Samoa Feasibility Study

Contract to conduct a feasibility study to develop a National Used oil Management Plan for Samoa, Solomon Islands, Tonga and Vanuatu

Contract to Conduct a Feasibility Study and Develop a National Used Oil Management Plan for Samoa, Solomon Islands, Tonga and Vanuatu

Samoa Feasibility Study

December 2022

David Haynes & Katenia Rasch

Going Troppo Consulting for Araspring Consulting Ltd

This document has been produced with the financial assistance of the AFD. The views expressed herein can in no way be taken to reflect the official opinion of the AFD.

Executive Summary

Poor management of used oil is a major environmental concern for Pacific Island nations. Samoan Customs data (2018-2021) indicates that an average of 740,000 Lts of lubricants are imported into the country annually. Based on this data, imported lubricants generate around 370,000Lts of used oil annually that needs to be sustainably managed. There is little data available on actual generation rates of used oil but is likely to be between 200,000-350 Lts per year. Used oil is currently used for a range of purposes in Samoa, some of which can be considered legitimate re-use (eg in the construction industry and for concrete pipe manufacturing) as well as for environmentally unacceptable uses such as sports field marking. Used oil is also stored long-term with approximately 240,000 Lts of used oil currently in long-term bulk storage[1].

Environmentally sustainable management of used oil is theoretically governed under the Samoan Waste Management Act (2010), which is administered and implemented by the Samoan Ministry of Natural Resources and Environment (MNRE). The Act has adequate provisions that could be utilised to manage used oil in Samoa including the oversight of the operation of approved used oil managers including regulation of the ways used oil should be stored, transported and disposed of. In addition, Regulations may be developed and subsequently approved by the Head of State which impose special levies for the purpose of raising revenues for the effective management of used oil under the Act. Improved management of used oil in Samoa under provisions of the Waste Management Act (2010) will help prevent to the deliberate or accidental release of used oil to the environment.

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

- Finalisation of national used oil management policy, including cost benefit analysis of used oil disposal options
- Formation of a national Steering Committee,
- Drafting of national used oil management legislation and regulations, and
- Implementation of collection and dispersal of an Advanced Disposal Fee (ADF) on all imported lubricants
- Development of a national used oil management plan.

These steps are summarised in Table 1.

Table 1. Summary of actions required to achieve best practice used oil management in Samoa

Action	Responsibility	Timeframe	Outcome
Review and revision of the Samoan National Used Oil Management Policy (2013)	Government and Stakeholders	2023	Agreed and endorsed national used oil management policy
Under the Waste Management Act (2020) in relation to used oil management, the Government of Samoa via the CEO, MNRE, is required to designate used oil as a hazardous material	MNRE	2023	Used oil designated a hazardous material
Establishment of National Used Oil Management Steering Committee	MNRE	2023	Expert used oil management body available to provide specialist advice and programme oversight to Government

[1]Estimated volume after dewatering and sludge removal (Ramani, Sun Petrochem Corporation India, pers com Nov 2022)

Action	Responsibility	Timeframe	Outcome
Under the Waste Management Act (2010), development of: • Rules • Operating manuals • Codes of practice • Standards • Regulations to regulate all activities associated with used oil management	MNRE	2023	All activities associated with used oil management are standardised and enforced
Establishment of a user-pays management system enforced under the Waste Management Act	MNRE	2023-2024	Special Fund model, where the government collects the Advanced Disposal Fee (ADF) and pays it back out to a contracted System Operator (Managing Agency)
National Used Oil Management Plan	MNRE Steering Committee	2023	Agreed and endorsed National Used Oil Management Plan
Collection of agreed Advanced Disposal Fee (ADF) on all imported lubricants	MNRE Customs Managing Agency	2024 onwards	Collection of an Advanced Disposal Fee (ADF) on all imported lubricant products enforced under Government regulations
National management of used oil commenced	Managing Agency National Steering Committee	2024 onwards	National management of the collection and export of the used oil.

The establishment of an Advanced Disposal Fee (ADF) will need to be supported by a staged National public awareness campaign run by MNRE to:

- provide accurate information concerning the relative risks posed by used oil to Samoa's natural environments and the governments 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.

A preliminary analysis suggests that there are several sustainable management options for used oil in Samoa that would help protect the environment. These would need to be considered by Government and a National Steering Committee and agreed upon. The options are summarised in Table 2.

Table 2. Used oil management options (all costs Tala)

Management Option for Used Oil	End use of used oil	Responsibility	Estimated Cost (Tala per Lt used oil)	Potential issues
Small-scale pyrolysis	Production of gas and liquid fuel for village cooking	MNRE Village Councils SPREP	Collection: 0.00 Treatment: X.XX Export: 0.00 **Total: X.XX**	• Dependent on small scale (village) demand for pyrolysis products • Difficult to regulate • Only manages a very small percentage of national used oil • Potential for use in Savaii
Large-scale pyrolysis		MNRE SPREP	Collection: 0.52 Treatment: X.XX Export: 0.00 **Total X.XX**	• Dependent on enforced ADF • Dependent on reliable national used oil collection service and storage facilities • Dependent on contracted pyrolysis provider • Dependent on multi-country co-operative effort
Dewatering and filtration	Production of reconstituted lubricant for sale and use	MNRE Management Agency (eg SRWMA)	Collection: 0.52 Equipment: 30,000 Export: 0.00 **Total X.XX**	• Dependent on reliable national used oil collection service • Dependent on contractor (eg SRWMA) to process used oil • Dependent on (eg SRWMA) capacity to market and sell recovered oil • Dependent on management of filtrates and oily water

Management Option for Used Oil	End use of used oil	Responsibility	Estimated Cost (Tala per Lt used oil)	Potential issues
				• Use of recovered product may void engine warrantees
Periodic export of used oil to New Zealand	Used in Pulp and Paper manufacturing	MNRE Management Agency (SRWMA)	Collection: 0.52 Export: 1.19 **Total 1.71**	• Dependent on enforced ADF • Dependent on reliable national used oil collection service and storage facilities • Dependent on offshore shipment meeting International Convention requirements
Periodic export of bulk stored used oil to India/Dubai	Industrial use including road making and steel production	MNRE Management Agency (SRWMA) Sun Petrochem Corporation India	Collection: 0.52 Export: 0.00 **Total 0.52**	• Dependent on enforced ADF • Dependent on reliable national used oil collection service • Dependent on high petroleum prices • Dependent on offshore shipment meeting International Convention requirements • Dependent on willingness of EPC to maintain long-term bulk oil storage

Long term management of used oil in Samoa would be guided and directed by a national Used Oil Management Plan to establish and direct an appropriate management framework to improve national management of used oil. The National Used Oil Management Plan will be presented in the subsequent fourth project report to the Agence *française de Développement* (AFD). The Used Oil Management Plan would have 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 Samoa.
- **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 promote effective used oil management is increased and their engagement strengthened.

The Samoan Used Oil Management Plan goals would be achieved through 11 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 strategic actions are summarised in Table 3.

Table 3. Proposed National Used Oil Management Plan 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	MNRE
G2: Minimisation of the adverse effects of used oil on the	MA2: Appropriate standards and safeguards for the handling, collection, transportation, storage, and disposal of used oil are established and applied	MNRE Private Sector

Used Oil Management Goals	Used Oil Management Actions	Responsible Entity
environment and people of Samoa		
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	MNRE
	MA4: Management of used oil complies with all relevant Samoan laws	MNRE
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 principal	MNRE Used Oil Managing Agency
G5: Duplication of effort is minimized, and coordination of used oil management activities are maximized to ensure effective implementation of the Policy	MA6: Used oil management concerns are appropriately addressed in waste management legislation, regulations, and planning	MNRE
G6: The capacity of stakeholders to promote effective used oil management is increased	MA7: National Used Oil Management Steering Committee established	MNRE Stakeholders
	MA8: Opportunities are created to develop industry and community understanding, skills and general capacity to manage used oil	MNRE Private Sector
	MA9: Collection, storage and disposal of used oil outsourced where possible to the private sector	MNRE Private Sector
	MA10: Regulation of and service delivery of used oil management activities will be clearly separated	MNRE Used Oil Managing Agency
	MA11: A national register of oil and lubricant importation data and used oil generation maintained and reported annually	Used Oil Managing Agency MNRE

Routine monitoring (the systematic and routine collection of project information) by MNRE will ensure learnings from experiences are captured and evaluated to improve practices and activities in the future. Routine assessment of annual completed programme data will inform future strategic decisions, thus improving the project or programme in the future with regards to programme relevance, effectiveness, efficiency, impact and sustainability

The bulk stockpile of approximately 350,000 Lts of used oil (estimated at 240,000lts of used oil after dewatering and sludge removal) will also need to be managed in a once off programme as part of used oil management in Samoa. This will also require management of removed sludge and oily water.

Abbreviations

ADF	Advanced Disposal Fee (Levee)
AFD	*Agence Française de Développement*
ARF	Advance Recycling Fee
BPS	Bluescope Pacific Steel
CBA	Cost Benefit Analysis
CEPA	Conservation and Environment Protection Authority (PNG)
CNG	Compressed natural gas
COP	Code of Practice
CSC	Container Safety Certification (plate)
EPC	Electrical Power Corporation
EPR	Extended Producer Responsibility
GDP	Gross Domestic Product
GEFPAS	Global Environment Facility - Pacific Alliance for Sustainability
HSNO	Hazardous Substances and New Organisms (Act)
IBC	Intermediate Bulk Containers
ISO	International Organisation for Standards
ISPM15	International Standards For Phytosanitary Measures No. 15
IWMF	Integrated Waste Management Facility
JICA	Japan International Cooperation Agency
LPG	Liquefied petroleum gas
MNRE	Ministry of Natural Resources and Environment
MoF	Ministry of Finance
MOU	Memorandum of Understanding
MRF	Material recovery facility
MTP	Moana Taka Partnership
NZ	New Zealand
PAHs	Polycyclic aromatic hydrocarbons
PCBs	Polychlorinated biphenyls
PFO	Processed Fuel Oil
PICTs	Pacific Island Countries and Territories
PPE	Personal Protective Equipment
PPM	Part per million
PPS	Pacific Product Services
SAICM	Strategic Approach to International Chemicals Management (Programme)
SC	Sunpetroleum Corporation
SCL	Salters Cartage Limited (NZ)
SPA	Samoa Port Authority
SPREP	Secretariat for the Pacific Regional Environment Programme
SRWMA	Samoa Recycling and Waste Management Association
SSC	Samoa Shipping Corporation
SWAP	Sustainable Waste Actions in the Pacific
SWIRE	SWIRE Shipping
SWOMP	Samoa Waste Oil Management Programme
TEU	Twenty Foot Equivalent (Shipping Container)
TT	Tanktainer
TWM	Total Waste Management (PNG)
UN	United Nations
USEPA	United States Environmental Protection Agency

WOPU	Waste oil processing unit
WPC	Waste Petroleum Combustion Ltd

Contents

1.0 AFD Programme to Develop a Used Oil Management Plan

1.1 Project background

Pacific Island Countries and Territories (PICTs) are under increasing pressure from development and growing human population, and the social and economic pressures associated with this growth. Increased populations and urbanisation have led to increased product imports and waste generation. Much of the waste generated through these imported products cannot be economically managed due to issues of small and isolated populations; economic volatility; geographical isolation from large economies; limited institutional, financial, and human capacity; and inadequacy of infrastructure to capture and process waste materials. Poor waste management poses risks to the economies of PICTs, as most rely heavily on clean environments for agricultural activities and a vibrant tourism industry.

The overall work covered in this project is funded by the *Agence française de Développement* (AFD), referred to hereafter as "Committing to Sustainable Waste Actions in the Pacific (SWAP)", and it aims to improve sanitation, environmental, social, and economic conditions in Pacific Island countries and territories through proper waste management. To achieve this, the overall work focuses on three streams of wastes: used oil, marine debris, disaster wastes and an overarching issue on sustainable financing mechanisms. Eight countries and territories will benefit from this overall project which include Fiji, French Polynesia, New Caledonia, Samoa, Solomon Islands, Tonga, Vanuatu, and Wallis and Futuna.

This project focuses exclusively on used oil and four countries have been chosen to benefit, namely Samoa, Solomon Islands, Tonga and Vanuatu. The main outcome of the project is a National Used Oil Management Plan for each country. As part of this process, Araspring Ltd (New Zealand) in association with Going Troppo Consulting (Australia), Pacific Reef Savers (New Zealand) and POPs Environmental Consultants Ltd (New Zealand) were awarded a contract by SPREP/AFD to develop used oil management plans for Samoa, Solomon Islands, Tonga and Vanuatu in December 2021. This report focuses on the Samoa component of the work.

1.2 Used oil background

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 adopted by the Basel Convention Guidance document[2] and also by the SPREP Used Oil Export and Import Guidance Document[3].

For the classification of hazardous waste under the Waigani[4] and Basel Conventions[5], the term "waste oil" is used, and this is taken to also mean "used oil".

[2]"Basel Convention Technical Guidelines on Used Oil Re-refining or Other Re-uses of Previously Used Oil" UNEP 1997
[3]"Waste Assessment Guide for the Export and Import of Used Lubricants and Used Oil" SPREP 2015
[4]*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).
[5]Basel Convention on the control of transboundary movements of hazardous wastes and their disposal and Annexes and Amendments (1998)

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

Used oil is 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 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. 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.

Large volumes of used oil can potentially enter aquatic ecosystems in water runoff from urbanized areas. Typically, oil spilled on soil migrates downward by gravity into ground waters, and spreads laterally via capillary forces and soil heterogeneity. Once in the environment, oil hydrocarbons and associated metals may persist for years. Ingested oil may adversely impact the ability of animals to digest food and damage their intestinal tracts. Oil also reduces the insulating capacity of animal furs and the water repellency of bird feathers increasing morbidity and mortality due to exposure and eventual drowning. There are also major community health considerations around the fate of used oil due to its toxicity. Used oils typically contain a range of compounds that may have adverse impacts when released into the environment. These compounds include polycyclic aromatic hydrocarbons (PAHs), heavy metals, additives and antioxidants, trace levels of chlorinated solvents, and polychlorinated biphenyls (PCBs). Exposure to these compounds can result in damage to the liver, kidneys, heart, lungs, and nervous system. Poly-aromatic hydrocarbons are also potent carcinogens. Oil concentrations as low as one part per million (ppm) can contaminate drinking water.

Used oil has been poorly managed in the Pacific in the past and is one of the priority environmental management issues for the region.

1.3 Project deliverables

The overall project deliverables are set out in Table 4 below:

Table 4: Project Deliverables

Deliverables	Task	Due Date
1. Inception Meeting	1.1 Participate in an initial meeting with the SWAP PMU organised by SPREP	Within two weeks of the project commencement on 10 January 2022
2. Inception Report	2.1 Host an Inception Workshop with National stakeholders 2.2 Undertake a detailed desktop review of existing legislation, policy, strategy and plans that address waste management, institutional frameworks, and other	Within 1 month following Inception meeting

Deliverables	Task	Due Date
	enabling frameworks relevant to waste management	
3. Analysis Report	3.1 Undertake an analysis of used oil production and existing used oil collection, storage, treatment, disposal and export services 3.2 Analyse findings against government and stakeholder priorities	Within 2 months following approval of the Inception Report
4. Feasibility Study Report	4.1 Development of a feasibility study based on all the information gathered and data obtained through the consultations, interviews, and investigations 4.2 Feasibility Study Presentation	Within 2 months following approval of the Analysis Report
5. Draft National Used Oil Management Plans	5.1 Compile all the gathered information to develop a Draft National Used Oil Management Plan 5.2 National Stakeholder Presentation	Within 2 months following approval of the Feasibility Study Report
6. National Used Oil Management Plans	6.1 Final national used Oil Management Plans	Within 1 month following approval of the Draft National Used Oil Management Plans

1.4 The Feasibility Report (This Report)

Under the terms of the contract, the Consultant is required to:

- Develop a Feasibility Report based on all the information gathered and data obtained through the consultations, interviews, and investigations reported previously in an Inception Report[6] and an Analysis Report[7].
- Present these findings on best practice national used oil management to Government and non-government Stakeholders.
- Provide a clear premise for the product and geographical scope and likely services necessary to meet the stated government and stakeholder needs within a draft national Used Oil Management Plan.

As per the contract, the Feasibility Study needs to address:

a) Products to be included in the Used Oil Management Plan
b) Sectors to be serviced by the Used Oil Management Plan
c) Recommendations for options on how to best deliver the Used Oil Management Plan and services
d) Identification and specifications of any equipment and materials required for the establishment of used oil collection, storage, treatment and disposal stations, including cost estimates.
e) Assessment of the capacity-building needs of government and the oil and waste industry to effect the implementation and operation of the proposed Used Oil Management Plan.

[6]Haynes and Rasch (2022). *Samoa Inception Report.* AFD/SPREP. 15pp.
[7]Haynes and Rasch (2022). *Samoa Analysis Report.* AFD/SPREP. 48pp.

f) Identification of the system data capture and monitoring necessary to effectively manage service contracts, report to the community, and assist the country to report on its obligations under international conventions (monitoring system details, including any technological requirements, should be detailed).
g) Provision of recommendations for national engagement and education of the oil / used oil sector and community to assist with the implementation and success of the National Used Oil Management Plan.

1.5 Assistance Provided

The writers hereby acknowledge and thank the Ministry of Natural Resources and Environment (MNRE) for their assistance with the scheduling of meetings and interviews with key stakeholders. Thanks also to all stakeholders interviewed for their time and information provided during interviews.

2.0 Key findings of the Samoa National Analysis Report

2.1 Samoa national background

The independent State of Samoa forms the larger and western part of the Samoan Archipelago in the south-west Pacific. Samoa comprises of two main islands and seven smaller islands. Its total land area is about 2,820 km^2 with the two main islands of Upolu and Savaii containing 1,115 and 1,700 km^2 respectively. The 2021 national census recorded a total population of 200,010[8]. Samoa's population lives in 343 villages including the Apia Urban Area. Over 98% of these are traditional villages or villages the are largely autonomous of the National Government and may have a population ranging in size from less than a 100 to as many as 500 people. With some exceptions, national development initiatives especially the development of physical infrastructure, public utilities of water, electricity and social services for education, health, etc are the responsibility of the national Government. But there are recognized roles of villages, led by the Councils of Chiefs as having an integral role overall national development process.[9]

2.2 Current and predicted national lubricant (oil) importation rates

Recent Samoan Department of Customs data on lubricating oil and related product imports is presented in Table 5. Only three Tarif lines are recorded by Customs, limiting the potential usefulness of the collected data. This data can be compared with the annual oil (lubricant) import data collected from Customs in 2011 which recorded that an average of 594,000 Lts of oil was imported into Samoa annually at that time[10].

Table 5. Customs Data, Samoan oil imports 2018-2021 (1,000lt)[11]

Oil Type	HS Tariff Code[12]	2018	2019	2020	2021
Petroleum oils	2709.00.00	153	161	37	
Lubricating oils	2710.12.70	541	792	612	544
Petroleum oils	2710.20.00	12		60	123
Total		**706**	**953**	**709**	**667**
Four Year Average					**740**

2.3 Current and predicted used oil generation rates

Very little accurate information has been able to be obtained about the quantity of used oil currently generated in Samoa (Table 6).

[8]https://www.sbs.gov.ws/images/sbs-documents/Population_and_Demography/2022/FinalPrelim_V3Final_final.pdf
[9]Government of Samoa (2015). *Samoa's National Biodiversity Strategy and Action Plan (NBSAP) 2015-2020*. 81 pp.
[10]Envirocare Engineering Consult Ltd (2013). *Cost Benefit Analysis of Used Oil Management Options for Samoa.* Unpublished Report to the Secretariat of the Pacific Environment Programme. 31 pp.
[11]Samoa Customs data (2022)
[12]https://www.abs.gov.au/statistics/classifications/australian-harmonized-export-commodity-classification-ahecc/latest-release

Table 6. Available used oil generation data for Samoa 2022

Generator	Annual used oil generation rate (Lts)
Asco Motors	15,000
Ford Hyundai	9,600*
Nissan	23,000*
Lucky Construction	9,600
Lee Transport	480
Ott Construction	7,000
Ah Liki Construction	2,500
Blue Bird Transport	1,800
EPC	12,000**
Vailima Brewery (Samoa Breweries Ltd)	8,000*
TOTAL	**90,000**
Estimated national total (50% of averaged 2018-2021 lubricant imports)	**370,000**
Estimated total 2011[13]	**248,000**

* Generated over an unknown period
**Estimated

Past Pacific used oil audit reports have provided a "rule of thumb" that about 40-50% of lubricating oil added to engines ended up being collected as used oil. Based on the current average lubricant import data from Samoan Customs, it could therefore be expected that 330,000-430,000 Lts of used oil is currently generated in Samoa each year (Table 6). However, a significant (although currently unknown) fraction of this generated used oil is currently reused in the construction industry and does not require disposal (see Section 2.4).

Over the longer term, using GDP increases to estimate lubricant import increases, a total of 3.6M Lts of used oil may be generated in Samoa by 2031 which needs to be managed (Table 7). This assumes an average annual GDP for Samoa of 1.4%, based on historical data. However, importantly, any estimate of forward used oil generation rates is complicated by the lack of correlation between GDP and actual lubricant importation rates. The reality is that historically, GDP is essentially unconnected to actual quantities of lubricating oil imported (R^2 = 0.275).

Table 7. Estimated used oil generation rates for Samoa 2022-2030

Year	Actual and estimated GDP[14,15]	Oil Imports (x1000lts)	Estimated used oil generation (x1000lts) at 50% recovery	Estimated cumulative used oil generation (x1000lts) 50% recovery
2010	2.55			
2011	4.17	**594**	**297**	
2012	-4.09	**563**	**281**	
2013	-0.42	**469**	**235**	
2014	0.05			
2015	4.30			
2016	8.13			
2017	1.04			
2018	-1.23	**706**	353	

[13]Envirocare Engineering Consult Ltd (2013). *Cost Benefit Analysis of Used Oil Management Options for Samoa.* Unpublished Report to the Secretariat of the Pacific Environment Programme. 31 pp.
[14]https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=WS
[15]https://www.statista.com/statistics/728304/gross-domestic-product-gdp-growth-rate-in-samoa/

Year	Actual and estimated GDP[14,15]	Oil Imports (x1000lts)	Estimated used oil generation (x1000lts) at 50% recovery	Estimated cumulative used oil generation (x1000lts) 50% recovery
2019	4.38	**953**	477	
2020	-2.59	**709**	355	
2021	-8.08	**667**	334	
2022	0.01	759*	379*	379*
2023	4.02	769*	385*	764*
2024	4	780*	390*	1,154*
2025	3.51	791*	396*	1,550*
2026	3.01	802*	401*	1,951*
2027		813*	407*	2,357*
2028		825*	412*	2,770*
2029		836*	418*	3,188*
2030		848*	424*	3,612*

*Estimated using average (2010-2021) GDP (1.43%)

2.4 Current used oil disposal practices

Stakeholders have advised that used oil is currently used for a range of purposes in Samoa including:

- Machinery servicing
- Coating to prevention of vehicle corrosion
- As a lubricant in construction activities including steel moulding
- For concrete pipe production
- For sports field marking
- Small scale private use including chainsaw bar lubrication
- Fence post protection from termites
- Kept in long term storage

Therefore, the actual quantity of used oil collected and stored for eventual sustainable disposal is significantly less than the theoretical total national used oil generation rate (Section 2.5)

2.5 Used oil in storage

Whilst most of the used oil generated in Samoa is currently re-used for a range of activities (see Section 2.4), the remainder is stored, and this stockpiled volume will also need to be managed as a component of a Samoan Used Oil Management Strategy. The exact stored volume is unknown, but likely to be around 240,000-350,000 litres (Table 8).[16] No used oil has been exported from Samoa for recycling to date (2022). The Samoa Recycling and Waste Management Association (SRWMA) and JPRISM have jointly collected 60,000 Lts of used oil in 2021 and stored it at the recently opened oil storage facility located at the SRWMA (SWOMP) Storage Facility adjacent to the *Tafaigata* sanitary landfill facility.

[16]It has been estimated that this volume is around 240,000lts of used oil after it has been dewatered and de-sludged (Ramani, pers com Nov 2022)

Table 8. Volumes of used oil reported to be in short and long-term storage (2022)

Location	Volume (Lts) of used oil (short-term)	Volume (Lts) of use oil (long-term storage)
Lucky Construction Ltd	**800**	**800**
Ott Transport	**200**	
Lee Transport	**40**	
Ah Liki Construction	**400**	
Silva Transport	**200**	
Bluebird transport and construction	**100**	
EPC		**290,000**
SRWMA storage site (SWOMP)		**60,000**
ESTIMATED TOTAL		**350,000**
Estimated total after dewatering and coarse filtration[17]		**240,000**

2.6 Environmental risks associated with current national practices

Used oil can potentially enter aquatic ecosystems in water runoff from urbanized areas if it is not contained. Once in the environment, oil hydrocarbons and associated metals may persist for years. Ingested oil may adversely impact the ability of animals to digest food and damage their intestinal tracts. Oil also reduces the insulating capacity of animal furs and the water repellence of bird feathers increasing morbidity and mortality due to exposure and eventual drowning. Used oils typically contain a range of compounds that may have adverse impacts when released into the environment. These compounds include polycyclic aromatic hydrocarbons (PAHs), heavy metals, additives and antioxidants, trace levels of chlorinated solvents, and polychlorinated biphenyls (PCBs). (Human) exposure to these compounds can result in damage to the liver, kidneys, heart, lungs and nervous system. Poly-aromatic hydrocarbons are also potent carcinogens. Oil concentrations as low as one part per million (ppm) can contaminate drinking water.

2.7 Current Samoan policy and regulatory environment

Management of waste (including used oil) in Samoa is carried out under the Samoan Waste Management Act (2010). Under Section 4 of the Act, the Samoan Ministry of Natural Resources and Environment (MNRE) is responsible for implementation of the Act and the regulation and management of waste in Samoa. The functions and responsibilities of the Ministry under the Act include:

- Preparation, adoption and enforcement of rules, operating manuals, codes of practice and standards regulating activities associated with the management of waste in Samoa (Section 4k); and
- Formulation, implementation and enforcement of policies, programs, initiatives, standards and requirements to reduce the generation of waste (Section 4o).

2.7.1 Waste types covered under the Act

The 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

[17]Ramani, Sun Petrochem Corporation India, pers com Nov 2022

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.

2.7.2 Waste regulations

The Head of State (acting on the advice of Cabinet) may endorse Regulations for the proper management and regulation of waste in Samoa and for the management and operation of approved waste management operators (Section 43(1)). Regulations may be made which specify toxic and hazardous waste and regulate the manner in which such waste may be stored, transported and disposed of (Section 43(2)).

2.7.3 Waste related levies

The Head of State (acting on the advice of Cabinet) may endorse Regulations which impose special levies on goods which have adverse effects on the environment, or for the purpose of raising revenues for the effective management of waste (Section 10).

2.7.4 Used oil storage, collection and transportation regulations

Transportation of bulk used oil from collection points to bulk storage or to point of use must be regulated to ensure best environmental practice. The same must be applied for storage. This must consider issues such as:

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

3.0 Best practice used oil management

Used oil is a hazardous substance that poses a potential threat to both humans and the environment, and failure to manage it appropriately could endanger human health, environmental protection and may breach national regulations. Safe, best practice management of used oil can be categorised into five main areas - collection, transport, bulk storage, export, and recovery.

3.1 Used oil collection

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. Best practice used oil collection prevents contamination of the used oil and provides safe handling and efficient collection and transportation procedures for used oil.

3.1.1 Public used oil generators

For the collection of used oil from small volume (<60 Lts) generators to be effective, an appropriate number of public drop off points need to be available. These public collection sites safely aggregate and store used oil collected from small volume generators. Lubricant retailers should prominently display a sign advising customers of recommended recovery arrangements including the location of collection points for used oil. To mitigate any risk to the public or the environment, it is important that large quantities of used oil are not allowed to build up on-site. Regular used oil collections from the site should be arranged as often as is necessary.

3.1.2 Industrial and commercial used oil generators

Industrial and commercial operators (automotive repair workshops, industrial manufacturing operations and other commercial operators) must store or dispose of their used oil in a manner that is not detrimental to human health and the environment. Used oil must be:

- Collected and stored in dedicated facilities which are designed, labelled, and operated to minimise contamination and spillage.
- Used oil storage containers should be within a bunded enclosure that is not open to the rain.
- 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.
- All staff must be trained in the correct procedures for the storage and handling of used oil, and of the need to keep used oil separate from other substances, especially flammable liquids.

3.2 Used oil transportation

Used oil transporters are those Parties who commercially collect used oil from one or more used oil generator or collection points and transport it to a used oil transfer or bulk storage facility. (This does not include domestic users of oil who transport small quantities (e.g. less than 60 Lts) of used oil from the point of generation to a collection site (Section 3.1.1)). Used oil must be collected and transported in a manner that is not detrimental to human health and the environment.

- All drivers must have a valid driver's licence for the vehicle they are driving and appropriate used oil transportation training.

- All tank wagons used in the collection of used oil must comply with relevant national regulations for the transport of hazardous substances, including static electricity protection.
- Transported used oil must have a flash point greater than 60^0C (determined by a flash point test or vapour test at each collection point).
- Records must be kept for each site detailing the date and volume of used oil collected.
- Records must be kept of each shipment of used oil that is delivered to another used oil transporter, user or transfer facility.
- All tank wagons must carry a road tanker spill kit for cleaning up any minor spillage. If oil is accidentally discharged during collection and/or transportation, immediate action to protect human health and the environment must be taken.
- National Legislation and Regulations should provide a mechanism whereby any collection contractor must be licensed by the authorities and hold appropriate quality assurance and environmental certifications.
- Contractor(s) should be audited annually to ensure compliance with collection and transport procedures and proper documentation.

3.3 Used oil bulk storage

3.3.1 Bulk used oil storage

A used oil bulk storage facility is defined as any facility at a site that receives, and aggregates used oil from used oil transporters for subsequent additional transportation. Typically, a bulk storage facility is likely to receive used oil from used oil transporters in large volumes. Best practice requires that owners and operators of used oil bulk storage facilities must:

- Hold current consents to operate such facilities.
- Maintain and operate them in accordance with these consents.
- Must comply with all relevant requirements of the relevant legislation.
- Used oil storage tanks must 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.
- Signage that notifies employees, emergency services and other people of the presence of hazardous substances.
- An emergency response plan.
- At least two fire extinguishers
- A spill kit that is appropriate for cleaning up used oil.

3.3.2 Bulk used oil spill containment system

Best practice requires that above ground stationary tanks of 1000L or more must have a secondary containment 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.
- The secondary containment system must have a capacity of at least 110% of the largest tank at the site.
- The containment (bund) floor must be impervious.
- When used, double skinned storage tanks avoid the need for bunding.

3.3.3 Bulk used oil transfer operations

Best practice dictates that during loading and unloading of used oil at a used oil facility:

- A staff member must attend all times.
- Records of incoming oil by date, volume, source and flash point[18] must be recorded.
- Employers and staff must be properly prepared to manage an oil spill and other emergency situations.
- Staff involved in oil transfer should wear appropriate personal protective equipment (PPE) that may include overalls, boots, gloves, and eye protection.

3.4 Used Oil Export

Responsible national management of used oil in Samoa will most likely require collected bulk used oil to be exported from Samoa for reuse or recycling into the future. This will usually involve a commercial transaction, with the ownership of the used oil generally passing on to the collector (and then to the exporter/receiver). The responsibility for environmentally acceptable disposal practices also passes on to the collector and then the exporter/receiver. Prior to export, collected used oil is analysed to assess its suitability for export and reuse, before being treated in the appropriate manner to salvage whichever fuels, lubricants or metals are present in the mixture. Used oil recovery is a best practice as it significantly minimises impact on the environment as it:

- Prevents waste oil from re-entering the local ecosystem and causing damage.
- The carbon footprint of recovered oil is significantly lower than crude oil.
- A new recycled product is created from or by the used oil.
- Every litre of recovered oil is a litre that does not have to be taken from the ground.

Recycling of bulk quantities of used oil from Pacific Island countries typically involves export of the bulk used oil in appropriate containment to an accredited and licenced used oil exporter and recycler. Used oil export must comply with all relevant international Convention requirements.

3.4.1 Used oil export containment options

Used oil can be shipped offshore in various types of containment, the most common in use are:

- 20 Foot ISO Tanktainers;
- 205 litre UN rated drums; and
- 1,000 litre Intermediate Bulk Containers (IBCs).

Drums and IBCs are loaded into and transported in 20' General Purpose shipping containers (TEUs).

Table 9. Used oil containment and transport options

Containment	Volume transported in one 20ft container equivalent (lts)	Cost to purchase (container load)	Cost to rent including cleaning costs (4 month round trip)	Risk factors
ISO Tanktainer	23,000	$US 35,000	$US 4,500	Built to carry large volumes of liquids
205 Lt Drums (80 per container)	16,000	$US 2,220		Packed correctly will be unlikely to fail
IBCs (20 per container)	20,000	$US 1,000		Must be in excellent (new) condition for shipping used oil
Flexitanks				Generally considered unsuitable for transport of used oil. If used oil is de-

[18]Lower Explosive Limit (LEL) meters could be potentially used as an alternative, low cost assessment technique

Containment	Volume transported in one 20ft container equivalent (lts)	Cost to purchase (container load)	Cost to rent including cleaning costs (4 month round trip)	Risk factors
				watered and filtered it can be classified as re-refined oil and transported in flexitanks as product with no Basel or Waigani issues

ISO Tanks

An ISO Tank is a tank container which is built according to ISO standards (International Organisation for Standardisation). ISO tanks are designed to transport and store hazardous and non-hazardous liquids. 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 for subsequent shipments, therefore the shipping cost is potentially doubled.

Drums

Drums used for shipping waste oil must be UN rated and carry the UN stamp. 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 if 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[19]. 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 invasive species pests associated with timber packaging material.

IBCs

Intermediate Bulk containers (IBCs) (also known as IBC tank, IBC tote, IBC, or pallet tank) are industrial-grade containers engineered for the mass handling, transport, and storage of liquids, semi-solids, pastes, or solids. Intermediate bulk containers can be manufactured from various materials based on the requirements of the application or service the IBC will be used for. Traditional materials include high-density polyethylene. Rigid intermediate bulk containers are stackable, reusable containers with an integrated pallet base mount that provides forklift and/or pallet jack manoeuvrability. IBC tank capacities generally used are often 1,040 and 1,250 litres (275 and 330 US gal). Caged IBC totes are commonly used due to their low cost, wide compatibility, and versatility. If they are used for transporting used oil, they 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.

Flexitanks

Flexitanks are flexible bladders that are used inside 20' general purpose shipping containers to transport some liquids. As used oil is usually categorized as waste, shipping companies and liability insurers generally refuse to carry or provide liability cover for used oil shipped in flexitanks. This is not always the case but generally shipping used oil in flexitanks is not considered best practice.

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

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.

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).

3.4.2 Classification of used oil

The Basel Convention identifies used oil as: "any semi-solid or liquid used product consisting totally or partially of mineral oil or synthesised hydrocarbons (synthetic oils), oily residues from tanks, oil-water mixtures and emulsions arising from industrial and non-industrial sources **where they have been used** for lubricating, hydraulic, heat transfer, electrical insulating (dielectric) 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"**.[20]

3.4.3 Used oil export Convention requirements

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

Used oil that has not been treated or processed is classified as waste. The SPREP Guidance document[21] states:

> *Annex I of both the Basel and Waigani Conventions lists broad categories of waste streams and waste constituents that may be regarded as potentially hazardous. Of these, used oil would fall into one or both of the following categories:*
>
> - ***Y8 Waste mineral oils unfit for their originally intended use***
> - ***Y9 Waste oils/water, hydrocarbons/water mixtures, emulsions***
>
> *A waste which falls under any of the Annex 1 categories is considered to be hazardous unless it can be shown not to possess or exhibit any of the hazardous characteristics (explosive, flammable, corrosive, toxic, etc.) which are listed in Annex II of both the conventions. Oils themselves are not especially toxic, but contaminants such as additives, breakdown products,*

[20]Secretariat of the Basel Convention (1997). Basel Convention Technical Guidelines on Used Oil Re-Refining of Other Re-Uses of Previously Used Oil Basel Convention series/SBC No. 02/05

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

and other substances which may have become mixed with the oils during use, can be much more so.

In addition, oils have the potential to cause environmental damage by virtue of their persistence and their ability to spread over large areas of land or water. Films or coverings of oil may reduce or prevent air from reaching life forms of all types within an area of land or sea, and can rapidly result in significant degradation of environmental quality in those media.

Therefore, used oil is likely to possess at least one or more of the following hazardous characteristics listed in Annex II:

H6.1 Poisonous (acute)
H11 Toxic (delayed or chronic)
H12 Ecotoxic

As a result of the above considerations, used oil should be regarded as a hazardous waste and is subject to the controls applied under both the Basel and Waigani Conventions.

Used oil that has been processed to the standard that it can be considered as usable fuel is no longer waste and is no longer subject to controls under the Basel and Waigani Conventions.

Authorities in the relevant countries (export, import and transit countries) should control the transboundary shipments of used oil 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.

Used oil that is being exported under the Y8 or Y9 waste classifications should have a flashpoint above 60^0C, or it will need to be assigned the H3 "Flammable Liquids" classification.

Based on the New Zealand Code of Practice for Used Oil[22], used oil 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, which means they do not need be classified as H3.

List A

- Engine oil – typically includes crankcase oils from gasoline, diesel and LPG/CNG 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

[22] "Management and Handling of Used Oil HSNOCOP63" New Zealand Environmental Protection Authority Nov 2013

- 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 60oC.

Oily wastes from sources in List A should not be mixed with any wastes from List B below. Many, although not all, of the products in List B will have a flash point (closed cup) below 60^{o}C. Regardless of flash point, however, List B products must not be mixed with List A products and then disposed of as used oil.

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

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 and future export under the Y8 or Y9 classifications.

As per Section 3.2 above, before used oil is picked up for transport, it must be demonstrated that the used oil has a flash point greater than 60^{0}C, and such a requirement will also ensure that all used oil is also suitable for export. The flashpoint can be determined by a flash point test or vapour test at each collection point. If the used oil generator is reputable, it may also be sufficient to receive an assurance from the generator that the used oil is free of contamination from any List B substances.

3.4.3.2 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[23] and SPREP websites[24]. The Conventions aim to reduce hazardous waste generation and promote environmentally sound management of hazardous wastes, wherever the place of disposal. This is addressed through several 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 (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

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

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 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).

The Basel 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. It is ratified by Samoa, with MNRE being the Competent Authority.

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. It is ratified by Samoa, with MNRE being the Competent Authority.

3.4.3.3 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 MNRE, the Competent Authority for Samoa. 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.

3.4.3.4 Transboundary shipment permits

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"*[25]. The validity of an approval is 12 months.

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

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

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.

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[26].

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.

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, considering 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.

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 movement page for a shipment can be found in the text for the Waigani Convention Annex VI A[27]. The following documents are required for transboundary shipments:

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

3.4.4 SPREP position on Used oil export Convention requirements[28]

The SPREP position on classification of used or waste oil and its management under the Basel Convention is outlined below:

[26]https://www.epa.govt.nz/assets/Uploads/Documents/Hazardous-Substances/Guidance/2e44f5838c/Importing-hazardous-waste-into-New-Zealand.
[27]https://www.informea.org/en/treaties/waigani-convention/text
[28]SPREP (2015*). Waste assessment guide for the export and import of used lubricants and used oil.*20pp.

Annex I of both the Basel and Waigani Conventions lists broad categories of waste streams and waste constituents that may be regarded as potentially hazardous. Of these, used oil would fall into one or both of the following categories: **Y8 Waste mineral oils unfit for their originally intended use Y9 Waste oils/water, hydrocarbons/water mixtures, emulsions** A waste which falls under any of the Annex 1 categories is considered to be hazardous unless it can be shown not to possess or exhibit any of the hazardous characteristics (explosive, flammable, corrosive, toxic, etc.) which are listed in Annex II of both the conventions. Oils themselves are not especially toxic, but contaminants such as additives, breakdown products, and other substances which may have become mixed with the oils during use, can be much more so. In addition, oils have the potential to cause environmental damage by virtue of their persistence and their ability to spread over large areas of land or water. Films or coverings of oil may reduce or prevent air from reaching life forms of all types within an area of land or sea and can rapidly result in significant degradation of environmental quality in those media. Therefore, used oil is likely to possess at least one or more of the following hazardous characteristics listed in Annex II: **H6.1 Poisonous (acute) H11 Toxic (delayed or chronic) and H12 Ecotoxic.** As a result of the above considerations, used oil should be regarded as a hazardous waste and is subject to the controls applied under both the Basel and Waigani Conventions.

Article 4 of both of the Basel and Waigani Conventions places restrictions on the movement of wastes between countries. For the purposes of this Guide, the key restrictions are as follows: Hazardous wastes may not be imported from outside the Waigani Convention area; Hazardous wastes may not be exported to or imported from countries that are not a Party to either of the conventions (unless subject to the agreements allowed under Article 11); Non-Party transit countries must be notified of the proposed movement, and some Party countries may also require that the movement be approved by the non-Party, and; Hazardous wastes may only be exported to other Party countries in accordance with the control procedures laid out under the conventions (see next section of this Guide).

4.0 Potential Options for disposal of bulk used oil

4.1 National used oil recycling options

There are logistical and financial barriers in implementing waste management technologies on small island nations. Current practices often require wastes to be exported for processing overseas, which can be associated with high upfront costs and negative environmental impacts. Additionally, there are potential benefits from on-island processing of waste, including job opportunities and revenue from recovered products that are lost. Several potential options to reuse used locally are available,[29] but most are not relevant for uptake in Samoa (Table 10).

Table 10. Summary of options for used oil management

Processing Option	End product	Suitability for Samoa
Local reuse	Used lubricant reused for other mechanical purposes	Used oil widely reused in the construction industry and for use in small hand tools such as chainsaws (Section 2.4)
Controlled incineration	Heat or electricity generation	Unsuitable as requires pre-treatment of the used oil to remove contaminants[30]
NuFuel Pyrolysis	Collected liquid used for heating	NuFuel[31] prototype may have applicability in non-urban villages to help recycle plastic and to generate fuel to cook food
Regional or sub-regional Pyrolysis Hub	Usable Fuel	The PACPLAN Resilience Project is considering the purchase and establishment of a suitable Regional or Sub-regional Pyrolysis Plant to process marine spill and other oily waste.
Reprocessing	Blended with fuel oil	Impractical due to lack of end user
De-watering and filtration	Re-refined oil suitable for generating process steam & heat	Small scale equipment available
Activated clay treatment	Production of new lubricant base stock	Impractical due to high cost and small feedstock volumes
Export to New Zealand	Used in Kraft Mill processes	Export to New Zealand is the most cost-effective export option
Export to India	Used for road making and steel manufacture	Sun Petrochem Corporation India (SR Global Resources Australia) have indicated they will export dewatered and desludged used oil from Samoa at no cost

4.1.1 Pyrolysis

Pyrolysis generally consists in heating a material above its decomposition temperature, breaking chemical bonds in its molecules. The fragments usually become smaller molecules but may combine to produce residues with larger molecular mass, even amorphous covalent solids. Pyrolysis can also be used to treat municipal solid waste and plastic waste.

4.1.1.1 NuFuel Pyrolysis Process

NueFuel NZ have developed an innovative system that converts plastic waste to produce fuel using low tech pyrolysis (the cracking of hydrocarbons in the absence of oxygen) is being trialled in the Solomon Islands. Plastic waste is put into a closed chamber surrounded by a firebox which can be fuelled by wood. The system can also process biomass and tyres, used oil and plastics coated in aluminium. The chamber is heated up and the hydrocarbons are cracked turning it into usable gas.

[29]MRA (2022). *Used Oil Management Technology Options report*. SPREP. 49pp.
[30]MRA (2022). *Used Oil Management Technology Options report*. SPREP. 49pp
[31]https://www.nufuels.biz/

Depending on the system design, the gases can be flared off directly for heat with a small amount going through a condenser and becoming liquid fuel. If more liquid fuel is wanted rather than mainly gas, then more liquid fuels can be produced.

Gas with a similar profile to LPG or natural gas is produced, together with a liquid fuel and a very small amount of solid fuel. The current two systems in the Solomon Islands produce about 20% gas in real time and 80% waxy liquid fuel which can be used in burners. The waxy liquid fuel while usable in burners is not easy to use in the oven that has been developed. Recent development work back in New Zealand now removes most of the wax and produces a 'runnier' liquid fuel which makes it easier to use in the oven and 'rocket' burner that have also been designed by Nufuels for the community. The further development work since late 2019 has also resulted in the ability to produce 80% gas with the remainder a liquid fuel. This gives more flexibility to communities around what kind of energy they want. A flare burner has also been produced which can use the gas to temperatures of up to 800 degrees. As these improvements are developed, they will be provided back to the communities who have systems. At present the gas would be used virtually real time alongside a cook but there is potential to design a simple storage system (under minimum pressure). With simple adaptations to small petrol generators the gas can be used to produce electricity.

Costing estimates to establish the NuFuels units is the Solomon Islands are presented in Table 8. Cost efficiencies are possible by fabricating some parts of the unit locally, and further cost efficiencies can be achievable by increasing the batch quantity of units manufactured (10+). Training and local liaison costs incurred in the Solomon Islands account for about 25-30% of total cost, thereby contributing to locally generated revenue.

Table 11. NueFuel Cost estimates

Cost Components	NZ single unit (USD)	NZ single unit (10 unit scale-up)(USD)	SI single unit (USD)
Build	13 750	10,670	13,440
Shipping costs from NZ	3,125	3,125	925
Total Build Cost	16,875	13,795	14,365
Total Package	25,500	21,310	21,960

4.1.1.2 Regional/Sub-regional Pyrolysis system

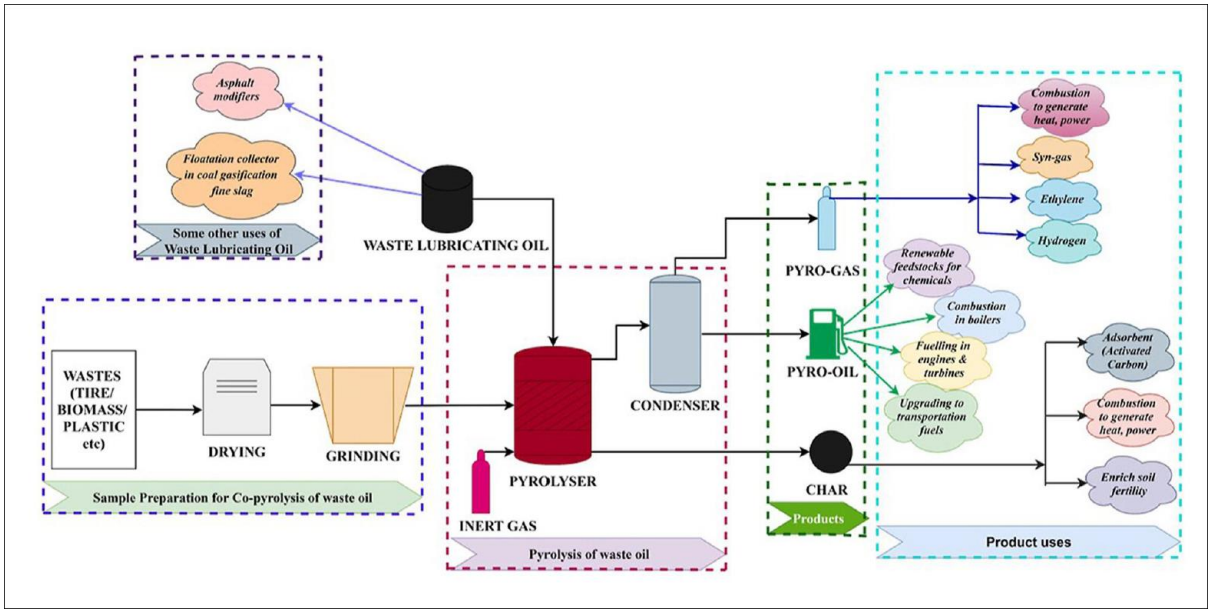
The PACPLAN Maritime Spill Preparedness Improved Self-Reliance Programme 2022-25 (PACPLAN Resilience Project) is funded by DFAT. For the six target countries (Papua New Guinea, Solomon Islands, Vanuatu, Nauru, Kiribati and Tuvalu), it is designed to deliver three outcomes[32]:

a) Lowering the risk of inadequate financial recovery and impact restitution, through international conventions and ratification through domestic law.
b) Lowering the risk of inadequate response outcomes, through reviewing national risk, plans and preparedness, and building regional and international cooperation, doctrine development, and training and exercises.
c) Building capability across all PACPLAN countries and the region, through improved and shared systems, improved training and development, improved strategic planning and governance, and a new multinational Pacific Ready Response Taskforce.

[32]Pacific Regional Mechanism for Oil Spills. PACPLAN Resilience Project 2022-2025, Backgrounder (Paul Irving. Project Officer October 2022)

PACPLAN is the Pacific Islands Regional Marine Spill Contingency Plan (PACPLAN 2019), which is core to the success of this project. It is designed to promote and implement regional cooperation in prevention of, planning for and response to marine spills and maritime emergencies, including building capability and arrangements for regional and international assistance for pollution incidents. One important issue associated with managing oil spills is dealing with the waste oil that is collected from the spills. The PACPLAN Resilience Project has investigated the purchase of a Waste Oil Pyrolysis Plant and has looked at a number of such plants, including the Chinese "Beston" process[33]. Figure 1 below was supplied by SPREP.

Figure 1 – Pyrolysis Plant Flow Diagram



PACPLAN in collaboration with other regional donors are discussing the possibility of:

- Purchasing a suitable pyrolysis plant (or plants)
- Locating the plant (or plants) in a suitable central location, possibly Suva in Fiji.
- Using the plant to process oil collected from marine oil spills, as well as other stored used oil from around the Pacific.
- Using the processed fuel that is produced from the Pyrolyser as a supplementary fuel for ships.

This initiative clearly has potential implications for the management of used oil in the Pacific.

4.1.2 Dewatering and filtering

The Yuneng ZJC Series Hydraulic Oil Filtration Machine developed and sold by the ***Chongqing Yuneng Oil-Filter Manufacturing Co., Ltd*, Chongping, China**, is widely used to quickly purify used oil by dehydrating any water, remove gas and mechanical impurities in the oil, remove the light acid and hydrocarbons by flashing to restore the performance of hydraulic oil lube oil.[34] It is designed to process various industrial waste oils with the viscosity less than 320 mm^2/s, such as turbine oil, mechanical oil, hydraulic oil, compressor oil and refrigeration oil which contaminated by water infiltration, emulsification and mechanical particles during processing, transportation and

[33] Personal Communication, Paul Irving, SPREP

[34] https://www.yunengoilpurifier.com/zjc-series-hydraulic-oil-filtration-machine.html

application. The oil to be filtered is pumped through an internal electric heater and the heated oil passes through the strong magnetic filter, and the metal particles and large particle impurities are filtered or removed. Fine impurities are removed by second and third stage filters. The filtered oil is then demulsified, dehydrated and degassed in a flash tower prior to a final filtration step. The machine process between 30-200 Lts/ Min of used oil, dependent on the plant model. The quoted price is US$ 9,500 ex-factory (July 2022). The parameters of a suitably sized unit, model ZJC3KY-GR, are presented in Table 12.

Table 12. ZJC Hyraulic Oil Filter Specifications

Parameters	Model ZJC3KY-GR	Before Purification	After Purification
Flow Capacity	3,000L/H – 50L/M		
Viscosity		Up to 320 mm²/Sec	
Water content		Up to 3,000ppm	Less than 50ppm
Filter Capacity			Less than 3 micron
Heating Power	30KW		
Total Power	33.5KW 3Phase		

4.2 International used oil recycling options (Export)

4.2.1 Regional overview

Used oil has been exported for recycling from Pacific Island countries to a range of destinations in the past. These destinations have included Fiji, Japan, Singapore, New Zealand, South Korea, Australia, and India.[35] Export carrier options are detailed in Section 5.

4.2.2 New Zealand

New Zealand is a proven option for recycling used oil from Pacific Island countries. Tonga, Samoa, Solomon Islands, Cook Islands, and Kiribati have, among other Pacific Island countries, have exported used oil to New Zealand for recycling since 2010. New Zealand continues to be a viable export destination option for recycling used oil currently stockpiled in the Pacific region.

Salters Cartage Ltd (SCL) is a major company based in Auckland New Zealand that receives, and processes used oil and related hydrocarbon waste streams. Their main outlet for reuse of the used oil is the New Zealand Oji Fibre Solutions company, a producer of a range of kraft mill pulps for use in the manufacture of various papers, boards and specialty products. SCL has been receiving used oil from various Pacific countries for many years and are keen to continue and expand this source of used oil. SCL recycle most of the used oil generated in Tahiti, French Polynesia (1,000+ tonnes per year) and receive hydrocarbon liquids and sludges from New Caledonia (500+ tonnes per year). SCL receive not only used oil, but also used oil filters, plastic oil containers, oily rags, oily sludge, and hydrocarbon-contaminated soils. Filters are shredded and the component parts recycled, and plastic containers are washed, shredded and the plastic is recycled by a company[36] who manufacture environmentally friendly plastic fenceposts. SCL receives used oil in a variety of containers, drums, IBCs, pallets and ISO Tanktainers.

There are two other used oil recyclers based in Auckland. **Waste Management New Zealand Ltd**[37] operate a large hazardous waste management facility at East Tamaki in Auckland, and a used oil recycling plant located in Mt Maunganui. They offer also offer a viable option for recycling used oil

[35]Haynes et al. (2018). *Desktop review of used oil management data*. SPREP. 21pp.
[36]https://www.futurepost.co.nz/
[37]https://www.wastemanagement.co.nz/for-business/hazardous-waste/

from Pacific Island countries and import waste hydrocarbons from New Caledonia and French Polynesia for recycling and disposal. **Waste Petroleum Combustion Ltd**[38] (WPC) operate an oil recycling facility based at Pukekohe, south of Auckland. WPC's point of difference is they advertise that they do not charge to receive used oil. WPC do not have a significant track record of imports from Pacific Island countries.

4.2.3 Fiji

Bluescope Pacific Steel (BPS)[39] collect and burn used oil in their steel processing plant in Suva. They have been proactive in the local Fiji market in collecting used oil for this purpose in the past and operate a professional collection and storage system. They have quite a large storage capacity, but it is not sufficient to take very large amounts of use oil. They have a limited capacity to manage sludge and they do not have a tank cleaning capacity. The local market keeps them well supplied to meet their used oil needs and their core business is steel making, not used oil. They are therefore not interested in importing bulk quantities of used oil directly into Fiji from overseas countries. They do receive used oil from other countries indirectly if they have the capacity - for example from Pacific Energy shipments from other countries such as Tuvalu. The BPS operation is sound and meets audit criteria for health, safety and environmental impact, with the possible exception of the air emissions, which BPS is working to address now. BPS may be willing to take part in plans to import used oil from other countries in the future but only as an indirect partner, and only if they have the capacity and resources to manage the used oil. As of August 2022, BlueScope have shut down their plant due to Covid and staffing issues.

4.2.4 Australia

Collecting and recycling used oil is a significant part of the waste sector in Australia, accounting for 5% of all national hazardous waste generation.[40] Accordingly, there is a substantial industry which collects and recycles used oil. The Australian Government provides industry incentives to increase the recycling of used motor oil through the Product Stewardship for Oil Program[41]. As used oil is a hazardous waste, its importation into Australia requires an import permit under the *Hazardous Waste (Regulation of Exports and Imports) Act 1989*. The fee for the 2022-2023 year is AUD$ 13,123. For a typical shipment of 16,000 litres in 80 drums, the fee adds AUD$ 0.82 cents per litre to the disposal cost, which is a significant cost factor.

The Port of Brisbane is serviced by vessels which call in most Pacific Island countries ports. Used oil has been imported sporadically and only in small volumes in the past. In 2021, Total Waste Management (TWM) held a permit to import 2,000 tonnes of used oil from Papua New Guinea to Queensland Australia. There are no other current permits from Pacific Island countries to import used oil into Australia for recycling.

Cleanaway Waste Management Limited[42] is the largest used oil processor in Australia, processing over 150 million litres of used lubricating oil and oily water from over 35,000 workshops and businesses. Cleanaway operates two ISO certified waste oil refining facilities in Queensland and New South Wales. These facilities recycle used oil into new base oils and fuel oils. Fuel oil is used by Cement Australia's site at Gladstone in Queensland, and new base oils are sold in Australia and exported overseas. Used oil to be treated requires a laboratory analysis of the bulk waste prior to acceptance. Bulk oil suitable for recycling costs **$AUS0.43 per Lt** to be recycled by this company (excluding other charges). Other waste oil processors are operating in Queensland and can provide a similar service to Cleanaway.

[38]https://www.oilrecovery.co.nz/waste-oil-collection/
[39]Haynes et al (2018) Report # 2 Review of Oil Management Data Section 6.3 Page 7 SPREP.
[40]https://www.dcceew.gov.au/sites/default/files/documents/hazardous-waste-in-australia-2021.pdf Appendix B14.
[41]www.oilrecycling.gov.au
[42]https://www.cleanaway.com.au/services/waste-oil/

4.2.5 Papua New Guinea

Total Waste Management (TWM) operate a used oil management capacity in Papua New Guinea. TWM are a PNG company located in the Roku/Porebada area of the Central Province, Papua New Guinea. TWM engage in processing of used oils at the company's Integrated Waste Management Facility, and also export materials for recycling. TWM operations are noted as being compliant with national laws and operating permit conditions together with maintaining third party facility accreditation that is a requirement of their tier one Clients. The company has had a significant number of Australian (Waigani) hazardous waste import permits (not confined to used oils) since 2016 for the transboundary movement of hazardous wastes (Basel Convention).

TWM commenced construction of the Integrated Waste Management Facility (IWMF) at their Roku (head office) in 2018, the first locally commercially owned site of its kind in Papua New Guinea. The IWMF currently operates a high temperature incinerator; industrial wastewater treatment plant; hazardous waste storage facility and used oil processing unit. Through the design phase and about to commence construction is an engineered industrial landfill and material recovery facility (MRF). Where capacity is not available at the Roku IWMF, TWM manage the export of materials to offshore consignees for sustainable treatment, disposal or recycling. TWM facilities are designed to meet US standard which operate under a Level 3 Environmental Operating Permit regulated by PNG's Conservation and Environment Protection Authority (CEPA). TWM is accredited to internationally recognised standards:

- ISO 9001 Quality Management
- ISO 14001 Environmental Management
- ISO 45001 OHS Management

The indicative cost to process used oil (per Lt/tanktainer and other) is PGK7.24 **(~US$2.06**) per litre.

Current annual acceptance of used oil is limited by storage availability in the on-site Dangerous Goods building. TWM hold Basel permits for exporting used oil to Australia, volume up to 2 million litres per year. Used oils are exported to Australia for processing after which the materials are generally accumulated and supplied to a third party as fuel (other than direct incineration) or other means to generate energy e.g. cement kilns. TWM also operate a portable unit that recycles waste oil into a Processed Fuel Oil (PFO) product using a 20ft containerised waste oil processing unit (WOPU) capable of recycling used oil products. Used oil products are fed into the WOPU unit which removes additives, solids and water to produce a clean PFO. The PFO is used as a fuel extender in boilers, kilns and incinerators. Used oil is processed at a rate of 1,000L per hour and under optimum operating conditions the WOPU will process 7,000L (35 drums) of used oil per day. TWM have been using PFO as fuel for the high temperature incinerator on site.

4.2.6 India

In a new initiative brokered through JICA, **Sun Petrochem Corporation India** (SR Global Resources Australia) have indicated a willingness to export all bulk used oil currently held in storage in Samoa for processing in India at no cost. SC claim to operate a large used oil processing plant in the southern Indian state of Tamil Nadu and receive used oil locally and internationally through the Port of Chennai. They also operate in the Middle East through Dubai and have an office in Sydney, Australia. SC claim to be collecting and exporting recycled used oil from used oil recycler(s) in Auckland New Zealand. They indicate that the refined oil they produce in India is used in steel mills and other heavy industries, and as boiler fuel in a range of industries. It is also used as a fuel to melt bitumen for roadmaking. Their standard arrangements are that:

- SPC will pick up used oil from a country if the volume exceeds 100,000 litres per shipment and they have no upper collection limit.
- SPC provide this service free of charge, and will continue to do so, provided the price of virgin oil remains high.
- The used oil must be dewatered and filtered to take out any coarse contaminants.
- According to SPC, this pre-treatment technically eliminates the need for Basel/Waigani permitting of the transported as it will enable SPC/Samoa to categorise the oil as supplementary fuel and avoid the need to obtain a transboundary permit under the Basel Agreement.[43] **This interpretation is not shared by MNRE or SPREP, the Regional Basel Secretariate.**
- SPC do not take sludge.
- SPC can pick up used oil in drums and IBC's, which need to be placed in shipping containers. SPC will also receive oil in isotanks, which is their preferred container.
- SPC also use flexitanks or plastic bladders, which are inserted into containers. They purchase the flexitanks from Infinity Logistics and Ventures Ltd (Infinity), Malaysia, a large international supplier of flexi-tanks. Where flexi-tanks are employed for used oil transport, SPC will provide training in their installation, and will supervise the installation and the loading of the flexitanks.
- SPC require suppliers of used oil to undertake at the supplier's cost, all the "in-country" work of packaging, transport to the wharf and documentation including those required to meet the Waigani and Basel Conventions, so the used oil is ready for shipment.
- Once the shipment is loaded on the vessel at the port of export, SPC take ownership and responsibility for the used oil.
- SPC also take out the necessary insurance cover. They pointed out that for flexi-tanks, Infinity provides their own insurance cover for $US7M.

The current stockpile of used oil after dewatering and desludging in Samoa is estimated (Oct 2022) as approximately 240,000 litres (EPC and landfill collection sites)[44]. Samoa will have to organise packing and transportation of used oil from the storage facility to the port. Samoa will be responsible for all the local costs involved (i.e. packing, loading, transportation to the wharf, and loading fees as well as any International Convention requirements). Water and sludge from the used oil will need to be managed in country as a hazardous waste. **The willingness of Sun Petrochem Corporation India to export used oil at no cost is totally dependent on the current high price of oil.**

[43]Ramani, Sun Petrochem Corporation India, pers com Nov 2022
[44]Ramani, Sun Petrochem Corporation India, pers com Nov 2022

5.0 Used oil shipping services

5.1 Pacific carriers

Most Pacific Island countries are serviced by one or other of the shipping companies operating in the Pacific region (Table 13). Services are generally regular, but routes and port calls may change at short notice according to the marine trade requirements. Some services involve trans-shipment of containers from one vessel to another at an intermediate port between the export and import ports. Some services transit through intermediate ports where the container stays on the vessel. Transhipments and transits through intermediate ports must be included on Waigani transboundary permits, and when routes change during the validity of a permit, competent authorities of the export, import and transit countries must be informed.

Table 13. Destination ports

Export location	Swire Shipping	NPDL	Matson	Sofrana ANL
Samoa	Auckland Brisbane Suva	Auckland Brisbane Suva	N/A N/A N/A	Auckland Suva

5.2 Shipping costs

Shipping costs are significantly different between locations and by different carriers (Table 14). SWIRE Shipping is the most economical carrier to transport used oil from Samoa to New Zealand, Australia or Fiji.

Table 14. Container shipping costs (Tala) ex Apia, Samoa to foreign ports (excluding other associated costs, see Section 7.9)

	Swire Shipping		NPDL		SofranaANL		Matson	
	TEU	IsoTank	TEU	IsoTank	TEU	IsoTank	TEU	IsoTank
To Auckland	4,535	4,535	14,339	9,976	5,215	5,215	N/A	N/A
To Brisbane	5,948	5,948	N/A	N/A	10,411	10,411	N/A	N/A
To Suva	5,595	5,595	14,339	9,976	7,755	7,755	N/A	N/A

5.3 Moana Taka Partnership

In March 2018, the China Navigation Company Ltd/Swire Shipping Agencies, and SPREP signed a Memorandum of Understanding (MOU)[45] to address critical waste management issues in the Pacific Islands under the *Moana Taka* Partnership project. The *Moana Taka* Partnership enables Swire Shipping vessels to utilise empty shipping containers to transport non-commercial recyclable waste from Pacific Island countries. Swire Shipping will provide free container hire and free shipment of eligible waste shipments between Swire Shipping serviced ports. The waste is transported to countries with appropriate waste disposal facilities, ensuring that everything from oil to plastics to aerosols are properly recycled. Swire can also carry eligible waste from a non-Swire shipping network port, if the Shipper can get it to a port serviced by Swire. “Non-Commercial” waste cargoes

[45]https://www.sprep.org/sites/default/files/documents/publications/moana-taka-partnership.pdf

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 prior two-years, it is regarded as “commercial” for the purpose of determining *Moana Taka* Partnership eligibility. The referenced SPREP publication 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.

6.0 National Best Practice Recommendations

A range of steps need to be completed to ensure Samoa manages used oil appropriately into the future. These are summarised in Table 15.

Table 15. Summary of actions required to achieve best practice used oil management in Samoa

Action	Responsibility	Timeframe	Outcome
Review and revision of the Samoan National Used Oil Management Policy (2013)	Government and Stakeholders	2023	Agreed and endorsed national used oil management policy
Under the Waste Management Act (2010), development of: • Rules • Operating manuals • Codes of practice • Standards • Regulations to regulate activities associated with used oil management	MNRE	2023	All activities associated with used oil management are standardised and enforced
Establishment of National Used Oil Management Steering Committee	MNRE	2023	Expert used oil management body available to provide specialist advice and programme oversight to Government
Establishment of a user-pays management system enforced under the Waste Management Act	MNRE	2023-2024	Special Fund model, where the government collects the ADF and pays it back out to a contracted System Operator (Managing Agency)
Collection of agreed Advanced Disposal Fee (ADF) on all imported lubricants	MNRE Customs Managing Agency	2024 onwards	Collection of an Advanced Disposal Fee (ADF) on all imported lubricant products enforced under Government regulations
National management of used oil	Managing Agency National Steering Committee	2024 onwards	National management of the collection and export of the used oil.
Monitoring and Evaluation	MNRE National Steering Committee	2024 onwards	Annual programme evaluation and reporting
Public education and training programme	MNRE Managing Agency	2024 onwards	National awareness and willingness to manage used oil

6.1 Policy

The Draft Samoan National Used Oil Management Policy (2013)[46] was designed to establish and operate an appropriate management framework that improves national management of used oil and promotes shared used oil management responsibility by all stakeholders. The Policy covers 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.

This policy needs to be reviewed, revised as necessary and endorsed by Government and Stakeholders.

6.2 Legislation

Management of waste (including used oil) in Samoa is carried out under the Samoan Waste Management Act (2010). Under Section 4 of the Act, the Samoan Ministry of Natural Resources and Environment (MNRE) is responsible for implementation of the Act and the regulation and management of waste in Samoa.

Under the Waste Management Act, in relation to used oil management, the Government of Samoa via the Ministry of Natural Resources (MNRE) is required to prepare, adopt and enforce:

- **Rules**
- **Operating manuals**
- **Codes of practice**
- **Standards**

to regulate all activities associated with used oil management.

6.3 Regulations

Waste included under the Act may be determined to be a waste or a hazardous waste for the purpose of the Waste Management 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.

Under the Waste Management Act, in relation to used oil management, the Government of Samoa via the CEO, MNRE, is required to designate used oil as a hazardous material.

6.4 Regulatory compliance

Under the Waste Management Act, in relation to used oil management, the Government of Samoa via the Ministry of Natural Resources (MNRE) is required to enforce national used oil management regulations.

[46]SPREP (2013). *National Used Oil Management Policy (2013-2016).* MNRE. 7pp.

6.5 Sustainable funding and cost recovery

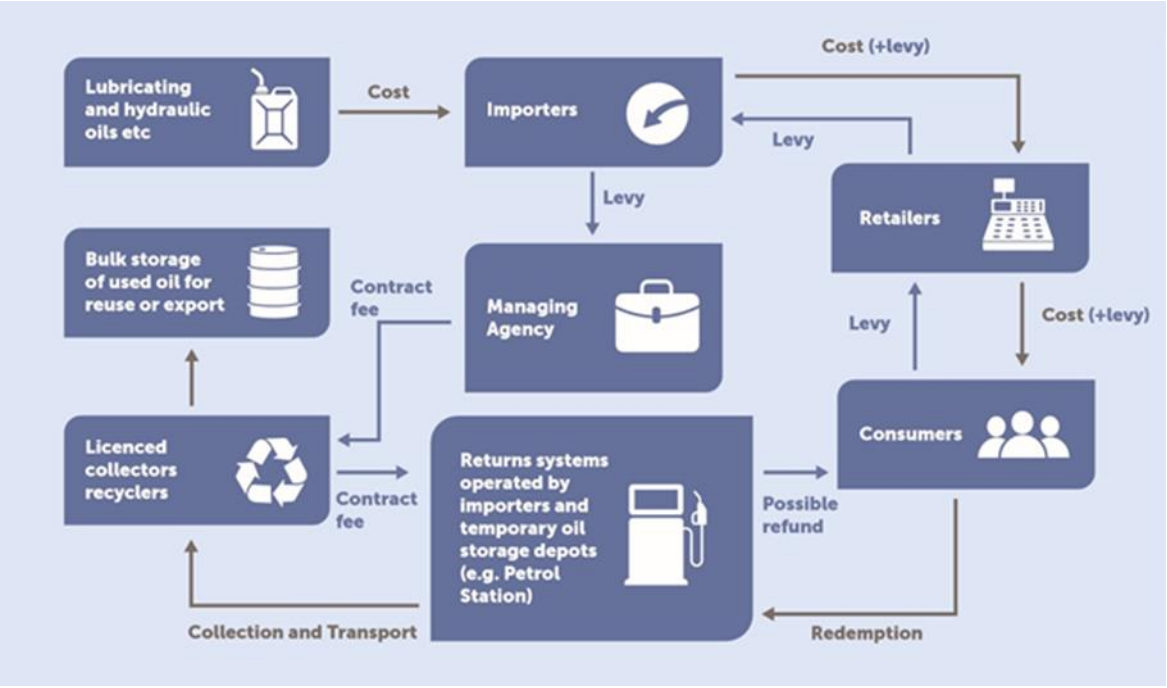
Under the Waste Management Act, in relation to used oil management, the Head of State (acting on the advice of Cabinet) may make Regulations which impose special levies on particular goods which have adverse effects on the environment, or for the purpose of raising revenues for the effective management of waste (Section 10).

Sustainable use oil management in Samoa will require establishment of a user-pays management system enforced under the Waste Management Act. This will require the collection of an Advanced Disposal Fee (ADF) on all imported lubricant products enforced under Government regulations.

6.5.1 Introduction

The principals of Extended Producer Responsibility (EPR) require in simple terms for used oil, that the cost to collect and treating or exporting used oil is added to the purchase price of the product. This can be done by collecting an Advance Disposal Fee (ADF) or Advance Recycling Fee (ARF) before the product is sold, and then directing this money to whoever conducts the recovery for recycling or export. This scheme is presented in Figure 2.

Figure 2. Advanced Disposal Fee (ADF) model



6.5.2 Setting the ADF Levy

Setting the ADF levee is dependent on an accurate understanding of the total cost to manage the generated used oil. The amount of used oil to be processed is generally only half of the amount lubricant imported, as oil is lost during use, mostly by being burnt in engines or through leaks. Therefore, the amount of the ADF per litre of imported lubricant need only be around half of what the total used oil management cost per litre is. **The current viable ADF is estimated to be 1.71 Tala per Lt of imported lubricating oil (see Attachment 3).**

6.5.3 Used Oil Management System

There are two types of management models that are common:

- The Special Fund model, where the government operates the fund that holds the Advance Disposal Fees, alongside a used oil recovery system which may be either private or government owned and operated, or
- The Managing Agency model, where the government simply sets the rules through legislation while the system is run by a non-government Managing Agency and the funds sit outside the government financial system.

For Samoa, the best approach is to use a Special Fund model, where the government collects the ADF and pays it back out to a contracted System Operator (Managing Agency) who manages the national collection and export of the used oil.

6.5.4 Legislative Framework

The primary piece of legislation required will be to create a Special Fund, and the provisions by which a Special Fund can be set up will be laid out in existing national financial legislation. A Special Fund is a separate government account to the normal General Revenue account. Expenditures from General Revenue usually have to conform to budgets passed by national parliament, but a Special Fund is ring-fenced, with rules about what the money can be spent on and sits outside the normal government budgetary process. Any Special Fund will almost certainly need its own Act, which can be short and simple. Regulations regarding what is required to pay an ADF, how much and when, and the appointment of a System Operator (the Managing Agency) maybe required to be under this Act, or may be possible under existing waste management legislation. The advice of the national Attorney General's office is best sought in this regard. The System Operator (the Managing Agency) may be nominally the government in legislation, as long as that power is able to be passed across to an 'agent'. The regulation can be used to deal with the details of the ADF system, such as how much is the ADF to be paid, rather than putting this into the Act, as this makes it easier to adjust critical values - such as the ADF - without having to amend the Act. Amending a regulation is usually a much simpler process. The regulations do not need to set the amount per litre that the System Operator (the Managing Agency) can claim, as this can be set in the contract with the System Operator (the Managing Agency). This is an important point to note. The regulations must be clear about which part of government holds the contract with a System Operator (the Managing Agency).

6.5.5 Advanced Disposal Fee collection

For Samoa, as all lubricating oil is imported, the point of import becomes a suitable place in which to collect the fee. If Customs is used to collect the ADF, then it is simple to place that money into the dedicated Special Fund which will be operated under the Ministry of Finance, as the Customs service is always a part of the Ministry.

6.5.6 Contracting a System Operator (Managing Agency)

It is likely that the System Operator (the Managing Agency) is a company who already had storage tanks suitable for holding the used oil. In Samoa this could continue to be SWRMA, or another entity such as EPC could be contracted to undertake this role. A contract can be quite simple, in that the System Operator (the Managing Agency) claims a pre-agreed fee from the Special Fund per litre of used oil processed (exported). The key factors of any contract are to:

- Identification of the claim rate per litre of used oil collected and exported
- Accounting for litres processed (exported)
- Monitoring of collection and export of used oil, and
- For compliance with pollution control regulations.

It generally is best if the Ministry of Finance holds the contract to pay out the System Operator (The Managing Agency) claims, whilst the environment ministry is the regulator regarding the conditions to be complied with. The contract will specify on what basis the used oil is 'processed'. For example, if export is the management option chosen in the National Used Oil Management Plan, then once a litre is exported the System Operator (the Managing Agency) can claim the payment allotted.

6.5.7 Claims for ADF Payments

If export is the requirement of the 'processing' in the contract, then production of a Bill of Lading should be included in any payment claim documentation. Such claim documentation might also include relevant Basel/Wagaini permit information. Together, these would show that oil was exported and that it met the trans-boundary movement requirements. It could be that a receipt might also need to be provided by any receiver of the used oil overseas. It is essential that any System Operator is only paid upon proof of export (or other agreed processing method). If any payments are made before processing is completed, then a perverse incentive will be in place for the System Operator to collect and store, but not process, used oil, with all the long-term consequences that a National Plan wishes to avoid.

6.6 Management (National Steering Committee composition and functioning)

Successful future management of used oil in Samoa 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 programme in Samoa including maximising the benefits from the projects and ensuring an approved methodology is followed. The Steering Committee would include representatives from the following institutions:

- SPREP
- Chamber of Commerce
- MNRE
- Ministry for Customs and Revenue
- EPC
- Oil and fuel importers
- Samoa Ports Authority

Members of the Committee would be responsible (through an agreed Terms of Reference) for:

- Monitoring business and strategic issues, and provision of advice to the project team on those that may present a risk to the project or have impact on the project rationale or success;
- Resolution of any issues outside the authority or control of Managing Agency such as priority setting, decision-making and resource commitments that cross organisational boundaries and require agreement from senior stakeholders;
- Actively and overtly support the project and act as an advocate for its outcomes;
- Oversee the project quality assurance program;
- Monitor progress against approved plans; and
- Monitor realisation of benefits and report these to senior executive and governance bodies.

All members of the Steering Committee are expected to:

- Understand the strategic implications and outcomes of the project;
- Appreciate the impact of the project on all major stakeholders;
- Provide those directly involved in the projects with guidance on business issues;
- Address any issue which has major implications for the project; and

- Accept responsibility for the project strategy and the overall benefit realisation of the project.

6.7 Monitoring and Evaluation

Routine monitoring (the systematic and routine collection of project information) will ensure learnings from experiences are captured and evaluated to improve practices and activities in the future. Routine assessment of annual completed programme data will inform future strategic decisions, thus improving the project or programme in the future with regards to programme relevance, effectiveness, efficiency, impact and sustainability

6.8 Education and Awareness to increase used oil collection

The establishment of an Advanced Disposal Fee (ADF) will need to be supported by National public awareness campaigns to:

- provide accurate information concerning the relative risks posed by used oil to Samoa's natural environments and the governments 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.

The awareness programme could 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 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 a community advertising to inform people about oil collection points and other facilities and to encourage behavioural change. This stage would be mobilised 1 month prior to implementation of stewardship program and continue over the life of the program.

6.9 Summary of capacity gaps for National Best Practice used oil management

Table 16. Summary of used oil management capacity gaps in Samoa

Used Oil Management Goals	Used Oil Management Actions	Responsible Entity	Capacity Gap
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	MNRE	No endorsed National Oil Management Policy
G2: Minimisation of the adverse effects of used oil on the	MA2: Appropriate standards and safeguards for the handling, collection,	MNRE Private Sector	No National Standards for

Used Oil Management Goals	Used Oil Management Actions	Responsible Entity	Capacity Gap
environment and people of Samoa	transportation, storage, and disposal of used oil are established and applied		used oil management
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	MNRE	Competent Authority may need additional training
	MA4: Management of used oil complies with all relevant Samoan laws	MNRE	No National Regulations for used oil management
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 principal	MNRE Used Oil Managing Agency	No AFD for used oil agreed or implemented
G5: Duplication of effort is minimized and coordination of used oil management activities are maximized to ensure effective implementation of the Policy	MA6: Used oil management concerns are appropriately addressed in waste management legislation, regulations, and planning	MNRE	Legislation, standards and regulations not yet drafted
G6: The capacity of stakeholders to promote effective used oil management is increased	MA7: Opportunities are created to develop industry and community understanding, skills and general capacity to manage used oil	MNRE Private Sector	No current used oil awareness programme
	MA8: Collection, storage and disposal of used oil outsourced where possible to the private sector	MNRE Private Sector	SWRMA requires ongoing training and equipment
	MA9: Regulation of and service delivery of used oil management activities will be clearly separated	MNRE Used Oil Managing Agency	
	MA10: A national register of oil and lubricant importation data and used oil generation maintained and reported annually	Used Oil Managing Agency MNRE	Register not currently in use No current monitoring and evaluation programme in place

7.0 National Best Practice Implementation

7.1 National Used Oil Management Plan

A national Used Oil Management Plan establishes 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 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 Samoa.
- **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 promote effective used oil management is increased.

7.1.1 Strategic Actions

The Samoan Used Oil Management Plan goals would be achieved through 11 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 strategic actions are summarised in Table 17.

Table 17. 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	MNRE
G2: Minimisation of the adverse effects of used oil on the environment and people of Samoa	MA2: Appropriate standards and safeguards for the handling, collection, transportation, storage, and disposal of used oil are established and applied	MNRE 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	MNRE
	MA4: Management of used oil complies with all relevant Samoan laws	MNRE
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 principal	MNRE Used Oil Managing Agency
G5: Duplication of effort is minimized and coordination of used oil management activities are maximized to ensure effective implementation of the Policy	MA6: Used oil management concerns are appropriately addressed in waste management legislation, regulations, and planning	MNRE

Used Oil Management Goals	Used Oil Management Actions	Responsible Entity
G6: The capacity of stakeholders to promote effective used oil management is increased	MA7: National Used Oil Management Steering Committee established	MNRE Stakeholders
	MA8: Opportunities are created to develop industry and community understanding, skills and general capacity to manage used oil	MNRE Private Sector
	MA9: Collection, storage and disposal of used oil outsourced where possible to the private sector	MNRE Private Sector
	MA10: Regulation of and service delivery of used oil management activities will be clearly separated	MNRE Used Oil Managing Agency
	MA11: A national register of oil and lubricant importation data and used oil generation maintained and reported annually	Used Oil Managing Agency MNRE

7.2 Government Regulatory Intervention

To effectively manage used oil, the Government of Samoa via the Ministry of Natural Resources (MNRE) will need to prepare, adopt and enforce standards regulating activities associated with used oil management (See Sections 6.1-6.4). Model used oil regulations have previously been produced for Samoa (Attachments 1 and 2). When enacted and enforced, these regulations:

- Identify a product stewardship arrangement for used oil that promotes the sharing of responsibility by importers, retailers, consumers and users of oil
- Provide an arrangement for managing used oil that is financially sustainable
- Ensure that management of used oil complies with relevant international conventions and national legal requirements
- Ensure that users of oil contribute to the costs associated with exporting or otherwise managing used oil in an environmentally sustainable manner
- Ensure management of the export of used oil in an environmentally sound manner.

Action Required: Drafting and implementation of national used oil regulations

7.3 Used Oil Management Steering Committee

Successful future management of used oil in Samoa 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 programme in Samoa including maximising the benefits from the projects and ensuring an approved methodology is followed. The Steering Committee would include representatives from the following institutions:

- SPREP
- Chamber of Commerce
- MNRE
- Customs
- EPC
- Oil and fuel importers
- Ports Authority

Action Required: Establishment of a National Used Oil Management Steering Committee

7.4 National used oil education and awareness programme

The establishment of a Product Stewardship System will need to be supported by National public awareness campaigns to:

- provide accurate information concerning the relative risks posed by used oil to Samoa's natural environments and the governments 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.

The awareness programme could 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 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 a community advertising to inform people about oil collection points and other facilities and to encourage behavioural change. This stage would be mobilised 1 month prior to implementation of stewardship program and continue over the life of the program.

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

7.5 Collection of an Advanced Recycling Fee to fund on-going used oil management

Funding the used oil management programme will require collection by the Customs Department of an advanced deposit fee (ADF) on all lubricant imports. The costs associated with national used oil management that will need to be met by the ADF are identified in Attachment 3 and will require an ADF of 1.71 Tala per litre on all lubricant imports to be collected.

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

7.6 Managing Agency (System Operator) appointment

A Managing Agency to oversee the daily operation of the Stewardship System will be funded by the Advanced Recycling 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:

- be a non-profit entity;
- manage its funds in accordance with the requirements of the Department of Finance ensuring sufficient funds are allocated to pay the collectors and recyclers;
- review and approve applications from collectors and /or recyclers;
- enter contract agreements with approved collectors and /or recyclers;
- conduct audits of collectors and recyclers to ensure compliance with permits;
- carry out inspections;
- design and implement awareness campaigns; and
- ensure that used oil is recycled or reused or exported.

Action Required: Confirmation of the appointment of the Samoa Recycling and Waste Management Association (SRWMA) or other body as the national used oil Managing Agency (System Operator)

7.7 Implementation of a national used oil management programme

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

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 used oil through a possible refund mechanism.
2. Oil is sold to retailers and then, in turn, to consumers who eventually produce used oil.
3. Used oil is returned by small consumers to a licensed site for a possible partial refund and
4. Used oil is collected from larger used oil generators for free.
5. All used oil returns are documented.
6. Recovered used oil is stored for export and routine export.
7. Unclaimed funds and the balance of the import levy are used to support used oil collection, storage cand export costs, and the administration of the Managing Agency and to support used oil awareness campaigns.

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

7.8 National used oil collection

7.8.1 Types of oils collected under the national used oil management programme

Used oil is defined for the purposes of this management plan 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[47] and Basel Conventions[48]. 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. 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.

7.8.2 Sectors serviced under the national used oil management programme

Any government or non-government organisation, agency or business or private individual that generates used oil identified under Section 7.7.1.

7.8.3 Used oil collection

A used oil collection system would include establishing small volume (<1000Lt) 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.

7.8.4 Collection and bulk storage

Used oil collection from temporary storage locations (Section 7.6.1) would be carried out by competent licensed carriers with the appropriate equipment. The licensed carriers would collect used oil by road tanker or in smaller suitable containers such as steel drums. Intermediate temporary storage of collected used oil prior to export shall include bulk storage (in Tanktainers) or in 210Lt steel drums contained in a concrete, sheltered and bunded area.

The collection and storage of used oil would be supported by appropriate legislation (Section 7.1) 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 the regulation provisions concerning the transport of dangerous goods and hazardous wastes including relevant regional and international conventions such as Waigani and Basel Convention.

Action required: Regular collection and bulk storage of used oil commenced by the Managing Agency (SRWMA).

[47] *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).

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

7.9 National used oil export programme

A preliminary cost analysis has concluded that the collection of used oil in 210Lt steel drums and export to New Zealand for reuse is the cheapest, environmentally sustainable management for used oil in Samoa (Attachment 3). The costs of collection, storage, and shipment of used oil for recycling will be recovered from the oil purchaser through a levy placed on the oil when it is imported into the country (Section 7.1). A summary of the preliminary cost analysis is presented in Table 18.

Table 18. National used oil cost analysis

	Unit Cost (Tala)	Annual Operating Costs (Tala)	Cost per 40,000Lt collected	Cost per Lt (Assumes 200000Lt annual collection)	Aukland	Aukland	Brisbane	Brisbane
					TEU	IsoTank	TEU	IsoTank
One off costs (not considered)								
Flash point instruments (4)	2000	8000						
Transfer Pump (2)	188	376						
Signage (one off)		1200						
Fire extinguisher (one off)		1000						
TOTAL		**10576**						
Annual Costs								
SWOMP Operating Costs (12 months)		12600						
Spill response equipment (one off)		150						
Gloves	7	42						
Glasses	13	78						
Hard Hat	30	180						
Boots	105	630						
Overalls	155	930						
Chemical Gloves	30	180						
Total Annual Operating Cost		**14790**		**0.07**				
40,000 Lts Collected (4Days)								
Crane Truck hire (4hrs per day, 4 days per Month)	180/hr		2880	0.072				
Forklift (10hrs per day, 4 days per Month)	100/hr		4000	0.1				
Labour (6 staff)	5 /hr		336	0.0084				
IBC	200							
Drum (new)	56		10667	0.27				
Pallets (4 drums per pallet)	3		143	0.004				
Total				**0.45**				
Grand Total Collection Cost per Lt				**0.52**				
Apia Costs								
Transport and unloading/loading					1,763	1,763	1,763	1,763
Iso Tank Cleaning						2,658		2,658
Seafreight (per Container)								
SWIRE					4,535	4,535	5,948	5,948
Import Costs (per Container)								
Waigani Costs					2,385	2,385	22,006	22,006
Import Costs					3,578	3,578	6,575	6,575
Dangerous Goods Surcharge					318		318	
Disposal Cost (per Container)					6,360	5,486	8,395	17,188
Total Export Cost (per Container)					18,938	20,404	45,005	56,138
Total Export Cost per Lt					1.18	0.89	2.81	2.44
Total Management Cost per Lt					**1.71**	**1.41**	**3.34**	**2.96**
Total Management Cost per Lt (If SWIRE Free)					**1.42**	**1.21**	**2.96**	**2.71**

7.10 Monitoring and Reporting

The monitoring and evaluation of the Product Stewardship System will be carried out by the Managing Agency in accordance with the Model Regulations. The following sections are based on the Model Regulations presented in Attachment 1 and Attachment 2.

7.10.1 Monitoring

MNRE will use inspectors appointed under Clause 5.7 of the regulations 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.

7.10.2 Reporting

Under the regulations the Managing Agency will prepare an annual evaluation report to the responsible Minister by [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 levy is paid;
- The annual number of litres of used oil collected;
- 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.

7.11 National used oil stockpile export

The exact stored volume of used oil in Samoa is unknown, but likely to be around 420,000 litres (see Table 8). A bulk of these stockpiles are held by EPC. These stockpiles will also have to be exported for recycling in the longer term. Recent estimates have indicated that the volume of these stockpiles is likely to be 240,000lts after dewatering and desludging.[49]

In a new initiative brokered through JICA, Sunpetroleum Corporation (SC) have indicated a willingness to export all bulk used oil currently held in storage in Samoa for processing in India or Dubai at no cost. Samoa will have to pay for the packing and transportation of used oil from the storage facility to the port. Samoa will be responsible for the local costs involved (i.e. packing, loading, transportation to the wharf, custom documentation and Basel documentation, etc.). All used oil will need to be dewatered and transferred into new IBCs supplied by Sunpetroleum Corporation prior to shipment overseas. Sunpetroleum Corporation suggest that the first shipment will be made in 2023 to test the process for future shipments, although the details have yet to be finalised (October 2022). **The willingness of Sun Petrochem Corporation India to export used oil at no cost is totally dependent on the current high price of oil.**

[49]Ramani, Sun Petrochem Corporation India, pers com Nov 2022

Attachments

Attachment 1	Draft Model Used Oil Management Regulations (2014)
Attachment 2	Drafting Instructions to Revise Model Used Oil Management Regulations (2018)
Attachment 3	Samoa Used Oil Management ADF Cost Calculation (2022)
Attachment 4	Draft Used Oil Code of Practice for Pacific Countries (2022)

Attachment 1 Draft Model Used Oil Management Regulations (2014)

Attachment One:

DRAFT MODEL USED OIL REGULATIONS

PART 1 - PRELIMINARY

1. Short title and commencement

(1) These Regulations may be cited as the Used Oil Regulations 2014.

(2) These Regulations commence on [insert commencement date].

2. Interpretation

(1) In these Regulations, unless the context otherwise requires:

"Act" means the [name of Act under which Regulations made].

"base oil" means an oil that is free from contaminants or additives and to which other substances may be added for a particular application.

"Basel Convention" means the Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Basel, 1989.

"Fund" means the Waste Recycling Fund established by regulation 2.4.

"licensed collector" means a person who is licensed as a waste management operator under the Act to collect used oil.

"licensed recycler" means a person who is licensed as a waste management operator under the Act to recycle or sell used oil.

"Managing Agency" means the body responsible for administering these Regulations.

"oil" means:

(a) petroleum based oil (including lubricant base oil; prepared lubricant additives containing carrier oils; lubricants for engines, gear sets, pumps and bearings; greases, hydraulic fluids; transmission oils; and transformer and heat transfer oils);

(b) synthetic equivalents of goods covered by paragraph (a); and

(c) any other goods determined by the Minister for the purposes of this definition.

"oil recycling benefit" means an amount payable under Part 4.

"recognised overseas buyer" means a person in a country other than [country] who is recognised in that country as a person who recycles oil in an environmentally sound manner by complying with the Basel and Waigani Conventions.

"recycled oil" means:

(a) goods produced from used oil; or

(b) used oil that has been re-refined.

"recycling levy" means the levy impose by regulation 2.1.

"recycling of oil" means:

(a) producing goods from used oil; or

(b) re-refining used oil.

"re-refined" has the meaning given by subregulation (2).

"used oil" means any oil that has been used and that, as a result of that use, is contaminated by physical or chemical impurities.

"Waigani Convention" means the 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, Waigani, 1995.

(2) For the purpose of these Regulations, used oil has been re-refined if it has been restored to the condition of a base oil meeting the criteria in Schedule 1:

(a) by thin film evaporation, followed by solvent extraction or hydrofinishing; or

(b) by vacuum distillation, followed by solvent extraction or hydrofinishing; or

(c) by another process approved for the purpose of this subregulation by the Minister as being:

(i) consistent with the objects of the Act and these Regulations; and

(ii) similar in purpose and effect to the processes mentioned in paragraphs (a) and (b).

3. Objectives of these Regulations

The objectives of these Regulations are to:

(a) develop a product stewardship arrangement for used oil that promotes the sharing of responsibility by importers, retailers, consumers and users of oil;

(b) provide an arrangement for managing used oil that is financially sustainable;

(c) ensure that management of used oil complies with relevant international conventions and national legal requirements;

(d) ensure that users of oil contribute to the costs associated with exporting or otherwise managing used oil in an environmentally sustainable manner;

(e) manage the export of used oil in an environmentally sound manner.

PART 2 - LEVY

4. Recycling levy on oil

For the purposes of section XX of the Act, a levy is imposed on the importation of oil into [country].

5. Amount of levy

(1) The amount of levy is to be determined by the Minister.

(2) In determining the amount of levy, the Minister must have regard to:

(a) the costs of storing used oil, including the costs of providing temporary storage containers;

(b) the costs of collecting and transporting used oil;

(c) the costs of recycling used oil;

(d) if the used oil is not recycled, the costs of exporting the used oil for recycling, or selling the oil for further use;

(e) the estimated amount of the oil recycling benefit; and

(f) the estimated costs of ongoing initiatives to raise people's awareness of the need to protect the environment by collecting and recycling used oil.

(3) Before determining the amount of levy, the Minister must consult:

(a) [any relevant government bodies, such as the Department of Finance];

(b) importers of oil;

(c) a representative of major users of oil;

(d) the power utility;

(e) any existing oil recyclers;

(f) business representatives; and

(g) community representatives.

(4) The Minister must ensure notice of the amount of recycling levy is published at least one month before the levy commences.

6. Payment of levy

The recycling levy is payable by the importer of the oil.

7. Waste Recycling Fund

(1) A Fund called the Waste Recycling Fund is established.

(2) The recycling levy is to be paid into the Fund.

(3) The Fund is to be managed by the Managing Agency, in accordance with the requirements of the [Department of Finance or other government body].

(4) Moneys paid into the Fund are to be used:

(a) for payment of oil recycling benefit, in accordance with Part 4;

(b) to provide short term oil storage containers; and

(c) for ongoing initiatives to raise people's awareness of the need to protect the environment by collecting and recycling used oil; and

PART 3 – DEALING WITH USED OIL

8. Short term storage of used oil

(1) Used oil must be stored in a safe and an environmentally approved manner.

(2) In particular, used oil must be stored in a container that:

(a) is in good condition and labelled to show it contains used oil;

(b) has spill prevention and collection equipment that includes appropriate and adequate sized bunding; and

(c) has adjacent and accessible fire prevention and suppression equipment.

9. Collection of used oil

(1) A licensed collector must:

(a) meet all health, safety and environmental requirements for the handling, collection, transport and storage of used oil;

(b) wear appropriate personal protective equipment;

(c) provide suitable storage tanks where required, that have appropriate spill prevention equipment and appropriate and adequate sized bunding;

(d) have adjacent and accessible fire prevention and suppression equipment; and

(e) keep a record of each amount of used oil received.

10. Recycling or export of used oil

(1) A licensed recycler must:

(a) meet all health, safety and environmental requirements for the handling, transport and storage of used oil;

(b) wear appropriate personal protective equipment;

(c) provide suitable storage tanks where required, that have appropriate spill prevention equipment and appropriate and adequate sized bunding and fire extinguishers;

(d) have adjacent and accessible fire prevention equipment;

(e) keep a record of each amount of used oil received;

(f) recycle used oil by:

(i) re-refining the used oil in [country]; and

(ii) selling the recycled oil for reuse in [country]; or

(iii) subject to subregulation (4), export the used oil.

(2) If the licensed recycler sells the recycled oil, he or she must be reasonably satisfied that the buyer of the oil will deal with the oil in an environmentally safe manner.

(3) If the licensed recycler exports the used oil, he or she must be reasonably satisfied that the person to whom the oil is exported will deal with the oil in an environmentally safe manner.

(4) The recycler may only export used oil with the approval of the Minister.

11. Occupational health and safety

(1) All persons involved in collecting, storing, transporting or recycling used oil must wear appropriate personal protective equipment.

(2) An employee of a licensed collector or recycler must wear an identity card showing his or her employment.

12. Licensing of collectors and recyclers

(1) A person who collects used oil for the purpose of recycling or export, or recycles or exports used oil, must be licensed under the Act.

(2) A person may apply in writing to the Minister to be licensed as a used oil collector or a used oil recycler, or both.

(3) The Minister may grant the licence if he or she is satisfied:

(a) for an application for a used oil collector's licence – that:

(i) the applicant has a viable business model to operate an oil collection business;

(ii) the applicant has the relevant expertise and equipment to collect, handle and transport used oil in compliance with environmental and safety standards and guidelines;

(iii) all vehicles and drivers used by the applicant in the collection of used oil will comply with transport regulations and any licensing requirements for transporting hazardous materials; and

(iv) all transportation vehicles are appropriately labelled.

(b) for an application for a used oil recycler's licence – that:

(i) the applicant has a viable business model to operate an oil recycling and export business;

(ii) the applicant has suitable bulk storage tanks that are installed on an impervious base; and

(iii) any spillage will be caught by an appropriate and adequately sized bund;

(iv) the applicant has the relevant experience and equipment to recycle used oil in compliance with safety and environmental standards and guidelines;

(v) if used oil is to be exported, the applicant is able to establish that the oil will be sold to a recognized overseas buyer of used oil in accordance with the Basel Convention and the Waigani Convention; and

(vi) the applicant has not been convicted of any environmental offences in [country]; and

(c) in both of those cases – that:

(i) the applicant's employees are trained in the handling of used oil and will be issued with appropriate personal protective equipment;

(ii) the applicant is aware of his or her obligations under the Act and these Regulations, and under relevant environmental legislation, in relation to the handling of used oil.

13. Licence

The licence must be in the form approved by the Minister.

PART 4 –OIL RECYCLING BENEFIT

14. Entitlement to benefit

(1) A licensed recycler is entitled to be paid oil recycling benefit for used oil that is, within a benefit period:

(a) recycled in accordance with these Regulations; or

(b) exported in accordance with regulation 3.3.

(2) However, a licensed recycler is only entitled to be paid benefit for used oil that is recycled or exported after [specific date OR the date of commencement of these Regulations].

15. Application for benefit

(1) A licensed recycler may apply to the Managing Agency for payment of oil recycling benefit for a benefit period.

(2) The application must:

(a) be made using the form approved by the Managing Agency;

(b) set out, for the benefit period, the quantity of used oil:

(i) recycled;

(ii) sold or available for sale; and

(iii) exported; and

(c) be signed by the licensed recycler.

(3) The application must have with it:

(a) documentation that establishes the quantity of used oil that has been recycled and is available for sale; and

(b) for oil that is being exported - shipping documentation (including the bill of lading) to show the quantity of used oil that is ready to be shipped.

(4) The Managing Agency must assess the application for benefit and issue a notice of assessment to the licensed recycler showing the amount of benefit and how it was calculated.

(5) In assessing the application for the benefit, the Managing Agency may:

(a) ask the applicant for further information about:

(i) the dates and quantities of used oil received by the applicant; and

(ii) the name of the licensed collector that provided the used oil;

(b) inspect the oil loaded for shipping.

16. Amount of benefit

(1) The amount of benefit is to be based on the quantity of used oil recycled, ready to be exported or exported during the benefit period.

(2) In determining the amount of benefit, the Managing Agency must have regard to:

(a) the volume of used oil that has been recycled; and

(b) the volume of used oil that has been exported or is ready for export.

17. Payment of benefit

Benefit is payable out of the Fund.

PART 5 – MISCELLANEOUS

18. Contract

(1) Managing Agency may enter into agreements with a licensed collector and a licensed recycler concerning the collection and recycling of used oil and the sale and export of recycled oil.

(2) An agreement may require the collector or recycler to pay a bond.

19. Offences

(1) A person must not dispose of used oil otherwise than in accordance with the Act and these Regulations.

(2) In particular, a person must not:

(a) pour used oil onto the ground;

(b) pour used oil into a drain or into still or flowing water;

(c) allow used oil to escape onto the ground or into a drain or still or flowing water;

(d) store used oil in a way that allows the oil to escape onto the ground or into a drain or still or flowing water; or

(e) burn used oil in the open air.

(3) A person who contravenes subsection (1) or (2) commits an offence and is liable on conviction to a fine not exceeding XX penalty units or imprisonment for a term not exceeding [PERIOD], or both.

20. Offences by licensed collector or recycler

(1) A licensed collector and a licensed recycler:

(a) must transport used oil in such a way that no oil escapes from the container in which it is transported;

(b) must not allow collected used oil to escape onto the ground or into still or flowing water; and

(c) must comply with the requirements of these Regulations in dealing with used oil .

(2) A licensed recycler must carry out the recycling process in such a way that no used oil escapes onto the ground or into still or flowing water.

(3) A person who contravenes subsection (1) or (2) commits an offence and is liable on conviction to a fine not exceeding XX penalty units or imprisonment for a term not exceeding [PERIOD], or both.

21. Obligation to clean up spills

If a licensed collector or licensed recycler accidentally discharges used oil during storage, collection, transportation or recycling, he or she must, immediately after becoming aware of the discharge, take all necessary action to:

(a) contain the spill;

(b) clean up the spill; and

(c) notify the Managing Agency.

22. Report by Managing Agency

(1) The Managing Agency must give an annual report to the Minister by [DATE] each year, setting out:

(a) the amount of levy paid into the Fund;

(b) how money in the Fund has been spent;

(c) the total quantity of oil on which levy is paid;

(d) the total quantity of used oil collected; and

(e) the total quantity of used oil recycled or exported.

(2) The Minister must present the report to Parliament within one month of receiving it.

(3) The Managing Agency must make the report available to the public after it has been presented to Parliament.

23. Reports by licensed collectors and recyclers

(1) A licensed collector must give a written report to the Managing Agency and the Minister every 12 months setting out the amount of used oil:

(a) collected; and

(b) delivered to a licensed recycler.

(2) A licensed recycler must give a written report to the Managing Agency and the Minister every 12 months setting out the amount of used oil:

(a) received;

(b) held awaiting decision whether it should be recycled, sold or exported;

(c) identified for recycling;

(d) undergoing recycling;

(e) identified for sale in [country] as used oil;

(f) sold in [country] as used oil;

(g) identified for export;

(h) ready for shipping;

(i) shipped.

(3) The report must have with it:

(a) copies of relevant documents relating to the recycling, sale or export;

(b) a health and safety incident report; and

(c) a report concerning whether the recycler has complied with relevant standards and codes of practice relating to the environmentally sound management of used oil.

24. Inspection

(1) The Managing Agency may appoint an inspector for the purposes of these Regulations.

(2) An inspector may, during business hours:

(a) enter premises used by a licensed collector or a licensed recycler for the storage or recycling of used oil;

(b) inspect the storage and recycling operations carried out on those premises;

(c) inspect books and records relating to the collection and recycling of used oil.

(3) Before carrying out an inspection, an inspector must produce evidence of his or her appointment.

25. Review

(1) The rate of levy and benefit payable under these Regulations must be reviewed annually.

(2) Three years after the commencement of these Regulations, the Minister must appoint a person to review:

(a) the operation of the Fund; and

(b) generally, the operation of the system of managing used oil under these Regulations.

SCHEDULES

SCHEDULE 1 – RE-REFINED BASE OIL CRITERIA

1. Mutagenicity

The oil must be non–carcinogenic, demonstrated by having a mutagenicity index of less than 1 using the Modified Ames Test.

2. Poly–aromatic hydrocarbons

(1) The oil must contain less than the following for each kilogram of oil:

(a) 10 mg of benzo(a)pyrene;

(b) 10 mg of dibenz(ah)anthracene;

(c) 100 mg of benz(a)anthracene;

(d) 100 mg of benzo(b)fluoranthene;

(e) 100 mg of benzo(k)fluoranthene;

(f) 100 mg of chrysene;

(g) 100 mg of indeno(123–cd)pyrene.

(2) The total amount of poly–aromatic hydrocarbons mentioned in subclause (1) that the oil contains must be less than 400 mg for each kilogram of oil.

(3) The total amount of all poly–aromatic hydrocarbons that the oil contains (including poly–aromatic hydrocarbons mentioned in subclause (1)) must be less than 1 000 mg for each kilogram of oil.

3. Polychlorinated biphenyls

The oil must contain less than 2.0 mg of polychlorinated biphenyls for each kilogram of oil.

4. Polychlorinated dibenzo–p–dioxins

The total amount of dioxins and furans that the oil contains must be less than 10 picograms Toxic Equivalent for each gram of oil.

5. Total acid number

The oil must have a total acid number of less than 0.07 mg of potassium hydroxide for each gram of oil.

6. Heavy metals

The oil must contain less than the following for each kilogram of oil:

(a) 5 mg of arsenic;

(b) 2 mg of cadmium;

(c) 10 mg of chromium;

(d) 100 mg of lead.

7. Appearance

The oil must have a clear and bright appearance.

SCHEDULE 2

PETROLEUM PRODUCT CRITERIA

1. Density

The petroleum product must have a density:

(a) equal to or exceeding 0.900 at 15º Celsius as determined by ASTM 1298; or

(b) less than 0.900 at 15º Celsius as determined by ASTM 1298 and:

(i) a maximum cetane index of 35 as determined by ASTM D976; or

(ii) in respect of the heaviest 10% of a particular volume of fuel tested, a value of 0.35% mass of carbon residue on 10% distillation residue as determined by ASTM D189 or D524; or

(iii) a minimum pour point of 15º Celsius as determined by ASTM D97; or

(iv) a minimum sulphur content of 1.5% mass as determined by ASTM D129; or

(v) a minimum kinematic viscosity of 10 centistokes (millimetres squared per second) at 40º Celsius as determined by ASTM D445.

2. Duty

Duty on the petroleum product must have been paid at a rate that is applicable to diesel fuel.

3. Use

The petroleum product must be capable of being used as a fuel otherwise than in an internal combustion engine.

4. References to ASTM tests

In this Schedule, ASTM, followed by a number, is a reference to the test so numbered as prescribed by the American Society for Testing and Materials and set out in Section 5 of the *Annual Book of ASTM Standards* (1986 revision) published by the American Society for Testing and Materials at Philadelphia, Pennsylvania in the United States of America.

Attachment 2 Drafting Instructions to Revise Model Used Oil Management Regulations (2018)

Attachment Two:

GEF ID: 4066 – UNEP/GEF PAS Pacific POPs Release Reduction Project

Drafting instructions to amend the Draft Model Used Oil Regulations

Prepared by Esther Richards for the Secretariat of the Pacific Regional Environment Programme,
Version 1 (25 April 2018)

These drafting instructions are to be read in conjunction with the Draft Model Used Oil Regulations

Current provisions	Issue or policy intent	Drafting instructions
Interpretation	The undefined terms "environmentally sound" and "environmentally safe" are used throughout the Model Regulations. The Basel Convention includes a definition for environmentally sound management of hazardous wastes which can be adapted for used oil, i.e. "*taking all practicable steps to ensure that used oil is managed in a manner which will protect human health and the environment against the adverse effects which may result from the used oil*".	Use consistent terminology throughout the document (i.e. "environmentally sound management" rather than "environmentally safe") and define it in accordance with the Basel Convention.
Section 4	Section 4 imposes a levy on the importation of oil into the country only. This excludes oil produced domestically by re-refining used oil. As oil that is re-refined and sold domestically will also require end-of-life management, the levy should also apply. The disparity in levy application may also breach international trade conventions.	Apply the levy to imported oil as well as oil that is produced domestically.
Section 6	Section 6 states that the recycling levy is payable by the importer of the oil. Based on the revisions to section 4 above, the levy would also be payable by any producer who re-refines used oil into new oil that is sold domestically.	Amend the provision so that the recycling levy also applies to domestic producers of oil.
Section 8	Section 8 prescribes requirements for the short-term storage of used oil, including requirements for storage containers. However, the provisions do not address siting of storage containers to minimise environmental harm from occurring. Used oil containers should only be stored on sites that are licensed (e.g. under Environment Act) for such storage.	Insert a new provision in section 8 to require used oil to be stored at a site holding the appropriate environmental licence or authorisation.
Section 9	Section 9 describes the requirements that a licensed collector must meet to collect used oil. Some of the requirements pertain to the storage of used oil, which duplicate the requirements for short-term storage in section 8.	Simplify and streamline section 9 by replacing sections 9 (c) and 9(d) with a cross reference to section 8.
Section 10	Section 10 describes the requirements that a licensed recycler must meet to recycle or export used oil. Some of the requirements pertain to the storage of used oil, which duplicate the requirements for short-term storage in section 8.	Simplify and streamline section 10 by replacing sections 10(c) and 10(d) with a cross reference to section 8.

Current provisions	Issue or policy intent	Drafting instructions
Section 10(3)	Section 10(3) requires a licensed recycler to be 'reasonably satisfied' that the receiver of used oil will deal with the oil in an environmentally sound manner. While this is an important factor in complying with environmentally sound management under the Basel or Waigani Conventions, it is not the only one. It is necessary to ensure that the entire process of exporting used oil is done in compliance with the Conventions.	Amend section 10(3) to require a licensed recycler to ensure that the exportation of used oil complies with the Basel or Waigani Convention.
Section 3.3(4)	Section 3.3(4) states that a "recycler may only export used oil with the approval of the Minister". A person who recycles or exports used oil is already required to be licensed under the Act (section 12). This provision (section 10(4)) introduces an undefined term, "recycler", and also introduces ambiguity by potentially suggesting that the Minister must approve each individual shipment of used oil.	Delete section 10(4).
Section 11	Section 11 prescribes occupational health and safety (OHS) requirements for persons involved in managing used oil. A significant OHS (and environmental) risk associated with used oil management is accidental spills. In the event of a spill (e.g. during transport), appropriate emergency procedures, including spill kits, should be in place to mitigate and reduce adverse outcomes. Moreover, relevant persons (employees and contractors) should be well-versed in these emergency procedures to ensure they can be effectively executed if necessary. Spill contingency procedures may also be partially addressed under the country's National Marine Spill Contingency Plan.	Insert additional provisions to require licensed collectors and licensed recyclers to: - put emergency procedures, including spill kits, in place to mitigate and reduce adverse environmental and public health outcomes in the event of a spill - ensure that all employees and contractors, involved in the collection or recycling of used oil are appropriately trained in used oil handling and spill response procedures according to their level of involvement or responsibility.
Section 12	Section 12 enables a person to apply in writing to the Minister to be licensed as a used oil collector or used oil recycler or both. However, it does not specify the information that an applicant must provide, although the information can be inferred from the matters that the Minister must consider in deciding on an application. It is important that application requirements be prescribed in the Regulations to provide a level playing field for all applicants, and to enable potential applicants to be aware of the Minister's expectations. An application must include sufficient information that will enable the Minister to determine:	Insert provisions to make it clear that an application to become a licensed recycler or a licensed collector, must be in an approved form and include specific information, including: - details of the applicant's experience in used oil collection or recycling (whichever is relevant) - a proposed operational and maintenance plan which include sections addressing: o engineering drawings and details of used oil infrastructure (e.g. containment bunds) o vehicles, storage equipment and other equipment to be used; o details of the sites where used oil activities are proposed to take place, including evidence of ownership or lease of the sites (*the licence, if granted, should authorise used oil activities at these sites only)*

Current provisions	Issue or policy intent	Drafting instructions
	- whether or not the operations proposed by the applicant would result in unacceptable harm to public health and the environment. - in the case of used oil export, whether the export will be likely to comply with the country's obligations under the Basel or Waigani Conventions.	o proposed spill response procedures and other environmental protection measures to be taken o occupational health and safety, including measures to be taken to ensure that employees and sub-contractors have the required level of training; and measures to ensure the health and safety of employees - details of the intended recipient of the used oil (e.g. licence of the receiving facility demonstrating that they are approved by the regulatory agency to receive used oil; signed letter of intent between the applicant and the receiver regarding the trade in used oil) - a signed declaration by the applicant stating the information provided to be truthful - Any other information required by the Minister.
	Section 12 also prescribes the matters that the Minister must consider in deciding on an application for a used oil collector's licence, a used oil recycler's licence or both. This section requires the Minister to consider matters that are unlikely to be in place at the time of the application. For example, the Minister must be satisfied that all transportation vehicles are appropriately labelled (section 3.5(a)(iv)), and that suitable bulk storage tanks are installed on an impervious base (section 3.5(b)(ii)). However, an applicant is unlikely to purchase vehicles or invest in infrastructure until a licence is granted and would therefore be unable to demonstrate these matters at the time of lodging the application. These matters are more suited to be stipulated as conditions of the licence (if granted), under section 13. For example, if a licence is granted, then the licence holder must ensure that transportation vehicles are appropriately labelled. Failure to comply with this licence condition would be an offence and provide grounds for cancelling or suspending the licence.	Delete the following provisions: - 3.5(a)(iii) - 3.5(a)(iv) - 3.5(b)(ii) - 3.5(b)(iii) - 3.5(c)(i) The matters in these deleted provisions will be specified as licence conditions in section 13.
		Require the Minister, for a used oil collector's licence and a used oil recycler's licence, to be satisfied that: - the proposed emergency response procedures will acceptably mitigate or reduce adverse impacts in the event of an accident - the proposed engineering design of used oil infrastructure (e.g. bunds around storage tanks) will provide adequate environmental protection by mitigating the egress of used oil or associated wastes into the environment.
		Insert a new provision to require that the Minister make and communicate a decision to the applicant within [x] business days. However, before this timeframe expires, the Minister may, by notice to the applicant, extend the period for making a decision by a further [x] business days. (*timeframes will be set by the country*).
		Require the Managing Agency to publish and maintain a publicly available list of licensed collectors and licensed recyclers.

Current provisions	Issue or policy intent	Drafting instructions
Section 13	Section 13 states that a used oil collector's licence or used oil recycler's licence must be in the form approved by the Minister. The used oil collector's licence and the used oil recycler's licence will be the main instruments for regulating the environmentally sound management of used oil. As such the provisions should be elaborated to provide greater clarity to potential applicants on how licenses will be regulated, including: - conditions that may be imposed under a licence and the consequences of non-compliance - conditions under which a licence can be amended, cancelled, suspended, surrendered, or transferred to another person	Insert a new provision that enables the Minister to impose conditions on a collector's or recycler's licence. Licence conditions may include: - a requirement for all vehicles and drivers used under the licence to comply with transport regulations and licensing requirements for transporting hazardous materials - labelling requirements for vehicles and equipment - minimum specifications and maintenance requirements for bulk storage tanks (i.e. impervious base, and appropriately and adequately sized bund) and other used oil equipment - requirement to maintain a register of training provided to employees and contractors - reporting requirements - requirement to retain all records required by the regulations for [x] years *(country to specify the time*). - The amount of bond payable to the Fund (*see drafting instructions for Section 18 below*) Prescribe a fine, a term of imprisonment or both for a person or corporation that does not comply with a licence condition. [*country to specify details*]
		Insert new provisions that enable the Minister to amend, cancel, suspend and transfer a licence as follows: **Amendment of a licence** - The holder of a licence may apply to the Minister, using the approved form, to amend their licence. The licence holder must provide the information required in section 12, if different to the information provided for the original licence. o For example, a licence holder may apply to amend the licence to include additional used oil operational sites, and would need to provide details of spill response procedures for the new site, construction drawings, etc. - In deciding the application, the Minister must consider the matters prescribed in section 12. A decision must be made and communicated to the applicant within [x] business days, however, before this timeframe expires, the Minister may, by notice to the applicant, extend the period for making a decision by a further [x] business days. **Cancelation or suspension of a licence** - The Minister may cancel or suspend a licence, if the Minister is satisfied that there is a sufficient

Current provisions	Issue or policy intent	Drafting instructions
		ground for doing so. Grounds may include the following: o The licence was granted on the basis of false or misleading information provided by the applicant o A condition of the licence has not been complied with o The licence was granted on the basis of information and circumstances that have changed, such that continued operation is likely to result in unacceptable harm to public health or the environment. **Transfer of a licence to another person** - The holder of a licence may apply to the Minister, using the approved form, to transfer the licence to another person. For example, a licence may be transferred if a business is sold to another person. Information to be provided with the application include: o details of the transferee, including their experience in used oil collection and/or recycling (whichever is relevant to the licence being transferred o signed consent of the proposed transferee o a signed declaration by the proposed transferee stating that they are aware of their obligations under the licence, the Act, these Regulations, and other relevant legislation (e.g. environmental and health and safety legislation) in relation to the management of used oil. - In deciding the application, the Minister must consider whether: o the proposed transferee has the experience relevant to the licence being transferred o the applicant has been convicted of any environmental offences in [country] o the applicant is aware of his or her obligations under the licence, the Act, these regulations, and other relevant legislation in relating to the management of used oil. - A decision must be made and communicated to the applicant within [x] business days, however, before this timeframe expires, the Minister may, by notice to the applicant, extend the period for making a decision by a further [x] business days.
Section 13	It is expected that a licence would be granted for a specific period of time (e.g. 10 years, unless cancelled, suspended or surrendered) to provide some operational certainty to the licence holder and to help justify investment in infrastructure and equipment. It is suggested that an annual licence fee be imposed.	Amend the provisions to require the holder of a collector's licence and a recycler's licence to pay an annual fee within [x] business days of the anniversary of the licence being granted. Prescribe the annual fees in the Fee Schedule recommended in these drafting instructions.

Current provisions	Issue or policy intent	Drafting instructions
Section 14	Section 14 entitles a licensed recycler to be paid an oil recycling benefit for used oil that, within a benefit period, meets stipulated criteria. 'Benefit period' is not defined in the current provisions.	Define 'benefit period'. A suggested definition is: the length of time over which the oil recycling benefit is calculated.
Section 15	Section 15 prescribes details around the application for an oil recycling benefit. Subsection (2) specifies the information that must be included in an application for oil recycling benefit. In the case of re-refined oil, the applicant should be required to demonstrate that the re-refined oil meets minimum acceptable criteria. This will help to prevent fraud.	Amend Suggested definition of "independent laboratory": - a laboratory that: (a) is independent of the person making the claim for the oi recycling benefit; and (b) operates at arm's length from the person; and (c) has appropriate certification, facilities, resources and expertise to conduct the tests necessary for the purposes of Schedule 1.the provisions as follows: - An application for payment of the oil recycling benefit for re-refined oil, must include an original copy of the test results from an independent laboratory. - The independent laboratory must sample and test the re-refined oil against the criteria in Schedule 1.
	Subsection (4) requires the Managing Agency to assess the application for benefit and issue a notice of assessment to the licensed recycler showing the amount of benefit and how it was calculated. There are no timeframes prescribed around the assessment and notification process. If an application is not assessed (and paid) in a timely manner, the delays could affect cash flows which could, for example, delay the exportation of used oil and cause the licensed recycler to not meet contractual obligations with the receiver of the used oil.	Insert a new provision which requires the Managing Agency to assess the application for payment of oil recycling benefit and notify the applicant within [x] business days of receiving an application or, if additional information was requested under section 15(5), within [x] business days of receiving the additional information.
Section 16	Section 16 prescribes matters around determining the amount of the oil recycling benefit. The amount of the used oil recycling benefit payable to a licensed recycler would depend on the matters currently prescribed in section 16(2) as well as pre-determined benefit rates for recycled oil (e.g. $0.50 per litre) and exported used oil (e.g. $0.20 per litre). Prescribing the benefit rates in the Regulation will provide greater clarity and certainty to recyclers about the potential benefits payable, which will improve business operations.	Insert a new provision which requires the Minister to publish by gazette notice, the benefit rates (for recycled oil and exported used oil) payable under these regulations.
Section 17	Section 17 concerns the payment of the oil recycling benefit. This section does not prescribe any timeframes or details around when and how payments will	Insert a new provision which requires the Managing Agency to pay the assessed used oil recycling benefit to the licensed recycler within [x] business days. Require payment to be made by [*country to*

Current provisions	Issue or policy intent	Drafting instructions
	be made by the Managing Agency. As with section 15(4), if the assessed benefit is not paid in a timely manner, there could negative knock on effects for sustaining used oil activities.	*specify payment methodology, e.g. electronic funds transfer, cheque, etc*].
Section 18	Section 18 enables the Managing Agency to enter into a contract with a licensed collector or recycler. Subsection (2) enables the Managing Agency to require the licensed collector or recycler to pay a bond under the contract. However, there are no details prescribed around the purpose of the bond, how the bond would be determined, how and when the bond would be repayable or forfeited, and how the Managing Agency will ensure the availability of funds, if it becomes necessary to pay a claim against the bond or to discharge the bond.	Prescribe the following details for a bond: - The purpose of a bond is to ensure that funds are available to cover any costs that may be incurred as a result of taking action to bring a used oil operation into compliance or to rehabilitate any environmental harm caused by the actions of the collector or recycler. - The Managing Agency must decide the amount of the bond. - The Managing Agency may make a claim against the bond to recover reasonable costs or expenses of taking action to prevent or minimise environmental harm or to restore the environment. - Before making a claim, the Managing Agency must first give the other party a notice of the intended action and allow at least [x] business days for the other party to respond. - The Managing Agency must consider the other party's response in deciding whether to make the claim and must notify the other party of its decision within [x] business days. - The licensed collector or recycler may apply to the Managing Agency to reduce the amount of the bond (e.g. if used oil operations have been scaled down), or discharge the bond (e.g. if operations have cease and there are unlikely to be any environmental issues). - The application should include a statement demonstrating the extent to which the licence conditions have been complied with. The Managing Agency may request additional information to decide the application. - If the Managing Agency is satisfied that there is not likely to be any claim on the bond, it may decide to reduce or discharge the bond. A decision must be made and notified to the applicant within [x] business days of receiving the application or additional information if requested. - Bond revenue must be quarantined from Levy revenue to ensure funds are available to support claims or to discharge the bond as necessary.
Section 19	Section 19 prescribes the general offences under the Regulations. It is suggested to make it an offence for a person to knowingly give used oil to an unlicensed collector or recycler.	Prescribe a new offence in section 19 as follows: - A person must not give used oil to an unlicensed collector or an unlicensed recycler.

Current provisions	Issue or policy intent	Drafting instructions
Section 20	Section 20 prescribes offences that apply specifically to licensed collectors, and licensed recyclers. Subsection (2) specifically requires a licensed recycler to exercise care in not allowing used oil to escape onto the ground or into still or flowing water. It should also be an offence for the licensed waste recycler to allow the unauthorised release of any wastes and effluents generated by the used oil recycling process. It should be noted that such releases, may be authorised under other environmental or waste management legislation.	Amend the provisions to make the unauthorised release of wastes and effluents from used oil recycling an offence.
Section 23	Section 23 requires a licensed collector to provide a written report every 12 months; However, it is not clear that the written report should cover the previous 12 months.	Amend sections 23(1) and 23(2) to make it clear that the written report must cover the previous 12 months.
Section 24	Section 24 describes the powers of inspectors appointed by the Managing Agency. The improper transportation of used oil poses an immediate public health and environment risk. An authorised inspector should therefore be empowered to stop and inspect used oil transportation vehicles and to provide direction to avert any immediate dangers to public health and the environment.	Insert an additional power in section 24(2) that enables an inspector to stop and inspect used oil transportation vehicles and to provide the driver with instructions if such instructions are necessary to mitigate immediate risks to public health or the environment.
	The Regulations do not provide any guidance on how to deal with issues that may be revealed during inspections. The Managing Agency should be enabled to issue a 'Notice to Comply' (or similar) to require the licensed collector or licensed recycler to take corrective actions to address any issues identified during inspections.	Prescribe a new provision that enables the Managing Agency to issue a Notice to Comply to the licence holder, to correct any issues discovered during inspections. The Notice to Comply should stipulate the issue(s) to be addressed, the date those issues were discovered, the deadline for action to be taken, and the penalty for not complying with the notice.
Section 25	Section 25 provides for the regular review of the levy, used oil recycling benefit, the operation of the Fund, and the used oil, management system. Subsection (2) requires the Minister to appoint a person, three years after commencement of the Regulations, to review the operation of the fund and the used oil management system. It is suggested that after the first three-year review, a further review should be a conducted every 5 years to ensure the efficient operation and continuing relevance of the used oil management system.	Amend section 25(2) to require a review to be conducted every 5 years after the first three-year review.

Current provisions	Issue or policy intent	Drafting instructions
n/a	The Model Regulations as written and as amended by these drafting instructions, enable a person to submit several applications including to: - become a licensed collector and licensed recycler - amend a used oil collector's licence or used oil recycler's licence - transfer a used oil collector's licence or used oil recycler's licence to another person. There are several general matters for applications that should be prescribed to provide greater clarity to persons operating under the regulation. These include clarifying the application fees and powers of the Minister to request additional information to support an application.	Insert a new section ('Applications') with provisions for the following: - require that all applications under the Regulation, excluding an application for an oil recycling benefit, be accompanied by the prescribed application fee - prescribe a Fee Schedule for the various application categories [*country to set the amount of each fee*] - enable the Minister to request additional information from an applicant to support an application. The information request must be given to the applicant within [x] business days of receiving the application and it must stipulate the deadline for providing the information. However, the Minister and the applicant may agree to extend the deadline for providing the additional information.

Attachment 3 Samoa Used Oil Management ADF Cost Calculation (2022)

	Unit Cost (Tala)	Annual Operating Costs (Tala)	Cost per 40,000Lt collected	Cost per Lt (Assumes 200000Lt annual collection)
One off costs (not considered)				
Flash point instruments (4)	2000	8000		
Transfer Pump (2)	188	376		
Signage (one off)		1200		
Fire extinguisher (one off)		1000		
TOTAL		**10576**		
Annual Costs				
SWOMP Operating Costs (12 months)		12600		
Spill response equipment (one off)		150		
Gloves	7	42		
Glasses	13	78		
Hard Hat	30	180		
Boots	105	630		
Overalls	155	930		
Chemical Gloves	30	180		
Total Annual Operating Cost		**14790**		**0.07**
40,000 Lts Collected (4Days)				
Crane Truck hire (4hrs per day, 4 days per Month)	180/hr		2880	0.072
Forklift (10hrs per day, 4 days per Month)	100/hr		4000	0.1
Labour (6 staff)	5 /hr		336	0.0084
IBC	200			
Drum (new)	56		10667	0.27
Pallets (4 drums per pallet)	3		143	0.004
Total				**0.45**
Grand Total Collection Cost per Lt				**0.52**

Apia Costs

Transport and unloading/loading

Iso Tank Cleaning

Seafreight (per Container)

SWIRE

Import Costs (per Container)

Waigani Costs

Import Costs

Dangerous Goods Surcharge

Disposal Cost (per Container)

Total Export Cost (per Container)
Total Export Cost per Lt
Total Management Cost per Lt

Total Management Cost per Lt (If SWIRE Free)

Aukland	Aukland	Brisbane	Brisbane
TEU	IsoTank	TEU	IsoTank
1,763	1,763	1,763	1,763
	2,658		2,658
4,535	4,535	5,948	5,948
2,385	2,385	22,006	22,006
3,578	3,578	6,575	6,575
318		318	
6,360	5,486	8,395	17,188

$NZ

From Apia to:
AKL/TGA
Brisbane
Suva
N.S. denotes No

Tala

From Apia to:
AKL/TGA
Brisbane
Suva
N.S. denotes No

18,938	20,404	45,005	56,138
1.18	0.89	2.81	2.44
1.71	**1.41**	**3.34**	**2.96**
1.42	**1.21**	**2.96**	**2.71**

NPDL		Swire		SofranaANL	
20'GP	ISOTank	20'GP	ISOTank	20'GP	ISOTank
9018	6274	2852	2852	3280	3280
No Service	No Service	3741	3741	6548	6548
9018	6274	3519	3519	4890	4890
Service					

NPDL		Swire		SofranaANL	
20'GP	ISOTank	20'GP	ISOTank	20'GP	ISOTank
14,339	9,976	4,535	4,535	5,215	5,215
		5,948	5,948	10,411	10,411
14,339	9,976	5,595	5,595	7,775	7,775
Service					

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

Attachment 4:

Used Oil Code of Practice for Pacific Countries

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

Contents

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 centres
- 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
- 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
- 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
- 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)
- 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, and
- the date of acceptance of the used oil, and
- a description of the used oil being transported, and
- 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, and
- the ID number (if applicable) of the receiving facility, and
- the date of delivery, and
- the quantity of used oil delivered, and
- 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 1000L 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 1000 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
    - 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.
    - 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.

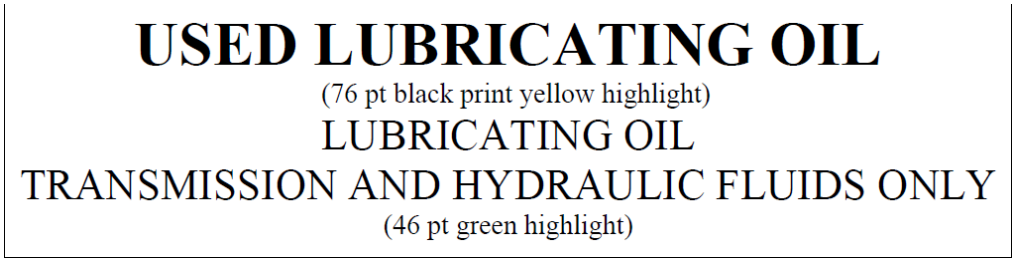
Appendix 1: Site Requirements

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 flamamble 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:



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, or

- 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, and
- 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, and
- 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 metres 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, and
    - Advise those people about the actions they should take to protect themselves, and
    - Help or treat any person injured in the emergency, and
    - 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' and
    - 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, and
    - Any skills the person is required to have, and
    - 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, and
    - Actions to be taken to contact any emergency service provider, and
    - The purpose and location of each item of equipment or material; to be used to manage the emergency, and
    - 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, or
- 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 and
- procedures for notifying the relevant municipal authorities, and
- 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 1000 litres. It is also recommended that secondary containment systems are installed when the quantities are below 1000 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 Categories	Quantity – Total Aggregate Capacity	
	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 Categories	Quantity – Total Aggregate Capacity	
	Less than 20,000 litres	**Greater than or equal to 20,000 litres**
≤ 60 litres	At least 25% aggregate capacity	5000 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, and
- 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 1000 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.)

<table>
<tr><td colspan="2">HAZCHEM 3Z</td></tr>
<tr><td colspan="2">USED OIL</td></tr>
<tr><td> 
Combustible Liquid</td><td rowspan="2">In case of emergency dial 111
Fire, Police or Ambulance
Keep away from ignition sources – no smoking, no naked flames
Ecotoxic to aquatic life – contain spills, protect waterways.
24Hr company contact
Dial xx xxxxx
Regional council pollution hotline
Dial xx xxxxxx</td></tr>
<tr><td> 
Ecotoxic to Aquatic Life</td></tr>
</table>

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 5000 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 and
- 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 1000 L	1.5 metres
1000 L to 2500 L	2 metres
2500 L to 5000 L	3 metres
500 L to 25,000 L	4 metres
25,000 L to 50,000 L	5 metres
50,000 L to 100,000 L	6 metres
100,000 L to 250,000 L	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 1000 litres. Only one such tank shall be permitted per site.

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.