



UNC
ENVIRONMENT,
HEALTH & SAFETY

The University of North Carolina at Chapel Hill
Department of Environment, Health & Safety
1120 Estes Drive Ext., CB# 1650
Chapel Hill, North Carolina 27599-1650

March 24, 2010

S. Jay Zimmerman
RRO Aquifer Protection Supervisor
DENR Division of Water Quality
1628 Mail Service Center
Raleigh, NC 27699-1628

Subject: The University of North Carolina at Chapel Hill (UNC-Chapel Hill) Bingham Facility

Dear Mr. Zimmerman:

I am writing in response to your February 23, 2010 letter in which you requested a schedule of tasks that UNC-Chapel Hill will perform to develop a long-term approach to the treatment and disposal of wastewaters generated at the Bingham Facility. Attached please find the requested schedule, which identifies the specific tasks and activities UNC-Chapel Hill will conduct in order to evaluate the wastewater systems at the Bingham Facility. Please also find attached a description of each task to be undertaken during the evaluation.

UNC-Chapel Hill and its engineering consultant, McKim & Creed, is committed to a thorough assessment of the site treatment and sprayfield systems, as well as development of an integrated water strategy for the site.

UNC-Chapel Hill and McKim & Creed would be pleased to meet with you to review this schedule in detail at your earliest convenience.

Please contact me at 919.843.5913 if you have any questions or comments.

Sincerely,

Mary Beth Koza
Director, Environment, Health and Safety

Attachments

Cc: Larry Daw
Sally Hoyt

Bingham Research Facility Integrated Total Water Management Evaluation

UNC-Chapel Hill and its engineering consultant, McKim & Creed, will evaluate existing conditions, near-term expansion, and master planned conditions for wastewater, potable water, non-potable water, and stormwater for the Bingham Facility. In particular, UNC-Chapel Hill will perform the tasks described below.

PHASE 1: ASSESSMENT ACTIVITIES

The assessment activities will be conducted to inform the evaluations and alternatives analysis in Phase 2, discussed below.

1.1 Preliminary Efforts

Preliminary efforts include kick-off meetings, scope preparation, background document review, and preparation of the Pump and Haul Permit Application.

1.2 Initial Feasibility/Site Capacity Assessment

UNC-Chapel Hill applied for an NIH grant to expand the Bingham Facility. The University will conduct a feasibility/site capacity assessment, which will provide a rough, preliminary estimate of the site's capacity for wastewater disposal.

1.3 Wastewater Characterization and Non-Potable Water Demand Evaluation

McKim & Creed will perform a wastewater characterization based on sampling, staff interviews, and master plan information and will project non-potable water demands based on water usage records and analysis of the needed water quality for specific uses.

1.4 Wetlands Delineation

McKim & Creed's subcontractor, Biohabitats, will delineate wetlands and streams across the entire site. Following a field visit from the Army Corps of Engineers, the streams and wetlands will be surveyed.

1.5 Soils Mapping & Standard Permeability Testing Plan

A licensed soil scientist, subcontracted by McKim & Creed, will map soils on the entire site and conduct standard permeability testing.

1.6 Agronomist Management Plan

A licensed soil scientist, subcontracted by McKim & Creed, will prepare a plan that meets the requirements of the Land Applications Unit.

1.7 Geotechnical and Subsurface Evaluation

McKim & Creed's subcontractor will perform split spoon geotechnical borings and will install piezometers in the open boreholes.

1.8 Hydrogeologic Wastewater Application Receiving Capacity Assessment

The hydrogeologic assessment by McKim and Creed's subcontractor will include mapping of the stratigraphy, potentiometric surface, development of a hydrologic model, and development of a Modflow simulation.

1.9 Hydrogeologic Water Supply Assessment

McKim & Creed's subcontractor will conduct a fracture trace analysis and geophysical resistivity profile -to assess the influence of UNC-Chapel Hill's 80 gpm well on surrounding private water supply wells.

PHASE 2: ALTERNATIVES ANALYSIS

Phase 2 will involve an evaluation of multiple alternatives for integrated water management. Following this evaluation, UNC-Chapel Hill will select an approach and develop an implementation timeline.

2.1 Wastewater Infrastructure Evaluation

UNC-Chapel Hill will evaluate treatment and disposal methods consistent with the 15A NCAC 02T .0500 and .0900 rules. The wastewater characterization will be used to evaluate wastewater treatment systems. Recommended modifications, if any, to other components of the wastewater system will be evaluated, including the collection, treatment, storage, and spray field system.

2.2 Potable Water Infrastructure Evaluation

McKim & Creed will sample the potable water supply and recommend upgrades, if any, to the existing water supply system.

2.3 Stormwater Analysis

McKim & Creed will prepare a conceptual stormwater plan to show the type, location, and size of BMPs to meet the State Stormwater Requirements and Jordan Lake Rules. McKim & Creed will also evaluate rainwater harvesting options.

2.4 Integrated Water Alternatives Analysis

McKim and Creed will analyze multiple proposed alternatives for integrated water management based on regulatory, cost, and operational factors and present this analysis to UNC-Chapel Hill for evaluation.

2.5 Recommended Alternative Preliminary Engineering and Basis for Design Report

Once an alternative is selected, McKim & Creed will develop a phased implementation plan and timeline, as well as a schematic design level report and plans.

PHASE 3: DESIGN

PHASE 4: BID AND AWARD

PHASE 5: CONSTRUCTION