SPREP PROE

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Tonga Used Oil Management Plan

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John O'Grady
Araspring Ltd

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Abbreviations

ADF	Advanced Disposal Fee
AFD	Agence française de développement
COP	Code of Practice
GDP	Gross Domestic Product
IBC	Intermediate Bulk Container
ISO	International Organisation for Standardisation
JICA	Japanese International Cooperation Agency
MEIDECC	Ministry of Energy, Information, Disaster Management, Environment, Climate Change and Communications
MRC	Ministry of Revenue and Customs
MTP	Moana Taka Partnership
PICTs	Pacific Island Countries and Territories
SPREP	Secretariat for the Pacific Regional Environment Programme
SWAP	Committing to Sustainable Waste Actions in the Pacific
TEU	Twenty-foot Equivalent Unit
TPL	Tonga Power Ltd
TT	Tanktainer
UNEP	United Nations Environment Programme
USEPA	United States Environmental Protection Agency
WAL	Tonga Waste Authority Ltd
WMA	Waste Management Act

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1.0 Introduction

Motor oils are used in internal combustion engines or associated mechanical parts. Their main function is lubrication of moving parts, but they also clean, inhibit corrosion and cool the engine by transferring heat. Motor oils are derived from petroleum-based and non-petroleum synthesised chemical compounds. Similarly, **hydraulic fluids** are low compressibility oils that transfer power in hydraulic machinery. Common hydraulic fluids are also based on mineral oils.

The United States Environmental Protection Agency (USEPA) and some other jurisdictions make a distinction between the terms "used oil" and "waste oil", with waste oil being the broader term encompassing oil with a wider level of contamination. In this report, however, they are treated as interchangeable terms. This is the approach taken by the Basel Convention Guidance document[1] and also the SPREP Used Oil Export and Import Guidance Document[2].

For the classification of hazardous waste under the Waigani[3] and Basel Conventions[4], the term "waste oil" is used, and this is taken to also mean "used oil".

For this report, "used oil" uses the definition in the Basel Guidance Document:

> *Used Oil includes any semi-solid or liquid product consisting totally or partially of mineral oil or synthesised hydrocarbons (synthetic oils), oily residues from tanks, oil-water mixtures, and emulsions. These may be produced from industrial and non-industrial sources where they have been used for lubrication, hydraulic movement, heat transfer, electrical insulation or other purposes and whose original characteristics have changed during use, thereby rendering them unsuitable for further use for the purpose for which they were originally intended.*

A significant proportion (40-60%) of lubricating oils (and hydraulic fluids) become a "used" waste product after a period of use.

Improper disposal of these used oils can have major negative impacts on natural resources such as groundwater, the marine environment and soil, as well as on human populations. Poor management of used oil is a major environmental concern for Pacific Island nations including Tonga. It is estimated that about **330,380 – 380,000 litres of used oil are being generated annually in Tonga**[5]. Much of this used oil is essentially unmanaged.

A number of sequential steps need to be completed to ensure Tonga manages used oil appropriately into the future. These include:

- Finalisation of national used oil management policy, including a detailed cost benefit analysis of used oil generation rates and disposal options;
- Drafting of national used oil management legislation, regulations, standards and a code of practice;

[1] "Basel Convention Technical Guidelines on Used Oil Re-refining or Other Re-uses of Previously Used Oil" UNEP 1997

[2] "Waste Assessment Guide for the Export and Import of Used Lubricants and Used Oil" SPREP 2015

[3] *Convention to ban the importation into Forum Island countries of hazardous and radioactive wastes and to control the transboundary movement and management of hazardous wastes within the south Pacific region* (1995)

[4] Basel Convention on the control of transboundary movements of hazardous wastes and their disposal and Annexes and Amendments (1998)

[5] O'Grady (2023). *Tonga Feasibility Study Report*. SPREP: https://library.sprep.org/content/contract-conduct-feasibility-study-deelop-national-used-oil-management-plan-tonga-samoa

- Formation of a national Used Oil Management Steering Committee;
- Establishment of a national Used Oil Managing Agency;
- Formation of a user pays management system for used oil management;
- Implementation of collection of an Advanced Disposal Fee (ADF) on all imported lubricants; and
- Dispersal of ADF income to pay for national used oil collection, storage and management.

This national used oil management plan outlines this process which is summarized in Part 5 *Critical Used Oil Management Establishment Activities*.

These points are all elaborated on further in the report below. It should also be noted that the term Advanced Disposal Fee (ADF) has been used throughout this report as it is a generally accepted term. The term "Advanced Recycling Fee" could also, however, be used and this may better reflect the processes involved. It is intended that as much used oil as possible is recycled rather than disposed.

2.0 Purpose and Scope of the Used Oil Management Plan

2.1 Background[6]

Poor management of used oil is a major environmental concern for Pacific Island nations. Tongan Customs data indicates that about 600,000 litres of oil (lubricating, hydraulic and two-stroke) are imported into Tonga per year. Based on this data, imported lubricants generate around 355,000 Lts of used oil annually that needs to be sustainably managed.

Used oil is currently used for a range of purposes in Tonga, for example:

- for dust control on roads and other locations;
- Coating to prevent vehicle corrosion
- weed abatement and vegetation control;
- timber preservation by painting, staining or dipping;
- pest control or as a carrier fluid for agrichemicals (pesticides or herbicides);
- small scale private use including chainsaw bar oil lubrication (a common use);
- treating skin disease on pigs.

All these uses will result in used oil reaching the environment as a contaminant. It is also expected that significant amounts of used oil may just be disposed of directly to the environment in various unsatisfactory ways, including direct disposal on the ground, or into watercourses, sewers or drainage systems.

Used oil may also be placed in rubbish bins to be collected as part of household waste, taken directly to the landfill for disposal, or burnt in open-air burning.

These and similar practices will very likely result in

- contamination of the environment, ground and groundwater,
- migration to watercourses,
- contamination of air,
- negative impacts on humans, plants, animals or other organisms.

There is an estimated amount of 223,200 litres of used oil stored by a variety of generators in a tanktainer, Immediate Bulk Containers (IBCs), drums and smaller containers stored in un-bunded areas by generators of used oils.

2.2 Purpose

This Used Oil Management Plan establishes and directs an appropriate management framework to improve national management of used oil and to promote shared used oil management responsibility by all national stakeholders. This Management Plan has been guided and directed by prior investigations into the status of used oil management in Tonga which has utilized a comprehensive range of national stakeholder data on existing national used oil management[7]. The Management Plan will also help guide a future national used oil

[6] O'Grady (2022). *Tonga Feasibility Study*. SPREP.: https://library.sprep.org/content/contract-conduct-feasibility-study-deelop-national-used-oil-management-plan-tonga-samoa
[7] Ibid

management feasibility study that will potentially refine previously collected used oil management information.

2.3 Scope

The Plan improves national management of all used oil consistent with the classification of used oil as a hazardous waste under the Waigani and Basel Conventions[8,9].

[8] http://www.basel.int/default.aspx?tabid=4834
[9] https://www.sprep.org/convention-secretariat/waigani-convention

3.0 Regulatory Framework

3.1 Waste Management Act

Management of waste (including used oil) in Tonga is carried out under the Waste Management Act (2005). MEIDECC is responsible for implementation of the Act and the regulation and management of waste in Tonga.

The Waste Management Act (2005) (WMA) provides a comprehensive legislative base for the effective development and management of the sector. It primarily creates Waste Management Service Areas[10], in which approved Waste Management Authorities[11] are responsible to carry out the functions of the Act. The Tonga Waste Authority Ltd (WAL) was created by the Act to manage waste on Tongatapu, and that function was taken on by the Ministry of Health in all other islands at the time of the enactment of the Act. Over the last four years, WAL has, however, taken on the function of Approved Waste Management Authority in both Ha'apai and Vava'u.

The WMA contains wide ranging provisions, including:

- the provision of municipal solid waste collection, transfer, and disposal services;
- promotion of waste reduction and recycling programs;
- development of rules and codes of practice;
- monitoring of public health and environmental impacts;
- public awareness raising;
- solid waste management community responsibilities;
- imposition and collection of solid waste management fees; and
- prosecutions for violations.

The Act is specific on operational responsibilities, including the contracting of services to the private sector. It also contains both the power to make regulations (a power of the Minister of Environment) and the power for the Approved Authorities to levy, at section 27 (e): *special levies on particular goods the disposal of which is likely to have adverse effects on the environment*. The Act charges the Approved Authorities with various functions, including:

- Section 21 Recycling of Wastes - a*n approved Authority shall promote the recycling of wastes*;
- Section 13 Fees and Charges - a*n approved Authority may levy and vary the following fees, including for collection and disposal of hazardous wastes.*

These various provisions, taken along with some of the provisions of sections 6 and 8 on the Functions and Powers of the Approved Authority, could be seen as potentially creating an existing legal framework to develop an Advanced Disposal Fee (ADF) system for used oils. The ADF is seen as one of the keys to successful management of used oils. Implementation of an ADF would require at a minimum the development of regulations specific to used oils.

[10] Waste Management Act, Part II
[11] ibid, Part III

3.2 Waste Types Covered Under the Waste Management Act

Each waste included under the Act may be determined to be a waste or a hazardous waste for the purpose of the Act either through Regulations made under Section 6a of the Act; or by written determination by the Chief Executive Officer (Section 6b).

Under Section 2 of the Act, "Hazardous waste" includes:

> *"…any waste which is, or which has the potential to be toxic or poisonous, or which may cause injury or damage to human health or the environment".*

Used oil fits within this definition of hazardous wastes.

3.3 Waste Regulations

The Minister of Environment may make Regulations for the proper management and regulation of waste in Tonga and for the management and operation of approved waste management operators.

Regulations may be made which specify toxic and hazardous waste and regulate the way such waste may be stored, transported and disposed of.

3.4 Used Oil Storage, Collection and Transportation Regulations

The Minister of Environment may make Regulations concerning the transportation and storage of bulk used oil to ensure best environmental practice. For used oil management, these must consider issues such as:

- All vehicles and drivers used in the collection of used oil must comply with all relevant Land and Transport Authority registration and licensing requirements;
- Transportation of used oil must occur in suitable, covered containers;
- Used oil must be contained in appropriately labeled transport containers; and
- Transport and storage of used oil must be managed with access to suitable accidental spill containment equipment and personal protective equipment.

4.0 Improved National Used Oil Management Framework

4.1 Used Oil Management Goals

The proposed national Used Oil Management Plan describes and directs an appropriate management framework to improve national management of used oil and promote shared used oil management responsibility by all national stakeholders.

The proposed national Used Oil Management Plan has 6 goals:

- **Goal 1**: Minimisation of the unnecessary, untimely, and uncontrolled national generation of used oil.
- **Goal 2**: Minimisation of the adverse effects of used oil on the environment and people of Tonga.
- **Goal 3**: Management of used oil conforms and complies with all relevant national and international conventions and legal requirements.
- **Goal 4**: The costs associated with used oil disposal are met by those responsible for generating the used oil.
- **Goal 5**: Coordination of used oil management activities is maximized to ensure cost-effective environmental outcomes.
- **Goal 6**: The capacity of stakeholders to achieve effective used oil management is increased.

4.2 Used Oil Management Actions

The Tongan Used Oil Management Plan will be achieved through 12 Strategic Actions that (a) strengthen institutional capacity; (b) promote public private partnerships; (c) promote sustainable best practices; (d) develop human capacity; and (e) improve documentation and dissemination of outcomes. These actions are presented in Table 1 and these actions are also mentioned in Table 2 in Section 5.0 below.

Table 1. National used oil management goals and actions

Used Oil Management Goals	Used Oil Management Actions	Responsible Entity
G1: Minimisation of the unnecessary, untimely, and uncontrolled national generation of used oil	MA1: Minimum national quality standards for imported lubricants are promoted and enforced	MEIDECC
G2: Minimisation of the adverse effects of used oil on the environment and people of Tonga	MA2: Appropriate standards and safeguards for the handling, collection, transportation, storage, and disposal of used oil are established and applied	MEIDECC Private Sector
G3: Management of used oil conforms and complies with all relevant national and international conventions and legal requirements	MA3: All national obligations required under relevant International Conventions are met during management of used oil	MEIDECC
	MA4: Management of used oil complies with all relevant Tongan laws	MEIDECC
G4: The costs associated with used oil treatment/final disposal are met by those responsible for generating the used oil	MA5: Used oil management is sustainably funded utilizing a publicly supported instrument based on the polluter pays principle.	MEIDECC Used Oil Managing Agency
	MA6: A comprehensive audit of national used oil generation rates completed to establish an accurate cost of sustainable national used oil management	MEIDECC, JICA, SPREP

Used Oil Management Goals	Used Oil Management Actions	Responsible Entity
G5: Duplication of effort is minimised, and coordination of used oil management activities are maximized to ensure effective implementation of the Policy	MA7: Used oil management concerns are appropriately addressed in waste management legislation, regulations, and planning	MEIDECC
G6: The capacity of stakeholders to achieve effective used oil management is increased	MA8: National Used Oil Management Steering Committee established	MEIDECC Stakeholders (Including Private Sector)
	MA9: Opportunities are created to develop industry and community understanding, skills and general capacity to manage used oil	MEIDECC Stakeholders
	MA10: Collection, storage and disposal of used oil outsourced where possible to the private sector or specialist government agencies	MEIDECC Private Sector
	MA11: Regulation of and service delivery of used oil management activities will be clearly separated	MEIDECC Used Oil Managing Agency
	MA12: A national register of oil and lubricant importation data and used oil generation maintained and reported annually	Used Oil Managing Agency MEIDECC and MRC (Customs)

4.3 Used Oil Management Roles and Responsibilities

The Tongan Government is responsible for regulating and enforcing the national management of used oil. They will be assisted by the private sector.

The Tongan Government will:

- Take the lead in final cost benefit analysis of national used oil management;
- Take the lead in reporting national used oil data;
- Take the lead in the development of national occupational health and safety guidelines for used oil management;
- Take the lead in the development of national environmental guidelines for the safe handling, collection, transportation, and storage of used oil;
- Take the lead in enforcement of relevant workplace health and safety legislation; and
- Take the lead in regulation of used oil management activities.

The Used Oil Managing Agency will:

- Manage the collection, storage and disposal of used oil under contract to the Tongan Government.

The National Petroleum Industry will

- Take the lead in provision of used oil management training; and
- Apply all relevant regulated work-based used oil management standards.

5.0 Critical Used Oil Management Establishment Activities

5.1 Critical Steps

A range of steps need to be completed to ensure Tonga manages used oil appropriately into the future. These are summarised in Table 2 and discussed further below. **The critical establishment activities are discussed in Sections 5.2 – 5.8 below and the critical management activities are discussed in Sections 6.0, 7.0 and 8.0 below.**

Table 2. Summary of actions required to achieve best practice used oil management in Tonga

Action	MA (Table 1)	Responsibility	Timeframe	Outcome
Programme Establishment				
1. Preparation of a Tongan National Used Oil Management Policy	MA1 MA2 MA3 MA4 MA5	Government and Stakeholders	2023	Agreed and endorsed national used oil management policy
2. Complete detailed national used oil cost benefit analysis	MA6	MEIDECC, JICA, SPREP	2023	True cost of national used oil management documented
3. Under the Waste Management Act (2005), development and enforcement of: • **Rules** • **Operating manuals** • **Codes of practice** • **Standards** • **Regulations to regulate activities associated with used oil management**	MA1 MA2 MA3 MA4 MA7 MA11	MEIDECC	2023	All activities associated with used oil management are standardised and enforced
4. Establishment of a user-pays management system enforced under the Waste Management Act	MA5 MA6	MEIDECC	2023-2024	Special Fund model, where the government collects the ADF and pays it back out to a contracted System Operator (Managing Agency)
5. Establishment of National Used Oil Management Steering Committee	MA8	MEIDECC	2023	Expert used oil management body available to provide specialist advice and programme oversight to Government
6. Establishment of a national used oil Managing Agency	MA10	Managing Agency National Steering Committee	2024 onwards	National expert management of the collection, storage and export of the used oil
Programme Implementation				
7. Public and industry education and training programme	MA9	MEIDECC Managing Agency	2024 onwards	National awareness of and willingness to manage used oil

Action	MA (Table 1)	Responsibility	Timeframe	Outcome
		Petroleum industry		
8. Collection of agreed Advanced Disposal Fee (ADF) on all imported lubricants	MA5	MEIDECC, MRC (Customs)	2024 onwards	Collection of an Advanced Disposal Fee (ADF) on all imported lubricant products enforced under Government regulations
9. Commence national used oil management programme	MA9 MA10	MEIDECC Managing Agency Petroleum industry	2024 onwards	National used oil management programme
10. Monitoring and Evaluation	MA11 MA12	MEIDECC]National Steering Committee	2024 onwards	Annual programme evaluation and reporting

5.2 Policy

A National Tongan Used Oil Management Policy is needed to establish and guide the operation of an appropriate management framework that improves national management of used oil and promotes shared used oil management responsibility by all stakeholders.

The Policy needs to cover all used oil consistent with the classification of hazardous waste under the Waigani and Basel Conventions. This includes any semi-solid or liquid product consisting totally or partially of mineral oil or synthesised hydrocarbons (synthetic oils), oily residues from tanks, oil-water mixtures and emulsions.

Action Required: A National Used Oil Management Policy needs to be prepared and endorsed by Government and Stakeholders.

5.3 Used Oil Background Information

Background, but incomplete information has been collected on used oil generation rates in Tonga in 2023[12]. This study identified that an average of 600,000 Lts of lubricants are imported into Tonga annually. Based on this data, imported lubricants generate up to 380,000 litres of used oil annually that needs to be sustainably managed.

Used oil is currently used for a range of purposes in Tonga, all of which are unacceptable in varying degrees. These uses are described in Section 1.0 above. These uses all expose people and the environment to hazards and there are better alternatives available for all these uses.

Used oil is also stored long-term and this was described in the 2023 study as follows[13].

Based on the visits that were made, an estimate was made of the used oil that was currently in storage in Tongatapu. This is shown in Table 3 below.

[12]O'Grady (2023). *Tonga Feasibility Study*. SPREP 53pp.
[13]Ibid

Table 3: Used Oil Stored in Tongatapu

Location	Quantity of Used Oil Stored (Litres)
Pacific Energy	10,000
Spare Parts Zone	6000
Vaitohi Auto Parts	600
Tonga Power Ltd	136,000
Asco Motors	400
E. M. Jones	300
Ministry of Infrastructure	500
Ports Authority (Domestic)	600
Fletcher Royco	400
Lulutai Airlines	10,000
Tofa Ramsey Shipping Company	5000
Friendly Islands Shipping Agency	20,000
Eua Ferry Services	3000
Pacific Sunrise Fishing	30,000
Tonga Waste Authority Ltd	400
Total	**223,200**

There may also be used oil stored at locations that were not visited, and also on other islands, especially the Vava'u and Ha'apai island groups. It is likely therefore that the total quantity of used oil stored may be around 250,000 litres.

5.4 Advanced Disposal Fee Calculation and the Moana Taka Partnership

A Stewardship System to fund the sustainable collection of used oil products is shown in Annex 1 and the key to this stewardship system is the collection of an Advanced Disposal Fee (ADF).

Accurate information on total annual used oil generation rates is critical for establishing an ADF to finance national used oil management. The updated costs (2023) associated with national used oil management that will need to be met by the ADF are identified in Annex 2 and are based on export to New Zealand. The ADF is currently calculated as TOP 0.72 if the Moana Taka Partnership (MTP) is able to be used and TOP 0.80 if the MTP is not used.

The Moana Taka Partnership (MTP) is a partnership between The China Navigation Company Ltd./ Swire Shipping Agencies, and SPREP to provide free container hire and free shipment of eligible waste between Swire Shipping serviced ports. "Waste Oil" is one of the clearly stated categories of waste eligible for this service[14]. The MTP therefore clearly offers benefits for the management of used oil in Tonga.

[14] SPREP (2020) Moana Taka Partnership - A Guide for Pacific Island Countries and Territories

To quote Swire Shipping[15]:

> *Under the Moana Taka Partnership (MTP) Swire Shipping provides both the containers and ocean freight carriage on a pro bono / Free of Charge basis. This enables private sector companies to move recyclable waste out of the PICTs where it is accumulating, to countries with competent and sustainable recycling plants. This partnership connects government and commerce together for the first time in the waste stream removal / treatment area for the benefit of all, and helps resolve a long-standing environmental and social issue.*

The waste shipment has to be for cargoes that are classified as non-commercial[16]. "Non-Commercial" waste cargoes are those that, without the assistance of the Moana Taka Partnership, would not have been shipped as the cost of container hire and shipping would be close to or greater than the value of the cargo. If a waste cargo has been shipped for profit in the previous two years it is regarded as "commercial" for the purpose of determining MTP eligibility. The referenced SPREP publication[17] includes guidance for applicants on eligibility and the procedure to apply for a potential shipment. A shipment of used oil was made in 2018-2019 from RMI to New Zealand using the Moana Taka Partnership.

Action Required: Collection of accurate national used oil generation data and calculation of accurate Advanced Disposal Fee (ADF) based on this information and the preferred used oil disposal (export) option.

5.5 Regulatory Actions

Environmentally sustainable management of used oil is theoretically governed under the Tongan Waste Management Act (2005), which establishes a Waste Management Authority to manage waste in Tonga. It is considered that the Minister of Ministry of Energy, Information, Disaster Management, Environment, Climate Change and Communications (MEIDECC) can require the Waste Management Authority to manage used oil or choose another way to manage used oil. The Tonga Waste Authority Ltd was established under this Act.

Action Required: Under the Waste Management Act, in relation to used oil management, it is considered that the Government of Tonga is able to regulate all activities associated with used oil management by preparing, adopting, and enforcing relevant rules, operating manuals, codes of practice and standards. Actions are required to ensure the appropriate regulations and management system are put in place.

Asa stated in Section 3.2 above, "Hazardous waste" is defined in the Waste Management Act as including *"….any waste which is, or which has the potential to be toxic or poisonous, or which may cause injury or damage to human health or the environment*".

Action Required: Under the Waste Management Act, in relation to used oil management, the Government of Tonga via MEIDECC, is required to designate used oil as a hazardous waste.

[15] https://www.swireshipping.com/information/info-pages/sustainability/moana-taka-partnership/
[16] SPREP (2020) Moana Taka Partnership - A Guide for Pacific Island Countries and Territories
[17] Ibid

5.6 Sustainable Funding and Cost Recovery

Under the Waste Management Act, The Tonga Waste Authority Ltd is empowered to impose fees for the disposal of hazardous waste (Section 13(1)(d)). An amendment to the Act may, however, be necessary to permit the collection of an Advanced Disposal Fee (ADF) to fund used oil management, which may be collected by another agency instead of the Tonga Waste Authority.

Action Required: Agreement on collection of an Advanced Disposal Fee (ADF) on all imported lubricant products enforced under Government regulations to fund national used oil management. This may require an amendment to the Waste Management Act.

5.7 Used Oil Management Steering Committee

Successful future management of used oil in Tonga will require the establishment of a national Steering Committee. The aim of the Steering Committee is to ensure successful delivery of the used oil management in Tonga including maximising the benefits from the projects and ensuring an approved methodology is followed. The Steering Committee would likely include representatives from the following institutions:

- SPREP/JICA
- Chamber of Commerce
- Tonga Waste Authority Ltd
- MEIDECC
- MRC
- Tonga Power Ltd
- Oil and fuel importers
- Tonga Ports Authority
- Ministry of Infrastructure

Action Required: MEIDECC to establish a National Used Oil Management Steering Committee.

5.8 Managing Agency (System Operator) Appointment

A Managing Agency to oversee the daily operation of the Stewardship System will be funded by the Advanced Deposit Fee. The Managing Agency should be a non-profit government entity responsible for managing and administering the national used oil management programme. The Managing Agency should:

- Manage its funds in accordance with the requirements of the Ministry of Finance ensuring sufficient funds are allocated to pay used oil collectors and recyclers;
- Review and approve applications from used oil collectors and /or recyclers;
- Enter contract agreements with approved used oil collectors and /or recyclers;
- Conduct audits of used oil collectors and recyclers to ensure compliance with permits;
- Carry out inspections;
- Promote the design and implementation of used oil awareness campaigns; and
- Ensure that as far as is possible that all used oil is recycled or reused or exported.

Action Required: Establishment or appointment of an existing body as the national used oil Managing Agency (System Operator).

6.0 Critical Used Oil Management Implementation Activities

6.1 Programme Elements

A national used oil management programme will be managed and coordinated by the national Managing Agency and will require the following interconnected elements:

- Importers bring oil products into the country and are charged a small levy which is passed on to a Used Oil Managing Agency. The used oil levy can be used to encourage consumers to return used oil through a possible refund mechanism.
- Oil is sold to retailers and then, in turn, to consumers who eventually produce used oil.
- Used oil is returned by small consumers to a licensed site for a possible partial refund.
- Used oil is collected from larger used oil generators for free.
- All used oil returns are documented.
- Recovered used oil is stored for export or possible local processing.
- Unclaimed funds and the balance of the import levy are used to support used oil collection, storage and export costs, and the administration of the Used Oil Managing Agency.
- A suitable Code of Practice (COP) is adopted that sets out the correct procedures for managing the collection, transport and storage of used oil. A draft COP for PICTs is contained in Annex 4.

Action required: National used oil management programme commenced by the Managing Agency.

6.2 National Used Oil Education and Awareness Programme

The establishment of a Product Stewardship System (Annex 1) will need to be supported by national public awareness campaigns and community and industry training programmes run by MEIDECC on the subject of best practice used oil management to:

- Provide accurate information concerning the relative risks posed by used oil to Tonga's natural environment and human health, and the government's initiative to deal with the used oil issue;
- Provide accurate information on best practices that individuals and businesses can adopt to better manage used oil at a local scale; and
- Provide training on the safe handling and storage of used oil, especially to industry.

The awareness programme would be conducted in two phases.

Phase 1: General Awareness

This phase will focus on general awareness raising of the used oil issue among key stakeholders such as importers, consumers, garage owners, service stations and local villages. The phase will promote the government's effort to improve the waste oil stewardship program and inform people what they can do to assist with used oil recovery. The mobilization of this phase would be commenced two months prior to implementation of the stewardship programme and to complement Phase 2 awareness.

Phase 2: Implementation Messages

Communication activities will focus on community advertising to inform people about oil collection points and other facilities and to encourage behavioural change. This stage would be mobilised one month prior to implementation of stewardship program and continue over the life of the program. It will focus on the details of the program.

Action Required: Development and communication of ongoing public and industry used oil management awareness and training campaigns.

6.3 Collection of an Advanced Disposal Fee

Funding the used oil management programme will require collection by the Ministry of Revenue and Customs of an Advanced Disposal Fee (ADF) on all lubricant imports. The updated costs (2023) associated with national used oil management that will need to be met by the ADF are identified in Appendix 2 and will require an estimated ADF of 0.72 – 0.80 TOP per litre on all lubricant imports to be collected. This is, however, a preliminary figure that will need to be refined.

Action Required: Commencement of routine collection of an Advanced Disposal Fee (ADF) on all imported lubricant products.

6.4 National Used Oil Management

6.4.1 Used Oil Collection

Types of oils collected under the national used oil management programme are defined as any petroleum-based or synthetic oil or fluid that, through contamination, has become unsuitable for its original purpose due to the presence of impurities or loss of original properties. This covers all used oil consistent with the classification of hazardous waste under the Waigani[18] and Basel Conventions[19].

A used oil collection system would include establishing small volume (1000 litres or less) temporary storage sites. Ideally the containers would be stored undercover and placed in a bunded area to contain any spillages. Collection locations would be sited at service stations, car workshops, hauliers/bus companies, construction companies and other industrial locations.

Any government or non-government organisation, agency or business or private individual that generates used oil would be serviced under this plan. Used oil will be required to be stored in appropriate containers that are appropriately labelled. Used oil storage containers are to be located within bunded waste management areas. The alternative is to use double-skinned containers, which also provide satisfactory secondary containment. Full containers could be picked up with a crane truck which would, at the same time, replace full containers with empty containers.

[18] Convention to ban the importation into Forum Island countries of hazardous and radioactive wastes and to control the transboundary movement and management of hazardous wastes within the south Pacific region (1995)
[19] Basel Convention on the control of transboundary movements of hazardous wastes and their disposal and Annexes and Amendments (1998)

Public drop-off points should also be established, probably at service stations. These drop-off points will need commitment and management to make sure they are not mis-used.

Action required: Routine collection of used oil by used oil generators continued or commenced.

6.4.2 Used Oil Transportation

Used oil collection from temporary storage locations would be carried out by competent licensed carriers with the appropriate equipment. The licensed carriers would collect used oil by road tanker or crane truck for the smaller containers as described in Section 6.3.1 above.

Intermediate temporary storage of collected used oil prior to export shall include bulk storage (such as in Tanktainers) or in IBCs or 210 litre steel drums contained in a concrete, sheltered and bunded area. Transportation of used oil from collection points to bulk storage must be regulated to ensure best environmental practice. This will include:

- All vehicles and drivers used in the collection of used oil must comply with all LTA registration and licensing requirements;
- Transportation of used oil in suitable, covered containers;
- Appropriate labeling of transport containers;
- Tracking of transported oil; and
- Access to suitable accidental spill containment equipment and personal protective equipment.

Action required: Regular transport of collected oil to bulk storage facilities commenced by the Used Oil Managing Agency.

6.4.3 Used Oil Storage

The collection and storage of used oil would be supported by appropriate legislation so that there is a legal requirement for used oil to be collected and stored in an environmentally acceptable manner. All collected used oil shall be transported and stored in compliance with appropriate regulation provisions concerning the transport of dangerous goods and hazardous wastes. These could be linked to the COP in Annex 4.

Action required: Regular bulk storage of used oil commenced by the Used Oil Managing Agency.

6.5 Industry Training

Personnel carrying out works that generate, transport, store, and dispose of (recycle) used oil in Tonga within a used oil management programme must undergo basic site-specific induction and training which includes an outline of the waste management requirements (and other environmental issues) on-site. Applicable training suited to the different roles and responsibilities is to be undertaken in accordance with appropriate national standards.

Action required: Suitable training is to be established for used oil management.

7.0 Other Plan Concepts including Disposal / Recycling

7.1 Options for Management

The first management stage involves collection and storage. This is common to both options described in the second stage below.

The second management stage involves reprocessing of the used oil into a usable product. Typically, that has been handled in the past in numerous Pacific countries by export and this is discussed further in Section 7.6 below. Export is the option of default as local management has not been available in many countries.

Used oil can be used unprocessed if there is a suitable high temperature process where contaminants can be effectively destroyed as is the case with Bluescope Pacific Steel in Fiji. Usually, however, the used oil needs to be processed so that a re-refined product is obtained that can be used in local industries, local equipment or for transport, in an environmentally and technically sound way. This requires a processing plant that can meet proper specifications and is properly operated and maintained. A market is also required for the re-refined oil that is produced.

7.2 Local Processing

Local processing is an option that should be considered for Tonga. As an example, a local company Ocean Environmental Services (OES), based in Vanuatu, is planning to establish a local processing facility based on pyrolysis technology that would serve the local Vanuatu market. OES is a subsidiary of Ocean Logistics Ltd. The following information has been provided by OES[20] and this could also be relevant for Tonga.

OES are currently at the investigation stage and are planning to have a used oil pyrolysis processing plant operating and in production in early 2024. They are considering purchasing a standard unit supplied by Beston Group (www.bestongroup.net). Probably they would choose the BLJ-6 model with a capacity of 4-6 T/d. IT should be noted that the pyrolysis technology can also be extended to include many plastics which would be very beneficial for waste management for Tonga in the long term.

They consider that they could sell the product at a price that is very competitive with diesel on the local market. Their goal will be to produce a useable fuel oil for use in some of the older tugboat vessels and within their group of companies for container handling equipment. They have also identified several other possible customers in the local market that use boiler furnaces in their processes. There may also be other possible customers for the refined product.

Considering the relatively low capital cost of the plant and the fact that the selling price of the product will compete very favorably with locally available diesel, initial indications are that the project is financially viable and attractive.

It should be noted that if local processing facilities can be established that are of a sufficiently high standard, then this option will always be preferred to export. Local

[20] Email communications with Andrew Bohn, CEO Ocean Logistics Ltd, April 2023

processing is much cheaper than export, a potentially valuable resource is retained in the country, and from a climate change / sustainability viewpoint, used oil in large amounts are not being transported long distances.

7.4 SWAP Pilot Project

Tonga has been invited by SWAP to prepare a used oil management pilot project proposal based on the collection and storage of used oil. An application has being made. The overall goal of the project is to have a used oil management system in Tonga.

Specifically, the project will be conducted to

1. Establish a storage facility for used oil;
2. Establish proper collection at relevant collection sites and establish a private sector collaboration with the government to use relevant technology such as pyrolysis to use the used oil to make other useful products;
3. Ensure the collaboration between the private sector and the government is established to provide some revenue to the government to support sustaining the system;
4. Establish an ADF scheme to support the sustainability of the project;
5. Build the capacity of all stakeholders involved through relevant training; and
6. Accurate data on imports of the different oil types and the generation of used oil is established.

These aims are all in full accordance with this Management Plan.

7.5 Management System Costs

The Tonga Used Oil Feasibility Study[21] described in detail the collection and storage facilities that are required. These are summarized, with estimated costs, in Table 3 below. It is understood that the SWAP Pilot Project has $US165,000 available to assist with funding this cost, which would initially be done via a pilot project. The items purchased for the pilot project would then be available for future use as part of an overall used oil management system.

Table 4: Cost to Establish Used Oil Collection and Storage Facilities

Item	Cost (USD)
Storage facility construction:	100,000
Tanks, pumps, plumbing:	60,000
Collection tanks:	45,000
Crane truck:	60,000
Public drop-off centre:	16,000
Fire extinguishers (2 x Dry powder):	3,000
LEL Meters for detection of volatile contaminants (2)	2,000
PPE	2,000
Construction Supervision	20,000

[21] *Tonga Used Oil Feasibility Study* Araspring Ltd - February 2023

Item	Cost (USD)
Operation	20,000
Training	5,000
Publicity	5,000
Total	**338,000**
Contingency 5%	16,900
Total plus contingency	**354,900**

7.6 Used Oil Export

Used oil export for treatment has been used on many occasions in the Pacific for the disposal of used oil. Destinations have included New Zealand, Australia, Fiji, India and South Korea. It is important to use the Waigani or Basel Conventions as this is a legal requirement and it also ensures that the used oil is being treated satisfactorily at the destination point. Annex 5 contains information relating to meeting the requirements of the Basel and Waigani Conventions.

It is believed that New Zealand is a suitable destination point for used oil from the Pacific for the following reasons:

- Used oil can be shipped to New Zealand for a reasonable cost.
- There is a long history of satisfactory shipments of used oil from the Pacific to New Zealand.
- There is an assurance that the used oil will be processed satisfactorily.
- There is a ready market in New Zealand for the refined product.
- Swire Shipping travels between most Pacific Ports and New Zealand and this applies to Tonga. The MTP can therefore be used (see Section 5.2 above.)

There are, however, other destinations that could be explored, provided export to those countries can legally be carried out and Basel / Waigani requirements can be met.

8.0 Monitoring and Reporting

8.1 Monitoring

The monitoring and evaluation of the Product Stewardship System will be carried out by MEIDECC.

MEIDECC will use inspectors to monitor and carry out regular inspections of generators, collectors, and the Managing Agency to ensure compliance with the Used Oil Regulations. The monitoring will ensure that there are no breaches of the Regulations.

8.2 Reporting

Under the used oil management regulations, the Managing Agency will prepare an annual evaluation report to the responsible Minister by a defined date each year, which will include the following information:

- The annual amount of levy paid into the Fund;
- The annual quantity of imported oil on which the levy is paid;
- The annual number of litres of used oil collected;
- The quantity of used oil in current storage;
- The annual quantity of used oil exported;
- Details and outcomes of awareness campaigns;
- An audited account of how the money in the Fund has been spent; and
- A programme occupational health and safety report.

9.0 Management Plan Stakeholders' Meeting

A Stakeholders' Meeting was held on 15 June 2023 to discuss the draft Used Oil Management Plan. The minutes of this meeting are contained in Annex 3.

Findings from this meeting have been used as the basis to complete this Final Used Oil Management Plan.

Annexes

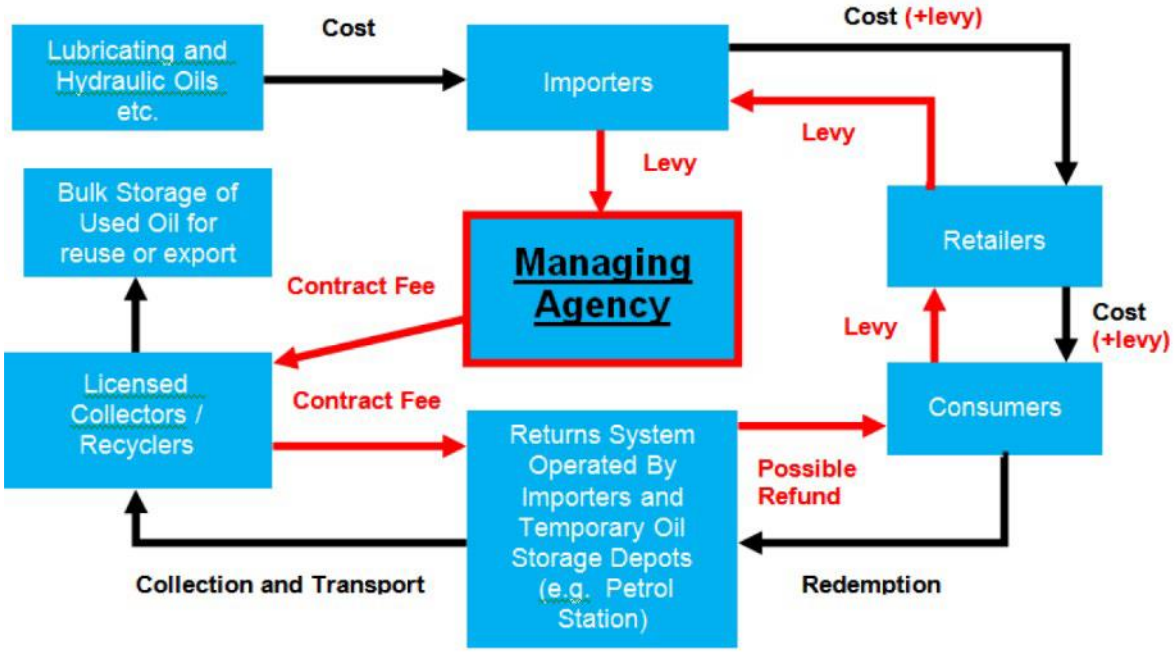
- Annex 1: Used Oil Stewardship Arrangements
- Annex 2: Used Oil Estimated AFD calculations – (TOP)
- Annex 3: Used Oil Stakeholders' Meeting
- Annex 4: Draft Used Oil Code of Practice for Pacific Countries (2022)
- Annex 5: Transboundary Shipment of Used Oil

Annex 1 – Used Oil Stewardship Arrangements

A Stewardship System to fund the sustainable collection of used oil products can be summarised as:

1. Importers bring oil products into the country and are charged a small levy which is passed on to a Used Oil Managing Agency. The used oil levy can be used to encourage consumers to return waste oil through a refund mechanism.
2. Oil is sold to retailers and then, in turn, to consumers who eventually produce used oil. Used oil is returned by the consumer to a licensed site for a potential refund.
3. Licensed used oil collectors provide returns to the Managing Agency and receive payment for expenses incurred in the collection, storage and handling of each litre of used oil.
4. Recovered used oil is stored for export.
5. Unclaimed funds and the balance of the import levee are used to support used oil collection and export costs.

Figure 1: Stewardship system flow diagram for used oil



Annex 2 – Used Oil Estimated AFD calculations (TOP)

Item	Cost (USD)	Cost (TOP)	Export to NZ with MTP (TOP)	Export to NZ without MTP (TOP)
Set-up Costs to set up a used oil collection and storage service in Tongatapu.				
Storage facility construction:	100,000	235,000		
Tanks, pumps, plumbing:	60,000	141,000		
Collection tanks:	45,000	105,750		
Crane truck:	60,000	141,000		
Public drop-off centre:	16,000	37,600		
Fire extinguishers (2 x Dry powder):	3,000	7,050		
LEL Meters for detection of volatile contaminants (2)	2,000	4,700		
PPE	2,000	4,700		
Construction Supervision	20,000	47,000		
Operation	20,000	47,000		
Training	5,000	11,750		
Publicity	5,000	11,750		
Total	**338,000**	**794,300**		
Contingency 5%	16,900	39,715		
Total plus contingency	**354,900**	**834,015**		
Vava'u, Ha'apai and 'Eua need simpler systems - smaller tanks, public dropoff points, facilities to transfer to IBCs for Transport.				
Total Capital Cost Estimate:		0		
Tongatapu	354,000	831,900		
Vava'u, Ha'apai and 'Eua, say 3 x $50.000	150,000	352,500		
Total:	504,000	1,184,400		
SPREP /SWAP can fund $US165,000	-165,000	-387,750		
Cost for Tonga to Fund:	339,000	796,650		
Spread Set-up costs over 5 years - cost per year:	67,800	15,9330		
Annual Operating Costs				
Cost of Setup spread over 5 years:	67,800		67,800	67,800
Annual Export and Treatment of one year's accumulation of used oil, say 330,000 litres			113,650	160,000

Item	Cost (USD)	Cost (TOP)	Export to NZ with MTP (TOP)	Export to NZ without MTP (TOP)
Cost of preparation for export, including Basel/Waigani			33,000	33,000
Labour (export) five full time including drivers			150,000	150,000
Maintenance estimate			30,000	30,000
Other operating costs, including fuel, power, admin etc			40,000	40,000
Total			**434,450**	**480,800**
About 600,000 litres of lubricating oil are imported per year into Tonga. The ADF would therefore need to be:			**0.72**	**0.80**

Annex 3 - Used Oil Stakeholders' Meeting

National Used Oil Management Plan/ Used Oil Management Pilot Project for Tonga

WORKSHOP MINUTES

Date: Thursday 15 June 2023
Venue: House of Tonga Conference Room

Welcoming and Introduction

- The workshop was opened by an introduction by Julie Pillet of SPREP/AFD who welcomed everyone to the workshop.
- Mafile'o delivered the welcoming remarks, firstly introducing Julie from AFD, the project manager and John O'Grady the consultant engaged by SPREP to produce the National used Oil Management Plan which is a living document that will be updated as and when required. Mafile'o encouraged participants to discuss and scrutinize the plan and advise what needs to be added or removed based on their knowledge and company situation.
- Following the welcoming address, all participants were asked to introduce themselves. Participants included representatives from Tonga Power Ltd, Statistics Department, TOTAL Energy, Recycling business SRM, Pacific Energy, Ports Authority, Ministry of Revenue and Customs and Ministry of Infrastructure as well as the Department of Environment, MEIDECC.

Session 1 – John O'Grady

Introduction to Oil Management Tonga

- What is used oil? Oil waste moved around between countries and agreements and permission between countries are needed. Pacific regional convention controls movement of this oil and radioactive waste (Basel and Waigani Convention).
- Why is it a problem? Poor management can lead to pollution and destroy the environment.
- Used oil can enter aquatic systems if not contained and create other environmental problems.
- Compounds including PAHs, heavy metals – copper chromium arsenic, additives, antioxidants, PCBs.
- Health issues – liver, kidneys, heart, liver and nervous system.
- Used oil can contaminate water systems but has other uses as well including dust control, coating to prevent vehicle corrosion, used as a timber preservative, sports field marking, treating skin disease on pigs and small-scale oil lubrication.
- The SWAP Programme in committing to Sustainable Waste Actions. How much is used oil?
- According to the Tonga Statistics Dept – 516, 229 litres of lubricating oil and 69,

609litres of hydraulic oil were imported in 2021. In addition 33, 000litres - 338, 000 litres are generated annually in Tonga.

- One of the Best Practice in Used Oil storage was demonstrated in Kiribati but was not bunded but had a roof to cover the oil drums. For Tonga's case, there is a need for stations where the public can drop off used oil and placed across the islands in Tongatapu and the outer islands as well.
- Used oil transportation – What do people in workshops sometimes do? They mix all used oil and hydrocarbons –not good to mix used oil with low flashpoint liquids such as kerosene and petrol.
- Best Practice Used Oil Bulk storage – Need for bunded areas that can contain 10 percent of the oil storage capacity or double skinned tank. Need storage and emergency response plan for storing hazardous waste that can include local Collection Containers – such as double skinned and 1000 litres capacity.
- Used oil disposal options for Tonga – try to treat it to be re-used, exporting it is expensive, especially Australia which charges high processing fees.
- Best Practice Used Oil Export – used oil shipping options and containment, tank tainers, UN rated rums, 1000 litre Intermediate Bulk Containers (IBCs). Flexitanks are not considered best practice.
- All used exported oil must be appropriately labelled, especially flammable and toxic substances.
- Best Practice Sustainable Finance – a user-pays management system would be effective but there needs to be incentives to get money to return used oil.

Questions and Discussion:

Hakau (Ports authority) – what is code and requirements for the transportation for Dangerous goods in Tonga? Who is the regulator for that?

John – most PICs don't have proper controls on hazardous substances, although Vanuatu is in the process of putting in place effective hazardous substances and hazardous waste legislation. Importers of hazardous substances sometimes have their own regulations for example oil companies.

Hakau (Ports authority) – once it gets off the wharf, dangerous goods are no longer controlled.

Mafile'o (DOE) – DOE is responsible for transboundary movement. Gio recycling used to export oil but have stopped as not economically viable. Pacific Energy has the capacity, labelling and transportation of their used oil and no issues with them, however transboundary movement between countries is regulated by competent authority DOE depending on the nature and type of hazardous waste eg. Pesticides, but export needs license and approval from DOE, approval from the receiving country, and approval from transit countries.

Hakau (Ports authority) – ships have tank for dirty oil – oil pollution plan and have log book and tug boat discharges oil and regulated by marine and ports. Tanks used to move used oil in Tonga, are they regulated?

John – managing hazardous substances and managing hazardous waste are distinctive and need appropriate controls.

Mafile'o (DOE) – two oil companies collect used oil from major companies like TPL and not sure who does the transportation and might be covered under the Petroleum – Ports declare it as DG even though it is dirty used oil.

Saimone (Tonga Recyclers Association) – aware of the convention as we export lead acid batteries and there are a number of approvals required by transiting countries to South Korea and the plan is important to address the issues on used oil.

Mafile'o (DOE) - TPL had leaking oil issues 5 years ago due to high generation of used oil due to generator. TPL needed DOE assistance TOTAL and Pacific Energy attempted to remove the used oil from site. Approval permit received from Pacific Energy to remove 160, 000 litres from Tonga to Fiji (Bluescope Steel). However, concerns as well in small workshops, mechanics distribute oil and people don't know how hazardous the used oil is on the environment and on their health so the new management plan will also address this. Also the gas stations have used oil storage issues so the plan will explore ways to treat the oil in country so it can be re-used safely. Also the ships that generate used oil need to be considered. Estimate about 5 years to have a proper system in place to be sustained financially including a levy.

Hema (Marine and Ports, MOI) – it would be good to also consider the transport division for data on used oil.

Hakau (Ports Authority) – shipping companies generate oil and also the quarry companies and changing oil in ships uses a lot and those who produce this and oil spills in the harbour sometimes occur.

Fekita (Pacific Energy) – we only collect from people who buy from us i.e our customers. We used to collect from TPL but now as TOTAL is their main supplier they would comply with their collection requirements.

John – large fishing company – Pacific Sunrise Fishing were also consulted, and they had considered installing a treatment plant for the used oil, as the used oil is stored in drums that are corroding.

Mafile'o (DOE) – TPL is biggest contributor of used oil and all other collection companies, the plan will have a collection station – Swire Shipping will establish free transportation cost and also the shipping cost would be free subject to negotiations with companies and will be extended to both the big and smaller companies and recycling companies as well.

Fekita (Pacific energy)– this is urgent and work needs to be done quickly on this.

Hema (Marine and Ports, MOI) – does it include insurance costs?

John – no it doesn't – only shipping and containers.

Fekita (Pacific energy) – suggest including in budget for this project to cover insurance needs.

Mafile'o (DOE) – we will strengthen capacity of public private partnership and clarify regulators and make it clear to the public and also include levy of oil to sustain and administer the operation. We need to now work on the development of national used oil management plan to ensure that it is practical as it will drive the formulation of regulations for used oil under

hazardous waste management in Tonga. We will not be reinventing the wheel but strengthen existing structure on used oil collection and management.

MORNING TEA BREAK – 15 mins

Session 2: John O'Grady

Presentation on the Draft Tonga National Used Oil Management Plan

John presented the information on the plan and mentioned that the draft will be shared. The plan establishes and directs management framework for national used oil management. The Regulations will impose levies and powers to enforce the plan. Current legislation includes Environment Management Act 2010 and Hazardous Waste Management Act 2010.

Not many countries can take waste oil from ship, and ships sometimes dump waste oil in the ocean as they have full waste oil tanks. Ships are required to have records of where they dispose their oil waste.

Coordinating responsibilities is important with all stakeholders but requires money and will to do the work.

From consultations there is a real need to manage the used oil problem across both the larger and smaller producers in Tonga. GOT will regulate and enforce the national management of used oil. A Pacific Code of Practice also part of the management plan and have been adapted from New Zealand Code of Practice.

Critical Establishment Activities – need for policy to establish and guide used oil management framework.

Perhaps should be an Advanced Recycling Fee as opposed to Advanced Disposal Fee.

Scenario 1 – 0.73 TOP using MTP and scenario 2 – 0.81 TOP not using MTP to export to NZ. Companies there can treat waste oil and resell it to industries such as the pulp paper company.

MTP is the Moana Taka Programme set up by SPREP and Swire Shipping, where Swire Shipping take as a backload, recyclable and other wastes free of charge.

Questions and Discussion

Fekita (Pacific Energy)– people don't go for quality but rather for price, so it is a problem to regulate oil by using a levy.

John – those who use the oil should pay.

Hakau (Ports Authority, MOI) – force people to pay for insurance and also encourage the ADF.

Mafile'o (DOE) - Moana Taka partnership – partnership between Swire shipping and SPREP to provide free container hire and free shipment of eligible waste classified as non-commercial. MTP is beneficial option for Tonga.

John - Establishment of ADF – needs accurate data.

Fekita (Pacific Energy) – most companies buying hydraulic oil would rather leak the fuel rather than fix the hose so this is another challenge.

John - Legislative change - MEIDECC needs rules, operating manual, codes of practice and standards established under the WMA. Sustainable funding – agreement on the collection of the ADF on all imported lubricants and perhaps other oils such as hydraulic oils, enforced under new regulations to fund National Used oil management.

Fekita (Pacific Energy) – note that ADF also means Auto diesel fuel – ensure no confusion in acronyms with ADF.

John - Need overseeing committee and also steering committee including SPREP, JICA, Chamber of Commerce etc and need also national used oil managing agency (system operator) to operate the system that is a non-profit govt entity and will manage funds, approved used oil collectors and recyclers, awareness campaigns etc Need for awareness and education campaign to educate the public on the issues of used oil on water, environment etc. Collection of ADF – ensure the revenue generated is used only for the used oil and not funding other govt work. Monitoring and reporting – managing agency needs to produce audit reports and occupational health and safety reports.

Presentation 2: Used Oil Collection

Used oil transportation – regular collection and transport of oil to bulk storage facility commenced by used oil agency. Storage needs bund system to contain all spills and is included in codes of practice. Bund system must not have holes or leak pathways and also ensure all hazardous chemicals are contained safely to ensure no leakage through taps etc.

Treatment and Re-use – managing agency needs to determine a suitable treatment and re-use path for the used oil that is collected. Local processing if viable is preferable to export as it is cheaper, more sustainable, and valuable resources can be retained in country.

Used oil export – explore all options for destination - include NZ and others.

Summary – need for used oil management, utilize SWAP system.

Questions and Discussion and Pre-Pilot project discussion on Used Oil Management

Hakau (Ports Authority) – MEIDECC regulation on dirty oil management. What is the application and limit of the regulation and if ports included, as Marine and Ports have their own regulation as well.

Mafile'o (DOE) – MEIDECC is land based and responsible for transboundary permit of hazardous waste between countries but Marine and Ports covers the ports and marine area. MEIDECC regulates WAL and address illegal dumping issues on land. MEIDECC supports the Marine and Ports in their work to manage oil spills in the ports and the land.

Hakau (Ports Authority) – user pay system already exists in the ports - levy in ports for oil pollution and ship wrecks but not sure where the revenue goes so important to stipulate in regulations to be clear on the levy charged and the use for it.

Mafile'o (DOE) – consider recycling companies to collect from the small companies but will strengthen the current two oil companies and explore the possibility of small workshops. Also some are not registered and need to all be included and establish collect point that is accessible for everyone. Pay the levy so the service will be available to you. Govt also has issues in managing revenue for specific purposes and used in general pool.

Stakeholders here need to decide how money will be collected and the purpose of revenue to strengthen capacity of companies for storage or shipping costs etc and if treatment facility is established the revenue can also manage the operation of the facility. The committee can decide on that but currently MEIDECC has authority on hazardous waste. Again emphasizing partnership and collaboration to drive this.

Saimone – public private partnership would be more effective and this is a good start to establish something sustainable. Govt responsible for using the oil are also polluting the environment.

Mafile'o (DOE) – my concern is that imposing the levy on top of the oil price may not sit well with public and customers. Will the customer be willing to pay the levy?

Saimone – this is mostly on the lubricants so it should be ok.

Mafile'o (DOE) – need for more awareness.

Hakau (Ports Authority) – the way to sell the levy is recycling or cleaning up to fit the mind of the people – ARF more suitable than ADF – amend the lube oil levy fee or oil levy enforced by international ships.

Hema (MOI)– legislation exists to enforce the levy, however internal issues at Ministry of Finance around revolving fund is an issue.

Mafile'o (DOE) – this is good to take heed of, when developing a regulation to ensure the funding is directed only towards used oil. Establishing a steering committee and the managing agency is important and meeting updates as well.

Hema – Fiji's system works in terms of used oil.

Mafile'o (DOE) – need to consult Attorney General office on the fund issue.

Saimone – suggest to work with Minister to avoid the revolving fund issue with MOF.

Saimone – the fee may be going to WAL but the fund should go to the non-profit government, but also explore other agencies that can manage this.

Mafile'o (DOE) – will need to consider AG help. Advance recovery fee with WAL is being tendered out by SPREP to produce this for WAL and if WAL is accessing this fee, they might also not use it for intended use.

John – should Tonga explore the possibility of a treatment system?

Hakau (Ports Authority) – together with Marine and Ports they established an incinerator to burn dirty oil over 2 days and 200 litre drums of LPG – 90 litre and only small amount of good oil was generated. It didn't continue to operate, however.

Mafile'o (DOE) – need to explore the refining and recycling system for used oil to be re-used by boats, tractors and a feasibility study could determine the funding for the project to use oil sustainability in Tonga.

Hakau (Ports Authority) – check with MOI on incinerator as they had plans to establish one.

Saimone – feasibility also should include the viable technology for Tonga.

TPL – they blended used oil with virgin lube oil for one of their generators and it was not good and caused operational problems.

Fekita (Pacific Energy) – climate change issue and pollution can be the avenue to seek funds for the project.

Mafile'o (DOE) – Govt doesn't have capacity and therefore would rather be regulator and give this responsibility to the private and public sector and should be stated clearly in the plan. Will be contracted to those who have the technical expertise to operate it.

Hakau (Ports Authority) – what about a regional agreement for this treatment - check with SPREP.

Mafile'o (DOE) – SPREP was asked to find a regional hub to dispose hazardous and used oil. Only Fiji has some capacity to manage their used oil and stockpiled oil needs to be addressed. 300, 000 litres a year and the stockpiling issue is dangerous.

Hakau (Ports Authority) – Tonga appears to be sitting on a dynamite as explosion can occur with the amount of used oil stored on land.

Mafile'o (DOE) – the immediate action now is to remove all the stockpiles and collection to ship to Fiji. Get more tanktainers and collect the used oil.

John – Fiji uses the used oil to run their steel plant so don't rely on them as they will only take the used oil they need for their operation.

Mafile'o (DOE) – need to increase storage capacity at TPL and set up collection points at gas stations. Consider having the collection point at a TOTAL or PE gas station.

Isikeli (TOTAL) – the higher the volume of fuel the underlying costs will be huge and might not be viable. But in terms of collection point the additional facilities and fees will need to be paid by the customers.

Mafile'o (DOE) – pinpoint the collection points. Project can also look at treatment plant and conduct feasibility study to establish this within the next 5 years. Look at option to collect and drop at TOTAL and PE. Determine needs of all the companies in terms of space, facilities etc. Tanktainer costs about 40, 000 – 60, 000 USD from NZ and crane truck – 60k TOP. How long

does tanktainer takes to be full? – TPL one day, PE – depends on the demand and collection. How often do we do collection? Consider MOU with TOTAL to use their container as a start.

Session 3: Mabella presentation on Pilot Project on Used Oil Management

Mabella presented the consultation results and the recommendations for used oil management for Tonga.

1. Short term option

Increase storage capacity of TPL to accommodate used oil from small workshops;

- Additional tankers for safer storage (supported by SWAP);
- Procure crane truck (support by SWAP);
- Establish strategic drop off points – free collection by SWAP;
- TPL to continue its current system of exporting used oil to NZ, Australia, PNG;
- Execute and MOU between Govt and TPL to formalise the PPP arrangement.

Mafile'o – MOU will be signed with the two oil companies – TOTAL and Pacific Energy rather than TPL as TPL and other small workshops are their clients and they collect used oil from drop off points from them.

Advantages

- Proper containment of used oil;
- Increased awareness on safe handling, storage and disposal of used oil;
- Proper inventory of used oil generation for more informed decision making – needs reliable data to back this up;
- Huge stockpiles of used oil can be addressed including those of small workshops.

Disadvantages

- Cost of exporting may be too expensive and unsustainable;
- Stringent requirements keep changing;
- Possibility for used oil to be stockpiled if not used.

2. Long Term option

Advanced Recovery Fee and Deposit (ARFD) system to sustain the improved collection and storage system.

- Include used oil as an eligible item for import levy considering ARFD;
- Review the petroleum act and potentially make amendments to include a levy system;
- Establish an ARFD system – feasibility study, legislation, implementation plan – supported by PACWASTE plus to establish this and is now being tendered;
- Implement the ARFD to provide sustainable funding for used oil management.

Advantages - Opportunity to access funding through levy.

Disadvantage – time consuming process up to 5 years to establish.

3. In-situ Treatment Facility

Pyrolosis and small-scale facility and Vanuatu is already considering this system.

Advantages – product can be used locally, reduce quantity of oil to exported, PPP arrangement, co-funding system through PPP.

Disadvantage – requires feasibility study, requires equipment that may be capital intensive.

Questions and Discussion

Mafile'o advised Mabella that from the discussions held earlier, all the participants agree with the idea of increasing storage and capacity of public private sector and feasibility study for small scale pyrolosis study and also conduct awareness campaign, education and training as part of SWAP support for managing used oil. Tender is already out for ADRF to support WAL for establishing waste levy instead of using monthly fee. The facility might be established at TPL as they are the major generator of waste oil, and they may have space.

Closing Remarks

John – expressed alignment of Mabella's presentation with his presentation. Treatment plant needs economic viability and needs to be well considered given the failure of complex equipment in other PICs.

Julie – expressed her gratitude for the discussions and the need to submit proposal by end of June or early July to start implementing pilot project by end of 2023. SWAP can support Phase 2 if there is success with the short-term project and look forward to implementing the pilot project.

Mafile'o – from the discussions we will re-confirm and establish the network and committee to move things forward and they have agreed to get in touch with the managers to establishing collection point and get everyone on board. Also in regard to shipping schedule and costs, it was agreed that they will use the current costs by oil companies or use the Moana Taka partnership for this project. Also the project needs to ensure that the exporting country is willing to take the used oil. Tonga is also looking forward to feasibility study to see which options are viable to treat used oil. PACWASTE project will also consider which legislation to include the used oil management issue.

Mafile'o also thanked all the participants on behalf of the Director and also thanked Julie and Mabella and technical support, and John the consultant developing the national used oil management plan. And special thanks to the stakeholders for attending the workshop. She reiterated that their concerns and comments are valuable and will be taken into consideration and wished them all the best for the rest of the day's activities.

Workshop Participants and Contact

Name	Organisation	Email address
Samuela T Finau	Tonga Power Ltd	tfinau@tongapower.to
Ati Pomana	Statistics Department	apomana@stats.gov.to
Isikeli Taoi	Total Energies	Isikeli.taoi@totalenergies.com
Saimone Vuki	Tonga Recycle Association	tongarecycles@gmail.com
Fekita Fangaloka	Pacific Energy	fekitafangaloka@p.energy

Name	Organisation	Email address
Hakaumotu Fakapelea	Ports Authority	
Mele Taumoepeau	Statistics Department	mtaumoepeau@stats.gov.to
Hemaloto Tupou	Ministry of Infrastructure	Likewater83@gmail.com
John O'Grady	SPREP	jogrady@actrix.co
Mafile'o Masi	Department for Environment	Mafileo.masi@gmail.com
Mele Tu'akalau	Department for Environment	Mele.tovi94@gmail.com
Sulieti Ofa	SPREP	Sulietih.ext@sprep.org
Dorothy Foliaki	SPREP	Dorothyf.ext@sprep.org
Filimone Lapao'o	Department for Environment	Mone.lapaoo@gmail.com
Siua Hakaumotu	Department for Environment	siuahakaumotu@gmail.com
Sio Fuimaono	Department for Environment	
Kailani Tupou	Department for Environment	Ktupou010@gmail.com

Group Photo from the Workshop

Annex 4 - Draft Used Oil Code of Practice for Pacific Countries (2022)

Please note:

- This Code is largely based on the New Zealand Document – "Management and Handling of Used Oil HSNOCOP 63" November 2013, NZ Environmental Protection Authority.

- References to the GHS7 are to the UN Globally Harmonised System Rev 7. This is an international system for classifying hazardous substances and all references are to the flammable liquids classification. The following categories apply:

Table 1: GHS7 Flammable Liquids Categories

Category	Criteria
1	Flash point < 23°C and initial boiling point ≤ 35°C
2	Flash point < 23°C and initial boiling point > 35°C
3	Flash point ≥ 23°C and ≤ 60°C
4	Flash point > 60°C and ≤ 93°C

1.0 Definition of Used Oil

In this document, the term 'used oil' is used. However, this is intended to be synonymous with the term 'waste oil' in the context of the contents of the document.

While it is appreciated that, in general, 'used oil' can be derived from many different sources and mixtures of different waste streams, have many different compositions and mean different things to different people, used oil is taken to have the following definition:

> *Any oil that has been refined from crude oil, or any synthetic hydrocarbon oil, that has been used, and as a result of such use, has become unsuitable for its original purpose due to the presence of impurities or contaminants or the loss of original properties.*

Used oil is oil from industrial and non-industrial sources and can be derived from any one of the substances in List A, or be a mixture of these substances. These substances have a flash point (closed cup) above 60^0C.

List A

- Engine oil – typically includes crankcase oils from gasoline, diesel and LPG engines
- Brake fluid
- Gear oils
- Transmission fluids
- Hydraulic oils and fluids
- Compressor oils
- Refrigeration oils
- Industrial process oils
- Electrical insulating oil except oil likely to contain PCBs

- Neat metalworking fluids and oils (excluding chlorinated products) – these must not be diluted with water or any product from List B
- Heat transfer oils
- Machining oils
- Ship's slops, bilge water, tank cleanings produced by vessels during normal shipboard operations
- Bottom clean-out waste from virgin fuel storage tanks, virgin fuel oil spill clean-ups, or other oil
- Wastes that have not been used, providing the flash point of the material is greater than 60^0C

Used oil should not include any of the products in List B or a mixture of products in Lists A and B

List B

- Petroleum distillates used as solvents, such as turpentine, kerosene, parts washing solvents
- Petrol and/or diesel (including biofuels) – including mixtures from refuelling errors
- Antifreeze, radiator flushing, or other inhibitor packages (e.g. stabilising coolant additives (SCAs))
- Oils derived from animal or vegetable fats and oils – including those used as a lubricant
- Paint and paint brush washings
- Chlorinated oil or solvents
- Any virgin or used oil which may contain PCBs (> 5 mg/kg)
- Soluble cutting fluids

Please note:

- Many, although not all, of the products in List B will have a flash point (closed cup) below 60^0C. Regardless of flash point, however, List B products must not be mixed with List A products and then disposed of as used oil.
- If used oil becomes contaminated with products from List B, the resulting product will usually become unsuitable for collection for re-use as a fuel.
- Small amounts of **some** List B products such as vegetable oils may not greatly change the actual properties of the List A products.
- However, mixing of List A and List B products is strongly discouraged as there is no guarantee that the resulting mixture would be suitable for used oil collection.

Within the scope of this document, used oil must either not have any flammable liquid classification (Flashpoint > 93^0C) or have a Flammable Liquids Category 4 Class under the UN GHS7 Classification System (Flashpoint >60^0C or ≤93^0C).

2.0 The Used Oil Collection System

The used oil management system can be divided up as follows:

- small volume generators
- public collection points
- industrial/commercial generators
- collectors and transporters
- storage and processing
- end users (e.g. industrial boilers)
- exporters

The effective collection and transport of used oils from the point of generation to end-use locations is essential if used oil is to be utilised or disposed of in an environmentally acceptable and safe way.

The following sections of this code address each of the components of the used oil collection system and provide advice to the relevant parties on their roles and responsibilities with regard to used oil.

The aim is to:

- prevent contamination of used oil with inappropriate materials;
- encourage small volume oil generators to deliver their used oils to local collection centers;
- encourage retail outlets which sell lubricating oils to arrange for used oil collection facilities to be available to their customers and the general public;
- encourage the provision of publicly available collection facilities in rural areas that are inadequately served by retail outlets selling lubricating oils;
- provide safe and efficient collection and transportation procedures for used oil;
- set out the operational and testing procedures and equipment to be used by any party aggregating used oil in a transfer or tank farm facility;
- provide guidance and information on what is and what is not an appropriate use for used oil; and
- ensure the safe handling of used oil by those who collect, transport, store, process, use or dispose of used oil.

3.0 Small Volume Generators

Many people buy small amounts of lubricating oil to use at home. Collectively this ends up generating significant volumes of used oil. This section of the code aims to provide information to these "small volume generators" on how to handle and what to do with their used oil.

3.1. Definition of a small volume generator

Small volume generators are those oil users who have no on-site used oil storage, and typically accumulate volumes of less than 60 litres of used oil at any one time. The large numbers of private motorists who change their own oil fall into this category.

3.2. What are your responsibilities?

People who maintain their own vehicle(s) and who change the engine and/or other oil(s) should comply with the following procedures:

- Place a drip pan directly under the vehicle's oil pan plug to collect as much as possible of the used oil and to prevent spills, before draining oil from the sump.
- If you are changing your oil filter, loosen the old filter (use a filter wrench if necessary), then spin it off and drain as much oil as possible into the drip pan. Place the filter upside down in a container. Drain for 24 hours. Add the used oil to what you already have in your collection container. If you can, take the old filter to a local scrap metal dealer or public collection point. If you don't have any other alternative, wrap the filter in newspaper and dispose of it through your domestic waste collection.
- Pour the used oil into a clean, empty container with a tight lid (e.g. the plastic container the clean oil was supplied in)**. DO NOT MIX IT WITH ANY OTHER SUBSTANCE.**
- Take the used oil to your nearest used oil public collection site.

3.3. Where do you take your used oil?

Public collection sites fall into two types: those where the public can leave the used oil in its container at a drop-off bin and those where the used oil is poured into a bulk tank.

Drop-off bins are available at a number of locations including:

- oil retail/reseller sites such as;
- auto accessory stores; and
- DIY stores.

Bulk tanks are available at some landfills and other properly designated sites.

3.4. Inappropriate methods of disposal of used oil

The following methods of disposing of used oil are inappropriate due to the actual or potential adverse environmental impacts:

- unauthorised disposal on the ground, or into watercourses, sewers or drainage systems;
- burial;
- using used oil for dust control, weed abatement, vegetation control, timber preservation by painting, staining or dipping, pest control or as a carrier fluid for agrichemicals (pesticides or herbicides);

- use as a marker, e.g. on playing fields;
- placing used oil in rubbish bins to be collected as part of household waste (except for disposal of well drained used oil filters and oily rags);
- open-air burning;
- combustion in, for example, kerosene burners, or as a fuel; or
- any other practices, in which the used oil may cause contamination of the ground and ground water, migrate to watercourses, contaminate air or have negative impacts on humans, plants, animals or other organisms.

4.0 Public Collection Sites

For the collection of used oil from small volume generators to be effective, there needs to be an appropriate number of public collection points available. This section aims to encourage retailers of virgin oil to the public to recover the used oil, and local authorities to take a more proactive role in used oil collection. It also provides a guide on what is required to comply as a used oil public collection site.

4.1. Definition of a public collection site

Any site or facility that accepts/aggregates and stores used oil collected from small volume generators is a public collection site. Public collection sites fall into two types: those where the public can leave the used oil in its container at a drop-off bin and those where the used oil is poured into a bulk tank.

4.2. What Are Your Responsibilities?

All retailers of oil are strongly encouraged to promote the recovery and/or reuse of their oil. This can be enhanced by posting a sign at the point of sale either advising the consumer that the outlet accepts used oil, or that you have made arrangements for another outlet to accept used oil on your behalf.

Oil retail/reseller sites

All sellers of oil in packages of 20 litres or less are therefore encouraged to:

- have a suitable facility available to take back used oil at the point of sale at no charge to the consumer, or
- arrange for a third party within a 10 km radius in an urban area, and at an appropriate location in a rural area, to accept oil on their behalf.

Sellers should also prominently display a sign advising customers of recommended recovery arrangements for the site.

If the aggregate quantity collected exceeds 1000 litres, the sites must comply with the requirements of Appendices 3 (Site requirements) and 5 (Spill management).

Local authorities

Where a public collection site utilises bulk tanks, such as at landfills, those facilities must comply with the provisions of section 5 below and the appendices of this code.

4.3. Classification of Public Collection Sites

Used oil public collection points are classified as either controlled collection or as general collection sites based on the ability to prove that the used oil on site is not contaminated by other products.

Controlled collection sites

A used oil public collection point can be classified as a controlled collection site when the site can demonstrate, by appropriate in-house procedures for handling used oil that it is protected from receiving unwanted or contaminated oils (see Appendix 1). In particular, it is protected from receiving flammable liquids.

General collection sites

Used oil public collection points that cannot show they are protected from receiving unwanted or contaminated oils will be classified as general collection sites. The site requirements specified in Appendix 1 are to be applied.

5.0 Industrial and Commercial Used Oil Generators

Industrial and commercial operators must store or dispose of their used oil in a manner that is not detrimental to human health and the environment. Industrial and commercial generators may have complicated operations and must take care to segregate used oils generated from different processes to avoid contamination of the separate oil streams. This includes:

- not contaminating segregated oil with any other oily fluid that may appear to be the same substance, and
- not contaminating oils with flammable liquids.

5.1. Definition of an industrial or commercial used oil generator

Industrial and commercial generators are defined as those parties who in the course of their commercial operations generate or accumulate used oil. In all cases the site storage of used oil is unlikely to exceed 5000 litres.

Typical sites include:

- automotive vehicle repair workshops
- industrial manufacturing operations
- other commercial operators, for example sites generating used gear oil and sites generating used hydraulic oil.

These are essentially sites that are not public collection sites.

Industrial and commercial generators of used oil are classified as either a controlled collection site or as a general collection site.

Controlled collection sites are sites where the used oil has not been contaminated by other hazardous substances. This means being able to demonstrate by in house procedures that the used oil comes from closed systems where cross-contamination with other substances has not occurred during typical industrial processes, for example contamination with refrigerants or solvents.

General collection sites are sites where it cannot be demonstrated that the site is protected from receiving contaminated oils or unwanted substances. The site requirements specified in Appendix 1 must be applied.

5.2. What Are Your Responsibilities?

As a generator of used oil you must collect and store used oil in dedicated facilities which are designed, labelled and operated to minimise contamination and spillage. The used oil must be prevented from becoming contaminated with other substances such as petrol, diesel, solvents, agricultural chemicals, water, or engine coolants. If contamination with other substances does occur, the contaminated substance must be immediately treated as a hazardous waste that requires competent management.

You must provide separate dedicated facilities for each of the main types of used oil:

- automotive engine lubrication and circulating oils, including engine oil, transmission fluids, final drive and drive-line fluids, brake fluids and power steering fluids, hydraulic oils, turbine oils, heat transfer oils, compressor oils, industrial gear oils;

- used metal working/cutting oils, including neat cutting, grinding, machine, rolling, quenching and coating oils, and undiluted soluble metal-working fluids (but excluding chlorinated products); and
- electrical insulating oils. If these contain polychlorinated biphenyls (PCBs) or other chlorinated organics they must not be mixed with any other oil. If you suspect that the oil might contain more than 5 ppm PCBs, you should contact the EPA for advice on handling and disposal.

You must ensure that your staff have been trained to be aware of the procedures for the storage and handling of used oil, and of the need to keep used oil separate from other substances, especially flammable liquids.

5.3. Site Requirements

The site requirements, including management procedures which must be followed, are specified in Appendix 1.

The requirements for storage tanks are specified in Appendix 2.

Procedures for spills are specified in Appendix 3.

6.0 Collection and Transportation

This section sets out the operational, testing, equipment and recording procedures to be used for the transportation of used oil in bulk.

6.1. Definition of a Transporter

Used oil transporters are those parties who commercially collect used oil from more than one used oil generator or collection point and transport it to a used oil transfer facility or tank farm facility (as defined in Section 7.1). This does not include domestic users of oil who transport small quantities (e.g. less than 60 litres) of used oil from the point of generation to a collection site.

6.2. Your Responsibilities

Used oil must be collected in a manner that is not detrimental to human health and the environment. When collecting and transporting used oil you must ensure that the used oil has a flash point greater than 60^0C. To do this you must either:

- conduct a flash point test or vapour test at each collection point, or
- conduct a pre-collection audit of the site you are collecting oil from.

It should be noted that portable flash point testing equipment is available but may not be considered practical in some Pacific contexts. Transporters can, however, easily carry LEL gas detectors, which are often combined with detectors for other gases (e.g. oxygen, carbon monoxide, hydrogen sulphide.) An audible alarm is usually set at 10% of the detector calibration gas and conversions are available to calculate LELs for other gases. LEL detectors should be calibrated regularly and records should be kept of the calibrations.

The LEL is the “Lower Explosive Limit” and at the LEL is defined as the lowest concentration (by percentage) of a flammable gas or vapour in air that is capable of causing a fire in presence of an ignition source.

The site inspection should cover the following areas:

- storage equipment
- site management procedures
- general site tidiness
- potential hazards
- source of used oils
- whether the site is a controlled collection site
- collection of List A substances only
- where there is any doubt, a flash point test or vapour test must be undertaken

If the site meets the criteria for collecting used oil, you and the site operator can agree on an appropriate collection service schedule for the site.

If you are a used oil transporter you must ensure that the vehicle transporting the used oil meets the criteria for the type of sites that the used oil is being transported from (see Section 6.3). The types of vehicles that are required for a general collection site and a controlled collection site differ.

You should keep records for each site detailing the date and volume of used oil collected. This can be an invoice/receipt for each site. If invoices are not provided, the site operator must subsequently have access to your collection records if required, for use as evidence of appropriate used oil management.

If oil is accidentally discharged during collection and/or transportation, you must take immediate action to protect human health and the environment; for example, contain the spill by bunding the discharge area, notify local authorities and clean up the spill. Spills must be reported to the site operator and to the appropriate agency, such as a local council, as soon as possible.

Sites should keep records of each spill in excess of 5 litres. These records should be retained for at least 3 years.

6.3. Requirements for Drivers and Vehicles

The following requirements are to be observed:

- All tank wagons used in the collection of used oil must comply with relevant national regulations for the transport of hazardous substances. If used oil is collected in bulk from general sites where there is a possibility of contamination with Flammable Liquids of GHS7 categories 1, 2, or 3, then the used oil must be transported in a tank wagon suitable for the transport of petrol.
- If you collect and transport used oil in bulk from controlled sites where the oil can be guaranteed to have a flash point (closed cup) above 60^0C (that is, it has a GHS7 Flammable Liquid Category 4) then a tank wagon suitable for diesel will be sufficient. If the flashpoint is above 93^0C then a tank wagon suitable for non-flammable substances will be sufficient.
- All tank wagons must carry a road tanker spill kit for cleaning up any minor spillage. For further information on spill kits, spill preventions, response and clean-up procedures for transporters see Appendix 3.
- Any spillage of used oil at a customer site must be cleaned up. This may be by using the vehicle's spill kit. If the spill is greater than can be handled by the spill kit, the driver must wait at the site until a clean-up crew has arrived and responsibility for the clean-up is handed over to them.
- All hoses must be plugged or capped when not in use. All suction pipes are to be stored in an enclosed leak-proof container or locker complete with a drain point so that it can be drained of product if necessary.
- All tank wagons should work on a no-product-to-ground policy.
- All drivers must undergo training for tank wagon work, and this must be documented.
- All drivers must have the current drivers licence for the vehicle they are driving. If the substances being transported, including any local requirements for licensing drivers for transporting dangerous goods, then these requirements must also be observed. Special training is necessary.
- Additional precautions are required if the used oil being transported has a flash point less than 60^0C. This includes applying hazardous atmosphere zones for substances with GHS7 flammable liquid categories 1 and 2. These zones are areas around the tankers where sources of ignition must be excluded.
- Vehicles with product that could be contaminated with GHS7 flammable liquid categories 1, 2 or 3, are to be labelled with UN Number "1993", Shipping name "Waste Flammable Liquid NOS", and Common Name "Used Oil, Hazchem 3[Y]". This information must also be stated on the accompanying transport documents.

6.4. Vacuum Tankers

Prior to using a vacuum tanker, even in controlled sites, the driver should check to ensure that GHS7 Categories 1, 2 and 3 flammable liquids have not inadvertently been disposed of in the tank which is being collected from. Vacuum tankers can only collect these liquids if the vehicle is designed and constructed for them, or otherwise there is a risk of fire or explosion.

6.5. Static Electricity

Static electricity is a problem when pumping petroleum substances. The following precautions must be taken whenever used oils are pumped.

- Always earth road vehicles before loading or unloading. Before pumping commences and the tank is being unloaded or loaded, attach a loading or unloading hose that is electrically continuous to the tank. You can also use a separate static strap that can be attached to the tank. The tank must be earthed.
- Avoid splash loading when top loading into empty vehicles. Ensure that the fill pipe reaches as close as possible to the bottom of the tank or use bottom filling.
- Avoid pumping water or air with petroleum substances.
- Maintain a slow loading rate until the fill pipe on the receiving vessel is covered by at least 100 mm.

6.6. Records

When you collect and deliver used oil you should maintain records of this transaction for a minimum of three years. Each tank wagon load of used oil must undergo flashpoint testing or vapour testing (See Section 6.2 above) before it is delivered to a used oil transfer facility. This will ensure contaminants are not present in the load. Records of this testing should be retained for three years.

Acceptance

As a used oil transporter, you must keep a record of each used oil batch accepted for transport. Records for each batch must include:

- the name, address and ID number (if applicable) of the transporter and whoever provided the used oil for transport;
- the date of acceptance of the used oil;
- a description of the used oil being transported;
- the quantity of used oil accepted; and
- the signature of a representative of whoever provided the used oil for transport. The signature must be dated on receipt of the used oil.

Delivery

As a used oil transporter, you must keep a record of each shipment of used oil that is delivered to another used oil transporter, user or transfer facility. Records of each delivery must include:

- the name and address of the receiving facility or transporter;
- the ID number (if applicable) of the receiving facility;
- the date of delivery;
- the quantity of used oil delivered;
- the signature of a representative of the receiving facility or transporter. This must be dated on receipt of the used oil; and
- the results of the flashpoint test or vapour test of each tank wagon loads of used oil.

6.7 Delivering Used Oil

Used oil transported from a collection point must only be unloaded at a site that meets the criteria for a used oil transfer facility/tank farm facility (see Section 7).

6.8 Transportable Containers

Where IBCs (Intermediate bulk containers) are used for the collection and transportation of used oil, these must comply with chapter 6.5 of the UN Model Regulations on the Transport of Dangerous Goods.

IBCs are required to be inspected at 2.5 yearly and 5 yearly intervals. These inspections are required to be in accordance with the UN Model Regulations.

A compliant IBC needs to be marked and needs to display the date of the latest inspection.

Where portable tanks are used for the collection and transportation of used oil, these must comply with chapter 6.7 of the UN Model Regulations. Furthermore the attachment of the portable tank to the deck of the vehicle must be able to resist the forces experienced when being transported.

7.0 Storage and Processing

This section concerns owners and operators of used oil bulk storage facilities together with those who have operations for processing, refining or disposing of used oil. It does not apply to people who carry out incidental processing operations on used oil during the normal course of transportation (see Section 6). It includes the use of used oil as a fuel in any operation.

7.1. Used Oil Facilities

Bulk storage facilities

A used oil tank bulk storage facility is defined *as any facility at a site that receives and aggregates used oil from used oil transporters (as defined in Section 6.1) for subsequent additional transportation, processing, re-refining or use and which is not a used oil generator.*

A bulk storage facility typically consists of a tank farm and may include the incidental processing of used oil through, for example, stripping water.

Typically, bulk storage facilities are likely to receive used oil from used oil transporters in large volumes i.e. received in bulk by tank wagon.

Processing and use plants

Used oil processing or use plants are *any facilities which either receive and aggregate used oil from used oil transporters (as defined in Section 6) and which also process, re-refine or use the used oil.*

These are facilities that engage in physical operations designed to make used oil more amenable for the production of fuel oils, lubricants or other used oil-derived products. Processing includes, but is not limited to, any mechanical or chemical treatment, as well as blending used oil with virgin petroleum products (excluding those with flammable liquids classifications GHS7 Categories 1, 2 and 3).

Bulk storage facilities are subject to more rigorously controlled practices than for either virgin oil stored at commercial operations or used oil stored at public and industrial / commercial collection points. The reasons for this are:

- storage of greater volumes
- the likelihood that such sites will sometimes receive used oil contaminated with flammable liquids.

7.2. What Are Your Responsibilities?

Owners and operators of used oil bulk storage facilities and used oil processing, refining or burning sites must hold current consents to operate such facilities, and maintain and operate them in accordance with these consents. Used oil bulk storage facilities must also minimise contaminated waste which will require disposal to landfills, for example, by shredding, washing and recycling plastic oil containers.

Each site must comply with all relevant requirements of the relevant legislation.

7.3. Storage Facilities

Tanks

Tanks must comply with the following:

- Stationary tanks must be compliant with Appendix 2 (New Tanks) or Appendix 5 (Existing Tanks) of this code.
- A means to prevent unauthorised access is to be provided; this can include padlocking inlet and outlet valves when not in use.
- Above ground stationary tanks of 1,000L or more must have a secondary containment system. A secondary containment system is a system in which the used oil is contained if it escapes from the container or containers in which it is held. The used oil must be able to be recovered from the secondary containment system. A common form of secondary containment is a compound with bund walls. The secondary containment system must have a capacity of at least 110% of the largest tank at the site.
- The bund floor must be impervious.
- Below ground stationary tanks must have a secondary containment system of at least the capacity of the tank.
- Each tank is to have some method to determine the volume of used oil in it.
- All tank maintenance is to be recorded and the records kept for five years.
- At each site the operator is to have a sufficient storage capacity on site certified for flammable liquid storage to allow for discharge from the largest capacity of a vehicle that may be received, in the event of a load being contaminated with a low flash point substance.
- The vehicle discharge area must be bunded. The bund must equal or exceed the volume of the largest compartment of any vehicle to be discharged.
- Operating requirements are specified in Appendix 1 to this code.

7.4. Transfer Operations

During loading and unloading of used oil at a used oil facility, a staff member must be in attendance at all times.

Records

All sites that hold, process, refine or dispose of used oil are to keep records of incoming oil by date, volume, source and flash point. Records of oil going off site should indicate date, volume, and destination. Owners and operators of sites that hold, process, refine or dispose of used oil must keep documentation that acts as an audit trail, Sites must also keep disposal records for any hazardous by-products generated in the process. This includes sludges and ash, and spent fuller's earth containing oil.

All records should be retained for at least three years.

Spill/ Emergency Management Procedures

Employers and staff must be properly prepared to manage an emergency involving hazardous substances, including having emergency response procedures and equipment. These include:

- At least two fire extinguishers if at least 500L of used oil is held when the used oil is of GHS7 Flammable Liquid Category 4, although it is good practice to have fire extinguishers available regardless of the hazard classification of the used oil.
- A spill kit that is appropriate for cleaning up used oil. This should contain personal protective equipment (PPE) that may include overalls, boots, gloves, eye protection.

It should also contain spill handling equipment, containment equipment, absorbent materials and information on what to do when a spill occurs.

- Signage that notifies employees, emergency services and other people of the presence of hazardous substances. Refer to Appendix 1 for details of signage.
- A secondary containment system that meets the requirements set out in section 7.3.
- An evacuation plan.
- An emergency response plan if your site holds greater than1000L of used oil. If your site holds less than 1,000 litres of used oil it is still good practice to have an emergency response plan.
- Where applicable, emergency response procedures for low flash point substances and/or substances at elevated temperatures.
- Emergency response plans must be site specific and cover all reasonably likely occurrences and the responses for your site and shall include a description of what you will do to:
    - call emergency services;
    - warn people at the workplace and in nearby areas that an emergency has occurred;
    - advise people how they can protect themselves and how they can help other people involved in the emergency; and
    - manage the emergency so that damage is minimised.
- The plan must also:
    - Name the people with specific responsibilities (such as fire wardens, first aiders) and include the contact information for them and emergency services;
    - Include how to get information about the hazardous properties of the substances involved in the emergency;
    - State the location and purpose of emergency equipment and materials that may be needed;
    - Set out the actions to take for each potential emergency and the order in which to take them; and
    - Be available to all people that are listed in the plan as having responsibilities and also to emergency services.
- Emergency response plans must be tested at least annually; records of tests must be kept for at least two years. You must update your plan if there are changes to the hazardous substances present at your workplace, or if there are changes to staff that have specific emergency responsibilities. You must test altered plans as soon as possible, and in any event no later than 3 months after the change.
- After any emergency, you should review your plan and identify steps to prevent future incidents.

8.0 Use or Disposal of Used Oil

8.1. Air Quality

Open burning of used oil is environmentally unacceptable, due to a wide range of potential emissions, including dioxins.

Combustion of used oil for purposes of generating useful heat, steam, power or electricity must also be done with due regard to air emissions.

If you collect and transport used oil to people who intend to utilise the used oil as a fuel, you should ensure the user intends to use it in an environmentally acceptable manner.

Combustion processes must meet ambient air concentration requirements for fine particulate (PM10), sulphur dioxide, nitrogen dioxide, ozone and carbon monoxide.

Complying with the fuel specifications in 8.2 below does not ensure that the combustion process will ensure compliance with these requirements.

8.2. Reprocessed Oil Specifications

Used oil reprocessed for use as a fuel oil must be converted into a distinct marketable substance. It must meet the following fuel specifications:

Maximum levels
Lead 100 ppm maximum
Arsenic 5 ppm maximum
Cadmium 2 ppm maximum
Chromium 10 ppm maximum
Total halogen content 1,000 ppm maximum (no PCBs allowed)
Flash point 60°C minimum

Each batch of reprocessed oil must be tested to ensure this specification is complied with. Such testing would normally be undertaken by the provider of the used oil and the records should be retained for at least 5 years. This includes situations whereby used oil is collected and used directly as fuel oil.

For practical purposes smaller batches e.g. batches less than 10,000 litres, may be consolidated for testing so long as the sample is representative.

8.3. Disposal of Used Oil

Used oil that is to be disposed of (as opposed to being used for burning or being re-used) will usually involve a commercial transaction, with the ownership of the used oil generally passing to the collector.

In this case, the responsibility for environmentally acceptable disposal practices passes to the collector.

The used oil must be disposed of by:

- Exporting it as a waste – all requirements of the Basel Convention or Waigani Convention (whichever is relevant), must be followed.
- Treating it so that it is no longer hazardous.

The latter point does not include depositing it in a sewage facility or spreading on land surfaces (including roads) but does include combustion in a managed incineration facility.

8.4. Disposal of Packaging

Unless the package is to be reused or recycled, the package must be rendered incapable of containing any substance and disposed of:

- in a manner consistent with disposal of the used oil itself; or
- through a public or commercial waste collection service.

Appendix 1: Site Requirements

Management procedures

- The operator must provide written material to staff about the appropriate procedures for handling used oil and oil filters. Safety datasheets must be available.
- The used oil collection and transportation agent must comply with the guidelines in Section.
- Collection facilities are sited to prevent used oils from entering sewerage and storm water systems, drainage channels and the natural environment.
- Storage facilities should be inspected visually on at least a weekly basis to ensure that a standard of cleanliness and that environmental management is maintained, and that regular collections are carried out.
- Stationary container facilities should be audited annually, with records retained on site until the next audit. These audits will generally be by internal staff (i.e., conducted by storage facility staff).
- The site must have a management plan in the event that the storage tanks and other receptacles become contaminated with other hazardous materials, such as flammable solvents. This may entail calling a transporter able to handle GHS7 Categories 1, 2, and 3 flammable liquids and arrange for collection of it.
- The site must have health and safety procedures that are appropriate to the handling that is taking place.
- In the event that a spillage occurs, records should be kept for all spills in excess of 0.5L. These records should be retained for at least 3 years.

Additional management procedures for controlled collection sites

- Controlled collection sites must be able to show they are protected from receiving unwanted or contaminated oils by having the following management procedures in place on site and by ensuring that staff are aware of them. Only used oils from List A are acceptable.
- A legible and visible sign must be prominently mounted which advises persons wanting to dispose of used oil to avoid contaminating it and either:
  - lists the products that are not accepted (antifreeze, paints, solvents, petrol, diesel etc.), and says where unacceptable products should be disposed of, or
  - specifies the used oils that the storage tank is limited to receive.
- Signs that meet this requirement include:

USED LUBRICATING OIL
(76 pt black print yellow highlight)
LUBRICATING OIL
TRANSMISSION AND HYDRAULIC FLUIDS ONLY
(46 pt green highlight)

PROHIBITED SUBSTANCES
(Black 76 pt yellow highlight)
PETROL, DIESEL, COOLANTS, PAINT SOLVENTS, PARTS WASHING FLUIDS and KEROSENE are forbidden
(Black 46 pt, red highlight)

- For public collection sites where used oil is poured into a tank, the operator must visually inspect the used oil and reject any that he or she suspects may contain something unacceptable. This is unnecessary for public collection systems where the used oil is retained in sealed leak proof containers such that each batch of used oil is separated from other material.
- For sites generating used oil, the operator must have a documented process for accepting the used oil and this process must be made aware to the staff involved.

Segregation of incompatible substances

Used oil must not be in contact with any substance or material with which it is incompatible. Incompatible substances, including those held in packages, must be held separately. Used oil must be separated from:

- Explosive substances
- Flammable gases
- Flammable solids
- Oxidising substances

Public collection facilities

The collection agent at a public collection site must provide a safe, leak proof facility for the collection of customer's contaminated containers/receptacles. The agent must ensure that contaminated receptacles are recycled. If recycling is not available, containers must be disposed of in a safe and appropriate manner, e.g. at a suitable landfill.

All public collection sites must:

- be monitored at all times they are available to the public, and
- be inaccessible to the public when not monitored e.g. at night, and
- be weather tight, and
- be located away from sources of ignition, gutters, storm water drains, waterways and environmentally sensitive areas, and
- be advised to local fire and pollution response authorities in order to minimise the risk of spills, fires, contamination and over-filling.

If the used oil has a GHS7 Category 4 Flammable Liquids classification, the used oil containers/receptacles must be stored:

- outside, or in a detached building;
- in a room with walls and ceiling constructed with 60/60/60 fire resistance rating provided not more than 450 litres are situated in the store; or
- in a room with walls and ceiling constructed with 120/120/120 fire resistance rating provided not more than 2000 litres are situated in the store.

Rooms in the third and fourth bullet points may have a door opening into the building provided that:

- The door of the room has a fire resistance rating of -/60/60 in the case of bullet point three and - 120/120/120 in the case of bullet point four;
- The door is fitted to be self-closing in the event of a fire near the doorway, and
- There are no combustible materials within 3 metres of the doorway;
- No portion of the structure within 3 metres of the doorway is constructed of combustible materials; and
- The door is kept closed except when goods are placed in, or removed from, the room.

This code of practice is not applicable to used oils which have a flashpoint 60^0C degrees Celsius or lower. These oils may require additional precautions.

Removal of used oil

Removal of used oil from public collection sites as well as industrial and commercial generator sites should only be done through a commercial collection agent who complies with procedures as set out in Section 6.

Fire extinguishers

Fire extinguishers must have a capability of 30B4 (the rating should be marked on the fire extinguisher) and must be positioned within 30 meters of the used oil.

Emergency response plan

Employers and staff must be properly prepared to manage an emergency involving the used oil. The site must have a single emergency response plan for all of the hazardous substances held in it. This plan must describe all of the reasonably likely emergencies that may arise and for each of these must:

- Describe the actions to be taken to
  - Warn people at the place, and in surrounding areas that may be adversely affected by the emergency, that an emergency has occurred;
  - Advise those people about the actions they should take to protect themselves, and
  - Help or treat any person injured in the emergency;
  - Manage the emergency so that its adverse effects are first restricted to the area initially affected, then as soon as practicable reduced in severity, then if reasonable possible eliminated;
  - If any of the substances remain, re-establish the conditions imposed on it when it was approved; and
- Identify every person with responsibility for undertaking any of the actions described above and give information on:
  - How to contact the person;
  - Any skills the person is required to have;
  - Any actions that person is expected to take; and
- Specify
  - How to obtain information about the hazardous properties of and means of controlling the substance or substances that may be involved;
  - Actions to be taken to contact any emergency service provider;
  - The purpose and location of each item of equipment or material; to be used to manage the emergency;

- How to decide which actions to take; and
- The sequence in which actions should be taken.

All equipment, materials and responsible people specified in the plan, must be:

- present at the location;
- available to reach the location within the times specified; or
- in the case of trained persons, be available within a specified time frame.

The emergency response plan must be available to every person responsible for executing the plan or part of it and to every emergency service provider.

The emergency response plan must be tested:

- at least every twelve months; and
- within 3 months of a change to the plan, persons or procedures.

The test must demonstrate that every procedure and action is workable and effective. The results of the test must be documented and held for at least 12 months.

Furthermore the site must demonstrate that it has a spill-response and clean-up plan, which includes:

- up-to-date procedures for contacting clean-up contractors;
- procedures for notifying the relevant municipal authorities;
- staff awareness; and
- having a spill kit available (see Appendix 3).

Secondary containment systems

Secondary containment systems are required when the quantity of used oil is equal to or greater than 1,000 litres. It is also recommended that secondary containment systems are installed when the quantities are below 1,000 litres. The capacity of the secondary system is dependent on the capacity of the containers in which the substances are held whether they are held above or below ground, and whether the used oil has a flammable classification or not.

Table 2: Minimum secondary containment capacity for used oil that is flammable i.e. Category 4

Container Size	Quantity – Total Aggregate Capacity	
Categories	**Less than 5,000 litres**	**Greater than or equal to 5,000 litres**
≤ 60 litres	At least 50% aggregate capacity	2,500 L or 25% aggregate capacity whichever is the greater
> 60 and up to 450 litres	At least 100% aggregate capacity	5,000 L or 50% aggregate capacity whichever is the greater
> 450 litres	At least 110% of the capacity of the largest container	

Table 3: Minimum secondary containment capacity for used oil that is not flammable.

Container Size	Quantity – Total Aggregate Capacity	
Categories	**Less than 20,000 litres**	**Greater than or equal to 20,000 litres**
≤ 60 litres	At least 25% aggregate capacity	5,000 L or 5% aggregate capacity whichever is the greater
> 60 and up to 450 litres	At least 25% aggregate capacity or 110% of the largest container whichever is greater	5,000 L or 5% aggregate capacity whichever is the greater
> 450 litres	At least 110% of the capacity of the largest container	

Common forms of secondary containment systems include:

- a compound with bund walls or a depression in the ground;
- a tank with a double skin and where the interstitial space is monitored; and
- for small volume collection, leak proof containers held within a larger receptacle.

In order to avoid the secondary containment system collecting rainwater during periods of rain, a shelter or roof can be placed over the tank and secondary containment system.

Signage requirements

- Signage is required when the quantity of used oil is equal to or greater than 1,000 litres.
- Signs must advise people of the hazardous properties of the substances that are present at a site and must have precautionary statements that tell people what to do to avoid unintended consequences.
- Signage needs to be in English, clear, easily understood, and able to be read from a distance of 10 metres.
- If the used oil is located in a building, signs must be positioned at every vehicular and pedestrian access to the building and at each entrance to any room or compartment inside the building which the used oil is located in.

These requirements are complied with by signs which show the following:

- The hazardous substances present, with the use of signal words such as HAZCHEM, or WARNING.
- The hazardous properties of the substances and the type of hazard of each substance present. If substances have multiple classifications these all need to be considered when displaying signs.
- Precautionary statements that prevent unintended ignition or combustion.
- Emergency actions to be taken in the event of an emergency.

This can be provided in pictorial form, for example by pictograms (as in the example below). The sign below is suitable for used oils with a flash point above 60oC. (Separate consideration is required if the flash point is 60^0C or below.)

HAZCHEM 3Z	
USED OIL	
 Combustible Liquid	In case of emergency dial 111 Fire, Police or Ambulance Keep away from ignition sources – no smoking, no naked flames
 Ecotoxic to Aquatic Life	Ecotoxic to aquatic life – contain spills, protect waterways. 24Hr company contact Dial xx xxxxx Regional council pollution hotline Dial xx xxxxxx

Personal Protective Equipment

A person who handles the used oil in a place of work must use protective clothing or protective equipment that is designed, constructed, and operated to ensure that the person does not come into contact with the used oil and is not exposed to a concentration of the used oil that is greater than the workplace exposure standard for the used oil, or any component of it.

Practical application of these requirements for the handling of used oil includes the use of gloves and safety goggles and a mask. Additional personal protective equipment may be necessary for other reasons for example, the use of safety boots/shoes to minimise physical injuries.

Equipment to handle the used oil

A person in charge of the used oil must ensure that equipment used to handle it—

a) retains the used oil, without leakage at all temperatures and pressure for which the equipment is intended to be used; and
b) dispenses or applies the used oil, without leakage, at a rate and in a manner that the equipment is designed for.

Appendix 2: Tanks for Used Oil

This appendix specifies the minimum standard for used oil stationary container systems at small volume industrial/ commercial and public collection sites that is, for tanks less than 5,000 litres capacity.

Design and Construction

All new above ground tanks with a capacity of 250 litres or greater and all new below ground tanks must comply with a recognised international code of practice which should be stated on the tank, and can be manufactured from steel or fibreglass reinforced plastic. Steel tanks can have integral secondary containment to avoid the need for external secondary containment.

For used oil at controlled sites and which does not have a flammable hazard classification, that is, the flash point is greater than 93^0C, thermoplastic tanks and rotationally moulded polyethylene tanks are also acceptable. Again they must comply with a recognised international code of practice which is stated on the tank.

Information to be supplied with tanks

Tanks installed on site should be supplied with sufficient information to readily support their compliance.

Existing tanks

Tanks installed prior to the date of this code must comply with the provisions of Appendix 5 of this code.

Design considerations for tanks

In addition to the requirements of the recognised international code of practice, the following must also be adhered to:

Openings

All openings should be located in the top of the tank above the safe fill level. Where it is necessary to install an opening below the safe fill level, e.g. for use as a water drain or sediment removal, this opening must have a secure closure which is only open under the supervision of a trained person. A secure closure is one which is locked and which requires a key to open or one which requires tools to open.

Fill point

Where the used oil is tipped into the tanks from containers, the fill point is to be of sufficient size to allow easy draining of the oil containers. A mesh is to be provided in the fill point to stop the ingress of solid particles or matter.

Discharge

The discharge point must be suitable for the collection truck to pump out the used oil. If permanently fitted, the pipe on the suction discharge should terminate as close to the bottom of the tank as practicable to enable the collection of as much sludge as possible. If sludge stays in the bottom of the tank it will become hard and reduce the workable volume of the tank. Sludge is not easily removed.

Colour

The external surface of the finished tank may be any colour.

Safe fill level

The tank is to be marked, or have an indicator, showing the safe fill level.

Security

Unless unauthorised access to the tank is prohibited e.g. the tank is located in a lockable building:

- All openings for the tank must be able to be locked, and.
- Tanks are to be kept locked at all times, unless they are being loaded or unloaded.

Siting of used oil tanks

- Tanks are to be sited to minimise the possibility of leakage through malicious or accidental damage.
- The tank's location must be where there is some degree of supervision by the site operator, who has responsibility for what is emptied into the tank.
- The tanks should be sited so that oil can be safely loaded and unloaded from the tank.
- Tanks must be mounted on an impermeable surface such as concrete or asphalt. They must not be placed on soil.
- If the tanks are located near vehicular traffic, consideration should be given to the movement of vehicles. Where impact that is resulting in damage to the tank is likely to occur, protection should be installed e.g. barriers or bollards.
- Tank wagons must be able to manoeuvre safely around the site.
- Potential hazards, such as recycling and rubbish bins, should not be placed within 2 metres of a used oil tank sited outdoors.
- On sites equipped with drainage interceptors, tanks must be located within the interceptor's catchment area. On sites not equipped with interceptors, the tank should be located at least eight metres from any storm water, sump or other drain.

Tanks containing used oil may be located inside buildings:

- at controlled sites;
- when the used oil does not have a flammable hazard classification, that is, the flash point is in excess of 93 deg C5; and
- when fabricated from steel; or
- when fabricated from fibreglass reinforced plastic or plastic with a capacity no greater than 1000 litres.

When tanks are located inside, they should be located so that a used oil collection truck can park within five metres.

Tanks for the collection of used oil situated outside must be separated from buildings and site boundaries by the following separation distances. These separation distances are only applicable where there is no possibility of contamination with Category 1, 2 or 3 substances:

Table 4: Separation Distances

Tank capacity	Separation distance
Up to 600 litres	0 metres
600 L to 1,000L	1.5 metres
1,000 L to 2,500L	2 metres
2,500L to 5,000L	3 metres
5,000L to 25,000L	4 metres
25,000L to 50,000L	5 metres
50,000L to 100,000L	6 metres
100,000L to 250,000L	7 metres

Separation distance between tanks

Tanks up to 5,000 litres capacity used for the collection of used oil must be separated from each other by 0.5 m. Tanks greater than 5,000 litres capacity or where there is possibility of contamination with Category 1, 2 or 3 liquids require greater separation distances..

Secondary containment systems

If tanks are above-ground and have a capacity of at least 1000L, a secondary containment system is required. Details are provided in Appendix 1.

Markings

All tanks used for the collection of used oil should have signs which specify the oils which are accepted and the oils which are not accepted. This sign may be mounted on the tank or in a prominent place nearby. A suitable sign is specified in Appendix 1.

Appendix 3: Spill Prevention, Response and Clean-up Procedures

Spill kit: suggested contents list

Suitable for vehicles and also sites storing up to 5,000 litres.
(This may be varied to suit local conditions if required).

Table 5: Spill kit contents

Contents	Quantity
Hydrocarbon absorbent pads	10
Bag of particulate (Oil Dry or similar)	1
Absorbent socks	1 x 1.5 m - 1 x 3 m
Hydrocarbon pillows	2
PVC drain cover	1
Folding trenching tool	1
Pair PVC gauntlets	1
A pot of Vetta Paste, Plug 'N' Dike, Pig Repair putty, or similar	1
Polythene disposal bags	2
Contents list	1

Spill prevention

Key precautions are as follows:

Table 6: Precautions

Do	To prevent
Park away from traffic flows, and/or use safety cones if necessary	Tank wagon being hit by other traffic
Protect tank with barriers or bollards if there is nearby vehicle movement	Tank being hit by traffic
Dip tank wagon and site tank before collection	Tank wagon overflow
Regular inspection of hoses, pumps and other equipment	Equipment failure

If spills do occur

Any spillage or similar escape, or contamination of other products by the used oil shall, where possible, be rectified before the collector leaves the site.

- For each action, put on appropriate personal protection equipment.
- Isolate the source of spillage and close vehicle valves.
- If it is safe, contain and control the spill.
- Stop all operations in the immediate areas of concern and remove or shut down any ignition sources.

- Close the interceptor valve if there is one on site, and close and/or block any drains leading off the site.
- Report spillage to site operator.
- Start the clean-up. Request assistance if necessary.
- Ensure that any materials used in the clean-up are disposed of appropriately.
- If the spillage occurs on unsealed ground, the soil must be removed and disposed of to an appropriately approved facility – either landfill, transfer station, or hazardous waste treatment facility.
- If there is a risk of oil entering a sewer, storm water drain or natural waterway, the relevant local authority should be notified immediately.

Notice of any such incident shall be given to the appropriate agency as soon as possible by way of a report detailing the cause and severity of the incident and the remedial measures taken. Your emergency management procedures must include the possibility of a spill of used oil occurring.

Appendix 4: Tank Wagon Operating Requirements.

Prior Use

Before a tank wagon is used to carry a hazardous substance of any hazard classification that differs from a hazardous substance previously carried:

- the tank wagon must be completely emptied of the previously carried substance; or
- the mixture of the hazardous substance with any residue of the previously carried substance remaining in the tank must not create a substance of a different hazardous property, nature, or degree.

Filling tank wagons

A person in charge of a tank wagon must ensure that a tank compartment is not filled to a level beyond the maximum filling level.

The person in charge of transferring a liquid hazardous substance to or from any tank wagon must—

- attend the tank wagon from the time the transfer of the hazardous substance commences and until it is completed; and
- ensure that, from the time the transfer of the hazardous substance commences and until it is completed, the tank wagon does not move; and before the tank wagon is moved, ensure that all tank openings are securely closed when the transfer of hazardous substance is complete.

Supervision of tank wagons

The person in charge of a tank wagon that contains a liquid hazardous substance of any hazard classification (or residue vapour from the hazardous substance) may leave that tank wagon unattended—

- in suitably managed transit depot that takes into account the hazardous nature of the tank contents; or
- on a road or elsewhere for up to 5 minutes if the tank wagon is—
  - at least 30 m away from all areas of high intensity land use other than roads;
  - and at least 8 m away from all areas of low intensity land use other than roads.

Firefighting capability

A tank wagon that carries a Flammable liquid equal or below Flashpoint 93^0C must have—

- at least 1 fire extinguisher in the tank wagon cab; and
- on each tank at least 1 fire extinguisher.

Fire extinguishers must be installed and located on a tank wagon in a way that the person in charge of the tank wagon is able to extract any extinguisher from its location and hold it ready for use within 10 seconds.

Authorised persons

A person in charge of a road tank wagon with a tank capacity of not less than 2,000 litres must, at any time a hazardous substance (or residue of a hazardous substance) of any hazard classification is contained in the tank, ensure that no person is in or on the tank wagon except the persons—

- necessary for the operation of the tank wagon; and
- who carry out maintenance, inspection, training, or management duties.

Appendix 5: Existing Tanks

Existing tanks may be constructed in accordance with the following parameters:

Materials

The materials for used oil tanks shall be fit for purpose. All materials used in the construction of used oil tanks must be able to retain product for the life of the tank without leakage or deterioration from either the product contained or external conditions. To minimise the hazard from static electricity, the mixing of conductive and nonconductive materials shall be avoided in the construction of containers.

Plastic Tanks

Tanks constructed from plastic materials (including fibreglass reinforced plastic tanks) shall be capable of withstanding exposure to ultraviolet radiation in the environment within the temperature range -18°C to +55°C.

Containers made from plastics shall contain anti-static inhibitors.

When a container is moulded of polyethylene it should be tested for stress cracking in accordance with Appendix G of AS/NZS 2906:1999, and it shall not crack. **Note:** This requirement may be waived if the manufacturer can provide evidence that the polyethylene is crack-resistant.

Tanks with a capacity of less than or equal to 1000 litres,

The maximum size for fibreglass or plastic igloos shall be 1,000 litres.

Capacity

The container will have an overflow capacity, to the lowest opening, not less than 105 percent of the safe fill level.

Colour

The external surface of the finished tank may be any colour.

Safe fill level

The tank is to be marked, or have an indicator, showing the safe fill level.

Tank fixing

The tank is to have suitable points for fixing to the ground. These are to be clearly identified by the manufacturer. The mountings and the tank need to be able to withstand a side force equivalent to the weight of the container and the used oil contained in the tank. The average specific gravity of lubricating oil is to be taken as 0.9. The purpose of this side force requirement is to allow for wind and earthquake forces, not for impact resistance.

Tanks compliant with this specification and which are constructed from a form of plastic material have a have a finite life of 10 years from the date of manufacture. Where the date of manufacture is not known, the tank must be removed from service within 5 years from the date of this code.

IBCs

IBCs (intermediate bulk containers) are designed as transportable containers. They are not designed for, or approved as, stationary tanks. Information on IBCs is included in section 6.8 of this code.

Annex 5 – Transboundary Shipment of Used Oil

1.0 Classification of Used Oil for collection, transport and marine shipment

1.1 Classification of Used Oil

Used oil that has not been treated or processed is classified as waste. Waste oils and oils unfit for their original purpose are categorised as wastes to be controlled by Annex 1 of the Basel Convention[1] as Y8 or Y9 wastes. Authorities in concerned countries should control the transboundary shipments of used oil from their country to ensure that environmentally sound management of the used oil is achieved, there is compliance with national and international laws and regulations, and that where possible local management solutions are prioritized and implemented (Section 2).

1.2 Used oil mixing

Used oil can be collected from a range of different sources. At some collection points there is the possibility that different types of used oil and other similar liquids may be mixed, this may result in the used oil being classified as hazardous and not suitable for collection. Section 1 of the New Zealand Code of Practice "Management and Handling of Used Oil HSNOCOP 63" lists those oils which can be mixed [List A], and those substances which cannot be mixed [List B] with List A oils.

1.3 Used oil flash point testing

The New Zealand Code of Practice further states that used oil being collected cannot have any flammable liquid classification under the New Zealand HSNO Act or have a 3.1 D classification (ie a flashpoint between 60° C and 93° C). Used oil collectors must conduct a flash point test or vapour test at each collection point to determine that the used oil to be collected has a flash point higher than 93° C. Used oil that does not pass these tests must be segregated and managed as hazardous waste. It should not be mixed with or diluted with other used oil.

2.0 Transboundary protocols – The Basel and Waigani Conventions

An overview of the Basel and Waigani Conventions and the status of the Parties is detailed on the Basel Convention[2] and SPREP websites[3]. The two Conventions aim to reduce hazardous waste generation and promote environmentally sound management of hazardous wastes, wherever the place of disposal. This is addressed through a number of general provisions requiring States to observe the fundamental principles of environmentally sound waste management (Basel Convention Article 4). Hazardous wastes may not be exported to a State not party to the Basel Convention, or to a party having banned the import of hazardous wastes

[1] https://www.basel.int/Portals/4/Basel%20Convention/docs/text/BaselConventionText-e.pdf
[2] http://www.basel.int/default.aspx?tabid=4834
[3] https://www.sprep.org/convention-secretariat/waigani-convention

(Basel Convention Article 4). Parties may, however, enter into bilateral or multilateral agreements on hazardous waste management with other parties or with non-parties, provided that such agreements are "no less environmentally sound" than the Basel Convention (Basel Convention Article 11). In all cases where transboundary movement is not, in principle, prohibited, it may take place only if it represents an environmentally sound solution, if the principles of environmentally sound management and non-discrimination are observed and if it is carried out in accordance with the Convention's regulatory system.

The regulatory system is the cornerstone of the Basel and Waigani Conventions and is based on the concept of prior informed consent, it requires that, before an export may take place, the authorities of the State of export notify the authorities of the prospective States of import and transit, providing them with detailed information on the intended movement. The movement may only proceed if and when all States concerned have given their written consent (Basel Convention Articles 6 and 7). In the event of a transboundary movement of hazardous wastes having been carried out illegally, i.e. in contravention of the provisions of articles 6 and 7, or cannot be completed as foreseen, the Convention attributes responsibility to one or more of the States involved, and imposes the duty to ensure safe disposal, either by re-import into the State of generation or otherwise (Basel Convention Articles 8 and 9).

2.1 The Basil Convention

The Basel Convention on the Control of Transboundary Movements of Hazardous and their Disposal (the Basel Convention) is the broadest and most significant international treaty on hazardous and other wastes. Its objectives are to regulate international trade in hazardous waste and other wastes, to minimise their generation and transboundary movement, and to ensure their environmentally sound disposal. The Basel Convention was adopted in March 1989 and entered into force in May 1992.

2.2 The Waigani Convention

The Waigani Convention is modelled on the Basel Convention and constitutes the Pacific regional implementation of the international hazardous waste control regime. There are however some differences between the two conventions: the Waigani Convention also covers radioactive wastes; and its territorial coverage includes each Party's Exclusive Economic Zone (200 nautical miles) (rather than extending only to the outer boundary of each Party's territorial sea (12 nautical miles) as under the Basel Convention). **The Waigani Convention bans the importation of Hazardous and Radioactive Wastes into Forum Island Countries, and controls the Transboundary Movement and Management of Hazardous Wastes within the Pacific Region**. The Waigani Convention entered into force in 2001.

Table 1. Conventions ratified or acceded by country

County	Basel	Waigani
Samoa	Yes	Yes
Solomon Islands	Yes	Yes
Tonga	Yes	Yes
Vanuatu	Yes	Yes

2.3 Role of Competent Authorities

All shipments of hazardous waste under the auspices of the Basel or Waigani Convention must have the prior written approval of the countries of export, import and any transit countries.

The approvals are managed by the Competent Authorities of the concerned countries. A list of the competent authorities for member countries can be found on the SPREP website[4]. Each Competent Authority shall be responsible for the implementation of notification procedures for transboundary movement of hazardous wastes in accordance with the text of the convention.

Table 2. Competent Authorities

County	Basel	Waigani
Samoa	MNRE	MNRE
Solomon Islands	tba	MECDM
Tonga	MIEDECC	MIEDECC
Vanuatu	DEPC	DEPC

3.0Transboundary shipment permits

3.1 Notification & Movement Pages

Applications for approval to make used oil shipments under either the Basel or Waigani Convention use a common format based on the Basel documentation format for applications for approval to make shipments. Instructions for completing the notification and movement pages for an application can be found on the Basel Convention website *"Revised notification and movement documents for the control of transboundary movement of hazardous wastes and instructions for completing these documents"*[5]. The validity of an approval is 12 months.

3.2 Contract & transfer of ownership and responsibility

The existence of a valid contract between the exporter and the disposer is required. The point at which the responsibility and ownership of the waste transfers from the exporter to the disposer must be clearly stated in the contract. If an authorized transboundary movement of waste cannot be completed in accordance with the terms of the contract or the convention, the waste is to be returned to the exporter. Alternatively, the importer may, with the agreement of the concerned Parties, arrange for another suitable disposal facility in the import country to manage the environmentally sound management of the shipment.

3.3 Insurance requirements

The Basel and Waigani Conventions require that for any transboundary movement of hazardous wastes there shall be an adequate public liability insurance, bond or other guarantee as may be required by the exporting, importing and any transit Parties. The insurance cover must be appropriate for the type of waste and the amount being shipped, and must be sufficient to cover any incident including personal injury or damage to property, and the cost of remedying all contamination, spillage or pollution caused by a sudden, accidental event. Refer to the guidelines for importing hazardous waste into New Zealand for further details on insurance requirements for transboundary shipments[6].

[4] https://www.sprep.org/sites/default/files/30-SPREP-Meeting/Waigani%20Convention/WC_5.2_Att.1-List_Competent_Authorities_and_Focal_Points.pdf

[5] http://www.basel.int/Portals/4/Basel%20Convention/docs/techmatters/forms-notif-mov/vCOP8.pdf

[6] https://www.epa.govt.nz/assets/Uploads/Documents/Hazardous-Substances/Guidance/2e44f5838c/Importing-hazardous-waste-into-New-Zealand

3.4 Shipping pre-requisites

The Conventions require that the Competent Authority of the export country shall not allow a transboundary movement until it has received written consent for the shipment from the import country and all other concerned transit countries. The shipping company may also impose other controls on the waste substances it may accept for shipment and the packing of the waste, for example most shippers will not accept waste oil in flexi-tanks.

3.5 Environmentally Sound Disposal

Competent Authorities are required to ensure that transboundary shipments are destined for facilities that provide for environmentally sound management of the waste. Parties are required to ensure the availability of treatment and disposal facilities for the environmentally sound management of hazardous wastes, which shall be located, to the extent practicable, within areas under its jurisdiction, taking into account social, technological, and economic considerations. However, where Parties are for geographic, social or economic reasons, unable to dispose of hazardous waste safely within those areas, co-operation should take place between Parties to facilitate the availability of adequate treatment and disposal facilities and to improve and achieve the environmentally sound management of hazardous wastes.

4.0 Packing and documentation for marine shipment

4.1 ISO-Tanks

An ISO Tank is a tank container which is built according to the ISO standards (International Organisation for Standardisation). ISO tanks are designed to transport and store liquids, both hazardous and non-hazardous. They offer a safe and cost-efficient method for transporting used oil. ISO tanks offer the advantage to maximize the volume that can be transported (23,000 litres) in a 20' container footprint. A disadvantage is that if the unit is on hire for an extended term, it must be re-positioned empty for subsequent shipments, therefore shipping cost is potentially doubled.

4.2 Drums and IBCs

Figure 1. UN rating Stamp

Figure 2. Plastic Intermediate Bulk Container (IBC)

Drums used for shipping waste oil must be UN rated and carry the UN stamp (Figure 1). Closed head drums used for liquids are designated UN 1A1. Open head drums used for solids are designated UN 1A2. Drums are usually steel and must be in "as new" condition. Plastic drums may be acceptable provided that they have not been stored outdoors and subject to UV rays from sunlight which may cause deterioration of the plastic.

Wood pallets used for packing drums must carry the ISPM15 stamp[7]. ISPM 15 was developed to address the global spread of timber pests by regulating the movement of timber packing and dunnage used in international trade. ISPM 15 describes phytosanitary measures that have been used and are designed to reduce the risk of the introduction and/or spread of quarantine pests associated with timber packaging material.

Intermediate Bulk containers (IBCs; Figure 2) used for transporting used oil must be in "as new" condition and carry a registration plate that indicates it is certified for transporting dangerous goods. The base of the IBC should be metal, wood bases are generally not suitable. The bottom valve of the IBC must be lockable in the closed position and be fitted with a blanking cap.

4.3 Packing the shipping container

Where 20' general purpose shipping containers are used for the marine transport of used oil, the shipping container must have a valid CSC plate. This is the safety approval plate that contains the main details of the container. The details shown on a CSC plate are as prescribed by the Convention for Safe Containers (1972). Drums should be strapped and/or wrapped to secure them on pallets. Where IBCs are stacked two high the bottom frame of the upper IBC should be secured to the top of the lower IBC using strong cable ties, to prevent movement during shipment. The contents of the shipping container should be strapped or braced with timber to prevent movement during shipment. In particular, the front row of the cargo must be strapped or braced to ensure the cargo does not shift during shipment and put pressure on the doors of the container.

4.4 Labelling and placarding

Used oils should be classified under the Environmentally Hazardous Substance class as:

- UN Number: 3082;
- Dangerous Goods Class: Class 9 (Miscellaneous dangerous substances and articles);
- Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Used Oil);
- Hazchem Code: 3Z (The HAZCHEM Emergency Action Code specifically designed to inform emergency services / fire brigades of actions required).

4.5 Basel/Waigani Movement document procedures

Movement pages must be completed and sent to the Competent Authorities of all concerned countries before a shipment can commence. Instructions for completing the movement page for a shipment can be found in the text for the Waigani Convention Annex VI A[8].

[7] https://www.mpi.govt.nz/export/timber-wood-products/using-wood-packaging-for-exports/requirements/country-ispm-15-requirements/

[8] https://www.informea.org/en/treaties/waigani-convention/text

4.6 Shipping documents

The following documents are required for transboundary shipments:

- Container packing lists;
- Dangerous goods declaration;
- Valid notification and completed movement document;
- Transit port approvals; and
- Bills of Lading.