# North Carolina Hazardous Waste Workshop

## Introduction to Chemists, Initial Soil Sampling Plans (ISSP's) and Hazardous Waste Generator Closure Guidance

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**Let's get started with the topics that I will cover today:**

- **Who** are the Hazardous Waste Section Chemists and how to contact them?
- **When** do you need to contact a Hazardous Waste Section Chemist?
- **Why** is it important to know about sampling plans, the Hazardous Waste Section Chemist, and **Where** to find Guidance Documents?
- **How** do you close a Hazardous Waste Central Accumulation Area, Hazardous Waste Unit, and/or a facility under the Hazardous Waste Generator Improvement Rules (March 2018)


**<u>Who</u> are the Hazardous Waste Section Chemists and how do I contact them?**

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A Compliance Branch Unit Map with staff emails and phone numbers by county can be downloaded from the NC DEQ web site link below:


https://www.deq.nc.gov/about/divisions/waste-management/about-waste-management/frequently-asked-questions/hazardous-waste-section-faqs

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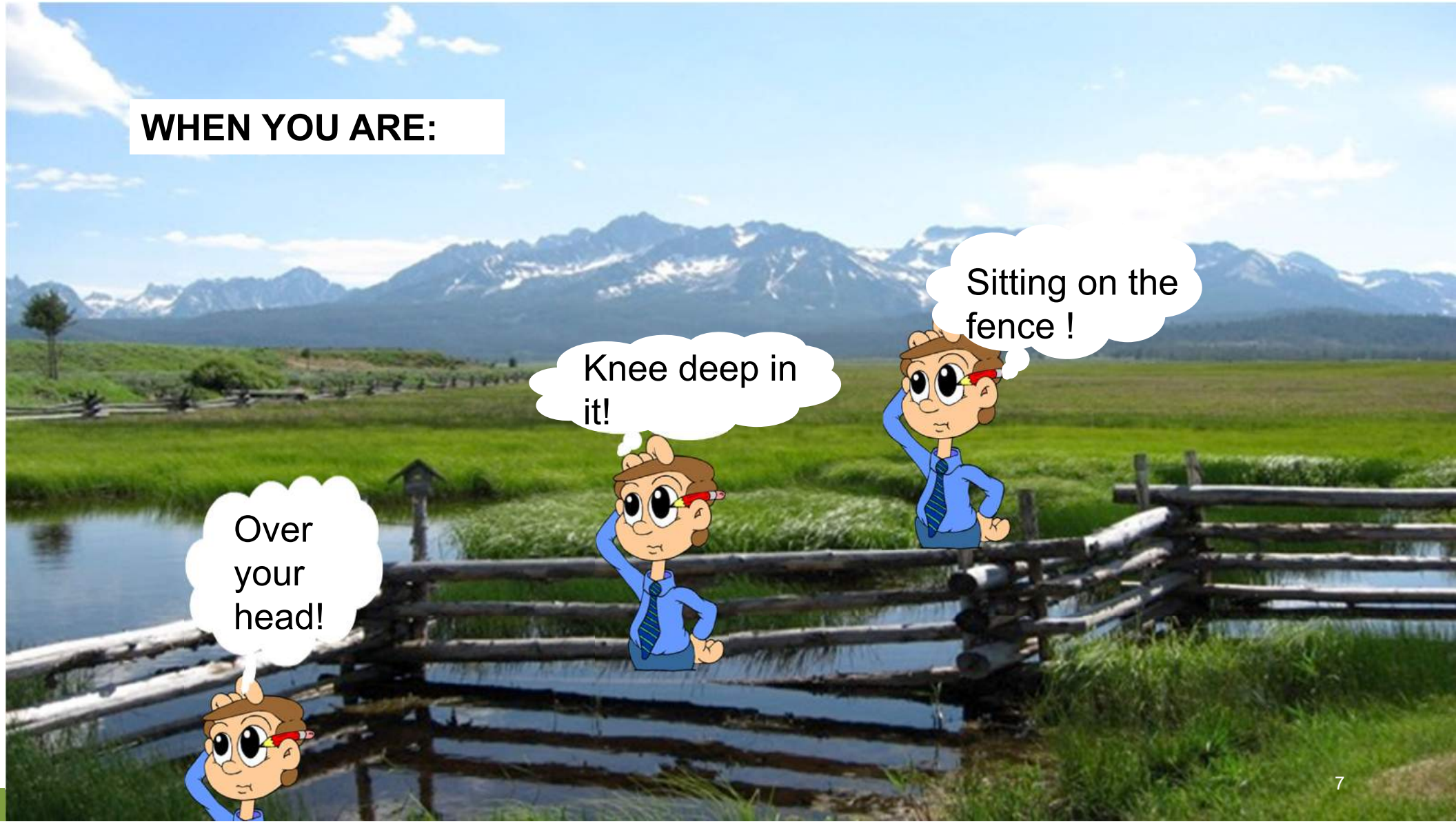
**<u>When</u> do you need to contact a Hazardous Waste Section Chemist?**


WHEN YOU ARE:
Over your head!
Knee deep in it!
Sitting on the fence !

**OR, WHEN YOU HAVE:**

- Received an **Immediate Action (IA-NOV)** that requests an Initial Soil Sampling Plan (ISSP)


**<u>Where</u> do you find Hazardous Waste Generator guidance on Initial Soil Sampling Plans (ISSP's)?**

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# ISSP
# Guidance

- **First**, read the Immediate Action Notice of Violation (IA-NOV) carefully for detailed information and confirm that an Initial Soil Sampling Plan (ISSP) or Comprehensive Site Soil Sampling Plan is being requested.

- **Second**, contact a qualified professional or NC Certified Environmental Consultant and a NC Certified Lab for assistance.

- **Third**, contact the Eastern or Western Chemist for guidance on the ISSP's, EPA Methods, Closure guidelines, and clean-up value reference documents.

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**Guidance on Initial Soil Sampling Plans can be found at:**

https://www.deq.nc.gov/about/divisions/waste-management/hazardous-waste-section/technical-assistance-and-guidance-documents#ClosurePostClosure-2196

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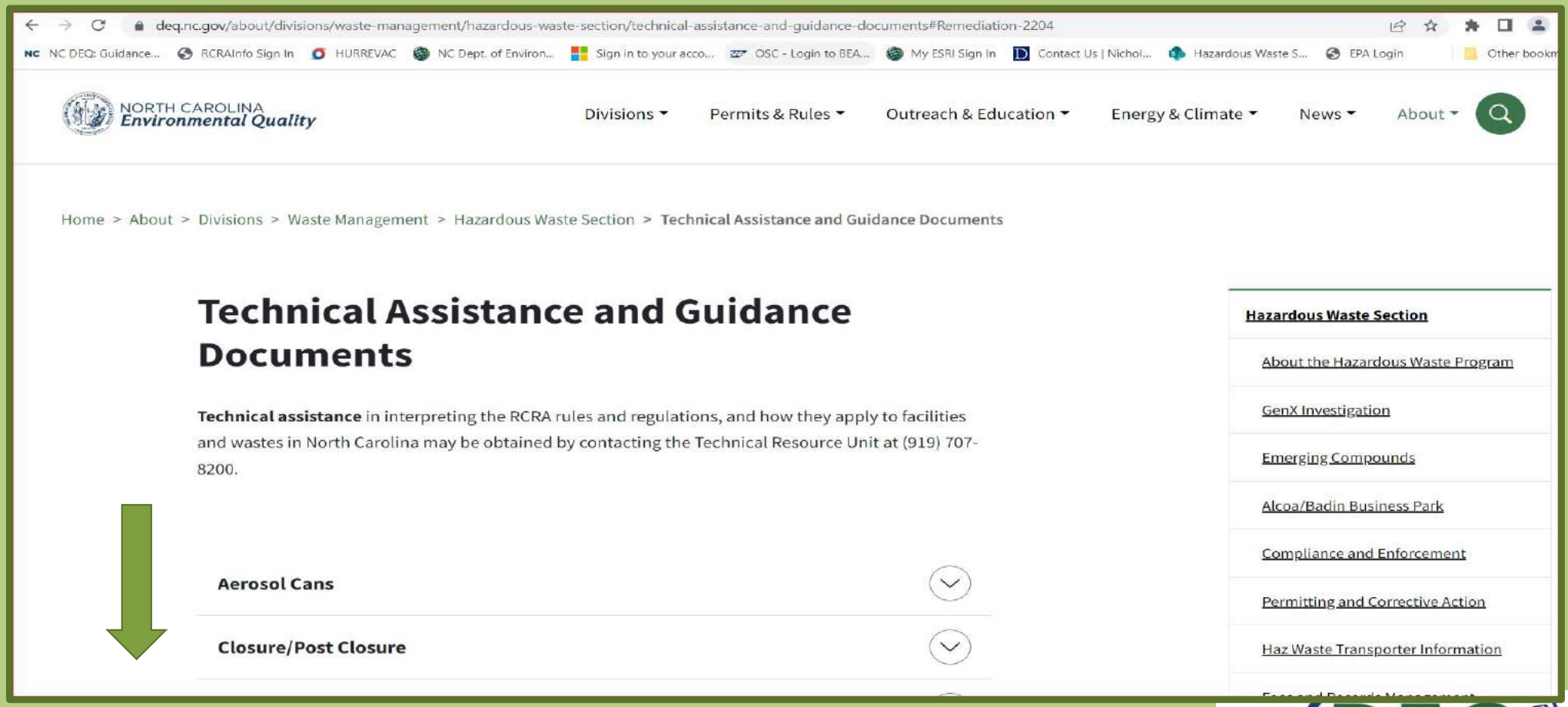


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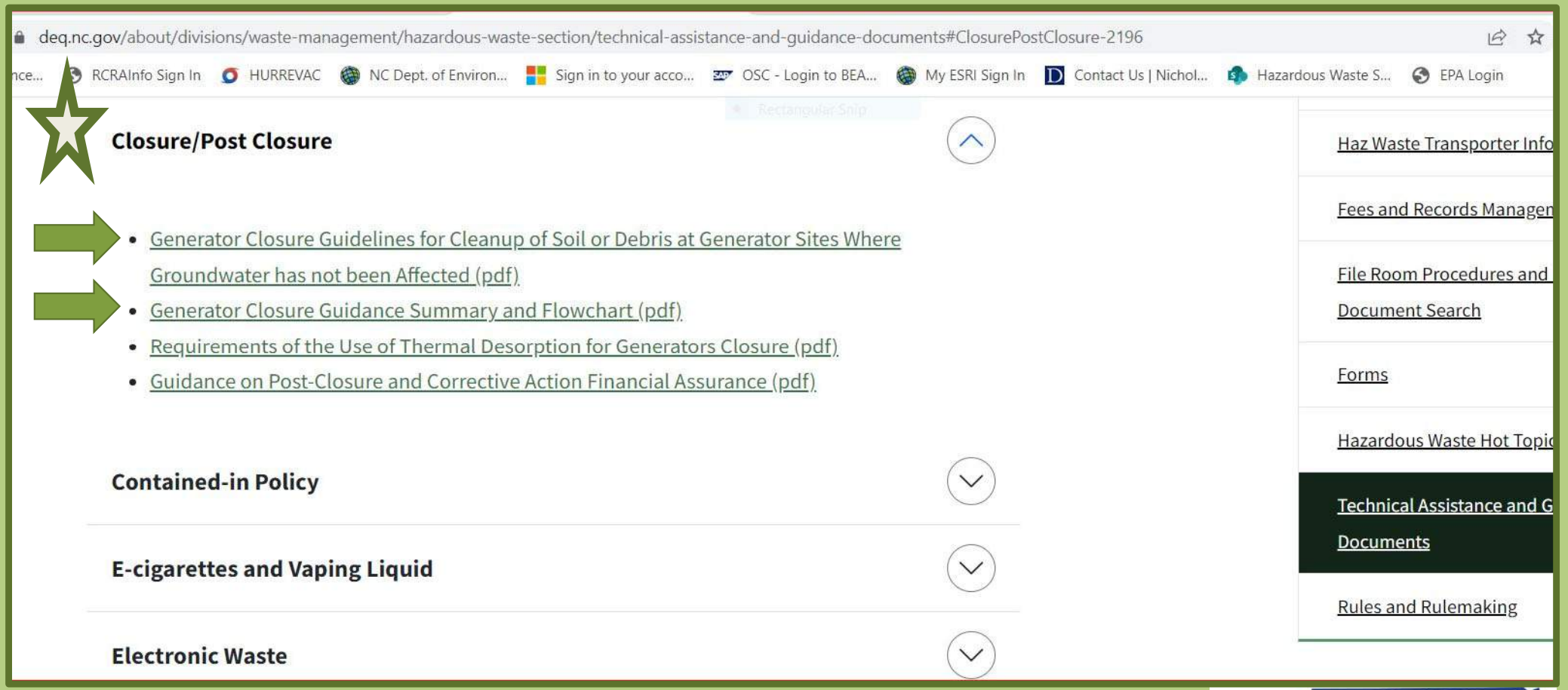


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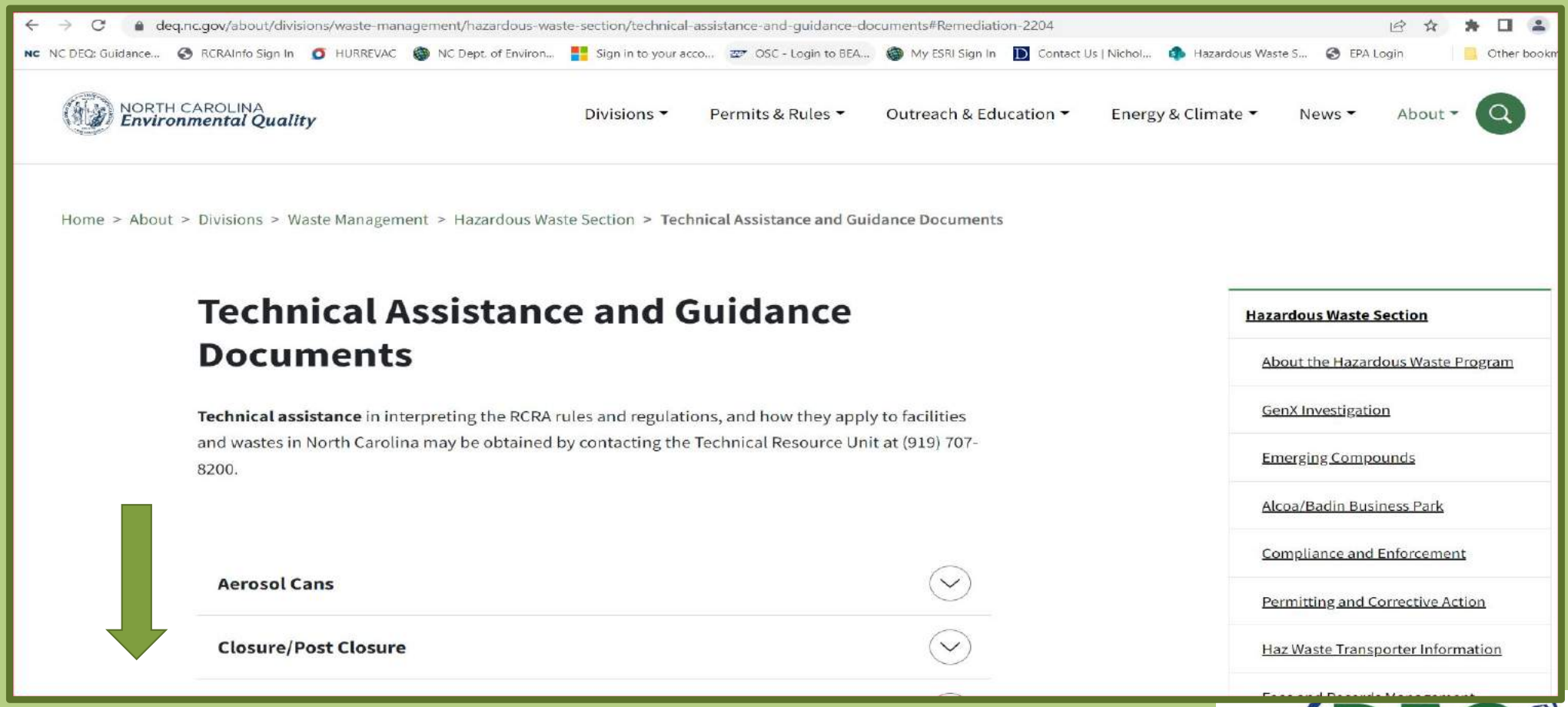
**Soil Remediation Goals/Clean-up Values Reference Document(s) can be found at:**

https://www.deq.nc.gov/about/divisions/waste-management/hazardous-waste-section/technical-assistance-and-guidance-documents#Remediation-2204

https://www.deq.nc.gov/about/divisions/waste-management/hazardous-waste-section/technical-assistance-and-guidance-documents

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Lead Waste

## Remediation

- North Carolina Hazardous Waste Section Guidelines for Establishing Remediation Goals at RCRA Hazardous Waste Sites, December 2013 (pdf)
- NCDEQ Hazardous Waste Section Compliance Branch Soil Cleanup Goal Table (pdf)
- NCDEQ Hazardous Waste Section Compliance Branch Soil Cleanup Goal Table (Excel Spreadsheet)
- NCDEQ IHSB Preliminary Soil Remediation Goals (PSRGs) Table
- Establishing Groundwater Protection Standards in RCRA Permits per 264.92 and 264.94 (pdf)
- DWM Residential Vapor Intrusion Screening Levels (pdf)
- DWM Non-residential Vapor Instrusion Screening Levels (pdf)

**Hazardous Waste Section – Compliance Branch**

**Soil Cleanup Goals (SCG) for Hazardous Waste Generators**

October 2023

(based on May 2023 USEPA Regional Screening Tables)

***These notes must be used with the Hazardous Waste Section – Compliance Branch SCG Table***

**General Notes:**

1. For clean closure, hazardous waste generators must remove ALL wastes and meet the LOWEST VALUE of: (1) the level most protective of human health through direct contact (residential level; unrestricted-use level) and (2) the soil screening level protective of groundwater. Before soil that contains hazardous waste is excavated for purposes of treatment, management, and/or subsequent disposal, Branch staff should be contacted for assistance to address Land Disposal Restrictions found in 40 CFR Part 268.
2. SCGs are obtained using the USEPA Regional Screening Level (RSL) table. If a contaminant does not have a SCG listed, then one or more of the contaminant-specific parameters are not available from the RSL table to calculate a soil SCG (these contaminants are only included in the SCG table to account for all entries on the RSL table). If a 02L Standard or IMAC is available for a contaminant with no SCG, protection of groundwater evaluation is still necessary. Please contact Branch staff for further guidance if a protection of groundwater evaluation is required. If no SCG is available and a protection of groundwater evaluation is not possible for a contaminant of concern, the Method Detection Limit (MDL) or a calculated Practical Quantitation Limit (PQL) will be used as the unrestricted-use-cleanup level.
3. Bold contaminants have SCGs below applicable LDRs found in 40 CFR Part 268. Please contact Branch staff prior to managing these contaminants of concern for further guidance before establishing unrestricted-use-cleanup levels.
4. The **health-based SCGs** (Residential; unrestricted-use) are based upon human health risk and do not address potential ecological risk. The SCGs listed are the lower of:
    a. the carcinogenic target risk of 1.0E-06 (**C**), or
    b. the non-carcinogenic target hazard quotient of 0.2 (**N**).

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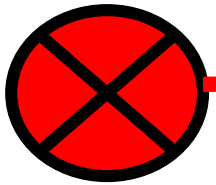
**Remediation**

**USE the Hazardous Waste Section SCG Table**



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**<u>Why</u> is it important to know about Sampling Plans and the Hazardous Waste Section Chemists?**

**Time is of the Essence**

A Notice of Violation (NOV) will require a waste determination and an appropriate waste disposal plan, **within 30 days** of receipt of the notice.

An **Initial Soil Sampling Plan (ISSP)** will be required**, within 60-90 days** of receipt of the notice, **"**when evidence of a hazardous waste release to soil is documented". The ISSP **must be approved by the Chemist** before conducting soil remediation.

- You will need time to consult with an Environmental Professional to determine your **Data Quality Objective** and to develop and submit a **Defensible Sampling Plan**.

- Environmental consultants registered with NC can be found at: **https://deq.nc.gov/about/divisions/waste-management/superfund-section/inactive-hazardous-sites-program/registered-environmental-consultant-program**

- NC Certified Laboratories In-state can be found for download at: **https://deq.nc.gov/about/divisions/water-resources/water-resources-science-and-data/water-sciences-home-page/chemistry-laboratory/laboratory-certification-branch/certified-laboratory-listings**

## Initial Soil Sampling Plans (ISSP's)

Initial Soil Sampling Plans are required when a waste determination is complete that identifies the waste, as hazardous waste, and when there is evidence that this hazardous waste was released to the underlying soil.

The Notice of Violation will require that you develop and submit an Initial Soil Sampling Plan.

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**Questions** to consider and discuss with an Environmental Professional include:

**What:**

- Clean-up goals for contaminate concentrations of concern?
- Quantity of sample will be collected ?
- Quantity of sample will be needed for the lab analysis?
- Size of the Area to be sampled?
- Vertical and horizontal extent of contamination, if known?
- Defensible number of samples, to be confident clean-up goals are met, or a proper waste identification is made?
- Container strategy for sampling, storage, transport, and disposal is appropriate for the weight/volume of waste to be discarded.

## Abandoned Drum Containers - Unknown Origin and Unknown Waste Content

Group 1

Group 2

## Group 3


In this example, where the waste is of **unknown origin** and **unknown contents** the following list of EPA Sampling Methods will be required in order to identify if hazardous waste is present:

- **EPA Method 8260B Toxicity Characteristic Leaching Procedure (TCLP) volatile organic compounds (VOCs)**
- **EPA Method 8270D TCLP semi-volatile organic compounds (SVOCs)**
- **EPA Method 6010C TCLP Resource Conservation and Recovery Act (RCRA) metals by and EPA Method 7470A for mercury**
- **EPA Method 8081B TCLP pesticides**
- **EPA Method 8151A TCLP herbicides**
- **EPA Method 8082A Polychlorinated biphenyl (PCB)**
- **Asbestos by Polarized Light Microscopy**

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**Group 3 –** Hazardous Waste
Chloroform was identified as exceeding TCLP value for toxicity (Reference 40 CFR Part 261.24/Table 1 )

In this example, after all the sampling, and the EPA Sample Method analyses were completed for the waste determination, the laboratory results identified the hazardous waste, Chloroform, was present in the green drum containers (Group 3) located in area E shown on the map .

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Consult with an Environmental Professional to review EPA Sampling Methods and waste determination laboratory results, before conducting the Initial Soil Sampling Plan (ISSP)

In this example, it was determined that:

Chloroform was identified by TCLP as over the maximum concentration of contaminants for Toxicity Characteristic limit of 6 mg/L, and so the waste is deemed to be hazardous waste and further, due to the evidence of release of this hazardous waste to the underlying soil, the soil must be remediated to meet the Preliminary Soil Remediation Goal (PSRG) for the Chloroform value of 0.34 mg/kg.

The following EPA Sampling Method is required:
EPA Method 8260B **Total** Volatile Organic Compounds (reported in **mg/kg**)

**Note:** PSRG Table values are in mg/kg, so be sure to run **Totals** Method and not TCLP for Initial Soil Sampling Plans (ISSP's).

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**<u>How</u> do you close a Hazardous Waste Central Accumulation Area, Hazardous Waste Unit and/or a facility under the Hazardous Waste Generator Improvement Rules (March 2018)**

The Hazardous Waste Section Chemist may be involved with Hazardous Waste Unit, and Facility Closures for both small and large quantity generators.

A Hazardous Waste “Unit” Closure would include closure of:

- Central Accumulation Areas (HW CCA’s)
- HW Tanks
- HW Drip Pads
- HW Containment Buildings

| | Clean Closure Requirement | Regulation (Federal) | Submitted (Y/N/NA)* | Location in Application | Technically Adequate (Y/N)* | Comments |
|---|---|---|---|---|---|---|
| 1 | **Notification**<br><br>A large quantity generator accumulating hazardous wastes in containers, tanks, drip pads, and containment buildings, prior to closing a unit at the facility, or prior to closing the facility, must meet the following notification conditions: | 40 CFR 262.17(a)(8) | | | | |
| | **1.1 Waste Accumulation Unit Closure**<br><br>The generator shall place a notice in the operating record within 30 days after closure identifying the location of the unit within the facility.<br><br>OR<br><br>Meet the requirements in *Checklist 2* below and notify North Carolina Hazardous Waste Branch following the procedures in *Checklist 1.2* below for the waste accumulation unit. | 40 CFR 262.17(a)(8)(i) | | | | *If the waste accumulation unit is subsequently reopened, the generator may remove the notice from the operating record.* |
| | **1.2 Facility Closure** | 40 CFR 262.17(a)(8)(ii) (A) - (C) | | | | |
| | i. Notify North Carolina Hazardous Waste Branch using form 8700-12, no later than 30 days prior to closing the facility. | | | | | |
| | ii. Notify North Carolina Hazardous Waste Branch using form 8700-12 within 90 days after closing the facility that it has complied with the closure performance standards in *Checklist 2* below for the waste accumulation unit. | | | | | |
| | iii. The generator may request additional time to clean close, but it must notify North Carolina Hazardous Waste Branch using form 8700-12 within 75 days after the date provided in *Checklist 1.2.i.* above to request an extension and provide an explanation as to why the additional time is required. | | | | | |

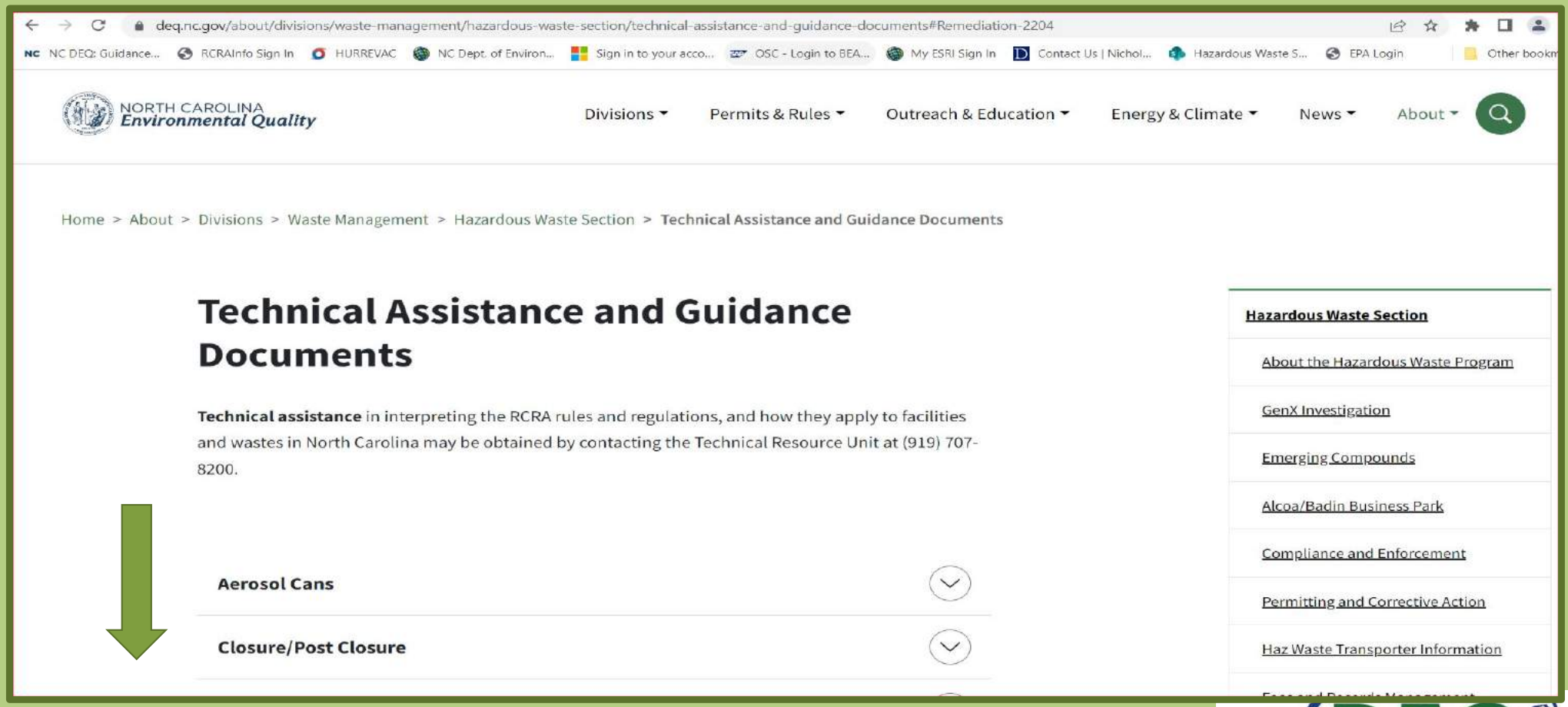
| Clean Closure Requirement | Regulation (Federal) | Submitted (Y/N/NA)* | Location in Application | Technically Adequate (Y/N)* | Comments |
|---|---|---|---|---|---|
| **2.1 Container, Tank Systems, and Containment Building Waste Accumulation Units**<br><br>The generator shall demonstrate the following: | 40 CFR 262.17(a)(8)(iii) (1) – (4) | | | | |
| i. Minimized the need for further maintenance by controlling, minimizing, or eliminating the post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere. | | | | | |
| ii. Removed or decontaminated all contaminated equipment, structures and soil and any remaining hazardous waste residues from waste accumulation units including containment system components (pads, liners, etc.), contaminated soils and subsoils, bases, and structures and equipment contaminated with waste, unless 40 CFR Part 261.3(d) applies. | | | | | *If the generator finds that any contaminated soils and wastes cannot be practicably removed or decontaminated, then the waste accumulation unit is considered to be a landfill. See 40 CFR §265.111 Closure performance Standard and (Subpart G and H) and (§265.310) Closure and post-closure care requirements that apply to landfills.* |
| iii. Any hazardous waste generated in the process of closing either the generator's facility or unit(s) accumulating hazardous waste must be managed in accordance with all applicable standards of 40 CFR Parts 262, 263, 265 and 268, including removing any hazardous waste contained in these units within 90 days of generating it and managing these wastes in a RCRA Subtitle C hazardous waste permitted treatment, storage and disposal facility or interim status facility. | | | | | |

| Clean Closure Requirement | Regulation (Federal) | Submitted (Y/N/NA)* | Location in Application | Technically Adequate (Y/N)* | Comments |
|---|---|---|---|---|---|
| **2.2 Drip Pad Waste Accumulation Units**<br><br>The generator shall demonstrate the following: | 40 CFR 262.17(a)(8)(iv) | | | | |
| i. Minimized the need for further maintenance by controlling, minimizing, or eliminating the post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere. | 40 CFR 262.17(a)(8)(iii)(A)(1) | | | | |
| ii. Removed or decontaminated all waste residues, contaminated containment system components (pad, liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leakage, and manage them as hazardous waste. | 40 CFR 265.445(a) and (b) | | | | *If the generator finds that not all contaminated subsoils can be practically removed or decontaminated, the drip pad is considered to be a landfill and the generator must close the facility and perform post-closure care in accordance with closure and post-closure care requirements that apply to landfills (§265.310).* |
| iii. Any hazardous waste generated in the process of closing either the generator's facility or unit(s) accumulating hazardous waste must be managed in accordance with all applicable standards of 40 CFR Parts 262, 263, 265 and 268, including removing any hazardous waste contained in these units within 90 days of generating it and managing these wastes in a RCRA Subtitle C hazardous waste permitted treatment, storage and disposal facility or interim status facility. | 40 CFR 262.17(a)(8)(iii)(A)(3) | | | | |

**The Large Quantity Generator Closure requirements can be found at 40 CFR 262.17 (a) (8) (i) and**

In the Hazardous Waste Generator Compliance Manual, the compliance manual is located at the DEQ web site link below:

**https://deq.nc.gov/about/divisions/waste-management/hazardous-waste-section/technical-assistance-and-guidance-documents#HazardousWasteGenerator-2355**

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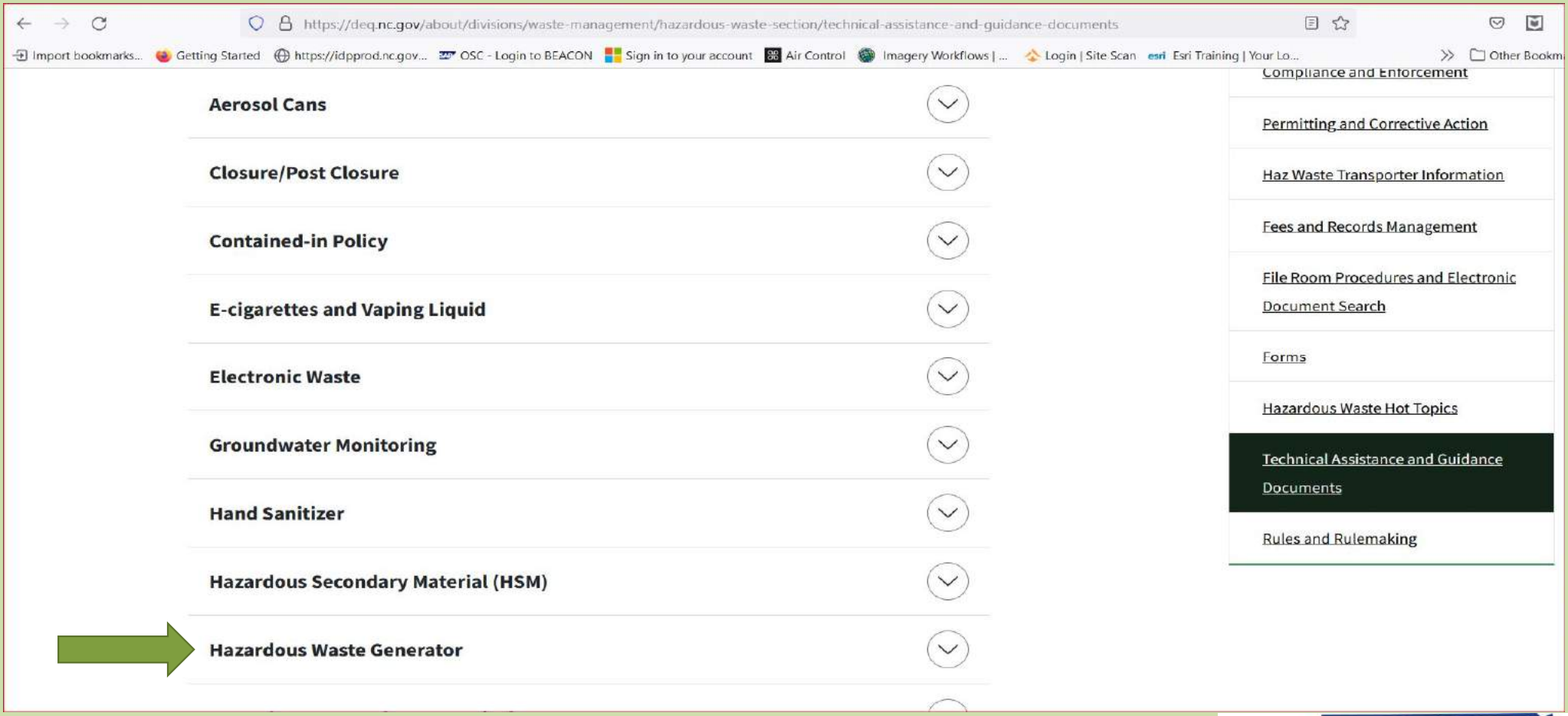


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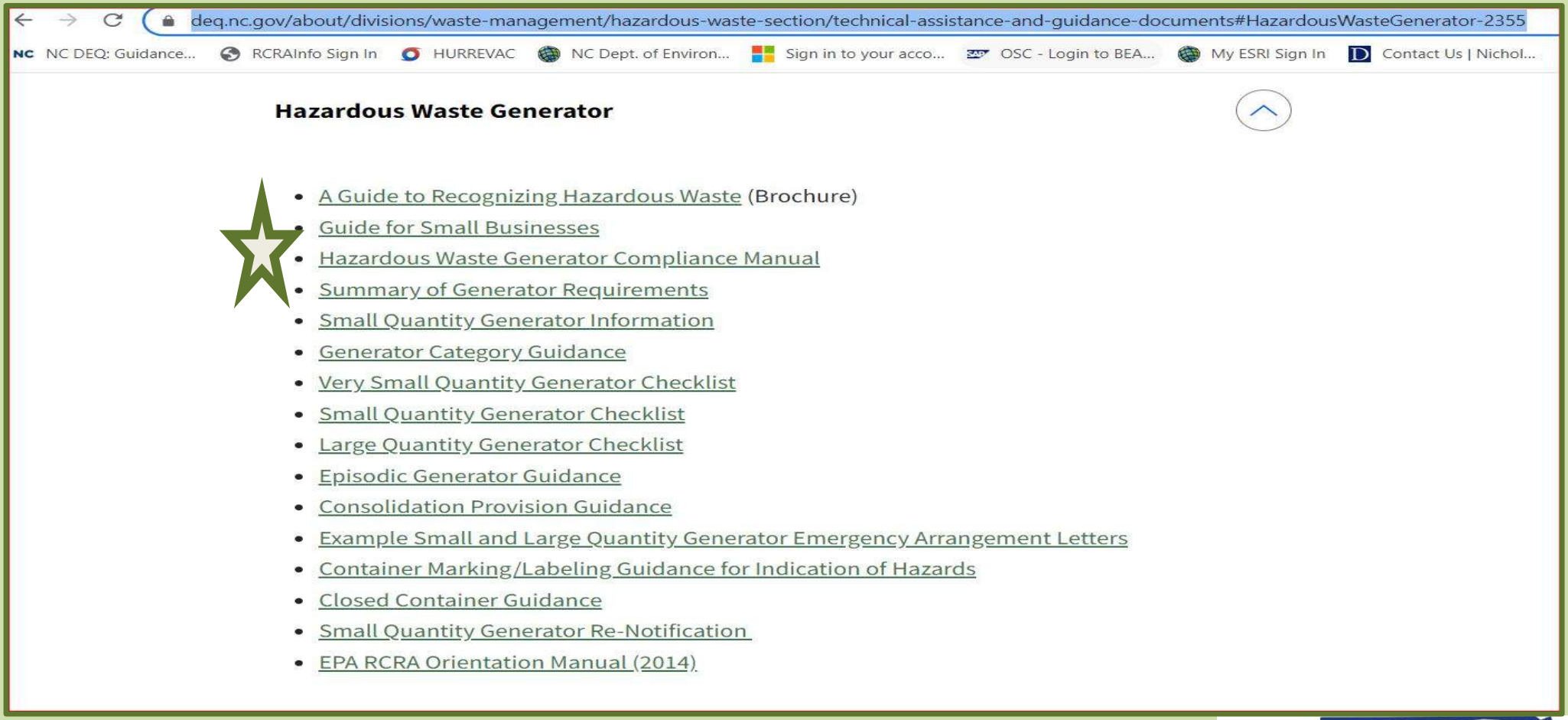


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**The Small Quantity Generator Closure requirements can be found at: 40 CFR 262.16 (b)(4)(i)**

**(i)** A small quantity generator accumulating hazardous waste in tanks must, upon closure of the facility, remove all hazardous waste from tanks, discharge control equipment, and discharge confinement structures. At closure, as throughout the operating period, unless the small quantity generator can demonstrate, in accordance with § 261.3(c) or (d) of this chapter, that any solid waste removed from its tank is not a hazardous waste, then it must manage such waste in accordance with all applicable provisions of parts 262, 263, 265 and 268 of this chapter.


**Why** is it important to know about sampling plans, and the Hazardous Waste Section Chemist.

The Hazardous Waste Chemists will review and approve sample plans:

- **When** hazardous waste is released and requires clean-up
- **When** a Notice of Violation requires an Initial Soil Sampling Plan (ISSP) submittal
- **When** a hazardous waste generator closes a hazardous waste central accumulation area, hazardous waste unit, or their facility


**Where** to find Hazardous Waste Generator Guidance Documents and the Soil Cleanup Goal Table

**https://deq.nc.gov/about/divisions/waste-management/hazardous-waste-section/technical-assistance-and-guidance-documents**


Any Questions?