# NORTH CAROLINA BROWNFIELDS REDEVELOPMENT SECTION

# ENVIRONMENTAL MANAGEMENT PLAN

This form is to be used to prepare an Environmental Management Plan (EMP) for projects in the North Carolina Brownfields Redevelopment Section at the direction of a Brownfields project manager.

The EMP is a standard requirement of a Brownfields Agreement (BFA). Its purpose is to clarify actions to be taken during demolition and construction at Brownfields properties in an effort to avoid delays in the event of the discovery of new contamination sources or other environmental conditions. The EMP provides a means to document redevelopment plans and environmental data for each applicable environmental medium to inform regulatory-compliant decision-making at the site. As much detail as possible should be included in the EMP, including contingency planning for unknowns. Consult your project manager if you have questions.

Prospective Developers and/or their consultants must complete and submit this form and all pertinent attachments, see checklist below, to their Brownfields project manager prior to any earthmoving or other development-related activities that have the potential to disturb soil at the Brownfields Property, including demolition. For the EMP to be valid for use, it must be completed, reviewed by the Section, signed by all parties working on the project, and approved by the Brownfields project manager. Failure to comply with the requirements of the EMP could jeopardize project eligibility, or in the event of a recorded agreement, be cause for a reopener.

**The EMP is valid only for the scope of work described herein and must be updated to be applicable for new phases of redevelopment or after significant changes in applicable regulatory guidance. Risk characterization of a Brownfields Property to DEQ’s written satisfaction is required prior to EMP approval.**

**Voluntary Metrics Tab**

The NC Brownfields Redevelopment Section updates estimated capital investment (from the Brownfields Property Application) and estimated jobs created (from the Brownfields Agreement) whenever possible. As a voluntary measure, you may opt to complete the below information for capital investment and jobs created as estimated by your final redevelopment plans for the Brownfields Property:

1. Estimated capital investment in redevelopment project: Click or tap here to enter text.
2. Estimated jobs created:
3. Construction Jobs: Click or tap here to enter text.
4. Full Time Post-Redevelopment Jobs: Click or tap here to enter text.

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So that the EMP provides value in protecting Brownfields eligibility and public health, the preparer shall ensure that the following steps have been completed prior to submitting the EMP for review. Any EMP prepared without completing all of the following is premature and may be returned without comment.

Site sampling and assessment that meets Brownfields’ objectives is complete and has been reviewed and approved by the Brownfields project manager.

Specific redevelopment plans, even if conceptual, have been developed for the project, submitted and reviewed by the Brownfields project manager.

Please submit, along with the completed EMP form, the following attachments, as relevant and applicable to the proposed redevelopment:

A set of redevelopment plans, including architectural/engineering plans, if available; if not, conceptual plans may suffice if updated when detailed plans are drafted.

A figure overlaying redevelopment plans on a map of the extent of contamination for each media.

Site grading plans that include a cut and fill analysis.

A figure showing the proposed location and depth of impacted soil that would remain onsite after construction grading.

Any necessary permits for redevelopment (i.e. demolition, etc.).

A detailed construction schedule that includes timing and phases of construction.

Tabulated data summaries for each impacted media (i.e. soil, groundwater, soil gas, etc.) applicable to the proposed redevelopment.

Figures with the sampling locations and contamination extents for each impacted media applicable to the proposed redevelopment.

A full final grade sampling and analysis plan, if the redevelopment plan is final.

If known, information about each proposed potential borrow soil source, such as aerial photos, historic site maps, historic Sanborn maps, a site history, necessary for Brownfields approval.

Information and, analytical data if required, for quarries, or other borrow sources, detailing the type of material proposed for import to the Brownfields Property.

A work plan for the sampling and analysis of soil to be brought onto the Brownfields Property. Refer to [Issue Resolution 15](https://deq.nc.gov/media/9834/download) in Brownfields Redevelopment Section Guidelines.

A map of the Brownfields Property showing the location of soils proposed for export and sampling data from those areas.

If a Vapor Intrusion Mitigation System (VIMS) is required by the Brownfields Redevelopment Section, the VIMS plan will be signed and sealed by a NC Professional Engineer. The VIMS Plan may also be submitted under separate cover.

## GENERAL INFORMATION

|  |  |
| --- | --- |
| **Date:** Click or tap to enter a date. | **Revision Date (if applicable)**: Click or tap to enter a date. |

**Brownfields Assigned Project Name:** Click or tap here to enter text.

**Brownfields Project Number**: Click or tap here to enter text.

**Brownfields Property Address**: Click or tap here to enter text.

**Brownfields Property Area (acres):** Click or tap here to enter text.

**Is Brownfields Property Subject to RCRA Permit?**....................... **Yes  No**

**If yes enter Permit No.:** Click or tap here to enter text.

**Is Brownfields Property Subject to a Solid Waste Permit**….…….. **Yes  No**

**If yes, enter Permit No.:** Click or tap here to enter text.

## COMMUNICATIONS

**A copy of this EMP shall be distributed to all the parties below as well as any contractors or site workers that may be exposed to site vapors, soil, groundwater, and/or surface water. Additionally, a copy of the EMP shall be maintained at the Brownfields Property during redevelopment activities in an area that is prominently accessible to site workers. NOTE, THE EMP DOES NOT TAKE THE PLACE OF A SITE-SPECIFIC HEALTH AND SAFETY PLAN.**

**Prospective Developer (PD):** Click or tap here to enter text.

**Contact Person:** Click or tap here to enter text.

|  |  |
| --- | --- |
| **Phone Numbers: Office:** Click or tap here to enter text. | **Mobile:** Click or tap here to enter text. |

**Email:** Click or tap here to enter text.

**Contractor for PD:** Click or tap here to enter text.

**Contact Person:** Click or tap here to enter text.

|  |  |
| --- | --- |
| **Phone Numbers: Office:** Click or tap here to enter text. | **Mobile:** Click or tap here to enter text. |

**Email:** Click or tap here to enter text.

**Environmental Consultant:** Click or tap here to enter text.

**Contact Person:** Click or tap here to enter text.

|  |  |
| --- | --- |
| **Phone Numbers: Office:** Click or tap here to enter text. | **Mobile:** Click or tap here to enter text. |

**Email:** Click or tap here to enter text.

**Brownfields Redevelopment Section Project Manager:** Click or tap here to enter text.

|  |  |
| --- | --- |
| **Phone Numbers: Office:** Click or tap here to enter text. | **Mobile:** Click or tap here to enter text. |

**Email:** Click or tap here to enter text.

**Other DEQ Program Contacts (if applicable, i.e., UST Section, Inactive Hazardous Site Branch, Hazardous Waste, Solid Waste):**

|  |
| --- |
| Click or tap here to enter text. |

## NOTIFICATIONS TO THE BROWNFIELDS REDEVELOPMENT SECTION

Written advance Notification Times to Brownfields project manager: Check each box to accept minimum advance notice periods (in calendar days) for each type of onsite task:

On‐site assessment or remedial activities:……………………………………….…… 10 days Prior

Construction or grading start:……………………………………….………………………. 10 days Prior

Discovery of stained soil, odors, USTs, buried drums or waste, landfill, or other signs of previously unknown contamination: ……………………………….……………………………………. Within 48 hours

Implementation of emergency actions (e.g. dewatering, flood or soil erosion control measures in area of contamination, ventilation of work zones):…………….……….……… Within 48 hours

Installation of mitigation systems:………………………….………………….……….. 10 days Prior

Other notifications as required by local, state or federal agencies to implement redevelopment activities: (as applicable): ……………………….…………………………………………..… Within 30 days

## REDEVELOPMENT PLANS

1. **Type of Redevelopment (check all that apply):**

**Residential Townhomes (Prior written DEQ approval REQUIRED regardless of ownership structure) Recreational Institutional Commercial Office Retail Industrial**

**Other specify:**

|  |
| --- |
| Click or tap here to enter text. |

1. **Check the following activities that will be conducted prior to commencing earth‐moving activities at the site:**

**Review of historic maps (Sanborn Maps, facility maps)**

**Conducting geophysical surveys to evaluate the location of suspect UST, fuel lines, utility lines, etc.**

**Interviews with employees/former employees/facility managers/neighbors**

1. **Summary of Redevelopment Plans (MANDATORY: attach detailed plans or conceptual plans, if detailed plans are not available. EMP review without such information would be premature)**:

**Provide brief summary of redevelopment plans, including demolition, removal of building slabs/pavement, grading plans and planned construction of new structures:**

|  |
| --- |
| Click or tap here to enter text. |

1. **Do plans include demolition of structure(s)?:**

**Yes  No  Unknown**

**If yes**, please check here to confirm that demolition will be conducted in accordance with applicable legal requirements, including without limitation those related to lead and asbestos abatement that are administered by the Health Hazards Control Unit within the Division of Public Health of the North Carolina Department of Health and Human Services. If available, please provide a copy of your demolition permit.

1. **Are sediment and erosion control measures required by federal, state, or local regulations?**

S&EC requirements can be found at: <https://deq.nc.gov/about/divisions/energy-mineral-and-land-resources/erosion-and-sediment-control/erosion-and-sediment-control-laws-and-rules>

**Yes  No  Unknown**

**If yes**, please check here to confirm that earth-work will be conducted in accordance with applicable legal requirements. If soil disturbance is necessary to install sediment and erosion control measures, they may not begin until this EMP is approved.

1. **Which category of risk‐based screening level is used or is anticipated to be specified in the Brownfields Agreement?** Note: If children frequent the property, residential screening levels shall be cited in the Brownfields Agreement for comparison purposes.

Residential  Non‐Residential or Industrial/Commercial

1. **Schedule for Redevelopment (attach construction schedule):**
   1. **Construction start date:** Click or tap to enter a date.

* 1. **Anticipated duration (specify activities during each phase):**

|  |
| --- |
| Click or tap here to enter text. |

* 1. **Additional phases planned?  Yes  No**

**If yes,** specify the start date and/or activities if known**:**

**Start Date:** Click or tap to enter a date.

**Planned Activity:**

|  |
| --- |
| Click or tap here to enter text. |

**Start Date:** Click or tap to enter a date.

**Planned Activity:**

|  |
| --- |
| Click or tap here to enter text. |

**Start Date:** Click or tap to enter a date.

**Planned Activity:**

|  |
| --- |
| Click or tap here to enter text. |

* 1. **Provide the planned date of occupancy for new buildings:** Click or tap to enter a date.

## CONTAMINATED MEDIA

Please fill out the sections below, using detailed site plans, if available, or estimate using known areas of contaminated soil and a conceptual redevelopment plan. Provide a figure overlaying new construction onto figure showing contaminated soil and groundwater locations.

1. Contaminated Media on the Brownfields Property

Part 1. Soil:  Yes  No  Suspected  Unknown

Part 2. Groundwater:  Yes  No  Suspected  Unknown

Part 3. Surface Water:  Yes  No  Suspected  Unknown  N/A

Part 4. Sediment:  Yes  No  Suspected  Unknown  N/A

Part 5. Soil Vapor:  Yes  No  Suspected  Unknown

Part 6. Sub‐Slab Soil Vapor:  Yes  No  Suspected  Unknown

Part 7. Indoor Air:  Yes  No  Suspected  Unknown

1. **For the Area of Proposed Redevelopment on the Brownfields Property, attach tabulated data summaries for each impacted media and figure(s) with sample locations.**

### PART 1. SOIL

1. **Known or suspected contaminants in soil (list general groups of contaminants)**:

|  |
| --- |
| Click or tap here to enter text. |

1. **Depth of known or suspected contaminants (feet):**

|  |
| --- |
| Click or tap here to enter text. |

1. **Area of soil disturbed by redevelopment (square feet):**

|  |
| --- |
| Click or tap here to enter text. |

1. **Depths of soil to be excavated (feet):**

|  |
| --- |
| Click or tap here to enter text. |

1. **Estimated volume of soil (cubic yards) to be excavated (attach grading plan):**

|  |
| --- |
| Click or tap here to enter text. |

1. **Estimated volume of excavated soil (cubic yards) anticipated to be impacted by contaminants:**

|  |
| --- |
| Click or tap here to enter text. |

1. **Estimated volume of contaminated soil expected to be disposed of offsite, if applicable:**

|  |
| --- |
| Click or tap here to enter text. |

#### PART 1.A. MANAGING ONSITE SOIL

**If soil is anticipated to be excavated from the Brownfield Property, relocated on the Brownfields Property, or otherwise disturbed during site grading or other redevelopment activities, please provide a grading plan that clearly illustrates areas of cut and fill (approximate areas & volumes are acceptable, if only preliminary data available).**

1. **HAZARDOUS WASTE DETERMINATION:**
2. **Does the soil contain a LISTED WASTE as defined in the North Carolina Hazardous Waste Section under 40 CFR Part 261.31‐261.35?**....................................... **Yes No**

**If yes**, **explain why below, including the level of knowledge regarding processes generating the waste (include pertinent analytical results as needed)**.

|  |
| --- |
| Click or tap here to enter text. |

**If yes**, **do the soils exceed the “Contained‐Out” levels in Attachment 1 of the North Carolina Contained‐In Policy?**.................................................  **Yes  No**

1. NOTE: IF SOIL MEETS THE DEFINITION OF A LISTED HAZARDOUS WASTE AND EXCEEDS THE CONTAINED‐OUT LEVELS IN ATTACHMENT 1 TO THE NORTH CAROLINA CONTAINED‐IN POLICY, THE SOIL MAY NOT BE RE‐USED ONSITE AND MUST BE DISPOSED OF IN ACCORDANCE WITH DEQ HAZARDOUS WASTE SECTION RULES AND REGULATIONS.
2. **Does the soil contain a CHARACTERISTIC WASTE?**.................................... **Yes  No**

If yes, mark reason(s) why below (and include pertinent analytical results).

**Ignitability** Click or tap here to enter text.

**Corrosivity** Click or tap here to enter text.

**Reactivity** Click or tap here to enter text.

**Toxicity** Click or tap here to enter text.

**TCLP results** Click or tap here to enter text.

**Rule of 20 results** (20 times total analytical results for an individual hazardous constituent on TCLP list cannot, by test method, exceed regulatory TCLP standard)

|  |
| --- |
| Click or tap here to enter text. |

**If no,** explain rationale:

|  |
| --- |
| Click or tap here to enter text. |

1. NOTE: IF SOIL MEETS THE DEFINITION OF A CHARACTERISTIC HAZARDOUS WASTE, THE SOIL MAY NOT BE RE‐USED ONSITE AND MUST BE DISPOSED OF IN ACCORDANCE WITH DEQ HAZARDOUS WASTE SECTION RULES AND REGULATIONS.
2. **Screening criteria by which soil disposition decisions will be made (e.g., left in place, capped in place with low permeability barrier, removed to onsite location and capped, removed offsite):**

**Preliminary Health‐Based Residential SRGs**

**Preliminary Health‐Based Industrial/Commercial SRGs**

**Division of Waste Management Risk Calculator (For Brownfields Properties Only)**

**Site‐specific risk‐based cleanup level. Please provide details of methods used for determination/explanation.**

|  |
| --- |
| Click or tap here to enter text. |

**Additional comments**:

|  |
| --- |
| Click or tap here to enter text. |

1. **If known impacted soil is proposed to be reused within the Brownfields Property boundary, please check the measures that will be utilized to ensure safe placement and documentation of same. Please attach a proposed location diagram/site map.**

**Provide documentation of analytical report(s) to Brownfields project manager.**

**Provide documentation of final location, thickness and depth of relocated soil onsite map to Brownfields project manager once known.**

**Geotextile to mark depth of fill material.**

**Provide description of material**:

|  |
| --- |
| Click or tap here to enter text. |

**Manage soil under impervious cap  or clean fill**

**☐Describe cap or fill:**

|  |
| --- |
| Click or tap here to enter text. |

**Confer with NC BF project manager if Brownfield Plat must be revised (or re‐recorded if actions are Post‐Recordation).**

**GPS the location and provide site map with final location.**

**Other. Please provide a description of the measure**:

|  |
| --- |
| Click or tap here to enter text. |

1. **Please describe the following action(s) to be taken during and following excavation and management of site soils:**

**Check to confirm that management of fugitive dust from site activities will be handled in accordance with applicable local, state, and federal requirements.**

**Field screening of site soil**

**At a minimum, contractors shall be made aware of protocols should impacted soils (e.g. staining, unusual odors, fill materials) be identified.**

**Describe the field screening method, frequency of field screening, person conducting field screening**:

|  |
| --- |
| Click or tap here to enter text. |

**Soil sample collection**

**Yes**

**Not anticipated - In order to avoid delays in construction, a plan shall be in place for sampling of suspect soils should they be encountered during redevelopment. If soil sample collection is not anticipated but the need to do so is identified during redevelopment, notify the Brownfields project manager of the anticipated sample and report dates for scheduling purposes.**

**Describe the sampling method (e.g., in‐situ grab, composite, stockpile, etc.) and confirm that all procedures outlined in applicable DEQ guidance for assessment shall be followed** Typically, at least one representative sample (per 500 yd3 for residential and 1,000 yd3 for commercial) consisting of a 3 to 5-point composite sample with grab sample for VOCs based on the highest PID reading is required to determine soil management options**:**

|  |
| --- |
| Click or tap here to enter text. |

**Check applicable chemical analytes for soil samples:**

**Minimum Sample Requirements:** Volatile organic compounds (VOCs) by EPA Method 8260*;* Semi‐volatile organic compounds (SVOCs) by EPA Method 8270; and Metals RCRA List + Hexavalent Chromium by EPA Method 6020/7199

**Pesticides:** Specify Analytical Method Number(s):

|  |
| --- |
| Click or tap here to enter text. |

**PCBs:** Specify Analytical Method Number(s):

|  |
| --- |
| Click or tap here to enter text. |

**Other Constituents & Respective Analytical Method(s)** (e.g. Herbicides):

|  |
| --- |
| Click or tap here to enter text. |

**Check to confirm that by the owner’s signature and the North Carolina Professional Engineer/Geologist sealing this EMP the consultant understands that no work plan for suspect soil sample collection will be submitted beyond this EMP, and that it is the responsibility of the sealing professional and property owner to ensure that all applicable guidelines and methodologies are followed and reported to DEQ for determination and approval of soil placement prior to final relocation.**

**If impacted soils above applicable PSRGs and/or site specific risk thresholds are proposed to be relocated on-site, prior to final placement on-site, the following shall be submitted for DEQ review/approval**

* Analytical data that has been sampled in accordance with the above referenced frequency and following procedures outlined in the most recent Brownfields Redevelopment Section *Environmental Site Assessment Work Plan Minimum Requirements Checklist* *(Checklist)* and in accordance with DEQ IHSB *Guidelines for Assessment and Cleanup of Contaminated Sites (Guidelines)*
* Figure outlining planned soil placement and any future site features including buildings/hardscape/open areas
* A North Carolina PE/PG recommendation of placement

|  |  |  |
| --- | --- | --- |
| **Impacts** | **Options** | |
| **Onsite Placement without conditions** | **Onsite placement under 2 ft of cap or clean fill1, 2** |
| All Constituents below applicable PSRGs | **X** |  |
| Constituents3 below applicable PSRGs; Metals below background but above PSRGs | **X** |  |
| Constituents3 below applicable PSRGs; Metals above Background /PSRGs |  | **X** |
| Constituents above Applicable PSRGs |  | **X** |

1: Requires Prior Written DEQ Approval

2: VOC impacted soils above applicable PSRGs shall not be placed directly beneath building footprints without prior written DEQ approval.

3: Constituents indicate any samples evaluated for other than metals.

**Check to confirm that stockpiling of known or suspected impacted soils will be conducted in accordance with Figure 1 of this EMP. Stockpile methodology should provide erosion control, prohibiting contact between surface water/precipitation and contaminated soil, and preventing contaminated runoff. Explain any variances or provide additional details as needed:**

|  |
| --- |
| Click or tap here to enter text. |

**Final grade sampling of exposed native soil (i.e., soil that will not be under buildings or permanent hardscape).** Select chemical analyses for final grade samples with check boxes below (Check all that apply):

**Minimum Sample Requirements:** Volatile organic compounds (VOCs) by EPA Method 8260*;* Semi‐volatile organic compounds (SVOCs) by EPA Method 8270; and Metals RCRA List + Hexavalent Chromium by EPA Method 6020/7199

**Pesticides:** Specify Analytical Method Number(s):

|  |
| --- |
| Click or tap here to enter text. |

**PCBs:** Specify Analytical Method Number(s):

|  |
| --- |
| Click or tap here to enter text. |

**Other Constituents & Respective Analytical Method(s)** (e.g. Herbicides):

|  |
| --- |
| Click or tap here to enter text. |

**Please provide a scope of work for final grade sampling, including a diagram of soil sampling locations, number of samples to be collected, and brief sampling methodology. Samples should be collected from 0-2 ft below ground surface, with the exception of VOCs which should be taken from 1-2 ft below ground surface. Alternatively, indicate if a work plan for final grade sampling may be submitted under separate cover.**

|  |
| --- |
| Click or tap here to enter text. |

***If final grade sampling was NOT selected, please explain rationale:***

|  |
| --- |
| Click or tap here to enter text. |

#### PART 1.B. IMPORTED FILL SOIL

**NO SOIL MAY BE BROUGHT ONTO THE BROWNFIELDS PROPERTY WITHOUT PRIOR APPROVAL FROM THE BROWNFIELDS REDEVELOPMENT SECTION. According to the Brownfields IR 15, “Documenting imported soil (by sampling, analysis, and reporting in accordance with review and written approval in advance by the Brownfields Redevelopment Section), will safeguard the liability protections provided by the brownfields agreement and is in the best interest of the prospective developer/property owner.”**

Requirements for importing fill:

**Check to confirm that the import volumes outlined below have been confirmed based on geotechnical evaluations.**

1. **Will fill soil be imported to the site?**................................................ **Yes  No  Unknown**
2. **If yes, what is the estimated volume of fill soil to be imported?**

|  |
| --- |
| Click or tap here to enter text. |

1. **If yes, what is the anticipated depth that fill soil will be placed at the property? (*If a range of depths, list the range*.)**

|  |
| --- |
| Click or tap here to enter text. |

**PRIOR TO SOIL PLACEMENT AT THE BROWNFIELDS PROPERTY, a *Soil Import Request* must be submitted for DEQ Brownfields review and approval. The request shall consist of a data package that details:**

* Fill source location/history (Phase I if available, current aerials, etc.)
* Analytical data that has been sampled in accordance with the below frequency and following procedures outlined in the most recent Brownfields Redevelopment Section *Environmental Site Assessment Work Plan Minimum Requirements Checklist* *(Checklist)* and in accordance with DEQ IHSB *Guidelines for Assessment and Cleanup of Contaminated Sites (Guidelines)*
* A table comparing the import soil to existing site concentrations
* A PE/PG recommendation of import
* All relevant attachments listed in the *Checklist*

**Soil Import Sampling Requirements:**

|  |  |  |
| --- | --- | --- |
| **Source** | **Sample Frequency** | **Sample Analysis** |
| Virgin Material from DEQ Brownfields Pre-approved Quarry | None (Contact Brownfields project manager for list of pre-approved Quarries | |
| DEQ Permitted Quarry (Not Brownfields Pre-approved) | At least one representative sample from area of planned import | VOCs, SVOCs, RCRA Metals, any site specific COCs (e.g. pesticides, PCBs, etc.) |
| Other NC DEQ Brownfields Property | At least one representative sample per 1,000 yd3 consisting of a 3-point composite sample with grab sample for VOCs based on the highest PID reading | VOCs, SVOCs, RCRA Metals, any site specific COCs (e.g. pesticides, PCBs, etc.) |
| Off-site unpermitted/regulated property |
| Bulk Landscape Material from Commercial Vendor (i.e. topsoil) | No Sampling Required | |

**If other special considerations apply, discuss:**

|  |
| --- |
| Click or tap here to enter text. |

**Check to confirm that by the owner’s signature and the North Carolina Professional Engineer/Geologist sealing this EMP the consultant understands that no work plan for suspect soil sample collection will be submitted beyond this EMP, and that it is the responsibility of the sealing professional and property owner to ensure that all applicable guidelines are followed and reported in the *Soil Import Request* for DEQ approval. Failure to meet these requirements could result in resampling and/or failure to approve import.**

#### PART 1.C. SOIL EXPORT

NO SOIL MAY LEAVE THE BROWNFIELDS PROPERTY WITHOUT APPROVAL FROM THE BROWNFIELDS REDEVELOPMENT SECTION. Failure to obtain approval may violate a brownfields agreement causing a reopener or jeopardizing eligibility in the Section, endangering liability protections and making said action possibly subject to enforcement. Justifications provided below must be approved by the Section in writing prior to completing transport activities. Refer to Brownfields IR 15 for additional details.

1. **If export from the Brownfields Property is anticipated, export soil must be sampled at a frequency of one sample per 1,000 yd3 consisting of a 3-point composite sample with a grab sample for VOCs based on the highest PID reading. Samples shall be analyzed at a minimum for VOCs, SVOCs, and RCRA metals plus any site specific COCs.**

**PRIOR TO EXPORT FROM THE BROWNFIELDS PROPERTY, a *Soil Export Request* must be submitted for DEQ Brownfields review and approval. The request shall consist of a Data Package that details:**

* Proposed Receiving Facility
* Analytical data that has been sampled in accordance with the above referenced frequency and following procedures outlined in the most recent Brownfields Redevelopment Section *Environmental Site Assessment Work Plan Minimum Requirements Checklist* *(Checklist)* and in accordance with DEQ IHSB *Guidelines for Assessment and Cleanup of Contaminated Sites (Guidelines)*
* A table comparing the export soil to concentrations on the receiving site concentrations including risk comparison (Note that calculated risk cannot be increased on the receiving site)
* A North Carolina PE/PG recommendation of export
* Written approval from the receiving site property owner representative for export
* All relevant attachments listed in the *Checklist*

**Soil Export Options**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Impacts** | **Options** | | | |
| **Use as Beneficial Fill** | **Off-site disposal at other Brownfields Property2,6,7** | **Off-site disposal at LCID/CD Landfill1, 3** | **Off-site disposal at Subtitle D MSW/Permitted Landfarm4** |
| All Constituents below applicable PSRGs | **X** | **X** | **X** | **X** |
| Constituents5 below applicable PSRGs; Metals below background but above PSRGs |  | **X** | **X** | **X** |
| Constituents5 below applicable PSRGs; Metals above Background /PSRGs |  | **X** | **X** | **X** |
| Constituents above Applicable PSRGs |  | **X** |  | **X** |

1: Requires Prior Written DEQ Approval

2: VOC impacted soils above applicable PSRGs shall not be placed directly beneath building footprints without prior written DEQ approval.

3: Requires comparison to site specific metals concentrations.

4: Facility to determine if they can accept soil within their permit.

5: Constituents indicate any samples evaluated for other than metals.

6: Requires written approval from receiving site property owner representative.

7. Site COCs must be in comparable concentrations to receiving site and not significantly raise risk of the receiving site.

**Check to confirm that by the owner’s signature and the North Carolina Professional Engineer/Geologist sealing this EMP the consultant understands that no work plan for suspect soil sample collection will be submitted beyond this EMP, and that it is the responsibility of the sealing professional and property owner to ensure that all applicable guidelines are followed and reported in the *Soil Export Request* for DEQ approval. Failure to meet these requirements could result in resampling and/or failure to approve export.**

**If other special considerations apply, discuss:**

|  |
| --- |
| Click or tap here to enter text. |

#### PART 1.D. MANAGEMENT OF UTILITY TRENCHES

**Install liner between native impacted soils and base of utility trench before filling with clean fill (Preferred)**

**Last out, first in principle for impacted soils (if soil can safely be reused onsite and is not a hazardous waste), i.e., impacted soils are placed back at approximately the depths they were removed from such that impacted soil is not placed at a greater depth than the original depth from which it was excavated.**

**Evaluate whether necessary to install barriers in conduits to prevent soil vapor transport, and/or degradation of conduit materials due to direct impact with contaminants.**

If yes, provide specifications on barrier materials or provide the results of this evaluation in the Vapor Mitigation Plan. Note that if vapor mitigation is planned for site buildings, utility corridors will need to be evaluated as part of mitigation designs:

|  |
| --- |
| Click or tap here to enter text. |

If no, include rationale here:

|  |
| --- |
| Click or tap here to enter text. |

Unknown, details to be provided in the Vapor Mitigation Plan for site buildings

**Other comments regarding managing impacted soil in utility trenches:**

|  |
| --- |
| Click or tap here to enter text. |

### PART 2. GROUNDWATER

1. **What is the depth to groundwater at the Brownfields Property?**

|  |
| --- |
| Click or tap here to enter text. |

1. **What is the maximum depth of soil disturbance onsite?**

|  |
| --- |
| Click or tap here to enter text. |

1. Is groundwater known to be contaminated by onsite offsite both or unknown sources? Describe source(s):

|  |
| --- |
| Click or tap here to enter text. |

1. **What is the direction of groundwater flow at the Brownfields Property?**

|  |
| --- |
| Click or tap here to enter text. |

1. Will groundwater likely be encountered during planned redevelopment activities (e.g. footer/utility construction or helical pilings?)

Yes No

If yes, describe these activities:

|  |
| --- |
| Click or tap here to enter text. |

In the event that groundwater is encountered during redevelopment activities (even if no is checked above), list activities for contingent management of groundwater (e.g., dewatering of groundwater from excavations or foundations, containerizing, offsite disposal, discharge to sanitary sewer, NPDES permit, or sampling procedures).

|  |
| --- |
| Click or tap here to enter text. |

1. Are monitoring wells currently present on the Brownfields Property?.................Yes No

If yes, are any monitoring wells routinely monitored through DEQ or other agencies?..................................................................................................................Yes No

1. Please check methods to be utilized in the management of known and previously unidentified wells.

Abandonment of site monitoring wells in accordance with all applicable regulations. It is the Brownfields Redevelopment Section’s intent to allow proper abandonment of well(s) as specified in the Brownfields Agreement, except if required for active monitoring through another section of DEQ or the EPA.

Location of existing monitoring wells marked

Existing monitoring wells protected from disturbance

Newly identified monitoring wells will be marked and protected from further disturbance until notification to DEQ Brownfields can be made and approval for abandonment is given.

1. Please provide additional details as needed:

|  |
| --- |
| Click or tap here to enter text. |

Please note, disturbance of existing site monitoring wells without approval by DEQ is not permissible. If monitoring wells are damaged and/or destroyed, DEQ may require that the PD be responsible for replacement of the well.

### PART 3. SURFACE WATER

1. Is surface water present at the property?  Yes  No
2. If yes, attach a map showing the location of surface water at the Brownfields Property
3. Is surface water at the property known to be contaminated?  Yes  No  Unknown
4. Will workers or the public be in contact with surface water during planned redevelopment activities or as part of the final redevelopment?  Yes  No
5. In the event that contaminated surface water is encountered during redevelopment activities, or clean surface water enters open excavations, list activities for management of such events (e.g. flooding, contaminated surface water run‐off, stormwater impacts):

|  |
| --- |
| Click or tap here to enter text. |

### PART 4. SEDIMENT

1. Are sediment sources present on the property?  Yes  No
2. If yes, is sediment at the property known to be contaminated?  Yes  No  Unknown
3. Will workers or the public be in contact with sediment during planned redevelopment activities?  Yes  No
4. Attach a map showing the location of known contaminated sediment at the property.
5. In the event that contaminated sediment is encountered during redevelopment activities, list activities for management of such events (stream bed disturbance):

|  |
| --- |
| Click or tap here to enter text. |

### PART 5. SOIL VAPOR

1. Do concentrations of volatile organic compounds at the Brownfields property exceed the vapor intrusion screening levels (current version) in the following media:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Groundwater | Exterior Soil Vapor | Sub-Slab Soil Vapor |
| Residential | Yes  No  Unknown | Yes  No  Unknown | Yes  No  Unknown |
| Commercial | Yes  No  Unknown | Yes  No  Unknown | Yes  No  Unknown |

1. Attach a map showing the locations of all soil vapor samples including any soil vapor contaminants that exceeds screening levels and overlays planned site development features.
2. If applicable, at what depth(s) is exterior soil vapor known to be contaminated?

|  |
| --- |
| Click or tap here to enter text. |

1. If applicable, at what depth(s) is sub‐slab soil vapor known to be contaminated?

0‐6 inches Other, please describe:

|  |
| --- |
| Click or tap here to enter text. |

1. Will workers encounter contaminated exterior or sub-slab soil vapor during planned redevelopment activities?  Yes  No  Unknown

In the event that apparent contaminated soil vapor is encountered (based on elevated PID readings, unusual odors, etc.) during redevelopment activities (trenches, manways, basements or other subsurface work,) list activities for management of such contact, INCLUDING notification to DEQ within 48 hours of identification of the issue for determination of additional requirements:

|  |
| --- |
| Click or tap here to enter text. |

### PART 6. INDOOR AIR

1. Are indoor air data available for the Brownfields Property?  Yes  No
2. If applicable, attach a map showing the location(s) where indoor air contaminants exceed site screening levels.
3. If the structures where indoor air has been documented to exceed risk‐based screening levels will not be demolished as part of redevelopment activities, will workers encounter contaminated indoor air during planned redevelopment activities?  Yes  No  Unknown  N/A

If no, include rationale here:

|  |
| --- |
| Click or tap here to enter text. |

1. In the event that contaminated indoor air is encountered during redevelopment activities, list activities for management of such contact:

|  |
| --- |
| Click or tap here to enter text. |

## VAPOR INTRUSION MITIGATION SYSTEM

1. Is a vapor intrusion mitigation system (VIMS) proposed for this Brownfields Property?

**Yes  No  Unknown**

If no or unknown, include rationale here as well as plans for pre-occupancy sampling, as necessary:

|  |
| --- |
| Click or tap here to enter text. |

**If yes,  VIMS Plan Attached or**  **VIMS Plan to be submitted separately**

**If submitted separately provide date:**

|  |
| --- |
| Click or tap here to enter text. |

VIMS Plan shall be signed and sealed by a NC Professional Engineer and follow the DEQ Brownfields Redevelopment Section’s *Vapor Intrusion Mitigation System Design Submittal Requirements*.

Note that approval of this EMP does not imply approval with any vapor intrusion mitigation land use restrictions or requirements of the recorded or draft Brownfields Agreement and that separate approval of mitigation measures will be required.

## CONTINGENCY PLAN

In this section, please provide actions that will be taken to identify or manage unknown potential new sources of contamination. During redevelopment activities, it is not uncommon that unknown tanks, drums, fuel lines, landfills, or other waste materials are encountered. Notification to DEQ Brownfields project manager, UST Section, Fire Department, and/or other officials, as necessary and appropriate, is required when new potential source(s) of contamination are discovered. These Notification Requirements were outlined on Page 1 of this EMP.

Should potentially impacted materials be identified that are inconsistent with known site impacts, the DEQ Brownfields project manager will be notified, and a sampling plan will be prepared based on the EMP requirements and site-specific factors. Samples will generally be collected to document the location of the potential impacts.

Check the following chemical analysis that are to be conducted on newly identified releases:

**Minimum Sample Requirements:** Volatile organic compounds (VOCs) by EPA Method 8260*;* Semi‐volatile organic compounds (SVOCs) by EPA Method 8270; and Metals RCRA List + Hexavalent Chromium by EPA Method 6020/7199

**Pesticides:** Specify Analytical Method Number(s):

|  |
| --- |
| Click or tap here to enter text. |

**PCBs:** Specify Analytical Method Number(s):

|  |
| --- |
| Click or tap here to enter text. |

**Other Constituents & Analytical Method(s)** (e.g. Herbicides)

**Please note, if field observations indicate the need for additional analyses, they should be conducted, even if not listed here**.

|  |
| --- |
| Click or tap here to enter text. |

Please provide details on the proposed methods of managing the following commonly encountered issues during redevelopment of Brownfields Properties.

Underground Storage Tanks – Note that UST Section guidelines must be followed for sample frequency during UST closure. Unless damage to onsite structures to remain as part of redevelopment would occur, USTs shall be removed from the Brownfields Property:

|  |
| --- |
| Click or tap here to enter text. |

**Sub-Grade Feature/Pit:**

|  |
| --- |
| Click or tap here to enter text. |

**Buried Waste Material – Note that if buried waste, non-native fill, or any obviously filled materials is encountered, the DEQ Brownfields Redevelopment Section must be notified to determine if investigation of landfill gases is required:**

|  |
| --- |
| Click or tap here to enter text. |

**Re-Use of Impacted Soils Onsite:**

|  |
| --- |
| Click or tap here to enter text. |

**If unknown, impacted soil is identified onsite, management onsite can be considered after the project team provides the necessary information, outlined in Part 1.A. Item 11, for Brownfields project manager approval prior to final placement onsite.**

If other potential contingency plans are pertinent, please provide other details or scenarios as needed below:

|  |
| --- |
| Click or tap here to enter text. |

## POST‐REDEVELOPMENT REPORTING

Check this box to acknowledge that a Redevelopment Summary Report will be required for the project. If the project duration is longer than one year, an annual update is required and will be due by January 31 of each year, or 30 days after each one-year anniversary of the effective date of this EMP (as agreed upon with the project manager). These reports will be required for as long as physical redevelopment of the Brownfields Property continues, except that the final Redevelopment Summary Report will be submitted within 90 days after completion of redevelopment. Based on the estimated construction schedule, the first Redevelopment Summary Report is anticipated to be submitted on Click or tap to enter a date.

The Redevelopment Summary Report shall include environment-related activities since the last report, with a summary and drawings, that describes:

* 1. actions taken on the Brownfields Property;
  2. soil grading and cut and fill actions;
  3. methodology(ies) employed for field screening, sampling and laboratory analysis of environmental media;
  4. stockpiling, containerizing, decontaminating, treating, handling, laboratory analysis and ultimate disposition of any soil, groundwater or other materials suspected or confirmed to be contaminated with regulated substances; and
  5. removal of any contaminated soil, water or other contaminated materials (for example, concrete, demolition debris) from the Brownfields Property (copies of all legally required manifests shall be included).

Check box to acknowledge consent to provide a NC licensed P.G. or P.E. sealed, Redevelopment Summary Report in compliance with the site’s Brownfields Agreement.

## APPROVAL SIGNATURES

**Brownfields Project Number:** Click or tap here to enter text.

**Brownfields Project Name:** Click or tap here to enter text.

|  |  |
| --- | --- |
| Prospective Developer: Click or tap here to enter text. | Date Click or tap to enter a date. |
| Printed Name/Title/Company: Click or tap here to enter text. |  |

|  |  |
| --- | --- |
| Consultant: Click or tap here to enter text. | Date Click or tap to enter a date. |
| Printed Name/Title/Company: Click or tap here to enter text. |  |

PE/PG Professional License #: Click or tap here to enter text.

**Firm PE/PG License #:** Click or tap here to enter text.

***Insert PE/PG Seal Above***

|  |  |
| --- | --- |
| Brownfields Project Manager:Click or tap here to enter text. | Date Click or tap to enter a date. |
|  |  |

