



**Department of Energy**

**Ohio Field Office  
Fernald Area Office**

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DEC 17 1999

Mr. James A. Saric, Remedial Project Manager  
U.S. Environmental Protection Agency  
Region V-SRF-5J  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590

DOE-0243-00

Mr. Tom Schneider, Project Manager  
Ohio Environmental Protection Agency  
401 East 5<sup>th</sup> Street  
Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

**TRANSMITTAL OF THE DRAFT NATURAL RESOURCE RESTORATION DESIGN PLAN FOR  
AREA 8, PHASE II**

Enclosed for your review is the draft Natural Resource Restoration Design Plan (NRRDP) for Area 8, Phase II (A8PII). The draft NRRDP reflects the goals outlined in the Natural Resource Restoration Plan and the tentative decisions reached during the October 21, 1999, meeting and field tour by the Fernald Natural Resource Trustees (NRT). In addition to the NRRDP, responses to the Ohio Environmental Protection Agency (OEPA) comments on the A8PII conceptual design are also enclosed.

Implementation of the project is planned in two phases. The construction of an access roadway and parking area is planned for implementation this Fall. Expedited approval of the grading portion of this NRRDP (as discussed during the October 21, 1999, meeting) will allow construction activities to begin in the immediate future. The planting portion of this NRRDP is planned for implementation for the Spring of 2000, however, planting will be accelerated during the winter months if plant material is available.

The next Natural Resource Working Group meeting is being proposed for the week of January 10, 2000, to reach concurrence on this NRRDP. In addition to the enclosed NRRDP, the conceptual design for the Northern Pine Plantation Restoration Project will also be discussed so that conceptual design can be initiated.

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Mr. James A. Saric  
Mr. Tom Schneider

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If you have any questions or would like further information, please contact Kathleen Nickel at (513) 648-3166 or Robert Janke at (513) 648-3124.

Sincerely,



Johnny W. Reising  
Fernald Remedial Action  
Project Meeting

FEMP:Nickel

Enclosures

cc w/enclosures:

G. Jablonowski, USEPA-V, SRF-5J  
T. Schneider, OEPA-Dayton (three copies of enclosures)  
F. Bell, ATSDR  
M. Schupe, HSI GeoTrans  
R. Vandegrift, ODH  
F. Barker, Tetra Tech  
M. Clawson  
K. Moore  
D. Sarno, FCAB  
AR Coordinator, FDF/78

cc w/o enclosures:

N. Hallein, EM-31/CLOV  
A. Tanner, OH/FEMP  
P. Yerace, OH/FEMP  
M. Chezik, DOI  
B. Kurrey, USFWS  
D. Carr, FDF/52-2  
T. Hagen, FDF/65-2  
J. Harmon, FDF/90  
R. Heck, FDF/2  
S. Hinnefeld, FDF/31  
T. Walsh, FDF/65-2  
ECDC, FDF/52-7



**RESPONSES TO OHIO ENVIRONMENTAL PROTECTION AGENCY  
COMMENTS ON THE AREA 8, PHASE II ECOLOGICAL RESTORATION DESIGN**

**FERNALD ENVIRONMENTAL MANAGEMENT PROJECT**

Commenting Organization: Ohio EPA  
Section #: Pg. #: Line #: Commentator: OFFO  
Code: C  
Original Comment #: 1

Comment: No seedlings are included. Although we understand that larger trees are to be planted, the inclusion of seedlings is recommended. This will expand the range of successional stages in the restoration and add to the information about the viability of planted seedlings.

Response: Seedlings have been added to the planting plan. DOE is proposing to increase forest patch densities through seedlings. Seedlings will be planted in higher numbers (400 per acre) in anticipation of increased mortality through deer browsing, competition from weeds, etc. Therefore, DOE can not commit to 80 percent survival for seedlings (as it has for saplings).

Action: Include seedlings in the design at a density of 400 seedlings per acre, which would allow for 50 percent survival while still meeting a forest patch density of approximately 450 stems per acre (200 seedlings plus 165 saplings plus 92 shrubs). The exact mix of species to be used will be determined by availability, but will consist of 75 percent dominants and 25 percent associates for each forest type.

Commenting Organization: Ohio EPA  
Section #: Pg. #: Line #: Commentator: OFFO  
Code: C  
Original Comment #: 2

Comment: The proposed planting densities are the lowest that we have seen. These low planting densities are not supported by any reference data and are substantially below those used in the wetland project or the A8P1 plantings. We believe the density should be increased.

Response: Planting densities are proposed to be increased through the use of seedlings.

Action: See Action for Comment No. 1.

Commenting Organization: Ohio EPA  
Section #: Pg. #: Line #: Commentator: OFFO  
Code: C  
Original Comment #: 3

Comment: Remove the planting of Black and Silky willow from the savanna areas 4-7. These areas should have plantings more indicative of savanna. These plantings should include button bush, hazelnut, shrubby St. John's wort, and new jersey tea (shrub plantings). Suggested savanna seed mix is included in Appendix A.

Response: Agree. Willow species will be removed and the listed shrubs will be included in the savanna patches at a density of approximately 34 shrubs per acre. The previously attached seeding mix will be used to the extent possible due to seed availability.

Action: Incorporate shrub plantings and seeding mix into savanna patch designs.

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Commenting Organization: Ohio EPA  
Section #: Pg. #: Line #: Commentator: OFFO  
Code: C  
Original Comment #: 4  
Comment: Add dormant willow plantings to RP3 and RP 4 at numbers >100 and RP1 and RP2 >50.

Response: DOE proposes to use dormant willow cuttings and coir fabric to stabilize cow paths along the Paddys Run bank. Five areas along Paddys Run totaling approximately 2,300 square feet will require stabilization. Based on this area, about 575 willow cuttings will be planted on 2-foot centers.

Action: Include bank stabilization details into the planting design.

Commenting Organization: Ohio EPA  
Section #: Pg. #: Line #: Commentator: OFFO  
Code: C  
Original Comment #: 5  
Comment: Remove Black Locust from the buffer zone planting. It can become a nuisance.

Response: Agree.

Action: Remove black locust from buffer patch.

Commenting Organization: Ohio EPA  
Section #: Pg. #: Line #: Commentator: OFFO  
Code: C  
Original Comment #: 6  
Comment: Add shrub spp (~25) to MM8. It appears to have been left out of this section inadvertently.

Response: Agree.

Action: Add shrub species to MM8.

Commenting Organization: Ohio EPA  
Section #: Pg. #: Line #: Commentator: OFFO  
Code: C  
Original Comment #: 7  
Comment: Shrub species should be added to the buffer strip.

Response: Agree.

Action: Add smooth sumac, fragrant sumac, Carolina rose, and corralberry at a density of 92 shrubs per acre.

Commenting Organization: Ohio EPA  
Section #: Pg. #: Line #: Commentator: OFFO  
Code: C  
Original Comment #: 8  
Comment: Reduce bur oak in savanna to 5 in areas listed with 10 and to 6 in areas listed with 11. These should be of the largest size available (>1.5" caliper).

Response: Agree.

Action: Reduce bur oak densities in savanna patches as specified and obtain the largest size saplings available.

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Commenting Organization: Ohio EPA Commentator: OFFO  
Section #: Pg. #: Line #: Code: C  
Original Comment #: 9

Comment: In savanna areas, plant white oak in upland areas, 3 in each of SV2, 3, 8, 9, and 10, and 4 in SV1. Plant swamp oak instead of white oak in SV 4, 5, 6, and 7.

Response: Agree.

Action: Revise savanna patches as specified.

Commenting Organization: Ohio EPA Commentator: OFFO  
Section #: Pg. #: Line #: Code: C  
Original Comment #: 10

Comment: To upland savanna areas add the following shrubs: hazelnut, shrubby St. Johns wort, new jersey tea, and prairie rose.

Response: Agree.

Action: Revise savanna patches as specified.

Commenting Organization: Ohio EPA Commentator: OFFO  
Section #: Pg. #: Line #: Code: C  
Original Comment #: 11

Comment: Watering may need to extend beyond one year if drought years occur (perhaps to three years).

Response: Agree that watering may be required beyond one year. DOE will commit to watering in the first and second growing season if drought conditions occur. DOE will weigh watering needs against monitoring survival requirements in years after the second growing season.

Action: Specify watering approach as outlined above.

Commenting Organization: Ohio EPA Commentator: OFFO  
Section #: Pg. #: Line #: Code: C  
Original Comment #: 12

Comment: Round up in seeded areas in Spring as well as Fall prior to seeding.

Response: Agree.

Action: Apply herbicide in Fall and Spring.

Commenting Organization: Ohio EPA Commentator: OFFO  
Section #: Pg. #: Line #: Code: C  
Original Comment #: 13

Comment: Will trails be installed in this area? If so, will they be for access to this area only or will they be part of a larger trail system, or both. Of what will they be constructed.

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Response: Trails are proposed through the restored A8PII in the Master Plan for Public Use of the FEMP. DOE is proposing that trails be installed at the end of restoration; therefore, they will not be considered in the restoration design. Trails can easily be added at a later time, since there will be existing access throughout the restored area for watering, maintenance, monitoring, etc.

Action: None required.

Commenting Organization: Ohio EPA  
Section #: Pg. #: Line #: Commentator: OFFO  
Code: C  
Original Comment #: 14  
Comment: The monitoring described is insufficient.

Response: DOE envisions success monitoring as a two-phase process. The first phase ensures that the planting plan was successful in establishing the desired vegetation in the near term. In other words, the monitoring is designed to answer whether the vegetation planted has survived. DOE has proposed monitoring success criteria of 80 percent survival for saplings and shrubs and 90 percent cover for grasses and forbs after three growing seasons. Once these success criteria have been met, the second phase of monitoring would commence to determine whether or not the long-term goals of the Natural Resource Restoration Plan (NRRP) are being met. This phase involves measuring selected plots for sapling growth and volunteer recruitment, as well as wildlife use.

Action: Develop long-term success criteria for inclusion in both the A8PII restoration design and the NRRP.

Commenting Organization: Ohio EPA  
Section #: Pg. #: Line #: Commentator: OFFO  
Code: C  
Original Comment #: 15  
Comment: The maintenance plan must include prescribed burns in the savanna area.

Response: DOE agrees that prescribed burns are most effective and will pursue them as a maintenance activity for the savanna. In the event that prescribed burns are not possible due to health and safety concerns at the site, DOE will commit to periodic mowing of the savanna.

Action: Discuss the use of prescribed burns for maintenance of the savanna.

Commenting Organization: Ohio EPA  
Section #: Pg. #: Line #: Commentator: OFFO  
Code: C  
Original Comment #: 16  
Comment: Add chestnut and blue ash seedlings. Seeds could be planted and growth aided with direct seed plant shelters (see Appendix B for examples from Blue-X<sup>®</sup>).

Response: DOE proposes to grow blue ash from seed in the beech-maple and mesophytic forest types. Chestnuts will be grown from seed pursuant to availability.

Action: Include seeding of blue ash and, if possible, chestnut in the beech-maple and the mesophytic forest types.

Commenting Organization: Ohio EPA  
Commentator: OFFO



Section #: Pg. #: Line #: Code: C

Original Comment #: 17

Comment: Add shingle oak to plant list.

Response: Agree.

Action: Add shingle oak to the oak-maple, mixed mesophytic, and beech-maple forest types.

Commenting Organization: Ohio EPA Commentator: OFFO

Section #: Pg. #: Line #: Code: C

Original Comment #: 18

Comment: Additional detail should be provided on the nursery area design as well as operation.

Response: It has not been determined whether or not a nursery will be established at the FEMP. Therefore, DOE considers nursery details as outside the scope of the A8PII restoration design.

Action: None required.

Commenting Organization: Ohio EPA Commentator: OFFO

Section #: Pg. #: Line #: Code: C

Original Comment #: 19

Comment: The plan should discuss the operation of the material handling area. Details should include expected storage volume and mixing operations.

Response: Agree.

Action: Provide detail in the A8PII restoration design regarding the operation of the material handling area.

Commenting Organization: Ohio EPA Commentator: OFFO

Section #: Pg. #: Line #: Code: C

Original Comment #: 20

Comment: As stated in previous comments, Ohio EPA believes a vernal pool should be added to the design.

Response: Agree.

Action: Provide detail in the A8PII restoration design regarding the addition of a vernal pool.