



Nova Scotia
Oil and Glycol Stewardship Plan
January 1, 2020 to December 31, 2024

For submission to:

Honorable Gordon Wilson, Minister of Environment
Halifax, Nova Scotia

For more information:

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1. Introduction

The 2020-2024 Nova Scotia Oil and Glycol Stewardship Plan is submitted by UOMA NS, a division of Atlantic Used Oil Management Association (UOMA Atlantic, a private non-profit organization), division of Nova Scotia, to Nova Scotia Environment, pursuant to the requirements of the Nova Scotia *Regulation, Solid Waste-Resource Management Regulations*, made under Section 102 the *Environmental Protection Act, known as "The Regulation"*.

This stewardship plan covers the term from 2019-2024 or such other period as specified by Nova Scotia Environment.

DEFINITION

In this stewardship Plan

1. *"Collection Facility or Return Facility"* means a facility that accepts the designated materials from persons who wish to return them and that is identified as a collection or return facility through an approved oil and glycol stewardship plan.
2. *"Collector"* means a business registered with UOMA NS to collect the products designated by the Regulation from generators or collection facilities and deliver them to a processor registered with UOMA NS.
3. *"Consumer"* means a person who uses oil, oil filters or glycol for his or her own purposes and not for the purpose of resale.
4. *"Designated materials"* means used oils, used glycol (antifreeze), used filters and containers with a capacity of 50 L or less manufactured for the purpose of holding glycol, oil or diesel exhaust fluid, and includes an aerosol container used to hold a lubricant and a cleaner for automotive parts throughout the territory of the province of Nova Scotia, in accordance with the Regulation.
5. *"Environmental Handling Charges (EHC)"* means the contribution paid to UOMA NS by its brand owners, as established by UOMA NS.
6. *"Generators"* means the users of the designated materials in the normal course of business or as private consumers.
7. *"Processor"* means a business registered with UOMA NS to reclaim (give a second life) the designated materials governed by the Regulation.
8. *"Return Incentives (RI)"* means the financial incentive disbursed by UOMA NS to collectors registered with UOMA NS for recovery of designated materials.

2. UOMA NS

UOMA NS is created for the purpose of satisfying the requirements of “The Regulation” as an organization empowered to manage an integrated recovery and reclamation program for the designated products and increase user awareness. UOMA NS’s vision is to deploy and manage a recovery and stewardship program for used oils, used glycol (antifreeze), used filters and containers with a capacity of 50 L or less manufactured for the purpose of holding glycol, oil or diesel exhaust fluid, and includes an aerosol container used to hold a lubricant and a cleaners for automotive parts in an efficient and environmentally, economically and socially responsible manner. We propose to become a model of excellence from a sustainability perspective.

UOMA NS’s mission is to manage an efficient recovery and stewardship program for designated products on behalf of its members, who are brand owners, in accordance with applicable regulations and from a sustainable development perspective.

UOMA Atlantic division NB, PE and NL have been chosen by the provinces of New Brunswick, Prince Edward Island and Newfoundland and Labrador as the official agent to manage the Used Oil and Glycol program. The New-Brunswick and Prince Edward Island programs have been successful by first understanding how much oil, and other products are sold or distributed in the provinces and then what is collected to clearly define environmental success rates. It is interesting to note that in 2018, 90.5% of the used oil in New Brunswick is collected and recycled. In Prince Edward Island there is similar success even though the program has not been in operation as long where 87.3% of used oil is collected and recycled. There are similar successes with the collection and recycling of the other automotive liquids, filters, glycol and containers. The New Brunswick program has been operating since 2014 while the Prince Edward Island initiative has just passed the three-year mark (April 2015) with over 172 members in New Brunswick and 113 in Prince Edward Island.

UOMA Atlantic has a close relationship with the province of Quebec as they have engaged SOGHU (Quebec’s Used Oil Management Association) as their program manager. SOGHU is considered by the industry as one of the best Used Oil and Glycol program managers in the Country. UOMA Atlantic and SOGHU are also influential members of NUOMAAAC (National Used Oil Material and Antifreeze Advisory Council) whose mandate is to coordinate the Canada-wide used oil and antifreeze recycling effort and encourages consistent national standards for this unique and successful industry-led stewardship recycling program and to have fully integrated programs in all provinces and territories of Canada. UOMA Atlantic efforts will follow as much as possible NUOMAAAC’s efforts always considering the provincial differences in regulation.

3. Program Membership and Program Funding

The plan is submitted by UOMA NS on behalf of the oil and glycol brand owners who have appointed UOMA NS as their agent under the Regulation (for current list of brand owners see **Appendix A**). The program is open to any brand owner to join.

PART II article : 18R

“brand owner” means 1 of the following:

- (i) a person who is the owner or licensee of the intellectual property rights to oil, glycol, oil filters or product containers sold, offered for sale or otherwise distributed in or into the Province,
- (ii) a manufacturer or distributor of oil, glycol, oil filters or product containers sold, offered for sale or otherwise distributed in or into the Province,
- (iii) for oil, glycol, oil filters or product containers imported into the Province, the first person to sell or offer for sale the oil, glycol, oil filter or product containers in the Province;

Funding the program comes from an Environmental Handling Charge (EHC) imposed on the brand owners or first importers (UOMA NS members) in Nova Scotia, based on their sales of products subject to the regulation. The amounts of such Environmental Handling Charges (EHC) are harmonized as much as possible with those charged in western Canada, Quebec, New Brunswick, Prince Edward Island and Newfoundland and Labrador. Since return collection facilities are an important element of the service offered to the public (do it yourself), UOMA NS will work on developing a suitable network of return collection facilities in order to provide the maximum number of locations throughout the province where the designated products can be returned free of charge.

No retailer, brand owner or wholesaler shall charge a consumer, or make visible on a consumer’s receipt of sale, a separate fee with respect to the costs associated with implementing or operating an oil and glycol stewardship program.

Program revenues are applied to the operation of the program, including education, collection system, administration, transport, recycling and disposal of collected residual products as well as a reserve fund. The policy of the program is not to have the reserve fund exceed one year’s operating expenses. Environmental Handling Charge rates might be adjusted as needed with the sole purpose of maintaining the viability of the program.

4. Program Products

Product Definition

The UOMA NS Program manages post-consumer leftover “oil” and “glycol” as defined in the Regulation:

“glycol” means ethylene or propylene glycol used or intended for use as a vehicle or commercial engine coolant, but does not include any of the following:

- (i) plumbing antifreeze,
- (ii) windshield washer antifreeze,
- (iii) lock de-icer and antifreeze,
- (iv) gasoline and diesel fuel antifreeze;

“oil” means

- (i) petroleum or synthetic derived crankcase oil, engine oil and gear oil, and hydraulic fluid, transmission fluid and heat transfer fluid, or
- (ii) fluid used for lubricating purposes in machinery or equipment;

“oil filter” means

- (i) a spin-on style or element style fluid filter that is used in hydraulic, transmission or internal combustion engine applications, or
- (ii) an oil filter, a diesel fuel filter, a storage tank fuel filter and a household furnace oil filter other than a gasoline filter;

“product container” means a container with a capacity of 50 L or less manufactured for the purpose of holding glycol, oil or diesel exhaust fluid, and includes an aerosol container used to hold a cleaner for automotive parts;

Products Accepted

For further clarity, the following oil and glycol products are included as accepted program products.

This list is subject to change by UOMA NS.

EHC applicable on Oil Fluid and Container

Description	Product	Container (50 L or
circulating oil or turbine oil	yes	yes
compressor oil	yes	yes
gear oil	yes	yes
hydraulic fluid	yes	yes
marine engine oil for vessels operating domestically	yes	yes
mineral heat transfer fluid	yes	yes
natural gas compressor oil not consumed in use	yes	yes
paper machine oil	yes	yes
petroleum crankcase or engine oil	yes	yes
polyolester fluids	yes	yes
power steering fluid	yes	yes
refrigeration system oil	yes	yes
re-refined oil	yes	yes
synthetic crankcase or engine oil	yes	yes
transmission fluid	yes	yes
turbine oil	yes	yes
vegetable oil for lubrication	yes	yes

EHC applicable on Oil and Diesel Exhaust Fluid Container only

Description	Product	Container (50 L or less)
2-cycle engine oil	no	yes
agricultural spray oil	no	yes
anti-seize lubricant	no	yes
chain oil	no	yes
conveyor lube	no	yes
dedusting oil	no	yes
diesel exhaust fluid	no	yes
drawing, stamping and shaping oil	no	yes
dripless lube	no	yes
emulsified oil	no	yes
food grade white mineral oil	no	yes
form release oil	no	yes
gasoline/2-cycle engine oil mixes	no	yes
machine tool and slideway lubricant	no	yes
marine cylinder oil	no	yes
metal working oil	no	yes
natural gas compressor oil consume in use	no	yes
pneumatic system oil	no	yes
process oil	no	yes
guenching oil	no	yes
rock drill oil	no	yes
rustproof oil	no	yes

saw guide oil	no	yes
silicone lubricant	no	yes
textile oil	no	yes
wiring pulling lubricant (petroleum or vegetable based)	no	yes

EHC applicable on Automotive Antifreeze Fluid and Container

Description	Product	Container (50 L or less)
ethylene glycol vehicle engine coolant	yes	yes
propylene glycol vehicle engine coolant	yes	yes

EHC applicable on Aerosol Container

Description	Product	Container (50 L or less)
aerosol propelled lubricant	no	yes
aerosol cleaner for automotive parts	no	yes
aerosol grease	no	no
aerosol paint	no	no
aerosol solvent/cleaner	no	no

EHC applicable on Filters

Description	Product
spin-on or element style filter that is used in hydraulic, transmission or internal combustion engine applications including diesel fuel filter	yes
coolant filter (also known as water filter)	yes
diesel fuel filter used at retail & commercial pump islands	yes
household furnace fuel filter	yes
oil / air separator filter	yes
plastic / paper element style filter	yes
storage tank diesel fuel filter	yes
sump type automatic transmission filter	yes

Brand Owner of Products

The UOMA NS program accepts Program products sold in Nova Scotia regardless of the brand owner.

Type of User

The UOMA NS Program accepts program oil and glycol sold in Nova Scotia from any consumer/user of the Program products including household, commercial and government generators.

Non-Program Material

Non-program materials introduce unfunded costs and safety hazards into the system and are not to be accepted. In the initial stage of the UOMA NS program, information to all collectors and outreach to the general public will be critical. Communication is a major element in the success of any post- consumer collection program and UOMA NS intends to make this a priority.

All products purchased outside Nova Scotia becomes the responsibility of the importer.

EHC not applicable on either Product or Container

Description	Product	Container (50 L or less)
3-in-1 household oil	no	no
base oil, including re-refined base oil	no	no
brake fluid	no	no
cleaning/flushing fluids for motors/equipment	no	no
cooking oil	no	no
Electrical insulating oil	no	no
emulsified oil	no	no
ethylene glycol heat transfer fluid	no	no
export oil sales	no	no
glycol-based heat transfer fluid	no	no
Grease	no	no
gun oil	no	no
heating furnace oil	no	no
hydraulic jack oil	no	no
hydraulic oil dye	no	no
Kerosene	no	no
marine engine oil for vessels operating internationally	no	no
oil additive	no	no
oil treatment	no	no
penetrating oil	no	no
phosphate ester hydraulic fluid	no	no
polyglycol synthetic compressor oil	no	no
propylene glycol heat transfer fluid	no	no
sewing machine oil	no	no
silicone heat transfer fluid	no	no
Solvents	no	no
synthetic aromatic hydrocarbon heat transfer fluid	no	no
Undercoating	no	no
urethane coating	no	no
water glycol hydraulic fluid	no	no
Wax	no	no
windshield washer fluid	no	no
windshield washer fluid	no	no
winter start fluid	no	no

EHC not applicable on Filters

Description	Product
air filter	no
crankcase ventilation filter	no
gasoline fuel filter	no
household furnace air filter	no
sock-type filter	no

EHC not applicable on Antifreeze and Container

Description	Product
aircraft de-icing fluid	no
antifreeze plumbing fluid	no
fuel line de-icing fluid	no
lock de-icing fluid	no
windshield washer fluid	no

5. Management of Collected Oil and Glycol

5.1 Used Oil and Glycol Management

UOMA NS’s role is to recover and recycle post-consumer oils, used antifreeze, used oil or fluid and antifreeze containers of 50 liters or less including lubricant aerosols and cleaners for automotive parts, and used oil filters. It will consequently set up a recovery and reclamation system that will regularly be reassessed and adapted. The program products must not only be recovered, but recycled in accordance with all applicable regulations. The objective is for all products to be 100% reclaimed and have a second life.

Used Oil

Oils will either be re-refined or processed and recycled as energy or any other way accepted by the Regulation. Recycling of used oil by energy reclamation is strictly controlled; the oils must be analyzed to ensure they meet the regulatory standards, including the percentage of water. Processing will take place in companies (Terrapure Environmental in Nova Scotia, Safety-Kleen in Nova Scotia and Véolia in Quebec) that have the equipment to remove metal particles and water from the used oil. Since the burning of used oil in small furnaces in the Atlantic Provinces is legal, we anticipate that most of the used oil collected will be processed and resold as industrial fuel to companies such as pulp and paper mill.

Oil Filters

Filters are at the processor level, crushed and/or compressed to extract the oil so that they can be recycled (foundry or any acceptable method in Nova Scotia). A second method feeds them into huge furnaces – the oil assists heating, while the residual material contributes sulfur that otherwise would have to be added, and the metal is recovered or any other way accepted by the Regulation. We anticipate that the used oil filters be crushed and recycled. The processing of the used oil filters will be done in at least four companies (Terrapure Environmental in Nova Scotia, Safety-Kleen in Nova Scotia and Veolia in Quebec).

Oil, diesel exhaust fluid and glycol Containers

Containers should be reused or decontaminated, recycled into flakes and reintroduced as raw material into other products such as farm drains, bins, composite construction materials, etc. or any other way accepted by the Regulation. Processing of plastic containers will be done by RPM Eco in Quebec and possibly by Scotia Recycling in Nova Scotia.

Used Glycol

Used glycol is reprocessed by removing particles and contaminants and resold as glycol (variety of quality based on end-use). The processing of used glycol will be done by Terrapure Environmental in Nova Scotia and Global Récupération Inc in Quebec.

Aerosol cans

Designated aerosol cans will be depressurized, crushed and the metal is recovered, sent to foundries/smelters and reintroduce as raw material in other metal products or any other way accepted by the regulation. The processing of designated used aerosol cans will be done by Terrapure Environmental in Nova Scotia, Campor Environnement and Global Récupération Inc in Quebec.

Contaminated Oil/Glycol and Non-program Materials

In the event that contaminated and/or non-program materials enter the program, they become the sole responsibility of the collector.

UOMA NS is constantly assessing methods that could improve the applicability of the 3Rs in a life cycle perspective and take them into account in establishing its return incentives, where applicable.

Considering that there is by regulation a landfill ban for all of the above designated materials, UOMA Atlantic in cooperation with its collectors will identify any generators of these materials that do not respect the bans and report it to the proper authority.

5.2 Program Accessibility

Every region of Nova Scotia will be serviced by registered UOMA NS collectors. The service offered to garages, harbours and industry (IC&I) represents almost 90% of the volume and is based on free enterprise, where the generators will have the choice of choosing any registered collector and call them to request collection. These registered collectors will have to deliver the program products they recover to processors registered with UOMA NS. Some of these generators will become public collection facilities also registered with UOMA NS. UOMA NS will work with regional authorities in Nova Scotia and commercial generators where citizens from across Nova Scotia will be able to return the program products free of charge. A list of all collectors for large generators and collection facilities for smaller generators will be available on UOMA NS's website. From the number of collection facilities that was developed in NB and PEI by UOMA Atlantic, we anticipate to have at least 150 collection facilities servicing Nova Scotia citizens.

UOMA Atlantic will use the following rule in the establishment of collection facilities:

- Rural sites shall be located to ensure that at least 90% of the Province's rural population is within a 30 kilometre radius of the nearest collection site;
- Urban sites in Halifax Regional Municipality and Cape Breton Regional Municipality shall be located to ensure that at least 50% of their respective urban populations are within a 10 kilometre radius of the nearest collection site;
- Urban and rural sites in HRM and CBRM shall be sited so as to ensure that at least 90% of their respective combined (urban and rural) populations are within a 30 kilometre radius of the nearest collection site;

Collection network

UOMA NS's program Return Incentives considers population density and geographic issues in a manner that all Nova Scotia residents receive similar levels of service.

Generally, the system will utilize both public and private existing infrastructure, such as:

- garages and service facilities
- participating Regional Authorities (solid waste management sites)
- harbours
- participating retailers
- one day collection events – in cooperation with participating Regional Waste Management Authorities
- salvage yards
- forestry companies
- trucking industry
- government departments (eg. Transportation and infrastructure renewal).

Based on other UOMA Atlantic served provinces, we estimate the number of collection sites to be serviced by our collectors to be well over 1500.

Again, program Return Incentives to collectors will assure complete provincial coverage across Nova Scotia.

UOMA NS's intent is to provide blanket coverage for collection across Nova Scotia. We will work closely with current private sector operators and specialized hazardous collector firms plus all public sector authorities in order to achieve maximum coverage. Collectors will be responsible to collect from garages, harbours, dealerships and large volume users based on incentives offered by UOMA NS.

Large volume users: Financial Return Incentives to collectors act as a motivator to full-service collection across Nova Scotia regardless of location or size of operation. With incentives as an integral part of the program, collectors receive more money than they were able to charge generators prior to the establishment of the Stewardship Program. This assures that regardless of volume generated, large and small volume generators will receive collection services by registered UOMA NS service providers.

Service Providers: Collectors and collection facilities are fully responsible for all necessary health and safety aspects of the collection, transportation and temporary storage of all collected material. UOMA NS will assure before registration that all service providers conform to all regulatory and environmental laws of Nova Scotia.

Collections System: UOMA NS partnership agreement with collectors and processors is critical to the success of the program. Contractual agreements allow UOMA NS to maintain full control of the program at all times.

Transportation and Consolidation: UOMA NS will track geographic areas being serviced, quantities collected per drop-off locations and monitor quality of the collected materials on an ongoing basis. Collected material will then be managed by designated processors and reported to authorized regulatory agencies.

Program Accessibility

UOMA NS's intent is to provide complete coverage across Nova Scotia. We will work with current private sector operators and specialized hazardous collectors plus all public sector authorities in order to achieve maximum coverage.

The success of the program will depend on consumer awareness and program accessibility, meaning convenient access to collection sites. It will be an ongoing objective of the program to continually make it more convenient for people to dispose of their leftover oil and glycol materials.

Variables which contribute to accessibility include:

- number, location of collection sites relative to the distribution of population in Nova Scotia
- hours of operation of collection sites
- ease of access to program information including collection site locations.

The proposed collection site network will be developed with a view to optimizing these variables based on the information provided by the collection sites. Following program implementation it will be important to gather data by which to assess accessibility such as:

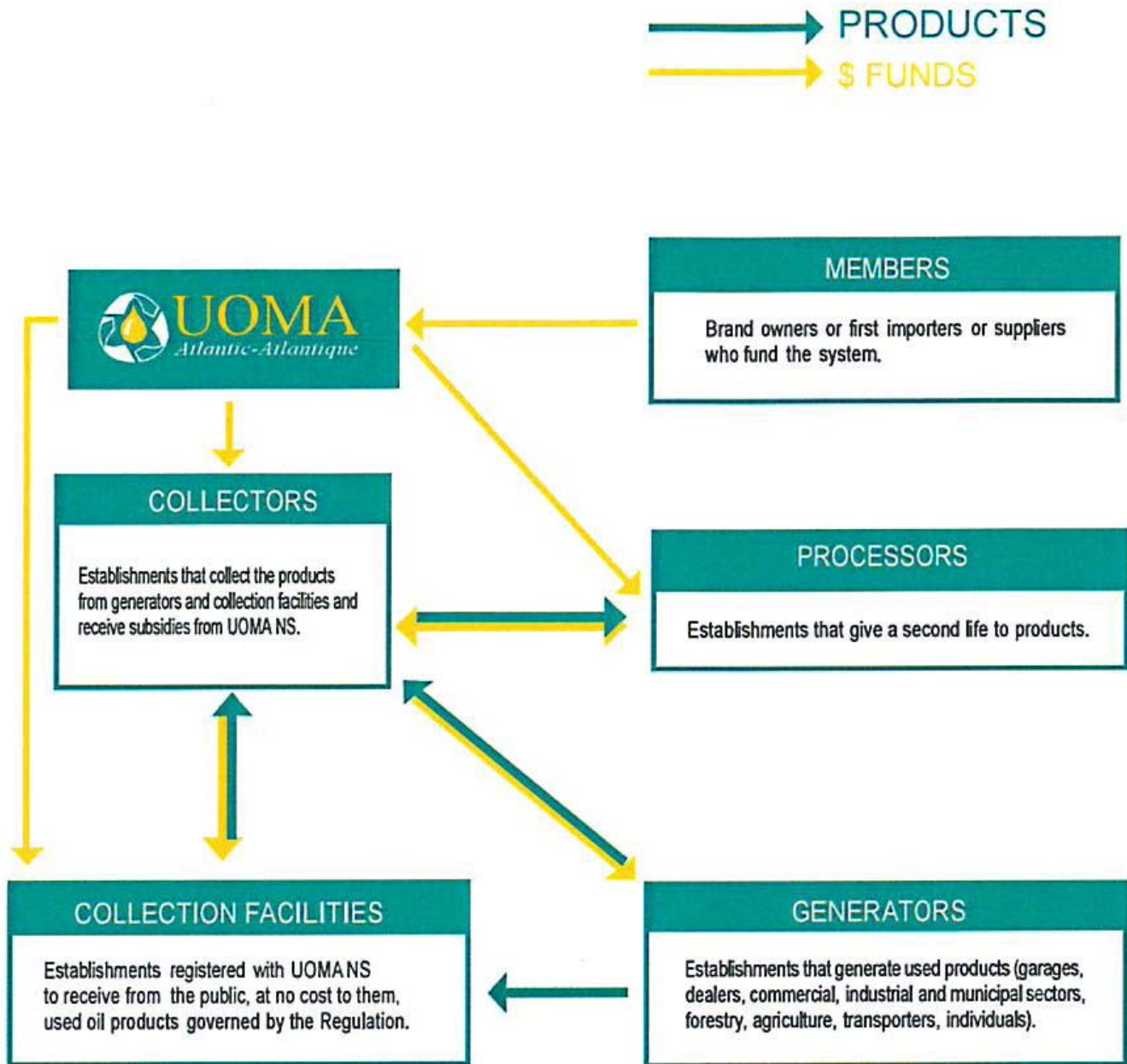
- distance and travel time for users, using geographic information systems (GIS) - map-based analysis tools on service radius (time or distance), postal codes, etc.
- user feedback and program awareness surveys, conducted at collection sites, through the program's 800 number enquiry service and by telephone surveys

Based on the findings from these evaluations, accessibility can be analyzed, and targets can be developed for subsequent years of the program that will provide for greater accessibility for residents throughout Nova Scotia.

Business Model

UOMA NS program is funded by the **brand owners** (member of the association). The funds received are distributed as return incentives to **collectors** based on the region of the collected products and to oil, diesel exhaust fluid and glycol plastic container processors for the decontamination of the product. The products are then sent to **processors** where the products are given a second life. No incentives are given until UOMA NS receives proof that the products have been given a second life (processed).

STANDARD FLOW CYCLE OF FUNDS AND PRODUCTS



Methods to be used for the collection, storage, transportation and recycling of the products.

Used Oil will be collected at the generators using a tanker truck. Most generators actually have the infrastructure to store the used oil. If they do not have one, the collector will supply 45 gallon drums to them.

Used filters and aerosols will be collected in a 240-L or 360-L wheeled plastic bins supplied by the collector to the generator. The collector will collect the filters changing the full bin by an empty bin.

Used oil and glycol containers will be collected in plastic bags stored in a 360-L plastic bin both supplied by the collector.

Used Glycol will be collected at the generators in 45 Gallon drums supplied by the collector.

The used filters, aerosol and glycol are commonly collected in the same truck. Used oil is collected using a tanker truck and the used oil and glycol plastic containers in a trailer pulled by a pick-up truck. All vehicles used for the collection of the designated material have containment in case of a spill and need to be in compliance with regulation if applicable.

In all cases the frequency of the collected products will depend on the volumes generated by the generators and the region serviced.

5.3 Product Sales

The quantity of oil and glycol sold annually varies with market conditions, but is an important reference for the quantity of materials available for collection in the future.

Estimated sales volumes for the materials included in the UOMA NS plan

Products	Volumes
Oil (litres)	16 000 000
Filters (units)	1 500 000
Oil Containers (litres)	8 500 000
Glycol/Antifreeze (litres)	2 200 000
Glycol/Antifreeze Containers (litres)	1 100 000

5.4 Methodology of collection rate calculation:

UOMA NS utilizes a number of performance measures to track the program's performance year to year. Performance measures applicable to this program include:

- Volume reused
- Volume consumed in use or lost
- Residual Recovery Volume

No single performance measure is considered an accurate indication of the program's performance and in some cases the performance measure is influenced by factors that are beyond the program's control such as market conditions. Since Nova Scotia's geography and commercial activities is proportionately similar to those of the neighboring province of Quebec, Newfoundland and Labrador, New Brunswick and Prince Edward Island, several of the benchmarks will be the same.

- **Used Oil:** New lubricating oil being marketed is not collectable at 100%, some of it is burnt in use. Based on a study made in the province of Québec in 2010 by the firm Dessau NI environment conducted by SOGHU and RECYC QUÉBEC, it was determined that the used oil collectable rate for Québec is 72.9%. Other provinces resembling Nova Scotia use the following collectable rates: Manitoba and Saskatchewan: 65%, British Columbia 69.1%. Considering the above, UOMA NS will use the collectable rate of 70 % for the applicable oils put on the market in Nova Scotia. The same collectable rate is used in New Brunswick.

Formula:

$$\text{Used Oil} = \frac{\text{Used Oil collected in litres}}{\text{Used Oil marketed in litres X 70\%}}$$

- **Filters:** The collection rate in New Brunswick is calculated using the same method as in Quebec with the methodology where once or twice a year filters are being segregated with the goal of obtaining for both steel and cardboard filters the net average weight in kilograms and the percentage of units collected. This segregation is done at Veolia Service à l'Environnement in St-Hyacinthe, Quebec. With the information captured, we are able to produce the following formula.

Formula:

$$\text{Filter collection rate} = \frac{(\text{Units of steel filters collected} + \text{Units of cardboard filters collected})}{(\text{Units of steel filters marketed} + \text{Units of cardboard filters marketed})}$$

Where:

- Units of steel filters collected = % of the weight of steel filters segregated before compression multiplied by the total weight of filters collected before compression divided by the average weight of a steel filter before compression;
 - Units of cardboard filters collected = % of the weight of cardboard filters segregated before compression multiplied by the total weight of filters collected before compression divided by the average weight of a cardboard filter before compression;
 - Units of steel filters marketed = total units marketed multiplied by the % of steel units collected;
 - Units of cardboard filters marketed = total units marketed multiplied by the % of cardboard units collected.
- **Oil and Antifreeze Containers** are presented to show only the kg processed for these products only. A thorough segregation process is made at the processor site by a UOMA Atlantic employee who verifies the content of each arrival by an accurate sampling system. The sampling system consists of segregating the containers in 5 categories, (oily, glycol, windshield washer, other plastic and garbage). A collector would see their incentive cut if the containers are contaminated above 5% of plastic or material that is not part of the program (windshield washer, other plastic and garbage)

Formula:

$$\text{Oily containers} = \frac{\text{(Total weight of plastic containers collected X \% of oily containers)}}{\text{Total weight of oily containers marketed X 95\%*}}$$

* **Oil Containers:** 95% of collectable rate for oil containers is based on a 2008 study made by RECYC-QUÉBEC and SOGHU stating that 5% of containers are reused and are therefore not available for collection.

$$\text{Glycol containers} = \frac{\text{(Total weight of plastic containers collected X \% of glycol containers)}}{\text{Total weight of glycol containers marketed}}$$

- Glycol (antifreeze): 45% of collectable rate for the applicable glycol (antifreeze) marketed is based on a study made by the firm *Dessau NI environment* in 2012 conducted by NUOMAAAC (National Used Oil Material Advisory Council). A new national study is presently in progress to determine if this rate corresponds to the reality as all across Canada the collection rate for glycol is low.

Formula:

$$\text{Glycol} = \frac{\text{Total glycol collected in litres}}{\text{Total glycol marketed X 45\%}}$$

UOMA NS implementation strategy will emphasize communication and outreach efforts designed to highlight the environmental benefits of properly managing the designated products. Incentives to collectors and processors are nevertheless a significant financial driver to reaching target volumes in any collection program.

5.4.1 Collection Rate

The Collection Rate compares the volume of oil or glycol collected in a given year to the volume of oil and glycol sold and available for recovery in that same year (collected/sold). The most significant challenge in Nova Scotia is determining the percentage of used oil currently being reused in oil-burning furnaces. UOMA NS will work closely with Nova Scotia Environment to assess this matter.

5.4.2 Estimated volumes collected

Based on collection history in New Brunswick and Prince Edward Island and on the projected volumes market in the province of Nova Scotia, UOMA NS estimates the volumes collected at year 5 to be

Product	Estimated volume		Collection rate
Used Oil ¹	6 545 000	Liters	85%
Used filters	700 000	Units	70%
/Used oil containers * ²	4 560 000	Liters	80%
Used Glycol ³	375 000	Liters	50%
Used glycol containers	495 000	Liters	60%

* Includes lubricating aerosols and brake cleaners

1. Based on a study made in 2010, 30% of the oil is consumed in use and consequently non recoverable.

2. Based on a study made in 2006, 5% of the used oil containers are reuse.

3. Based on a study made in 2012 that is being reviewed in 2019, 45% of used glycol is recoverable.

Also based on the history in New Brunswick and Prince Edward Island, we believe that the collection rates will increase the following way to year 5.

Product	Collection rate				
	Year 1	Year 2	Year 3	Year 4	Year 5
Used Oil ¹	60%	75%	85%	85%	85%
Used filters	40%	55%	70%	70%	70%
Used oil containers *2	40%	60%	80%	80%	80%
Used Glycol ³	20%	30%	35%	40%	50%
Used glycol containers	30%	40%	50%	55%	60%

5.5 Local economic benefits

The difficulty in estimating the local benefits of the UOMA NS program mostly depends if the products will be processed in Nova Scotia or not. However the following benefits will occur factoring out the processing.

- UOMA NS will engage a full-time representative in year one and part-time in year two and after.
- All collectors will need;
 - to engage employees to collect the designated products,
 - to purchase vehicles for collection purpose,
 - to purchase storage bins and drums for generators.
- Generators will no longer have to pay to dispose of the designated products.
- Transportation of the designated products outside the province.

If processing is made in the province;

- Processors will need to purchase in processing equipment like compactors and balors.

6. Design for Environment

The overall program objective is to reduce the environmental impact of leftover oil and glycol through the application of the pollution prevention hierarchy of (i) reuse, (ii) recycle, (iii) recovery of energy and (iv) disposal. With respect to the concept of design for environment, there is limited ability of a stewardship program of this scope to influence product design. The oil and glycol industries are consolidating and most brand owners manufacture for a market area on a multinational level. Major factors that influence design for the environment are general market conditions, competition amongst industry players and the amount of the EHC

imposed on particular products (varies based on recyclability).

The Regulation requires brand owners to describe efforts to redesign oil and glycol products to improve reusability and recyclability. The oil and glycol industry is a consolidated industry and most brand owner manufacture for a market area that includes more than one province or country. Design for environment such as recycled content in their products, is a common dialogue UOMA Atlantic has with its brandowners during board meetings and conferences that we will report on the annual report to Nova Scotia Environment.

The overall program objective is to reduce the environmental impact of leftover oil and glycol through the application of the pollution prevention hierarchy of reduce/reuse/recycle. The program will continue to seek improvements in the reduction of environmental impact through a number of pathways.

Product design has evolved considerably in recent years with an emphasis on performance and pollution prevention. Nevertheless, UOMA NS charges higher EHC for non-recyclable products and/or containers with a clear intent on promoting total-recyclability. Many of the products included in the UOMA NS program will change over time as a result of design for environment activities and we will continue to promote products with a high degree of recyclability.

7. Communications and Public Awareness

7.1 Program Communications

UOMA NS uses a number of methods to communicate information about the program to the public and to increase awareness of the program and its objectives, including:

- **Program Website:** The NS Oil and Glycol website at ns.uoma-atlantic.com provides information to Nova Scotia residents on:
 - Depot locations with details on hours of operation and products accepted
 - Description of products accepted by the program
 - Details on relevant EHC
 - Annual reports and other program information
- **Social Media:** To be developed as part of a communication and marketing plan.
- **UOMA NS hotline:** Bilingual hotline operated by UOMA NS provides free information on where to recycle designated material: 1-833-222-8662
- **Local Government Partnerships:** The Program works with the Regional Waste Management Authorities to promote the Nova Scotia Oil and Glycol Product

Stewardship Plan. UOMA Atlantic will contact and offer to meet with Regional Solid Waste Coordinators (RSWC) at least once every two years to discuss opportunities for collaboration on educating consumers about the Program and will engage with the Nova Scotia Solid Waste Managers and Directors Committee to help them support with landfill bans of our designated products.

- **Other Partnerships:** The program will collaborate with other NS product stewardship programs as they develop
- **Point of Sale (PoS) Materials:** Brochures, etc. are given out at retail stores, trade shows, and Regional Waste Management Authorities. Orders are replenished upon request, free of charge, and materials are regularly updated
- **Direct Mailings:** Dedicated mailings to targeted groups such as automotive garages are conducted to promote the program
- **Marketing & Media Buying:** Marketing is a key component in creating awareness of the new program and sustaining interest overtime. An initial multimedia campaign is essential to the success of the program. Thereafter, a communications and marketing plan will determine future audiences and requirements
- **Earned Media:** The program will develop an earned media strategy as part of its communications and marketing plan.

Advertising

UOMA Atlantic will make use of available media partners to promote the Program throughout the province. It is UOMA Atlantic's aim to ensure that the level of advertising in-market appropriately reflects our ongoing effort to increase public awareness and use of the Program. UOMA Atlantic will strive to employ a mix of approaches, including general messaging related to the Program. Advertising platforms may include any of the following in appropriate combinations:

- Print (dailies, periodicals, car magazines publications)
- Radio
- Digital
- Sponsorships
- Provincial and community television

One important aspect of the program is to participate in trade shows to bring awareness to specialized industries such as:

- Agricultural
- Forestry
- Fishery
- Schools

This is why the participation of a full time local UOMA Atlantic representative is one of our business model strength. This ensures a complete service for the stakeholders.

Program Rollout and Communications Targets

The Program has the following targets for communications: Initially program is introduced to members, collectors and processors. Once established, UOMA NS in cooperation with the province of Nova Scotia will officially launch the program to the general public. Communication efforts will be integral to the stewardship plan success and evolve with specific needs. Quantitative research will be used to measure program awareness and perception at various intervals of the program’s implementation stage.

Program Launch

The communications plan for the program includes a “program launch”. Details of the launch plan are set forth in Appendix B.

8. Performance Measurement

Consumed in Use Rate: Current data in other jurisdictions (BC, Alberta, Manitoba and Quebec) indicate an average in-use consumption rate of 30% and this based on a study done by NI Environnement/Dessau “Review of Recoverable Used Oil in Quebec” in 2010. UOMA NS will work closely with regulatory authorities to measure and monitor this activity in Nova Scotia.

Recovery Rates: Comparing yearly collected volumes to reported sales data allows UOMA NS to measure program performance on a provincial level.

Historical comparison: Initially program (launch period 1-3 years) volumes will be on the lower scale for certain product types (containers, filters, glycol and antifreeze). As program maturity is attained, volumes are expected to increase to a stable level. Other used-oil management programs in Canada have predictable year-over-year volumes once programs are fully implemented.

Benchmarking: Recovery rates (2017) for similar stewardship programs in Canada.

<i>Provinces</i>	<i>Used oil</i>	<i>Used oil filters</i>	<i>Used containers</i>	<i>Used glycol</i>
British Columbia	69%	87%	83%	43%
Alberta	84%	87%	86%	N/A
Saskatchewan	75%	80%	39%	11%
Manitoba	78%	81%	26%	N/A
Quebec	85%	87%	94%	27%
New Brunswick	91%	68%	67%	27%
Prince Edward Island	86%	45%	100%	45%

Containers recovered: Comparing collected volumes to reported sales data (required reporting - Membership Agreement) allows UOMA NS to measure program performance on a provincial level. Nevertheless the UOMA NS Membership Agreement does stipulate that 25% of all members will be audited annually. This enables UOMA NS to maintain valid information of its members as it pertains to sales to volume collected data.

Waste audits: In the event that additional market information is required or in need of validation, waste audits can be a useful tool to determine performance information. UOMA NS will consider using waste audit techniques as a means of gathering additional market information on a per need basis.

Consumer awareness: Communication efforts will be an integral part of stewardship plan success and evolve with specific needs. Quantitative research will be used to measure program awareness and perception at various intervals of the program implementation.

Collection Sites: UOMA NS's intention is to have blanket coverage of the Nova Scotia territory for the Oil and Glycol Product Stewardship Program. UOMA NS will work closely with Waste Management Authorities, Harbour Authorities and regulatory officials in Nova Scotia in determining the optimal coverage required to attain maximum performance. UOMA Atlantic will update educational tools and visit collection sites on a case per case scenario, on demand or at least every two years to assess compliance.

Auditing of Members (Brand Owners), Collectors and Processors

UOMA Atlantic has adopted audit standards and protocols to assist in ensuring that all its registered members and registered collectors and processors achieve and maintain compliance with the Used Oil and Glycol Program and governing regulation

As per the membership, collector and processor agreement with UOMA Atlantic, all Members, Collectors and Processors are obligated and agree in order to meet requirements of the Regulation to be reviewed for compliance by an independent auditing firm at UOMA ATLANTIC'S expense. UOMA Atlantic has a policy to audit 20% to 25% of its revenue and incentive costs yearly. Consequently all of UOMA Atlantic's stakeholders get audited at least once every 5 years.

UOMA Atlantic's program utilizes a database tracking system to record and track the designated materials managed from point of sale to when it is being collected, processed and to final destination. This database is used to develop reports, which are used for auditing purpose.

Independent assessment of plan

UOMA NS will provide for an independent assessment of the program plan following consultation Nova Scotia Environment to determine the parameters of the assessment.

Appendix A

List of Brand Owners who have already manifested to appoint UOMA NS as their Agent for the Nova Scotia Oil and Glycol Stewardship Program

Brand Owner Name
Home Hardware Stores Limited
Mann+Hummel Filtration Technologie Canada ULC
Parkland Fuel Corporation
Parts of Trucks Inc.
Superline Fuels
Uni-Select Eastern Inc.
Wakefield Canada Inc.

Appendix B Program Launch Plan

It is proposed that the system will be launched in two phases:

- Phase 1: Fall 2019, “Pre announcement”. During this program development period, the program will commit to the launch date and advise the public on what changes they can expect to see when the new program starts.
- Phase 2: January 1, 2020 – “launch” It is proposed that Phase 2 will begin with a formal program launch over the period January to March 2020 (described in following section). On the program start date of January 1, 2020 the program anticipates having in place the majority of collection sites in the province-wide collection system including participating regional waste management, garages and retail sites. January 1, 2020 will also be the effective date of the obligation of brand owners to remit fees on the sale of program products.

Launch messages

- Scotia Environment overseeing new oil and glycol stewardship program under regulation
- Recycling used oil and glycol just got easier in Nova Scotia
- Brand owners that manufacture and market oil and glycol are taking stewardship responsibility for their products and now cover the cost of recovering the oil/glycol, containers and filters for recycling or proper disposal if needed.
- Partnership with regional waste management, garages, retailers and others for collection system
- All operations Atlantic Canada (locally) based – collection, transport, processing (eastern Canada)

Program information

- NS oil and glycol program has started
- Program will provide citizens from Nova Scotia with answers to the what, where, how and why they should recycle used oil and glycol materials
- UOMA NS, industry program manager, has worked with municipalities and commercial/retail organizations to establish a convenient province-wide collection system, system will continue to improve over time
- Oil and glycol products covered by the program can be dropped off without charge at any of the collection sites
- Oil is recovered as a valuable resource while the filters and containers are recycled into new products. Materials of insufficient quality to be recycled will be managed in an environmentally responsible way.

Tactics/rollout

Communications Materials: News release with backgrounder, Q&A and Talking Points

- Announcement of commencement of the program, description of industry role, what is in place, how the program will roll out and what consumers will see, note the key objectives of increased access and environmentally management
- Possible quotes from minister, NS Regional Waste Management, oil industry/UOMA NS rep, consumers or environmental associations
- Include list of collection facilities
- Identify 800 number and website
- Distribution: province-wide news desks, reporters who have shown an interest, trade magazines, stakeholders
- Highlight the NS Oil/Glycol program website homepage for more information
- Post on Scotia Environment websites/ media pages.

Advertising: Primary methods considered will include:

- Radio, tv, ads
- Newspaper and alternative media ads

Other communications products

- Update FAQs and other information as necessary on website and in other materials
- Display material (branding) – pop up banner(s) for events/photo ops

Evaluation of launch

- Calls to 800 number
- Nova Scotia Environment and stakeholder feedback
- Media coverage, tone/content/position
- Municipal and commercial/retail feedback

Appendix C Public oil/glycol Collection Facilities proposed

Category	Business name	City
GM	O'Regan's Chevrolet Buick GMC Cadillac	Halifax
GM	Steele Chevrolet Buick GMC Cadillac	Dartmouth
GM	Bruce Chevrolet Buick GMC - Middleton	Middleton
GM	Ron MacGillivray Chev Buick GMC	Antigonish
GM	Bruce Chevrolet Buick GMC - Digby	Digby
GM	Herron Chevrolet Buick GMC Ltd	New Glasgow
GM	Pye Chevrolet Buick GMC	Truro
GM	South Shore Chevrolet Buick GMC	Hebbsville
GM	Murray GM Barrington	Barrington
GM	South Shore Chevrolet	Liverpool
GM	Tantramar Chev Buick GMC Ltd.	Amherst
GM	Carroll South Shore Motors Limited	Bridgewater
GM	MacPhee Ford	Dartmouth
GM	Ron MacGillivray Chev Buick GMC Ltd	Antigonish
GM	Bruce Auto Group	Middleton
GM	Steele Chevrolet Buick GMC Cadillac	Dartmouth
GM	Steele Auto Group (8 Basinview Dr)	Dartmouth
GM	Roseway Chrysler Dodge Jeep R	Shelburne
GM	Midway Motors Ltd	Port Hastings
GM	Harvard Auto Sales	Lower Sackville
GM	Steele Auto Group (550 Windmill Rd)	Dartmouth
GM	Zacks Auto Sales	Truro
GM	MacIntyre Chevrolet Cadillac Buick GMC Ltd	Sydney
GM	Cornwallis Chevrolet Buick GMC	Kentville
GM	Murray GM Yarmouth	Yarmouth
Toyota	O'Regan's Toyota Halifax	Halifax
Toyota	Truto Toyota	Truro
Toyota	Kentville Toyota	Kentville
Toyota	Amherst Toyota	Amherst
Toyota	Anchor Toyota	Stellarton
Toyota	Tusket Toyota	Yarmouth
Toyota	O'Regan's Toyota Dartmouth	Dartmouth
Toyota	O'Regan's South Shore Toyota	Bridgewater
Toyota	Tri-Mac Toyota	Port Hawkesbury
Toyota	Breton Toyota Ltd	Sydney
Waste Management Facility	Kaizer Meadow Solid Waste Management Facility	Chester
Waste Management Facility	Region of Queens Waste Management Facility	Caledonia
Waste Management Facility	Solid Waste Management Facility	Sydney
Waste Management Facility	HRM Waste Facility	Lakeside
Waste Management Facility	Guysborough Waste Management Facility	Boylston
Auto Value	Edge of Town Auto (Auto Value)	Newcombville
Auto Value	Mighty Auto Bedford (Auto Value)	Bedford
Auto Value	Mighty Auto Cole Harbour (Auto Value)	Dartmouth
Auto Value	Mighty Auto Dartmouth (Burnside) (Auto Value)	Dartmouth
Auto Value	Mighty Auto Halifax (Auto Value)	Halifax
Auto Value	Anchor Toyota	Stellarton