

**SCOPE OF WORK  
FOR THE  
NATURE AND EXTENT STUDY  
AT THE GUDE LANDFILL**

**I. Nature and Extent Study**

- A. Collect, review and analyze groundwater and surface water monitoring and laboratory testing data, as provided by the County, including any County trend analyses and well boring construction completion logs.
- B. Field review and evaluate available information related to the existing groundwater monitoring wells. Inspect the groundwater monitoring wells to determine current physical condition and assess the need for any potential maintenance including: well casing, well screen, potential for sedimentation occurring at the well screen, etc. Also evaluate the current number of groundwater monitoring wells and their placement with respect to acquiring usable and application data for background conditions and regulatory compliance.
- C. Field review, sample (as necessary), and evaluate existing conditions of surface water bodies that border the Gude Landfill property boundary.
- D. Field review, sample (as necessary) and evaluate any known, visible or suspect areas on the landfill and along the perimeter property boundary for leachate seeps. Provide recommendations for immediate and long-term corrective measures.
- E. Perform a wetland delineation and forest stand delineation and survey wetland and forest boundaries that are contained within and border the Gude Landfill property for presentation on separate site maps. Obtain a jurisdictional determination for the wetland boundaries to support the Clean Water Act Section 404 permitting. Forest stand delineation must meet the requirements of the Maryland-National Capital Park and Planning Commission.
- F. Plan and field review of site stormwater management infrastructure including: stormwater drainage flow, swales, stormwater control structures, and associated design and available as-built drawings for previous site improvements.
- G. Review existing landfill gas monitoring data and boring construction logs in regards to regulatory compliance and future placement of new permanent perimeter landfill gas monitoring wells (by others) Provide surveyed property boundary documentation to the County Landfill Gas Management Contractor for installation of the new permanent perimeter landfill gas monitoring wells.
- H. Plan and field review of site topography and topographic maps.
- I. Determine additional data needs to evaluate existing conditions and prepare a comprehensive Nature and Extent Study Work Plan for submission to the County and the Maryland Department of the Environment (MDE) for review and concurrence.
- J. Prepare a site specific Health and Safety Plan for field work at the Gude Landfill.
- K. Perform additional field work with own staff or subcontractors as required to fill in data gaps for existing conditions including, but not limited to groundwater, surface water, landfill gas and stormwater management monitoring and infrastructure to prepare a comprehensive Nature and Extent Study.

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- L. Develop separate and independent contour maps presenting groundwater contours and surface water and stormwater flow directions on and around the perimeter of the landfill property. Develop an existing conditions drainage area map for the Gude Landfill.
- M. In conjunction with the independent groundwater contour maps and surface water and stormwater flow direction maps, provide a separate map depicting likely contaminant migration routes, identify human exposure pathways, and assess the potential for human exposure along the migration routes.
- N. Perform additional statistical analyses, limited computer-aided modeling or other measures to assess groundwater, surface water, and landfill gas contaminant concentration over time, mobility, impact to environment, etc.
- O. Contact and provide written documentation for correspondence with applicable federal, state, and local permitting agencies, other jurisdictional entities, and adjacent property owners to inquire about potential permitting requirements, public public notification requirements, and property access for general remediation actions at the Gude Landfill. Agencies are to include, but are not limited to:
  - 1. MDE – nature and extent, etc.
  - 2. Army Corps of Engineers – wetlands, streams, etc.
  - 3. Maryland-National Capital Parks and Planning Commission (M-NCPPC) – land use, forest conservation (NRI/FSD), mandatory referral, etc.
  - 4. County Department of Permitting Services (DPS) – stormwater management, sediment control, etc.
  - 5. Columbia Gas/Trans Continental – gas line right-of-way, etc.
- P. Following the review of existing and new information, provide a breakdown of the Gude Landfill site into priority areas for remediation based on potential pathways for human exposure (perceived risk versus actual risk), environmental impacts, contaminant concentrations, etc. Also consider in the priority evaluation potential recommendations and timelines to implement any immediate corrective measures.
- Q. Attend weekly internal planning and progress meetings with County staff.
- R. Attend monthly public meeting and presentations, exclusive of internal progress meetings with County staff.
- S. Attend necessary meetings with federal, state and local permitting agencies and other jurisdictional entities to meet the objectives of Item O and to complete applicable permitting and public notification requirements.
- T. Provide content for a County managed website to keep the public, MDE, and other stakeholders informed of the progress of the project.
- U. Prepare a detailed project schedule outlining major work items in M.S. Project format for the Nature and Extent study to be updated on a monthly basis and periodically upon request by the County.

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- V. Prepare an Executive Summary of the Nature and Extent Study discussing major findings and recommendations, environmental impacts, health and safety concerns, etc.
- W. Based on the findings of the Nature and Extent Study, prepare a Remediation Feasibility Memorandum identifying critical items to be considered and incorporated in the next phase of work, Phase 2 – Remediation Alternatives Investigation. Such topics should include, but not be limited to potential remediation options, potential pros and cons to each remediation alternative, and approximate cost ranges. This document will supplement the Executive Summary.
- X. Prepare two (2) Nature and Extent Study reports; a status report at 50% completion describing work completed, preliminary results, planned work, and a draft 90% completion stage written report for County review. Ten (10) copies in 3-D-ring binders of the draft report are to be provided.
- Y. Prepare one (1) final Nature and Extent Study report for submission to MDE. Fifteen (15) copies in 3-D-ring binders of the final report are to be provided. The Consultant will be responsible for addressing all MDE and other agency comments and any required resubmissions of the Nature and Extent Study.
- Z. The duration of this Project Phase will be determined after review of the County's existing data during detailed scoping of the project, which is anticipated to be approximately six (6) months. The project phase duration may be modified based on the review of existing information or performance of site investigations. The Consultant shall provide a project schedule with the proposal to perform the work.

Note – the Consultant shall provide an initial cost estimate for performing the Nature and Extent Study. Costs for all other future phases of work shall be negotiated based on the prior phase's findings and recommendations.

**Scope of Work Items Removed for inclusion in Aerial Survey, Field Survey,  
and Limit of Waste Delineation.**

- Conduct new aerial flyover and field surveying to generate an accurate topographic map with 2-foot contours.
- Perform a property deed review for the Gude Landfill, survey property corners, and recover or place permanent surveyed benchmarks along all property corners and points required for line-of-sight between benchmarks.
- Perform test pitting (preferred), hand excavation, or a geophysical survey to delineate the limits of waste along the perimeter landfill property boundary.