Livestock Siting Technical Expert Committee
Engineering Subcommittee
Meeting Notes August 31, 2010

Attendance: All engineering subcommittee members attended. Guest observers included a representative from the Dairy Business Association and from the Farmer's Union (Karen Slaughter). The meeting was called to order at 9:30 am. and adjourned at 3:05 pm.

The subcommittee's assignment and the agenda were reviewed.

Question 3; Should the BARNY model, cited in Worksheet 5, be replaced?
The committee began by reviewing the BARNY (currently incorporated into ATCP 51) and BERT (NRCS's Barnyard Evaluation Rating Tool) animal lot evaluation models. WINHUSLE was dropped from consideration because it is not a barnyard-specific tool. BARNY is available on the DATCP website (http://www.datcp.state.wi.us/arm/agriculture/land-water/livestock_siting/pdf/BARNY.xls), but is no longer being revised and is not supported. BERT was developed following the adoption of ATCP 51. It is found on the NRCS website (ftp://ftp-fc.sc.egov.usda.gov/WI/engcad/Spreadsheets/BERT.xls). BERT is used for Comprehensive Nutrient Management Plan (CNMP) farmstead inventories and is supported by NRCS. BERT and BARNY are very similar, and are both derived from the USDA, Agriculture Research Service (ARS) model first developed in 1982 and field tested in Washington County. BARNY was used extensively by the Priority Watershed Program, and was modified by DNR numerous times. BERT and the original ARS model generate a feedlot pollutant load from a single 10 year storm event, while the BARNY model extrapolates that result to generate an annual average pollutant loading. The discussion concluded that BERT includes more specific data inputs and would likely result in more consistent results than BARNY. The subcommittee was favorable to BERT but concluded that the output of the two models would need to be calibrated. It was agreed to continue their evaluation at the next meeting by running the models on four hypothetical feedlots and comparing the results.

Action item: Ed and Dennis will generate BARNY/BERT model results from four feedlot scenarios prescribed by the subcommittee and shown in Attachment 1.

Question 2; Should manure storage evaluation (Worksheet 4) be modified?
Discussion of manure storage evaluations tools centered on two flow charts, one based on Worksheet 4, ATCP 51 and the other on NRCS's CNMP inventory (both attached). The CNMP flow chart was derived from and is a refinement of the ATCP 51 worksheet. The subcommittee discussed the need to refine the ATCP 51 worksheet to narrow the interpretation necessary to characterize an existing storage. For example, the subcommittee felt that the worksheet should include additional guidance to conclude that a facility is in "…good condition and repair..." Current ATCP 51 standards presume a level of trust in professionals that is not matched by regulators' ability to verify that a standard is met. Further, the lack of specificity could result in widely varying results and competitive pressures on engineers and practitioners conducting evaluations. The group agreed to pursue a balance between the judgment of the professional and the verification required. The subcommittee agreed to continue its discussion at the next meeting

by reviewing proposed refinements to the worksheet criteria that each member would submit for consideration.

Action item: Each member will send Dennis (dennis.presser@wisconsin.gov) additional verifying criteria that an engineer or ag-practitioner needs to evaluate to select the check-boxes in Worksheet 4.

Question 4; What changes should be made to Worksheet 5 for feed storage?
The subcommittee acknowledged that ATCP 51 requirements are outdated because they were adopted before development of the technical standards for feed storage leachate and runoff control. NRCS standard 629 has since been adopted and is now being updated by a SOC team. Likewise, CAFOs have all been required to address feed storage leachate and runoff control and have been upgrading their facilities to prevent contamination. In light of these developments, the subcommittee concluded the following:

-Future revisions to ATCP 51 should require that new and significantly altered feed storage facilities meet NRCS 629.
-The ATCP 51 exemption for feeds of less then 70% moisture should be eliminated as it is not protective of water resources nor does it prepare farming operations for their transition to WPDES permits.
-An evaluation tool (risk assessment) for existing facilities, similar to manure storage and feedlots, needs to be developed. An exemption for small storage areas will be explored and needs definition.

Future Topics:
The next meeting will introduce two new questions:

-Question 7; Process Wastewater.
-Question 8; Costs and risks associated with facility closure.

Assignments:

- Tom agreed to provide an overview of process wastewater requirements and to speak on WPDES regulations at the next meeting.
- John Roach agreed to speak on facility closures at the next meeting.
- Ed and Dennis will generate BARNY/BERT model results from four feedlot scenarios prescribed by the subcommittee and shown in Attachment 1.
- Each member is to send Dennis additional verifying criteria that an engineer or ag-practitioner needs to know to select the check-boxes in Worksheet 4.
- Each member is to review the homework materials for the September 14 joint discussion on setbacks.

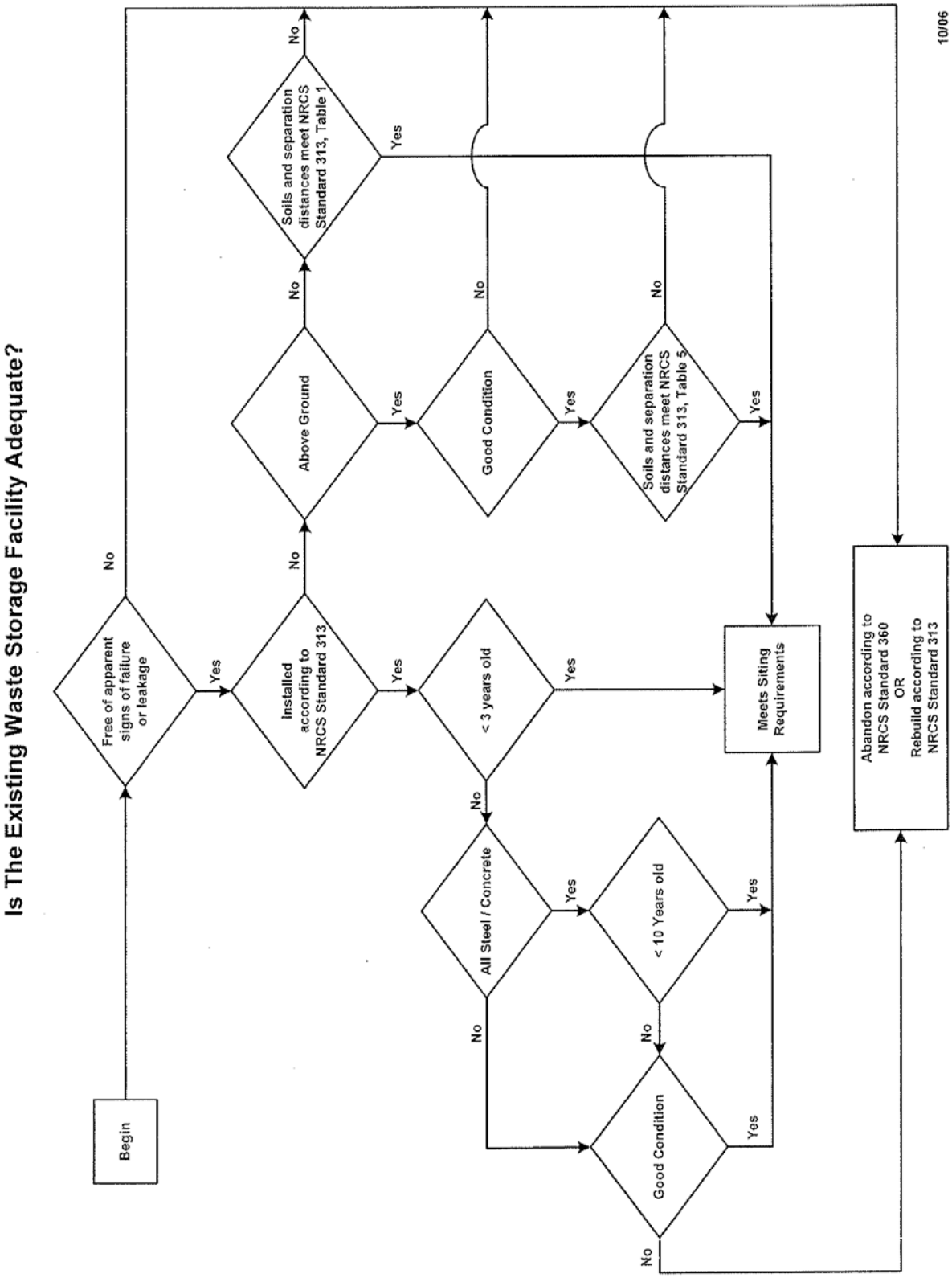
Our next meeting will be at the DATCP office building, lobby conference room, in Madison on September 14, 2010, starting at 9:00 am., and will include a one hour long, joint discussion on setback distances with the odor subcommittee.

Attachment 1: Barnyard Evaluation Rating Tool scenarios

Barnyard Evaluation Rating Tool Scenarios

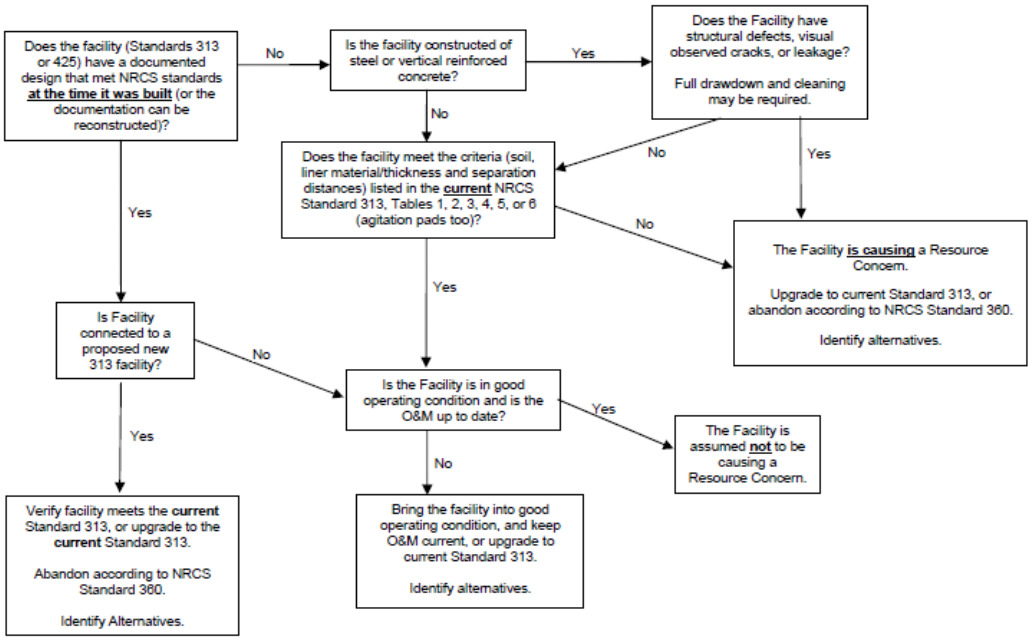
Parameter	**Scenario 1**	**Scenario 2**	**Scenario 3**	**Scenario 4**
Paved lot	8000	20,000		
Earthen lot	0	0	20,000	108,000
Settling basin y/n	n	N	n	n
% time on lot	50	50	50	50
Lot scraped?	y	Y	n	n
Animals on lot	75	75	75	75
Type ½	1	1	1	1
Avg weight	1400	1400	1400	1400
Tributary area	0	0	0	0
RCN				
Roof area	0	0	0	0
Vegetated downstream	Y	Y	Y	Y
Runoff across vegetated	Y	Y	Y	Y
Cover type	Run various	Run various	Run various	Run various
Length	Run various	Run various	Run various	Run various
Width	Run various	Run various	Run various	Run various
Slope	2	2	2	2
Distance to blue line	1001	1001	1001	1001
Distance to lake, wetland, pond	1001	1001	1001	1001
Manure solids leaving	Y and n	Y and n	Y and n	Y and n
Operating condition	good	good	good	good
Edge of lot BERT:				
End of buffer BERT				

Attachment 2: DATCP manure storage evaluation flow chart



Attachment 3: NRCS manure storage evaluation tool

Evaluation of Existing Manure and Wastewater Storage Facility
Assuming Volume at the MOL and length of storage meets 590 plan



Good operating condition: The facility is functioning like it is new. Warning signs, fences, ladders, bars, rails, ventilation, safety stops, or gates are in place and minimize the hazards to animals and people. Environmental protections are in place and functioning. Agitation has not deteriorated the liner or in-place materials. The items listed in the O&M plan are being followed.

Structural defects: Large floor cracks, large wall cracks, concrete corrosion, exposed or rusty rebar, tilting walls, excessive settlement, differential settlement, bulging, bowing walls, etc.

3/4/08