JAN 0 5 2010

MARYLAND DEPARTMENT OF THE ENVIRONMENT
1800 Washington Boulevard • Baltimore MD 21230
410-537-3000 • 1-800-633-6101

Martin O'Malley
Governor

Anthony G. Brown
Lieutenant Governor

Shari T. Wilson
Secretary

Robert M. Summers, Ph.D.
Deputy Secretary

December 21, 2009

UniStar Nuclear Energy
100 Constellation Way, Suite 1400P
Baltimore, Maryland 21202-3106
Attn: Dimitri Lutchenkov

RE: Mitigation - Conceptual Phase II Plan
Nontidal Wetlands Permit #: 08-NT-0191
Permit Tracking #: 200862335
Project: Calvert Cliffs Nuclear Power Plant
County: Calvert

Dear Mr. Lutchenkov:

The Mitigation and Technical Assistance Section has reviewed the Conceptual Phase II Mitigation Plan from December 8, 2009. Before this plan can be approved, please address the following comments:

1. Since this is only a Conceptual Plan, detailed plans are not included. These detailed plans will need to be reviewed and approved by the Mitigation Department as part of the Phase II Mitigation Plan approval.
2. As discussed through email with Jim Burkman (Constellation Generation Group) on December 9, 2009, MDE will require a 1:4 ratio for enhancement to replace forested wetland losses. This includes a 1:2 for the ratio of impacts to mitigation required for forested wetlands and a 1:2 credit for wetland enhancement. For future reference, MDE calculates ratios differently than discussed in your plans. First, we determine the required replacement ratios based on the type of impact (Ex: generally, forested and scrub/shrub wetland impacts require 1:2 replacement and emergent requires 1:1 replacement). Then, the mitigation type gets a ratio (ex: generally restoration/creation gets 1:1 credit, enhancement gets less credit – no more than 1:2 credit).
3. Stream preservation rarely receives mitigation credit. We would only consider that if the stream has exceptional value. If it is considered at all, the credit ratio would be much lower than 1:1.
4. The regulatory agencies may require a monitoring period longer than 5 years, especially since much of the wetland mitigation is for eradicating *Phragmites* areas, which often require monitoring for longer time periods.

5. We will consider advanced mitigation credit once items 2 and 3 have been addressed.
6. In areas where regenerative stormwater conveyance (RSC) practices will be installed, are these existing forested areas? If so, how much area will be cleared to install these? Are all of these areas necessary to reduce erosion. For example, the descriptions for WE-4, WC-5 and WC-6 sound like they are currently relatively stable. The concern is obviously that if it is a healthy forested system already, we do not get much functional gain by cutting down the mature trees to make a forested wetland system. If the concern is that additional stormwater will be going to these areas to make them unstable, maybe that should be addressed through the stormwater management instead of through mitigation. As mentioned, we would be very interested in seeing an example of the RSC systems.
7. For mitigation area WC-2, will the flow control be set? If you are planning to use a control structure that can be manipulated, once the desired water elevations are met, the structure should be locked. We do not want this control structure to be actively controlled in the long-term – except for the possible management of *Phragmites*.
8. Any areas proposed as emergent wetlands will have a strong threat of *Phragmites* invasion. You may want these areas to be planted in trees to reduce that threat.
9. The protection document should also include language allowing remediation of the mitigation site after approval by MDE (attached).
10. For monitoring, please also include information required through the MDE monitoring protocol for sites larger than a half acre (attached).

If you have any questions, please call me at (410) 537-4018.

Sincerely,

Kelly P. Neff
Nontidal Wetlands and Waterways Division

Cc: MDE – Cheryl Kerr, Mohammad Ebrahimi, Amanda Sigillito
USACE – Kathy Anderson

Attachments: Monitoring Protocol for Mitigation Projects Greater Than One-Half Acre
Declaration of Restrictive Covenants

DECLARATION OF RESTRICTIVE COVENANTS

THIS DECLARATION OF RESTRICTIVE COVENANTS (this "Declaration") is made this ___ day of _____, 200_, by
("Owner") having an address at

INTRODUCTORY STATEMENT

A. Owner is the fee simple owner of that certain real property located in the _____ Election District of _____ County, Maryland consisting of approximately acres more particularly described in a Deed dated _____, and recorded among the land records of _____ County, Maryland at Liber ___, Folio ___ ("Property").

B. Owner proposes to create a _____nontidal wetland, approximately ____acres in size at the location shown on Attachment A, ("Survey"), attached hereto and hereby made a part hereof ("Mitigation Site").

C. Owner desires to record this Declaration among the Land Records of County to ensure that certain activities not be conducted within the Mitigation Site.

NOW THEREFORE, in consideration of the covenants, terms, conditions and restrictions hereinafter set forth, Owner declares as follows:

1. As of the date hereof, the Mitigation Site shall be deemed jurisdictional nontidal wetlands. Owner, his personal representatives, heirs, successors and assigns shall not undertake on its own, or grant permission to others, to conduct any of the following regulated activities within the Mitigation Site or a 25 foot buffer measured outward from the perimeter of the Mitigation Site:

A. Removal, excavation, or dredging of soil, sand, gravel, minerals, organic matter, or materials of any kind;

B. Changing existing drainage characteristics, sedimentation patterns, flow patterns, or flood retention characteristics;

C. Disturbance of water level or water table by drainage, impoundment or other means;

D. Dumping, discharging of material or filling with material, including the driving of piles, and placing of obstructions;

E. Grading or removal of material that would alter existing topography;

F. Destruction or removal of plant life that would alter the character of the nontidal wetland, except for the removal of invasive species as determined by the Maryland Department of the Environment;

G. Agricultural activities shall not be conducted within the Mitigation Site or within a 25 foot wide buffer measured from the outside perimeter of the Mitigation Site. For purposes of this Declaration, the term "agricultural activities" means aquaculture and farming activities including plowing, tillage, cropping, seeding, cultivating, the grazing and raising of livestock, sod production and harvesting for production of food and fiber products. Forestry activities may not be conducted within the Mitigation Site. "Forestry activities" means planting, cultivating, thinning, harvesting or any other activity undertaken to use forest resources or to improve their quality or productivity; except for:

H. Maintenance and repair activities authorized by the Department of the Environment and the Army Corps of Engineers that are necessary for the site to function as designed.

2. Owner, his personal representatives, heirs, successors and assigns shall include reference to this Declaration and the restrictions contained herein in every deed, or other legal instrument by which any interest in the Property is conveyed. The provisions of this Declaration shall be deemed to be covenants running with and binding upon the Property in perpetuity.

IN WITNESS WHEREOF, Owner has hereunto set his hand and seal the day and year first above written.

_____(SEAL)
Owner

STATE OF MARYLAND, County of _____, TO WIT:

I HEREBY CERTIFY, that on this ____ day of _____, 200 , before me the subscriber, a Notary Public of the State aforesaid, personally appeared _____ known to me, or satisfactorily proven to be, the Owner under the foregoing Declaration and acknowledged that he executed the same for the purposes therein contained and in my presence signed and sealed the same.

WITNESS my hand and Notarial Seal.

_____
Notary Public
My Commission Expires:_____

MARYLAND DEPARTMENT OF THE ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

April 23, 2004

MONITORING PROTOCOL FOR MITIGATION PROJECTS GREATER THAN ONE-HALF ACRE

A. Compensatory mitigation projects required as a condition of a State Nontidal Wetlands and Waterways Permit for wetland impacts should achieve the goals and objectives established in the approved Phase II Mitigation Plan. Mitigation projects greater than one-half acre shall conform to one of the following criteria, unless otherwise agreed to by the regulatory agencies.

1. After five years, greater than 85% of the site shall be vegetated by the planted species approved by the regulatory agency or by a combination of planted and naturally occurring vegetation agreed to by the regulatory agency.

2. After five years, the site shall be dominated by native or adaptive wetland vegetation.

B. An as-built design plan shall be submitted to the Nontidal Wetlands and Waterways Division within 120 days of the completion (this includes grading, planting and/or vegetative stabilization) of the mitigation project.

C. The permittee will be responsible for submitting annual monitoring reports to the Nontidal Wetlands and Waterways Division for a period of five consecutive years from the completion of the construction of the mitigation site. Annual monitoring reports must be submitted by December 31 of the year in which the mitigation planting occurs, unless planting occurs after July 1, in which case the first monitoring report will not be due until the end of the next year. The following information should be included with the annual monitoring report:

1. A narrative description of the mitigation site addressing its position in the landscape, adjacent waterbodies, and adjacent land use.

2. A narrative description of existing site conditions and how the mitigation site has achieved the goals, objectives and performance standards establish for the project.

3. Measurements of vegetation based upon performance standard criteria and methods used to assess the vegetative success of the mitigation site.

Recommended Vegetation Density Measurement Technique for Emergent Wetlands

The following method for measuring the success of herbaceous plant colonization should be conducted once between May and September of the second third and fifth growing seasons subsequent to the completion of the construction of the mitigation project: (refer to Example #1 and Data Sheet #1).

a. Measure emergent areas along transect lines at a compass bearing perpendicular to the longitudinal axis of the created wetland. Identify two categories, "Vegetated" and "Open Water", using this method
b. Start transect #1 20 feet from one of the longitudinal ends of the wetland. Space the transects parallel to each other at 50-foot intervals (75-foot intervals for sites larger than five acres); each transect crosses the entire width of the wetland.
c. Measure the distance covered by emergent vegetation along each transect (Vegetation should exhibit a minimum density of 43,560 living stems per acre (12"x 12"spacing"). The length of the transect covered by emergent vegetation is the area categorized as "Vegetated".
d. Open water and emergent areas that have fewer than 43,560 plants per acre are categorized as "Open Water". Measure the distance along each transect.
e. Plot the numbered transects and distance measurements of "Vegetated" and "Open Water" categories on a map of the mitigation site. Each distance measurement taken along a given transect for either category is denoted as a single point on each transect. Draw a line crossing the transects to connect the points to delineate the emergent vegetative areas. Connecting the points will differentiate the "vegetated " from the " open water" areas.
f. Measure the mapped area(s) of emergent vegetation to determine if the project has achieved the specified standard.

Recommended Vegetation Density Measurement Technique for Forested and Scrub-shrub Wetlands

The following method for measuring the success of woody plant colonization should be conducted once between May and September of the second, third, and fifth growing seasons subsequent to the completion of the construction of the mitigation project: (refer to Example #2 and Data Sheet #2).

a. Measure woody vegetation along transect lines at a compass bearing perpendicular to the longitudinal axis of the created wetland.

b. Start transect #1 20 feet from one of the longitudinal ends of the wetland. Space the transects parallel to each other at 50-foot intervals (75-foot intervals for sites larger than five acres); each transect crosses the entire width of the wetland.

c. Space six-foot radius circular plots at 50-foot intervals along each transect. {Note: Start laying out the circular plots on the odd-numbered transects at one end of the wetland and the even-numbered transect circular plots from the opposite end of the wetland (See Example #2)}. Record the circular plot data on the map and data sheets as follows:

"0" = no living tree or shrub over 10" in height is within the plot.
"1" = one living tree or shrub over 10" in height is within the plot.
"2" = two or more living trees or shrubs over 10" in height is within the plot.

4. Dates of site inspections.

5. Monitoring data for surface water and groundwater. The following is recommended:

Recommended Surface Water Data Collection

a. Take water depth measurements along transect lines that are perpendicular to the longitudinal axis of the created wetland.

b. Start transect #1 20 feet from one of the longitudinal ends of the wetland. Space the transects parallel to each other at 50-foot intervals; each transect crosses the entire width of the wetland.

c. Surface water depth measurements should be taken at 25-foot intervals along each numbered transect. {Note: Take the first measurement for the even-numbered transects on the same side of the wetland Take the first measurement for the odd-numbered transects on the opposite side of the wetland. For example, even numbers begin on the south side of the wetland site; therefore odd numbers begin on the north side.}

d. Water depth measurements should be recorded once every fourteen days throughout the first two months of the growing season, and every 30 days for the remainder of the growing season. Record to the nearest inch (refer to Data Sheet #3).

Recommended Groundwater Well Placement and Data Collection

a. Hydrologic zones differentiated by a 2-foot change in elevation should have a minimum of one groundwater monitoring well installed. In addition, a hydrologic zone should have a minimum of one groundwater monitoring well per four acres.

b. Begin the collection of groundwater well data within fourteen days of the start of the growing season and continue for at least the first two (full) growing seasons subsequent to the completion of grading. The approximate growing seasons within Maryland (these are regional averages; the growing season may be shorter or longer depending upon location and weather) are as follows:
East of Washington County - April 1 through October 31
West of and including Washington County - April 30 through September 30

c. Take groundwater well readings once every 14 days for the first two months of the growing season and every 30 days for the remainder of the growing season. Record to the nearest inch (refer to Data Sheet #4).

d. Measure and record any surface water present at the monitoring wells.

e. Include a copy of the plan showing the location of the wells, and summarize the information regarding groundwater and surface water elevations, and, if relevant, provide monthly rainfall data for the areas.

6. Take one set of photographs from established photographic points any time during May through September of each monitoring year (pictures should be taken at the same time of year when possible).

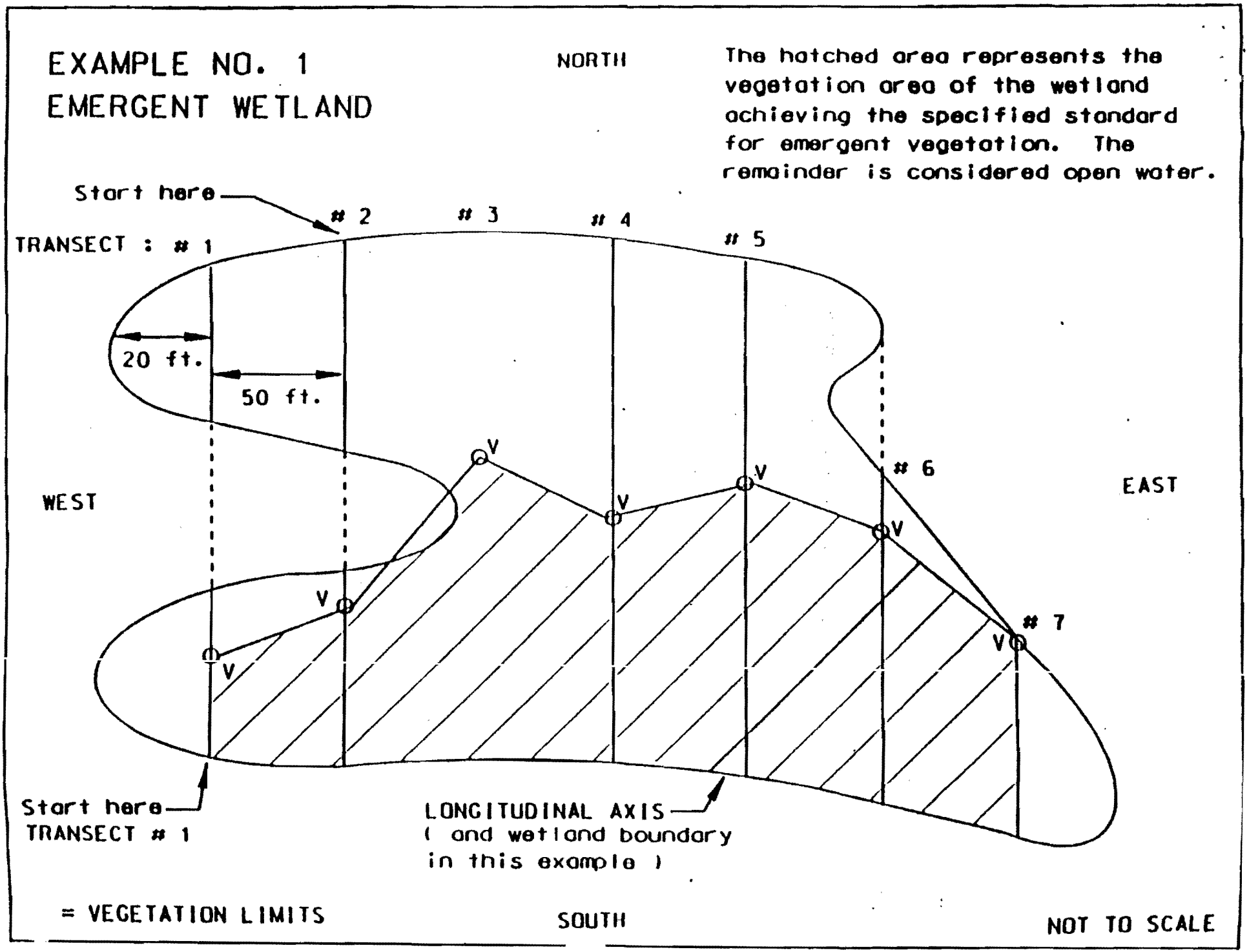
7. List the wetland species present (based on vegetative sampling technique) in order of dominance and by vegetative stratum.

8. Describe any problems observed within the mitigation site, such as: excessive inundation, insufficient hydrology, seasonal drought conditions, invasion by undesirable species of plants or wildlife, disease condition for plants, adverse water quality impacts (i.e., excessive sediment loading, water pollution, etc.), and slope failures or erosion problems.

9. Describe the proposed remedial measures to address the problems noted in item #6 above.

D. Remedial measures proposed by the permittee are subject to review and approval by the regulatory agencies prior to implementation. In the event that remedial measures are implemented, the monitoring period may be extended on a case-by-case basis, but will not be extended for more than a three-year period.

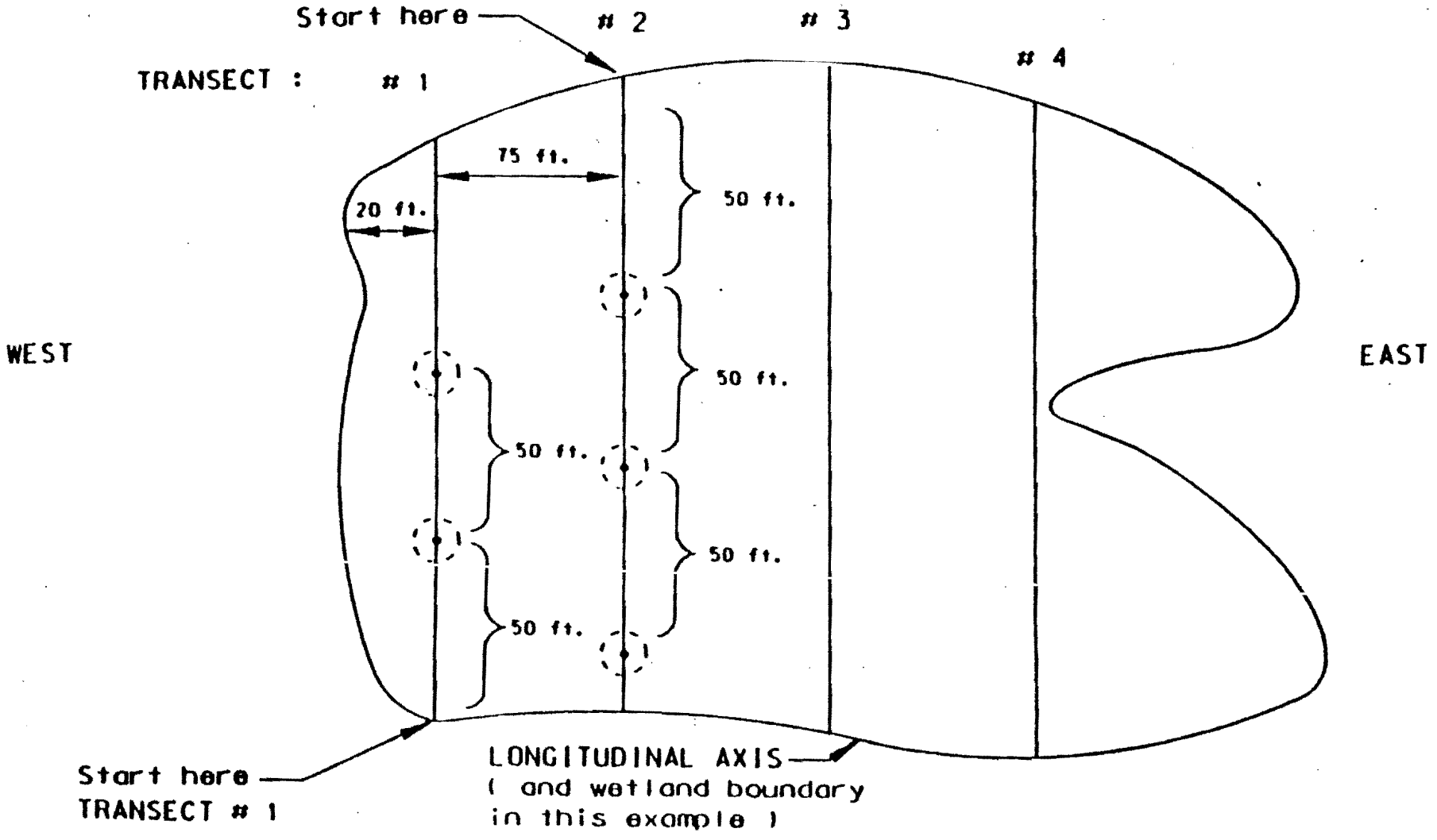
EXAMPLE NO. 1
EMERGENT WETLAND



EXAMPLE NO. 2
FORESTED WETLAND

NORTH

Depicts circular plots along odd and even numbered transects.



SOUTH

NOT TO SCALE

DATA SHEET #1
EMERGENT WETLANDS

The following is a sample data sheet for recording transect data for tidal and non-tidal emergent wetlands.

	VEGETATION DATA SHEET #1 -- EMERGENT WETLANDS	Monitoring Year _____

Permit #_____ Project Name_____

Mitigation Site: _____

Total Acreage: _____ County: _____ State: ___

Sampling Date: _____ Person(s) Sampling: _____

_____

Compass Bearing for Transects (Degrees)_____

Transect #	Vegetated (Distance in Feet)	Open Water (Distance in Feet)	List Dominant Plant Species
1	15.5	30.0	
2	18.0	32.0	
3	19.0	36.5	
4	14.5	32.5	
5	14.0	33.0	
6	13.0	28.5	

DATA SHEET #2
SCRUB/SHRUB & FORESTED WETLANDS

The following is a sample data sheet for recording plot data for forested and scrub/shrub wetlands.

VEGETATION
DATA SHEET #2
SCRUB/SHRUB & FORESTED WETLANDS

Mitigation Site: _____

Total Acreage: _____ County: _____ State: ____

Sampling Date: _____ Person(s) Sampling: _____

Plot Number	Number of Living Trees or Shrubs at Least 10 Inches in Height *	Plant Species
1	1	
2	1	
3	1	
4	1	
5	2	
6	0	
7	1	
8	1	
9	1	
10	2	

* "0" = no living tree or shrub over 10" in height is within the plot
"1" = one living tree or shrub over 10" in height is within the plot
"2" = two or more living trees or shrubs over 10" in height are within the plot

DATA SHEET #3
SURFACE WATER DEPTH

The following is a sample data sheet for recording surface water depths in emergent, scrub/shrub, and forested wetlands.

HYDROLOGY
DATA SHEET #3
SURFACE WATER DEPTH

Mitigation Site: _____

Total Acreage: _____ County: _____ State: ____

Sampling Date: _____ Person(s) Sampling: _____
_____

Transect #	Plot #	Depth of Water (inches)	Observations
1	1	3	
1	2	4	
1	3	14	
1	4	17	
1	5	6	
2	6	7	
2	7	12	
2	8	17	
2	9	30	
2	10	24	
2	11	8	
3	12	12	
3	13	14	
3	14	27	
3	15	28	
3	16	24	
3	17	12	
4	18	3	
4	19	20	
4	20	26	
4	21	8	
4	22	2	
5	23	6	
5	24	6	
5	25	8	
5	26	1	
6	27	3	
6	28	4	
6	29	5	
6	30	3	

DATA SHEET #4
GROUNDWATER ELEVATION

The following is a sample data sheet for recording groundwater elevations in scrub/shrub and forested wetlands.

HYDROLOGY
DATA SHEET #4
GROUNDWATER ELEVATION

Mitigation Site: _____

Total Acreage: _____ County: _____ State: _____

Sampling Date: _____ Person(s) Sampling: _____

Well #	Elevation at Well (feet)	Depth to Groundwater (feet)	Elevation of Groundwater (feet)
1	15.0	1.3	13.7
2	16.0	3.5	12.5
3	22.0	8.9	13.1
4	30.0	13.3	16.7
5	28.0	11.9	16.1

The following provides an example, in tabular form, for summarizing groundwater well data readings accumulated over time. This format is recommended to facilitate comprehension of the accumulated data.

Tabular Summary of Groundwater Well Data for Accumulated Readings

Mitigation Site: _____

Total Acreage: _____ County: _____ State: ____

Sampling Dates: from _____ through _____

Person(s) Sampling. _____

Sample Date	Elevation of Groundwater (GW) in Feet				
	GW #1	GW #2	GW #3	GW #4	GW #5
4/1/93	13.7	12.5			
4/8	13.7	12.5			
4/15	13.7	12.5			
4/22	13.7	12.5			
4/29	13.6	12.5			
5/6	13.6	12.4			
5/13	13.5	12.3			
5/20	13.5	12.3			
5/27	13.5	12.3			
6/2	13.4	12.1			
6/23	13.4	12.1			
7/14	13.3	12.1			
8/4	13.3	12.0			
8/25	13.3	12.0			
9/15	13.3	11.9			

DATA SHEET #5
DEPTH OF TOPSOIL

The following is a sample data sheet for recording topsoil data.

SOILS
DATA SHEET #5
DEPTH OF TOPSOIL

Mitigation Site: _____

Total Acreage: _____ County: _____ State: ____

Sampling Date: _____ Person(s) Sampling: _____

Soil Sample #	Depth of Topsoil (inches)	Observations
1	6	dark brown, clay loam
2	8	silt loam, bright colored
3	7	moist, sandy loam
4	10	
5	6	
6	6	
7	6	
8	6	
9	8	
10	7	