



Department of Energy

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3910

05 OCT 2001

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

DOE-0022-02

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

Dear Mr. Saric and Mr. Schneider:

**TRANSMITTAL OF RESPONSES TO THE UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY AND OHIO ENVIRONMENTAL PROTECTION AGENCY
COMMENTS AND THE FINAL WETLAND MONITORING REPORT FOR THE YEAR 2000
IN SUPPORT OF THE AREA 1, PHASE I WETLAND MITIGATION PROJECT**

- References:
1. Letter, J. Saric to J. Reising, "A1,P1 Wetland Mitigation 2000 Monitoring Report" dated March 7, 2001
 2. Letter, T. Schneider to J. Reising, "2000 Annual Wetland Monitoring Report," dated March 20, 2001

Enclosed for your approval are responses to the United States Environmental Protection Agency (USEPA) and Ohio Environmental Protection Agency (OEPA) comments and the final Wetland Monitoring Report for the Year 2000 in support of Area 1, Phase I (A1PI) Wetland Mitigation Project. The responses to these comments have already been incorporated into the final report. This report summarizes the first on-site evaluation of six acres of replacement wetlands constructed to partially offset the requirement to construct fifteen acres of mitigated wetlands impacted by the Comprehensive Environmental Response, Compensation, and Liability Act related activities. This monitoring report was developed in accordance to the A1PI Conceptual Wetland Mitigation Plan submitted to the Agencies on March 3, 1999. This report was also developed to comply with the USEPA and OEPA Clean Water Act 404 (b)(1) Guidelines promulgated in 40 Code of Federal Regulations Part 230. The purpose of this report is to determine the progression of the mitigated wetland features and to ensure the wetland replacement acreage is met.

Mr. James A. Saric
Mr. Tom Schneider

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05 OCT 2001

DOE-0022-02

If you have any questions or need further information, please contact Pete Yerace at (513) 648-3161.

Sincerely,



Johnny W. Reising
Fernald Remedial Action
Project Manager

FEMP:Yerace

Enclosures: As Stated

cc w/enclosures:

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**RESPONSES TO U.S. ENVIRONMENTAL PROTECTION AGENCY
TECHNICAL REVIEW COMMENTS ON THE
WETLAND MONITORING REPORT FOR THE YEAR 2000
AREA 1, PHASE I WETLAND MITIGATION PROJECT
(20700-RP-0002, REVISION A)**

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

GENERAL COMMENT

Commenting Organization: U.S. EPA
Section #: Not Applicable (NA) Page #: NA
Original General Comment #: 1
Comment: The document should be revised to include a brief description of the project construction and site revegetation activities as well as the timeline under which they are being completed.

Response: Agree.

Action: The document will be revised to include a brief description of the project construction and site revegetation activities including a timeline.

SPECIFIC COMMENTS

Commenting Organization: U.S. EPA
Section #: 2.4.1 Page #: 2-4
Original Specific Comment #: 1
Comment: The text indicates that a revised planting strategy is outlined in Section 2.5; however, Section 2.5 discusses wetland monitoring results and does not present a revised planting strategy. Section 2.4.1 should be revised to clearly present the revised planting strategy and the rationale for its implementation.

Response: The general approach to the revised planting strategy is outlined in Section 2.5.1. It is agreed that the details of the strategy are not included in the report and should be. The revised planting strategy will be attached to the report as an additional appendix.

Action: The Proposed Strategy for Replacement Planting in the Area 1, Phase I Wetland Mitigation Project (Letter DOE-0967-00 dated August 31, 2000) will be added to the revised monitoring report as an Appendix. A reference will be added to Section 2.5 to the new appendix.

Commenting Organization: U.S. EPA
Section #: 2.4.3 Page #: 2-5
Original Specific Comment #: 2
Comment: The text indicates that staff gauges were placed in Basins 1, 2, and 4 to evaluate water levels. Because all the basins except Basin 8 are designed to have an open water wetland classification (among others), the text should explain why staff gauges were placed only in Basins 1, 2, and 4 and why they are absent from Basins 6 and 7.

Response: Staff gauges were proposed in Basins 1, 2 and 4 because these were the only basins expected to have water deep enough to persist year round. All other channels and shallow basins throughout the wetland (including Basins 6 and 7) were expected to dry up during the hotter, drier parts of the year. Several other parts of the wetland held water throughout 2000, but may not in future years when precipitation is less.

Action: The following text will be inserted after the second sentence of the paragraph.

“Staff gauges were placed in the deeper pools of water contained in Basins 1, 2 and 4 to monitor water levels. These locations were selected because water is expected to persist in these pools year round and other pools are designed to dry up for portions of the year. Sampling locations are identified on the map found in Appendix F.”

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 2.4.3

Page #: 2-5

Line #: 3 and 4

Original Specific Comment #: 3

Comment: In the discussion of water elevation measurement, the text should cite the Appendix F table titled “Water Level and Shallow Well Measurements.”

Response: Agree.

Action: Add sentence in Section 2.4.3 referring readers to results presented in Section 2.5.3 and to the Appendix F table entitled “Water Level and Shallow Well Measurement.”

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 2.5.1

Page #: 2-7

Line #: 6 and 7

Original Specific Comment #: 4

Comment: The text states that “approximately 39 percent of plants were browsed, 4 percent rubbed and 17 percent destroyed.” The text should clarify whether this statement means that 60 percent of the woody plants were impacted or that the 39 percent browsed, 4 percent were rubbed and 17 percent were destroyed.

Response: Agree.

Action: Reword sentence as follows:

“Approximately 39 percent of plants were browsed resulting in varying degrees of damage. An additional 4 percent were damaged (bark scrapes) due to rubs and 17 percent were destroyed.”

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 2.5.1

Page #: 2-7

Line #: 20 and 21

Original Specific Comment #: 5

Comment: The text indicates that tree tubes were placed around the trunk of each tree, but it is unclear whether tree tubes were placed around all trees or just the replanted stock. The text should be revised to clarify this matter.

Response: Tree tubes were placed on every tree that had not been protected previously. When deer rubs were first discovered in the Fall of 1999 during the planting of Section 2, black drain pipe was placed on 1.5 inch caliper stock. Custom ordered tree tubes (i.e., brown,

lighter plastic with vent holes) were also placed on all stock that was replanted in 2000 and some stock planted in 1999 smaller than 1.5 inch caliper.

Action: Text will be edited to say "...around the trunk of every tree to protect from deer rubs..."

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 2.7

Page #: 2-10

Line #: 1 and 2

Original Specific Comment #: 6

Comment: The text discusses installation of grasses and forbs in Basins 3 and 5 as outlined in Table 2-3. The text and corresponding table are unclear as to whether the number of plugs listed is the total number for both Basins 3 and 5 or the number that will be installed in each basin. The text should be revised to clarify this issue.

Response: Agree. The table identifies the total number of plugs purchased and to be distributed between the basins.

Action: The title for Table 2-3 will be edited to read "Total Number of Plugs ..." And the title for Table 2-4 will also be edited to read "Total Number of Shrubs..."

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 2.7

Page #: 2-10

Line #: 8 and 9

Original Specific Comment #: 7

Comment: The text and the table cited (Table 2-4) indicate that a number of shrubs will be planted in Spring 2001 and list the shrub species and numbers. The text and table should be revised to identify the basins or patches in which these shrubs will be planted.

Response: Agree. This information was provided in the report, but did not get referenced in the section. Appendix D contains a map showing patches that are to be planed in Spring 2001.

Action: Add text to paragraph referencing the map in Appendix D. Text will read as follows:

"The map contained in Appendix D identifies patches to be planted in Spring 2001 (patches highlighted).

**RESPONSES TO OHIO ENVIRONMENTAL PROTECTION AGENCY COMMENTS
ON THE DRAFT WETLAND MONITORING REPORT FOR THE YEAR 2000
(20700-RP-0002, REVISION A)**

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

GENERAL COMMENT

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

Comment: Overall, the wetland project has developed into an ongoing progressive system despite the obstacles it has had to overcome. However, this monitoring report seemed to skip over details or the specifics on why the system failed to function in certain areas. For example, a lot of plants were replaced due to deer browsing and drought conditions. But the report failed to provide the "other reasons" behind any failures, such as water in a timely manner during the drought and the emergency measure taken to provide water for the system, deer tubes being poorly placed on saplings causing them to bend and break, the repeated use of ineffective deer browsing control mechanisms, etc. If this information was included in the report, then it would reveal the substantial effort that was put into this project and the obstacles encountered.

Response: The two most significant factors impacting the establishment of the wetland mitigation project in the first year were the drought experienced in 1999 and the impact of the deer. Efforts were made to keep the system watered during the summer of 1999 through the use of water trucks, soaker hoses, sprinkler systems and the gator bags on individual trees. DOE acknowledges that a team dedicated full time to keeping the project watered would have increased survival rates somewhat, but it is almost certain that significant mortality would still have occurred. As indicated in Comment No. 22, the drought of 1999 was classified as Mild in May, Moderate in June, Severe in July and August and Extreme in September. The occurrence of severe drought conditions during the planting and initial establishment of the thousands of trees and shrubs planted in the wetland would result in the loss of plant material under any watering regime. DOE considers that fact that the survival rate was above 70 percent given the weather conditions to be a success given the results of other restoration efforts carried out during the same time in the area. DOE acknowledges that in some isolated cases, tubes installed on individual trees may have negatively impacted the tree. The cases in which a tube impacted a tree are considered isolated and very minor in comparison to the impact of the drought and the risk of destruction by the deer. DOE does agree that the use of repellent sprays in the wetland project has had limited effectiveness with regard to preventing deer browse.

Action: A Lessons Learned sections will be added to the report (Section 2.8) and will discuss the challenges of keeping a large, diverse system watered during drought conditions, improvements that will be implemented regarding the use of tree tubes and the limited effectiveness of deer repellent sprays. Other topics will also be discussed as identified in other comment responses.

SPECIFIC COMMENTS

Commenting Organization: Ohio EPA

Commentator: DSW

Section #: 1.0

Pg. #: 1-1

Line #: 10-12

Code: C

Original Comment #: 2

Comment: The purpose as stated in these lines is related more towards the monitoring than the report. To be more explicit, the monitoring goals as stated in the conceptual plan include providing information to answer the questions: Have the requirements of the reviewing agencies been met, have sufficiently dense wetland plant communities been established, do surface and ground water levels support wetland conditions, is the quality of the surface and ground water comparable to a healthy system, have appropriate animal populations successfully colonized the site, and have wetland soils been created. The report should summarize the answers to the above questions. It should include a summary of data collected and an analysis of that data including an overall assessment of the system that the regulatory agencies can review. The information should be of sufficient detail so that someone familiar with wetland mitigation, but not the site, could interpret the trajectory as being successful or not.

Response: The requirements for monitoring the Area 1, Phase I Wetland Mitigation Project are contained in Appendix 3 of the Wetland Mitigation Design Plan submitted to the Agencies and NRTs on March 3, 1999. The text of the Monitoring Report incorrectly refers to the Conceptual Wetland Mitigation Plan issued on November 6, 1998. The Wetland Mitigation Design Plan outlines the specific goals of monitoring the project as follows: 1. Have the requirements of the reviewing agencies been met? 2. Have sufficiently dense wetland plant communities been established? 3. Do surface and groundwater levels support wetland conditions? 4. Does surface and groundwater quality fall within parameters indicative of a comparably healthy system? 5. Have animal populations adapted to wetland systems successfully colonized the site? 6. Have wetland soils been created? The specific parameters that are to be monitored in the first year of the project include the following: percent survival, percent cover, water levels, water quality, wildlife presence, visual change, soils, nest box cleanout.

It is agreed that the specific goals of the monitoring effort and the specific parameters to be monitored should be clearly stated in Section 1.0 of the report. Further, the answers to the questions outlining the specific goals of the project should also be provided to degree possible at this point in time.

Action: Include additional detail in Section 1.0 of the Monitoring Report as outlined above including revising the reference to the wetland design. Section 2.6 will be expanded to provide answers to the questions outlined as specific goals of the monitoring.

Commenting Organization: Ohio EPA

Commentator: DSW

Section #: 2.1

Pg. #: 2-1

Line #: 12-16

Code: C

Original Comment #: 3

Comment: The monitoring program also requires observations be made such that any problems can be detected as early as possible and corrective actions be taken immediately. Early detection and correction are stressed throughout the conceptual plan.

Response: Agree. Several situations have arisen in the wetland project that have required immediate corrective action and those should be highlighted in the Monitoring Report.

Watering during the drought in the summer of 1999 is one example. Herbicide application to address the outbreak of Phragmites and Cattails is another such example.

Action: The "Lessons Learned" discussion to be added in Section 2.8 of the Monitoring Report will be written to include the examples listed above and others as appropriate.

Commenting Organization: Ohio EPA
 Section #: 2.2 Pg. #: 2-1 Line #: 19-25 Commentator: DSW
 Original Comment #: 4 Code: C

Comment: I would recommend deleting the word "slightly" in Line 20. If the soil removal was a slight modification, achieving planting success would not be so difficult (compare Basin 8 and Area 8, Phase II). I would also include the construction of the borrow pit in Basin 4. There are no units associated with the elevations. A description of the south→north flow in Basins 4→1, north→south flow in Basins 8→1, and the west→east flow in Basin 5→1 should be included.

Response: Agree.

Action: The word "slightly" will be deleted in Line 20. Construction of the borrow pit in Basin 4 will be included. Units (ft) will be included with the elevations. Descriptions of the flow in Basins 4 to 1, 8 to 1, and 5 to 1 will be provided.

Commenting Organization: Ohio EPA
 Section #: 2.3 Pg. #: 2-1 to 2-3 Line #: NA Commentator: OFFO
 Original Comment #: 5 Code: C

Comment: Included in the basin characteristics should be the soil amendment(s) for that basin. This was not included in the construction completion report and needs to be in a permanent document. This, and subsequent reports, should include this information to assist in interpreting the progress of each basin.

Response: Agree.

Action: A description of the soil amendments for each basin will be included in Section 2.2.

Commenting Organization: Ohio EPA
 Section #: 2.3 Pg. #: 2-1 to 2-3 Line #: NA Commentator: OFFO
 Original Comment #: 6 Code: C

Comment: Included in the basin characteristics should be all sources of hydrology inputs and outputs (e.g., perched water connections, pole drains, etc.). These are important characteristics of each basin that help explain the current status.

Response: Agree.

Action: All sources of hydrology inputs and outputs will be included.

Commenting Organization: Ohio EPA

Commentator: DSW/OFFO

Section #: 2.3.1

Pg. #: 2-1

Line #: 29-32

Code: C

Original Comment #: 7

Comment: Hydrology in basin 1 also includes the two conduits connecting perched water to the surface. Referring the reader to Appendix D as well may be useful in orienting the reader. Alternatively a map of basins with surface water flow could be provided separately. As indicated above, each of the basin descriptions should include the soil amendment type.

Response: Agree.

Action: The description of Basin 1 will be expanded to include a description of the conduits connecting the perched water to the surface. Soil amendment type will be added to the description of each basin.

Commenting Organization: Ohio EPA

Commentator: OFFO

Section #: 2.3.2 and 2.3.3

Pg. #: 2-2

Line #: NA

Code: E

Original Comment #: 8

Comment: Section numbers are incorrectly 2.2.2 and 2.2.3.

Response: Agree.

Action: Numbering of sections will be corrected.

Commenting Organization: Ohio EPA

Commentator: OFFO

Section #: 2.3.2 and 2.3.3

Pg. #: 2-2

Line #: NA

Code: C

Original Comment #: 9

Comment: Either Basin 2 or 3, receives significant surface water flow from the ditch east of the north access road and south of the basins. The erosion caused by this flow required installation of erosion matting. The appropriate basin should include a discussion of this flow.

Response: Basins 2 and 5 receive surface water flow from a ditch that runs parallel to the North Access Road bordering the western side of the wetland.

Action: The description of Basins 2 and 5 will be expanded to include specific mention of the surface water flow from this drainage ditch.

Commenting Organization: Ohio EPA

Commentator: OFFO

Section #: 2.3.5

Pg. #: 2-2

Line #: 29-30

Code: C

Original Comment #: 10

Comment: The text references Appendix A, Basin 6 illustrated in Photograph 5 and it should reference Basin 5 being found in Photograph 8. Please correct.

Response: Agree.

Action: Text will be revised to include proper reference to Photograph 8 of Basin 5.

Commenting Organization: Ohio EPA
Section #: 2.3.6, 2.3.7, 2.3.8 Pg. #: 2-3 Line #: 13-23 Commentator: DSW
Code: C
Original Comment #: 11

Comment: These three basins also contain pole drains integral with clay drainage tiles (2 in Basin 7, 1 or 2 in Basin 8).

Response: Basins 6 and 7 both contain pole drain structures integral with drain tile discovered during construction. There were no pole drain structures installed in Basin 8.

Action: The presence of the pole drain structures will be added to the descriptions of Basins 6 and 7.

Commenting Organization: Ohio EPA
Section #: 2.4.1 Pg. #: 2-3 Line #: NA Commentator: OFFO
Code: C
Original Comment #: 12

Comment: Actual computation was made against the design planting rate not the actual planting rate since a number of plants were not installed during the initial installation. This is important to note since it makes survival look worse than it actually was. The text should be revised to discuss this issue.

Response: Agree.

Action: Text will be revised to clarify this point in the report.

Commenting Organization: Ohio EPA
Section #: 2.4.2 Pg. #: 2-4 Line #: 21 Commentator: DSW
Code: C
Original Comment #: 13

Comment: Although it states here that no cover estimates were made, Appendix E does have cover estimates. It is worth keeping these estimates in this report and elaborating in the results and summary sections.

Response: Cover estimates were calculated within each basin for herbaceous meadow and wet prairie communities. No cover estimates were calculated for upland prairie communities as noted in Section 2.4.2. The cover estimates in Appendix E are referenced under Section 2.5.2, Herbaceous Species under Section 2.5, Wetland Monitoring Results. More quantitative cover estimates for all communities will be calculated in 2001.

Action: Text will be added to Section 2.4.2 referring the reader to results in Section 2.5 and Appendix E.

Commenting Organization: Ohio EPA
Section #: 2.4.3 Pg. #: 2-5 Line #: 1-9 Commentator: DSW
Code: C
Original Comment #: 14

Comment: Please refer the reader to Appendix F and Section 2.5.3 for results.

Response: Agree.

Action: A sentence will be added to refer to Section 2.5.3 and Appendix F for results. In addition, a sentence will be added to each of the sections under "Methods" to refer the reader to the "Results" discussion.

Commenting Organization: Ohio EPA
Section #: 2.4.4 Pg. #: 2-5 Line #: 11-16 Commentator: DSW
Code: C
Original Comment #: 15
Comment: Please refer the reader to Appendix G and Section 2.5.4 for results.

Response: Agree.

Action: A sentence will be added to refer to Section 2.5.4 and Appendix G for results. See action from previous comment.

Commenting Organization: Ohio EPA
Section #: 2.4.4 Pg. #: 2-5 Line #: 12-14 Commentator: DSW
Code: C
Original Comment #: 16

Comment: I am concerned that the method of collection of water samples is affecting the measurement of dissolved oxygen. The Horiba U-10 should have a long enough cable on the probe that the probe could be dropped into the water with the sampler holding the readout. This would give a much better analysis of the dissolved oxygen. The draft conceptual plan also specifies recording the presence or absence of aquatic life.

Response: The method currently used to collect dissolved oxygen (DO) is the same method used for all readings taken across the FEMP (e.g., monitoring wells). It is not believed that DO readings would vary significantly if readings were taken directly from wetland pools and channels. Readings taken in the last year should accurately reflect DO readings in the wetland system. Future readings will be taken by directly inserting the Horiba U-10 probe into the wetland channel/pond.

Action: Change method of reading dissolved oxygen during future water quality analysis in the wetland as noted above.

Commenting Organization: Ohio EPA
Section #: 2.4.5 Pg. #: 2-5 Line #: 19-20 Commentator: OFFO
Code: C
Original Comment #: 17

Comment: The text reports the different amendments used in the wetland basins but does not mention which amendment was used in a particular basin. This is significant information in terms of a functioning system and should be included in this Monitoring Report.

Response: Agree.

Action: See Comment No. 5.

Commenting Organization: Ohio EPA
Section #: 2.4.5 Pg. #: 2-5 Line #: 20 Commentator: DSW
Code: C
Original Comment #: 18

Comment: The draft conceptual plan specified that soil sampling begin in year one.

Response: The Wetland Mitigation Design Plan did specify that soil sampling begin as part of the Year 1 monitoring. Section 2.5.5 provides the rationale for not collecting soil samples in 2000.

Commenting Organization: Ohio EPA

Commentator: DSW

Section #: 2.4.8

Pg. #: 2-6

Line #: Tables

Code: C

Original Comment #: 22

Comment: Please include the Palmer Drought Severity Index in these tables, especially in the cases where you state there was a severe drought. They are available from ODNR at <http://www.dnr.state.oh.us/odnr/water/pubs/newsletters/mwirmain.html>. For 1999, the indices were March -0.7, April -1.1, May -1.9, June -2.9, July -3.2, August -3.5, September -4.0, and October -3.0. The Palmer Drought Severity Index values are as follows: Above +4 = Extreme Moist Spell; 3.0 To 3.9 = Very Moist Spell; 2.0 To 2.9 = Unusual Moist Spell; 1.0 To 1.9 = Moist Spell; 0.5 To 0.9 = Incipient Moist Spell; 0.4 To -0.4 = Near Normal; -0.5 To -0.9 = Incipient Drought; -1.0 To -1.9 = Mild Drought; -2.0 To -2.9 = Moderate Drought; -3.0 To -3.9 = Severe Drought; Below -4.0 = Extreme Drought.

Response: Agree.

Action: Information on Palmer Drought Severity Index will be included in Section 2.4.8.

Commenting Organization: Ohio EPA

Commentator: OFFO

Section #: 2.5.3

Pg. #: 2-8

Line #:

Code: C

Original Comment #: 23

Comment: In addition to soil quality issues, water availability is probably the most significant issue facing the wetlands. In order to better understand the impacts of water levels within the complex the following efforts should be put in place: 1) install permanent staff gauges in each basin within the channel and major ponds (based upon group visit); 2) continue monthly water level measurements; 3) report all water level measurements in MSL to standardize and allow comparisons (for groundwater this would be in addition to reporting depth below surface); 4) closely track any adjustments to hydrology of the system in terms of headwall raising, piped in water, etc.; 5) if major adjustments are needed and implemented increase water level measurements around the adjustment. Within next years report provide a detailed description of water levels within basins including but not limited to figures showing standing water coverage based upon the MSL and as-built topography.

Response: DOE agrees that the amount of water entering and being retained in the wetland system is a very critical issue. Thus far, it appears that the wetland is functioning very well with regard to the retention of water in the system. It is acknowledged that some basins (e.g., 2 and 6) could benefit from more water retention. However the benefit of permanent staff gauges in all channels and major ponds may be only marginally beneficial due to the design of the system. The channels and shallow ponds are designed to dry up in the drier portions of the year and as witnessed thus far will fluctuate with rain events. It seems more appropriate to conduct a walk through and decide which basins require higher water levels and then make the appropriate adjustments at the headwalls to facilitate the needed increases in water levels. DOE does agree that close monitoring is warranted, adjustments should be made as appropriate and all results can be reported in MSL. Additional staff gauges and water level monitoring appear to have limited benefit at this point.

Action: Plan adjustments in specific basins to increase water level and provide more coverage of the basin with standing water. Results will be reported in MSL in all future monitoring reports.

Commenting Organization: Ohio EPA

Commentator: DSW

Section #: 2.5.5

Pg. #: 2-8

Line #: 24

Code: C

Original Comment #: 24

Comment: Ohio EPA/University of Dayton were able to collect soil samples during the 1999 and 2000 growing seasons. Unfortunately the soils were not compared to Munsell color charts, however several tests indicative of wetland soils were run. Perhaps, in addition to the Munsell color chart comparison, the site could also pick some of the tests run during those years on the soils. This would provide some continuity from the early years in wetland establishment.

Response: Results of the OEPA/University of Dayton soil analysis can be incorporated into the Monitoring Report as an appendix or by reference. Soil sample will be collected in 2001 and compared to Munsell color charts to identify hydric characteristics. The need to do additional soil analysis should be considered after evaluation of the soil sampling data collected in 2001.

Action: Collect soil samples and compare to Munsell color charts per approach outlined in the 2000 Monitoring Report.

Commenting Organization: Ohio EPA

Commentator: DSW

Section #: 2.5.7

Pg. #: 2-9

Line #: 4-9

Code: C

Original Comment #: 25

Comment: Basin 4 appears to still have goose fence in it, although inundated and it is stated here that goose fence was dismantled. I seem to recall tripping over some in Basin 1 as well, although this may have been removed afterwards. Specifics about which basins were flooded, and at what time of the year, how that was accomplished, etc. should be included. I thought Harold Swiger also removed some reed canary grass from Basin 6 as well. It may also be beneficial to mention the removal of the purple loosestrife from the drainage ditch to the south and west of the wetlands. What about the headwall leakage, repair and adjustment? There should be detail here about which ones were leaking, which were repaired, and which are still leaking. Which had the height adjusted to what and when. Weren't some repairs made to drainage channels as well, for example the drainage along the north access road was cutting a gulley and matting was installed to control erosion.

Response: Agree. A number of management activities were carried out in 2000 as noted in the comment. Management actions such as removal of goose line, removal of reed canary grass and purple loosestrife, flooding of individual basins and repair of headwall features will be noted in the revised report. A description of management actions carried out in the wetland will be included in the revised Monitoring Report.

Action: Add detail in the revised Monitoring Report to address management actions carried out in the wetland project in 2000.

Commenting Organization: Ohio EPA

Commentator: OFFO

Section #: 2.6

Pg. #: 2-9

Line #:

Code: C

Original Comment #: 26

Comment: The actual total number of required mitigation wetland acres is 16.5 as a result of the destruction of the Trap Range wetland. Additionally, until a measurement of the acreage of actual wetlands within A1PI is conducted, it is premature to state that 6.24 acres have been mitigated.

Response: Agree.

Action: The statement will be revised to state that 6.24 acres of new wetlands were planned as part of the project design and that the actual acreage will be determined at some point in the future. The last part of first sentence "...with 8.76 acres remaining to be mitigated." will be removed.

Commenting Organization: Ohio EPA

Commentator: DSW

Section #: 2.6

Pg. #: 2-9

Line #: 26-30

Code: C

Original Comment #: 27

Comment: There should be more discussion of the problems with woody and herbaceous plants here. For example Section 2.4.2 states that a walking survey was conducted but little or no cover of native plants occurred so cover estimates were not made. However native plants did appear, and were patchy. Some note of that needs to be made so that where they were located and the conditions could be available for future reference. There is tremendous value in noting what did and did not occur, where, what the conditions were and some analysis of the reasons why. There was more herbaceous cover in Basin 8, although mostly non-native, and this is probably related to soil organic content since that basin had the most existing topsoil. There is also no mention of the apparent value of bringing in donor plants and muck for the wetlands. Etc, etc, etc, in general there should be more here.

Response: Agree.

Action: Text will be revised to provide further detail.

Commenting Organization: Ohio EPA

Commentator: OFFO

Section #: 2.7

Pg. #: 2-9

Line #:

Code: C

Original Comment #: 28

Comment: Two additional problems which need to be addressed within the document and planned for during the upcoming field season:

- 1) Invasive species within the wetland and appropriate control measures. As stated in a previous comment at least one incidence of Phragmites invasion was found. Additional efforts to control Phragmites and Typha invasions should be detailed here and implemented as soon as practical in 2001.
- 2) The lack of obligate/facultative wetland vegetation coverage within the basins is significant. A discussion of efforts to remedy this problem as well as to monitor success of fixes is needed. A more quantitative approach to monitoring vegetation coverage and type within the basins is needed.

Response: Agree. The new Lessons Learned portion of the report will include a discussion on controlling invasive plants such as Phragmites and Typha. Measures to control invasive plants are planned in early 2001. DOE recognizes the problem with vegetation coverage in the basins and plans to implement management actions to control invasive and promote establishment of native plants. A more quantitative method for monitoring the vegetation in each basin will be implemented in 2001.

Action: Add discussion in revised Monitoring Report on efforts to control invasive species in the wetlands carried out in 2000 and identify the need to take additional measures to control invasives and promote native vegetation will be added to the report.

Commenting Organization: Ohio EPA
Section #: 2.8?? Pg. #: Line #: Commentator: OFFO
Code: C

Original Comment #: 29

Comment: One of the more useful portions of most of the Restoration Research reports and other documents from the FF Natural Resources Group is the Lessons Learned section. Inclusion of a lessons learned section within the annual report will allow for summarization of lessons and transfer of knowledge between projects. In addition, this could be a section which includes the discussion of the use of Adaptive Management in using monitoring data to make decisions regarding project management.

Response: Agree. See Response to Comment No. 1.

Action: A Lessons Learned discussion will be added as Section 2.8 of the report.

Commenting Organization: Ohio EPA
Section #: Appendix F Pg. #: F-1 Line #: NA Commentator: DSW
Code: C

Original Comment #: 30

Comment: Please include the day of the month that the measurements were taken. This will allow the reader to compare measurements with recent precipitation.

Response: Specific data on the day of the month that samples were collected is not available. Data was collected by Craig Straub who is no longer with the company and no record of exact date of collection is available. The 2001 Monitoring Report will contain data on the specific data that samples are collected.

Action: The day of the month will be included in future monitoring reports.

Commenting Organization: Ohio EPA
Section #: Appendix G Pg. #: G-1, G-2 Line #: NA Commentator: DSW
Code: C

Original Comment #: 31

Comment: Please include time of day and weather observations for each sampling event (e.g., 10:00, cloudy with intermittent rain). This will aid in interpreting the data, particularly pH and dissolved oxygen.

Response: Agree.

Action: The time of the day and the weather conditions will be included on the table.

Commenting Organization: Ohio EPA
Section #: Appendix H Pg. #: Line #: Commentator: OFFO
Code: C

Original Comment #: 32

Comment: No reference is made to the wood duck boxes installed in several of the basins. Please include a discussion of the efforts to inspect/cleanout/disinfect these boxes and what nesting activity was documented.

Response: The Wood Duck box in Basin 6 was identified in Appendix H as "OW4-D." Wood Duck boxes in Basins 1, 2 and 4 were not included in the report.

Action: A discussion of the wood duck boxes will be included in Appendix H. The label for the boxes in legend of Appendix H will be more clearly labeled.

Commenting Organization: Ohio EPA
Section #: Appendix I Pg. #: Line #: Commentator: OFFO
Original Comment #: 33 Code: C

Comment: Due to the problems encountered in establishing wetland conditions in a number of basins, the water monitoring should be revised as discussed above and should be conducted monthly from March through November. Additionally, a quantitative method for evaluating wetland vegetation coverage within the basins should be added.

Response: It does not appear that additional water monitoring in the wetland from March through November would help determine that wetland conditions have been established in a number of basins. The water monitoring data collected in 2000 indicated that water was near the surface of all wetland basins in March and October. Clearly not all basins were exhibiting wetland conditions throughout the extent of the basin. Water being present in a shallow monitoring well does not indicate that the entire basin where that well is located has water at or near the ground surface. Soil samples and vegetation samples will help determine the extent that wetland conditions have developed within each basin. DOE does agree that a more comprehensive and quantitative method should be implemented in 2001 to evaluate vegetation coverage with the basins. The result of soil samples and vegetation surveys will generate information on the portion of each basin that is exhibiting wetland characteristics. Once an assessment on the conditions of each basin is obtained, decisions can be made on management actions required in individual basins. Management actions should focus on raising water levels in some basins to inundate soil that currently is dry and establishing desired vegetation in basin dominated by weeds.

Action: Continue water monitoring as outlined in the design plan. Conduct more quantitative vegetation monitoring in 2001. Determine appropriate management actions based on data collected during the 2001 monitoring process.