



Date

Invoice No.

Job No.

# SPEL Baffle Box

Pollutant Separating Baffle Box

Operation & Maintenance Manual

## **READ THE FOLLOWING INFORMATION, WARNINGS AND INSTRUCTIONS BEFORE INSPECTING, PERFORMING MAINTENANCE OR CLEANING THIS STORMWATER TREATMENT DEVICE**

This manual is intended to explain the specifics of the SPEL Environmental Nutrient Separating Baffle Box®, and to review the common aspects of the existing regulations and safety procedures. It is the responsibility of all personnel to familiarize themselves with, understand, and comply with all applicable local, state and federal laws, BEFORE attempting to inspect or service this unit.

All precautions and procedures in this manual are current at the time of printing if this manual and are subject to change based on new processes and procedures. SPEL Environmental assumes no responsibility and will be held harmless for any injuries, fines, penalties or losses that occur involving any procedure in this manual or other non-addressed actions taken. The Nutrient Separating Baffle Box® performance is based on the procedures being followed in this manual. Non-Compliance with these measures will be the responsibility of the owner.

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# Section 1

## General Information

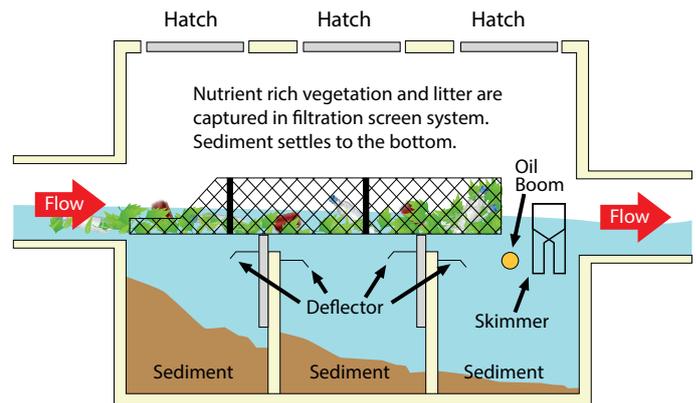
The Nutrient Separating Baffle Box® is a key component of your stormwater management program. To maintain proper operation, maintenance of these units is important. The Nutrient Separating Baffle Box manufactured by SPEL Environmental contains patented and patent pending technologies to effectively treat stormwater. The NSBB is highly effective in capturing total suspended solids (TSS), particulate form phosphorus, particulate form nitrogen, organics, trash, litter, oils and grease. Independent testing has shown the NSBB is capable of capturing up to 95% trash and litter, up to 95% of TSS, and up to 90% Organics and up to 60% TP.

Local and State regulations may require inspections and cleanings every 90 days for any BMP (Best Management Practice). SPEL Environmental recommends inspections be conducted twice a year. This will allow the NSBB to obtain the best pollutant removal efficiency.

## Functional Description

### DURING THE STORM EVENT

The inflow pipe is the same size as the outflow. Turbulence deflectors prevent captured sediment from re-suspending. Hydrocarbons collect in front of skimmer and are absorbed by Storm Boom.

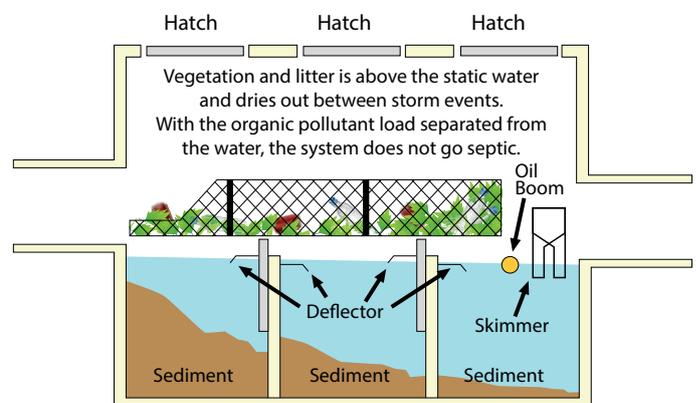


Bottom of concrete structure is only 1.2m below pipe.

## THE SYSTEM STAYS HEALTHY!

### AFTER THE STORM EVENT

Nutrient pollutant load is not lost to static water and flushed out at the next storm event. Separating organic matter from the static water prevents bacterial buildup.



During servicing, the screen system hinges off to the side to give easy access to the sediment collected in the lower chambers.

# Section 2

## Inspection Information

SPEL Environmental recommends the following inspection guidelines: After installation and the site has stabilized inspections should be conducted after every runoff event for the first Thirty (30) days. To insure that the Nutrient Separating Baffle Box obtains optimal pollutant removal efficiencies, subsequent inspections of sediment accumulation should be conducted a minimum of twice a per year. In the event the sediment accumulation equals or exceeds 50% of the Minimum Sediment Storage Volume (fig 2.1) then all accumulated sediment must be removed. All inspections must be documented (fig 2.2).

### Typical Inspection Procedures:

- 1: Visually inspect the unit from the surface for broken or missing hinges or handles.
- 2: Open access points (ie Manhole Covers or Hatches) and secure properly.
- 3: A visual inspection should be made of the basket screen system to determine the capacity of debris, cracks or damages.
- 4: A visual inspection should be made of the stormboom. Check for missing or broken parts.
- 5: A visual inspection should be done of the sediment chambers. This may require opening the bottom doors of the screen system (if possible).
- 6: A visual inspection should be made of the overall condition of the vault. Typically joint areas as well as inflow and outflow pipe grout areas.

# Section 2

## 2.1 Approximate Dimensions and Characteristics of common NSBB Models

NSBB MODEL #	INSIDE WIDTH (FT)	INSIDE LENGTH (FT)	BAFFLE HEIGHT (IN)	BAFFLE THICKNESS (IN)	VOLUME PLAN AREA (FT <sup>2</sup> )	MAXIMUM SEDIMENT STORAGE VOLUME (FT <sup>3</sup> )	50% SEDIMENT STORAGE VOLUME (FT <sup>3</sup> )	DISTANCE FROM TOP OF BAFFLE TO SEDIMENT FOR ANY CHAMBER (IN)
2-4-60	2	4	24	2	7.3	4.89	2.45	18
3-6-72	3	6	36	3	16.5	16.5	8.25	27
4-8-84	4	8	36	3	30.0	30.0	15.0	27
5-10-84	5	10	36	3	47.5	47.5	23.75	27
6-12-84	6	12	36	4	68.0	68.0	34.0	27
8-12-84	8	12	36	4	90.7	90.7	45.35	27
8-14-100	8	14	40	4	107	119	59.5	30
10-14-100	10	14	40	6	130	144	72.0	30
10-16-125	10	16	46	6	150	192	96.0	34
10-20-125	10	20	48	6	190	253	126.5	36
12-10-132	12	20	48	6	228	304	152.0	36
12-24-132	12	24	60	6	276	460	230.0	45

# Section 2

## 2.2 Inspection Checklist and Maintenance Guidance

### Nutrient Separating Baffle Box

(TO BE COMPLETED AT TIME OF INSPECTION OR MAINTENANCE)

Location: \_\_\_\_\_

Owner Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Date: \_\_\_\_\_ Time \_\_\_\_\_ Site conditions \_\_\_\_\_

INSPECTION ITEMS	CONDITION	COMMENTST
1. Access Openings		
2. Screen System		
3. Rear Skimmer and Storm Boom		
4. Sediment Chambers		
5. Vault Condition		

1. Inspection items are to determine accessibility into Nutrient Separating Baffle Box.
2. Visually inspect screen system for volume of debris and broken or missing parts.
3. Visually inspect skimmer for missing or broken parts & storm boom for discoloration.
4. Visually inspect sediment chambers for estimated quantity.
5. Visually inspect general condition of vault for any clogged areas.

MAINTENANCE ITEMS	APPROXIMATE VOLUME COLLECTED	DATE	COMMENTS
1. Screen System			
2. Sediment Chambers			
3. Skimmer Storm Boom	REPLACED Y / N		

1. After opening access vacuum out screen system—estimate volume collected.
2. After cleaning screen system—open bottom doors and vacuum out sediment chambers—estimate volume collected.
3. Replace storm boom if completely blackened.

# Notes

A series of horizontal dotted lines for taking notes.

# Section 3

**CAUTION!! ANY SERVICE WORK CONDUCTED IN TRAFFIC AREAS MUST MEET ALL DOT GUIDELINES FOR ROADWAY WORK AND ADDITIONAL SAFETY PROCEDURES WILL BE NECESSARY**

## Service Information

Maintenance activities including the removal of captured sediment and debris. Maintenance can be performed from outside the NSBB through access points such as manhole covers or hatches installed in the vault surface above the sediment chambers. During maintenance, the screen system may have either SunGlide Sliding Top Doors or SunGlide Hinged Doors. These top doors open to gain access to the debris captured by the screen system. The screen system also has bottom doors that open to give access to the sediment collected in the settling chambers. A vacuum truck is required for debris removal. Although not every circumstance can be covered in this manual a situation may arise when the structure needs to be entered.

**CAUTION!! All OSHA confined space requirements should be met while cleaning NSBB structures.**

### Typical Service Procedures:

- Step 1:** Open the access openings on top of the Baffle Box. These access openings are typically manhole covers, hatches, or grates.
- Step 2:** Vacuum the debris captured by the screen system to expose the sediment collection chambers.
- Step 3:** Open the bottom doors to the basket system to expose the sediment collection chambers. These doors are provided with eyebolts to attach a hook to lift open the doors which will hinge off to the side (fig 3.1).
- Step 4:** Vacuum each of the lower sediment chambers until they are empty.
- Step 5:** After cleaning the sediment chambers close the bottom screen doors of the screen system. Lower / Slide the top doors and assure they lock correctly (if equipped with SunGlide Lids).
- Step 6:** Visually inspect the Storm Boom in the skimmer system for oil accumulation. Change Storm Boom if it is significantly discolored or if it is close to one (1) year of service. The Storm Boom has ropes attached to each end which are fastened to eyelets adjacent to the access cover. These ropes act as a leash to prevent the bottom from washing away, and to allow the bottom to be easily pulled out of the containment bracket system on the face of the skimmer. Attach a rope on the end of the new boom to a rope on the end of the old boom. As the old boom is pulled out it will pull the new boom into position. The booms will trade places. Attach the rope ends of the new boom to the eyelets adjacent to the access cover (fig 3.2).
- Step 7:** When all maintenance work is completed, close the access covers.

# Section 3

## **Minimum Equipment Requirements:**

A vacuum truck is required for the servicing of the Nutrient Separating Baffle Box. Safety equipment will be determined by local, state and federal guidelines.

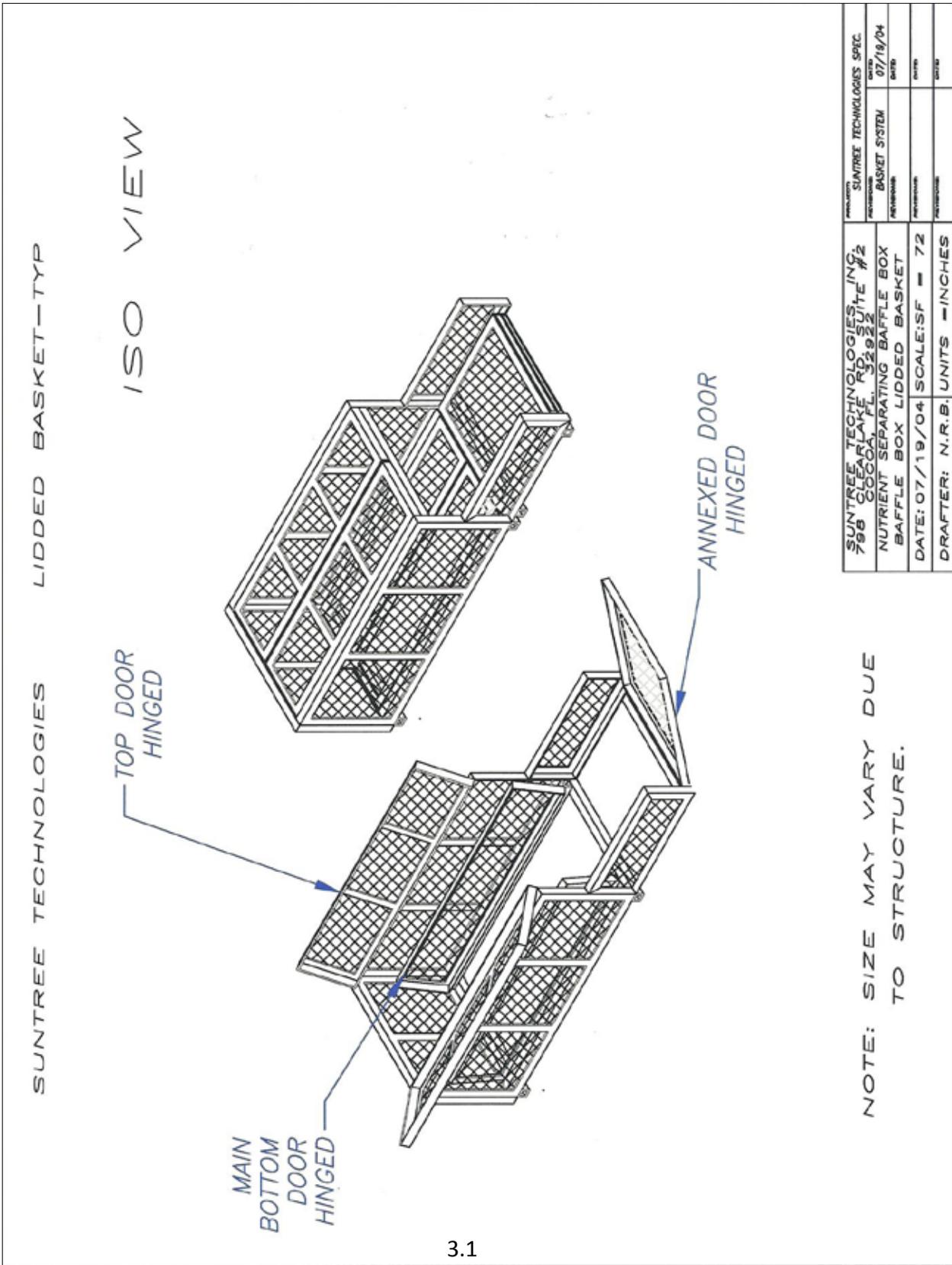
## **Structural Components:**

The structural components are designed to have a life span of several decades. Structural inspections are not required unless stipulated in guidelines set by the local municipality, state, or federal agencies.

## **Replacement Parts:**

All interior components are designed and sized to be unassembled and removed from the Nutrient Separating Baffle Box for servicing or replacement. For replacement parts and instructions please contact us.

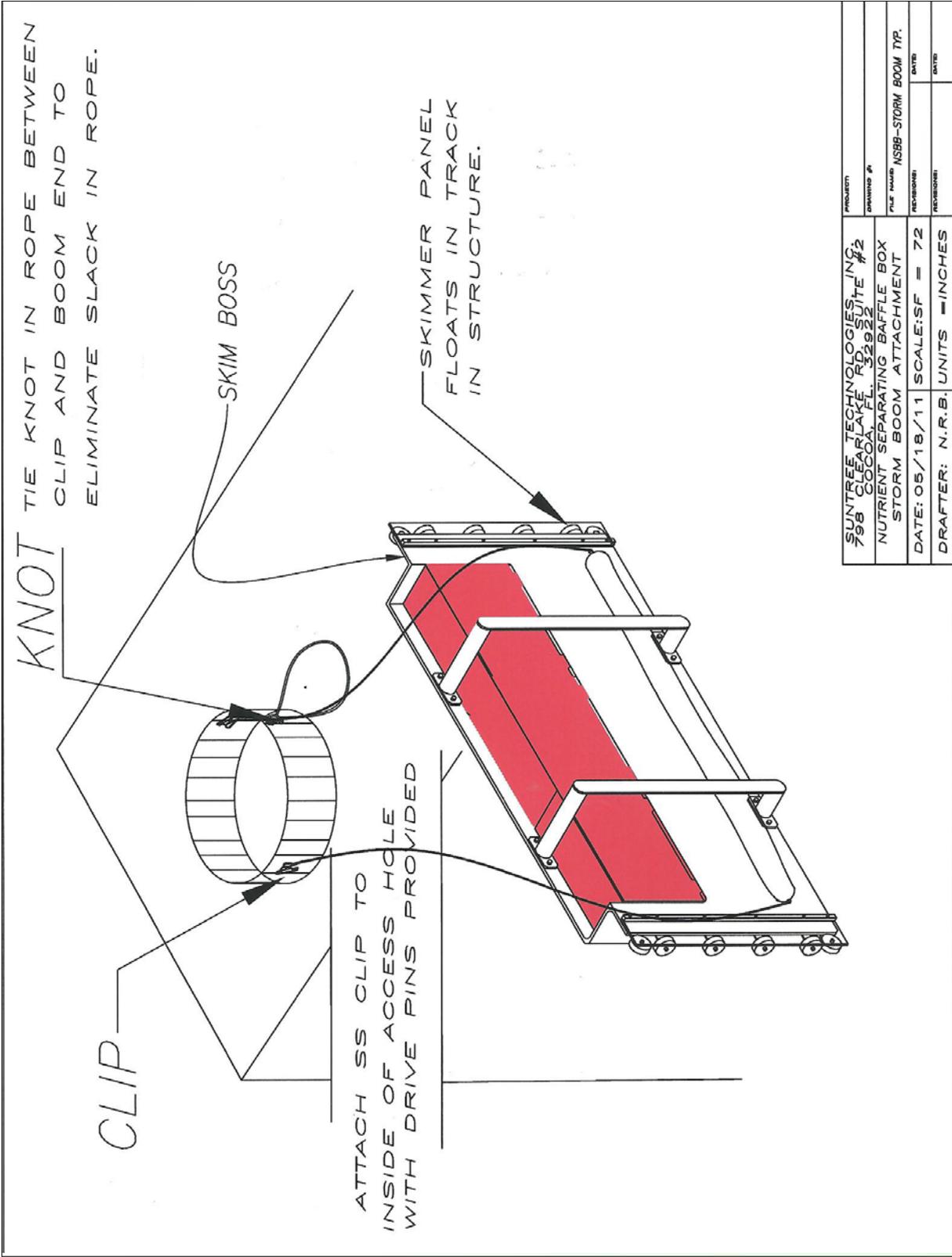
# Section 3



NOTE: SIZE MAY VARY DUE TO STRUCTURE.

SUNTREE TECHNOLOGIES, INC. 798 CLEARLAKE RD. SUITE #2 COCOA, FL 32922	SUNTREE TECHNOLOGIES SPEC. DATE: 07/19/04 DRAWN BY:
NUTRIENT SEPARATING BAFFLE BOX BAFFLE BOX LIDDED BASKET	PROJECT NO.: DATE:
DATE: 07/19/04 SCALE: SF = 72	DRAFTER: N.R.B. UNITS - INCHES

# Section 3



# Section 4

## Parts Information

### Job Specific Information

# Section 4

## Parts Information

## Job Specific Information

# Section 4

## Parts Information

### Job Specific Information

# Section 5

## Warranty Information

### Structural Components:

SPEL Environmental products are engineered and manufactured with the intent of being a permanent part of the infrastructure. SPEL Environmental warrants its products to be free from manufacturer's defects for a period of five (5) years from the date of purchase. SPEL Environmental warrants that the materials used to manufacture its products will be able to withstand and remain durable to environmental conditions for a period of five (5) years from the date of purchase. If a warranty claim is made and determined to be valid, SPEL Environmental will replace or repair the product, at the discretion of SPEL Environmental. Warranty claims must be submitted, evaluated, and approved by SPEL Environmental for the claim to be determined to be valid. All warranty work and/or corrective actions must be authorized by SPEL Environmental prior to work beginning not covered by this warranty. There are no warranties either expressed or implied other than what is specifically specified herein. Abusive treatment, neglect, or improper use of the Nutrient Separating Baffle Box manufactured by SPEL Environmental will not be covered by this warranty.

Below is the list of products covered by this warranty:

- Grate Inlet Skimmer Box®
- Nutrient Separating Baffle Box®
- Nutrient Separating Screen System
- Turbulence Deflector System
- Curb Inlet Basket®
- Hydrocarbon Flume Filter
- Trash Flume Filter
- Golf Green Filter



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Northern Territory	61 2 8705 0255
New Zealand	64 9 276 9045



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