FDM 21-35-1 Policy and Procedure Overview

August 15, 2019

1.1 Policy

It is the policy of the Department that all transportation improvement projects under its jurisdiction shall be evaluated to determine if they warrant a hazardous materials investigation. The goal is to discover all contamination as early as possible in the facilities development process to permit the timely consideration of options for avoidance or remediation. Early discovery also allows responsible parties time to remediate contamination prior to construction. It may be in the best interests of the state to avoid all involvement with contaminated parcels. When avoidance is not appropriate, early discovery will allow for efficient and environmentally sound remediation of the contamination.

1.2 Definitions

ESS – Bureau of Technical Services, Environmental Services Section

Region Environmental Staff - Region staff within the Technical Services Section (typically an Environmental Coordinator, Hazardous Materials Engineer, or Hydrogeologist) who work closely with ESS to ensure projects meet the criteria set out in the environmental documentation process. Specialists in areas such as hazardous materials engineering, hydrogeology, erosion control, stormwater management, or noise and air quality, depending on the region, may supplement these staff. The environmental coordinator, hydrogeologist, or hazardous materials engineer may assist in the project screening and may provide guidance on what level of investigation should be performed on a given site.

Beneficial Reuse – use of specifically approved industrial byproducts governed under Wis. Admin. Code ch.NR538.

Continuing Obligation - Continuing obligations are certain actions for which property owners are legally responsible. They still apply after a property is sold - each new owner becomes responsible for them. The state provides notice to the public by adding the property and related continuing obligation information to the DNR's Wisconsin Remediation and Redevelopment Database (WRRD) on the Internet established in accordance with s. 292.12(3), Wis. Stats.

Design Consultant - The consultant with whom the Department contracts to develop a facility design project. They are responsible for performing Phase 1 and Phase 2 contaminated site assessments, or else subcontract for this work with an environmental consultant. Sometimes a design consultant cannot assume responsibility for contaminated site assessment/remediation activities (e.g., there may be a conflict of interest). If a region is considering exempting a design consultant from these responsibilities for a project, they shall consult with ESS prior to initiation of the consultant design contract. The region shall request ESS approval for having these services provided by an environmental consultant under contract to ESS.

Environmental Consultant - A consulting firm that has special expertise to conduct all of the phases of contaminated site assessment and remediation under contract to ESS to perform this work statewide. Design consultants with this expertise can perform phase 1 and 2 work.

Hazardous Materials - Material that can be harmful to the environment but may not require long-term monitoring and documentation of its handling and disposal.

Petroleum (including used oil) is an example of a hazardous material. Two exceptions are the sludge at the bottom of an Underground Storage Tank (UST), and petroleum in an Above Ground Storage Tank (AST). Both are considered hazardous waste.

Hazardous Substance – is defined in Wis.Stat. 292.01(5).“Hazardous substance" means any substance or combination of substances including any waste of a solid, semisolid, liquid or gaseous form which may cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness or which may pose a substantial present or potential hazard to human health or the environment because of its quantity, concentration or physical, chemical or infectious characteristics. This term includes, but is not limited to, substances which are toxic, corrosive, flammable, irritants, strong sensitizers or explosives as determined by the department.

Hazardous Waste - is defined in Wis.Stat. 291.01(7). “Hazardous waste" or “waste" means any solid waste identified by the department as hazardous under s. 291.05 (1), (2) or (4).

This definition includes waste that exhibits certain hazardous characteristics and for which the law requires "cradle-to-grave" documentation of its handling. The following characteristics can define waste as hazardous:

ignitable: flash point is less than 60°C or 140°F. Examples are acetone and isopropyl alcohol.

corrosive: pH is less than 2 or greater than 12.5 Examples are lime kiln dust and metal plating pickling solutions.

reactive: explosive or reacts violently with air or water. Examples are trinitro compounds or potassium nitrate.

toxic: carcinogens and other specifically identified chemicals. Examples are benzene and dry-cleaning solvents.

Other categories of hazardous wastes are known as Listed Wastes. Federal law defines hazardous wastes. A complete list can be found in 40 C.F.R., Pt. 261.

Hazardous Waste Contractor – The business hired by the Department of Administration to transport and dispose of hazardous waste for all state agencies.

Minimal Excavation – excavation of 2 feet or less below current ground surface.

Responsible Party (RP) - The person or organization that is legally obligated to clean up a contaminated site. Normally this is the owner or controller of the site or the source of contamination.

1.3 Overview

This manual addresses procedure for dealing with hazardous materials, hazardous substances, and hazardous waste.

This procedure applies to all State Trunk Highway System projects and those secondary road projects awarded state or federal funds in their design or construction. The primary responsibility for the activities addressed in this procedure lies with the Transportation Region Office (sometimes through contract specifications with design consultants) for STH projects or with the project sponsor (e.g. municipality) for those non-STH projects that receive federal or state funds. The Bureau of Technical Services, Environmental Services Section (ESS) will be available to provide assistance and guidance to the regions and will be responsible for scheduling the environmental consultants under Department contract.

1.3.1 Process Phases

See Attachment 1.1 for a summary of the Hazardous Materials Program Process.

The first step is to determine if a given project requires a Hazardous Materials Assessment. In general, projects that involve right-of-way acquisition or more than minimal excavation also require following this process. See the section on “Potentially Exempt Projects” for a list of projects that normally do not require this assessment.

Site assessment and remediation is divided into five phases. Each of the first four phases ends with a report recommending whether there is a need for further action.

- Phase 1 – Hazardous Materials Assessment
- Phase 2 – Subsurface Investigation
- Phase 2.5 – Additional Subsurface Investigation and Definition of Extent of Contamination within the Right of Way
- Phase 3 – Defining extent of Contamination and Remediation Planning
- Phase 4 – Remediation

Although the process is defined in multiple phases, it is not always necessary to perform these phases in sequence. In certain cases, phases are skipped or combined depending on project needs. Determining what phases of investigation are necessary for a specific project should be done in consultation with region environmental staff and ESS.

Phase 1 uses field observations, interviews and records searches to identify sites that have a high likelihood of contamination. See FDM 21-35-5 for a more detailed description. If the Phase 1 reveals no evidence of potential contamination, then the assessment process is completed. If there is evidence of potential contamination, the project can either be redesigned to avoid it or additional investigation is initiated.

Phase 2 Subsurface Investigation, is a process to determine if contamination is present in the locations that are sampled. It is conducted by the environmental consultant and involves the collection of soil or water samples near potential sources of contamination to confirm or refute the presence of contamination in that localized area. See FDM 21-35-10 for a more complete discussion of the Phase 2 investigation. This phase commonly requires subsurface exploration using a drill rig, geoprobe or hand operated augers.

- If no contamination is discovered then the process is complete. If contamination is discovered, the designer may choose to either redesign the project to avoid it or else perform one of the next two steps

Phase 2.5 Additional Subsurface Investigation and Definition of Extent of Contamination within the Right of Way- is conducted when the source of the contamination is located off Department property, but the contamination extends into the project limits. It is performed by an environmental consultant under contract to the Department. This investigation is used to determine how much contamination will need to be removed prior

to or in conjunction with construction. A Phase 2.5 investigation will include the writing of remediation plans or construction special provisions for dealing with the contaminated material within the construction zone and submitting a materials handling plan to DNR for approval. See FDM 21-35-12 for the discussion of Phase 2.5 investigation.

Phase 3 Definition of Extent of Contamination and Remediation Planning is conducted in either of the following situations.

- When the contamination source is within the WisDOT right-of-way.
- When WisDOT proposes to acquire an entire property that contains the source of contamination or that portion of a property that contains the contamination source.

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Phase 3s are also conducted by the environmental consultant and require a complete determination of the nature and extent of the contamination and development of a remediation plan that includes the estimated costs of remediation. See FDM 21-35-15 for the discussion of the Phase 3 Investigation.

Normally, Phases 2.5 and 3 involve developing remediation plans. If, however, the cost of remediation is too high, the designer can still choose to redesign the project to avoid the contamination.

Phase 4 is the actual remediation of the contamination on the site or within the construction zone when WisDOT is not the responsible party. This phase can be completed prior to construction If the remediation cannot take place prior to construction, or if there are significant benefits to conducting remediation during construction, the special provisions of the construction contract must address the contamination and the proposed remediation plan (See FDM 19-15-85).

Attachment 1.2 shows the timing relationship between the phases and the PS&E due date.

1.4 Federal Participation

Federal participation in project remediation costs is dependent on whether or not the involvement with contamination is reasonable and feasible. The FHWA is currently revising existing policy guidance to encourage acquisition and/or clean-up of land within brownfields for transportation purposes where such actions are feasible, reasonable, within acceptable limits of liability exposure, when cooperating partners are available, and when parties legally responsible for the contamination are pursued to the maximum extent practicable. (Federal Highway Administration, Office of Planning, Environment and Realty, 2011). Incomplete or insufficient investigation of a contaminated site may impact a project by causing delays and cost overruns. On the other hand, some risk must be taken to control costs and time required for investigation.

When contamination, containers, hazardous waste, or underground storage tanks are discovered during construction operations, the work in the immediate area must be suspended until appropriate safety precautions are taken and a qualified environmental consultant completes an assessment of the problem. Procedures for dealing with contamination during construction are prescribed in the Construction and Materials Manual CMM 1-30.2 and Standard Specification 107.24. All contamination discovered during construction will be dealt with by ESS environmental consultants, except in those cases where the municipality has an environmental consultant under contract to manage contamination.

1.5 Potentially Exempt Projects

Projects or sites which do not require new right of way and which have no significant roadway or utility excavation generally do not present much risk of involvement with contaminated sites. Therefore, hazardous materials investigations normally will not be required for them. Projects or those portions of projects limited to the following types of work within existing right of way would generally fall into this category EXCEPT work in those locations where beneficial reuse or encapsulated low level contaminated material is located. If the work will take place in an area of beneficial reuse or low level contaminated material is located, consult with the region environmental staff and ESS before determining the project is exempt.

A. Pavement reconstruction, resurfacing, and pavement rehabilitation.
B. Addition of lanes in the median of a divided highway, unless the addition occurs in a location which includes beneficial reuse or encapsulated low level contaminated material.
C. Repair and maintenance of the highway and appurtenant facilities.
D. Pavement marking and signing.
E. Landscaping within the right of way (No or minimal excavation).
F. Bridge maintenance painting when performed in conformance with the requirements of air and water pollution control agencies.
G. Abandonment, removal, reconstruction or alteration of railroad grade crossings and protection.
H. Addition or replacement of median barrier, fencing, guard rail, safety barriers and impact attenuators.
I. Installation of noise barriers.

J. Safety improvement projects within the right of way.
K. Modification of features such as curbs, dikes, headwalls, slopes, ditches, etc. which exist within the right of way and involve minimal excavation.
L. Minor widening of less than a lane width and/or the addition of paved shoulders which involve no or minimal excavation or acquisition.
M. Minor operational improvements, such as median and side ditch paving, and drainage facilities that require only minimal excavation.
N. Installation or modification of traffic control systems and devices including addition of new elements, such as signs, signals, controllers, etc. where no or minimal excavation is required.
O. Addition of auxiliary lanes within existing right of way that does not require excavation, or the excavation is minimal.
P. Minor alteration or widening of existing grade separation structures.

All other projects will require some degree of hazardous materials investigation. The likelihood and possible extent of utility relocations, storm sewer and curb & gutter excavation should be considered in evaluating the need for investigation. Chapter 292 of Wis. Statutes requires that, if hazardous materials, hazardous waste, or leaking underground storage tanks are known to exist on state right of way, they must be addressed immediately regardless of the type of project. Underground storage tanks that are known to exist were required by federal law to have been in compliance with leak protection regulations by 1990. Any tanks known to be on the right of way or found during construction will be removed (or brought into compliance with leak protection if in use) regardless of the type of project.

Hazardous waste or hazardous material known to be in the right of way shall also be reported to the Department of Natural Resources as required by law (generally it is required to report within 24 hours). Remediation of such sites will be addressed on a case-by-case basis.

LIST OF ATTACHMENTS

Attachment 1.1	Hazardous Materials Investigation Process
Attachment 1.2	Hazardous Materials Assessment Schedule

FDM 21-35-5 Phase 1 Hazardous Material Assessments

August 15, 2019

5.1 Introduction

Phase 1 Hazardous Material Assessments are completed to satisfy environmental documentation requirements, to limit WisDOT's environmental liabilities, avoid costly construction emergencies and delays, and address worker safety during construction. Either the region, a design consultant or an environmental consultant, can do a Phase 1.

A Phase 1 includes the research and documentation of sites exhibiting potential hazardous material threats to WisDOT project operations mainly right-of-way (R/W) acquisition and excavation requirements. Phase 1 activity addresses project design scope and should yield results that will help deliver projects in both a cost efficient and environmentally-responsible manner. A complete Phase 1:

- Provides information required to determine the potential for contamination within the proposed WisDOT project limits,
- Addresses potential environmental liability, and
- Evaluates the need for both further environmental investigation and the incorporation of special provisions into the construction contract.

The Phase 1 is typically prepared in conjunction with early project processes. Some assessment may be done during project definition (life cycle 10); although most will be completed during the project delivery phase (life cycles 11, 12, and 15, when preliminary planning information regarding acquisition and excavation requirements becomes available. **If the project plans are to be shelved for a significant length of time (more than one year) after the assessments have been completed, or if project plans change significantly from those relied on during the Phase 1 assessment, (e.g. municipal sewer or water utilities are added to the project during final design), the assessments and recommended special provisions should be updated to reflect current conditions prior to letting the project**.

Contact the regional environmental coordinator or hazardous materials staff if you have questions regarding Phase 1 Hazardous Materials Assessments. A list of contacts can be found on the Hazardous Materials and Asbestos webpage.

5.2 Conducting a Phase 1 Assessment

First determine if a Phase 1 Hazardous Materials Assessment is required. Phase 1 is required for projects that

include the acquisition of new R/W or those that include significant roadway or utility excavation (greater than two feet below grade). This includes municipal utility projects conducted in conjunction with WisDOT projects. Projects or sites that do not require R/W acquisition or significant excavation will not typically require a Phase 1 investigation (Refer to FDM 21-35-1 Potentially Exempt Projects). The Phase 1 should include the entire project corridor unless the work proposed at portions of the project falls under the exemption. Document in the Phase 1 report those portions of the project exempted from Phase 1 investigation.

Those conducting the Phase 1 are encouraged to work closely with the design engineer as well as the WisDOT regional environmental, hazardous materials, and real estate staff; and involved municipalities to ensure a satisfactory investigation is completed. The assessment process may begin during early project scoping; however, as the project circumstances change, this phase may need to be repeated. As a result, project operations, specifically, R/W needs and excavation requirements, may be further refined and so require a revaluation of the Phase 1 results.

5.3 Phase 1 Scope and Organization

The following provides the standard scope of a typical Phase 1 Hazardous Materials Assessment for a WisDOT project. Following the detailed standards below will result in a complete Phase 1. The items are presented in a recommended chronological schedule of Phase 1 activities. By the nature of the assessment process, the findings of preceding tasks should lead and direct the investigation to subsequent tasks. Recognize this is an iterative process through project planning, design, and real estate acquisition. As project requirements are developed and refined, the Phase 1 scope, schedule, and organization may be revised as well.

1. Data Collection and Review

A Phase 1 assessment begins with collecting pertinent project information and available existing data concerning hazardous material issues throughout the project corridor.

A. Preliminary Project Information and Construction Requirements

- Obtain project description with location, street names and addresses
- Collect any preliminary design plans and develop base map/plan
- Identify locations where property acquisition will be necessary for completion of the project
- Determine the location and depth of any proposed excavation. Remember to include municipal utility work in addition to work planned by WisDOT.
- Determine potential dewatering requirements
- Obtain a USGS 7.5-minute quadrangle map of the corridor

B. Environmental Database Review

*Searches should include all sites within one-quarter mile of the project corridor. Environmental service database reports are not always comprehensive and may need to be cross checked with the following databases marked with a *.*

DNR Contaminated Lands Environmental Action Network (CLEAN)

This includes the DNR Bureau for Remediation and Redevelopment Tracking System (BRRTS)*, the Remediation and Redevelopment Sites Map, the DNR Leaking Underground Storage Tanks (LUST)*; DNR Spills*; DNR PECFA Database, and DNR Environmental Repair Program (ERP)* sites

Superfund sites in Wisconsin

DNR Solid and Hazardous Waste Information Management System (SHWIMS)

DNR Historic Registry of Waste Disposal Sites, RR108

DNR List of Licensed Solid Waste Landfills

Wisconsin Dept. of Agriculture, Trade and Consumer Protection (DATCP) Storage Tank Database (state registry of underground storage tanks [USTs] and above ground storage tanks [ASTs])*.

Other state and federal databases

RCRA INFO – EPA's comprehensive information system for the Resource Conservation and Recovery Act

For projects in rural/agricultural areas or projects that have farm co-ops, feed mills or other businesses that store, mix or handle agricultural chemicals, contact the Wisconsin Department of Agriculture, Trade & Consumer Protection (DATCP) to learn if there have been any reported spills, and determine the status of any cleanups in the area.

C. Historical Land Use Information

These records provide critical information regarding former industrial, agricultural, or residential, etc.,

practices at sites throughout the project corridor.

- Review WisDOT historical Plan Sets and real estate plats - these often show UST, AST and dispenser island locations as well as descriptive names for commercial properties (these include as-built plans and plats, and may be available from the regional Plat Coordinator or Records Coordinator), or for DOT staff, through DOTView: https://wigov.sharepoint.com/sites/dot-dtsd/mydtsd/dotview/SitePages/Home.aspx - Review WisDOT historical aerial photography available from WisDOT Surveying & Mapping Section (608) 246-5392 or http://wisconsindot.gov/Pages/projects/data-plan/aerial-image/aerial.aspx
- Review other available aerial photos from municipal and county records and the UW Madison Robinson Map Library (608) 262-1471 or https://geography.wisc.edu/maplibrary/
- Check Sanborn Fire Insurance Maps (where available) located at http://www.sanborn.com/products/fire_insurance_maps.asp,
- Search municipal records of historical ownership, tax key information, parcel identification, building permits, and plans,
- Interview current and past property owners for further site history information,
- Review existing DOT and municipal R/W permits for remediation systems, monitoring wells, manure pipelines, and other relevant features.

D. Hydrogeology - Soils and Groundwater information

Soil types, soil properties including hydraulic conductivities, groundwater elevation, and groundwater flow direction are of primary concern when considering hazardous material issues.

- Review hazardous material investigation reports previously completed for sites nearby (LUST, ERP, and other investigation or remedial action report files)
- Reference Wisconsin Geological and Natural History Survey (WGNHS) publications and well logs. Call (608) 262-1705 or https://wgnhs.wisc.edu/
- Reference USDA County Soil Survey Books (some may also indicate mine tailings sites, tanks, landfills and disturbed soils) or the online Web Soil Survey at http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm.
- Review subsurface reports in the plans for bridge structures in the immediate area, if available, for preliminary soils and depth to groundwater information

E. Interviews

Interviews often reveal former land use practices that are not recorded by sources described above. Furthermore, actual locations of contaminant sources (USTs, sludge pits, etc.) may only be available through an interview. Interviews should be documented.

- Interview the current and past property owners regarding current and past land use.
- Interview business owners, neighbors, and local historians and long-term residents
- Obtain additional information from public officials
    - Fire Department (tank and spill recorders)
    - Town Clerk or Chairperson
    - Health Department
    - Zoning and Building Inspection
    - Municipal or County Public Works Department including utility personnel
    - Municipal or County R/W permit coordinators

F. Regulatory Agency Files

Previously published site investigation and remedial action reports for sites having hazardous material concerns within the project corridor provide valuable environmental documentation. These should be reviewed in detail for any site that might impact R/W acquisition or excavation. They are available at the appropriate DNR region offices. Site file information needs to be duplicated and submitted with the Phase 1 report including:

- Site plans showing former and current contaminant source locations (i.e. tanks, petroleum product dispensers, imported fill, etc.)
- Figures showing the location of exploration boreholes, monitoring wells, and remediation systems
- Figures depicting the shallow potentiometric surface and groundwater flow direction
- Borehole logs for boreholes located within or adjacent to the proposed ROW and proposed excavations

- Figures indicating the horizontal extent of soil and groundwater contamination and completed remedial action
- Geologic cross-sections indicating the vertical extent of contamination and groundwater elevation.
- Borehole logs or tables summarizing the soil sample field screening (PID) results
- Tables of soil and groundwater laboratory data (including borehole, excavation floor and sidewall, and monitoring well samples) with figure showing sample locations
- Continuing obligations for closed sites
- Summaries and conclusions

2. Field Reconnaissance

A thorough field reconnaissance is critical to a complete Phase 1 Hazardous Materials Assessment. The field reconnaissance, or site inspection, should include all portions of the project requiring a Phase 1 assessment and may focus on sites identified during initial data collection as outlined above.

A. Walk the project corridor and document all sites posing a potential hazardous material concern to WisDOT operations. Suspicious sites of concern should be noted and located on a project base map. Photograph and sketch sites with hazardous material concerns. Some common sites or items indicating hazardous material concerns include the following (realize this is only an abbreviated list and the investigation should consider additional hazardous material sources as well):
    - Potential contaminant sources such as USTs, associated piping and dispensers, ASTs, drums
    - Industry or evidence of former commerce with potential to release hazardous substances Examples are gas stations, automobile repair facilities, dry cleaners, foundries, salvage yards, bulk chemical plants, agricultural chemical facilities, meth labs
    - Signs of ongoing remedial investigation or action including soil boreholes, monitoring wells, former excavations, stockpiled soils
    - Landfills
    - Abandoned properties with suspicious fill areas, odd chemical smells
    - Stained soils or stressed vegetation
    - Railroad ties and other creosote treated timbers should be noted and recommendations should include that this material is required to be either reused in its current condition as landscaping timber, or handled as a solid waste and disposed of at a licensed landfill
    - River sediments require a specific determination by the DNR region environmental liaison on what special handling and analytical requirements will be required.

B. Interview the owners or operators of the properties of concern. Names and telephone numbers of these and others who may be referenced as sources of information should be documented and followed up with contacts. Ask those interviewed for names, addresses, and telephone numbers of any long-term residents who might share information regarding past land use activities in the project area.

3. Data Evaluation

Analyze information gathered during previous tasks to determine which sites of concern have the potential to affect R/W acquisition or excavation activities.

- Determine the potential for proposed acquisition parcels to contain a contaminant source or continuing obligations from a closed site and associated liabilities for investigation and remediation, or coordination with DNR
- Consider the depth of the contamination, site soil types, and the water table depth in relation to the depth of proposed excavations (e.g., storm sewer trenches or utility excavations).
- Follow up with additional data review and evaluation to determine project impacts for sites of concern.
    - Evaluate or refine the project design to better determine specific potential acquisition, excavation, and dewatering requirements adjacent to the sites of concern
    - Where sites of concern have the potential to impact R/W acquisition or excavation activities, conduct further research in the form of interviews or supplemental regulatory file review
- Determine if the existing site data documentation will allow preparation of any required project special provisions

4. Conclusions and Recommendations Preparation

A complete Phase 1 concludes with the documentation and investigation of all hazardous material concerns throughout the project corridor. Conclusions and project recommendations are prepared based on the Phase 1

findings.

A. Conclusions

- Complete a WisDOT Phase1 Assessment Site Summary for all sites of potential hazardous materials concern (see Attachment 5.1).
- Note where sites of concern have the potential to affect project activities (acquisition, excavation, dewatering) and refer to specific project station locations, locating on plan sheets and base map

B. Recommendations are made regarding the following:

- The need for subsurface investigation (Phase 2, 2.5 or 3,) and notation of likely targets:
  - R/W acquisition areas
  - Areas of significant excavation
  - Grading areas
  - Potential contaminant sources
- The need for let contract special provisions and whether they can be written with information from the Phase 1
- If the site has continuing obligations which require further coordination with DNR
- Acquisition liability considerations:
  - Address the potential for acquisition to include contaminant sources
  - Determine if responsible party is taking action to correct known contamination
- Determine if the site is PECFA eligible with an identified responsible party and undergoing an active cleanup or developing a remedial action plan. The PECFA program stopped accepting new sites as of July 20,2015. The reimbursement program will sunset on June 30th, 2020. If acquisition or project construction will not occur prior to the sunset date, determine if the remediation will be completed prior to that date. If remediation will not be completed by June 30th, 2020, proceed as if the site were not eligible for PECFA.
  - If the site is PECFA eligible, determine if the proposed remediation plan will address areas of contamination within the proposed zone of construction.
  - If there is contamination within the existing or proposed R/W, determine if that contamination would be eligible for PECFA reimbursement if unearthed for WisDOT work.
- For any sites with groundwater monitoring wells within the existing or within the proposed R/W, recommend updating the survey and plotting their locations on the highway project design plans. The RP for the site should be notified by the region project manager that wells within the construction zone should be removed prior to construction.
- Water supply wells within the existing or proposed R/W must be properly abandoned. Recommend updating the survey, plotting the location in the design plans, and including the 204.3.3.3 well abandonment provision in the specifications and bid item 204.0265 in the estimate.
- For projects that require removal of river sediments, determine whether the excavated sediments will require handling as a solid waste. Contact the DNR region environmental liaison for this determination. If the river sediment is covered by an engineered cap, additional coordination with DNR will be required.
- Railroad ties and other creosote treated timbers will require handling as a regulated solid waste.

5. Report Format

The completed Phase 1 Hazardous Materials Assessment will be finalized in a bound report compiling all pertinent information. The report should be presented in a professional manner and written concisely to facilitate an efficient review by all interested parties. A final report consistent with and containing the items outlined in the description below successfully fulfills the requirement of a complete Phase 1. All report pages, including figures, must include the report date and the WisDOT project ID.

A. Cover

- Project Identification: WisDOT Project ID, Highway/Street, Project Limits, Municipality, and County
- Report Title (i.e., Phase 1 Hazardous Material Assessment)
- Report Date
- Consultant, Address, Phone, Fax, and Email Address

- If an environmental subconsultant to the prime design consultant is responsible for the Phase 1 investigation, include the address, phone, fax, and email address of both the prime design consultant and the environmental subconsultant.

B. Executive Summary

- Describe the highway project
- Summarize the assessment findings
- Summarize hazardous material and real estate recommendations for the project corridor
- identify any sites closed with continuing obligations
- identify any wells within the R/W or proposed acquisition that will require abandonment
- identify any contaminated sediment that will require special handling or additional coordination with DNR

C. Project Corridor Information

- Identify the unit of government responsible for project and local jurisdictions included within the project corridor.
- Describe the limits and nature of the project corridor, e.g., urban, residential, industrial.
- Describe the general land use history of the project corridor.
- Describe the general surficial hydrogeology of the project corridor including soil types, expected depth to groundwater, and direction of groundwater flow.
- Document sites/areas of the project exempted from investigation.
- Summarize all sites posing hazardous material concerns to the WisDOT project. Provide information regarding the site-specific name, location, hydrogeology, R/W acquisition and excavation requirements, and the nature and extent of the subject contaminants. Identify all sites closed with continuing obligations. Identify all wells within the existing or proposed R/W. Identify areas of contaminated sediment.

D. Conclusions and Recommendations

- Identify the sites with potential hazardous material concerns for the project corridor and state the construction or real estate interests in the property. Use a site summary table with the following information.
    - Name, address, and station location of site
    - Acquisition requirements
    - Excavation requirements
    - Contaminants of concern
    - Database records referenced (UST, LUST, etc.)
    - Need for additional investigation
    - Need for let contract special provisions
- Recommend one of the following for each property with potential hazardous material concerns:
    - Neither additional hazardous materials investigation nor special standard provisions are warranted
    - No additional hazardous materials investigation warranted, but special standard provisions are needed for the highway contract
    - Additional hazardous materials investigation is warranted, i.e., Phase 2, Phase 2.5, Phase 3, or Phase 4

E. Figures (some of these figures may be included in the specific site appendix)

- All figures need to be clearly readable with scale, north arrow, and DOT Project ID and date.
- Include the relevant portion of a USGS 7½ minute topographic map with all contours reproduced (color reproduction preferred). This map should contain a sidebar showing the location within the state. The map should also include quadrangle name, township, range, section and date of USGS topographic map.
- Project plan sheets with date
- A project corridor base map must be included showing:
    - all named side streets
    - relevant landmarks
    - current and proposed ROW boundaries

        - project construction boundaries
        - acquisition boundaries
        - potential hazardous materials sites (clearly indicated) and site features including former dispenser islands, tank beds, etc.
        - monitoring wells,
        - water supply wells in proposed acquisition areas.
    - A cross-section diagram of the alignment[1] showing:
        - water table depth in relation to depth of proposed excavations
        - known vertical extent of contamination in relation to depth and location of proposed excavations
    - Historical Sanborn Fire Insurance Maps (if coverage is available)
    - Historical aerial photographs, if available
    - Highway as-built plans and plats

F. Appendices

- Copy of the Environmental Service Database Report, if applicable
- There should be a separate appendix for each site with hazardous material concerns. Each appendix should include the following:
    - The completed WisDOT Hazardous Materials Assessment Site Summary (see Attachment 5.1)
    - A discussion of the site's hazardous material concerns and how they relate to the real estate interests and/or construction requirements for the project
    - A detailed figure showing the location of the site, the location of any pertinent hazardous material features (e.g., former UST, residual contamination, monitoring wells), the proposed and current ROW, property limits, the real estate interest, and the location of any proposed excavation, storm sewers or utilities
    - Relevant figures, data, text, and correspondence copied from the DNR and/or DATCP files
    - Documentation of interviews conducted with individuals having knowledge of the property
    - Color photos of the site showing specific hazardous material features.

LIST OF ATTACHMENTS

Attachment 5.1 Hazardous Materials Assessment Site Summary

FDM 21-35-10 Phase 2 Subsurface Investigation

August 15, 2019

10.1 Introduction

Phase 2 investigations are conducted to determine if a parcel suspected of being contaminated really is. It includes soil borings within the potential areas of concern as identified in the Phase 1 investigation. The investigation provides data on the nature of contamination and may provide information for waste characterization of soil and groundwater where the limits of contamination are known, and construction excavation limits are known. The Phase 2 will provide only *limited* information on the extent of contamination.

10.1.1 Acquisition Considerations

If acquisition of the *whole* property is proposed, the project manager should determine whether it would be more cost effective to go directly to a Phase 3 investigation to define the full nature and extent of contamination and get an estimate of the cost of remediation, which will be necessary for the appraisal. The results of a Phase 2 investigation should not be used as a definitive "all clear" to purchase a property in all situations. If the excavation or real estate requirements change after a Phase 2 is completed, it may be necessary to perform further investigations in the area where the changes are proposed.

If acquisition of only part of the property is proposed, a Phase 2 investigation may be appropriate when WisDOT is not proposing to acquire any known or potential source of contamination. *If WisDOT is proposing to acquire a source or potential source, then perform a Phase 3 investigation.*

If *no acquisition* of new property is proposed, and contamination is known or suspected to exist in WisDOT R/W

[1] In highway terms this is a profile view of the alignment

from an outside source, conduct a Phase 2.5 investigation to determine the nature and extent of contamination within the proposed zone of construction.

If WisDOT *owns the source* of suspected contamination, then conduct a Phase 3 investigation.

10.2 Scope

The scope of a Phase 2 investigation is flexible and is tailored to meet the needs of a project. Information on contamination gained during a Phase 2 investigation is provided to the DNR region office to allow early identification and notification of responsible parties and provide sufficient time for responsible parties to remediate prior to project construction or coordinate remediation with construction.

Phase 2 investigations are typically conducted during the project delivery phase of a project. If, however, there will be early or advanced acquisition of a parcel, the Phase 2 or 3 investigation must be completed before the parcel is acquired.

10.3 Requesting the Work

Phase 2s are conducted by environmental consultants. For in-house design projects, regions submit the following information to the Bureau of Technical Services, Environmental Services Section (ESS) to request a Phase 2 investigation:

- Completed Phase 1 assessment site summary (see FDM 21-35 Attachment 5.1) or Phase 1 report for each site for which a Phase 2 is being requested.
- Site Photos.
- Available plan & profile sheets for the site. If they are draft, mark the date of the draft and the word DRAFT on the sheets.
- Real Estate plat maps (indicate draft or final) which indicate what type of purchase (fee, easement, type of easement) is being considered for this parcel, and how much of the property is to be acquired.
- Completed Contaminated Site Investigation Request (see Attachment 10.1).

Local Roads and Design consultants requesting the services from ESS must submit the above information. Design consultants conducting their own Phase 2 investigations will follow the scope of services outlined below. Complete the Phase 1 investigation prior to recommending any Phase 2 actions. ***Note that services provided by design consultants are limited to Phase 1 and 2 investigations. For Phase 2.5 - 4 investigations, including development of materials handling plans and coordinating approvals with DNR, an ESS consultant must be used.***

10.4 Scope of Services

Give the region hazmat or environmental coordinator the opportunity to review the scope of services prior to performing the investigation. They will follow the Right of Entry procedure in FDM 9-10-5 for notifying the property owner prior to conducting work on site. The environmental consultant must give the region project contact at least 2 weeks' notice prior to the investigation to allow time for them to notify the property owner. The region may request that the environmental consultant provide this notification, in that case the region and ESS should be copied on the notification letter.

When an environmental consultant is scoping a work plan for a Phase 2 investigation the following items must be included in the plan:

- Map of proposed boring location showing available proposed design and acquisition elements and known utilities/facilities/municipal project elements.
- Proposed depth of borings
- Depth of samples
- Sampling parameters (including proposed locations and justification for the locations)
- Analytical Parameters (tailored to the site, and what is known from site history)
- Traffic Control
- Safety planning
- Notification to the region maintenance coordinator
- Notification to the region WISLCS coordinator for entry into the Wisconsin Lane Closure System (http://transportal.cee.wisc.edu/closures/)
- Site Inspection
- Owner Interview
- Review of Phase 1 information and further regulatory background review if needed
- Report preparation
- Contacting Diggers Hotline, and any additional necessary utility marking

- Notification of the county highway supervisor or city engineer on local road projects
- Obtaining any necessary local permits
- Geospatial data using the current WisDOT standard coordinate system, which, at a minimum, includes
  - Point locations for each site
  - Point locations for each monitoring well
  - Polygon locations for USTs, ASTs, and pump islands
  - Polygon locations for remediation excavation limits, approximate aerial extent of residual soil or groundwater contamination, remediation caps, and re-used contaminated fill material
- Detail the number of reports, report format requested (paper or electronic) and report distribution list
- Submission of boring logs in gINT format to the BTS geotechnical unit
- Insurance costs for Railroad Protective Liability Insurance for work within 50 feet of a railroad right of way

The following may be included based on site history:

- Electromagnetic or Ground Penetrating Radar surveys to determine location/number of tanks abandoned in place.
- Analytical parameters outside the normal range (e.g. background lead levels, full VOCs, waste characterization parameters, metals)
- Test pits

10.5 Methodology

10.5.1 Groundwater Sampling

The goal of groundwater sampling is to obtain a representative qualitative grab sample of water quality at the site. Groundwater samples can be collected from geoprobes or from temporarily screened wells. Follow the Groundwater Sampling Guide Desk Reference (PUBL-DG-037) and Groundwater Sampling Field Manual (PUBL-DG-038) for WDNR's groundwater sampling guidance.

Note: The DNR has developed Publication #RR-647 entitled "*A Fact Sheet of Frequently Asked Questions About Temporary Monitoring Wells for Remediation and Redevelopment*." It covers regulations and technical considerations for temporary wells under NR 141of Wisconsin's Administrative Code. It explains where temporary wells are appropriate and inappropriate, limitations of temporary wells, construction and abandonment information and a discussion of groundwater data quality from temporary wells. This document is located at the following internet site: http://dnr.wi.gov/files/pdf/pubs/rr/rr647.pdf

No permanent monitoring wells are established during this phase of investigation.

10.5.2 Soil Sampling

Soil should be field screened every 2 1/2 ft. Sampling should be done in the area of the highest PID readings and in the proposed zone of excavation. Borings should extend at least 2 ft below the deepest potential for excavation for a project. At least one analytical sample should be collected from each boring. If groundwater is encountered in the boring, the boring should extend at least 2 ft below groundwater level, and soil samples should be collected at this depth.

If **partial** acquisition is proposed, sampling should be conducted as close to the potential source as possible, within the area proposed for acquisition.

10.5.3 Analytical Testing

If the potential contamination is suspected to be a petroleum product, consider conducting a PVOC with extended naphthalene analysis rather than the traditional DRO/GRO/PVOC suite.

If other contaminants are believed to be present, the analytical testing should be tailored to those contaminants.

10.5.4 New Information or Unexpected Conditions

If additional information is gained during field operations that would result in a change in the scope of services, consultants should check in with the region project contact while in the field to determine if the scope should be expanded or decreased at that time.

Changes in the number of borings and analytical samples can be approved with a verbal authorization. The consultant must follow up with either a fax or e-mail to the region project contact and ESS documenting the changes in scope. The project contact (for design consultant projects) or ESS representative (for ESS contracts) must approve these changes. Changes in scope which result in a change in cost must be followed up with a change order to the work order or contract. At no time can the amount invoiced on a project exceed the total upper limit of compensation for a work order or contract. Avoid unnecessary remobilization whenever possible.

10.6 Phase 2 Report Contents

A separate Phase 2 report shall be prepared for each site. Reports for different sites shall not be bound together.

A Phase 2 report includes the following:

- **A cover which must include**:
  - Project Identification: WisDOT Project ID, Highway/Street, Project Limits, Municipality, and County
  - Report Title (*i.e.*, Phase 2 Subsurface Investigation, parcel number, site name, site address)
  - Report Date
  - Consultant, Address, Phone, Fax, and Email Address, and internal tracking number for this project
  - Report prepared by: (NAME)
  - If the environmental subcontractor is responsible for the Phase 2 investigation, include the Design Consultant, Address, Phone, Fax, and Email Address
- **Project Description** including excavation/grading/utility activity and proposed acquisition for the subject site.
- **Site History**
- **Soils Characterization**
- **Map of boring locations**
- Geospatial data table
- **Analytical results presented in a table, including the applicable soil or groundwater standards for each analyte.**
- **Conclusions**
- **Recommendations** - provide information for planning property acquisition and determine whether an exception to the Real Estate policy is necessary. Also determine the appropriate type of acquisition (temporary or permanent easement or fee title). Provide enough information for design specifications where there is a need for items such as collars and plugs;
- **Tables should be included in the text rather than in the appendices**.
- **Figures**: (all figures should stand alone)
  - Site location map which includes information on county and location within the state
  - Boring location map showing relationship to existing and proposed right of way and improvements. Use CADD base maps provided by the region or design consultant when available.
  - Separate boring maps for soil and groundwater with analytical results that highlight the exceedances of the RCL or PAL and distinguishes those that exceed the Enforcement Standard.
  - A table of the analytical results including the PAL, ES and RCL effective at the time of investigation.
  - Cross Sections - show proposed utility and excavations and sampling intervals and identify depth to groundwater and bedrock
  - References (e.g. NR 722.03 (2) (a), Wisconsin Department of Natural Resources, 1998)
- **Appendices**
  - Definition of acronyms (either in the appendix or on the inside front cover)
  - Table of PID readings, or show these on the boring logs
  - Boring Logs
  - Chain of Custody
  - Lab Reports
  - Sampling Methodology
  - Site photos
    - indicate boring locations with traffic cones or other highly visible means of identification
    - areas of significant staining
    - test pits

  - clean and contaminated samples
  - cultural features
- **Format** - Phase 2 reports can be submitted on paper or electronically as .pdf files. Geospatial data should be submitted in electronic format. ESS requires an electronic copy.

10.6.1 Distribution

Submit the Phase 2 report to the appropriate region office and ESS. The region will determine the need for additional distribution. At a minimum the region will send the DNR copies of Phase 2 reports for contaminated sites and send each property owner a bound paper copy of the Phase 2 report for his or her property. The region may request that the environmental consultant do this distribution. This should be spelled out in the scope of services.

10.6.2 Evaluation and Coordination

If a Phase 2 subsurface investigation confirms the presence of contamination on a site, the designer should consider alternatives that avoid the site. If the benefits of using the contaminated site still outweigh avoidance, proceed with either a Phase 2.5 or a Phase 3.

Acquisition of a PECFA ineligible or non-petroleum contaminated sites, or sites with continuing obligations will require additional time for coordination. Any such sites identified as potential acquisitions in the environmental document should immediately be referred to Real Estate for advance coordination.

LIST OF ATTACHMENTS

Attachment 10.1 Contaminated Site Investigation Request

FDM 21-35-12 Phase 2.5 Remediation Planning Necessary for Construction of a Highway Project

August 15, 2019

12.1 Purpose

When Phase 1, 2, or design review determines that there is a probability of contamination in the right of way, it is necessary to plan prior to construction for potential handling and disposal of contamination and its effect on the project. Some of the reasons for this investigation are:

- To minimize health risks to the contractor and the public.
- To prevent delay in project construction and increased project cost.
- To prevent unnecessary cost to an adjacent property owner who is responsible for eventual site cleanup.
- To prevent potential litigation of penalties for causing damages or for violating state and federal law
- To provide information to develop materials handling plans and obtain DNR approval for the plans.
- To promote beneficial reuse of low-level contaminated materials from the project within project limits when possible.

The Phase 2.5 is done to determine the feasibility of doing a limited clean up in the proposed or existing right of way. If the owner of the source of contamination cannot begin cleanup soon enough to avoid delay of highway construction, the region may decide to remediate only the area in the right of way and let the Responsible Party clean up the source later. This alternative should be limited to situations where recontamination of the right of way can be prevented and duplication of final cleanup costs with public funding is not excessive. If the source site is proposed for acquisition, a Phase 3 investigation would be more appropriate.

12.2 Overview

Phase 2.5 investigations are conducted by hazardous material consultants contracted by the Bureau of Technical Services, Environmental Services Section (ESS) including investigations for hazardous waste (as defined by RCRA and CERCLA federal law). If there is an adjacent property owner who is a Responsible Party (see FDM 21-35-1) investigating the contamination, they may provide useful information. WisDOT, however, must provide the prime contractor with the locations and types of contamination marked on the plan sheets, a DNR approved materials handling plan, and the special provisions needed for construction.

12.3 Request for Phase 2.5

Regions should submit a Contaminated Site Investigation Request (21-35-10 Attachment 10.1) to ESS to begin the Phase 2.5 process. This request must be initiated a *minimum* of twelve months prior to the P. S. & E. due date to allow for field work, lab analysis, assessment of options, permit or prior notice approvals from DNR and/or local governments, and writing of special provisions.

When requesting a Phase 2.5, the most current design plans should be forwarded along with the request to help develop the scope of work.

12.4 Outside Consultants

If a region wishes to use a hazardous materials consultant other than one that is already under contract with ESS to perform work above a phase 2, or a design consultant wishes to include Phase 2.5 work in their scope of services, or in a change order to their contract, the region must first get approval from the ESS Hydrogeologist or Hazardous Materials Specialist to do so. In such cases, it is recommended that Region Environmental Coordinators or ESS staff assist in development of the Phase 2.5 scope, alternative selections, and special provisions.

12.5 Typical Phase 2.5 Report

Typically, the Phase 2.5 report will include the following items:

A. Description of ownership and Responsible Party status for the contaminated site.

B. Identification of any continuing obligations associated with the contaminated site and required actions to be taken to address project impacts to areas with continuing obligations.

C. Nature of Contamination - Nature and extent of contamination within and near the depth of excavation must include concentrations of regulated materials and notation of how these concentrations compare to soil or groundwater regulatory standards. Nature of contamination should also include characterization of waste adequate for acceptance at a licensed landfill or other WisDOT approved disposal site. To describe contamination, a plan view should include boring or sampling locations, excavation limits required for project construction, utility locations, limits of contamination, recommended exclusion zone for non-OSHA trained personnel, and reference points that will remain undisturbed during construction. The plan should also note project stationing, north arrow, property boundaries, and structures when relevant. Depth of contamination should be shown in cross sectional views with both existing and proposed location of utilities, subgrade, groundwater elevations (when appropriate) and other relevant structures noted.

D. Description of PECFA eligibility status and assessment of allowable disposal options to qualify for PECFA reimbursement (applicable through June 30th, 2020)

E. Options and recommendation for excavation, hauling, de-watering, disposal of contamination, or beneficial reuse of low-level contamination from the project within project limits, methods to prevent migration onto the site after construction, methods to prevent migration off of the site (e.g., through utility trenches) and coordination with highway construction.

F. DNR approval of the materials handling plan.

G. Description of local government or additional DNR permits or notifications required. Note: WisDOT may need to obtain NPDES permits and may need to get prior approvals or give prior notice to DNR under NR 700 Investigation and Remediation of Environmental Contamination.

H. Location of monitoring wells within the zone of construction, identify wells to be abandoned during construction and wells to be protected during construction.

I. A marked-up copy of the plan set in either paper or electronic format.

J. Special provisions which conform to the DNR approved materials handling plan.

12.6 Phase 2.5 Process

The following steps describe the Phase 2.5 Process. The numbering corresponds to the boxes in the flow chart shown in Attachment 12.1.

1. Locations of probable contamination will generally be determined in Phase 1 or 2 or design reviews. The presence of a contaminated site adjacent to a project may indicate the need for a Phase 2.5 without having to do a Phase 2 to confirm the presence of contamination.
2. Ownership of the source of contamination must be checked by reviewing the department's real estate files and county register of deeds offices to determine whether the department holds fee title to property where the source is located. A title search may be necessary in some cases. The region Environmental Coordinator, Real Estate staff, ESS staff, or Office of General Counsel can assist in interpreting results of this investigation.
3. If WisDOT is the owner of the source of the contamination a Phase 3 investigation must be done to plan for remediation for the entire site and to prepare for remediation coordination during construction when necessary. See FDM 21-35-15 and FDM 21-35-20.
4. In cases where WisDOT is not the owner of the source or not responsible for remediation, region staff can request that the owner of the source investigate on a schedule that will assist in WisDOT's Phase 2.5 investigation. DNR may assist in expediting the owner's action. The owner's investigation (which will be available from DNR regional offices) may determine the extent of contamination in enough detail to assure that no contamination occurs in the excavation depth. In such a case the contractor must still be notified that contamination is present in the general area of construction (using STSP

107-100). The owner's Phase 3 investigation can also provide data on contamination that will reduce WisDOT sampling cost.

5. Designers must determine if there is any contamination within the planned excavation limits of the project. Generally, the Phase 2.5 investigation initially focuses on whether contamination is in the excavation limits of the project. However, consideration must be given to the potential that excavation may go deeper than planned because of unsuitable subgrade soils or changes in utility plans by local governments. Consider beneficial reuse of low-level contaminated material within the project limits.
6. Designers may look for ways to modify the design to avoid contact with contamination. This could involve shifting the location of utilities or other features of the roadway. Consider the cost of redesign vs the cost of managing the contamination. If the source of contamination is suspected to be within the right of way, avoidance is not an option.
7. Determine whether contamination beyond the excavation limits can be left in place while construction proceeds. Among the factors to be evaluated are: (a) Would remediation cost more after construction? (b) Would public funding (e.g., PECFA or DNR) be tapped to remediate at higher cost after construction? (c) If de-watering is necessary, will it worsen or change contaminant migration? (d) is the contamination within the R/W considered a source and should it be removed to prevent migration? If any of the above factors are present, designers must consider remediation despite the contamination having no direct effect on WisDOT's project.
8. If contamination beyond the excavation can be left in place during construction, provide a notice to contractors of the location of contamination in the special provisions.
9. If remediation in or beyond the excavation zone is needed, the Phase 2.5 would proceed to assess removal and disposal options. At this point, designers should consider allowing other responsible parties (RP's) to conduct remediation. Close and consistent coordination with the RP and their consultant will be necessary. WisDOT may coordinate disposal with other RP's but must carefully coordinate with the owners if they are permitted to enter WisDOT right of way during construction to remediate contamination. Other RP's would be required to submit a detailed plan for their activities and apply for permission to do work in right of way with form DT1812, "Application/Permit to Work on Highway Right of Way." See https://wisconsindot.gov/Pages/doing-bus/real-estate/permits/work-on-hwy.aspx for further information on R/W permits. It is suggested that plans submitted with the DT1812 application be reviewed by the Region Environmental Coordinator or ESS staff. Local governments may carry out remediation which could eliminate the need for WisDOT remediation. WisDOT, however, will still need to approve plans which affect construction and assure that remediation is coordinated with the project.
10. Designers should consider having remediation performed prior to construction. Sometimes below ground remediation reveals unexpected complications such as hidden or abandoned underground tanks or piping or heterogeneous soil conditions which conduct contamination to unexpected locations. The frequency of these situations can justify additional cost to avoid construction interruptions.
11. If contamination is to be remediated prior to construction, request a hazardous materials consultant and subcontractor to remove and dispose of such material before construction.
12. **Any contamination defined as a Hazardous Waste by federal law (40 CFR Part 261) must be handled by a consultant under contract to ESS**. Refer to FDM 21-35-20 for additional information on the Remediation process. If remediation is to be performed during construction, there are two possible courses of action based on the quantity and quality of the contamination.

    Case 1: There is a small quantity of contamination or it is defined as "hazardous waste" by federal RECRA or CERCLA law. A small quantity means the estimated remediation cost is $75000 or less. In either of these situations the ESS environmental consultant and their subcontractor will be given the remediation work. *Including remediation work costing $75,000 or less in a let contract will require approval by the Bureau of Project Development.*

    Case 2: There is a large volume of contamination (i.e., estimated remediation cost exceeds $75,000) and the material is not defined as "hazardous waste" by federal RECRA or CERCLA law. If both conditions are met, then the remediation work can be incorporated into the special provisions for the let contract. Writing these special provisions requires coordination of the planned construction process and the special handling requirements of contaminated material. Sampling must be done in the Phase 2.5 to delineate the boundary of material to be removed and provide samples for waste characterization analysis for disposal. This avoids the need to sample soil while it is being excavated to determine its status as clean or contaminated. Sampling during excavation may result in false positive or negative readings. Field sampling can take more time than originally planned as temperature or soil moisture changes with the weather. Field meters also are frequently not consistent with laboratory results. This is important because the department may retain responsibility for soil that

is removed and re-deposited under the assumption of being "clean."

13. As part of the special provisions the prime contractor must give 14 days' notice of the preconstruction meeting and three days' notice prior to commencing excavation in each known contaminated area. This notice should be written to avoid disputes over delays and it may be emailed or faxed.
14. The environmental consultant will complete a report to DNR and WisDOT on the remediation and disposal of contaminated soils and groundwater as required by NR 700.

LIST OF ATTACHMENTS

Attachment 12.1 Phase 2.5 Decision Making Process

FDM 21-35-15 Phase 3 Defining Full Extent of Contamination

August 15, 2019

All questions and comments about Phase 3 contaminated site assessments should be directed to the ESS Hydrogeologist and Contaminated Site Project Manager at (608) 266-7980, the hazardous materials specialist at 608-266-1476 or email: dothazmatunit@dot.wi.gov.

15.1 Definition

A Phase 3 Environmental Site Assessment is a thorough field investigation of a contaminated site in which the complete vertical and lateral extent of soil and groundwater contamination is fully characterized and defined. The investigation includes soil and groundwater sampling from several soil borings and groundwater monitoring wells strategically placed to define the limits of contamination. Depending on the site setting the field investigation may involve the use of drilling rigs, geoprobes, excavators, and geophysical testing.

Chemical analysis of soil and groundwater samples will vary depending on the source of contamination (e.g., gasoline underground storage tanks, solvent tanks, waste oil storage tanks, industrial fill material, etc.).

15.2 Purpose

The purpose of a Phase 3 investigation is to:

1. characterize the extent of contamination,
2. evaluate site cleanup (remediation) alternatives,
3. develop a conceptual remediation plan, and
4. provide cost estimates for remediation alternatives.

Phase 3 investigations are also performed when trying to determine the value of a contaminated parcel for acquisition purposes.

15.3 Warranting Situations

Phase 3 Investigations are performed for the following scenarios:

15.3.1 WisDOT is Responsible Party

WisDOT owns a contaminated parcel or the source of contamination is located in right of way owned by WisDOT in fee title (e.g., former gasoline pump island area). Consequently, WisDOT may be required to clean up the site per the State Spill Law (292.11 (3), Wis. Stats.). In these cases, WisDOT is identified as the *"responsible party" (RP)* by the Wisconsin Department of Natural Resources (DNR). Under current policy WisDOT thoroughly evaluates its options prior to acquiring contaminated parcels. Prior to the 1980's numerous contaminated properties (mostly former gas stations) were acquired for road projects. These sites are commonly referred to as WisDOT's "*Old RP Sites*." WisDOT BTS-ESS is responsible for oversight of "Old RP Sites."

15.3.2 WisDOT is Proposing to Acquire a Contaminated Property

Phase 3 investigations are performed in those situations where WisDOT has thoroughly evaluated all other options and is proposing to acquire a contaminated property to assist in determining the value of a contaminated parcel for acquisition purposes.

15.3.3 Extensive Contamination in Project

Situations occur when extensive soil and groundwater contamination is present throughout the highway project and beyond project limits. WisDOT may or may not be the RP, and other nearby RPs may not respond in time to investigate or cleanup contamination before construction. So, a Phase 2.5 or Phase 3 investigation may become necessary to resolve design or construction issues. Information from the Phase 3 is important for:

1. evaluating design alternatives,
2. providing estimated cost of remediation for appraisal and valuation,
3. evaluating the opportunity for beneficial reuse of low-level contaminated materials within the project limits,
4. determining quantities of contaminated soil or groundwater to be managed during construction, and

5. developing special provisions for managing contamination in the construction contract.

The Phase 3 investigation may include areas beyond the current or proposed right of way. This differs from the Phase 2.5 because the Phase 3 is focused on characterizing the contamination and defining the full extent of the contamination, regardless of right of way limits.

15.4 Phase 3 Process

1. The region shall initiate the Phase 3 Process by requesting ESS to schedule a Phase 3 Investigation using the Contaminated Site Investigation Request FDM 21-35-10 attachment 10.1. The region will provide ESS with a current open and authorized project ID number.
2. If a WisDOT "Old RP Site" is discovered then ESS will initiate the Phase 3 and inform the region Environmental Coordinator or Hazardous Materials Engineer. ESS project ID numbers are assigned to post construction "Old RP Sites."
3. ESS will assign an environmental consultant to do the actual investigation under contract with the department. The environmental consultant will work with the region and ESS during the development of the scope of work. The region environmental coordinator will review and ESS will review approve the work order.
4. The environmental consultant conducts the investigation in accordance with the appropriate series of the DNR Administrative Code. The consultant will also prepare and submit a report of their findings to ESS, the region and DNR.

15.5 Report Content

In general, the report format will follow DNR reporting requirements. Site maps and cross-sections depicting the extent of contamination and contaminant concentrations are an important part of the report. Also included is an evaluation of remediation options and a recommendation and cost estimate for the best site remediation alternative taking into account specific DOT design and construction plans. ESS and the region will determine if additional information is needed (e.g., summary of historical property ownership, discussion of remediation plan activities, recommendations for design changes, etc.).

15.6 Timing Considerations

The investigations are generally completed in 2 to 7 field days over a 3-week period. Results of the chemical analysis for samples submitted to a laboratory are available within 3 to 4 weeks of the submittal date. If an onsite portable laboratory is used for the investigation, then results are available within hours of sample collection. The final report submittal is typically 30 days after the last field day. Preliminary data is available sooner upon request. Acceleration of the project schedule is an option, but generally at higher cost.

15.7 Phase 3 Costs

The cost for a Phase 3 investigation ranges between $38,000 to $80,000 for typical sites. Cost will vary depending on hydrogeologic complexity, type of contaminant, co-mingling nature of contamination from multiple source areas, and extent of contamination. More complex sites can cost over $140,000.

15.8 References

Several environmental codes administered by the DNR and the Department of Agriculture, Trade and Consumer Protection are relevant when performing Phase 3 investigations:

- NR 140 - Groundwater Quality
- NR 141 - Groundwater Monitoring Well Requirements
- NR 500 - 599 Environmental Protection - Solid Waste Management
- NR 600 - 699 Environmental Protection - Hazardous Waste Management
- NR 700 - 799 Environmental Protection - Investigation and Remediation of Environmental Contamination
- Ch 292.63 Wis. Stats. – Petroleum storage remedial action; financial assistance
- NR 747 - Petroleum Environmental Cleanup Fund
- ATCP 93 – Flammable and Combustible Liquids

FDM 21-35-20 Phase 4 Hazardous Material Management *August 15, 2019*

20.1 Originator

The Bureau of Technical Services Environmental Services Section (ESS) developed this procedure as part of their responsibility for administering the Department's Hazardous Material Management Program. Questions and comments about Phase 4 activities should be directed to the program hydrogeologist, Robert Pearson at (608) 266-7980 or Robert.Pearson@dot.wi.gov.

20.2 Purpose

This procedure provides general information for managing contaminated soil or groundwater following WisDOT policies and procedures. Contaminated soil, sediment, groundwater, or other hazardous materials are commonly encountered during construction projects, resulting in the need for hazardous material handling plans and specialized contractors. The plans are developed from WisDOT Phase 2, 2.5, or 3 hazardous material site assessments and other existing information. Environmental consultants are hired by ESS for the Department's Phase 4 activities.

20.3 Definition

The term "Phase 4" Hazardous Materials Management is used to describe a task in which contaminated soil, sediment, groundwater or other hazardous material is specially handled, managed, or treated for onsite re-use or offsite re-use or restricted disposal.

Examples of Phase 4 activities include:

1. Removing known underground storage tanks (UST's) and above ground storage tanks (AST's) for building demolition or that are located within construction limits;
2. Removing unexpected UST's or contaminated soil encountered during a highway or bridge construction project (known as a "hazmat construction emergency");
3. Managing known contaminated soil required to be excavated during storm sewer, sanitary sewer, or other utility installation or replacement;
4. Managing known contamination in cut sections or EBS material;
5. Managing contaminated water and suspended solids generated during de-watering operations;
6. Completing remediation of a contaminated parcel acquired by WisDOT (known as a "DOT Responsible Party" site).

20.4 Background

Transportation right-of-way often receives long-term or intermittent contaminant migration from off-site sources. Hazardous material disturbed during construction requires proper management per state and federal regulations. For construction of transportation facilities this usually involves "partial remediation" or limited "waste management" of contaminated areas disturbed during construction. If a source of contamination is found in the right-of-way then complete remediation of contaminated areas may become necessary, even beyond originally planned construction limits. This happens when there is a significant threat to human health and the environment or WisDOT is identified as a "Responsible Party" for the source of contamination.

The most common hazardous material encountered during construction is petroleum-contaminated soil or groundwater originating from leaking UST's, AST's, fuel dispenser lines, or traffic accidents. Other contamination encountered in soils or groundwater includes heavy metal compounds (e.g., lead) and chemical solvents (e.g., trichloroethylene). River sediment near storm sewer outfalls in urban and industrialized areas are commonly inter-bedded with residuals of heavy metal compounds, PCBs, or poly-aromatic hydrocarbons (PAHs). Fill materials in urban settings or bridge approaches sometimes contain miscellaneous solid waste material, heavy metals, PAHs, and other potentially contaminated material.

WisDOT experiences 10 to 30 hazmat construction emergencies a year. Planned Phase 4 activities occur about 15 times per year in which ESS environmental consultants and subcontractors perform the work in coordination with the highway contractor. About 5 times a year special bid items for waste management tasks are included in a Let contract in which the highway contractor and subcontractors perform the work and ESS environmental consultants monitor compliance.

20.5 Implementing Phase 4

The Project Development teams should consult with the Region's hazardous materials specialist to determine when or if Phase 4 hazardous materials management is needed.

The Department's Environmental Consultant is responsible for coordinating or performing all Phase 4 activities for the Department. They work under contract with ESS when dealing with hazardous waste, non-hazardous waste or petroleum contamination. This requirement is a statewide policy to reduce risk for long-term liability and legal enforcement actions. ***Phase 4 work shall not be performed through region design or master contracts***.

Phase 4 activities performed by the Department's Environmental Consultant include in part:

1. Preparing Hazardous Material Handling Plans or excavation management plans;
2. Preparing Special Provisions for the Let contract and bid item quantity estimates;
3. Obtaining concurrence letters from the Wisconsin Department of Natural Resources (WDNR) for the Hazardous Material Handling Plans, excavation management plans, and/or Let contract special provisions;

4. Obtaining approvals for treatment and disposal of contaminated soil and groundwater;
5. Implementing the plans for the management of contaminated soil and/or groundwater prior, during, or after construction (e.g., environmental field screening and compliance documentation);
6. Documenting the management and disposal of contaminated soil and groundwater in a written report.

Whenever possible, this work is done before the transportation construction project is begun. If Phase 4 work must be performed during the transportation construction project, then the preferred method is to provide a simple notice to the highway contractor to coordinate Phase 4 work with the Department's ESS and the environmental consultant. The areas of hazardous materials management must be described by station locations and shown on the plan and profile sheets.

Phase 4 tasks are only included as bid items in the Let Contract for select projects provided certain criteria are met (See Items A6 and A7 of the Phase 4 Hazardous Material Management Checklist in Attachment 20.1). The bid items typically include excavation and disposal of petroleum contaminated soil, construction of contamination migration barriers, or contaminated water containment, treatment and disposal. The Department's Environmental Consultant is required to be on site to inspect, field screen, and document environmental compliance. For some projects the bid items may also include the beneficial re-use of low-level contaminated material within the construction limits or elsewhere on WisDOT right of way.

The region shall notify ESS when Phase 4 activities are necessary. The region shall request a work order 12 months prior to the PS&E. Late notification may cause project delays and reduce options for waste management alternatives.

20.6 Phase 4 and the Local Roads Program

Phase 4 hazardous materials management is often needed for urban sections of highway in the Local Roads Program. The local municipality is responsible for providing the necessary planning and completion of Phase 4 work using their environmental consultants under direct contract with them.

When unexpected hazardous material or underground storage tanks are encountered during construction on a local road project (hazmat construction emergency), the local municipality having jurisdictional control of the right-of-way is responsible for properly managing the situation.

In either situation, at the request of the region or the local roads management consultant, ESS and the Department's Environmental Consultant may manage and perform Phase 4 activities for the municipality. This can be done to address project delay concerns. The cost is billed to the local municipality through the project ID.

20.7 Agreements

Written agreements for managing hazardous materials are developed between WisDOT, local governments, private property owners, and DNR. These agreements identify cost share, long-term liability, and how much remediation or waste management is necessary.

The Responsible Party (RP) identified by DNR should pay for remediation activities and must be listed as the generator of waste. However, for some projects WisDOT or the local government will take the lead in responsibly managing contamination disturbed during construction in order to expedite a project for the least cost alternative.

Current environmental regulations allow residual contamination to be left in place. Consequently, if a WisDOT activity unearths contamination, it generally becomes a project cost. WisDOT shall not be listed as the generator of waste for a local road project.

20.8 When to Perform Phase 4

Phase 4 activities can happen before, during, or after construction. The amount of remediation varies per responsible party agreements, environmental regulations, project schedule, and imminent threats to human health and the environment (See Figure 20.1).

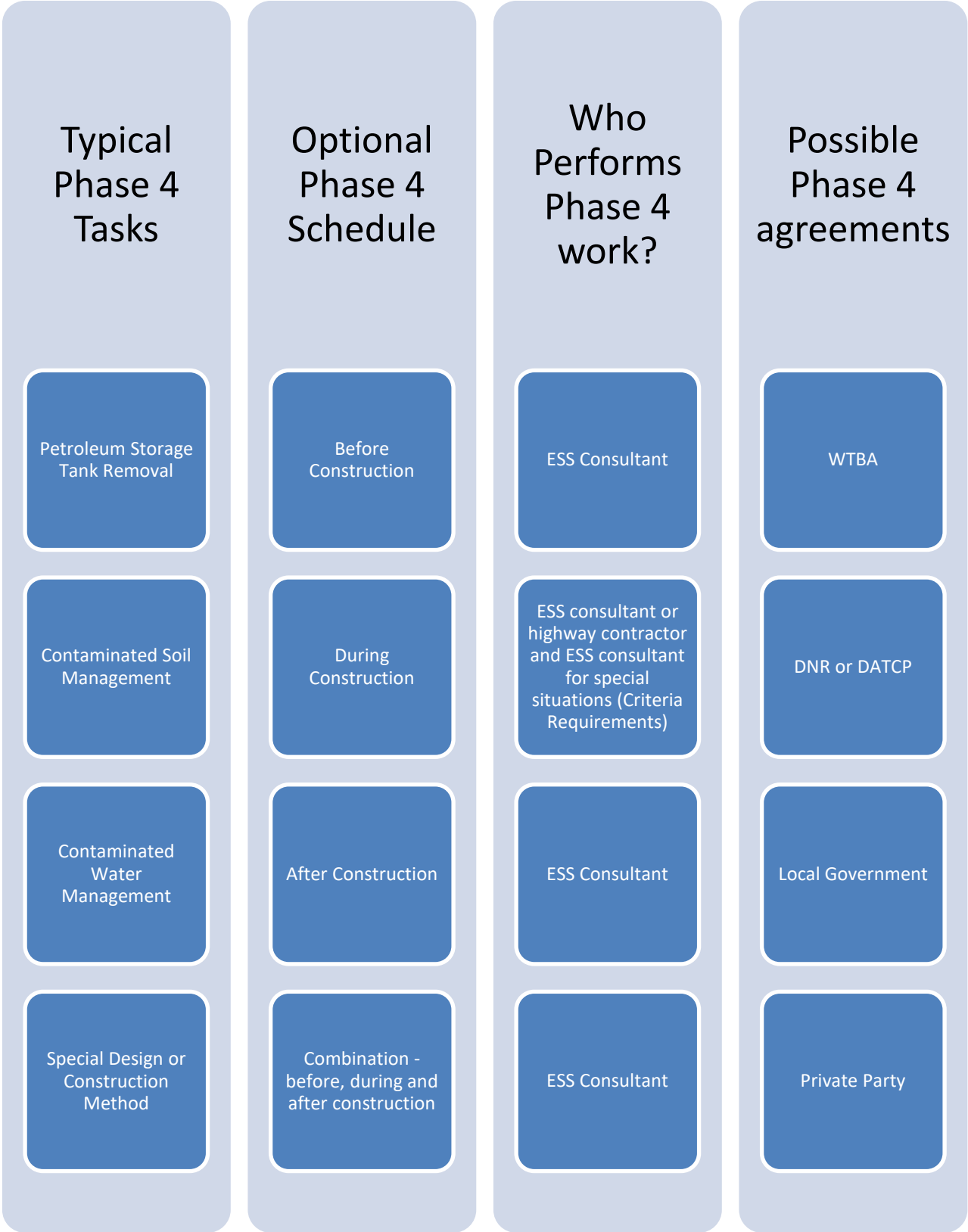

Figure 20.1. Overview of WisDOT Phase 4 Hazardous Materials Management

20.9 Indicate Phase 4 on Plan Sets

Coordination of Phase 4 work is described in the special provisions notice to the contractor. The locations for special management are also described by station designations. In addition, it is required to show areas of special management or contamination on the plan & profile sheets and cross section sheets (See Figure 20.2, Figure 20.3, and Figure 20.4).

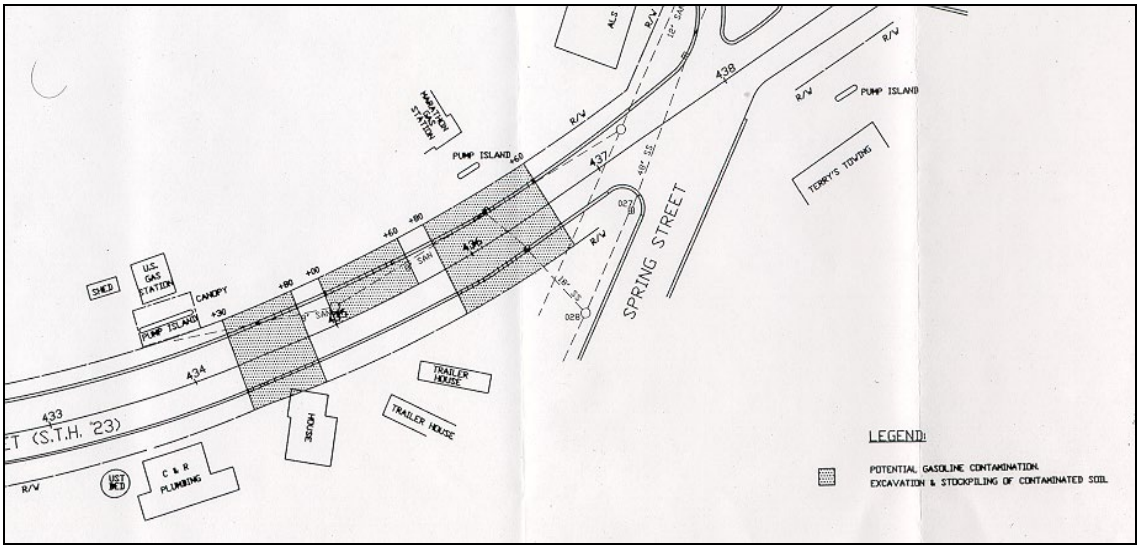

Figure 20.2. ***STH 23 Dodgeville, Iowa County***

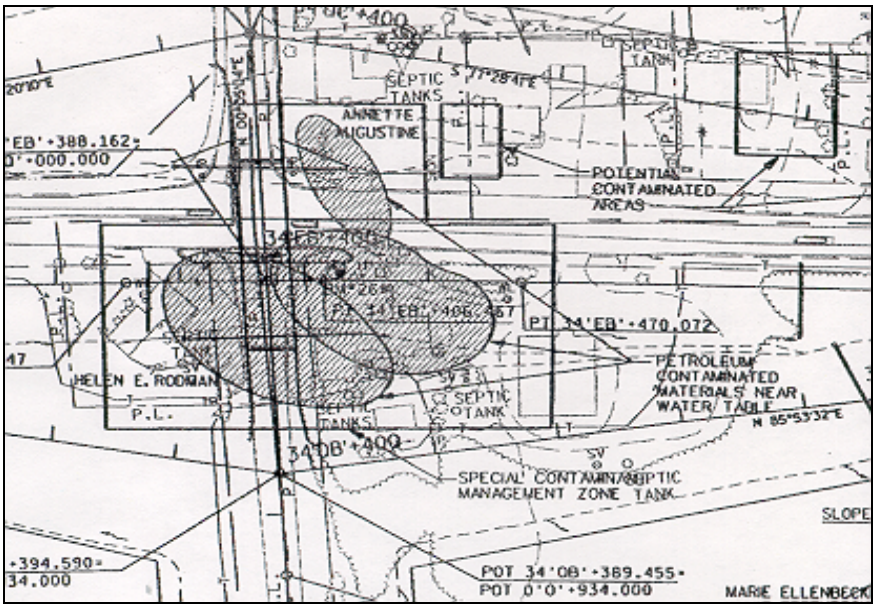

Figure 20.3. ***STH 29 and STH 97 Interchange, Marathon County***

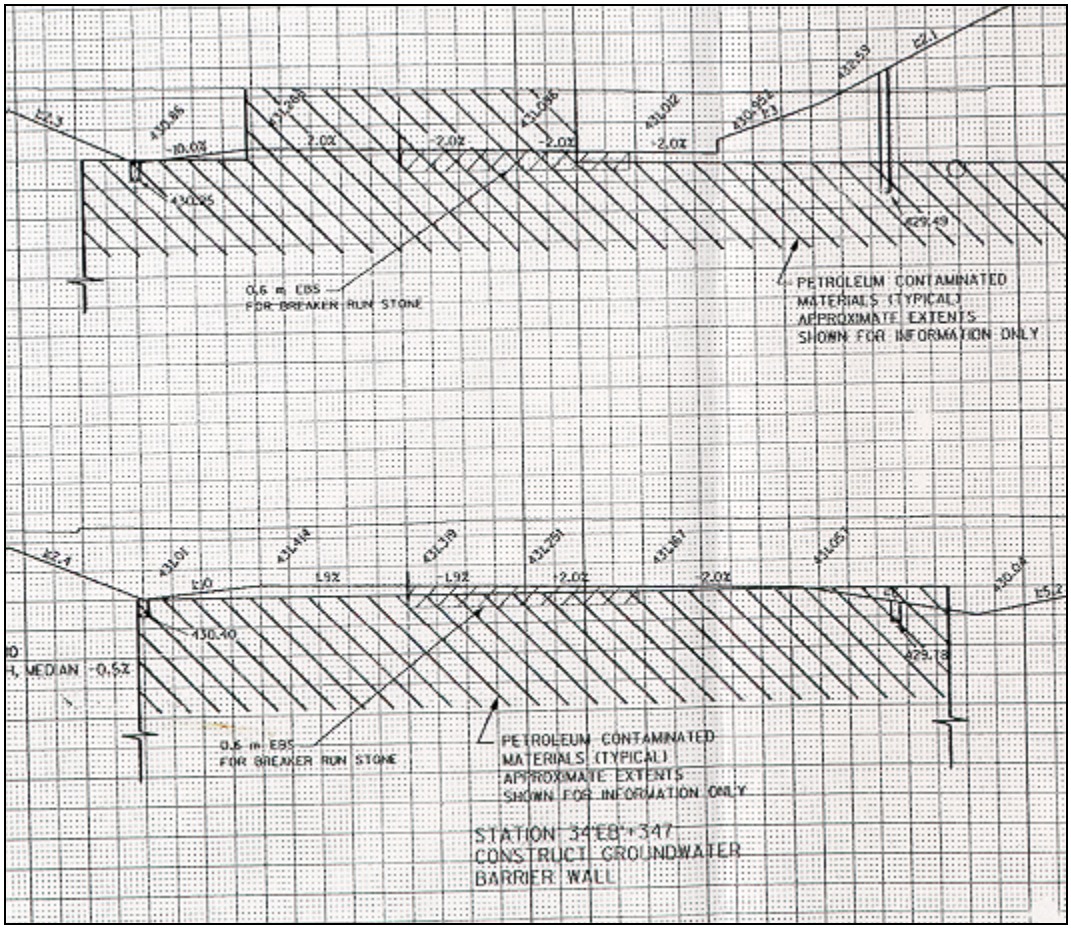

Figure 20.4. STH 29 and STH 97 Interchange, Marathon County

20.10 Hazardous Material Management Checklist

Phase 4 activities are non-standard construction practices for WisDOT. Occasionally the activities are complicated from an engineering, environmental, regulatory and legal perspective. The checklist in Attachment 20.1 is provided for WisDOT project managers, engineers, consultants, environmental professionals, and individuals responsible for reviewing PS&Es. Listed are common tasks, information, and issues that must be completed, understood, or resolved to successfully accommodate Phase 4 hazardous materials management during construction projects.

20.11 Materials Management Options

Management of Material Excavated During Highway Construction outlines the handling and disposal options for several types of excavated material. Work closely with the environmental consultant to determine which management method is the most appropriate for the material being excavated. Note that if at any time a material fails the landfill acceptance criteria and requires an EPA ID for disposal, it must go through the mandatory statewide hazardous waste contract (see Figure 20.5 below).

Classification	Characterization of Material	Material Management
Common Excavation (NR 500.08(2) Unregulated or Exempt Material	- Native Soil - Fill soils that have no obvious visual or olfactory contamination - Phase1 indicates no reason to suspect or analyze for contaminants - Clean, unpainted or untreated wood, brick, concrete, cured asphalt, and trace amounts of glass	Contractor-selected sites approved through the Erosion Control Implementation Plan (ECIP) review process or on-site reuse.
Special Excavation (NR 500.08(4) Solid Waste Low Hazard Exemption)	- Soil with low levels of petroleum contamination or contaminant metals within the disposal site fill plan criteria - Trace amounts (<25% volume of the excavation equipment's bucket load) of foundry sand, cinders and fly ash	WisDOT selected site or on-site reuse with WDNR concurrence. Sites must meet the location criteria of NR 504.04 (3)(c) and the performance standards in NR 504.04(4) (a) through (f). Fill plans are also approved through the ECIP review process.
Contaminated Soil and Fill Material	- Lead painted or treated wood - Petroleum contaminated soil	Contaminated material disposed at a WDNR-licensed solid waste disposal facility. Petroleum contaminated material shall be treated at a bioremediation facility (biopile) prior to disposal at the landfill. Direct disposal of contaminated material at landfills without such pre-treatment must be pre-authorized by the WisDOT region Environmental Coordinator or Hazardous Materials Engineer
Beneficially Reused Industrial Byproducts (NR 538)	- Significant amounts (>25% by volume of the excavation equipment's bucket load) of foundry sand, cinders or fly ash	Reuse within project limits. If material cannot be reused within project limits, reuse at an alternate location (with DNR approval), or dispose at a WDNR-licensed solid waste disposal facility.
Hazardous Waste	RCRA Subtitle C (NR 600) contaminated media	Treatment or Disposal under the State's Mandatory hazardous waste disposal contract.
Potentially contaminated material	Potentially contaminated material with unusual visual, olfactory, or other characteristics	Temporary stockpile with appropriate environmental controls constructed per NR718.05 while waste characterization is completed by WisDOT's environmental consultant. Temporary stockpiling at a licensed solid waste landfill may be an alternative with WDNR and landfill approval. Once waste is adequately characterized, disposal using the appropriate option.

Figure 20.5 Management of Material Excavated During Highway Construction

LIST OF ATTACHMENTS

Attachment 20.1 Phase 4 Hazardous Material Management Checklist

FDM 21-35-25 Environmental Documentation *August 15, 2019*

The environmental documentation for a project should identify and describe the areas that were investigated, the investigation methods, and the results of those investigations. It should be noted that contaminated site

investigations for a project may include all of the phases and might involve any combination of phases. For example, private landowners may be pulling underground tanks from their properties in response to either DOT activities or directions from the regulatory agencies. This information would be appropriately included in the project's environmental document. The environmental document should provide decision-makers with enough information upon which to base their project development decisions. It is important that contaminated sites be identified so the selection of an alternative and design decisions may be made.

Acquisition of PECFA ineligible or non-petroleum contaminated sites will require time for coordination. Any such sites identified as potential acquisitions in the environmental document should immediately be referred to Real Estate for advance coordination.

25.1 Draft Environmental Impact Statements and Environmental Assessments

Draft Environmental Impact Statements (DEISs) and Environmental Assessments (EAs) for a project shall contain a summary of the Phase 1 Hazardous Materials Assessment Site Summary or Phase 1 report for all parcels which have been determined not to require additional investigations. This summary may be in the Hazardous Materials and Contamination factor sheet, or in the body of the environmental document. Commitments for further investigation or remediation should be included in the Environmental Commitments.

If Phase 1 indicates that Phases 2 or 3 are needed, this should be documented in the DEIS or EA.

Do not disclose personally identifiable information (property owner names, business names, addresses, etc.) in the environmental document's hazmat section.

The environmental document shall identify and discuss as necessary and appropriate:

1. The number of parcels that had Phase 2 or Phase 3 Investigations or Phase 4 remediation, if any, and the results of those investigations or remediation.
2. The number of parcels which were not field reviewed but are suspected of being contaminated. These parcels should be included in the recommendations for future investigation unless the project will have no involvement with them.

Note: Projects which require Phase 2 Environmental Sampling may have their environmental document submitted to ESS prior to completing the Phase 2 activities. In such cases the following language should be incorporated into the environmental document:

> Having completed a Phase 1 investigation for the improvement under consideration, the Region has determined that further investigation of (insert number of sites) sites is merited. Those investigations are in the process of being scheduled. The DNR and possibly affected parties will be notified of the results. The Region will work with all concerned to ensure that the disposition of any petroleum contamination is resolved to the satisfaction of the Wisconsin DNR, WisDOT ESS, and FHWA before acquisition of any questionable site, and before advertising the project for letting.
>
> Non-petroleum sites will be handled on a case by case basis with detailed documentation and coordination with FHWA as needed.

This language commits the Department to completing additional investigation and coordinating with DNR, ESS, and FHWA where petroleum contamination is encountered prior to any acquisition or advertising for letting.

Where non-petroleum contamination is encountered, the sites will be handled on a case by case basis with more detailed documentation and coordination with FHWA and DNR.

25.2 Final Environmental Impact Statements and Findings of No Significant Impact

Completion of Phase 2, 2.5, 3 or 4 work is not required prior to submittal of the Final Environmental Impact Statement (FEIS) or the Finding of No Significant Impact (FONSI) to ESS. If, however, any Phase 2, 2.5 or Phase 3 Investigations have been completed prior to the time the FEIS or FONSI is submitted to ESS, a summary of the results of these investigations shall be included in the FEIS or FONSI. Where Phase 4 Remediation is required to complete construction of a highway project, the FEIS or FONSI shall describe the location, effects on the highway construction project and an estimate of the cost of Phase 4 remediation for each contaminated parcel. The language shown in the box above shall be used for the FEIS or FONSI when it applies.

25.3 Environmental Reports (ER) and Categorical Exclusions

A project which is documented with an Environmental Report (ER) or categorical exclusion may or may not require site investigations. It depends on whether the project calls for excavation or right of way acquisition. See FDM 21-35-1.5 for an explanation of when such investigations are necessary. If a Phase 1 investigation is necessary, its results should be mentioned in the environmental document. The results of this investigation should be kept in the project's hazmat file.

If Phases 2, 2.5, 3 or 4 are required then the document should include the text in the box above.

FDM 21-35-30 Disposal of Containerized Non-Hazardous Waste

August 15, 2019

30.1 Purpose and Scope

This procedure covers the management of the following non-hazardous wastes generated during contaminated site investigation (hereafter referred to as materials):

- contaminated soil cuttings
- development water
- purge water
- wash water

Materials generated by environmental consultants under direct contract to the Department, as well as containers generated by consultants under sub-contract to the Department's consultants are covered by this procedure. This procedure covers only those materials found to be non-hazardous by laboratory characterization. Materials found to be hazardous as defined by NR 661.03 must be disposed of following FDM 21-35-35.

Only materials generated during the course of Department managed investigations of a property for highway design, acquisition, remediation, or construction are covered. Materials generated during investigation of a private property adjacent to a highway by the private property owner, or investigation of the right of way by right of way permit are NOT the responsibility of the Department, and are not covered by this procedure.

30.2 Sampling and Containment of Material

30.2.1 Field Screening

All materials shall be screened in the field using a PID (photo ionization detector), FID (flame ionization detector), Portable Gas Chromatogram, or comparable field instrument. Soils that have positive readings must be containerized using a USDOT approved container. Soils which do not exhibit positive meter readings, but which exhibit either visual or olfactory evidence of contamination must be properly containerized. If soils do not exhibit, visual, olfactory, or metered evidence of contamination, they should be dispersed on site.

Groundwater shall be field screened and properly containerized if it exhibits visual, olfactory, or metered evidence of contamination. If no evidence of contamination is present, water should be disposed of into a storm sewer system or drainage ditch on site.

30.2.2 Laboratory Analysis

Soils and groundwater that exhibit evidence of contamination shall be sampled and submitted to a DNR certified laboratory for analysis. If laboratory analysis indicates the presence of contamination that would cause the waste to be characterized as hazardous, the waste must be disposed of following the Safety and Health Section procedure for disposal of hazardous waste (see FDM 21-35-35).

Upon receipt of laboratory results, the environmental consultant can submit the containerized material for disposal in accordance with this procedure.

30.2.3 Mixing Wastes

Soils and water shall be placed in separate containers. **Each site** on a project shall have its own containers. Similar wastes from multiple borings on **ONE** site may be containerized together (soil with soil, water with water). Soil and water shall not be mixed in one container.

30.3 Storage

The WisDOT project manager shall determine storage locations prior to the start of site activities. The project manager will notify the Regional Environmental Coordinator (REC) and the consultant of the storage location. The environmental coordinator shall notify the Bureau of Technical Services, Environmental Services Section (ESS) and the Regional Maintenance Supervisor.

Containers must be stored on WisDOT property *within the project limits.* If this is not possible, the REC or Hazardous Materials Coordinator shall seek permission from the Area DNR SPILLS/R & R Coordinator to store wastes outside the project limits. These exceptions must be reported to ESS. Storage must take place on WisDOT property. Special exemption to store waste on county property, or at the environmental consultant's facility may be granted by ESS with DNR and county or consultant approval.

Containerized material shall be placed in a secured area that will not obstruct vehicular and pedestrian traffic or vision lines. Containers shall be stored so as to be accessible by a handcart. Containers may not be stored in wetlands, floodplains, or in areas that are not level. The consultant shall provide fencing or other security measures when required by the WisDOT project manager.

30.4 Labeling of Material

30.4.1 Labels

All containers of investigative waste must be labeled. For containers containing non-hazardous material, only

Form DT1208 should be used. See Attachment 30.1 for an example of this label. If wastes are believed to be hazardous at the time of generation (e.g. wastes from dry cleaners, body shops etc.) hazardous waste labels shall be used *in addition to* DT1208, and the waste should be disposed of following procedure FDM 21-35-35.

30.4.2 Label Distribution

ESS will provide copies of DT1208 to the Regional Environmental Coordinators. Consultants shall obtain labels from the region or office that issued their contract. ESS will provide labels to consultants under direct contract to ESS.

The REC will distribute labels to WisDOT project managers and environmental consultants. Project managers shall be responsible for distributing labels to design consultants.

30.4.3 Unused Labels

Unused labels (DT1208) shall be returned to either the appropriate REC or the Bureau of Technical Services, Environmental Services Section (for those consultants with direct contracts with ESS), upon completion of the project.

30.4.4 Labeling Procedures

One Non-Regulated Waste label (DT1208) for each container shall be completed at the time of generation. Labels shall be completed using sunproof, waterproof, permanent markers or paint pens. The following information should be filled out for each label:

- Regional Office
- Project ID
- Site name - as shown on request for service
- Consultant's company name; contact person (field person performing work), and the contact person's phone number
- Generation date (date work was completed)
- Contents - circle whether contents are soil or water
- Number - containers must be numbered according to how many containers were generated on this site. Ex: container 1 of 3. (Total number of containers, not number of soil or number of water containers).
- Phase - circle the phase of the investigation being conducted

A corresponding Non-Hazardous Waste Container Inventory (DT1229) shall be completed for each container at the time of generation. Multiple containers containing the same waste stream with the same lab results can use one inventory form. The Non-Hazardous Waste Container Inventory (DT1229) shall contain information identical to that on the Non-Regulated Waste label (DT1208). Attachment 30.2 shows a properly completed Form DT1229.

30.5 Disposal of Material

Upon receipt of laboratory results, the consultant shall complete the non-hazardous waste inventory record (Form DT1229) and e-mail copies to:

- Hazardous waste disposal contractor
- ESS ATTN: Hazmat Specialist dothazmatunit@dot.wi.gov
- Region Contact
- Regional Environmental or /Hazardous Materials Coordinator or Hazardous Materials Engineer

The Hazardous Waste Disposal Contractor will schedule pickup of wastes and notify the following with the schedule:

- Region Contact & REC
- Consultant
- ESS

The Hazardous Waste Disposal Contractor is responsible for transportation and disposal of wastes. Costs will be changed back to the project ID.

30.6 Documentation of Waste Handling and Disposal

In addition to submitting copies of the Non-Hazardous Waste Container Inventory to the REC and to ESS for scheduling of disposal, copies of the forms must be submitted in the final report for each site. The forms shall be placed in the last appendix of the report.

If no excess soils or water are generated, or if soils or water are determined to be clean and disposed of on-site at the time of the investigation, this must be documented in the last appendix of the report.

ESS' file is complete when the following items are obtained:

- Copy of Container Inventory Form
- Copy of bill of lading or manifest
- Purchase order(s) and invoice(s)
- Certificate of destruction

30.7 Summary Responsibilities

30.7.1 ESS

- Provide Non-Regulated Waste labels (DT1208) to RECs and environmental consultants under contract to ESS.
- Collect unused labels from consultants under direct contract to ESS.
- Coordinate container pickup and disposal.
- Maintain waste tracking records
- Arrange for payment of hazardous waste contractor.
- Charges will be billed back to the project ID.

30.7.2 Regional Environmental Coordinator (REC)/Hazardous Material Coordinator or Hazardous Materials Engineer

- Administer this procedure in their region. Distribute labels to environmental consultants in regions with direct contracts.
- Distribute labels to the WisDOT project manager for design consultant jobs.
- Keep a copy of the Non-Hazardous Waste Container Inventories for each site in their region.
- Notify Regional Maintenance Supervisor of container storage locations and scheduled pickups.
- Notify ESS of changes in storage locations.
- Collect unused labels from project manager upon project completion.

30.7.3 Project Manager

- Locate an appropriate storage site for containers.
- Distribute labels for design consultant projects.
- Notify REC of storage location.
- Collect unused labels from consultant upon project completion.

30.7.4 Environmental Consultant

- Complete labels and Inventory forms. Submit forms to RECs, ESS and Hazardous Waste Disposal Contractor.
- Document container generation and disposal status in reports.
- Turn in unused labels to project manager upon completion of project.

30.7.5 Hazardous Waste Disposal Contractor

- Schedule waste pickup and notify ESS, REC/HW Coordinator/Engineer and Project Manager of schedule
- Transport and dispose of waste
- Document transportation and disposal with manifest or bill of lading
- Submit invoice for services to ESS
- Submit certificate of destruction to ESS

LIST OF ATTACHMENTS

Attachment 30.1	Non-Regulated Waste Label – DT1208
Attachment 30.2	Sample Completed Non-Hazardous Waste Inventory DT1229

FDM 21-35-35 Disposal of Hazardous Waste *August 15, 2019*

35.1 Purpose

This procedure establishes rules for the proper management and disposal of wastes generated during underground and above ground storage tank (UST, AST) abandonments and wastes generated during contaminated site investigations and remediations which are determined by laboratory analysis to be hazardous waste.

These procedures utilize a **mandatory** statewide hazardous waste disposal contract. Standard waste profiles have been established for the various wastes encountered during tank abandonments. These profiles are presented in Attachment 35.1. It is the responsibility of the party managing the worksite to determine if the wastes generated at the site fit the established profiles.

Management of paint waste from bridges is covered in CMM 1-30.3.

35.2 Storage and Containerization

35.2.1 Storage

All wastes must be stored in USDOT approved containers. The containers must be watertight and compatible with the wastes being stored. To minimize risks to WisDOT and the public, the following procedures shall be used for container storage:

1. Containerized material shall be inventoried and labeled.
2. Containers containing hazardous waste should be stored at the site of generation, within the WisDOT project limits. If this is not possible, the Regional Environmental Coordinator (REC), Hazardous Materials Coordinator or Hazardous Materials Engineer shall seek permission from the DNR Hazardous Waste Contact (http://dnr.wi.gov/staffdir/_newsearch/contactsearchext.aspx?exp=hazardous+waste+requirements) to store wastes off site.
3. Containerized material shall be placed in a level, secured area that will not obstruct vehicular and pedestrian traffic or vision lines.
4. Containerized water shall be placed in a heated or sheltered area if feasible, as water or other liquids may freeze or expand in the heat and rupture the container.

If the waste is determined to be hazardous, the applicable temporary storage time limit begins at time of generation: 180 days for 220 lbs to 2,205 lbs per site; 90 days for quantities greater than 2205 lbs or any quantity over 2.2 lbs of acute hazardous waste. Generation occurs on the date the first material is put into the container. A hazardous waste label shall be applied to the container if hazardous waste is suspected.

35.2.2 Containerization

1. Keep solids and liquids separate.
2. Liquid or petroleum product may be pumped into a tanker if there is sufficient quantity or containerized for either fuels blending or recycling.
3. Sludge must be containerized for disposal through the mandatory statewide contract.
4. Cleaning residue must be containerized for disposal through the mandatory statewide contract and may be mixed with sludge and/or water, depending on quantities generated.
5. Water may be pumped into a tanker if there is sufficient quantity or containerized for disposal.
6. Do not mix hazardous and non- hazardous wastes, this creates a larger quantity of hazardous waste.

35.3 Sampling and Analytical

Generator knowledge may be sufficient for waste characterization and profiling (e.g., UST removed was known to store unleaded gasoline). Analytical results from the site investigation may also be used for waste characterization. If not, the following procedure should be followed:

1. One 500 ml amber sample should be collected from containers with like contents (e.g., two containers of water would require one sample).
2. Analysis requirements for hazardous waste determination:

   Fingerprint (includes flashpoint)

   Total Benzene and Total Lead

   or

   Specific Constituent suspected at site (ex. TCE, PCB)

Send the sample directly to the hazardous waste contractor. Contact the hazardous waste vendor https://wisconsindot.gov/Documents/doing-bus/eng-consultants/cnslt-rsrces/environment/hazwaste-contacts.pdf for shipping information. Include appropriate chain of custody forms and a copy of the hazardous waste inventory.

NOTE: If container contents have already been analyzed by a DNR certified laboratory, then samples need not be sent to the hazardous waste disposal contractor. Send a copy of analytical results to the hazardous waste disposal contractor for profiling purposes.

35.4 Waste Characterization

Generator knowledge or laboratory results will indicate whether containerized materials are hazardous or non-

hazardous. A profile determination should be made based on the quantities of the contents of the waste (i.e., product solids and water)

A table with the existing profiles is presented in Attachment 35.1. If no profile has been established for the type of waste generated a new profile will be required. The contractor will work with ESS to establish a new profile.

35.5 Disposal

35.5.1 Hazardous Waste

1. The consultant shall complete the hazardous waste inventory (Form DT1231) and send copies to:
   - Hazardous waste disposal contractor
   - ESS ATTN: Hazmat Specialist
   - Region contact
   - Regional Environmental /Hazardous Materials Coordinator, or Hazardous Materials Engineer

   Attachment 35.2 is a copy of the inventory form, DT1231, and look under "Plans and projects." E-mail is the preferred means of communication.
2. If waste cannot be profiled without analytical results, then the consultant can send samples to hazardous waste contractor. Profiling will be conducted by the hazardous waste contractor and results will be submitted to the environmental consultant and ESS.
3. If the quantity of waste generated at one UST/AST removal site is greater than 2,205 lbs, then the environmental consultant shall contact ESS (dothazmatunit@dot.wi.gov) to obtain an EPA identification number.
4. Upon receipt of EPA ID#, ESS will forward the number to the environmental consultant, the hazardous waste contractor and the region contact.
5. Hazardous waste contractor will complete manifests and schedule pick up of wastes. Hazardous waste contractor will notify the following with the schedule:
   - Region contact
   - Consultant
   - ESS (arrange payment)
6. Hazardous waste contractor is responsible for the transportation and disposal of wastes.

35.5.2 Quantities Less Than 2,205 lbs

If the quantity generated at one UST/AST removal site is less than 2,205 lbs then an EPA ID number is not required. The above steps shall be followed with the exception of obtaining an EPA ID number. Any quantity over 2,250 lbs (or approximately four 55-gallon drums) will require an EPA ID. Non-hazardous wastes generated during contaminated site investigations or remediation should be handled in accordance with FDM 21-35-30 and FDM 21-35-50.

35.6 File Documentation

See Attachment 35.3 for a sample manifest.

Manifests now comply with the USEPA eManifest program and are distributed electronically.

Other forms that may be included for WisDOT retention include:

- Landban forms
- Contractor timesheets

ESS' file is complete when the following forms are obtained:

- Electronic copy of manifest
- Copy of Hazardous Waste Inventory, form DT1231
- eRCRA EPA ID submission
- eRCRA EPA ID confirmation email
- Copy of Landban Form (if applicable)
- Copy of purchase order and invoices
- Copy of the annual report filed by the region

The Region Environmental or Hazardous Waste Coordinator or Hazardous Materials Engineer will be responsible for preparing the annual report for the wastes generated from sites within their region. A copy of the report for each site should be submitted to ESS.

For each site, disposal activities shall be documented and made part of the report prepared for the appropriate phase of contaminated site investigation or remediation.

35.7 Payment

Costs for disposal of wastes will be billed back to the project ID. Additional charges include mobilization costs which vary depending upon the location and number of sites included in the pick-up.

LIST OF ATTACHMENTS

Attachment 35.1	Generic Profiles
Attachment 35.2	Hazardous Waste Inventory DT1231
Attachment 35.3	Hazardous Waste Manifest

FDM 21-35-40 Structure Notification

August 15, 2019

Sometimes, as part of WisDOT's investigation or remediation activities, special permanent structures must be installed on a highway right-of-way. These structures can be monitoring wells, venting systems or groundwater remediation systems. When such structures are to be installed on the right-of-way, the environmental consultant shall notify the appropriate Region Planning & Operations Group Manager (look under Consultant Contract Management on http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/default.aspx to find org charts by region) by submitting the information listed below. Send this notice two weeks before the proposed installation date and send copies of this notification to the region environmental coordinator and to the Bureau of Technical Services, Environmental Services Section, dothazmatunit@dot.wi.gov, with the subject Structure Notification. A Right of Way permit is not required because this structure is being constructed by the agency.

40.1 Notification Contents

- A site location map. This can be either a county map or a quadrangle map.
- County, highway, project termini and project ID number.
- A site map showing the location of the proposed structures within the right-of-way. Use the current as-built of the road as the base map. Show the approximate location of the proposed structures with reference points like buildings, edge of pavement, survey markers or some other obvious location reference. If the final location or number of structures changes from the initial notification the environmental consultant shall provide a revised map with the new information to the Region Planning & Operations Group Manager. Send copies of this revised data to the Region Environmental Coordinator as well as to ESS, Attention: Hydrogeologist. Final locations of the structures shall be located by GPS and the shape files submitted to the ESS Hydrogeologist.
- A description of the structures: type, size, flush mount or above ground wells.
- Summary of purpose for installing the structure(s) such as a venting system for remediation or a well to define the down gradient extent of contamination.

The environmental consultant shall post the notification and the scope of services signed by the Department representative on site at all times while the work is being performed.

40.1.1 Notification for Temporary Structures

A temporary structure is one that will be in place one day or less as part of Phase 2, 2.5, 3 or 4 activities. The environmental consultant shall notify the Region Planning & Operations Group Manager by phone two weeks before drilling or installing a temporary monitoring well.

40.2 Siting

Wells can be located anywhere within the highway right-of-way. This includes the traveled way and shoulders although this should be avoided if possible. Wells located in the traveled way, shoulders or clear zone shall be flush mounted and their covers shall be painted a highly visible color. Additional measures to make the flush mounted wells easier to find may also be employed; for example, mounting a magnet inside the well cover.

Wells located outside the clear zone should also be flush mounted. Where this is not possible, the non-flush mounted wells shall be flagged and painted in a highly visible color to provide added protection and visibility for maintenance crews. **The use of non-flush mounted wells requires the approval of the Region Systems Operations Group Manager.**

40.3 Notification of Removal

Notifications of removal of permanent structures shall contain the same information required for their installation. The notification shall include the date the structure will be removed. Send this written notification to the Region Planning & Operations Group Manager, the Region environmental coordinator and the ESS Hydrogeologist. Send this notification two weeks before the structure is to be removed.

FDM 21-35-50 Land filling or Bioremediation of Non-Hazardous Waste

August 15, 2019

50.1 Purpose and Scope

This procedure describes the use of the department's statewide hazardous waste disposal contract for management of specific non-hazardous wastes as follows:

- Bioremediation of petroleum contaminated soil (hereafter referred to as soil);
- Direct land filling of: river sediments; miscellaneous solid wastes; materials that do not require remediation; and other soils/materials that do not meet the hazardous waste category criteria for disposal (hereafter referred to as waste).

This procedure covers soil or waste generated by environmental consultants under direct contract to the department, as well as those generated by consultants under sub-contract to the department's consultants. This procedure does not apply to soil or waste generated by construction contractors or their subcontractors.

This procedure covers only those materials found to be non-hazardous by laboratory characterization. Materials found to be hazardous as defined by NR 605 **must** be disposed of in accordance with FDM 21-35-35.

Only materials generated during the course of department-managed investigations of a property are covered by this procedure. Materials generated during investigation of a private property adjacent to a highway by the private property owner are NOT the responsibility of the department and are not covered by this procedure. Local road program projects may use this procedure.

50.2 Applicable Disposal Sites

This procedure applies **only** to disposal sites that are included in the statewide hazardous waste disposal contract. Contact the hazardous waste disposal contractor for the current list. To use an alternate disposal site, the construction contractor or environmental consultant must contract directly with the alternate disposal facility. They must pay the alternate disposal facility directly and may request reimbursement from the department as outlined in their contract or scope of service.

Any DNR approved bioremediation facility http://dnr.wi.gov/topic/waste/documents/faclists/wislic_swlandfills_bycnty_withwaste.pdf may be used for bioremediation of petroleum contaminated soil generated by WisDOT.

Any DNR approved licensed landfill (http://dnr.wi.gov/topic/Landfills/) may be used for the disposal of non-hazardous wastes such as those listed above, but requires approval from ESS.

For more information on planning a remediation project that includes waste disposal through the construction contract, see Attachment 20.1.

50.3 Bioremediation

50.3.1 Process

The bioremediation process consists of the following activities.

1. Contact the hazardous waste contractor to determine which disposal site to use and the appropriate sampling protocol.
2. Conduct excavation and field screening.
3. Perform lab analysis of samples.
4. Stockpile material for future transport or load and haul directly (choice based on project needs).

50.3.2 Field Screening

The environmental consultant shall screen all soils in the field using one of the following techniques:

- PID (photo ionization detector),
- FID (flame ionization detector),
- Portable Gas Chromatogram, or
- Comparable field instrument.

Soils that have positive readings must be segregated for treatment. Soils that do not exhibit positive meter readings, but have either visual or olfactory evidence of contamination, must also be segregated for treatment.

50.3.3 Laboratory Analysis

Soils that exhibit evidence of contamination shall be sampled and submitted to a DNR certified laboratory for analysis following the acceptance limits protocols outlined in Attachment 50.1 for bioremediation projects using the statewide hazardous waste disposal contract, and Attachment 50.2 for direct landfill projects using the statewide hazardous waste disposal contract. The laboratory report must include the following information:

- Sample type, description, and location
- Type of sample preservation

- Sample integrity upon receipt by the lab
- Temperature of sample when received
- The analytical methods used to analyze the sample
- Sample results
- The laboratory limit of detection,
- Date sampled, received, extracted, and analyzed
- Chain of custody information including site address

50.3.4 Analytical Results

Analytical results used for waste profiling must be less than one year old.

If laboratory analysis indicates the presence of contamination that would cause the waste to be characterized as hazardous, the waste must be disposed of following the procedure for disposal of hazardous waste (see FDM 21-35-35).

Once the analytical profile has been established and approved, the material can be loaded and hauled to the bioremediation facility.

50.3.5 Stockpile Location and Construction

Stockpiles of segregated soils shall be constructed in accordance with NR 718. The WisDOT project manager, in consultation with the environmental consultant, shall determine stockpile location prior to the start of site activities. The location must comply with the location restrictions in NR 718.05. The project manager will notify the Regional Environmental Coordinator or Hazardous Materials Coordinator or Hazardous Materials Engineer of the storage location. The environmental coordinator or Hazardous Materials Coordinator/Engineer **shall notify ESS and the Regional Maintenance Supervisor**. Stockpile location shall be noted on the map included with form DT2219.

Stockpiles must be stored on WisDOT property within the project limits. If this is not possible, the regional environmental coordinator or Hazardous Materials Coordinator shall seek permission from the Area DNR R & R DOT LTE or R&R hydrogeologist: http://dnr.wi.gov/topic/Brownfields/documents/rr/rrphone.pdf to obtain permission to stockpile soils outside the project limits. These exceptions must be reported to ESS. Storage must take place on WisDOT property. Special exemption to stockpile soils on county property may be granted by ESS with DNR and county approval.

Stockpiled material shall be placed in a secured area that will not obstruct vehicular or pedestrian traffic or vision lines. The environmental consultant shall provide fencing or other security measures when required by the WisDOT project manager. No stockpiles shall be constructed within 50 feet of a railroad right of way.

Stockpiled material shall be bulk sampled and analyzed using the appropriate laboratory protocol. The environmental consultant will contact the Hazardous Waste Disposal Contractor to determine the appropriate number of bulk samples to collect.

50.3.6 Direct Load and Haul

Soils that are to be directly loaded and hauled to the bioremediation facility must have all analytical profiling completed prior to the start of excavation. Soils must be field screened by the environmental consultant. Direct loading and hauling will require close coordination and pre-approval from the Hazardous Waste Disposal Contractor.

50.4 Direct Land filling

The environmental consultant will contact the Hazardous Waste Disposal Contractor with information regarding the character and nature of the waste to be direct land filled.

The Hazardous Waste Disposal Contractor will determine the appropriate analytical protocols and number of samples to be collected.

The environmental consultant will collect the samples and have them analyzed (see “Laboratory Analysis” guidance under “Bioremediation”).

The Project Manager and Environmental Consultant will determine the excavation limits and estimated quantity of material.

50.5 Disposal of Material – Bioremediation and Direct Landfilling

When the analysis is complete the environmental consultant shall submit a completed form DT2219, Bioremediation and Direct Land Filling Project Request to ESS dothazmatunit@dot.wi.gov and the Hazardous Waste Disposal Contractor. Include laboratory results and a location map. Copy the Region contact (The person in the region requesting the work) and the Region Environmental or Hazardous Materials Coordinator or Hazardous Materials Engineer.

The Hazardous Waste Disposal Contractor will schedule pickup of wastes and notify the following with the schedule:

- Region Contact & Regional Environmental or Hazardous Materials Coordinator/Engineer
- Environmental Consultant
- ESS

The Hazardous Waste Disposal Contractor is responsible for transportation and disposal of wastes, unless otherwise specified in the construction contract. Exceptions must be noted on form DT2219. Costs will be charged back to the project ID.

50.6 Documentation of Material

ESS' file is complete when the following items are obtained:

- Copy of Bioremediation and Direct Land filling Project Request
- Copy of bills of lading or manifests
- Purchase order(s) and invoice(s)
- Certificate of destruction

50.7 Summary Responsibilities

50.7.1 ESS

- Coordinate bioremediation or land filling of material.
- Arrange for payment of hazardous waste contractor.
- Charges will be billed back to the project ID.

50.7.2 Regional Environmental Coordinator (REC)/Hazardous Material Coordinator/ Engineer (HMC/E)

- Administer this procedure in their region.
- Keep a copy of the Bioremediation and Direct Land filling Project Request (DT2219) for each site in their region.
- Notify Regional Maintenance Supervisor of stockpile locations and scheduled removal.
- Notify ESS, DNR and Regional Maintenance Supervisor of changes in stockpile locations.

50.7.3 Region Contact

- Locate an appropriate stockpile location.
- Notify REC or HMC of location.
- Determine excavation limits, estimate quantities.

50.7.4 Environmental Consultant

- Assist Project Manager in locating appropriate stockpile location, determining excavation limits and estimating quantities.
- Complete forms. Submit forms to Hazardous Waste Disposal Contractor, Regional Contact, REC or HMC and ESS.
- Collect samples for laboratory analysis and submit results to a DNR certified analytical lab for profiling.
- Conduct field screening and direct the stockpiling or loading and hauling.
- Follow up on disposal of hazardous wastes following FDM 21-35-35.

50.7.5 Hazardous Waste Disposal Contractor

- Determine disposal facility.
- Determine appropriate analytical protocol.
- Notify regional contact and REC or HMC/E with disposal schedule.
- Bill ESS.

LIST OF ATTACHMENTS

Attachment 50.1	Bioremediation Protocols
Attachment 50.2	Landfilling Protocols