chalmers – Capacity 280kw
- Alister Chalmers – Capacity 280kw

**Bailers:**

- **Tabarelli pn series**

Model: pn1800

Engine Bran: Iveco

Engine Capacity: 3ltr

Production rate: 6-10 mt per hour

- **LSM Bailer**

BTS-WR6500 CTR

| | |
|---|---|
| Compaction force: | 65t (650kN) |
| Bale size: | 1210x800x1000(var.)mm |
| Bale weight: | 450-800kg |
| Motor: | 7,5kW 32A |
| Voltage: | 400V |
| Size HxBxT: | 3320x2060x1310mm |
| Weight: | 3200kg |
| Strapping: | Wire |

**Trucks:**

- **Toyota van**

Model: Toyota Toyoace Truck

Engine capacity:

Year of manufacture:

- **Folden Hookloader**

Model: Toyota Toyoace Truck

Engine capacity:

Year of manufacture:

**Cable strippers:**

- **Super Stripper 170 Cable Stripper**

Length**:** 1000mm
Width**:** 640mm
Height**:** 1270mm
Weight**:** 600kg
Cutting Capacity**:** 3mm – 75mm
Cutting Speed**:** Approx. 27 meters per min

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09th July 2013

The Chairman Malta Planning and Environmental Authority Floriana

**Site Details**

Proposal: Generator report for the concerned scrap yard

**Applicant Details**

Applicant: Mr. Matthew Fenech Magrin
Mob No: +356 7905 3463
Tel. No.: +356 2166 7855
Website: www.metalcoltd.com
Architect: Mr. Joe Bugeja

ECL CONSULTING ENGINEERS
ING. JOHAN ALOISIO
WARRANT NR: 759
+356 9986 8828 E:JA@ECLCE.COM

Dear Sir,

We refer to the proposed development in caption previously, design being submitted by Architect Joe Bugeja on behalf of the client, Mr. Matthew Fenech Magrin, and below please find our comments and recommendations.

## 1.0 Generators

The following details are the requested details of the installed generators within this scrap yard.

*Generator 1*

| | |
|---|---|
| Brand: | Dawson-Keith |
| Engine: | Allis Chalmers 25000 Basic Engine |
| Alternator: | Stamford, 260kVA Prime Power at 0.8 Power Factor |
| Fuel Type: | Diesel |
| Stack Height: | 1.5m Above canopy |
| Annual Fuel Consumption: | 2,500L |
| Year of Manufacture: | Approximately 1980 |

**Figure 1:** *Dawson-Keith Generator Product Label*

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**Figure 2:** *Dawson-Keith Generator 1*

**Figure 3:** *Dawson-Keith Generator Stack*

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WARRANT NR: 759
+356 9986 8828 E:JA@ECLCE.COM

*Generator 2*

| | |
|---|---|
| Brand: | Dawson-Keith |
| Engine: | Allis Chalmers 25000 Basic Engine |
| Alternator: | Stamford, 260kVA Prime Power at 0.8 Power Factor |
| Fuel Type: | Diesel |
| Stack Height: | 1.5m Above canopy |
| Annual Fuel Consumption: | 3,000L |
| Year of Manufacture: | Approximately 1980 |

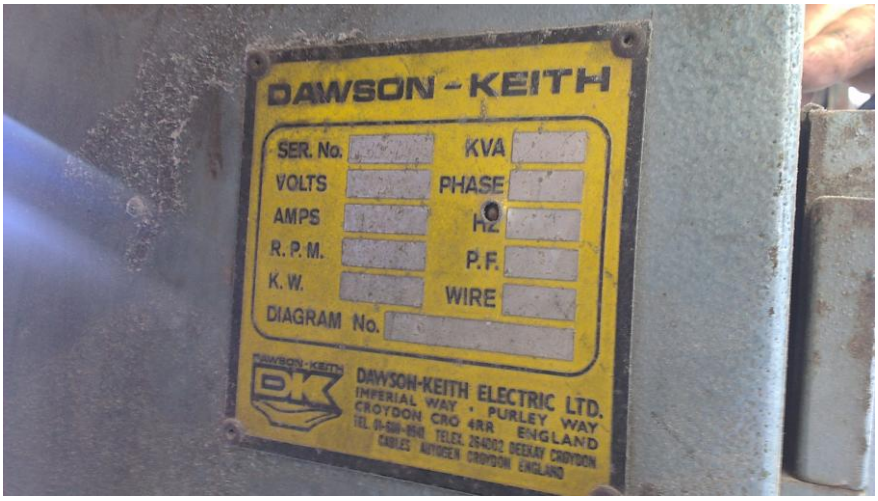


**Figure 4:** *Dawson-Keith Generator Product Label*

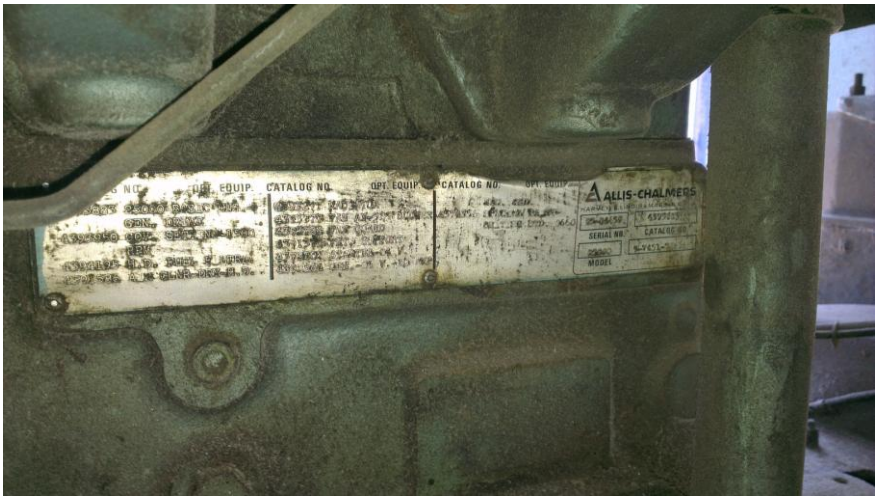


**Figure 5:** *Dawson-Keith Generator Name Plate*

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ING. JOHAN ALOISIO
WARRANT NR: 759
+356 9986 8828 E:JA@ECLCE.COM

**Figure 6:** *Dawson-Keith Generator 2*

*Generator 3*

| | |
|---|---|
| Brand: | FG Wilson P605E |
| Engine: | Perkins V12 |
| Alternator: | Stamford, 605kVA Prime Power at 0.8 Power Factor |
| Fuel Type: | Diesel |
| Stack Height: | 0.5m Above canopy |
| Annual Fuel Consumption: | 6,500L |
| Year of Manufacture: | Approximately 1995 |

**Figure 7:** *FG Wilson P605E Generator Set*


**Figure 8:** *FG Wilson P605E Name Plate*


**Figure 9:** *FG Wilson P605E Product Label*

We trust the above is in line with your requirements, and should you require any further clarifications, please do not hesitate to contact us.

Regards

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Ing. Johan Aloisio
Warrant No. 759

| | | |
|---|---|---|
| A | **Numru tar-Reġistrazzjoni**<br>Registration Number | LCM274 |

| | | |
|---|---|---|
| C. | **IS-SID REĠISTRAT TAL-VETTURA**<br>Registered Vehicle Owner | |
| C.1.1 | METALCO LTD | |
| C.1.2 | 48, SCRAP LANE ROAD | |
| C.1.3 | LUQA | |
| | CHARLES CREMONA | 0554258M |
| 2. | **DETTALJI TAL-VETTURA**<br>Vehicle Details | |
| B | **Data tal-Ewwel Reġistrazzjoni**<br>Date of First Registration | 04/01/2007 |
| [B.1] | **Sena ta' Manifattura**<br>Year of Manufacture | 1995 |
| D.1 | **Għamla**<br>Make | FODEN |
| D.2 | **Tip/Varjanti/Verżjoni**<br>Type/Variant/Version | N/A |
| D.3 | **Deskrizzjoni Kummerċjali/Isem tal-Vettura**<br>Vehicle Commercial Description/Name | 4340 HOOK LOADER |
| E | **Numru ta' Identifikazzjoni tal-Vettura**<br>Vehicle Identification Number | 301326 |
| F.1 | **L-Oġħla massa teknikament permessibbli meta mgħobbija (esklużi muturi u *mopeds*)**<br>Max. technically permissible laden mass (excluding motorcycles and mopeds) | 32000 kgs |
| F.4 | **L-Oġħla massa permessibbli tal-vettura kollha meta mgħobbija**<br>Max. permissible laden mass of the whole vehicle | N/A |
| G | **Massa tal-vettura f'servizz**<br>Mass of vehicle in service | N/A |
| I | **Data tar-Reġistrazzjoni li għaliha jirreferi dan iċ-ċertifikat**<br>Date of Registration to which this certificate refers | 14/04/2014 |

| | | | | |
|---|---|---|---|---|
| J | **Kategorija tal-Vettura (EU)**<br>EU Vehicle Category | SP1 | [J.1] **Kategorija Nazzjonali**<br>National Category | SPV |
| K | **Numru tal-Approvazzjoni tat-Tip**<br>Type Approval number | N/A | | |
| L | **Numru ta' Fusien**<br>Number of Axles | 4 | [L.1] **Tip ta' Saspenxin**<br>Suspension Type | OTHER |
| M | ***Wheelbase* (mm)**<br>Wheelbase (mm) | N/A | [M.1] **Wisa tal-fusien (mm)**<br>Axle width (mm) | N/A |

**Il-persuna li isimha jidher f'dan iċ-ċertifikat mhux bilfors hi sid il-vettura, iżda hi din il-persuna li għandha tiżgura li l-vettura hi rreġistrata u liċenzjata kif xieraq.**
The person whose name appears on this certificate is not necessarily the vehicle owner, but it is this person who shall ensure that the vehicle is properly registered and licensed.

**PROTEZZJONI TAL-INFORMAZZJONI – L-informazzjoni personali hi protetta u tintuża skont id-dispożizzjonijiet tal-Att dwar il-Protezzjoni u l-Privatezza tad-*Data* (KAP.440).**
INFORMATION PROTECTED – Personal information is protected and used in accordance with the provisions of the Data Protection Act (CAP. 440).

| | | | |
|---|---|---|---|
| [H] | **Perjodu ta' Validità**<br>Period of Validity | UNLIMITED | [Y] **Numru tas-Sistema**<br>System Number | 461995 |

**NOTI (Notes):**
TRANSFER TO BE AUTHORISED BY TRANSPORT MALTA
COMPANY-OWNED VEHICLE

Last recorded vehicle mileage 187338.00 km.
Length: N/A Particulate Matter: N/A

| | | |
|---|---|---|
| 3. | **DETTALJI TAL-MAGNA**<br>Engine Details | |
| P.1 | **Qawwa tal-Magna**<br>Engine Capacity | 11000 |
| P.2 | **L-Oġħla Qawwa Netta (kW)**<br>Max. Net Power (In kW) | N/A |
| V.7 | **Il-Livelli flimkien ta' $CO_2$ (g/km)**<br>Combined $CO_2$ (g/km) | N/A |
| P.3 | **Tip ta' fjuwil jew sors ta' qawwa**<br>Type of fuel or power source | DIESEL |
| P.5 | **Numru ta' Identifikazzjoni tal-Magna**<br>Engine Identification Number | 32548561 |
| [P.6] | **Kodiċi tal-Magna**<br>Engine Code | N/A |
| [P.7] | **Għamla tal-Magna**<br>Engine Make | CUMMINS |
| Q | **Proporzjon ta' Qawwa/Piż (muturi biss) (kW/kg)**<br>Power/Weight ratio (only for motor cycles) (kW/kg) | N/A |
| 4. | **DETTALJI OĦRA**<br>Other Details | |
| R. | **Kulur**<br>Colour | WHITE |
| S.1 | **Numru ta' passiġġieri bilqiegħda, ix-xufier u dawk li jużaw is-siġġijiet bir-roti**<br>Number of sitting passengers, driver and wheelchair users | 2 |
| S.2 | **Numru ta' passiġġieri bilwieqfa (fejn xieraq)**<br>Number of standing places (where appropriate) | N/A |
| [X.1] | **Data tal-aħħar bidla tas-sid**<br>Date of last change of owner | N/A |
| [X.2] | **Numru ta' sidien ta' qabel**<br>Number of former owners | N/A |
| [Y.1] | **Numru ta' pjanċi maħruġa**<br>Number of plates issued | 2 |
| [V.9] | **Kategorija Ambjentali**<br>Environmental Category | N/A |
| [Z] | **Tip ta' *Gearbox***<br>Gearbox Type | MANUAL |

| | | |
|---|---|---|
| A | Numru tar-Reġistrazzjoni<br>Registration Number | **BBQ819** |

| | | |
|---|---|---|
| 1. | **IS-SID REĠISTRAT TAL-VETTURA**<br>Registered Holder | |
| C.1.1 | METALCO LTD | |
| C.1.2 | 48 SCRAP LANE ROAD | |
| C.1.3 | LUQA | |
| | | CHARLES CREMONA 554258M |
| 2. | **DETTALJI TAL-VETTURA**<br>Vehicle Details | |
| B | **Data ta' l-Ewwel Reġistrazzjoni**<br>Date of First Registration | 27/03/2006 |
| [B.1] | **Sena ta' Manifattura**<br>Year of Manufacture | 1995 |
| D.1 | **Għamla**<br>Make | TOYOTA |
| D.2 | **Tip/Varjanti/Verżjoni**<br>Type/Variant/Version | N/A |
| D.3 | **Deskrizzjoni Kummerċjali**<br>Commercial Description | TOYOACE TRUCK |
| E | **Numru tax-Xaċi**<br>Vehicle Identification Number | BU1020103092 |
| F.1 | **Piż Gross tal-Vettura (GVW) (esk. muturi u mopeds)**<br>Max. technically permissible mass (GVW) (exc. m. cycles and mopeds) | 4705kgs |
| F.3 | **Piż Massimu Permessibbli (GTW) tal-vettura kollha**<br>Max. permissible laden mass (GTW) of the whole vehicle | |
| G | **Piż Gross Mgħaqqda (GCW) (mhux vetturi M1)**<br>Mass in Service (GCW)(not M1 vehicles) | |
| I | **Data tar-Reġistrazzjoni li għaliha japplika dan iċ-ċertifikat**<br>Registration Date to which this certificate applies | 10/10/2006 |
| J | **Kategorija tal-Vettura** N2<br>Vehicle Category | [J.1] **Kategorija Nazzjonali** GCV<br>National Category |
| K | **Numru tat-Type Approval (jekk disponibbli)**<br>Type Approval number (if available) | |
| L | **Numru ta' Fusien** 2<br>Number of Axles | [L.1] **Tip ta' Sospensjoni** OTHER<br>Suspension Type |

**C.4.c Il-persuna li isimha jidher f'dan iċ-ċertifikat mhux bilfors hi sid il-vettura. Hi din il-persuna li għandha tassigura li l-vettura hi rreġistrata u liċenzjata kif xieraq.**
The person whose name appears on this certificate is not necessarily the vehicle owner. It is this person who shall ensure that the vehicle is properly registered and licensed.

| | | |
|---|---|---|
| [Y] | **Numru tas-Sistema**<br>System Number | 449307 |

**NOTI** (Notes):
TRANSFER TO BE AUTHORISED BY MALTA TRANSPORT AUTHORITY

COMPANY-OWNED VEHICLE
AUTHORISED TO BE USED ONLY ON NATIONAL ROADS

| | | |
|---|---|---|
| 3. | **Dettalji tal-Magna**<br>Engine Details | |
| P.1 | **Qawwa tal-Magna**<br>Engine Capacity | 4100 |
| P.2 | **Qawwa Massima Netta (kW)**<br>Max. Net Power (In kW) | N/A |
| P.3 | **Tip ta' *fuel* jew sors ta' qawwa**<br>Type of fuel or power source | DIESEL |
| P.5 | **Numru tal-Magna**<br>Engine Identification Number | 1450317 |
| [P.6] | **Kodiċi tal-Magna**<br>Engine Code | [P.7] **Għamla tal-Magna**<br>Engine Make |
| Q | **Proporzjon ta'Qawwa/Piż (muturi biss) (kW/kg)**<br>Power/Weight ratio (only for motor cycles (kW/kg) | |
| 4. | **DETTALJI OĦRA**<br>Other Details | |
| R. | **Kulur**<br>Colour | WHITE |
| S.1 | **Numru ta' passiġġieri bilqiegħda u x-xufier**<br>Number of sitting passengers and driver | 3 |
| S.2 | **Numru ta' passiġġieri bilwieqfa (fejn adatt)**<br>Number of standing places (where appropriate) | N/A |
| [X.1] | **Data ta' l-aħħar bidla tas-sid**<br>Date of last change of owner | 10/10/2006 |
| [X.2] | **Numru ta' sidien ta' qabel**<br>Number of former owners | 1 |
| [Y.1] | **Numru ta' pjanċi maħruġa**<br>Number of plates issued | 2 |
| [Z] | **Tip ta' *Gearbox***<br>Gearbox Type | N/A |

# Appendix IV

## Technical information on the Cesspit, Reservoir,

## Oil separator and silt chamber

ECL CONSULTING ENGINEERS

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MALTA

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E: INFO@ECLCE.COM

25th September 2013

The Chairman Malta Planning and Environmental Authority Floriana

**Site Details**

Proposal: The construction of a sanitary discharge cesspit, a silt chamber and an oil separator within a scrap yard

**Applicant Details**

Applicant: Mr. Matthew Fenech Magrin
Mob No: +356 7905 3463
Tel. No.: +356 2166 7855
Website: www.metalcoltd.com
Architect: Mr. Joe Bugeja


Dear Sir,

We refer to the proposed development in caption previously, design being submitted by Architect Joe Bugeja on behalf of the client, Mr. Matthew Fenech Magrin, below please find our comments and recommendations.

## 1.0 Sanitary Discharge Cesspit

A sanitary discharge cesspit has already been constructed within this scrap yard in order to cater for the various sanitary discharge points of this yard. The cesspit has physical dimensions of 12.0m (L) x 6.0m (W) x 12.0m (H), whose dimensions conform to Schedule 1 Activity 43 of Legal Notice 106 of 2007. It also has direct access through two (2) in number manholes.

Due to the large volume that this cesspit can hold, it is not within practice to test it as per BS EN 1610, as this would require 864$m^3$ of water in order for the test to be carried out successfully.

## 2.0 Silt Chamber

A silt chamber having physical dimensions of 4.0m (L) x 2.0m (W) x 2.0m (H) is to be constructed within this scrapyard. These dimensions meet the requirements specified in BS 858

Access through this chamber is through a 0.6m (L) x 0.6m (W) manhole.

## 3.0 Oil Separator

An oil separator having physical dimensions of 4.0m (L) x 2.0m (W) x 2.0m (H) is to be constructed within this scrapyard, side by side to the silt chamber. These dimensions meet the requirements specified in EN 858.

Access through this chamber is through a 0.6m (L) x 0.6m (W) manhole.

## 4.0 Water Collection

Existing floor drains are connected by means of a buried 315mmØ pipe, discharging fluids to the silt chamber. The silt chamber is constructed in a manner that debris will fall to the floor of the chamber without being transferred to the oil separator. When the fluids flow over the wall that divides the oil separator and the silt chamber, the fluids will be basically composed of oil and water only.

The discharge pipework of the oil separator is installed beneath the fluids level, in order to make it possible for the oil to be kept within the separator, whilst only water is discharged to the cesspit. A preparation pipework is also to be installed for future connection to the main sewage pipeline.

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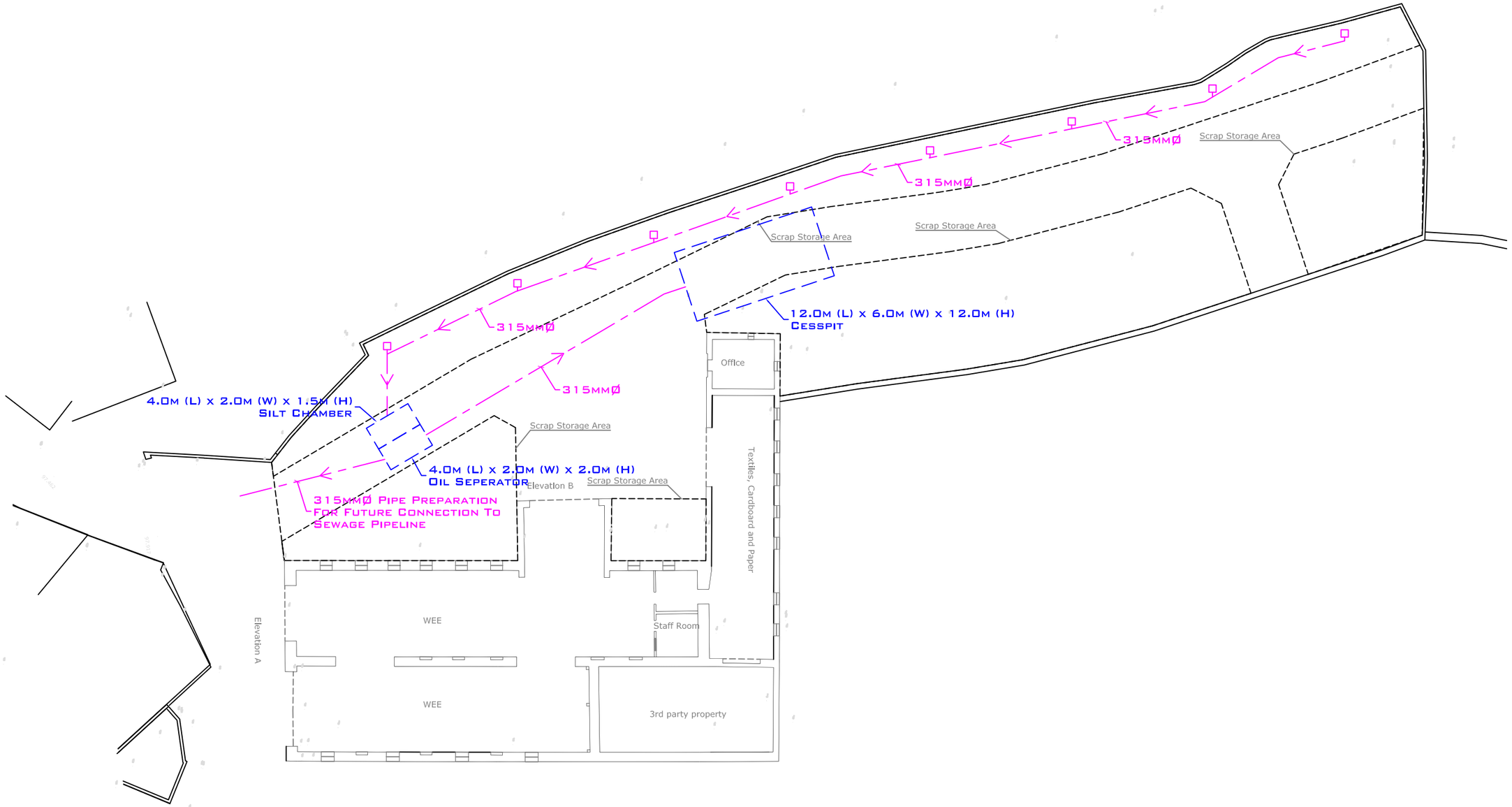


## Legend:

| | |
|---|---|
| □ 600mm x 600mm Floor Grilles | |
| | |
| | |
| | |
| | |
| | |

1. This drawing remains property of ECL consulting engineers and must not be used or copied without written permission.
2. Do not scale this drawing as a basis of measurement and the contractor is to check dimensions before construction. ECL consulting engineers must be informed about any contradiction or discrepancy before work is started. Any discrepancies arising from failure of doing so will be deemed to be the responsibility of contractor, and any claims for variation will be rejected.
3. These drawings are conceptual to assist the tenderer to formulate a proposal for works. The successful tenderer is to provide his own construction drawings, to co-ordinate the installation with the building structure, finishes and all other M&E services.


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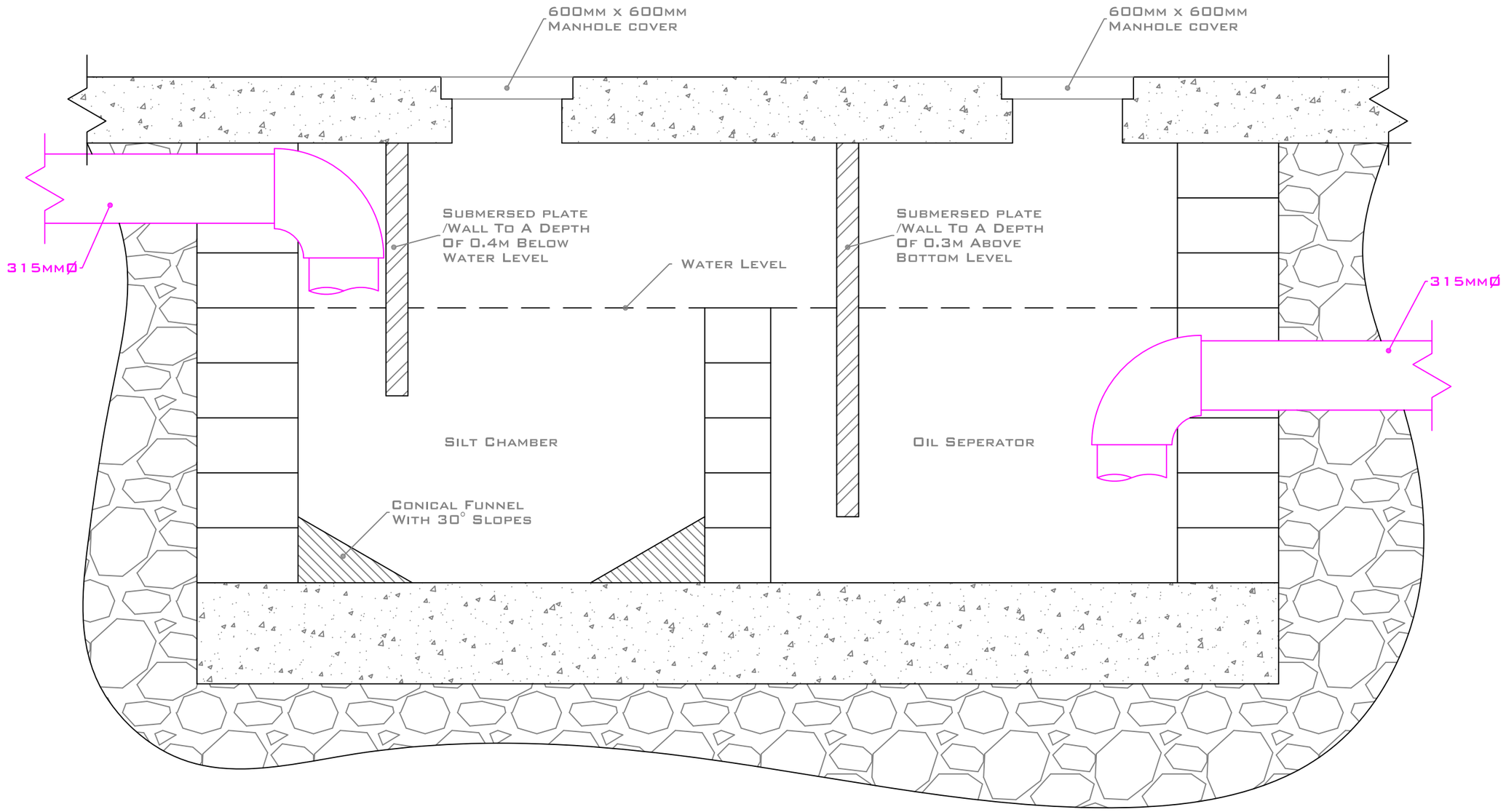
Project: Metalco Ltd

Drawing Title: Cesspit & Interceptor Layout

| Revision No.: | Last Updated: | Scale: | Drawing No.: |
|---|---|---|---|
| 01 | 03.09.13 | 1:350 (A3) | ML.CI.01 |

| Designed By: | Warrant No.: | Client: |
|---|---|---|
| Ing. J. Aloisio | 759 | — |

| Checked By: | Drawn By: |
|---|---|
| Ing. J. Aloisio | R.Mifsud |

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2. Do not scale this drawing as a basis of measurement and the contractor is to check dimensions before construction. ECL consulting engineers must be informed about any contradiction or discrepancy before work is started. Any discrepancies arising from failure of doing so will be deemed to be the responsibility of contractor, and any claims for variation will be rejected.
3. These drawings are conceptual to assist the tenderer to formulate a proposal for works. The successful tenderer is to provide his own construction drawings, to co-ordinate the installation with the building structure, finishes and all other M&E services.

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Project:
Metalco Ltd

Drawing Title:
Silt Chamber & Oil Seperator Layout

| Revision No.: | Last Updated: | Scale: | Drawing No.: |
|---|---|---|---|
| 01 | 03.09.13 | 1:20 (A3) | ML.SO.01 |

| Designed By: | Warrant No.: | Client: |
|---|---|---|
| Ing. J. Aloisio | 759 | — |

| Checked By: | Drawn By: |
|---|---|
| Ing. J. Aloisio | R.Mifsud |

We trust the above is in line with your requirements, and should you require any further clarifications, please do not hesitate to contact us.

Regards

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Ing. Johan Aloisio
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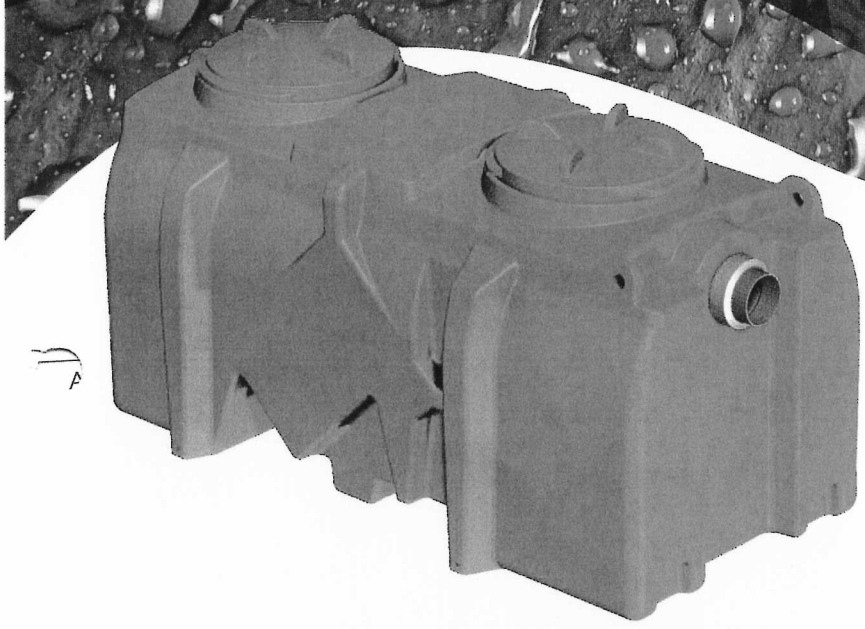
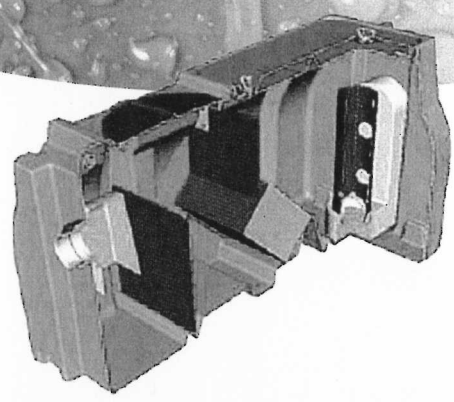
# Oil Interceptor





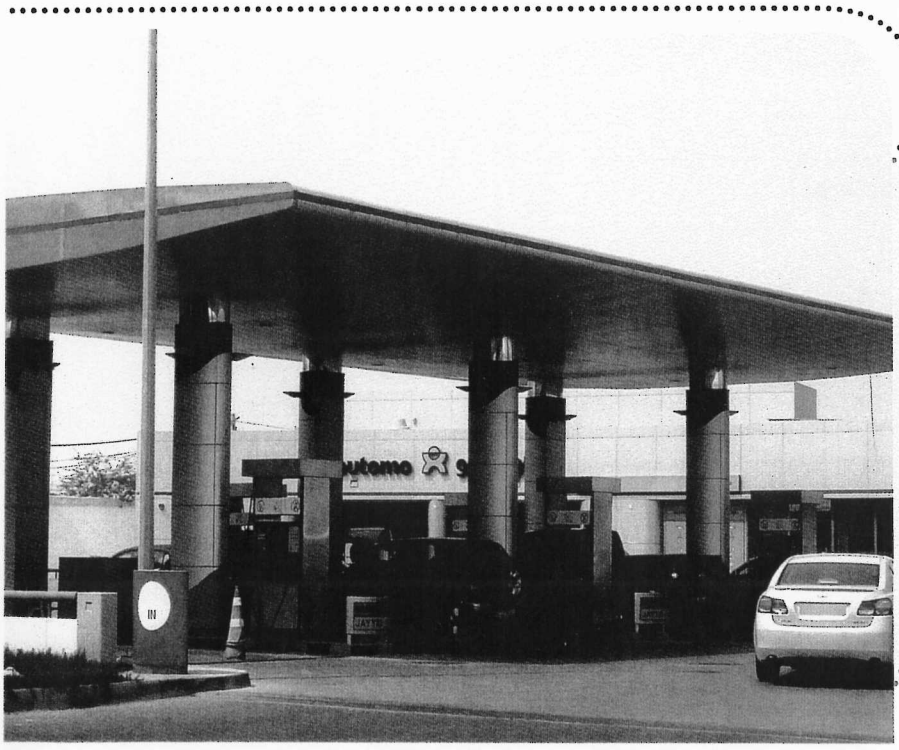
## AQUAPOLY
## OIL INTERCEPTOR

Patented and Registered Model

- CLASS I POLYETHYLENE HYDROCARBON DECANTER-SEPARATOR
- COMPLIES WITH EN 858-1 AND EN 858-2 STANDARDS
- CE CERTIFIED
- GUARANTEED ≤ 5 MG/L OUTPUT

**USES**

- SERVICE STATIONS
- CAR WASHES
- REPAIR SHOPS ETC



### TECHNICAL FEATURES

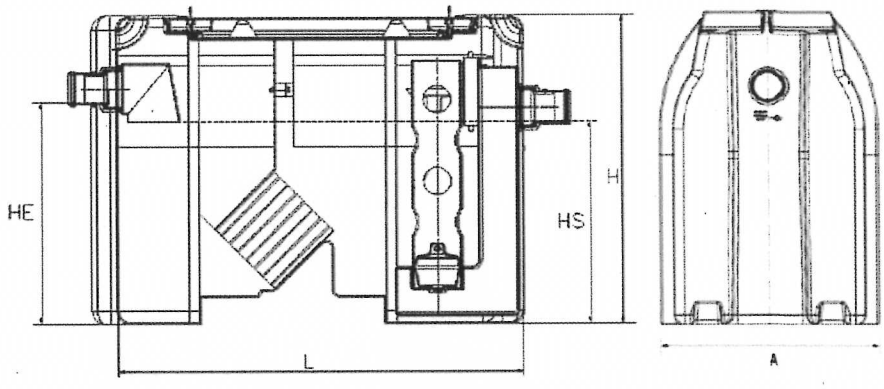
The Aquapoly Hydrocarbon Decanter-Separator is specifically designed with a lamellar coalescing effect and for a large retention capacity. All compartments are easily accessed for inspections and maintenance. Treatment takes place in two phases:

- Settling of sludge and sand in the decanter-sand trap compartment
- Separation of oil and hydrocarbons through the coalescing effect

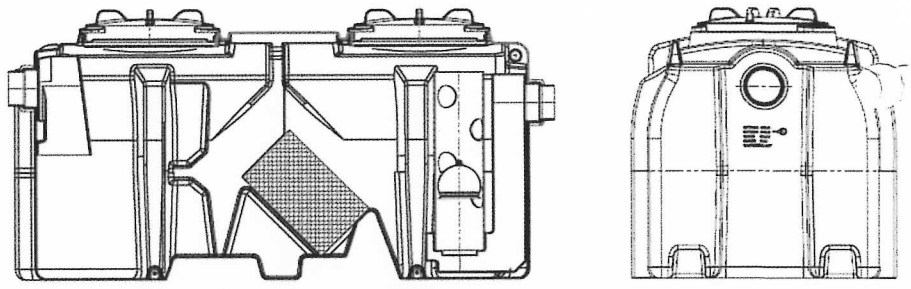
## TECHNICAL FEATURES

Treatable wastewater is retained in the settling compartment located at the head of the hydrocarbon separator, where sludge and sand are retained. The stream of water - now free of sludge and sand - flows to a separation compartment, equipped with a block of polypropylene lamellar cells that provide a coalescing effect which separates the hydrocarbons. An automatic shutter system prevents accidental hydrocarbon spillage if the hydrocarbon level overflows, thus preventing hydrocarbons from entering the water system.

The system can also be equipped with an oil / sludge level sensor to give an alarm when system needs desludging.




AquaPOLY01 and AquaPOLY03



AquaPOLY06 and AquaPOLY10

| Model | Flow lt/s | Volume of oil/ hydrocarbon Retention lt. | Volume Treated lt. | L mm | A mm | H mm | He mm | HS mm | Inlet/ outlet mm |
|---|---|---|---|---|---|---|---|---|---|
| AquaPOLY01 | 1.50 | 150 | 620 | 1570 | 1180 | 1058 | 823 | 753 | 110 |
| AquaPOLY03 | 3 | 210 | 1200 | 1570 | 1180 | 1200 | 965 | 895 | 110 |
| AquaPOLY06 | 6 | 350 | 1800 | 2300 | 1180 | 1212 | 785 | 715 | 160 |
| AquaPOLY10 | 10 | 460 | 2850 | 2300 | 1180 | 1662 | 1235 | 1165 | 160 |

***FM Environmental reserves the right to change the measurements*

*Contractual document. The data and values are given as an indication and are subject to change*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Applus® Certificado nº 380143

# Appendix V

## The Environmental Risk Assessment Report

## and the Risk Assessment Report

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6th June 2015

The Chairman Malta Planning and Environmental Authority Floriana

**Site Details**

| | |
|---|---|
| Proposal: | Environmental risk assessment report |
| Applicant: | Mr. Matthew Fenech Magrin |
| Address: | Metalco Ltd, Sqaq il fdal tal hadid, Luqa |
| Mob No: | +356 7905 3463 |
| Tel. No.: | +356 2166 7855 |
| Website: | www.metalcoltd.com |
| Architect: | Mr. Mark Abela |

## 1.0 Objective

The scope of this environmental risk assessment report is to identify the activities involving the use and production or release of relevant hazardous substances in order to prevent and tackle potential soil and ground water contaminationnfrom such substances and establish whether a baseline report is required.

## 2.0 Stage 1 - Site Description

Metalco Ltd has been in operation since 1988. It operates as an offshoot of Fenech & Cremona. Originally the firm was started by the late Anthony Cremona right after World War I where Antonio Cremona started recycling hides, glass and metals, which were exported to Italy. At that time, the company's name was Malta Scrap Iron and Metal Company. In 1963, after Antonio Cremona's death, his widow Lorenza made her brother Joseph Fenech a partner in the firm and Fenech & Cremona was established. Today, we specialize in the recycle of ferrous and non–ferrous metal scrap such as copper, brass, lead and aluminium, and also in the shredding of various types of materials such as mattresses and confidential documents.

Metalco Ltd is dedicated to being one of the leading producers and exporters of recycled scrap materials by using the most effective, modern and innovative methods in scrap recovery and to establish and maintain a fully environmentally friendly waste management facility. It is situated in the outskirts of Luqa covers an area of 2,750sqm. It is practically surrounded by another larger scrapyard on one side and by a vehicle servicing site on the other side.

## 3.0 Stage 1 - Site Operations

The site is operating as a scrap yard and buys used materials to process them into raw material for local and export. Within the premises the majority of materials are: aluminium apertures, which are split up into aluminium and glass, and used electricity cables which are processed into steel, copper, aluminium, rubber and PVC. Oter items are refrigeration condensors and eevaporators which again are split into aluminium or copper.

No car components are available on site except engine blocks, which are normally aluminium cast. Since there is the minor possibility of some oil containment an interceptor system was installed as covered in the following section.

Any other Items on site are all very minimal.

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## 4.0 Stage 1 – Identify Hazardous Substances available on site

Below is a list of hazardous substances that **at some point may be found** on site together with their respective code and maximum amounts on site:

| | |
|---|---|
| 07 06 01* | Aqueous washing liquids and mother liquors |
| 07 06 03* | Organic halogenated solvents, washing liquids and mother liquors |
| 07 06 04* | Other organic solvents, washing liquids and mother liquors |
| 07 06 08* | Other still bottoms and reaction residues |
| 07 06 09* | Halogenated filter cakes and spent absorbents |
| 07 06 10* | Other filter cakes and spent absorbents |
| 07 06 11* | Sludges from on-site effluent treatment containing dangerous substances |
| 08 03 17* | Waste printing toner containing dangerous substances |
| 16 02 11* | Discarded equipment containing chlorofluorocarbons, HCFC, HFC |
| 16 02 13* | Discarded Equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12 |
| 16 02 15* | Hazardous components removed from discarded equipment |
| 16 03 05* | Organic wastes containing dangerous substances (liquid soap, shampoo, creams, soap, powders and toothpaste) |
| 16 06 01* | Lead Batteries |
| 16 06 02* | Ni-Cd batteries |
| 16 06 03* | Mercury-containing batteries |
| 20 01 23* | Discarded equipment containing chlorofluorocarbons |
| 20 01 35* | Discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35 (other than those mentioned in section 2.2.1 only) |

## 5.0 Stage 2 – Identify which are relevant hazardous substances

Below is a list of hazardous substances that at some point may be found on site together with their respective code, chemical and physical properties and if relevant to contaminate soil or ground water:

| Hazardous Substance | Waste code | Chemical and Physical Property | Pollution Risk |
|---|---|---|---|
| Aqueous washing liquids and mother liquors | 07 06 01* | These are in semi-solid form, soluble, non toxic, moderate mobility, not persistant | **Relevant** |
| Organic halogenated solvents, washing liquids and mother liquors | 07 06 03* | These are in semi-solid form, soluble, non toxic, moderate to high mobility, not persistant | **Relevant** |
| Other organic solvents, washing liquids and mother liquors | 07 06 04* | These are in semi-solid form, soluble, non toxic, moderate mobility, not persistant | **Relevant** |
| Other still bottoms and reaction residues | 07 06 08* | These are in semi-solid form, non soluble, toxic, moderate mobility and persistant | **Relevant** |
| Halogenated filter cakes and spent absorbents | 07 06 09* | These are in solid form, non soluble, toxic, low mobility, not persistant | Not Relevant |
| Other filter cakes and spent absorbents | 07 06 10* | These are in solid form, non soluble, toxic, low mobility, not persistant | Not Relevant |
| Sludges from on-site effluent treatment containing dangerous substances | 07 06 11* | These are in semi-solid form, non soluble, toxic, moderate mobility and non persistant | **Relevant** |
| Waste printing toner containing dangerous substances | 08 03 17* | These are in solid form, non soluble, toxic, low mobility and persistant | Not Relevant |
| Discarded equipment containing chlorofluorocarbons , HCFC, HFC | 16 02 11* | These are in solid and liquid form, non soluble, toxic, low mobility and non persistant | Not Relevant |
| Discarded Equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12 | 16 02 13* | These are in solid and liquid form, non soluble, toxic, low mobility and non persistant | Not Relevant |
| Hazardous components removed from discarded equipment | 16 02 15* | These are in solid form, non soluble, toxic, low mobility and non persistant | Not Relevant |
| Organic wastes containing dangerous substances (liquid soap, shampoo, creams, soap, | 16 03 05* | These are in semi-solid form, soluble, non toxic, moderate mobility, not persistant | **Relevant** |

| | | | |
|---|---|---|---|
| powders and toothpaste) | | | |
| Lead Batteries | 16 06 01* | These are in solid and liquid form, non soluble, toxic, moderate mobility, not persistant | **Relevant** |
| Ni-Cd batteries | 16 06 02* | These are in solid form, non soluble, highly toxic, no mobility, not persistant | **Relevant** |
| Mercury-containing batteries | 16 06 03* | These are in solid form, non soluble, highly toxic, no mobility, not persistant | **Relevant** |
| Discarded equipment containing chlorofluorocarbons | 20 01 23* | These are in solid and liquid form, non soluble, toxic, low mobility and non persistant | Not Relevant |
| Discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35 (other than those mentioned in section 2.2.1 only) | 20 01 35* | These are in solid form, non soluble, toxic, low mobility and non persistant | Not Relevant |

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## 6.0 Stage 3 – Relevant Hazardous Substances quantities and storage systems found on site

Following the evaluation of relevant hazardous substances, and maximum quantities and storage system on site if relevant to contaminate soil or ground water and determine if baseline report is needed:

| Hazardous Substance | Quantity Found on Site | Storage Method |
|---|---|---|
| Aqueous washing liquids and mother liquors | <5T | These are stored in sealed plasetic containers and processed in an impervious cesspit. Sealing integrity is very good. |
| Organic halogenated solvents, washing liquids and mother liquors | <5T | These are stored in sealed plasetic containers and processed in an impervious cesspit. Sealing integrity is very good. |
| Other organic solvents, washing liquids and mother liquors | <5T | These are stored in sealed plasetic containers and processed in an impervious cesspit. Sealing integrity is very good. |
| Other still bottoms and reaction residues | None found on Site | If available, these are stored in impervious metal drums. Sealing integrity is very good. |
| Sludge from on-site effluent treatment containing dangerous substances | None found on Site | If available, these are stored in impervious metal drums. Sealing integrity is very good. |
| Organic wastes containing dangerous substances (liquid soap, shampoo, creams, soap, powders and toothpaste) | <1T | These are stored in sealed plasetic containers and processed in an impervious cesspit. Sealing integrity is very good. |
| Lead Batteries | <300T | These are in a semi dry state and do not pose and ground water or soil contamination risk, since they are contained in plastic impervious containers. Sealing integrity is very good. |
| Ni-Cd batteries | <10T | These are in a dry state and do not pose and ground water or soil contamination risk, since they are contained in plastic impervious containers. Sealing integrity is very good. |
| Mercury-containing batteries | None found on Site | If available, these are stored in impervious plastic containers. Sealing integrity is very good. |

Hence from the above, a baseline report is not required.

## 7.0 Stage 4 - Site Hazardous Substances History

The site has been in operation for over seventy years, however little records were kept, but the operation wasn't much different from what it is today, except for the below differences:

Aluminium used to be melted, creating a lot of pollution. Today all aluminium is schredded and segregated using an eddy current process resulting in a lower carbon footprint.

Electrical cables also used to be burnt to extract the copper and in the process releasing tonnes of toxic gasses. Today segregated using an eddy current process resulting in a lower carbon footprint.

Within the past 25 years new operations started on site, namely tyre and documentation shredding. All the separated material is exported.

Another new process is the management and treatment of WEEEs.

## 8.0 Further Site Ground water Protection measures

The floor of the site is covered with a layer of concrete and this protects against ground water contamination. However to totally eliminate water table contamination, the site is equipped with a series of floor drains and interconnected pipework which are all directed to Class I interceptors which include polyethylene hydrocarbon decanter-separators and comply with EN 858-1 and EN 858-2 standards.

All interceptors compartments are easily accessed for inspections and maintenance and the waste water treatment takes place in two phases:

- Settling of sludge and sand in the decanter sand trap compartment
- Separation of oil and hydrocarbons through the coalescing effect

Through the oil seperators, no oil will be transferred to the main cesspit but it will be contained within the oil seperators, which will be retrieved by an authorized waste carrier when required.

The discharge of these oil interceptors is directed towards a cesspit with physical dimensions of 12.0m (L) x 6.0m (W) x 12.0m (H). These dimensions conform to Schedule 1 Activity 43 of Legal Notice 106 of 2007, hence avoiding any possible penetration to the groundwater water table.

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## 8.0 Site Figures


**Figure 1:** *Aerial view of the site in the extents of Luqa*

**Figure 2:** *View of the typical material being processed within this facility*

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**Figure 3:** *View of one of the installed oil seperators during the back filling process*

**Figure 4:** *View of the diesel fuel tank with 110% bund and is currently in the registration process with MRA*

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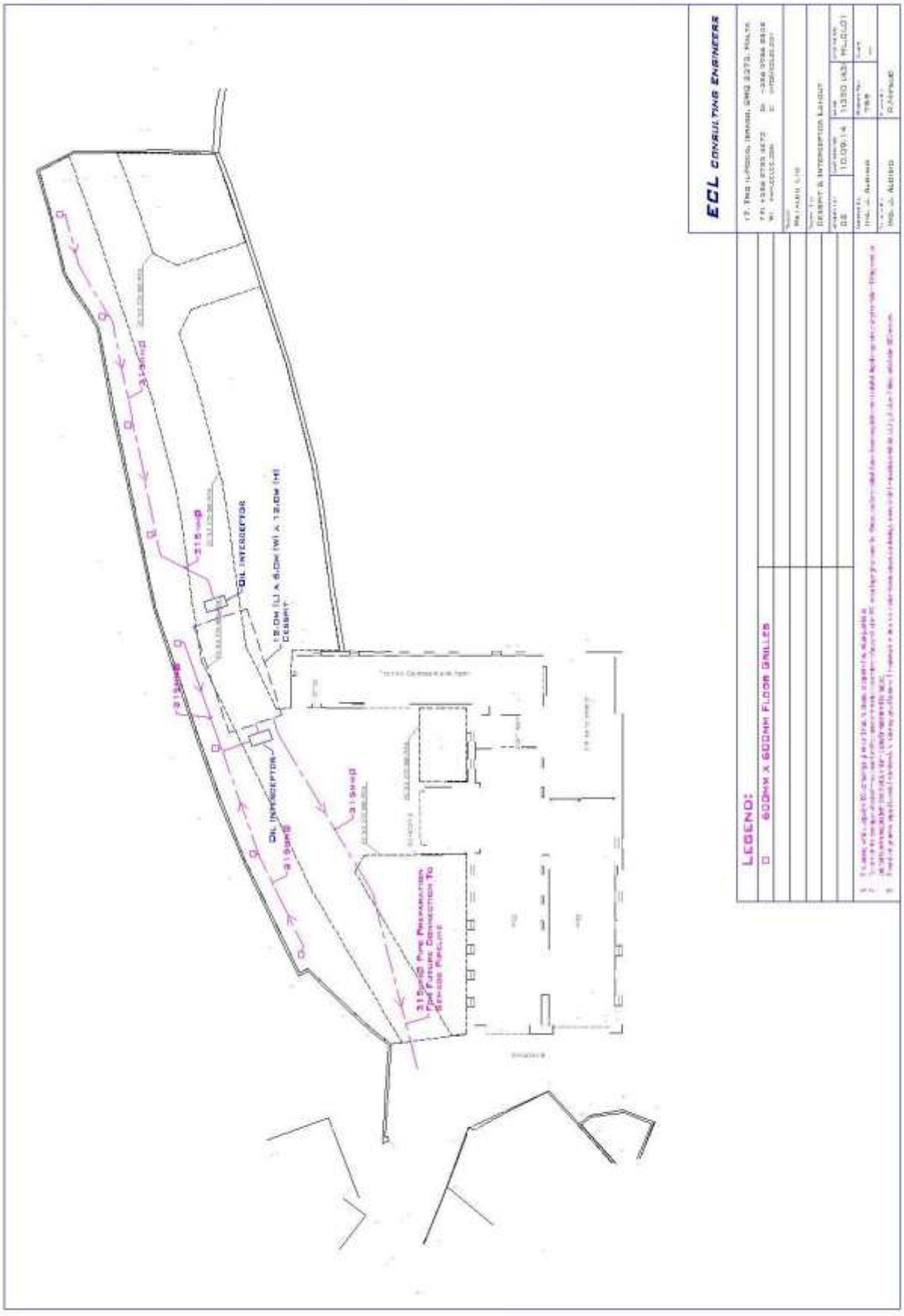


**Figure 5:** *View of the catchment area and interceptors*

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## 9.0 Conclusion

The above report is based on a number of visits and several discussions with owners. Past operations have also been discussed and highlighted if there was the possibility of any ground water contamination. From the above sections we can conclude that this environmental risk assessment report used to identify the activities involving the use and production or release of relevant hazardous substances in order to prevent and tackle potential soil and ground water contamination, was found to be none at all, hence a baseline report is not required.

We trust the above is in line with your requirements, and should you require any further clarifications, please do not hesitate to contact us.

Regards


Ing. Johan Aloisio
Warrant No. 759

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MALTA

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T: +356 2733 4472
E: INFO@ECLCE.COM

20th April 2015

The Chairman Malta Planning and Environmental Authority Floriana

**Site Details**

| | |
|---|---|
| Proposal: | Risk Assessment report |
| Applicant: | Mr. Matthew Fenech Magrin |
| Mob No: | +356 7905 3463 |
| Tel. No.: | +356 2166 7855 |
| Website: | www.metalcoltd.com |
| Architect: | Mr. Joe Bugeja |

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Dear Sir,

We refer to the proposed development in caption previously, design being submitted by Architect Joe Bugeja on behalf of the client, Mr. Matthew Fenech Magrin, below please find our comments and recommendations.

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## 1.0 Environmental Risk Assessment

The materials that are processed within this premises are aluminium, steel, copper, rubber and iron and the typical items that are processed within it are doors, windows, chairs, railings, electrical cables, electronic equiment etc. however no cars or items that can explode or overspill fuel or oils are processed within this premises. Hence the risks and hazards that are characterised within this area are not more than a normal workshop.

## 2.0 Environmentally related incidents action plan

### 2.1 Soaps Area

Since there are other items such as shampoos, and washing liquids the premises are to be equipped with a spillage containment kit to assist in the collectrion and removal or the liquid. However these items are processed in a segregated area within the yard, and this arae das a designated impervious cesspit below ground level which also acts as a bund.

### 2.2 All Other Areas

Within all the Other areas, to further minimise the risks, all liquids that fall within this site are directed towards two in no. 460L oil interceptors through floor drains and relevant pipework. These oil interceptors are Class I polyethylene hydrocarbon decanter-separators and comply with EN 858-1 and EN 858-2 standards.

All interceptors compartments are easily accessed for inspections and maintenance and the waste water treatment takes place in two phases:

- Settling of sludge and sand in the decanter sand trap compartment
- Separation of oil and hydrocarbons through the coalescing effect

Through the oil seperators, no oil will be transferred to the main cesspit but it will be contained within the oil seperators, which will be retrieved by an authorized waste carrier when required.

The discharge of these oil interceptors is directed towards a cesspit with physical dimensions of 12.0m (L) x 6.0m (W) x 12.0m (H). These dimensions conform to Schedule 1 Activity 43 of Legal Notice 106 of 2007, hence avoiding any possible penetration to the groundwater water table.

## 2.3 Action plan in case of failure of Abatement Equipment

In case the systems in 2.1 & 2.2 fail, the responsible person is to inform the CPD for assistance immediately on **112**.

## 3.0 Fire Breakout Emergency Plan

In the event of a fire breakout within any part of the premises, the following procedure is to be executed:

1. If a person identifies a fire breakout, he should signal a fire alarm condition by using the closest manual call point. The fire detection system dialler will automatically inform the Fire Brigade that a fire breakout condition exists. Another separate notification call to the same Fire Brigade on telephone number **112** should be carried out for re-assurance.
2. If the person that identifies the outbreak is not competent to extinguish the fire, this person should immediately evacuate the area and inform the competent person to extinguish the fire. A good number of fire extinguishers are available on site together with a pressurized hose reel for fire suppression.
3. If the fire is not controlled he is to inform the workers to keep calm and that an evacuation procedure should start and immediately evacuate the site and direct themselves towards the nearest fire assembly point outside of the premises.
4. The appointed competent persons should assist in the evacuation of all workers in the yard, before the fire brigade arrives.
5. When the fire brigade arrive they will instruct and evacuate the workers using their own standard procedure and finally check that all workers and staff have been evacuated.

This procedure is to be printed installed throughout strategic locations within the premises.

## 4.0 Relevant Environmental Incidents Actions

As previously stated, the risks that fuel spillage occur within this premises is brought to a minimum. However, since generators, fuel tanks and heavy commercial vehicles operate within this area, a minimum risk that fuel spillage occurs, is present. In case that this occurs, the following action plan should be followed:

1. The responsible person or Maintenance Contractor should be informed to investigate the case.
2. If the case is real, inform immediately the Water Services Corporation on telephone number 8007 2222 and inform them about the situation stating the location and the name of the responsible person.
3. Inform relevant authorised person to recover the fuel.

## 5.0 Diesel Tank – Secondary Storage facility

Since the Diesel Tank is more than 300L, a MEPA and an MRA application are in process to regularize the position as a secondary storage facility.

Attached to this report please find Annex 1 stating the certificate of construction and installation relevant to the diesel fuel tank installed within this premises.



## 6.0 Site Figures

**Figure 1:** *View of the typical material that is being processed within this premises*

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**Figure 2:** *View of one of the installed generators with no requirement for a bund*

**Figure 3:** *External view of one of the installed generators with no requirement for a bund*

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**Figure 4:** *View of one of the installed fire extinguisher points and wet fire fighting system fed from a borehole. In the event of a power outage, there are two generators that can be used to power the pump.*

**Figure 5:** *View of one of the installed oil seperators during the back filling process*


**Figure 6:** *View of one of the certified fire extinguishers product label*


**Figure 7:** *View of the diesel fuel tank with 110% bund and is currently in the registration process with MRA*


**Figure 8:** *Product nameplate of the diesel fuel tank*

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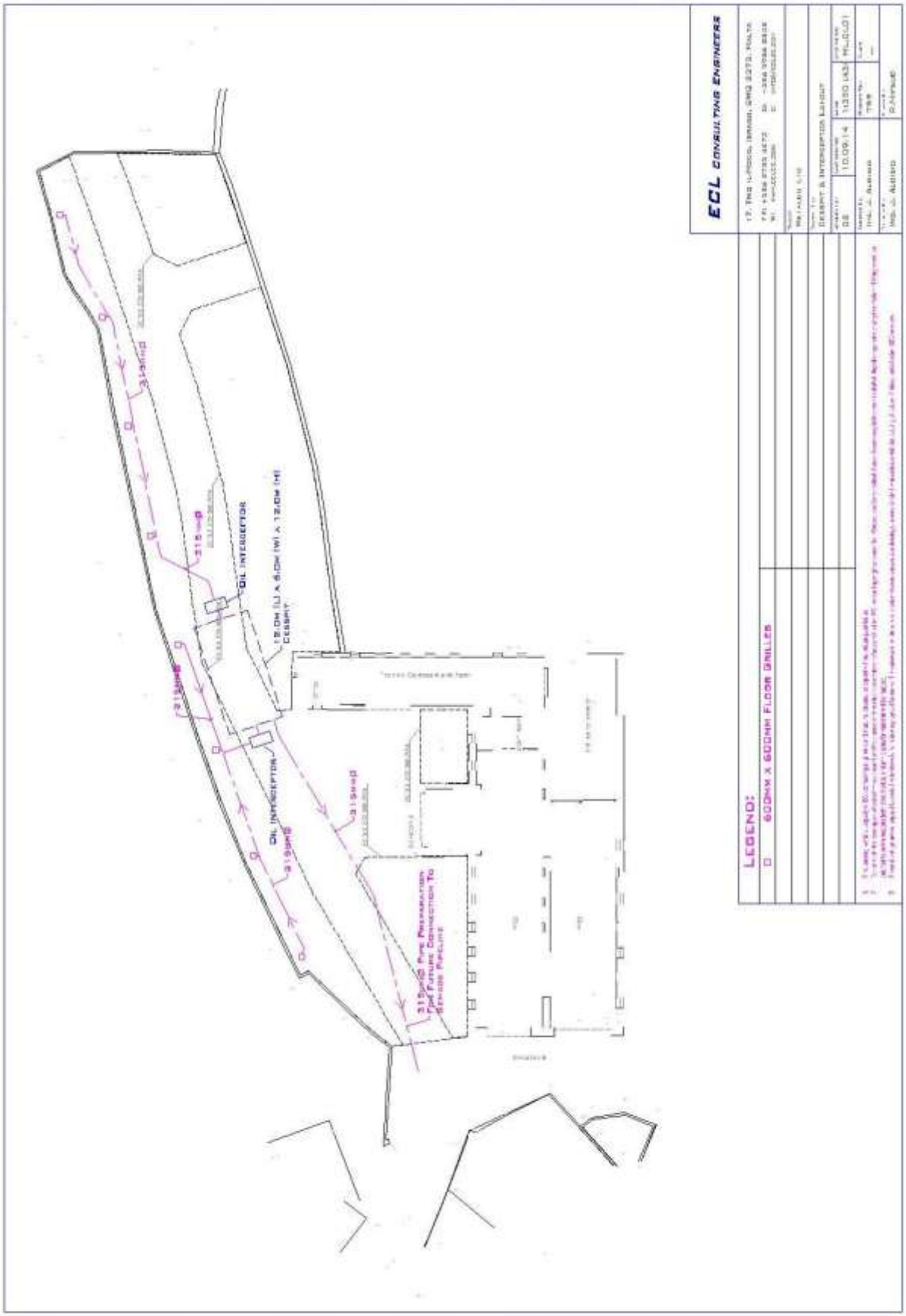


**13:** *View of the 'As Built' plan of the interceptors*

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## 7.0 International Standards References

- BS EN 124:1994 - *Gully tops and manhole tops for vehicular and pedestrian areas – Design requirements, type testing, marking, quality control*

- BS EN 858-1:2002 Incorporating Amendment No. 1 - *Separator systems for light liquids (e.g. oil and petrol) – Part 1: Principles of product design, performance and testing, marking and quality Control.*

- BS EN 858-2:2003 - *Separator systems for light liquids (e.g. oil and petrol) – Part 2: Selection of nominal size, installation, operation and maintenance.*

- BS EN 12285-1: 2003 - *Workshop Fabricated Steel Tanks – Part 1: Horizontal cylindrical single skin and double skin tanks for the underground storage of flammable and non-flammable water polluting liquids.*

- PPG3, Pollution Prevention Guidelines - *Use and Design of Oil Separators in Surface Water Drainage Systems.*

## 8.0 Conclusion

We trust the above is in line with your requirements, and should you require any further clarifications, please do not hesitate to contact us.

Regards


Ing. Johan Aloisio
Warrant No. 759

Giuseppe Dimartino
COSTRUZIONE SILOS SERBATOI INOX

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# CONTENITORE - DISTRIBUTORE RIMOVIBILE DG/5

# OMOLOGATO

## MINISTERO DELL'INTERNO

D.M. 31/07/1934 - D.M. 19/03/1990
D.M. 12/09/2003 e successiva modifica con D.A. Regione Sicilia del 04/05/2007
D.M. 27/01/2006

| | |
|---|---|
| Cliente | METALCO Ltd - Luqa LQA |
| Destinazione | METALCO Ltd - Luqa LQA |
| ALLEGATI | 1. Certificato di collaudo e costruzione n° 10637<br>2. Omologazione ministero dell'Interno<br>2.1. Approvazione di Tipo n° DCPST/A7/5649/AT/09210 del 16/05/2013 |

Giuseppe Dimartino
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# CERTIFICATO DI COLLAUDO E COSTRUZIONE

**Contenitore distributore rimovibile omologato per carburanti di cat. "C"**

D.M. 31/07/1934 – D.M. 19/03/1990 – D.M. 12/09/2003 e successiva modifica con D.A. Regione Sicilia del 04/05/2007 – D.M. 27/01/2006

**MATRICOLA**

**10637**

| Cliente | Destinazione |
|---|---|
| **METALCO Ltd**<br>**48, Scrap Lane Valletta Road**<br>**1764 - Luqa LQA** | **METALCO Ltd**<br>**48, Scrap Lane Valletta Road**<br>**1764 - Luqa LQA** |
| Ns. riferimento **O.D.L. n° 115/DG/14** | Rif. Vs. ordine **del 15/09/2014** |

| Caratteristiche serbatoio | | |
|---|---|---|
| Capacità nominale | **5000** | litri |
| Capacità geometrica | **4885** | litri |
| Diametro serbatoio | **1680** | mm |
| Lunghezza fasciame | **2010** | mm |
| Lunghezza totale | **2400** | mm |
| Spessore fasciame/fondi | **3/4** | mm |
| Lamiera | **S 235 JR UNI EN 10025** | |
| Rivestimento esterno | **Antiruggine + smalto Ral 6011** | |

**Procedimenti e saldature**

**Automatico con cordone continuo a tenuta stagna eseguito ad arco sommerso, manuale con elettrodi basici.**

**Prova di collaudo – 09/2014**

| | |
|---|---|
| Tipo di verifica | **Prova tenuta con aria** |
| Pressione di collaudo | **1 atm** |
| Tempo di prova | **12 ore** |

| Accessori |
|---|
| **- Pompa ST 56/M K33 PIUSI** |
| **- Pistola automatica A60 1" PIUSI** |
| **- Quadretto elettrico n° 14048 con blocco minimo livello** |
| **- Cassetta lucchettabile contenente la pompa e il quadretto elettrico realizzata in lamiera di acciaio al carbonio S235JR UNI EN 10025, verniciata con antiruggine e smalto** |
| **- Indicatore di livello meccanico EUROCONTROL** |
| **- Valvola limitatrice di carico al 90% da 3" RIDART** |
| **- Tappo F in alluminio da 3" RIDART** |
| **- Sfiato 1"1/2 con tagliafiamme RIDART** |
| ---------- |
| **In conformità alle prescrizioni previste dal D.M. 19/03/1990** |
| **- Bacino di contenimento pari a ½ capacità geometrica serbatoio** costruito il lamiera di acciaio al carbonio S235JR UNI EN 10025, verniciato con antiruggine e smalto. |
| ---------- |

**Si dichiara che il Contenitore Distributore Rimovibile è conforme all'Approvazione di Tipo del Ministero dell'Interno n° DCPST/A7/5649/AT/09210 del 16/05/2013**

| Il saldatore responsabile | MATRICOLA | Il responsabile |
|---|---|---|
| | **10637** | Costruzione Silos Serbatoi Inox<br>GIUSEPPE DIMARTINO<br>S.S. 115 - Km. 316 - 97100 RAGUSA<br>Tel. e fax 0932 251666<br>Partita IVA: 00001000884 |

**Ns. Rif. D.D.T. n° 425/14 del 18/09/2014**

*Ministero dell'Interno*

**DIPARTIMENTO DEI VIGILI DEL FUOCO, DEL SOCCORSO PUBBLICO E DELLA DIFESA CIVILE**
**DIREZIONE CENTRALE PER LA PREVENZIONE E LA SICUREZZA TECNICA**

**VISTO il decreto ministeriale 31 luglio 1934** recante "Approvazione delle norme di sicurezza per la lavorazione, l'immagazzinamento, l'impiego o la vendita di oli minerali e per il trasporto degli oli stessi";

**VISTO il decreto Ministero Interno 19 marzo 1990** recante "Norme per il rifornimento di carburanti, a mezzo di contenitori-distributori mobili, per macchine in uso presso aziende agricole, cave e cantieri";

**VISTO il decreto Ministero Interno 12 settembre 2003** recante " Approvazione della regola tecnica di prevenzione incendi per l'installazione e l'esercizio di depositi di gasolio per autotrazione ad uso privato di capacità geometrica non superiore a 9 m³ in contenitori-distributori rimovibili per il rifornimento di automezzi destinati all'attività di autotrasporto";

**VISTO il decreto Ministero Interno 27 gennaio 2006** recante "Requisiti degli apparecchi, sistemi di protezione e dispositivi utilizzati in atmosfera potenzialmente esplosiva, ai sensi della direttiva n. 94/9/CE, presenti nelle attività soggette ai controlli antincendio";

**VISTO l'atto di Approvazione di Tipo** rilasciato per rinnovo da questo Ministero (Prot. N. DCPST/A7/4560/AT/09210 del 14/05/2008);

**VISTO l'atto di Approvazione di Tipo** rilasciato per estensione da questo Ministero (Prot. N. DCPST/A7/9521/AT/09210 del 19/09/2008);

**VISTA l'istanza presentata dalla Società "DIMARTINO GIUSEPPE"** con sede S.S. 115 Km 330 - 97100 RAGUSA (RG), pervenuto in data 24/04/2013 con protocollo n. 8649, intesa ad ottenere il rinnovo congiunto delle Approvazioni di Tipo sopra indicate, riferite ai contenitori-distributori rimovibili di carburanti liquidi per autotrazione di categoria "C" sopra specificate;

**VISTA la dichiarazione** della Società, contenente l'impegno a costruire i contenitori-distributori rimovibili di carburanti liquidi di categoria "C" in argomento secondo le identiche caratteristiche tecniche e o funzionali dei prototipi dichiarati di tipo approvato;

**VISTA la dichiarazione** della Società con la quale si attesta che i contenitori-distributori rimovibili prima specificati sono costituiti da componenti provvisti da marcatura CE in sensi delle direttive applicabili come previsto dall'art. 5 comma 4 del Decreto Ministero Interno 22 gennaio 2008;

**Il presente atto consta di n. 3 facciate e non può essere riprodotto e/o mostrato a terzi se non integralmente..**



**SI RINNOVA**

alla Società **"DIMARTINO GIUSEPPE"**, ai fini della prevenzione incendi, la validità delle Approvazioni di Tipo relative ai **contenitori-distributori rimovibili** per carburanti liquidi per autotrazione di categoria "C":

| | | |
|---|---|---|
| MARCA: | "DIMARTINO GIUSEPPE" | |
| Versioni: | DG/1 | con capacità geometrica massima litri 953; |
| | DG/2 | con capacità geometrica massima litri 1.994 |
| | DG/3 | con capacità geometrica massima litri 2.991 |
| | DG/4 | con capacità geometrica massima litri 3.802 |
| | DG/5 | con capacità geometrica massima litri 4.885 |
| | DG/6 | con capacità geometrica massima litri 5.967 |
| | DG/7 | con capacità geometrica massima litri 7.001 |
| | DG/7,5 | con capacità geometrica massima litri 7.413 |
| | DG/8 | con capacità geometrica massima litri 7.809 |
| | DG/9 | con capacità geometrica massima litri 8.929 |

con installati, in apposita cassetta di contenimento, uno dei seguenti **gruppi erogatori**:

| | |
|---|---|
| MARCA: | S.A.M.P.I.. |
| Versioni: | GE.P.TR. 806<br>GE.PAM. 806 |

| | |
|---|---|
| MARCA: | PIUSI |
| Versioni: | BY-PASS 55 FILTER;<br>FB0; |

| | |
|---|---|
| MARCA: | IOMES |
| Versioni: | "IOM 567", "IOM 78",<br>"SELF 55", "SELF 80",<br>"ROLL MATIC 60", "ROLL MATIC 80" |

L'installazione delle predette apparecchiature dovrà effettuarsi con l'osservanza di tutte le norme di sicurezza vigenti in materia.

Può essere immesso in commercio ciascun esemplare omologo a quelli su indicati se corredato di dichiarazione redatta dall'intestatario del presente atto, ai sensi dell'art. 47 del DPR n°445/2000, attestante la conformità al contenitore distributore rimovibile di cui all'Approvazione di Tipo n° **DCPST/A7/5649/AT/09210**.

Il numero dell'Approvazione di Tipo deve essere riportato sulla targa di identificazione solidale al contenitore distributore rimovibile e conforme al punto 3 dell'Allegato al D.M. 12 settembre 2003.

Il presente atto è valido fino al **9 giugno 2018**.

All'intestatario del presente atto di rinnovo dalla Approvazioni di Tipo ed ai soggetti comunque interessati, si richiamano tutti gli obblighi di legge derivanti dall'applicazione dei precitati Decreti Ministeriali.

**Il presente atto consta di n. 3 facciate e non può essere riprodotto e/o mostrato a terzi se non integralmente.**

**Il presente atto di rinnovo è riproducibile unicamente nella sua integrale stesura ed ha validità esclusivamente se presentato congiuntamente agli originali atti di Approvazioni di Tipo da cui deriva.**

Roma, 16 MAG 2013

**Approvazione di Tipo**
**n° DCPST/A7/5649/AT/09210**

IL DIRETTORE CENTRALE
(Dabdo)

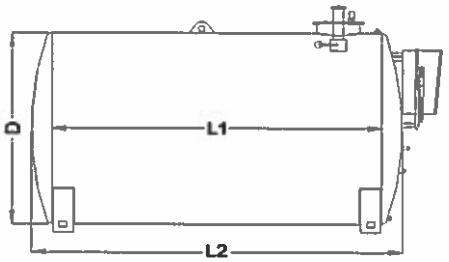
| | |
|---|---|
| **Committente** | METALCO Ltd |
| **Modello** | DG/5 |
| **Capacità nom.** | 5000 litri |
| **Collaudo n°** | 10637 |
| **D.D.T. n°** | 425/14 del 18/09/2014 |

Costruzione Silos Serbatoi Inox
GIUSEPPE DI MARTINO
S.S. 115 - Km. 316,197 - 97100 RAGUSA
Tel. e Fax 0932 251666
Partita IVA: 00001000884

**Il presente atto consta di n. 3 facciate e non può essere riprodotto e/o mostrato a terzi se non integralmente.**

Giuseppe Dimartino
COSTRUZIONE SILOS SERBATOI INOX
STABILIMENTO E UFFICI: S.S. 115 KM 316 – 97100 RAGUSA
TELEFONO 0932.251666 – FAX 0932.251666
C.C.I.A.A. n.40243 – Partita IVA 0000100884 – Cod. Fisc. DMR GPP 41B11 H163 E
Web www.serbatoidimartino.it E-mail: dimartinoserbatoi@tin.it

# TABELLA CENTIMETRICA




**Contenitore distributore rimovibile omologato M.I. mc 5**

Diametro D = cm 168
Lunghezza L1 = cm 210
Lunghezza L2 = cm 240

Capacità geometrica **4991** litri

| Lettura cm | Volume litri | Lettura cm | Volume litri | Lettura cm | Volume litri | Lettura cm | Volume litri |
|---|---|---|---|---|---|---|---|
| 1 | 3 | 44 | 1019 | 87 | 2611 | 130 | 4166 |
| 2 | 10 | 45 | 1052 | 88 | 2650 | 131 | 4198 |
| 3 | 18 | 46 | 1086 | 89 | 2688 | 132 | 4229 |
| 4 | 28 | 47 | 1120 | 90 | 2727 | 133 | 4259 |
| 5 | 40 | 48 | 1154 | 91 | 2765 | 134 | 4290 |
| 6 | 53 | 49 | 1188 | 92 | 2804 | 135 | 4320 |
| 7 | 67 | 50 | 1223 | 93 | 2842 | 136 | 4349 |
| 8 | 81 | 51 | 1258 | 94 | 2881 | 137 | 4378 |
| 9 | 97 | 52 | 1293 | 95 | 2919 | 138 | 4407 |
| 10 | 114 | 53 | 1329 | 96 | 2957 | 139 | 4435 |
| 11 | 131 | 54 | 1364 | 97 | 2995 | 140 | 4463 |
| 12 | 149 | 55 | 1400 | 98 | 3033 | 141 | 4491 |
| 13 | 168 | 56 | 1436 | 99 | 3071 | 142 | 4518 |
| 14 | 188 | 57 | 1472 | 100 | 3109 | 143 | 4544 |
| 15 | 209 | 58 | 1509 | 101 | 3147 | 144 | 4571 |
| 16 | 230 | 59 | 1545 | 102 | 3185 | 145 | 4596 |
| 17 | 251 | 60 | 1582 | 103 | 3222 | 146 | 4621 |
| 18 | 274 | 61 | 1619 | 104 | 3260 | 147 | 4646 |
| 19 | 297 | 62 | 1656 | 105 | 3297 | 148 | 4670 |
| 20 | 320 | 63 | 1693 | 106 | 3334 | 149 | 4693 |
| 21 | 344 | 64 | 1730 | 107 | 3371 | 150 | 4716 |
| 22 | 369 | 65 | 1768 | 108 | 3408 | 151 | 4739 |
| 23 | 394 | 66 | 1805 | 109 | 3445 | 152 | 4760 |
| 24 | 420 | 67 | 1843 | 110 | 3481 | 153 | 4782 |
| 25 | 446 | 68 | 1881 | 111 | 3518 | 154 | 4802 |
| 26 | 472 | 69 | 1919 | 112 | 3554 | 155 | 4822 |
| 27 | 499 | 70 | 1957 | 113 | 3590 | 156 | 4841 |
| 28 | 527 | 71 | 1995 | 114 | 3626 | 157 | 4859 |
| 29 | 555 | 72 | 2033 | 115 | 3661 | 158 | 4876 |
| 30 | 583 | 73 | 2071 | 116 | 3697 | 159 | 4893 |
| 31 | 612 | 74 | 2110 | 117 | 3732 | 160 | 4909 |
| 32 | 641 | 75 | 2148 | 118 | 3767 | 161 | 4924 |
| 33 | 671 | 76 | 2186 | 119 | 3802 | 162 | 4937 |
| 34 | 700 | 77 | 2225 | 120 | 3836 | 163 | 4950 |
| 35 | 731 | 78 | 2263 | 121 | 3870 | 164 | 4962 |
| 36 | 761 | 79 | 2302 | 122 | 3904 | 165 | 4972 |
| 37 | 792 | 80 | 2340 | 123 | 3938 | 166 | 4980 |
| 38 | 824 | 81 | 2379 | 124 | 3972 | 167 | 4987 |
| 39 | 855 | 82 | 2418 | 125 | 4005 | 168 | 4991 |
| 40 | 887 | 83 | 2456 | 126 | 4038 | | |
| 41 | 920 | 84 | 2495 | 127 | 4070 | | |
| 42 | 952 | 85 | 2534 | 128 | 4103 | | |
| 43 | 985 | 86 | 2572 | 129 | 4135 | | |

***NOTA BENE:*** I valori indicati in tabella sono validi solo se il serbatoio è posizionato perfettamente a livello.
Per i serbatoi a doppia parete le misure si riferiscono al serbatoio interno.

# Appendix VI

# Certification of Equipment

ECL CONSULTING ENGINEERS

ENGINEERING CONSULTANCY LTD
17, TRIQ IL-MODD
IBRAG, SWQ 2373
MALTA

M: +356 9986 8828
T: +356 2733 4472
E: INFO@ECLCE.COM

20th December 2014

**Applicant Details**

| | |
|---|---|
| Applicant: | Mr. Matthew Fenech Magrin |
| Mob No: | +356 7905 3463 |
| Tel. No.: | +356 2166 7855 |
| Architect: | Mr. Joe Bugeja |
| Site: | Metalco Ltd, Scrap Lane, Luqa |

Dear Sir,

Following a site visit held on the 29th October 2014 I inspected the machinery and is in good working condition:

ECL CONSULTING ENGINEERS
ING. JOHAN ALDISIO
WARRANT NR: 759
+356 9986 8828 E:JA@ECLCE.COM

**Lefort 600**
Year of manufacture- 2013
Maximum working pressure - 3000 PSI
Power source: Electricity

**Lindemann**
Year of manufacture- 1995
Maximum working pressure - 2000 PSI
Power source: Electricity

**Lindemann**
Year of manufacture- 1998
Maximum working pressure - 3000 PSI
Power source: Electricity



**Super chopper:**
Technical Spec. SC1412/160
Electrical motor 160 kW
Hägglund motor CB400
Rotor 1 400 mm/0-28 rpm
Knives 12 flying/7 static
Capacity/hour * Up to 12000 kg/hour
Weight Approx 15000 kg
Length x width x height 1700 x 3 000 x 3 500 mm

**Heavy Rasper:**
Technical Specifications Model- R1207
Rotor - 800 mm 120 rpm
Knives -12 flying/3 static
Capacity* hour -Up to 2000 kg/production hour
Motor -90 kW, 1400 rpm
Weight- 6900 kg
Length x width x height -1750 x 3250 x 3200 mm

**Rasper:**
Technical Specifications Model R807
Rotor -800 mm / 120 rpm
Knives -8 flying/2 static
Capacity* -Up to 1200 kg/production hour
Motor -75 kW, 1400 rpm
Weight -5500 kg
Length x width x height - 1750 x 2850 x 3200 mm

**Eddy Current Separator**

Year of manufacture – 2013
Motor -4 kw
Weight- 1800kg
Screening dimension 8- mm
Production- 3mt per hour

**Wire Granulator + Separator**
Year of manufacture- 2009
Weight – 910 kg
Production rate- 2.5 MT per hour
Motor- 75 kw

**Bailer**
Brand: Tabarelli pn series
Model: pn1800
Engine Brand – Iveco
Engine Capacity – 3ltr
Production rate: 6-10 mt per hour

ECL CONSULTING ENGINEERS
ING. JOHAN ALOISIO
WARRANT NR: 759
+356 9926 8828 E:JA@ECLCE.COM

**LSM Bailer**

| | |
|---|---|
| BTS-WR6500 CTR | |
| Compaction force: | 65t (650kN) |
| Bale size: | 1210x800x1000(var.)mm |
| Bale weight: | 450-800kg |
| Motor: | 7,5kW 32A |
| Voltage: | 400V |
| Size HxBxT: | 3320x2060x1310mm |
| Weight: | 3200kg |
| Strapping: | Wire |

**SUPER STRIPPER 170 CABLE STRIPPER**
Length**:** 1000mm
Width**:** 640mm
Height**:** 1270mm
Weight**:** 600kg
Cutting Capacity**:** 3mm – 75mm
Cutting Speed**:** Approx. 27 meters per min

**Generators:**

Perkins Rolls-Royce – Capacity 630kw
Alister Chalmers – Capacity 280kw
Alister Chalmers – Capacity 280kw

This certificate is valid for 1 year from date of issue.

We trust the above is in line with your requirements, and should you require any further clarifications, please do not hesitate to contact us.

Regards

ECL CONSULTING ENGINEERS
ING. JOHAN ALOISIO
WARRANT NR: 759
+356 9986 8828 E:JA@ECLCE.COM

Ing. Johan Aloisio
Warrant No. 759

Regalis Motors Limited

Address: 'Genuis Garage', Triq il-Ghajn Mriehel, Malta.
E-Mail: genuis@go.net.mt

Date: 5th November 2014

This is to certify that Regalis Motors Limited has completed the installation of the device Ultimate Cell on the 605KVA FG Wilson V12 Diesel Generator at Metalco Limited of 48, Scrap Lane, Valletta road, Luqa, Malta.

The purpose of this device is to reduce overall emissions up to 80% and fuel consumption up to 25%.

Louis Genuis
Director

ULTIMATE CELL

✓ *INSTITUTO SUPERIOR TÉCNICO DE LISBOA*
*"ULTIMATE CELL achieved a fuel consumption reduction between 18% and 38%".*

✓ *INSTITUTO DE SOLDADURA E QUALIDADE (ISQ)*
*"The results obtained from the tests, verify an average of 26.8% less fuel consumption with the use of the ULTIMATE CELL"*

**ULTIMATE CELL, ROHS COMPLIANT**

✓ **INSTITUTO DA MOBILIDADE E DOS TRANSPORTES DE PORTUGAL, IP**
The IMT - Institute for Mobility and Transport, responsible for national regulation, supervision and coordination in the field of land transport, approved on the 1st November 2013, the installation of the ULTIMATE CELL® device in light vehicles with combustion engines fired with diesel and petrol. "Installation Approved of the ULTIMATE CELL® device in light vehicles with petrol and diesel combustion engines."

Department for Transport

VCA APPROVED

Regalis Motors Limited

Address: 'Genuis Garage', Triq il-Ghajn Mriehel, Malta.
E-Mail: genuis@go.net.mt

Date: 5th November 2014

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ULTIMATE CELL

✓ *INSTITUTO SUPERIOR TÉCNICO DE LISBOA*
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✓ *INSTITUTO DE SOLDADURA E QUALIDADE (ISQ)*
*"The results obtained from the tests, verify an average of 26.8% less fuel consumption with the use of the ULTIMATE CELL"*

**ULTIMATE CELL, ROHS COMPLIANT**
Ultimate Power is pleased to announce that we have successfully completed the tests conducted by Bureau Veritas Hamburg to the requirements of Directive 2011/65 / EU RoHS (Restriction of Hazardous Substances) according to DIN E^n 62321 2009, Electrotechnical Products - Determination of levels of six regulated substances (lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls, polybrominated diphenyl ethers)

✓ **INSTITUTO DA MOBILIDADE E DOS TRANSPORTES DE PORTUGAL, IP**
The IMT- Instituto for Mobility and Transport, responsible for national regulation, supervision and coordination in the field of land transport, approved on the 1st November 2013, the installation of the ULTIMATE CELL® device in light vehicles with combustion engines fixed with diesel and petrol. "Installation Approved of the ULTIMATE CELL® device in light vehicles with petrol and diesel combustion engines."

Department for Transport

VCA APPROVED

THE UNITED KINGDOM VEHICLE APPROVAL AUTHORITY

COMMUNICATION CONCERNING THE APPROVAL GRANTED [1]/ ~~APPROVAL EXTENDED~~ [1]/ ~~APPROVAL REFUSED~~ [1]/ ~~APPROVAL WITHDRAWN~~ [1]/ ~~PRODUCTION DEFINITIVELY DISCONTINUED~~ [1] OF A TYPE OF ~~ELECTRICAL~~/ ELECTRONIC SUB-ASSEMBLY [1] WITH REGARD TO REGULATION NO. 10.04

E11 Approval No: 10R-048662

Extension No: Not applicable

1. Make (trade name of manufacturer): Ultimate Power®, Lda.

2. Type and general commercial description(s):

   UCCE V2.0 – Ultimate Cell
   UCTE V2.0 – Ultimate Cell
   UCBE V2.0 – Ultimate Cell

3. Means of identification of type, if marked on the ~~vehicle~~/component/ separate technical unit: [1]

3.1. Location of that marking: See manufacturer's documentation

4. Category of vehicle: Not applicable

5. Name and address of manufacturer:

   Ultimate Power®, Lda
   Estrada de Paços de Arcos 66ª
   2735-336 Cacém
   Portugal

6. In the case of components and separate technical units, location and method of affixing of the ECE approval mark: Engraved in the plastic injection mold components

VA 31-Oct-14 UK Approval Authority

7. Address(es) of assembly plant(s): As paragraph 5

8. Additional information (where applicable): See appendix

9. Technical Service responsible for carrying out the tests: Vehicle Certification Agency

10. Date of test report: 07 October 2014

11. No. of test report: MSQ308007

12. Any remarks: Approval to Supplement 2

    See Appendix

13. Place: BRISTOL

14. Date: 31 OCTOBER 2014

15. Signature: 

A. W. STENNING
Head of Technical and Quality Support Group

16. The index to the information package lodged with the Approval Authority, which may be obtained on request, is attached.

17. Reasons for extension: Not applicable

(1) Strike out what does not apply.

Appendix

to type-approval communication form No. 10R-048662

concerning the type-approval of an ~~electrical~~/electronic sub-assembly under Regulation No. 10.04

1. Additional information:.

1.1. Electrical system rated voltage: 13.5V. pos/~~neg~~ ground (1)

1.2. This ESA can be used on any vehicle type with the following restrictions: Not applicable

1.2.1. Installation conditions, if any:

1.3. This ESA can be used only on the following vehicle types: M, N

1.3.1. Installation conditions, if any: See manufacturer's documents

1.4. The specific test method(s) used and the frequency ranges covered to determine immunity were: (Please specify precise method used from Annex 9):

BCI: Actual frequency range used: 20 – 220MHz
Free field: Actual frequency range used: 200 – 2000MHz

1.5. Laboratory accredited to ISO 17025 and recognized by the Approval Authority responsible for carrying out the tests: Not applicable

2. Remarks: None

(1) Strike out what does not apply.

VA 31-Oct-14 UK Approval Authority

ULTIMATE POWER
Saving Energy Technologies

# VCA Job Number: **MSQ308007 Ultimate Power R10.04**


Manufacturer: ULTIMATE POWER®, Lda
Adress: Estrada de Paço de Arcos 66ª
2735 – 336 Cacém
Portugal
Mail: geral@ultimatepower.pt
Site: www.ultimatepower.pt


Date:
29/09/2014

ULTIMATE POWER
Saving Energy Technologies

ANNEX 2B

**1. Make (trade name of manufacturer):**

- Ultimate Power®, Lda.

**2. Type:**

- Ultimate Cell®, is an optimization device for internal combustion engines, which reduces both fuel consumption and exhaust emissions.

UCCE V2.0 – Ultimate Cell

UCTE V2.0 – Ultimate Cell

UCBE V2.0 – Ultimate Cell

**3. Means of identification of type, if marked on the component/separate technical unit ( 1 ):**

**3.1. Location of that marking:**

- All equipment's are properly identified with a sequential code traceability placed on the device and on the package. At the top of the equipment, is engraved on the injection mold the CE marking. After the approval of VCA, it will be engraved on the top cover the E-mark.

**4. Name and address of manufacturer:**

- Ultimate Power®, Lda Address- Estrada de Paços de Arcos 66ª, 2735-336 Cacém, Portugal

**Name and address of authorised representative, if any:**

- Qualiseg, Rua da Bela Vista nº 110 2ª, 2825-004 Caparica, Portugal

**5. In the case of components and separate technical units, location and method of affixing of the approval mark:**

- The approval mark shall be engraved in the plastic injection mold components and in the final product packaging.

**6. Address(es) of assembly plant(s):**

- Ultimate Power®, Lda

Address: Estrada de Paços de Arcos, 66 A 2735-336 Cacém Portugal

ULTIMATE POWER
Saving Energy Technologies

**7. This ESA shall be approved as a STU**

**8. Any restrictions of use and conditions for fitting:**

The equipment maybe use in any internal combustion engines, being effective on diesel, petrol and LPG engines.

The installation of the ULTIMATE CELL must be done only by certified installers approved by Ultimate Power®, Lda.

The device should be as far as possible from the exhaust manifold, the turbo and from all exposed engine moving parts also it should be placed in an upright position (+/-15 deg), with the outlet cover on the top.

**9. Electrical system rated voltage: 13,5 V, positive ( 2 ) ground.**

.....

Appendix 1:

5010 - UCCE Assembled

5011 - UCBE Assembled

5010 - UCTE Assembled

Diagrama blocos PCB

Bill of Material

Appendix 2:

Tests

Ficha de Dados de Segurança Electrolito UCCE

Ficha de Dados de Segurança Electrolito UCTE_UCBE

VCA Headquarters
1 The Eastgate Office Centre
Eastgate Road
Bristol, BS5 6XX
United Kingdom

Switchboard: +44 (0) 117 951 5151
Direct line: +44 (0) 117 952
Main Fax: +44 (0) 117 952 4103
Email: enquiries@vca.gov.uk
Web: www.dft.gov.uk/vca



VCA Midlands Centre
Leamington, Warwickshire UK
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Fax: +44 (0)247 632 9276
Email: enquiries@vca.gov.uk

VCA Millbrook Centre
Millbrook, Bedford UK
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Email: millbrook@vca.gov.uk

VCA North America
Livonia, MI 48152
Telephone: +1 248 468 0151
Fax: +1 248 319 9261
Email: general@vcana.com

Ohio Office
Ashland, Ohio USA
Telephone: +1 419 207 8123
Fax: +1 419-207 1163
Email: eppers@vcana.com

Southern Office
Telephone: +1 770 755 5435
Fax: +1 770 755 5435
Email: emiddlow@vcana.com

VCA Southern Europe
Via Stezzano 87
24126 Bergamo, Italy
Telephone: +39 035 069 0447
Fax: +39 035 069 0449
Email: info@vca-italy.it

VCA Asia Pacific
Ibaraka, Nagoya, Japan
Telephone: +81 52 603 0851
Fax: +81 52 603 8832
Email: enquiries@vca.gov.uk

VCA India
New Delhi 110 019, India
Telephone: +91 11 465 18 545
Fax: +91 11 465 18 546
Email: admin@vca-india.com

VCA Malaysia
Selangor, Malaysia
Telephone: +6 037 494 0271
or +6 037 494 4868
Fax: +6 037 494 0225
Email: enquiries@vca-malaysia

VCA China
Beijing, China
Telephone: +86 10 852 830 [illegible]
Fax: +86 10 852 830 97
Email: info@vca.cn

VCA Australia
Berwick, Victoria, Australia
Telephone: +61 [illegible]
Email: howard@vca.au.com

## THE UNITED KINGDOM TYPE APPROVAL AUTHORITY

Date: 31 October 2014

Dear Sir / Madam.

1. The vehicle component / type described on the attached approval(s) has been tested and meets the requirements of the ECE Regulation/EEC Directive displayed on the approval certificate(s). I enclose a set of approval documents, comprising, as appropriate, the approval certificate(s), test report and your documentation duly authenticated.

2. Maintaining Conformity of Production (COP) is a means of evidencing the ability to produce a series of products that exactly match the specification, performance and marking requirements outlined in the type approval documentation. Whether you are a manufacturer, or the agent applying for approvals on behalf of a manufacturer, and whatever your product is, suitable COP arrangements must be made. **Please follow these links to documents that explain COP in more detail:** http://www.dft.gov.uk/vca/conformity-of-production/conformity-of-production.asp

3. If you think there are any errors in the enclosed package, please contact Ian Woodruff, ian.woodruff@vca.gov.uk immediately.

Please be aware that from the date of issue we have a three week holding period, any corrections required after this time will need to be corrected via an extension, index revision or correction 1 certificate, as appropriate.

### ROAD TRAFFIC ACT 1988 - SECTION 80

3. The Secretary of State for Transport authorises, under section 80 of the Road Traffic Act 1988, the stated manufacturer or accredited agent to apply to the motor vehicle type / part specified, the appropriate mark designated in the Motor Vehicles (Designation of Approval Marks) Regulations 1979, as amended. The conditions attached to this authorisation are set out overleaf.

4. If this approval / extension / index revision results in a change being required to a vehicle information document issued under either a National or European Whole Vehicle approval you should notify the issuing authority to arrange for the approval(s) to be updated.

5. VCA is continually scrutinising the quality of the service it provides to customers, in order to discover more ways in which the standard can be improved. If you have a specific complaint concerning the way this job has been dealt with, please view the VCA complaints procedure for guidance: http://www.dft.gov.uk/vca/vca-complaints-procedure.asp

Yours faithfully,

Kate Edwards

VCA Operations Branch

## 1. CONDITIONS

1.1 This Approval may be withdrawn at any time and while held is subject to the following conditions.

## 2. CONDITIONS OF MOTOR VEHICLE PARTS

2.1 The holder of this approval shall put the approval mark described in the Motor Vehicles (Designation of Approval Marks) Regulations 1979 as amended only on Motor Vehicle Parts that:
a. Have been manufactured, assembled or completed in factories under his control and
b. Conform in all material respects with the samples, which were tested before this approval was issued.

2.2 The holder of this approval shall mark his products in the manner set out in the relevant Regulation / Directive as given in the Motor Vehicles (Designation of Approval Marks) Regulations 1979 as amended together with:
a. The approval number allocated by the Secretary of State for Transport.
b. His name or trademark
c. Any other markings specified in the appropriate international Regulation

2.3 The holder of this approval shall be prepared at any time to satisfy Department for Transport officials or agents of the Department, that the quality of the part being produced and marked or intended to be by him with the approval marking conforms in all material respects with that of the samples tested as the International Regulation requires.

2.4 The holder of this approval undertakes to admit duly authorised officials or agents of the Department at all reasonable times to any premises in which parts marked or intended to be marked are being manufactured, assembled or stored and to permit any such official or agent to inspect parts and all records relating to them and their production processes.

2.5 This approval may be suspended or withdrawn by the Secretary of State for Transport at any time without any particular length of notice being given and in the event of that being done the holder will absolve the Secretary of State from any claim for damages or compensation.

## 3. CONDITIONS FOR MOTOR VEHICLES

3.1 The holder of this approval shall put the approval mark described in the Motor Vehicles (Designation of Approval Marks) Regulation 1979 as amended only on Motor Vehicles fitted with Motor Vehicle parts which Motor Vehicles as fitted with such parts conform with the type of Motor Vehicle approved by as on behalf of the Secretary of State for Transport and only on Motor Vehicles that:
a. Have been manufactured, assembled or completed in factories under his control and
b. Conform in all material respects with the type of Motor Vehicle, which was tested before an approval certificate was issued.

3.2 The holder of this approval shall mark motor vehicles of the type approved. In the matter set out in the relevant Regulation / Directive using the authorised approval mark as given in the Motor Vehicles (Designation of Approval Marks) Regulation 1979 as amended together with the approval number allocated by the Secretary of State for Transport.

3.3 The holder of this approval shall mark Motor Vehicles of the type approved in the manner set out in the relevant Regulation annexed to the United Nations agreement of 1958 as amended using the authorised approval mark which comprises a capital letter E followed by the number 11 within a circle together with the approval number allocated by the Secretary of State for Transport.

3.4 The holder of this approval shall be prepared at any time to satisfy Department for Transport officials or agents of the Department that Motor Vehicles of the type approved which have been produced and marked or that are intended to be marked by him conform in all material respects with the type of vehicle approved.

3.5 The holder of this approval undertakes to admit duly authorised officials or agents of the Department at all reasonable times to any premises in which the Motor Vehicles of the type approved which have been or are intended to be marked are manufactured, assembled or stored and to permit any such official or agent to inspect the Motor Vehicles and all records relating to them and their production processes.

3.6 This approval may be suspended or withdrawn by the Secretary of State for Transport at any time without any particular length of notice given and in the event of that being done the holder will absolve the Secretary of State from any claim for damages or compensation.

# Appendix VII

# Comparison of Processes at Metalco Ltd with Best Available Techniques (BAT)

**Annex I: Comparison of the processes at Metalco Ltd with the BREF for Waste Treatments Industries (published August 2006).**

**Part 1: Generic BAT**

| Aspect of BAT | BAT | Status at Metalco Ltd |
|---|---|---|
| **Environmental management system (EMS)** | BAT is to implement and adhere to an Environmental Management System (EMS) that incorporates, as appropriate to individual circumstances, the following features: (see Chapter 4.1.2.8 of BREF)<br>• definition of an environmental policy for the installation by top management (commitment of the top management is regarded as a precondition for a successful application of other features of the EMS)<br>• planning and establishing the necessary procedures<br>• implementation of the procedures, paying particular attention to<br>- structure and responsibility<br>- training, awareness and competence<br>- communication<br>- employee involvement<br>- documentation<br>- efficient process control<br>- maintenance programme<br>- emergency preparedness and response<br>- safeguarding compliance with environmental legislation.<br>• checking performance and taking corrective action, paying particular attention to<br>- monitoring and measurement (see also the Reference document on General Principles of Monitoring) | An in-house EMS is in place and implemented. An annual review is undertaken (Section 4). |

| Aspect of BAT | BAT | Status at Metalco Ltd |
|---|---|---|
| | - corrective and preventive action<br>- maintenance of records<br>- independent (where practicable) internal auditing in order to determine whether or not the environmental management system conforms to planned arrangements and has been properly implemented and maintained.<br>• review by top management.<br><br>Three further features, which can complement the above stepwise, are considered as supporting measures. However, their absence is generally not inconsistent with BAT. These three additional steps are:<br>• having the management system and audit procedure examined and validated by an accredited certification body or an external EMS verifier<br>• preparation and publication (and possibly external validation) of a regular environmental statement describing all the significant environmental aspects of the installation, allowing for year-by-year comparison against environmental objectives and targets as well as with sector benchmarks as appropriate<br>• implementation and adherence to an internationally accepted voluntary system such as EMAS and EN ISO 14001:1996. This voluntary step could give higher credibility to the EMS. In particular EMAS, which embodies all the above-mentioned features, gives higher credibility. However, non-standardised systems can in principle be equally effective | |

| Aspect of BAT | BAT | Status at Metalco Ltd |
|---|---|---|
| | provided that they are properly designed and implemented.<br><br>Specifically for this industry sector, it is also important to consider the following potential features of the EMS:<br>• giving consideration to the environmental impact from the eventual decommissioning of the unit at the stage of designing a new plant<br>• giving consideration to the development of cleaner technologies<br>• where practicable, sectoral benchmarking on a regular basis, including energy efficiency and energy conservation activities, choice of input materials, emissions to air, discharges to water, consumption of water and generation of waste | |
| **Activities carried out** | Ensure the provision of full details of the activities carried out on-site. A good detail of that is contained in the following documentation (see Section 4.1.2.7 and related to the previous aspect (preparation and publication).<br>• descriptions of the waste treatment methods and procedures in place in the installation<br>• diagrams of the main plant items where they have some environmental relevance, together with process flow diagrams (schematics)<br>• details of the chemical reactions and their reaction kinetics/energy balance<br>• details on the control system philosophy and how the control system incorporates the environmental monitoring information<br>• details on how protection is provided during | Implemented. Liquids are not treated on-site, only temporarily stored. |

| Aspect of BAT | BAT | Status at Metalco Ltd |
|---|---|---|
| | abnormal operating conditions such as momentary stoppages, start-ups, and shutdowns<br>• an instruction manual<br>• an operational diary (related to the next aspect)<br>• an annual survey of the activities carried out and the waste treated. The annual survey should also contain a quarterly balance sheet of the waste and residue streams, including the auxiliary materials used for each site (related to the EMS aspect). | |
| **Housekeeping procedure** | Have a good housekeeping procedure in place, which will also cover the maintenance procedure, and an adequate training programme, covering the preventive actions that workers need to take on health and safety issues and environmental risks (see Sections 4.1.1.4, 4.1.1.5, 4.1.2.5, 4.1.2.10, 4.1.4.8 and 4.1.4.3). | Implemented. See Sections 4 and 8. |
| **Relationship with waste producer/holder** | Try to have a close relationship with the waste producer/holder in order that the customer's sites implement measures to produce the required quality of waste necessary for the waste treatment process to be carried out (see Section 4.1.2.9). | Not applicable. In general, the operator does not have a direct relationship with the user. |
| **Staff** | Have sufficient staff available and on duty with the requisite qualifications at all times. All personnel should undergo specific job training and further education (see Section 4.1.2.10. This is also related to the Housekeeping procedure aspect). | The management staff is committed to attend any available professional training courses or public information sessions on best practices in waste management, recycling and environmental permitting obligations. The management staff is also regularly in contact with MEPA with regards to their ongoing operations.<br>Staff training is provided according to their roles and duties, and includes proper operation of machinery, proper separation and treatment of the different wastes, and health and safety. |

| Aspect of BAT | BAT | Status at Metalco Ltd |
|---|---|---|
| | | New staff is recruited on a full time and/or part time basis as necessary in all areas of operations, particularly administration and manual workers. In addition, Metalco engages technical consultants, such as engineers, scientists and environmental experts according to needs to support the facility's regulatory compliance. |
| **Waste IN**<br>**Knowledge** | Have a concrete knowledge of the waste IN. Such knowledge needs to take into account the waste OUT, the treatment to be carried out, the type of waste, the procedure under consideration (see next aspects) and the risk (related to waste OUT and the treatment) (see Section 4.1.1.1). Guidance on some of these issues is provided in Sections 4.2.3, 4.3.2.2 and 4.4.1.2. | Implemented. See Section 8. |
| **Waste IN**<br>**Pre-acceptance procedure** | Implement a pre-acceptance procedure containing at least the following items (see Section 4.1.1.2):<br>• tests for the incoming waste with respect to the planned treatment<br>• making sure that all necessary information is received on the nature of the process(es) producing the waste, including the variability of the process. The personnel having to deal with the pre-acceptance procedure need to be able due to his profession and/or experience to deal with all necessary questions relevant for the treatment of the wastes in the WT facility<br>• a system for providing and analysing a representative sample(s) of the waste from the production process producing such waste from the current holder.<br>• a system for carefully verifying, if not dealing | The level of performance of the facility is dependent upon the quality of the incoming material. If the customer implements measures to produce the required quality of waste it can help to avoid the need to use very expensive solutions for the treatment of waste.<br>At Metalco, this is achieved through strict inspection for any contamination of the waste material prior to loading/accepting the material at the gate. Such contamination may include oil residues or other unacceptable material, like stones, wood and glass. Trucks entering the site will be properly contained so as to avoid possible spills/escapements throughout their journeys.<br>The facility adheres to the environmental permit conditions with regards to the use of registered waste carriers for transfer of waste, consignment notes for transfer of hazardous waste, trans-frontier shipment permits for export of hazardous waste, and the transfer of waste to authorised |

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| | directly with the waste producer, the information received at the pre-acceptance stage, including the contact details for the waste producer and an appropriate description of the waste regarding its composition and hazardousness<br>• making sure that the waste code according to the European Waste List (EWL) is provided<br>• identifying the appropriate treatment for each waste to be received at the installation (see Section 4.1.2.1) by identifying a suitable treatment method for each new waste enquiry and having a clear methodology in place to assess the treatment of waste, that considers the physico-chemical properties of the individual waste and the specifications for the treated waste. | facilities. |
| **Waste IN**<br>**Acceptance procedure** | Implement an acceptance procedure containing at least the following items (see Section 4.1.1.3):<br>• a clear and specified system allowing the operator to accept wastes at the receiving plant only if a defined treatment method and disposal/recovery route for the output of the treatment is determined (see pre-acceptance in the previous aspect). Regarding the planning for the acceptance, it needs to be guaranteed that the necessary storage (see Section 4.1.4.1), treatment capacity and dispatch conditions (e.g. acceptance criteria of the output by the other installation) are also respected<br>• measures in place to fully document and deal with acceptable wastes arriving at the site, such as a pre-booking system, to ensure e.g. that sufficient | Implemented. Waste is accepted in accordance with the Environmental Permit WM001/08 and its variations. |

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| | capacity is available<br>• clear and unambiguous criteria for the rejection of wastes and the reporting of all non conformances<br>• a system for identifying the maximum capacity limit of waste that can be stored at the facility<br>• visually inspect the waste IN to check compliance with the description received during the pre-acceptance procedure. *For some liquid and hazardous waste, this BAT is not applicable* (see Section 4.1.1.3). | |
| **Waste IN**<br>**Sampling procedures** | Implement different sampling procedures for all different incoming waste vessels delivered in bulk and/or containers. These sample procedures may contain the following items (see Section 4.1.1.4):<br>• sampling procedures based on a risk approach. Some elements to consider are the type of waste (e.g. *hazardous* or non-hazardous) and the knowledge of the customer (e.g. waste producer)<br>• check on the relevant physico-chemical parameters. The relevant parameters are related to the knowledge of the waste needed in each case<br>• registration of all waste materials<br>• have different sampling procedures for bulk (liquid and solids), large and small containers and laboratory smalls. The number of samples taken should increase with the number of containers. In extreme situations, small containers must all be checked against the accompanying paperwork. The procedure should contain a system for recording the number of samples and degree of consolidation | Not applicable. Due to economies of scale this is not considered feasible. |

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| | • details of the sampling of wastes in drums within designated storage, e.g. the time-scale after receipt<br>• sample prior to acceptance<br>• maintenance of a record at the installation of the sampling regime for each load, together with a record of the justification for the selection of each option<br>• a system for determining and recording:<br>- a suitable location for the sampling points<br>- the capacity of the vessel sampled (for samples from drums, an additional parameter would be the total number of drums)<br>- the number of samples and degree of consolidation<br>- the operating conditions at the time of sampling<br>• a system to ensure that the waste samples are analysed (see Section 4.1.1.5)<br>• in the case of cold ambient temperatures, a temporary storage may be needed in order to allow sampling after defrosting. This may affect the applicability of some of the above items in this BAT (see Section 4.1.1.5). | |
| **Waste IN**<br>**Reception facility** | Have a reception facility covering at least the following issues (see Section 4.1.1.5):<br>• have a laboratory to analyse all the samples at the speed required by BAT. Typically this requires having a robust quality assurance system, quality control methods and maintaining suitable records for storing the analyses results. *Particularly for* | Not applicable. Due to economies of scale this is not considered feasible. |

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| | *hazardous wastes, this often means that the laboratory needs to be on-site* | Implemented. See Section 5.1.1. |
| | • have a dedicated quarantine waste storage area as well as written procedures to manage non-accepted waste. If the inspection or analysis indicates that the wastes fail to meet the acceptance criteria (including, e.g. damaged, corroded or unlabelled drums) then the wastes can be temporarily stored there safely. Such storage and procedures should be designed and managed to promote the rapid management (typically a matter of days or less) to find a solution for that waste | |
| | • have a clear procedure dealing with wastes where inspection and/or analysis prove that they do not fulfil the acceptance criteria of the plant or do not fit with the waste description received during the pre-acceptance procedure. The procedure should include all measures as required by the permit or national/international legislation to inform competent authorities, to safely store the delivery for any transition period or to reject the waste and send it back to the waste producer or to any other authorised destination | Implemented. See Section 5.1.1. |
| | • move waste to the storage area only after acceptance of the waste | Implemented. See Section 5.1.1. |
| | • mark the inspection, unloading and sampling areas on a site plan | Implemented. See Section 3.3. |
| | • have a sealed drainage system | Implemented. See Section 3.3. |
| | • a system to ensure that the installation personnel who are involved in the sampling, checking and | Not applicable. Due to economies of scale this is not considered feasible. |

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| | analysis procedures are suitably qualified and adequately trained, and that the training is updated on a regular basis<br>• the application of a waste tracking system unique identifier (label/code) to each container at this stage. The identifier will contain at least the date of arrival on-site and the waste code. | Not applicable. Due to economies of scale this is not considered feasible. |
| **Waste OUT**<br>**Analysing** | Analyse the waste OUT according to the relevant parameters important for the receiving facility (e.g. landfill, incinerator) (see Section 4.1.1.1). | Chemical analysis may be carried out for certain counterfeit products (e.g. soaps, powders, toothpastes) to ensure that the waste falls within the waste categories acceptable by the receiving waste management facility.<br>The facility adheres to the environmental permit conditions with regards to the use of registered waste carriers for transfer of waste, consignment notes for transfer of hazardous waste, trans-frontier shipment permits for export of hazardous waste, and the transfer of waste to authorised facilities. |
| **Management systems**<br>**Traceability** | Have a system in place to guarantee the traceability of waste treatment. Different procedures may be needed to take into account the physico-chemical properties of the waste (e.g. liquid, solid), type of WT process (e.g. continuous, batch) as well as the changes that may occur to the physico-chemical properties of the wastes when the WT is carried out. A good traceability system contains the following items (see Section 4.1.2.3):<br>• documenting the treatments by flow charts and mass balances (see Section 4.1.2.4)<br>• carrying out data traceability through several operational steps (e.g pre-acceptance/acceptance/ storage/treatment/dispatch). Records can be made | Not applicable. Due to economies of scale this is not considered feasible. |

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| | and kept up-to-date on an ongoing basis to reflect deliveries, on-site treatment and dispatches. Records are typically held for a minimum of six months after the waste has been dispatched<br>• recording and referencing the information on waste characteristics and the source of the waste stream, so that it is available at all times. A reference number needs to be given to the waste and needs to be obtainable at any time in the process to enable the<br>• operator to identify where a specific waste is in the installation, the length of time it has been there and the proposed or actual treatment route<br>• having a computer database/series of databases, which are regularly backed up. The tracking system operates as a waste inventory/stock control system and includes: date of arrival on-site, waste producer details, details on all previous holders, an unique identifier, pre-acceptance and acceptance analysis results, package type and size, intended treatment/ disposal route, an accurate record of the nature and quantity of wastes held on-site including all hazards details on where the waste is physically located in relation to a site plan, at which point in the designated disposal route the waste is currently positioned<br>• only moving drums and other mobile containers between different locations (or loaded for removal off site) under instructions from the appropriate manager, ensuring that the waste tracking system is amended to record these changes (see Section | |

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| | 4.1.4.8). | |
| **Management systems**<br>**Mixing and blending rules** | Have and apply mixing/blending rules oriented to restrict the types of wastes that can be mixed/blended together in order to avoid increasing pollution emission of down-stream waste treatments. These rules need to consider the type of waste (e.g. *hazardous*, non-hazardous), waste treatment to be applied as well as the following steps that will be carried out to the waste OUT (see Section 4.1.5). | Not applicable. Mixing and blending does not take place on-site. |
| **Management systems**<br>**Segregation and compatibility procedure** | Have a segregation and compatibility procedure in place (see Section 4.1.5), including:<br>• keeping records of the testing, including any reaction giving rise to safety parameters (increase in temperature, generation of gases or raising of pressure); a record of the operating parameters (viscosity change and separation or precipitation of solids) and any other relevant parameters, such as generation of odours (see Sections 4.1.4.13 and 4.1.4.14)<br>• packing containers of chemicals into separate drums based on their hazard classification. Chemicals which are incompatible (e.g. oxidisers and flammable liquids should not be stored in the same drum (see Section 4.1.4.6). | Not applicable. This activity does not take place on-site. |
| **Management systems**<br>**Efficiency** | Have an approach for improving waste treatment efficiency. This typically includes the finding of suitable indicators to report WT efficiency and a monitoring programme (see Section 4.1.2.4). | The aim of Metalco is to extract the maximum resources out of the waste material delivered to their facilities both through their collection operations and from deliveries by third parties. This can be achieved through adequate processing, keeping in mind the waste hierarchy with special attention to waste minimisation followed by reuse, recovery and recycling. |

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| | | The aim of the facility is to have a zero waste operation whereby only unrecoverable material is sent for disposal. The level of performance of the facility is dependent upon the quality of the incoming material. Hence the first step to reduce waste is through the acceptance of good quality waste material for the purpose of their operation. This can be achieved through strict inspection for any oil contamination and for other unacceptable materials like stones, wood and glass prior to loading (in the case of internal collection operation) or prior to accepting the material at the gate.<br>Innovation also plays an important role in moving towards a zero waste operation. This can be achieved through the investigation of alternative reuse, reduction, recycling routes for current non-usable material currently being disposed of at landfill or incinerated.<br>Metalco will monitor operations and keep the necessary records to assure that its performance achieves higher reuse, recovery and recycling rates and lower disposal rates. |
| **Management systems**<br>**Accident Management Plan** | Produce a structured accident management plan (see Section 4.1.7). | Metalco will take the necessary measures to prevent and limit accidents which may have environmental consequences associated with waste treatment operations. Appropriate equipment, good inspection and maintenance procedures will also prevent accidents. |
| **Management systems**<br>**Incident diary** | Have and properly using an incident diary (see Section 4.1.7). | Metalco will have a template for recording incidents and corrective action to prevent the reoccurrence of possible incidents. |
| **Management systems**<br>**Noise and vibration** | Have a noise and vibration management plant in place as part of the EMS (see Section 4.1.8). For some WT installations, noise and vibration may not be an | Implemented. See Section 4. |

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| **management plant** | environmental problem. | |
| **Management systems**<br>**Decommissioning** | Consider any future decommissioning at the design stage. For existing installations and where decommissioning problems are identified, put a programme to minimise these problems in place (see Section 4.1.9). | An outline decommissioning is in Section 9. |
| **Utilities and raw material management**<br>**Raw material consumption and generation** | Provide a breakdown of the energy consumption and generation (including exporting) by the type of source (i.e. electricity, gas, liquid conventional fuels, solid conventional fuels and waste) (see Section 4.1.3.1). This involves:<br>• reporting the energy consumption information in terms of delivered energy<br>• reporting the energy exported from the installation<br>• providing energy flow information (for example, diagrams or energy balances) showing how the energy is used throughout the process. | Implemented. See Section 7. |
| **Utilities and raw material management**<br>**Energy efficiency** | Continuously increase the energy efficiency of the installation, by (see Section 4.1.3.4):<br>• developing an energy efficiency plan<br>• using techniques that reduce energy consumption and thereby reduce both direct (heat and emissions from on-site generation) and indirect (emissions from a remote power station) emissions<br>• defining and calculating the specific energy consumption of the activity (or activities), setting key performance indicators on an annual basis (e.g. MWh/tonne of waste processed). | Implemented. See Section 7. |
| **Utilities and raw material management** | Carry out an internal benchmarking (e.g. on an annual basis) of raw materials consumption. Some applicability limitations have been identified and these are mentioned in | Implemented. See Section 5.6. |

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| **Internal benchmarking** | Section 4.1.3.5. | |
| **Utilities and raw material management**<br>**Waste as a raw material** | Explore the options for the use of waste as a raw material for the treatment of other wastes (see Section 4.1.3.5). If waste is used to treat other wastes, then to have a system in place to guarantee that the waste supply is available. If this cannot be guaranteed, a secondary treatment or other raw materials should be in place in order to avoid any unnecessary waiting treatment time (see Section 4.1.2.2). | Not applicable. Due to economies of scale this is not considered feasible. |
| **Storage and handling**<br>**Storage** | Apply the following techniques related to storage (see Section 4.1.4.1):<br>• locating storage areas:<br>- away from watercourses and sensitive perimeters, and<br>- in such a way so as to eliminate or minimise the double handling of wastes within the installation<br>• ensuring that the storage area drainage infrastructure can contain all possible contaminated run-off and that drainage from incompatible wastes cannot come into contact with each other<br>• using a dedicated area/store which is equipped with all necessary measures related to the specific risk of the wastes for sorting and repackaging laboratory smalls or similar waste. These wastes are sorted according to their hazard classification, with due consideration for any potential incompatibility problems and then repackaged. After that, they are removed to the appropriate storage area<br>• handling odorous materials in fully enclosed or | Reference to BREF: Emissions from Storage |

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| | suitably abated vessels and storing them in enclosed buildings connected to abatement<br>• ensuring that all connections between the vessels are capable of being closed via valves. Overflow pipes need to be directed to a contained drainage system (i.e. the relevant bunded area or another vessel)<br>• having measures available to prevent the building up of sludges higher than a certain level and the emergence of foams that may affect such measures in liquid tanks, e.g. by regularly controlling the tanks, sucking out the sludges for appropriate further treatment and using anti-foaming agents<br>• equipping tanks and vessels with suitable abatement systems when volatile emissions may be generated, together with level meters and alarms. These systems need to be sufficiently robust (able to work if sludge and foam is present) and regularly maintained<br>• storing organic waste liquid with a low flashpoint under a nitrogen atmosphere to keep it inertised. Each storage tank is put in a waterproof retention area. Gas effluents are collected and treated. | |
| **Storage and handling**<br>**Bunding** | Separately bund the liquid decanting and storage areas using bunds which are impermeable and resistant to the stored materials (see Section 4.1.4.4). | Implemented for the liquid decanting and storage areas using bunds which are impermeable and resistant to the hazardous liquids, batteries and all the WEEE components. |
| **Storage and handling**<br>**Tank and process pipework** | Apply the following techniques concerning tank and process pipework labelling (see Section 4.1.4.12):<br>• clearly labelling all vessels with regard to their contents and capacity, and applying an unique identifier. Tanks need to have an appropriately | Reference to BREF: Emissions from Storage |

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| | labelled system depending on their use and contents<br>• ensuring that the label differentiates between waste water and process water, combustible liquid and combustible vapour and the direction of flow (i.e. in or outflow)<br>• keeping records for all tanks, detailing the unique identifier; capacity; its construction, including materials; maintenance schedules and inspection results; fittings; and the waste types which may be stored/treated in the vessel, including flashpoint limits. | |
| **Storage and handling**<br>**Accumulation** | Take measures to avoid problems that may be generated from the storage/accumulation of waste. This may conflict with BAT on "Utilities and raw material management: Waste as a raw material" when waste is used as a reactant (see Section 4.1.4.10). | Not applicable. Due to economies of scale this is not considered feasible. |
| **Storage and handling**<br>**Handling** | Apply the following techniques when handling waste (see Section 4.1.4.6):<br>• having systems and procedures in place to ensure that wastes are transferred to the appropriate storage safely<br>• having in place a management system for the loading and unloading of waste in the installation, which also takes into consideration any risks that these activities may incur. Some options for this include ticketing systems, supervision by site staff, keys or colour-coded points/hoses or fittings of a specific size<br>• ensuring that a qualified person attends the waste holder site to check the laboratory smalls, the old | Not applicable. Due to economies of scale this is not considered feasible. |

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| | original waste, waste from an unclear origin or undefined waste (especially if drummed), to classify the substances accordingly and to package into specific containers. In some cases, the individual packages may need to be protected from mechanical damage in the drum with fillers adapted to the packaged waste properties<br>• ensuring that damaged hoses, valves and connections are not used<br>• collecting the exhaust gas from vessels and tanks when handling liquid waste<br>• unloading solids and sludge in closed areas which are fitted with extractive vent systems linked to abatement equipment when the handled waste can potentially generate emission to air (e.g. odours, dust, VOCs) (see Section 4.1.4.7)<br>• using a system to ensure the bulking of different batches only takes place with compatibility testing (see Section 4.1.4.7 and 4.1.5). | |
| **Storage and handling**<br>**Bulking and mixing** | Ensure that the bulking/mixing to or from packaged waste only takes place under instruction and supervision and is carried out by trained personnel. For certain types of wastes, such a bulking/mixing needs to be carried out under local exhaust ventilation (see Section 4.1.4.8). | Not applicable. Does not take place on-site. |
| **Storage and handling**<br>**Chemical incompatibilities** | Ensure that chemical incompatibilities guide the segregation required during storage (see Section 4.1.4.13 and 4.1.4.14). | Implemented. Staff personnel are trained. |
| **Storage and handling**<br>**Containerised wastes** | Apply the following techniques when containerised wastes are handled (see Section 4.1.4.2): | Not applicable. Does not take place on-site. |

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| | • storing of containerised wastes under cover. This can also be applied to any container that is held in storage pending sampling and emptying. Some exceptions on the applicability of this technique related to containers or waste not affected by ambient conditions (e.g. sunlight, temperature, water) have been identified (see Section 4.1.4.2). Covered areas need to have adequate provision for ventilation<br>• maintaining the availability and access to storage areas for containers holding substances that are known to be sensitive to heat, light and water, under cover and protected from heat and direct sunlight. | |
| **Extractive vent systems** | Perform crushing, shredding and sieving operations in areas fitted with extractive vent systems linked to abatement equipment (see Section 4.1.6.1) when handling materials that can generate emission to air (e.g. odours, dust, VOCs). | All fine granulation and fine shredding of cables, wires, tyres and soft aluminium and plastics (including plastic from WEEE) is carried out indoors, all of which include dust suppression equipment, including dust filters and dust separators.<br>Shredding of cigarettes, textiles, paper and mattresses is carried out outdoors, under a temporary tent since these do not produce significant amounts of dust. Shredding of Aluminium profiles is carried out outdoors but smaller particles are separated by eddy current machine and collected in jumbo bags for recycling.<br>Baling activities are largely carried out outdoors and therefore extractive vent systems are not required. |
| **Full encapsulation / Inert atmosphere** | Perform crushing/shredding operations (see Sections 4.1.6.1 and 4.6) under full encapsulation and under an inert atmosphere for drums/containers containing flammable or highly volatile substances. This will avoid ignition. The | Not applicable. Does not take place on-site. |

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| | inert atmosphere is to be abated. | |
| **Washing processes** | Perform washing processes considering (see Section 4.1.6.2):<br>• identifying the washed components that may be present in the items to be washed (e.g. solvents)<br>• transferring washings to appropriate storage and then treating them in the same way as the waste from which they were derived<br>• using treated waste water from the WT plant for washing instead of fresh water. The resultant waste water can then be treated in the WWTP or re-used in the installation. | Not applicable. Does not take place on-site. |
| **Air emission treatments** | Restrict the use of open topped tanks, vessels and pits by:<br>• not allowing direct venting or discharges to air by linking all the vents to suitable abatement systems when storing materials that can generate emissions to the air (e.g. odours, dust, VOCs) (see Section 4.1.4.5)<br>• keeping the waste or raw materials under cover or in waterproof packaging (see Section 4.1.4.5)<br>• connecting the head space above the settlement tanks (e.g. where oil treatment is a pre-treatment process within a chemical treatment plant) to the overall site exhaust and scrubber units (see Section 4.1.4.1). | Not applicable. Does not take place on-site. |
| | The use of an enclosed system with extraction, or under depression, to a suitable abatement plant. This technique is especially relevant to processes which involve the transfer of volatile liquids, including during tanker charging/discharging (see Section 4.6.1). | Not applicable. Does not take place on-site. |

<table>
<tr><th>Aspect of BAT</th><th>BAT</th><th>Status at Metalco Ltd</th></tr>
<tr><td></td><td>Apply a suitably sized extraction system which can cover the holding tanks, pre-treatment areas, storage tanks, mixing/reaction tanks and the filter press areas, or to have in place a separate system to treat the vent gases from specific tanks (for example, activated carbon filters from tanks holding waste contaminated with solvents) (see Section 4.6.1).</td><td>Not applicable. Does not take place on-site.</td></tr>
<tr><td></td><td>Correctly operate and maintain the abatement equipment, including the handling and treatment/disposal of spent scrubber media (see Section 4.6.11).</td><td>Not applicable. Does not take place on-site.</td></tr>
<tr><td></td><td>Have a scrubber system in place for the major inorganic gaseous releases from those unit operations which have a point discharge for process emissions. Install a secondary scrubber unit to certain pre-treatment systems if the discharge is incompatible or too concentrated for the main scrubbers (see Section 4.6.11).</td><td>Not applicable. Does not take place on-site.</td></tr>
<tr><td></td><td>Have leak detection and repair procedures in place in installations<ul><li>handling a large number of piping components and storage and</li><li>compounds that may leak easily and create an environmental problem (e.g. fugitive emissions, soil contamination) (see Section 4.6.2).</li></ul>This may be seen as an element of the EMS.</td><td>Not applicable. Does not take place on-site.</td></tr>
<tr><td>Air emission levels</td><td>Reduce air emission to the following levels<table><tr><th>Air parameter</th><th>Emission levels associated to the use of BAT (mg/Nm$^3$)</th></tr><tr><td>VOC</td><td>7 – 20[1]</td></tr><tr><td>PM</td><td>5 – 20</td></tr><tr><td colspan="2">[1] For low VOC loads, the higher end of the range can be extended to 50</td></tr></table></td><td>Not applicable. Does not take place on-site.</td></tr>
</table>

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| | by using a suitable combination of preventive and/or abatement techniques (see Section 4.6). The techniques mentioned above in the BAT 'Air emission treatments' section also contribute to achieve these values. | |
| **Waste water management** | Reduce the water use and the contamination of water by (see Sections 4.1.3.6 and 4.7.1):<br>• applying site waterproofing and storage retention methods<br>• carrying out regular checks of the tanks and pits especially when they are underground<br>• applying separated water drainage according to the pollution load (roof water, road water, process water)<br>• applying a security collection basin<br>• performing regular water audits, with the aim of reducing water consumption and preventing water contamination<br>• segregating process water from rainwater (see Section 4.7.2). | Not applicable. Does not take place on-site. |
| | Have procedures in place to ensure that the effluent specification is suitable for the on-site effluent treatment system or discharge (see Section 4.7.1). | Not applicable. Does not take place on-site. |
| | Avoid the effluent by-passing the treatment plant systems (see Section 4.7.1). | N/A |
| | Have in place and operate an enclosure system whereby rainwater falling on the processing areas is collected along with tanker washings, occasional spillages, drum washings, etc. and returned to the processing plant or collected in a combined interceptor (see Section 4.7.1). | Not applicable. Does not take place on-site. |

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| | Segregate the water collecting systems for potentially more contaminated waters from less contaminated water (see Section 4.7.2). | Not applicable. Does not take place on-site. |
| | Have a full concrete base in the whole treatment area that falls to internal site drainage systems which lead to storage tanks or to interceptors that can collect rainwater and any spillage. Interceptors with an overflow to sewer usually need automatic monitoring systems, such as pH checks, which can shut down the overflow (see Section 4.1.3.6). | Not applicable. Does not take place on-site. |
| **Rainwater collecting** | Collect the rainwater in a special basin for checking, treatment if contaminated and further use (see Section 4.7.1). | Implemented. See Section 11. |
| **Re-use** | Maximise the re-use of treated waste waters and use of rainwater in the installation (see Section 4.7.1). | Not applicable. Water cannot be treated on site. |
| **Daily checks** | Conduct daily checks on the effluent management system and to maintain a log of all checks carried out, by having a system for monitoring the effluent discharge and sludge quality in place (see Section 4.7.1). | Not applicable. Does not take place on-site. |
| | Firstly identify waste waters that may contain hazardous compounds (e.g. absorbable organically bound halogens (AOX); cyanides; sulphides; aromatic compounds; benzene or hydrocarbons (dissolved, emulsified or undissolved); and metals, such as mercury, cadmium, lead, copper, nickel, chromium, arsenic and zinc) (see Section 4.7.2). Secondly, segregate the previously identified waste water streams on-site and thirdly, specifically treat waste water on-site or off-site. | Not applicable. Does not take place on-site. |
| | Ultimately after the application of "the water use and the contamination of water reduction", select and carry out the appropriate treatment technique for each type of waste water | Not applicable. Does not take place on-site. |

<table>
<tr><th>Aspect of BAT</th><th>BAT</th><th>Status at Metalco Ltd</th></tr>
<tr><td></td><td>(see Section 4.7.1).</td><td></td></tr>
<tr><td></td><td>Implement measures to increase the reliability with which the required control and abatement performance can be carried out (for example, optimising the precipitation of metals) (see Section 4.7.1).</td><td>Not applicable. Does not take place on-site.</td></tr>
<tr><td></td><td>Identify the main chemical constituents of the treated effluent (including the make-up of the COD) and to then make an informed assessment of the fate of these chemicals in the environment (see Section 4.7.1 and their applicability restrictions identified).</td><td>Not applicable. Does not take place on-site.</td></tr>
<tr><td></td><td>Only discharge the waste water from its storage after the conclusion of all the treatment measures and a subsequent final inspection (see Section 4.7.1).</td><td>Not applicable. Does not take place on-site.</td></tr>
<tr><td>Water emission levels</td><td>Achieve the following water emission values before discharge:<br><table><tr><th>Water parameter</th><th>Emission values associated with the use of BAT (ppm)</th></tr><tr><td>COD</td><td>20 – 120</td></tr><tr><td>BOD</td><td>2 – 20</td></tr><tr><td>Heavy metals (Cr, Cu, Ni, Pb, Zn)</td><td>0.1 – 1</td></tr><tr><td>Highly toxic heavy metals:<br>As<br>Hg<br>Cd<br>Cr(VI)</td><td><br><0.1<br>0.01 – 0.05<br><0.1 – 0.2<br><0.1 – 0.4</td></tr></table>by applying a suitable combination of techniques mentioned in Sections 4.4.2.3 and 4.7. The techniques mentioned above in this section on ‘waste water management’ (also contribute to reach these values.</td><td>Not applicable. Does not take place on-site.</td></tr>
<tr><td>Management of the process generated residues</td><td>BAT is to have a residue management plan (see Section 4.8.1) as part of the EMS including:<ul><li>basic housekeeping techniques</li><li>internal benchmarking techniques (see Section 4.1.2.8).</li></ul></td><td>Implemented. See Section 4.</td></tr>
</table>

| Aspect of BAT | BAT | Status at Metalco Ltd |
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| | Maximise the use of re-usable packaging (drums, containers, IBCs, palettes, etc.) (see Section 4.8.1). | Implemented. The packaging is reused. |
| | Re-use drums when they are in a good working state. In other cases, they are to be sent for appropriate treatment (see Section 4.8.1). | Implemented. The packaging is reused. |
| | Keep a monitoring inventory of the waste on-site by using records of the amount of wastes received on-site and records of the wastes processed (see Section 4.8.3). | Implemented. See Figure 6. |
| | Re-use the waste from one activity/treatment possibly as a feedstock for another (see Section 4.1.2.6). | Not applicable. Does not take place on-site. |
| **Soil contamination** | BAT is to provide and then maintain the surfaces of operational areas, including applying measures to prevent or quickly clear away leaks and spillages, and ensuring that maintenance of drainage systems and other subsurface structures is carried out (see Section 4.8.2). | In case of spillages these are cleaned up promptly and all hazardous materials and components will be bunded appropriately.<br>The ground of all parts of the facility is covered with an impermeable concrete layer to prevent any contamination of the underlying rock strata and groundwater.<br>Metalco will ensure that maintenance of drainage systems and other subsurface structures is carried out. |
| | Utilise impermeable base and internal site drainage (see Section 4.1.4.6, 4.7.1 and 4.8.2). | Implemented. See Section 3.1. |
| | Reduce the installation site and minimise the use of underground vessels and pipework (see Section 4.8.2). | Not applicable. Does not take place on-site. |

**Part 2: BAT for specific types of waste treatments**

| Aspect of BAT | BAT | Status at Installation |
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| **Biological treatments** | BAT is to use the following techniques for storage and handling in biological systems (see Section 4.2.2): | Not applicable. Does not take place on-site. |

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| | • for less odour-intensive wastes, use automated and rapid action doors (opening times of the doors being kept to a minimum) in combination with an appropriate exhaust air collection device resulting in an under pressure in the hall<br>• for highly odour-intensive wastes, use closed feed bunkers constructed with a vehicle sluice<br>• house and equip the bunker area with an exhaust air collection device. | |
| | Adjust the admissible waste types and separation processes according to the type of process carried out and the abatement technique applicable (e.g. depending on the content of non-biodegradable components) (see Section 4.2.3). | Not applicable. Does not take place on-site. |
| | Use the following techniques when applying anaerobic digestion (see Sections 4.2.4 and 4.2.5):<br>• application of a close integration between the process with the water management<br>• a recycling of the maximum amount of waste water to the reactor. See some operational issues that may appear when applying this technique in Section 4.2.4<br>• operate the system under thermophilic digestion conditions. For certain types of wastes, thermophilic conditions cannot to be reached (see Section 4.2.4)<br>• measure TOC, COD, N, P and Cl levels in the inlet and outlet flows. When a better control of the process is required, or a better quality of the waste OUT, more parameters are necessary for measuring and controlling<br>• maximise the production of biogas. This technique | Not applicable. Anaerobic digestion does not take place on-site. |

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| | needs to consider the effect on the digestate and biogas quality. | |
| | Reduce the air emissions of the exhaust gas when using biogas as a fuel by restricting the emissions of dust, NOx, SOx, CO, H2S and VOC by using an appropriate combination of the following techniques (see Section 4.2.6):<br>• scrubbing the biogas with iron salts<br>• using de-NOx techniques such as SCR<br>• using a thermal oxidation unit<br>• using activated carbon filtration. | Not applicable. Does not take place on-site. |
| | Improve the mechanical biological treatments (MBT) by (see Sections 4.2.2, 4.2.3, 4.2.8, 4.2.10, 4.6.23):<br>• using fully enclosed bioreactors<br>• avoiding anaerobic conditions during aerobic treatment by controlling the digestion and the air supply (by using a stabilised air circuit) and by adapting the aeration to the actual biodegradation activity<br>• using water efficiently<br>• thermally insulating the ceiling of the biological degradation hall in aerobic processes<br>• minimising the exhaust gas production to levels of 2500 to 8000 Nm3 per tonne. Levels below 2500 Nm3 per tonne do not have been reported<br>• guaranteeing a uniform feed<br>• recycling process waters or muddy residues within the aerobic treatment process to completely avoid water emissions. If waste water is generated, then this should be treated to reach the water emissions values mentioned previously<br>• continuously learning of the connection between the | Not applicable. Does not take place on-site. |

<table>
<tr><td></td><td>controlled variables of biological degradation and the measured (gaseous) emissions<br>• reducing emissions of nitrogen compounds by optimising the C:N ratio</td><td></td></tr>
<tr><td>Emission levels for mechanical biological treatments</td><td>Reduce the emissions from mechanical biological treatments to the following levels (see Section 4.2.12):<br><table><tr><th>Parameter</th><th>Treated exhaust gas</th></tr><tr><td>Odour (ouE/m$^3$)</td><td><500 – 6000</td></tr><tr><td>$NH_3$ (mg/Nm$^3$)</td><td><1 – 20</td></tr><tr><td colspan="2">For VOC and PM, see the generic BAT 41<br>The TWG recognised that $N_2O$ (see Section 4.6.10) and Hg also needed to be added to this table, however not enough data were provided to validate values on these issues.</td></tr></table>by using an appropriate combination of the following techniques (see Section 4.6):<br>• maintaining good housekeeping (related to BAT number 3)<br>• regenerative thermal oxidiser<br>• dust removal.</td><td>Not applicable. Does not take place on-site.</td></tr>
<tr><td></td><td>Reduce the emissions to water to the levels mentioned in “the water emissions values”. In addition, restrict the emissions to water of total nitrogen, ammonia, nitrate and nitrite as well (see Section 4.7.7 and the concluding remarks Chapter 7).</td><td>Not applicable. Does not take place on-site.</td></tr>
<tr><td>Physico-chemical treatments</td><td>BAT is to apply the following techniques in physico-chemical reactors (see Section 4.3.1.2):<br>• clearly defining the objectives and the expected reaction chemistry for each treatment process<br>• assessing each new set of reactions and proposed mixes of wastes and reagents in a laboratory-scale test prior to waste treatment<br>• specifically designing and operating the reactor</td><td>Not applicable. Does not take place on-site.</td></tr>
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| | vessel so that it is fit for its intended purpose<br>• enclosing all treatment/reaction vessels and ensuring that they are vented to the air via an appropriate scrubbing and abatement system<br>• monitoring the reaction to ensure that it is under control and proceeding towards the anticipated result<br>• preventing the mixing of wastes or other streams that contain metals and complexing agents at the same time (see Section 4.3.1.3). | |
| | In addition to the generic parameters identified previously for waste water, additional parameters need to be identified for the physico-chemical treatment of waste waters. Some reference is given on this issue in the concluding remark Chapter 7. | Not applicable. Does not take place on-site. |
| | Apply the following techniques for the neutralisation process (see Section 4.3.1.3)<br>• ensuring that the customary measurement methods are used<br>• separately storing the neutralised waste water<br>• performing a final inspection of the neutralised waste water after a sufficient storage time has elapsed. | Not applicable. Does not take place on-site. |
| | Apply the following techniques to aid precipitation of the metals in treatment processes (see Section 4.3.1.4):<br>• adjusting the pH to the point of minimum solubility where the metals will precipitate<br>• avoiding the input of complexing agents, chromates and cyanides<br>• avoiding organic materials that may interfere with precipitation from entering the process<br>• allowing the resulting treated waste to clarify by | Not applicable. Does not take place on-site. |

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| | decantation when possible, and/or by the addition of other dewatering equipment<br>• using sulphidic precipitation if complex agents are present. This technique may increase the sulphide concentration in the treated waste water. | |
| | Apply the following techniques to break-up emulsions (see Section 4.3.1.5):<br>• testing for the presence of cyanides in the emulsions to be treated. If cyanides are present, the emulsions need a special pre-treatment first<br>• setting up simulated laboratory tests. | Not applicable. Does not take place on-site. |
| | Apply the following techniques to oxidation/reduction (see Section 4.3.1.6):<br>• abating the air emissions generated during the oxidation/reduction<br>• having safety measures and gas detectors in place (e.g. suitable for detecting HCN, H2S, NOx). | Not applicable. Does not take place on-site. |
| | Apply the following techniques to waste waters containing cyanides (see Section 4.3.1.7):<br>• destroying the cyanides by oxidation<br>• adding caustic soda in excess to prevent a decrease in pH<br>• avoiding the mixing of cyanide wastes with acidic compounds<br>• monitoring the progress of the reaction using electropotentials. | Not applicable. Does not take place on-site. |
| | Apply the following techniques to waste waters containing chromium (VI) compounds (see Section 4.3.1.8):<br>• avoiding the mixing of Cr(VI) wastes with other wastes<br>• reducing Cr(VI) to Cr(III) | Not applicable. Does not take place on-site. |

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| | • precipitating the trivalent metal. | |
| | Apply the following techniques to waste waters containing nitrites (see Section 4.3.1.9):<br>• avoiding mixing nitrite wastes with other wastes<br>• checking and avoiding nitrous fumes during the oxidation/acidification treatment of nitrites. | Not applicable. Does not take place on-site. |
| | Apply the following techniques to waste waters containing ammonia (see Section 4.3.1.11):<br>• using a dual column air stripping system with an acidic scrubber for waste with ammonia solutions up to 20 w/w-%<br>• recovering the ammonia in the scrubbers and returning it to the process prior to the settlement stage<br>• removing the ammonia removed in the gas phase by scrubbing the waste with sulphuric acid to produce ammonium sulphate<br>• extending any air sampling for ammonia in exhaust stacks or filter press areas to cover the VOCs in filtration and dewatering (see Section 4.3.1.12). | Not applicable. Does not take place on-site. |
| | Link the air space above filtration and dewatering processes to the main abatement system of the plant (see Section 4.3.1.12). | Not applicable. Does not take place on-site. |
| | Add flocculation agents to the sludge and waste water to be treated, to accelerate the sedimentation process and to facilitate the further separation of solids (see Section 4.3.1.16 for some applicability restrictions identified). To avoid use of flocculation agents, evaporation is better in those cases where it is economically viable (see Section 4.7.6.1). | Not applicable. Does not take place on-site. |
| | Apply rapid cleaning and steam- or high pressure water jet | Not applicable. Does not take place on-site. |

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| | cleaning of the filter apertures of the sieving processes (see Section 4.3.1.17). | |
| **Physico-chemical treatment of solid wastes** | BAT is to promote the insolubilisation of amphoteric metals, and to reduce the leaching of toxic soluble salts by a suitable combination of water washing, evaporation, recrystallisation and acid extraction (see Section 4.3.2.1, 4.3.2.8, 4.3.2.9) when inmobilisation is used to treat solid waste containing hazardous compounds for land filling. | Not applicable. Does not take place on-site. |
| | Test the leachability of inorganic compounds, by using the standardised CEN leaching procedures and by applying the appropriate testing level: basic characterisation, compliance testing or on-site verification (see Section 4.3.2.2). | Not applicable. Does not take place on-site. |
| | Restrict the acceptance of wastes to be treated by solidification/immobilisation treatment to those not containing high levels of VOCs, odorous components, solid cyanides, oxidising agents, chelating agents, high TOC wastes and gas cylinders (see Section 4.3.2.3). | Not applicable. Does not take place on-site. |
| | Apply control and enclosure techniques for loading/unloading and enclosed conveyor systems (see Section 4.3.2.3). | Not applicable. Does not take place on-site. |
| | Have an abatement system(s) in place to handle the flow of air, as well as the peak loadings associated with charging and unloading (see Section 4.3.2.3). | Not applicable. Does not take place on-site. |
| | Use at least a solidification, vitrification, melting or fusion process before landfilling solid waste according to techniques in Sections from 4.3.2.4 to 4.3.2.7. | Not applicable. Does not take place on-site. |
| **Physico-chemical treatment of contaminated soil** | BAT is to control the rate of excavation, the amount of contaminated soil area that is exposed, and the duration that soil piles are left uncovered during the excavation and removal of contaminated soil (see Section 4.3.2.10). | Not applicable. Does not take place on-site. |

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| | Use a bench-scale test to determine the suitability of the process to be applied and the best operational conditions for its use (see Section 4.3.2.11). | Not applicable. Does not take place on-site. |
| | Have collection and control equipment in place such as afterburners, thermal oxidisers, fabric filters, activated carbon, or condensers for the treatment of the gases from thermal treatments (see Section 4.3.2.11). | Not applicable. Does not take place on-site. |
| | Report the efficiency achieved during the processes for the different components reduced and also for those that have not been affected by the process (see Section 4.3.2.3). | Not applicable. Does not take place on-site. |
| **Re-refining of waste oils** | BAT is to operate a careful control of the incoming materials supported by analytical equipment (viscometry, infrared, chromatography and mass spectrometry as appropriate), laboratories and resources (see Section 4.1.1.1). | Not applicable. Does not take place on-site. |
| | Check at least for chlorinated solvents and PCBs (see Sections 4.1.1.1 and 4.4.1.2). | Not applicable. Does not take place on-site. |
| | Use condensation as a treatment for the gas phase of the flash distillation unit (see Section 4.6.8). | Not applicable. Does not take place on-site. |
| | Have vapour return lines for loading and unloading vehicles, routing all vents to a thermal oxidiser/incinerator or an activated carbon adsorption installation (see Sections 4.1.4.6, 4.6.7 and 4.6.14). | Not applicable. Does not take place on-site. |
| | Direct vent streams to a thermal oxidiser with waste gas treatment if chlorinated species are present in the vent stream. If high levels of chlorinated species are present then condensation followed by caustic scrubbing and an activated carbon guard bed is the preferred treatment path (see Section 4.6). | Not applicable. Does not take place on-site. |
| | Utilise a thermal oxidation at 850 °C with a two seconds residence time for the vacuum distillation vent of vacuum | Not applicable. Does not take place on-site. |

<table>
<tr><td></td><td>generators or for the air from process heaters (see Section 4.6).</td><td></td></tr>
<tr><td></td><td>Use a highly efficient vacuum system (see Section 4.4.1.1).</td><td>Not applicable. Does not take place on-site.</td></tr>
<tr><td></td><td>Use the residues from vacuum distillation or thin film evaporators as asphalt products (see Section 4.4.1.15).</td><td>Not applicable. Does not take place on-site.</td></tr>
<tr><td></td><td>Use a re-refining process of waste oil which can achieve a yield higher than 65 % on a dry basis (see Sections from 4.4.1.1 to 4.4.1.12).</td><td>Not applicable. Does not take place on-site.</td></tr>
<tr><td>Emission levels for re-refining of waste oils</td><td>Achieve the following values in the discharged waste water from the re-refining unit (see Section 4.4.1.14):<br><table><tr><th>Waste water parameter</th><th>Concentration (ppm)</th></tr><tr><td>Hydrocarbons</td><td><0.01 – 5</td></tr><tr><td>Phenols</td><td>0.15 – 0.45</td></tr><tr><td colspan="2">For other water parameters, refer to BAT number 56 in the Generic BAT section</td></tr></table>by using a suitable combination of process-integrated techniques and/or primary, secondary, biological and finishing treatments (see Sections 4.4.1.14 and 4.7).</td><td>Not applicable. Does not take place on-site.</td></tr>
<tr><td>Treatment of waste solvent</td><td>BAT is to operate a careful control of the incoming materials as supported by analytical equipment, laboratories and resources (see Section 4.1.1.1).</td><td>Not applicable. Does not take place on-site.</td></tr>
<tr><td></td><td>Evaporate the residue from the distillation columns and to recuperate the solvents (see Section 4.4.2.4).</td><td>Not applicable. Does not take place on-site.</td></tr>
<tr><td>Regeneration of waste catalyst</td><td>BAT is to use bag filters to abate particulates from the fumes generated during the regeneration process (see Sections 4.4.3 and 4.6.5).</td><td>Not applicable. Does not take place on-site.</td></tr>
<tr><td></td><td>Use a SOx abatement system (see Section 4.4.3.3).</td><td>Not applicable. Does not take place on-site.</td></tr>
<tr><td>Regeneration of waste activated carbon</td><td>BAT is to have an effective quality control procedure in place to ensure that the operator can differentiate between the carbon used for potable water or food grade carbon and</td><td>Not applicable. Does not take place on-site.</td></tr>
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| | the rest of spent carbons (the so-called ‘industrial carbons’) (see Section 4.4.4.2). | |
| | Require a written undertaking from customers indicating what the activated carbon has been used for (see Section 4.1.2.3). | Not applicable. Does not take place on-site. |
| | Utilise an indirect fired kiln for industrial carbons –it may be argued that this could equally be applied to potable water carbons. However, limits on capacity and corrosion may deem that only multiple hearth or direct fired rotary kilns may be used (see Section 4.4.4.1). | Not applicable. Does not take place on-site. |
| | Utilise an afterburner with a minimum of 1100 °C, two seconds residence time and 6 % excess oxygen for the regeneration of industrial carbons where refractory halogenated or other thermally resistant substances are likely to be present. In other cases, less stringent thermal conditions are sufficient (see Section 4.4.4.2). | Not applicable. Does not take place on-site. |
| | Utilise an afterburner with a minimum heating temperature of 850 °C, two seconds residence time and 6 % excess oxygen for potable water and food grade active carbons (see Section 4.4.4.2). | Not applicable. Does not take place on-site. |
| | Apply a flue-gas treatment train consisting of quench and/or venturi and aqueous scrubbing sections, followed by an induced draft fan (see Section 4.4.4.2). | Not applicable. Does not take place on-site. |
| | Utilise a caustic or soda ash scrubbing solutions to neutralise acid gases for industrial carbon plants (see Section 4.4.4.2). | Not applicable. Does not take place on-site. |
| | Have a WWTP containing an appropriate combination of flocculation, settlement, filtration and pH adjustment for the treatment of potable water carbons. For effluents of industrial carbons, applying additional treatments (e.g. metal hydroxide precipitation, sulphide precipitation) are | Not applicable. Does not take place on-site. |

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| | also considered BAT (see Section 4.4.4.3). | |
| **Preparation of waste to be used as fuel** | BAT is to try to have a close relationship with the waste fuel user in order that a proper transfer of the knowledge of the waste fuel composition is carried out (see Section 4.5.1). | Not applicable. Does not take place on-site. |
| | Have a quality assurance system to guarantee the characteristics of the waste fuel produced (see Section 4.5.1). | Not applicable. Does not take place on-site. |
| | Manufacture different type of waste fuels according to the type of user (e.g. cement kilns, different power plants), to the type of furnace (e.g. grate firing, blow feeding) and to the type of waste used to manufacture the waste (e.g. hazardous waste, municipal solid waste) (see Section 4.5.2). | Not applicable. Does not take place on-site. |
| | *When producing waste fuel from hazardous waste, use activated carbon treatment for low contaminated water and thermal treatment for highly polluted water (see Sections 4.5.6 and 4.7). In this context, thermal treatment relates to any thermal treatment in Section 4.7.6 or incineration which is not covered in this document.* | Not applicable. Does not take place on-site. |
| | *When producing waste fuel from hazardous waste, ensure correct follow-up of the rules concerning electrostatic and flammability hazards for safety reasons (see Sections 4.1.2.7 and 4.1.7).* | Not applicable. Does not take place on-site. |
| **Preparation of solid waste fuels from non-hazardous waste** | BAT is to visually inspect the incoming waste to sort out the bulky metallic or non-metallic parts. The purpose is to protect the plant against mechanical destruction (see Section 4.1.1.3 and this is also related to BAT 8.e). | Not applicable. Does not take place on-site. |
| | Use magnetic ferrous and non-ferrous metal separators. The purpose is to protect the pelletisers as well as fulfill the requirements of the final users (see Sections 4.5.3.3 and 4.5.3.4). | Not applicable. Does not take place on-site. |

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| | Make use of the NIR technique for the sorting out of plastics. The purpose is the reduction of organic chlorine and some metals which are part of the plastics (see Section 4.5.3.10). | Not applicable. Does not take place on-site. |
| | Use a combination of shredder systems and pelletisers suitable for the preparation of the specified size waste fuel (see Sections 4.5.3.1 and 4.5.3.12). | Not applicable. Does not take place on-site. |
| | *For some installations preparing solid waste fuels from source-separated waste streams, the use of some or all of the above-mentioned techniques may not be necessary to comply with BAT (see Section 4.5.3.1).* | Not applicable. Does not take place on-site. |
| **Preparation of solid waste fuel from hazardous waste** | *BAT is to consider emissions and flammability hazards in case a drying or heating operation is required (see Sections 4.1.2.7 and 4.5.4.1).* | Not applicable. Does not take place on-site. |
| | *Consider carrying out the mixing and blending operations in closed areas with appropriate atmosphere control systems (see Sections 4.1.4.5, 4.5.4.1 and 4.6).* | Not applicable. Does not take place on-site. |
| | *Use bags filters for the abatement of particulates (see Section 4.6.26).* | Not applicable. Does not take place on-site. |
| **Preparation of liquid waste fuels from hazardous waste** | *BAT is to use heat-exchange units external to the vessel if heating of the liquid fuel is required (Section 4.5.4.1).* | Not applicable. Does not take place on-site. |
| | *Adapt the suspended solid content to ensure the homogeneity of the liquid fuel (see Section 4.5.4.1).* | Not applicable. Does not take place on-site. |

**Annex I: Comparison of the processes at Metalco Ltd with the BREF for Emissions from storage (published July 2006).**

**1.2 Storage of packaged dangerous substances**

| Aspect of BAT | BAT | Status at Metalco Ltd |
|---|---|---|
| **Safety and risk management** | Operational losses do not occur in storing packaged dangerous materials. The only possible emissions are from incidents and (major) accidents. Companies that fall under the scope of the Seveso II Directive are required to take all measures necessary to prevent and limit the consequences of major accidents. They must, in any, case have a major accident prevention policy (MAPP) and a safety management system to implement the MAPP. Companies in the high risk category (Annex I of the Directive) must also draw up a safety report and an on-site emergency plan and maintain an up-to-date list of substances. However, companies storing dangerous substances not falling under the scope of the Seveso II Directive can also cause emissions from incidents and accidents. Applying a similar, maybe less detailed, safety management system is the first step in preventing and limiting these.<br>BAT in preventing incidents and accidents is to apply a safety management system as described in Sections 4.1.6.1.<br><br>The degree of detail of the system is clearly dependent on various factors such as: the quantities of substances stored, specific hazards of the substances and the location of the storage. However, the minimum level of BAT is to assess the risks of accidents and incidents on the site using the five steps described in Section 4.1.6.1 | A Risk Assessment will be carried out to determine the likelihood of events that could lead to a release of hazardous substances causing contamination to land and/or groundwater, and what pollution prevention measures are or will be in place.<br>Another Risk Assessment will be carried out to establish a system to identify, assess and minimise the environmental risks and hazards of accidents and their consequences. This assessment will include:<br><br>• Emergency plans in case of fire and other emergencies (e.g. explosions);<br><br>• Plans for actions to be taken in case of failure of abatement equipment (if relevant); and<br><br>• Plans for actions to be taken in case of other environmentally relevant incidents (e.g. spillages, fuel leakage). |

| Aspect of BAT | BAT | Status at Metalco Ltd |
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| **Training and responsibility** | BAT is to appoint a person or persons who is or are responsible for the operation of the store.<br>BAT is to provide the responsible person(s) with specific training and retraining in emergency procedures as described in Section 4.1.7.1 and to inform other staff on the site of the risks of storing packaged dangerous substances and the precautions necessary to safely store substances that have different hazards. | Not applicable. Due to economies of scale this is not considered feasible. |
| **Storage area** | BAT is to apply a storage building and/or an outdoor storage area covered with a roof, as described in Section 4.1.7.2. For storing quantities of less than 2500 litres or kilograms dangerous substances, applying a storage cell as described in Section 4.1.7.2 is also BAT. | All hazardous waste material, namely i) Waste Electrical and Electronic Equipment, ii) washing liquids, powders and creams; iii) printing toners and iv) batteries, are all stored within a building or a steel shed with an impermeable concrete ground and a roof. |
| **Separation and segregation** | BAT is to separate the storage area or building of packaged dangerous substances from other storage, from ignition sources and from other buildings on- and off-site by applying a sufficient distance, sometimes in combination with fire-resistant walls. Member States apply different distances between the (outdoor) storage of packaged dangerous substances and other objects on- and off-site; see Section 4.1.7.3 for some examples.<br><br>BAT is to separate and/or segregate incompatible substances. For the compatible and incompatible combinations see Annex 8.3 of the BREF. Member States apply different distances and/or physical partitioning between the storage of incompatible substances; see Section 4.1.7.4 for some examples. | Different waste fractions are stored separately in designated areas according to different EWC codes. Hazardous waste is not mixed, either with other categories of hazardous waste or with other wastes, substances or materials. |
| **Containment of leakage and** | BAT is to install a liquid-tight reservoir according to Section 4.1.7.5, that can contain all or a part of the | Not applicable. Due to economies of scale this is not |

| Aspect of BAT | BAT | Status at Metalco Ltd |
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| **contaminated extinguishant** | dangerous liquids stored above such a reservoir. The choice whether all or only a part of the leakage needs to be contained depends on the substances stored and on the location of the storage (e.g. in a water catchment area) and can only be decided on a case-by-case basis.<br><br>BAT is to install a liquid-tight extinguishant collecting provision in storage buildings and storage areas according to Section 4.1.7.5. The collecting capacity depends on the substances stored, the amount of substances stored, the type of package used and the applied fire-fighting system and can only be decided on a case-by-case basis. | considered feasible. |
| **Fire-fighting equipment** | BAT is to apply a suitable protection level of fire prevention and fire-fighting measures as described in Section 4.1.7.6. The appropriate protection level has to be decided on a case-by-case basis in agreement with the local fire brigade. | Not applicable. Due to economies of scale this is not considered feasible. |
| **Preventing ignition** | BAT is to prevent ignition at source as described in Section 4.1.7.6.1. | Not applicable. Due to economies of scale this is not considered feasible. |

# Appendix VIII

# Technical Information on the Degassing Process

# EASYRECYCLE 1000

Unità portatile per recupero/riciclo di refrigerante
Portable refrigerant recovery/recycling unit

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Manuale istruzioni
User's manual

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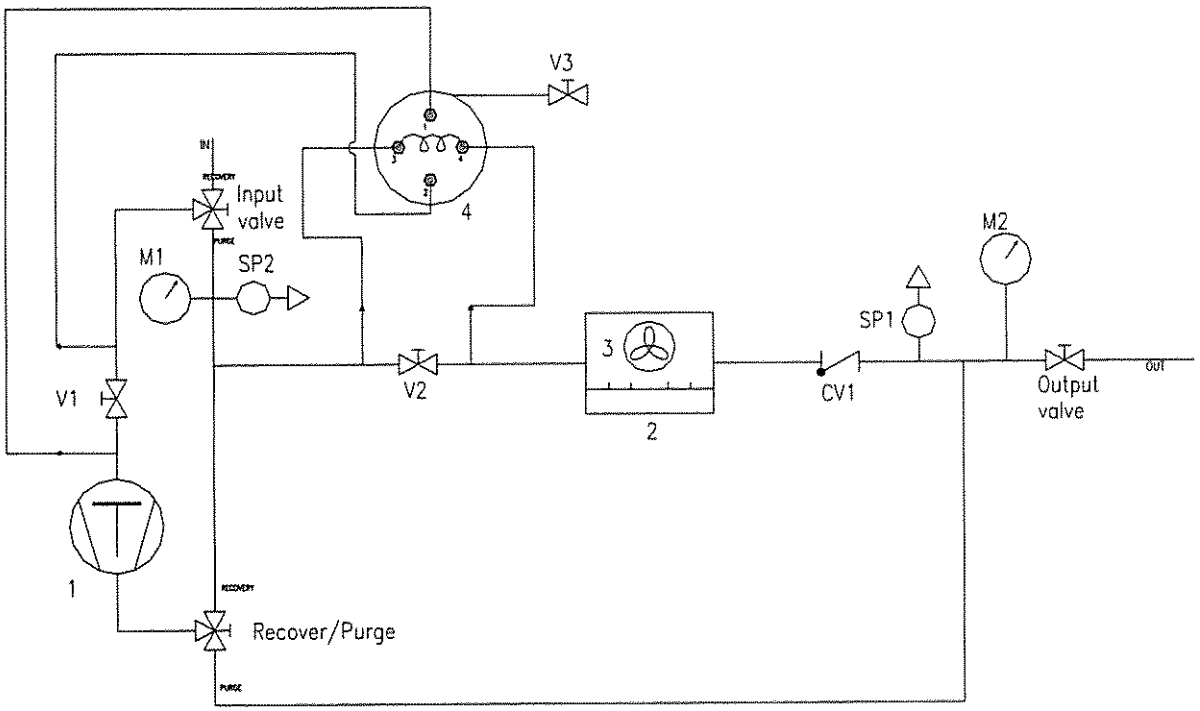
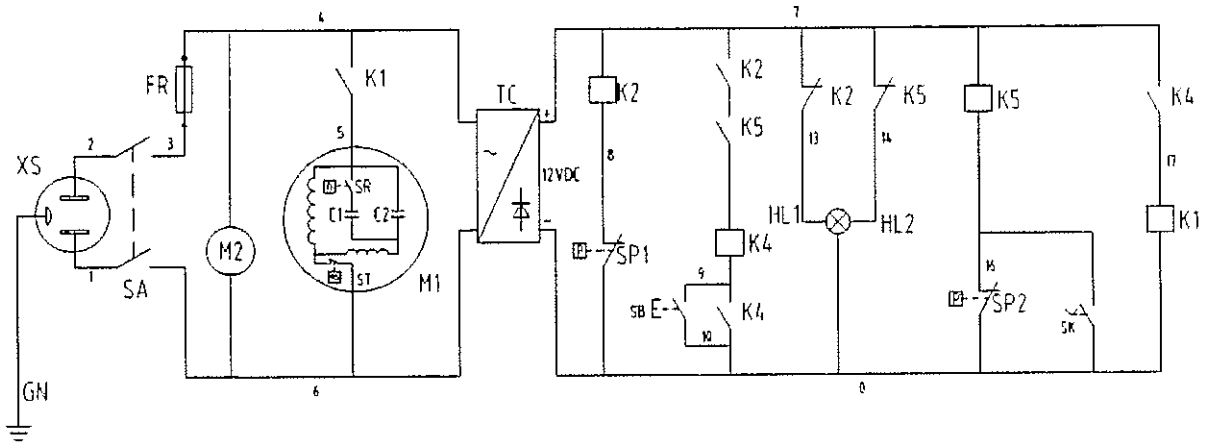
INDEX

## Hydraulic diagram




| | | | |
|---|---|---|---|
| **M1** | Suction pressure gauge | **V1** | Valve 1 for distiller system |
| **M** | Delivery pressure gauge | **V2** | Valve 1 for distiller system |
| **SP1** | Safety pressure switch | **V3** | Oil drain valve |
| **SP2** | Pressure/vacuum switch | **1** | Compressor |
| **INPUT valve** | Valve on low pressure line | **2** | Condenser |
| **OUTPUT valve** | Valve on high pressure line | **3** | Fan |
| **Recover/Purge** | Recovery/Purge valve | **4** | Distiller |
| **CV1** | Check valve on delivery line | | |

## Wiring diagram




| | | | |
|---|---|---|---|
| **XS** | Power outlet | **C2** | Running capacitor |
| **SA** | Main switch | **TC** | Electronic transformer |
| **FR** | Overload protection device | **SP1** | Safety pressure switch |
| **M1** | Compressor motor | **SP2** | Pressure/vacuum switch |
| **M2** | Axial fan | **SB1** | Start button |
| **K1** | Relay | **SK** | BY-PASS switch |
| **K2** | Relay | **HL1** | High pressure protection indicator |
| **K5** | Relay | **HL2** | Low pressure protection indicator |
| **SR** | Centrifugal switch | **ST** | Motor thermal protectors |
| **C1** | Start capacitor | | |

## Safety precautions and Operation guidelines

a) Read all safety, operating guidelines and instructions before operating this unit.
b) Only a qualified technician should operate this recovery unit!
c) Always wear safety glasses and protective gloves while working with refrigerants to protect your eyes and skin from refrigerant gases and refrigerant liquid. Avoid getting in touch with caustic liquid or gas.
d) Do not expose the equipment to the sun or rain.
e) Be sure that any room where you are working is thoroughly ventilated.
f) Use ONLY authorized refillable refrigerant cylinders. It requires the use of recovery cylinders with a minimum working pressure of 27.6 bar.
g) Do not overfill the recovery cylinder. Cylinder is full at 75% capacity. There should be enough space for liquid expansion. Overfilling of the cylinder may cause a violent explosion.
h) Do not exceed the working pressure of the recovery cylinder cylinder.
i) Do not mix different refrigerants together in one cylinder, or they could not be separated or used.
j) Before recovering the refrigerant, the cylinder should achieve the vacuum level: -0.9 MPa, which is for purging non-condensable gases.
k) When the unit is not used, all valves should be closed and the input and output fittings should be covered with their protective caps, as air and/or moisture may damage the recovery performances and shorten the service life of compressor.
l) If using an extension power cord, it should be a minimum 2.0mm$^2$ wires section and no longer than 30 meters, or it may make the voltage drop and damage the compressor.
m) A filter drier must always be used and should be replaced frequently. Each type of refrigerant must have its own filter. For the sake of ensuring the normal operation of the unit, please use the filter specified by our company. High quality filter drier will bring high quality services.
n) Special care should be taken while recovering from a "burned-out" system. Use two high acid capacity filters in series. When you have finished recovering from the system, flush the unit with a small amount of clean refrigerant and refrigerant oil to purge off foreign substances left inside.
o) The unit has an Internal High Pressure Shut Off Switch. If the pressure inside the system goes above 38.5 bar, the unit will automatically shut itself off and the Red Alarm Light will turn on. If the compressor needs to be restarted, please find out the cause first, then reduce the internal pressure below 25 bar. Press the START button to restart the compressor.

When the unit is under high pressure condition, restart the unit after eliminating the troubles

– Solutions for possible causes of High Pressure Shut Off:

1. Open the output valve of the unit if it's closed.
2. Open the input valve of the recovery cylinder if it's closed.
3. Check if the hose connected between the unit and the recovery cylinder is jammed. If yes, please close the output valve of the unit and the input valve of the recovery cylinder and then change a new one.
4. The temperature and the pressure of the recovery cylinder is too high (see recovery cylinder cooling method)

p) While using the recovery unit, make sure the power of the air-conditioning system is off
q) The unit has an Internal Low Pressure Shut Off Switch (Pressure/vacuum switch). The unit will automatically shut itself off if the inner pressure is lower than -0.2 ÷ -0.4bar and the green alarm light will turn on. To restart the compressor, please increase the input pressure above +0.4 bar or rotate the "BY-PASS switch" to the MANUAL position, then press the START button.
r) BY-PASS switch :

- when the BY-PASS switch is on AUTO, the pressure/vacuum switch can work,
- when the BY-PASS switch is on MANUAL, the pressure/vacuum switch can't work.

Please turn to the "Manual" position when the system pressure is lower than +0.4 bar or the system needs high vacuum.

s) If the cylinder pressure exceeds 21 bar, use the Recovery Cylinder Cooling Method to reduce the cylinder pressure.

t) To maximize recovery rates, use the shortest possible length of 3/8" or larger hose.
u) While recovering large amounts of liquid, use the liquid Push/Pull method.
v) After recovering, make sure there is no refrigerant left in the unit. Read the Self-Purging Method carefully. If liquid refrigerant remains in the unit, it can expand and damage the components.
w) If the unit is to be stored or not used for any length of time, we recommend that it be completely evacuated of any residual refrigerant and purged with dry nitrogen.
x) We suggest to use the hose with valve in order to reduce the loss of the refrigerant

## 1. Introduction to the recovery unit EASYREC120R100

Considering its reduced volume and the extreme facility of transportation, the unit is suited for interventions on civil conditioners, automotive vehicle conditioners, dispensers, domestic and commercial refrigerators and dehumidifiers.
The unit is supplied with an oil-less compressor without lubricant.

## 2. Standard equipment and components description

### 2.1. RECOVERY COMPRESSOR

Unit EASYREC120R100 is equipped with an oil-less compressor and is suitable for any type of CFC, HCFC and HFC refrigerant.

### 2.2. FILTER

The filter is equipped with two 1/4sae male connections. It is supplied with a hose to make the connection easier. The unit is also equipped with a moisture indicator that allows to check the quality of the filter.

### 2.3. MOISTURE INDICATOR

The moisture indicator must be connected between the filter and the recovery unit. It allows to check the quality of the filter. Replace the filter whenever the indicator shows that there is moisture.

### 2.4. PRESSURE GAUGES

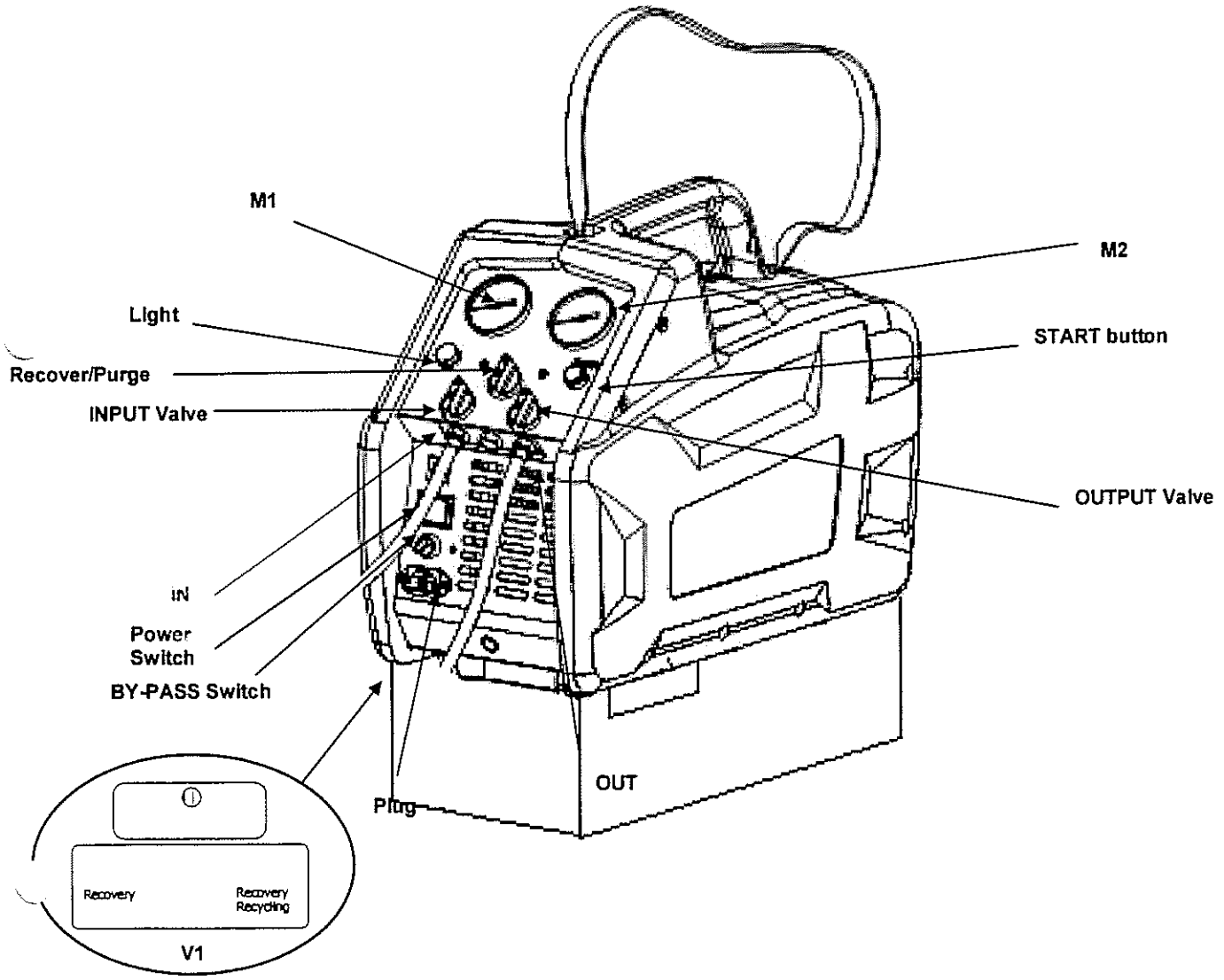
Unit EASYREC120R100 is equipped with two oil-filled pressure gauges Ø60mm: one pressure gauge on the suction line and one on the discharge line. They allow to check the pressure during recovery and refrigerant transfer with the push-pull method.

### 2.5. DISTILLATION SYSTEM

Unit EASYREC120R100 is provided with a distillation system (that can be excluded): it is equipped with an automatic device for flow regulation and allows the complete separation of the oil (coming from the system) from the refrigerant.

***This equipment must NOT work for more than 10 minutes in vacuum (-0.02Mpa)*** **when the BY-PASS switch" is on the MANUAL position**

## 3. Control panel




| | | | |
|---|---|---|---|
| **Power Switch** | Main Power switch | **OUT** | 1/4sae delivery connection |
| **M1** | Suction pressure gauge | **IN** | 1/4sae suction connection |
| **M2** | Delivery pressure gauge | **Light** | Light that indicates the end of recovery and HP alarm |
| **INPUT Valve** | Valve on low pressure line | **Recover/Purge** | Valve to select the Recovery or Purge function |
| **OUTPUT Valve** | Valve on high pressure line | **BY-PASS Switch** | Switch to activate the pressure vacuum switch |
| **Plug** | Plug for electrical cable | **START button** | Button to start the unit |
| **Breaker** | Overload protection device | **V1** | Valve to select Recovery/Recycling |

## 4. Refrigerant recovery from the A/C system

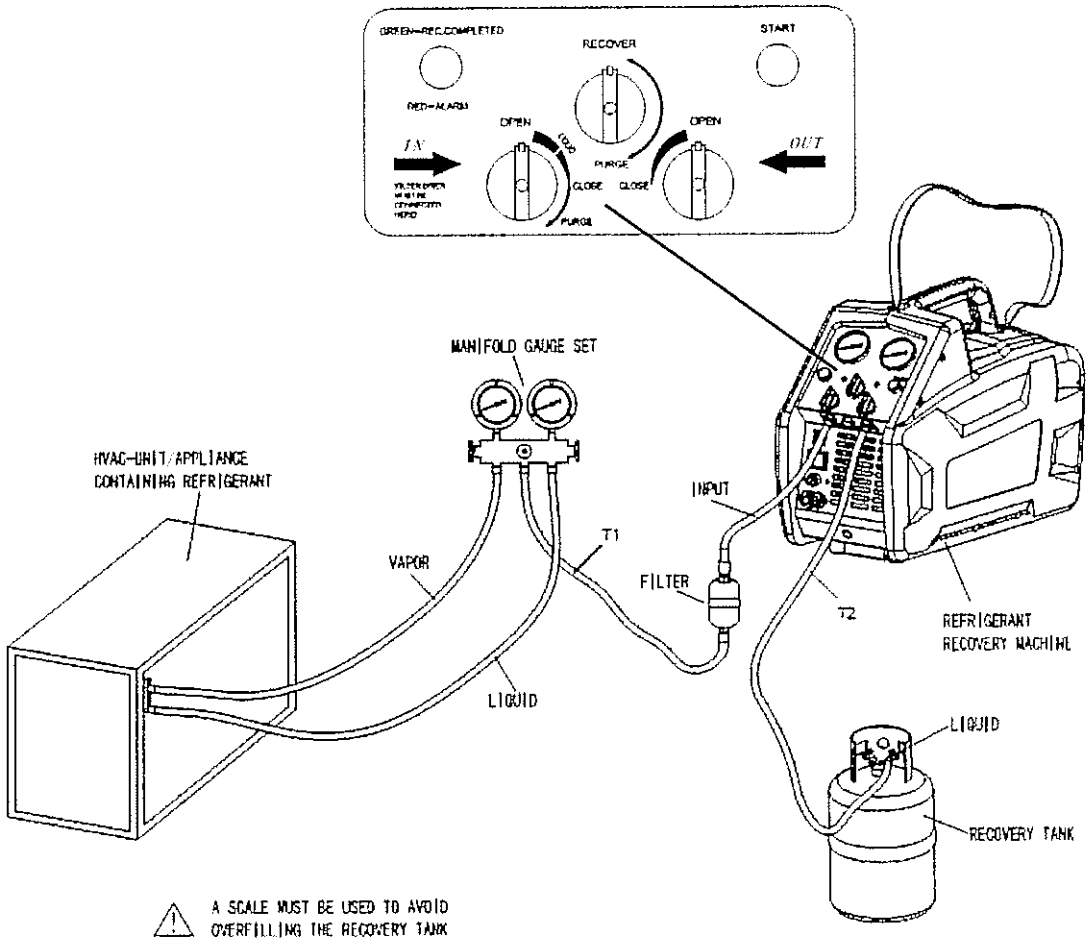
### 4.1 WARNING

To recover the refrigerant in a quick and efficient way, we suggest to connect the recovery unit to the cooling system by means of a 2-way manifold and flexible hoses with ball valves, which are not included in the standard equipment.
Before starting refrigerant recovery, the manifold, the flexible hoses and the filter drier must have been previously evacuated.
During refrigerant recovery, the cooling system must be turned off.

### 4.2 REFRIGERANT RECOVERY/RECYCLING

***Make sure that the V1 valve is on position "Recovery/Recycling"***

a) Connect the refrigerant circuit to the recovery unit by means of flexible hoses with ball valve, as shown by the picture.



***In case you perform recovery/recycling cycles of high quantities of liquid refrigerant (more than 2kg), regulate the input flow by turning the INPUT valve so that the pressure read on the M1 pressure gauge does not exceed 6 bar***

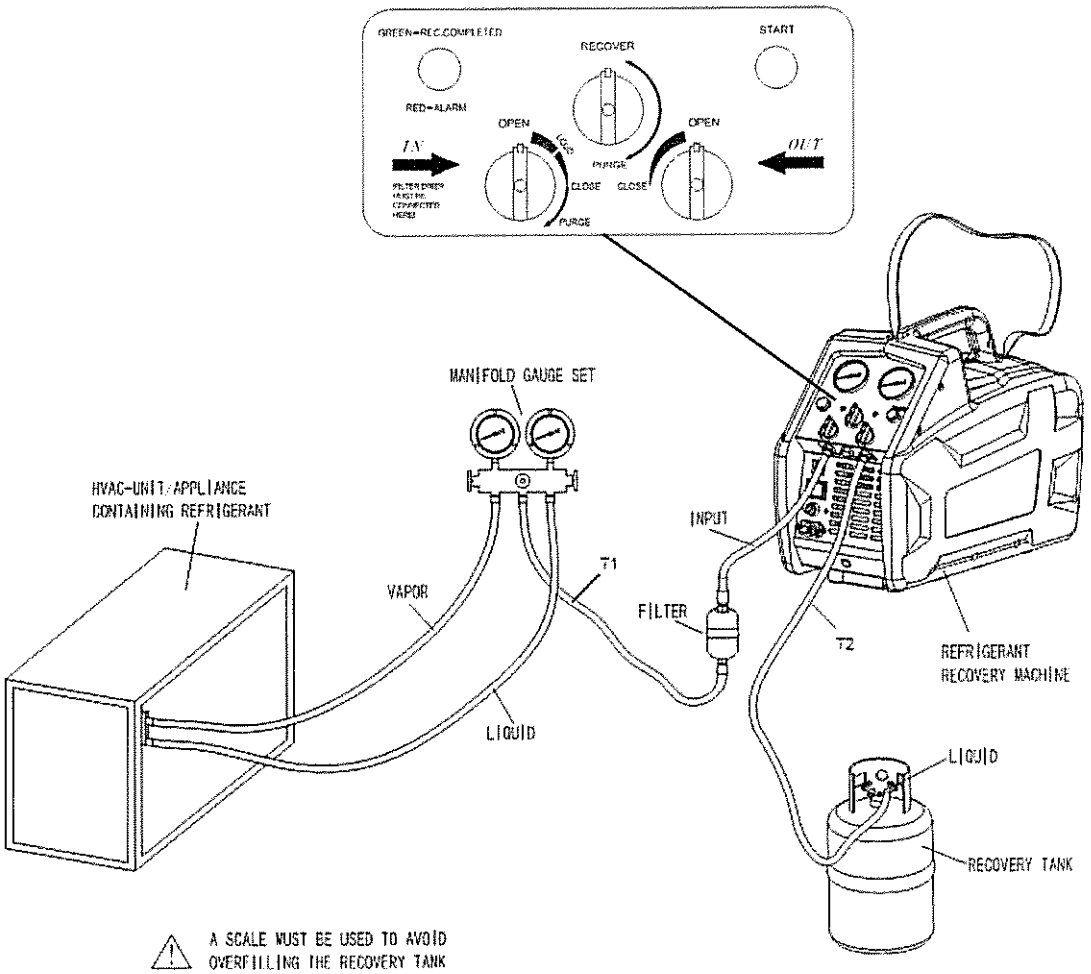
b) Turn the **V1** valve to position **Recovery/Recycling**
c) Turn the **INPUT** valve to position "CLOSE". Make sure that the valve **Recover/Purge** is on the RECOVER position.
d) Connect the valve of the T2 hose (delivery) to the stocking cylinder
e) Open the valves on the manifold (not supplied with the recovery unit)
f) Open the valve on the stocking cylinder
g) Open the **T1** and **T2** flexible hoses valves (flexible hoses are not supplied with the unit)
h) Turn the **Power Switch** to position "ON"
i) Turn the **BY-PASS** switch to position MANUAL
j) Turn the **OUPUT** valve to position "OPEN"
k) Slowly turn the **INPUT** valve to position "OPEN".
l) Press the **START** key to start the unit
m) In case you perform recovery/recycling cycles of high quantities of liquid refrigerant (more than 2kg), regulate the input flow by turning the INPUT valve so that the pressure read on the M1 pressure gauge does not exceed 6 bar
n) If the unit fails to start, turn the **INPUT** valve to position "CLOSE", restart the unit by pressing the **START** key and slowly open the **INPUT** valve.
o) Let the unit run until you reach a pressure of 2 bar on the **M1** gauge. Stop the unit by means of the **Power switch**
p) Connect the oil drain hose to the **V3** valve situated on the rear of the unit.
q) Slowly open the valve until all the oil inside the unit is drained. At the end of this operation, turn the V3 valve to close it.
r) Re-start the Recovery/Recycling function by pressing the **START** key.
s) Run until desired vacuum is achieved or until the unit stops automatically (the "**BY-PASS** switch" is on the "AUTO" position").
t) Close the vapour and liquid ports of the manifold.
u) Turn the **INPUT** and **OUTPUT** valves to position "CLOSE"
v) Turn the recovery unit off.

***Always purge the unit after each use. Failure to purge the remained refrigerant from the unit could result in the acidic degradation of internal components and ultimately cause premature failure of the unit.***

## 4.3. REFRIGERANT RECOVERY

***Make sure that the V1 valve is on position "Recovery"***

a) Connect the refrigerant circuit to the recovery unit by means of flexible hoses with ball valve, as shown by the picture.




b) Turn the **V1** valve to position **Recovery**
c) Turn the **INPUT** valve to position "CLOSE" Make sure the **Recover/Purge** valve is on the RECOVER position.
d) Connect the **T2** flexible hose valve (delivery) to the recovery cylinder.
e) Open the valves on the manifold (manifold is not supplied with the unit)
f) Open the recovery cylinder's valve
g) Open the **T1** and **T2** flexible hoses valves (flexible hoses are not supplied with the unit)
h) Turn the **Power Switch** to position "ON"
i) Turn the **BY-PASS** switch to position "MANUAL"
j) Press the **START** key to start the unit

k) Turn the **OUTPUT** valve to position "OPEN"
l) Slowly open the **INPUT** valve.
m) In the presence of liquid refrigerant, place the INPUT valve so that it does not go beyond the "liquid" zone
n) If the compressor starts to knock, slowly throttle back the **INPUT** valve until the knocking stops.
o) If the unit fails to start or has stopped due to an excessive quantity of liquid inside the compressor, please turn the **INPUT** valve to position "CLOSE", and then start the unit by pressing the **START** key; then slowly open the **INPUT** valve.
p) If you want the unit to stop automatically at the end of the cycle, turn the **BY-PASS** switch to position "AUTO".
q) When finishing the liquid refrigerant recovery, completely open the **INPUT** valve and the vapour and liquid ports of the manifold; this can improve the liquid recovery speed.
r) Run until desired vacuum is achieved or until the unit stops automatically (the **BY-PASS** switch is on the "AUTO" position).
s) Close the vapour and liquid ports of the manifold.
t) Turn the **INPUT** and **OUTPUT** valves to position "CLOSE"
u) Turn the recovery unit off.

***Always purge the unit after each use. Failure to purge the remained refrigerant from the unit could result in the acidic degradation of internal components and ultimately cause premature failure of the unit.***

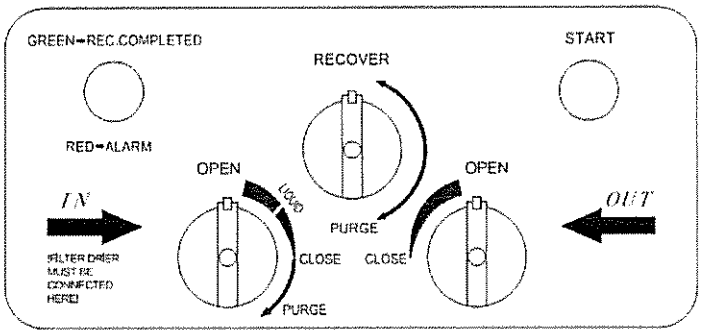
## 5. Self-Purge Method

### 5.1 WARNING

Once the filter drier has been used with a type of refrigerant, it is closely imbued with it; so, before using the recovery unit with a different refrigerant, it is necessary to replace the filter drier and eliminate the residual refrigerant from the unit itself.

### 5.2 "PURGE" FUNCTION

a) Turn the **INPUT** valve to position "CLOSE", turn the **OUTPUT** valve to position "OPEN" (recovery cylinder valves are open).
b) Turn the **Recover/Purge** valve to position "PURGE".
c) Make sure all connections are correct
d) Place the **BY-PASS** switch to position "MANUAL"
e) Turn the **Power Switch** to position "ON", then press the **START** key to start the unit.
f) Slowly turn the **INPUT** valve to the "PURGE" position until the desired vacuum level is achieved if the **BY-PASS** switch is on the manual position; or wait until the unit stops automatically if the **BY-PASS** switch is on position AUTO.
g) Close the valves on the recovery cylinder
h) Turn the unit off. Disconnect all hoses and filter drier.
i) Turn the **INPUT** and **OUTPUT** valves to position "CLOSE" and the **Recover/Purge** valve to position "RECOVER".
j) Screw the protective caps on the input and output fittings.

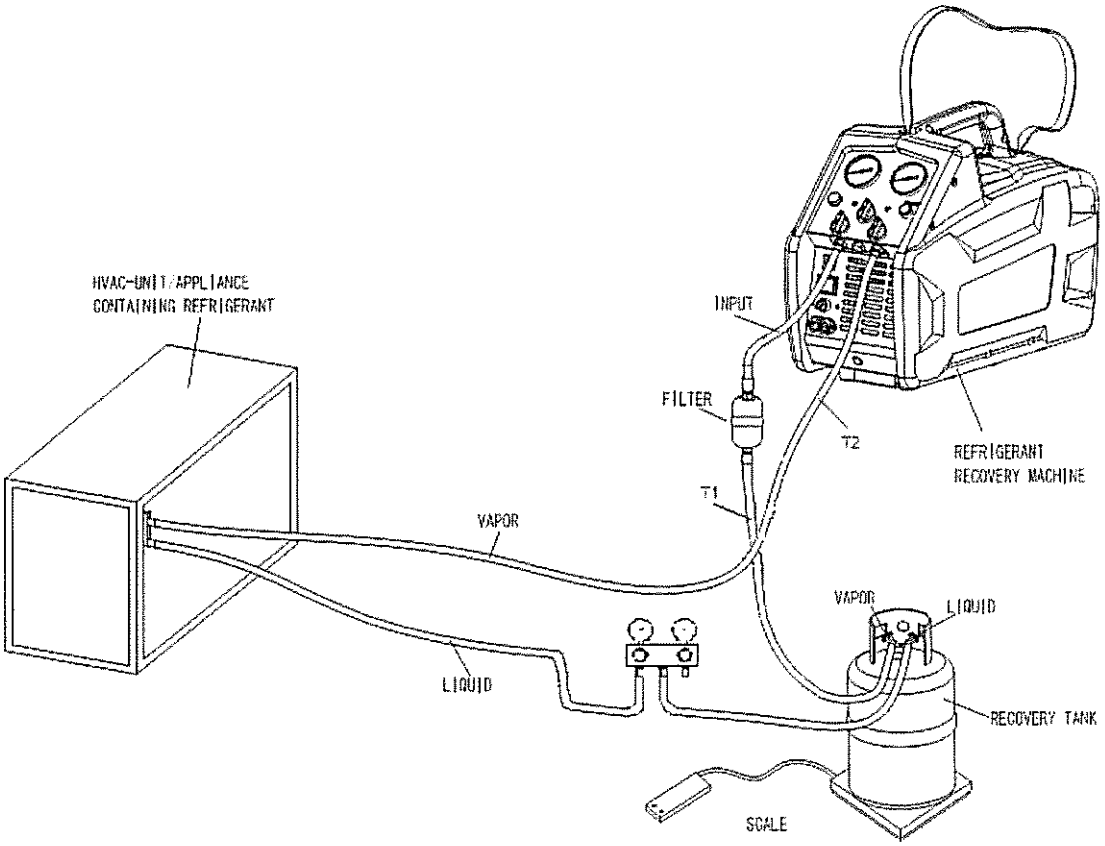


## 6. Refrigerant Transfer with Push-Pull method

Duly connected by means of the push-pull method, the recovery unit allows the rapid transfer of the liquid refrigerant from the refrigerant system to an external cylinder.

### WARNING

Connect the recovery unit and the refrigerant circuit by means of a two-way manifold, flexible hoses with ball valve, a cylinder with double valve (liquid-vapour) and a filter drier; these items are supplied separately on request and must be connected as shown in the picture:




Before use, make sure that all the flexible hoses, the filter drier, the stocking cylinder and the recovery unit have been previously evacuated or that they contain the same refrigerant as the one to be transferred.
Make the refrigerant transfer with the cooling system turned off.
The stocking cylinder must have a capacity equal to the quantity of refrigerant that has to be removed; anyhow, it must not be charged above 75% of its maximum capacity.
It is recommended to use an electronic scale in order to check the refilling of the stocking cylinder.

## - 2 REFRIGERANT TRANSFER

a) Operate on the refrigerant's system in order that most part of the refrigerant will be pumped into the liquid side of the system.
b) By means of the flexible hoses with ball valve, connect the cooling system liquid receiver connection to the stocking cylinder liquid valve (with tube) (see the above picture)
c) By means of the flexible hose (**T1**) with ball valve, connect the recovery unit filter drier (IN) to the stocking cylinder vapour valve (valve without tube)
d) By means of a flexible hose (**T2**), connect the exit connection (OUT) of the recovery unit to the A/C system vapour connection
e) Make sure that **V1** valve in on position **1 Recovery**.
f) Open the **INPUT** and **OUTPUT** valves of the recovery unit
g) Open the valves of the flexible hoses **T1** and **T2** of the recovery unit
h) Open the ball valves of the connecting flexible hoses
i) Open the valves on the manifold
j) Open the stocking cylinder valves
k) Switch the **Power Switch** to position "ON", then press the **START** key to start the unit.

Watch the manifold sightglass; the refrigerant transfer from the liquid receiver to the stocking cylinder is complete when you can see through the sightglass that the liquid refrigerant has stopped flowing.

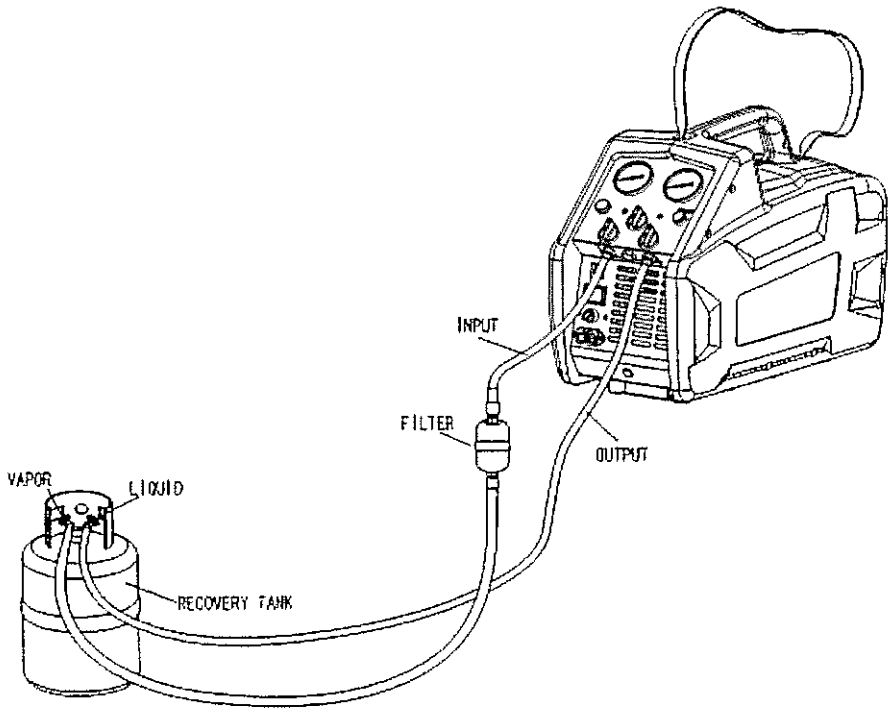
l) When the refrigerant transfer has been completed, close the cylinder vapour valve (valve without tube)
m) Close the valve of the **T1** hose and wait until you can read a pressure of -0.2 bar on the **M1** low pressure gauge (or wait for the automatic stop of the unit if the **BY-PASS** switch is on the AUTO position)
n) Turn the recovery unit off (**Power switch** to position "OFF")
o) Close the cylinder liquid valve and the flexible hose ball valve connected to it.
p) Close the valve of the **T2** flexible hose
q) Close all the manifold and flexible hoses valves used for connections

The recovery of the residual gaseous refrigerant from the inside refrigerant system can be done by connecting the unit as shown in "4.2 Refrigerant Recovery"

## 7. Recovery cylinder cooling method

### 7.1 PRE-WORK COOLING METHOD

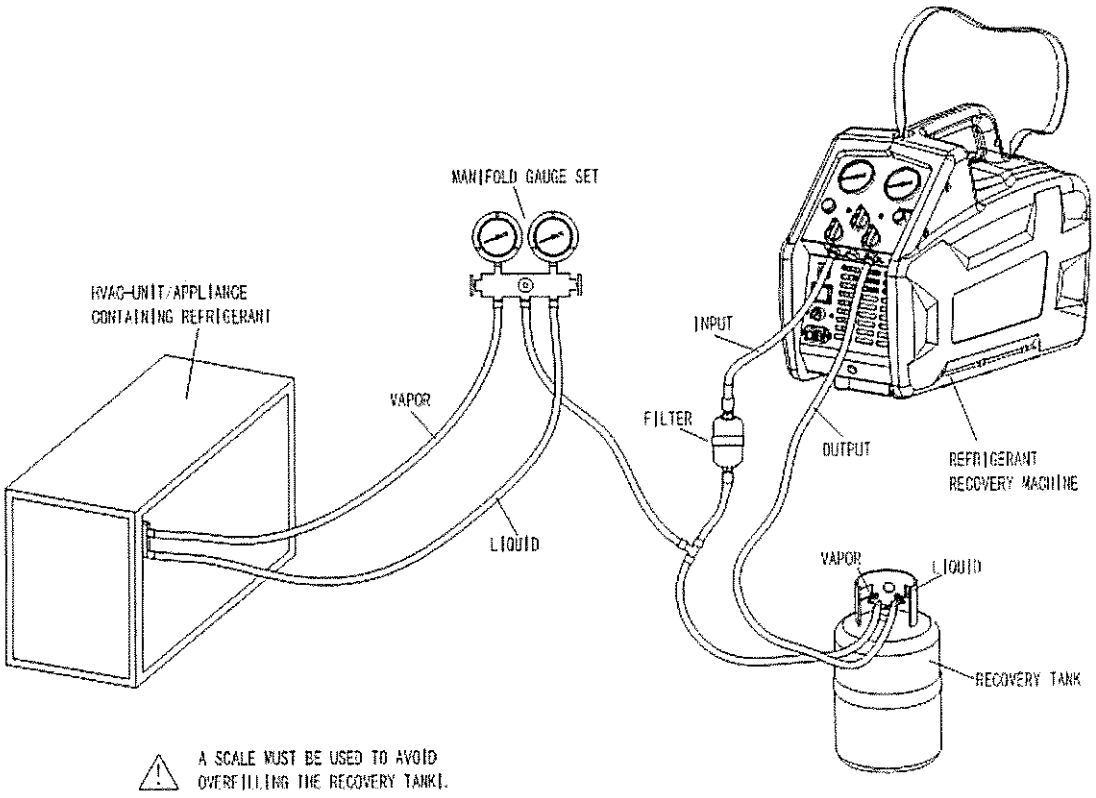
a) Before starting, there must be at least 0,5 kg of liquid refrigerant in the cylinder
b) Make sure all connections are correct and tight (refer to the below picture)
c) Make sure the **OUTPUT** valve and **INPUT** valve are on position CLOSE.
d) Turn the **Recover/Purge** valve to position "Recover".
e) Power on and then press the **START** key to start the unit.




f) Open the Vapour and Liquid valves on the recovery cylinder.
g) Open the **OUTPUT** valve, then open the **INPUT** valve.
h) Regulate the **OUTPUT** valve so that the output pressure is 7 bar higher than the input pressure, but never more than 21 bar
i) Run until the cylinder is cold; then turn the unit off.

## CYLINDER COOLING PROCEDURE IN THE RECOVERING PROCESS

d) Make sure all connections are correct and tight (refer to below picture)
e) Close the two valves on the manifold
f) Follow steps f) g) h) i) of the Pre-work Cooling Procedure until the temperature will decrease, then continue to recover



## 8. Ordinary maintenance

### 8.1 SPARE PARTS AND ACCESSORIES

n°1 MG111 Filter drier
n°1 XH412 Filter drier
n°1 G19020 Kit of 10 gaskets for flexible hose with ¼" SAE connections

### 8.2 PERIODICAL OPERATIONS FOR ORDINARY MAINTENANCE

a) Replace the swivel connections gaskets of the flexible hoses as soon as they show worn marks.
b) Replace the filter each time a different type of refrigerant is used and at least once every six months.

## 9. Max pressure switch reset

When a pressure of 38,5 BAR is reached, the max pressure switch, which is in the unit, operates by restraining all functions; the unit will automatically shut itself off and the Red Alarm Light will turn on.
If the compressor needs to be restarted, please find out the cause first, then reduce the internal pressure below 25 bar. Press the **START** key to restart the compressor.

## 10. Technical features

| | | | | |
|---|---|---|---|---|
| Refrigerants | Category III: R12, R134a, R401C, R406A, R500<br>Category IV: R22, R401A, R401B, R402B, R407C, R407D, R408A, R409A, R411A, R411B, R412A, R502, R509<br>Category V: R402A, R404A, R407A, R407B, R410A, R507 | | | |
| Power | 220-240VAC 50~60Hz | | | |
| Motor | 370 W AC 4 Pole start capacitor running capacitor | | | |
| Motor speed | 1450 rpm@50Hz | 1750 rpm@60Hz | | |
| Maximal current draw | 5A | 8A | | |
| Compressor | Oil-less, air-cooled, piston | | | |
| Automatic safety shut-off | 38.5 bar/3850kPa(558 psi) | | | |
| Recovery rate (kg/min) | | Category III | Category IV | Category V |
| | Vapor | 0.23Kg/min | 0.25Kg/min | 0.26Kg/min |
| | Liquid | 1.57Kg/min | 1.81Kg/min | 1.85Kg/min |
| | Push/pull | 4.6Kg/min | 5.57Kg/min | 6.22Kg/min |
| Operating temperature | 0 ~ 40°C | | | |
| Dimensions | 500 mm×250 mm×350 mm | | | |
| Weight | 17 kg | | | |

## 11. Troubleshooting

| *PROBLEM* | *CAUSE* | *ACTION* |
|---|---|---|
| Fan does not run | 1.Power supply cord is not connected<br>2.The circuit breaker has cut off | 1. Connect the power supply cord<br>2. Reset the circuit breaker when it's cooling after 5 minutes |
| After pressing the START key, the compressor doesn't start but the fan runs | 1.The unit is in high pressure shut off (Red alarm light turns on)<br><br>2.The unit is under low pressure protection (Green light turns on) | 1. Reduce the system pressure<br>2. The input loop is blocked, reset after eliminating troubles<br>3. Check if well connected<br>4. Turn the **BY-PASS** switch to the restart position |
| The compressor can't work | 1.Output pressure is too high<br>2. Failure in the motor, or other electrical components | 1.Turn the INPUT valve to position CLOSE and restart the unit<br>2. Factory service is required |
| The compressor starts but cuts off within a few minutes | 1.High pressure shuts off due to wrong operation, such as output valves of the unit or recovery cylinder are not open<br>2.Thermal protector is disconnected, but axial fan still running<br>3.The recovery cylinder is full at 80% capacity<br>4. Recovery is over and the unit is under low pressure switching point | 1. Read carefully this operating manual and follow the instructions,<br>2. The compressor will restart automatically after the motor is completely cooled<br>3. Take a new cylinder and then press the START key to start the compressor<br>4. Refer to step 4.2 k) and l), then proceed with self-purge operation |
| Recovery process is too slow | 1.The pressure inside the recovery cylinder is too high<br><br>2.The compressor seals are worn out | 1. Reduce the cylinder temperature with the Recovery Cylinder Cooling Method<br>2. Factory service is required |
| The unit doesn't pull out a vacuum | 1.Connecting hoses are loose<br>2. There is a leakage in the unit | 1.Tighten the connecting hoses<br>2. Factory service is required |

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**GAS2® RECYCLING**

The ever increasing cost of petrol and diesel as well as environmental concerns have lead to an exponential increase in registrations of vehicles driven by alternative fuels such as CNG and LPG. Although better for the environment, both LPG and CNG powered vehicles posse new challenges for dismantlers or vehicle recyclers.

Simply letting the gas escape in to the atmosphere is an unacceptable option. Not only is this a risk to the environment but it is also extremely dangerous as highly flammable and explosive gaseous mixtures will remain inside the cylinders

**QGAS2® RECYCLING** functions automatically. Once the transfer process has started there is no further need for operator intervention, thus avoiding the possibility of human error and any catastrophic consequences during the delicate nitrogen inerting phase.

**Q-GAS2 - Technical Data**

- Degasification can be carried out directly from the vehicle without the need to remove the cylinder.
- The operating cycle is completely automatic.
- No need for continuous monitoring by the operator. Once the degasification and purging of the old cylinder is complete an optical-acoustic alarm will alert the operator
- The process of inerting the old cylinder with neutralizing nitrogen gas at the end of the process cannot be accidently forgotten as this happens automatically.
- The final wash cycle with inert Nitrogen gas removes any trace of residual gas remaining in the used cylinders (a major explosion risk factor).
- QGAS2 reduces labor costs as an operator is only needed to connect and activate the machine.
- Using QGAS2 safeguards the environment as residual gass is not released in to the atmosphere. After degasification and purging, the used cylinder is safe to be recycled as scrap metal.
- It reduces work time and risks associated with the handling of the cylinders as the cylinder can remain inside the vehicle.
- The knowledge to the operator that best available technologies are being used for the degasification and purging process provides security and piece of mind to the operator.

**Q-GAS2 - Operating cycle**

- Combustion of LPG or CNG.
- Transfer of gas (optional) to an approved internal container (for LPG only).
- Purging used cylinders with nitrogen gas.
- The liquid LPG transfer phase and the subsequent combustion of the residual gas (non-transferable) is performed automatically by QGAS2 RECYCLING without the need for operator intervention. Automating the process eliminates any risk of user error.
- Transferring recovered LPG gas to the internal container improves the efficiency of the combustion phase. A powerful vacuum transfers LPG gasses quickly leaving only a minimum amount of residual gas for burning
- For improved safety, the proper operation of each phase is monitored by an onboard diagnostic's system. If a malfunction of any kind is detected the current operating phase is immediately stopped and the user is notified by means of an acoustic alarm.
- QGASII is equipped with sensors that detect both light and heavy gas leaks. If a gas leak of any kind is detected operations stop automatically and the equipment is secured.
- A patented system ensures that QGASII is free from atmospheric emissions (Legislative Decree, April the 3rd 2006, n°152, Consolidated Environmental Act).

# Appendix IX

# Delivery Notes of IPPC Application

## Delivery Note of IPPC application

| | |
|---|---|
| Name of installation | METALCO LTD. |
| Location | LUQA |
| Activity | WASTE MANAGEMENT FACILITY |

| Name of authority [1] | Name of person receiving application | Signature | Date |
|---|---|---|---|
| OHSA | Saviour Pace Ruseb | | 06.02.15 |
| ENV. HEALTH | Marion Beck | | 11-02-15 |
| | | | |
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This delivery note shall be appended to the IPPC application submitted to MEPA.

[1] As per Regulation 19(2) of the Industrial Emissions (Integrated Pollution Prevention and Control), LN 10 of 2013.

## Note of Receipt

# IPPC PERMIT APPLICATION FOR METALCO LTD WASTE MANAGEMENT FACILITY

**Our Ref:** *PRJ-ENV125*
**Client Ref:** *IP0002/13*

I, the undersigned hereby acknowledge receipt of the following materials:

| Material | Quantity |
|---|---|
| IPPC FORM B REPORT | 1 Soft Copy |

| Contact Name | Date of Receipt | Signature and/or Stamp |
|---|---|---|
| Mr James Newell | 04.02.2015 | Yolanda Greed |

ais ENVIRONMENT

## Note of Receipt

# IPPC PERMIT APPLICATION FOR METALCO LTD WASTE MANAGEMENT FACILITY

**Our Ref:** *PRJ-ENV125*
**Client Ref:** *IP0002/13*

I, the undersigned hereby acknowledge receipt of the following materials:

| Material | Quantity |
|---|---|
| IPPC FORM B REPORT | 1 Soft Copy |

| Contact Name | Date of Receipt | Signature and/or Stamp |
|---|---|---|
| Mr Stephen Mifsud<br>Ing Anthony Rizzo | 04.02.2015 | MARCO VELLA<br>MRA 04 FEB 2015 RECEIVED |

ais ENVIRONMENT

## Delivery Note of Consolidated IPPC application IP 0002/13

| | |
|---|---|
| Name of installation | Metalco Ltd. |
| Location | L/o Luqa |
| Activity | Operation of Waste Management Facility |

| **Name of authority** | **Name of person receiving application** | **Signature** | **Date** |
|---|---|---|---|
| Luqa Local Council<br>Local Council Administrative Offices<br>49, Triq San Pawl,<br>Luqa | M. JOHN SCHEMBRI<br>SINDKU HAL LUQA. | | 22/7/2015 |

This delivery note shall be appended to the Consolidated IPPC application submitted to MEPA.