

Nutrient Management Plan Review

Approach, Process & Guidelines

Recommended Plan Review Process

The review of an Act 38 NMP for recommendation for official approval involves three components: **Administrative Completeness Review, Technical Review, and On-Site Review**. In most cases, those three plan review components should occur in that sequence. This sequence is outlined below.

- **Administrative Completeness Review**
- **Technical Review (Initial In-Office Review)**
 - Cover Page & Appendix 1 (Complete Review)
 - Appendix 2 (Initial Overview – Information Gathering)
 - NMP Summary (Initial Overview – Information Gathering)
 - Appendices 9 & 10 (Initial Overview – Information Gathering)
 - Appendix 3 (Complete Review)
 - Appendices 4 & 5 (Complete Review)
 - Appendices 6 & 7 (Initial Review)
 - Appendix 8 (Complete Review)
 - Appendices 2, 9 and 10 & NMP Summary (Complete Review)
- **On-Site Review**
 - Appendices 6 & 7 (Complete Review)
 - Plan Related Operation Records
 - Checklist of Noted Items (Initial In-Office Review)
- **Technical Review (Final In-Office Review)**
 - All NMP Sections (Complete Review)

Within the Technical Review a suggested sequence of reviewing the specific NMP sections is provided. This suggested sequence is based on an approach that attempts to initially obtain a comprehensive birds-eye-view of the entire operation – its components, scope, resources and management. Before zeroing in on animal manure production, crop planning, and other details of the NMP, it is helpful to have in mind a “picture” of the entire operation. This provides perspective in determining if the “pieces” are accurate, realistic and sound.

It is recommended that new plan reviewers start with this sequence. As more experience is gained, each plan reviewer will develop their own approach and process.

During the plan review process observations and questions will arise that will commonly fall into one of the following categories:

- Mistakes, omissions, regulatory conflicts, etc. that the plan writer will be required to correct before the plan can be approved.
- Suggestions or recommendations to the plan writer regarding aspects of the plan that could be improved but are not required to be changed for plan approval.
- Aspects of the NMP which are not clear to the reviewer that will require contacting the planner during the review process in order to obtain needed insight or clarification.
- Specific things that need to be reviewed, checked, or clarified during the On-Site Review.

Each reviewer will need to develop a system of how to record and follow through with each of these types of observations and questions. Many reviewers print a paper copy of the plan and record review notes directly on the plan. This is an excellent approach for recording those issues that must be corrected by the planner. Making separate lists for the different types of observations, questions or notes listed above is another effective approach.

New reviewers should read and become familiar with each section of the NM Technical Manual that corresponds to the section of the NMP being reviewed.

Administrative Completeness Review

Review *Section V: Plan Review and Implementation* in the NM Technical Manual for more detailed guidance on the Administrative Completeness Review and the plan review administrative requirements. When the plan is received, the reviewer should:

- Date stamp the plan using the “Non-Final Form” stamp provided by the SCC.
- Conduct an Administrative Completeness Review within 10 days from the date of receipt of the plan.
- Provide notice to the operator indicating whether all of the required plan elements have been received.

To be considered administratively complete the plan must:

- Be completed using the required version of the NMP Standard Format Spreadsheet.
- Include all the required sections.
- Be for crop year(s) within the required date range.
- Contain all the required information (each section must be complete).
- Include current soil tests (dates) from laboratories using the appropriate tests (Mehlich 3 for P). These soil tests must meet the required acreage requirements.
- Include current manure analyses (dates).
- Include complete and appropriate manure equipment calibration information.
- Have no known issue that would stall the technical review of the plan.

Cover Page

General Cover Page Guidelines

- Conduct a complete technical review of the Cover Page.

For Crop Year(s)

- Act 38 NMPs span three crop years. Plans submitted for review and approval may include three separate annual plans for each crop year or one annual plan for the first crop year with the understanding that annual plans (updates) will be submitted (not for approval) for the two subsequent crop years.
 - Ascertain whether the plan submitted for review and approval contains three separate annual plans or the first of three annual plans.
- Crop years for planning purposes start on October 1. All CAFO plans must be submitted and approved before October 1 for applicable crop years. All CAO and VAO NMPs must be approved before any manure application in a crop year is planned to occur.
- Determine that a separate Excel document was used to plan each crop year. Using one Excel document to plan multiple crop years is not permitted. Evidence that one Excel document was used for multiple crop years will be found primarily in Appendix 4 and the NMP Summary.

Operator's Name, Address & Telephone Number

- The name of each owner of the operation must be included. For example, the names of both husband and wife if they are joint owners.
- Include name of farm if applicable.
- The address should be the mailing address of the primary owner.
- The phone number should be the owner's primary contact number.

Planner's Name, Certification Number, Address & Telephone Number

- Company logos can be included but the name and certification number of the planner submitting the plan must be included.
- The address should be the business mailing address of the planner.
- The phone number should be the planner's primary contact number.
- Check the PAPlants website to verify that the planner is currently certified. The name of the list you want is named NM Certified Specialist Search.

Administratively Complete Date

- This is to be left blank in the submitted plan. The date is entered by the plan reviewer when the submitted plan is determined to be administratively complete.

Plan Approval Date

- Left blank in submitted plan. Completed by reviewer when the plan is approved by the CD BOD or SCC.

Plan Update Submission Date(s)

- This is to be left blank in the submitted plan update. Because plan review and approval is not required, the public specialist receiving the plan update would enter the date the plan update is received.

Appendix 1

General Appendix 1 Guidelines

- Conduct a complete technical review of Appendix 1.
- Review the NM Technical Manual for guidance on how to administrate and review plans for the different programs.
- The reviewer must confirm during the on-site review that the planner has reviewed the NMP with the operator; at a minimum: the NMP Summary, Appendix 1, and Appendix 8. If the planner failed to review the plan with the operator, the reviewer must inform the Commission certification program staff of this fact.

Program Type Checkoff

- Does the program designation provide sufficient direction on the how the plan must be reviewed?
- This may direct coordination with another agency for certain plan submission notifications and review activities.

Crop Year Checkoff

- Determine that all the required plan sections have been submitted, particularly for 3-year plans.

Verifications

- Have all the necessary verifications been confirmed and noted?
- The reviewer should confirm the existence and location of the Emergency Response Plan during the on-site review of the plan.
- An Act 38 NMP for a farm that does not have a Conservation or Ag E&S Plan meeting the requirements of Chapter 102 cannot be approved.
- Are rented acres properly documented in Appendix 2?

Signatures, Dates, and Operator Title

- Are appropriate signatures and operator titles included in the submitted plan?
- This is one of the items for the administrative completeness review of the plan.

Appendix 2

General Appendix 2 Guidelines

- Begin with an initial overview of Appendix 2 with the purpose of gathering information that will be helpful in the technical review of Appendices 3, 4 and 5 and the on-site review of Appendices 6 and 7.
- The final complete technical review should be done after the above reviews have been completed.
- Appendix 2 serves two very critical purposes:
 - It allows those who have no or little knowledge of the operation to “know” the operation. This part of the plan is not for the operator, but for the reviewer. It should paint a comprehensive detailed picture of the operation – location on the landscape, acreage size, cropping system, animals on the operation, housing and manure handling systems, manure storages and management, manure spreading equipment and calibration, and manure sampling procedures.
 - It provides details about the operation that are integral to the development of the plan and necessary in evaluating the accuracy of the plan.
- For each of the sections answer these questions:
 - Are required information items missing or incomplete? Please note that all required information that needs to be included is shown in the direction boxes in the NMP.
 - Are there “gaps” in the operation “picture” that you think should be filled in? Note: The planner may have provided all the required information, but did not tie it all together adequately. Don’t hesitate to call the planner with some clarification questions.
- Refer to the Operation Maps where applicable to compare and confirm the information provided.

Operation Description

- The most common issue is incomplete or missing information. For example:
 - Each manure group in the plan is not described.
 - Crops are listed, but the rotation information is missing.
- Reviewers must insist that planners provide, at minimum, complete, detailed information for each of the categories listed in the standard Act 38 nutrient management plan.

County(s)

- Ensure that all counties included in the plan’s land base are listed.

Name of Receiving Stream(s)/Watersheds

- Every NMP must indicate a “blue line stream” regardless of distance from operation.

Notation of Special Protection Waters

- Reviewers should have a list of Special Protection Watersheds in their county. Ensure the accuracy of this notation.

- If Special Protection Watersheds are noted confirm that all operation fields in these watersheds are noted in Appendix 5: Phosphorus Index and evaluated with Part B of the Index.

Operation Acres

- Total Acres
 - The NMP must note the acreage of all the lands that are an integral part of the animal operation.
 - These acres may be owned or rented and must be land under the management control of the operator.
- Total Acres Available for Nutrient Application Under Operator's Control
 - The NMP must note the total acres, owned and rented, that will receive nutrients during the normal cropping rotation.
 - This acreage number is used in the AEU/Acre calculation.

Names & Addresses of Owners of Rented or Leased Land

- The NMP must include the names and addresses of owners of the rented and leased land.

Existing Manure Storages & Capacity

- The most common issue is incomplete or missing information.

Manure Application Equipment Capacity & Practical Application Rates

- The plan should list here the application equipment used, the specific calibrated rates, and calibration method used to determine these rates. Specific details such as equipment models, settings, speeds, etc. are recorded in the NMP Summary. Ensure that there is consistency between the listed application rates.
- The calibration records should be reviewed during the site visit part of the review process to confirm what is recorded here.
- If a custom applicator is used, the plan must include a statement to this effect and that the application rates included in the plan can be achieved by the custom applicator's equipment.

NMP Summary

General NMP Summary & Summary Notes Guidelines

- Begin with an initial overview of the NMP Summary with the purpose of gathering information that will be helpful in the technical review of Appendices 3, 4 and 5 and the on-site review of Appendices 6 and 7.
- The final complete technical review should be done after the above reviews have been completed.
- Review of this section provides an overview of the implementation of the nutrient management plan on the operation. Remember this is what the farmer will reference in implementing the plan.

- Most of the information in this section is imported from other sections of the plan.
- Therefore, don't get bogged down in a line-by-line, column-by-column review of the imported data, but do a fairly quick overview of the information.
- The litmus test of this section is - can the farmer use the summary, notes, farm map and have the information they need to manage and apply their manure.
- This part of the plan must be reviewed with the farmer by the planner. During the on-site visit part of the plan review, it must be determined that this review has taken place. A plan cannot be approved which was not reviewed with the farmer to ensure he understands and agrees with it.

NMP Summary

- The overview approach to this section is two-fold:
 - Look over the summary with the "operation picture" developed in Appendix 2. Are the crops, manure types, manure groups, pasture management, application rates, etc. consistent with what you already "know" about the operation?
 - Look for things that might merit a closer review in other sections of the plan.
- Some common things to look for include:
 - Fields grouped into CMU or divided fields.
 - Fields included on the Operation Map but missing from the summary.
 - Acreage inconsistent with Operation Map.
 - Notation of pastures.
 - Crops not consistent with the crop rotation information.
 - Manure groups not consistent with the manure group information.
 - Manure groups with the season in the title, but applied in a different season.
 - Application seasons that are impractical, i.e., summer application to corn.
 - Manure application rates inconsistent with calibration information.
 - Extremely low application rates or rates in excess of 9000 gallons/acre.
 - Incorporation time that is inconsistent with conservation tillage requirements on the operation.
 - Notation of starter fertilizer programs or absence of starter fertilizer programs for crops, such as corn, that use starter.
 - Notation of how supplemental fertilizer is handled in the plan.
 - Existence of negative N balances.
- Crop Year – This is the first of five data entry parts of the NMP Summary.
 - Ensure that each nutrient application summary chart only addresses one crop year.
 - Total acres, owned acres, and rented acres need to be entered and match the acres that are detailed in Appendix 2.

Animal Equivalent Units

- The number is calculated from data input in Appendix 3 of the spreadsheet and noted in the Nutrient Management Plan Summary.

Animal Equivalent Units Per Acre

- This number is calculated from data input in Appendix 3 of the spreadsheet.
- There is no difference in the plan review process or requirements for CAOs and VAOs. However, you should be aware of the differences that you would expect to see in the plan itself.

NMP Summary Notes

- Ensure that pastures and winter application CMU/Fields have the required information included in the notes. Notes are also required for crop management units that are receiving manure from small quantity manure groups and when combined manure application rates exceed 9,000 gallons.
- There are no additional requirements for the notes section; therefore, the remainder of the notes section is not “reviewable”. However, read the remainder of the notes and where appropriate note possible suggestions to the planners where the notes could be improved to better serve the farmer, or items, like application setbacks, which could be included.

Manure Spreader Calibration Notes

- Ensure that the required information is provided for each application included in the plan.

Manure Management and Stormwater BMP Implementation Summary

- This chart must include all BMPs listed in Appendices 6 and 7. At this point simply note what they are. During the review of Appendices 6 and 7 which include the onsite visit part of the review these BMPs should be confirmed as accurate and complete.
- All BMPs should include the specific practice name and code number from the PA Tech Guide. In some cases, specific management changes or actions may be listed in Appendices 6 and 7 which are not official BMPs. In those cases, the code column should be left blank or have an NA noted.
- General planning or record keeping requirements such as soil and manure testing, should not be included in the BMP chart.

In-Field Manure Stacking Procedures

- Operations not using this practice must indicate this with a statement such as, “no field stacking of manure will take place on this operation”.
- Operations using this practice must include guidance for locating and forming the stacks and note that the stacks must be covered if in the field for more than 120 days.
- The Operation Map must include the location of these stacking sites.
- During the onsite visit part of the plan review, these sites should be evaluated to determine that the requirements outlined in Supplement 17 are being met.

Additional CAFO Requirements

- If the operation will be field stacking manure, then this section of the plan must indicate that manure will need to be covered if stacked for more than 14 days, unless the manure is covered with an impermeable cover.

- If the operation will be storing manure (liquid or solid) over the winter, the winter manure storage capacity and useable space for all storages must be documented in this section of the plan. For liquid manure storages the winter manure storage capacity planning level must be expressed in feet. Solid manure storages require a narrative description that details the planning and management of the manure over winter, the anticipated manure production, and the solid manure storage (s) capacity. The usable storage height and usable storage volume in the storage facility on December 15 needs to be detailed in order to demonstrate that the operation will have adequate storage space to get through the winter storage period. Supporting information and calculations must be documented in Appendix 10.

Proposed Manure Storage Description

- This section must be completed if the operation is proposing a new or expanded manure storage facility. This section does not address existing manure storage facilities listed in Appendix 2.
 - Are required information items missing or incomplete?
- The location does not need to be described in this section of the plan but must be indicated on the attached farm map.
- For proposed storage facilities that will require a setback waiver (see *Section III: Minimum Standards for Manure Storage Facilities* in the Tech Manual), the plan should not be approved until the waiver request has been approved by the relevant agency (generally the conservation district) or signed by the neighbor for property lines.

Description of Planned Alternative Manure Technology Practices

- This section is only required to be completed if the operation will implement an alternative manure processing or treatment technology on the farm.
 - If there are planned alternative technologies, are required information items missing or incomplete?

Exported Manure Summary

- Operations exporting manure must include a brief description of the exporting arrangements. Operations not exporting manure should include a statement to that effect.
- Appendix 8 will be reviewed later for the specific details of the exporting arrangements.

Operator Management Map

- Does the Operation Map(s) include all the required information? Are each of the required features clearly identified? Is the required legend complete and clear?
- Maps are only valid if they can be read. Sometimes these maps are too dark or they have other problems because they are copies of copies that they cannot be read and therefore should not be accepted.
- Determine if the fields and acres on the map, match the field acres in the plan. You do not need to check every field, but a random sample is adequate.

- If fields are grouped in the plan, the map should give some indication if the grouping makes sense.

Appendix 9

General Appendix 9 Guidelines

- Begin with an initial overview of Appendix 9 with the purpose of gathering information that will be helpful in the technical review of Appendices 3, 4 and 5 and the on-site review of Appendices 6 and 7.
- The final complete technical review should be done after the above reviews have been completed.

Considerations

- Soils and topographic maps are required for all lands (owned or rented) included in the plan.
- Ensure that the Soils Map includes the operation and field boundaries, soil types and slopes with a soil's legend. Review the soil types to become familiar with associated properties and production capabilities (use Table 1.1-1 in the Penn State Agronomy Guide).
- Ensure that the Topographic Map drawn to scale and include at a minimum the operation boundary lines. The maps should be printed so that the elevations on the topo lines can be read. Sometimes these maps are zoomed in too close that you do not get the topo line elevations showing up on the printed map, which is not acceptable.
- Review both maps to get a feel for the lay of the land, water flow, and related manure management concerns.
- Note if P Index "contributing distance" lines are included. These, while not required, are helpful in reviewing the transport factors in the P Index.

Appendix 10

General Appendix 10 Guidelines

- Begin with an initial overview of Appendix 10 with the purpose of gathering information that will be helpful in the technical review of Appendices 3, 4 and 5 and the on-site review of Appendices 6 and 7.
- The final complete technical review should be done after the above reviews have been completed.

Considerations

- Note things that will be included in Appendices 3, 4 and 5 such as bedding or rainwater calculations.

- Considering what is already known about the operation and its management is there required information missing. For example, if winter application of manure was noted in the NMP Summary, then the winter application matrix should be included.
- Explanations or background information regarding unique aspects of the plan.

Appendix 3

General Appendix 3 Guidelines

- The complete technical review of Appendix 3 should follow the initial overview of the NMP Summary and Appendices 2, 9 and 10. Compare the following for consistency:
 - NMP Summary Table (manure groups, application seasons, pastures & uncollected manure)
 - NMP Summary Notes (pasture/grazing & winter application notes)
 - Proposed Manure Storage Description (if applicable)
 - Appendix 2: Operation Description (manure group management)
 - Appendix 2: Existing Manure Storages & Capacity (manure group management during storage manure removal, manure group sampling procedures)
 - Appendix 10 (rainfall additions worksheet, documentation of animal weights, bedding calculations, wastewater calculations, small quantities of manure) as necessary throughout the review of Appendix 3.
- Scan Appendix 3 to make sure there are no obvious spreadsheet errors indicated by “unusual” words and/or symbols.

Manure Production Inventory Method

- Note whether manure production inventory is determined by calculation or the use of operation records.
- After 3 years of implementation of the initial plan for an operation, manure inventory in all future plans should be based on operation records.

Manure Groups

- Ensure that the manure groups and the associated animal groups are consistent with the descriptions in Appendix 2.
- Ensure that the manure group determination is consistent with the guidance provided in the Nutrient Management Program Technical Manual.

Manure Analysis Information

- Ensure that all manure groups have manure analysis values and not book values unless the manure group is exempt or permitted a one-year variance as outlined in the Act 38 regulations and the Nutrient Management Program Technical Manual. For manure groups using the one-year variance, ensure that documentation is included in the plan specifying when the sample and analysis will be obtained.
- Ensure that the most recent manure analysis for each manure group entered in the Manure Average Input page is current within one year. Ensure that the previous 4 years

of manure analysis results, if applicable, are entered in the Manure Average Input page. Ensure that the manure analysis dates are consistent with the manure sampling procedures outlined in Appendix 2.

- The percent solids value must be entered as an actual numerical value in the spreadsheet. The < or > symbols can never be used with the numerical value.
- All manure reports used to report the manure nutrient values must be maintained on the operation or included in Appendix 10 and must be verified during the on-site evaluation.

Manure Group Description: Site & Season Applied

- Ensure that the site designations are the specific storage facilities or sites where manure is removed for land application.
- Ensure that the specific season of application (spring, summer, early fall, late fall or winter) is noted.

Animal Group Information: Type, Number and Weight

- Ensure that animal numbers are consistent with the descriptions in Appendix 2.
- Ensure that animal weights are consistent with Standard Animal Weights, and if different, that adequate documentation is provided in Appendix 10.

Uncollected Manure Information

- Ensure that the uncollected manure inputs (days and hours/day on pasture) are consistent with the information provided in the NMP Summary Notes for the pasture fields.
- **SPREADSHEET QUIRK:** Note animal groups whose grazing season spans multiple manure group seasons. If the animal groups in these scenarios are not given different names in each manure group, the spreadsheet will automatically note that the manure is already allocated for every manure group other than the first one, and that volume of uncollected manure will not appear in Appendix 4 for allocation.

Manure Volume Additions

- Compare values for bedding, washwater, and rainwater with documentation in Appendix 10.
- Check Rainfall Additions Worksheet inputs for consistency with information provided in Appendix 2 and the manure group determination in Appendix 3.

Manure Allocation Balance & Manure Exported Off-Farm

- Note positive numbers in the Manure Allocation Balance row. Positive numbers indicate manure that has not been allocated for land application or exported off the farm. Determine that the amount of unallocated manure does not exceed 5% of the total amount of manure collected in the manure group.
- Note negative numbers in the Manure Allocation Balance row. Negative numbers indicate manure that has been over-allocated. Ensure that the amount of over-allocated manure is within the allowances outlined in the Nutrient Management Program Technical Manual.

Appendix 4

General Appendix 4 Guidelines

- The complete technical review of Appendix 4 should follow the initial overview of the NMP Summary and Appendices 2, 9 and 10 and the complete review of Appendix 3. In particular, compare the following for consistency:
 - Appendix 2: Operation Description (crop rotation - crops, sequence and years)
 - Appendix 3 (manure groups and season applied)
 - NMP Summary: Manure Spreader Calibration Notes (calibrated rates)
 - NMP Summary: Exported Manure Summary
 - NMP Summary: Operation Maps
- Refer to Appendix 10 and the soils and topographic maps as necessary.
- Scan Appendix 4 to make sure there are no obvious spreadsheet errors indicated by “unusual” words and/or symbols.

Keep in mind overarching considerations:

- Does the allocation of nutrients and manure management practices reflect sound agronomic and nutrient management principals?
- Are environmental concerns adequately considered?

Make an initial check for the use of multiple applications.

- Are the multiple manure applications in the correct sequence for the crop year?
- Do the “nutrient balance after manure” values for the first (or prior) manure application match the “net nutrients required” values for the second (or next) manure application?
- There should be no final nutrient balance for multiple applications until the final application.

Make an initial check for the use of double crops.

- Double crops need to be planned separately and in the correct sequence during the crop year. The winter crop needs to be planned before the summer crop for the spreadsheet to allocate the N carryover to the summer crop.

Answer the following questions for each of the following Appendix 4 input values:

- **Crop Year** – Crop year consistency with timing of plan submission should have been completed during the NMP Summary review.
- **CMU/Field ID** – Field ID consistency with the farm maps should have been completed during the NMP Summary review. Are multiple fields combined into one CMU? If so, do these fields have the same crop, a unique management history, similar production

capacity, and are they managed distinctly as a unit? Are single fields subdivided into multiple CMUs? If so, what is the reason for this subdivision and is it realistic?

- **Acres** – Acreage consistency with the farm maps should have been completed during the NMP Summary review. Is pasture acreage accurate due to significant heavy use areas or wooded areas that should be accounted for?
- **Soil Test Report Date** – Are report dates within three years of when submitted? Are there soil test reports for multiple fields (same date and values for more than one field), and if so, are they for 20 acres or less and do they meet the requirements listed above for combining fields into a CMU? Soil test reports should be evaluated during the plan review site visit.
- **Laboratory Name** – Is the lab one who commonly does business in Pennsylvania? If the lab is not a common one, do they use the appropriate analytical tests.
- **Soil Test Levels** – Are soil test levels consistent with farm history? Are there any low (acidic) pH levels?
- **P Index Part A** – Are the selections accurate? Are they consistent with ppm P levels, proximity to streams on operation maps, special protection watersheds, and significant management changes on the operation?
- **Crop** – Crops grown on the operation should have been noted during the NMP Summary review. Are the selections correct for legume crop fields receiving manure?
- **Planned Yield** – Are yields realistic?
- **Soil Test Recommendation** – Check if user recommendations were used in place of PSU recommendations? If so, are the recommendations consistent with Penn State AASL recommendations? This consistency check can be done quickly by comparing the nitrogen recommendations in the plan with the N recommendation tables in the Agronomy Guide and recommendations for soil test levels >50 ppm P. Are the appropriate recommendations selected for double crops?
- **Other Nutrients Applied** – The type and number of starter fertilizer programs or other planned fertilizer programs regardless of manure should have been noted during the NMP Summary review.
- **P Index Application Method** – Has a method been selected and is it accurate?
- **Manure History Description** – Does the entire range of histories across the fields seem consistent with the crop rotation described in Appendix 2?

- **Legume History Description** – Are there legumes in the rotation? Do the residual amounts seem realistic? Do the rotated acres and corresponding legume residuals seem (quick assessment) consistent with the described crop rotation? In a double crop scenario, is the legume residual applied to the summer crop and not the winter crop?
- **Manure Group** – Are the manure group selections consistent with agronomic considerations (season of application, type of crop, etc.)?
- **Application Season/Application Management** – Application season and management and consistency with the crop (or cover crop) receiving manure should have been considered during the NMP Summary review. Are multiple manure applications to one field in the correct sequence?
- **P Index Application Method** – Has a method been selected and is it accurate?
- **P Index Value** – All fields requiring Part B of the P Index should have a value in this field. Note any “PI Incomplete” messages. Fields with the “PI Incomplete” message will also have the same message in Appendix 5 in the P Index Value row (30). The cause of this message is missing information in the Appendix 4 Input page for that field. Either one or more of the three “P Index Application Method” selections have not been selected or one or more of the “P Index Transport Factors” have not been entered. See Appendix 5 – P Index Value for more detail.
- **Planned Manure Rate** – The planned manure rates selected and their consistency with calibrated rates noted in Appendix 2 should have been determined during the NMP Summary review. Are the planned rates under the appropriate balanced rate – always N and P as required by the P Index? For pastures, is the planned rate the actual rate per acre of the amount of calculated uncollected manure from Appendix 3? Manure rates over 9000 gallons per acre should have been noted during the NMP Summary review. Manure spreader calibration records should be evaluated during the plan review site visit.
- **Supplemental Fertilizer** – The approach used to address supplemental fertilizer should have been noted and evaluated during the NMP Summary review.
- **P Index Application Method** – Has a method been selected and is it accurate?
- **Other Items** – Are final nutrient balances under the required (N or P) net requirements?

Appendix 5

General Appendix 5 Guidelines

- The complete technical review of Appendix 5 should follow the initial overview of the NMP Summary and Appendices 2, 9 and 10 and the complete review of Appendices 3 and 4.
- Refer to Appendix 10 and the soils and topographic maps as necessary.
- Scan Appendix 5 to make sure there are no obvious spreadsheet errors indicated by “unusual” words and/or symbols.

Source Factors

- All source factors are entered from Appendices 3 and 4. Consistency of Fertilizer and Manure Application Methods with Manure Application Season and Management should have been checked in Appendix 4.
- Ensure that pastures have surface application methods (0.6 or 0.8).
- Fields within 150’ of receiving waters should be evaluated more carefully.

Transport Factors

- Are all transport factors entered? Check for the “Check Transport” message in the Transport Sum rows (27 & 29). This message indicates that one or more transport factors were not entered in the Appendix 4 Input page for that field.

Answer the following questions for each of the following Transport input values:

- **Erosion** – The erosion value used in the P Index should be Actual (A) Soil Loss and not Tolerable (T) Soil Loss and should be determined by using the Revised Universal Soil Loss Equation (RUSLE). What is the source of the soil erosion values? Look for RUSLE calculations in Appendix 10 or the Conservation or Ag E&S Plan. The following inputs should raise questions: erosion values that exceed 5 T/A (maximum “T” value in Pennsylvania) and the same erosion value for all fields. This probably means “T” has been used for all fields. It is important to check 1) if the Conservation or Ag E&S Plan has been fully implemented to “T”, and 2) if the actual erosion values are from the Conservation or Ag E&S Plan or calculations. If actual soil loss values are not available, the planner must contact the regional nutrient management coordinator. The direction provided by the coordinator should be noted in Appendix 10. Verify field condition during plan review site visit, especially for fields within 150’ of receiving water.
- **Runoff Potential** – Review the soils map and information. Evaluate more closely fields within 150’ of receiving waters. Spot check other fields for consistency based on soil types.
- **Subsurface Drainage** – Review any information that may be submitted with the plan. Most likely this information will need to be verified during the plan review site visit.

- **Contributing Distance** – Are the contributing distance values entered consistent with the field boundaries, water bodies, and buffers on the farm maps? Ensure that all fields within 150’ of receiving water have been identified. Check buffer conditions during site visit. During the plan review site visit evaluate pastures to ensure that the five specified buffer conditions have been met. Spot check other fields for consistency with farm maps.
- **Modified Connectivity** – Refer to the Operator Management Map for existing BMPs. During the plan review site visit confirm these with visual assessment and by asking the farmer.

P Index Value

- Note any “PI Incomplete” messages. Fields with the “PI Incomplete” message will also have the same message in Appendix 4 in the P Index Value row (30). The cause of this message is missing information in the Appendix 4 Input page for that field. Either one or more of the three “P Index Application Method” selections have not been selected or one or more of the “P Index Transport Factors” have not been entered. In addition to the “PI Incomplete” message, the following messages will appear with specific missed inputs in the Appendix 4 Input page:
 - “P Index Application Method” for starter fertilizer: “E” in row 13, “Check Fert” in row 16, and “Check Source” in row 21.
 - “P Index Application Method” for supplemental fertilizer: “E” in row 15. Note: This is the only error message that will appear for this missed input.
 - “P Index Application Method” for the manure application: “E” in row 18, “Check Manure” in row 20, and “Check Source” in row 21.
 - “Transport Factors”: “Check Transport” in rows 27 and 29.

Appendix 6

General Appendix 6 Guidelines

- Conduct an initial in-office technical review of Appendix 6 and prepare a list of specific things to evaluate and questions to answer during the on-site review.
- Conduct the on-site review. Refer to the On-Site Review Guidelines & Checklist below.

Date of Site Evaluation

- The date the site evaluation was conducted must be recorded. Failure to conduct the site evaluation or record the date renders the NMP incomplete.

Statement Documenting Areas Evaluated During Site Evaluation

- Each specific site or area evaluated must be listed in this section. General statements are not adequate, i.e., “...all the manure storages were evaluated...”
- This list and description needs to be farm specific. Generic “canned” statements are not acceptable.

Identification of Inadequate Manure Management Practices and Conditions

- Each identified inadequate manure management practice must be listed with the associated site or area.

BMPs to Address Manure Management Problem Areas

- Each inadequate manure management practice must be addressed by an agreement to install appropriate and adequate BMPs (example: “Install a Heavy Use Area Protection – 561) or to change management (example: “Scrape the barnyard weekly.” or “Move the round bale feeder off the streambank.”)
- The BMPs must be included on the Manure Management and Stormwater BMP Implementation Summary table in the NMP Summary. Reference to BMPs must be consistent with the practice names, codes and units used in the PA Technical Guide.
- Requirements of ongoing NMP implementation and record keeping, such as soil testing and manure testing should not be listed in summary table.

Appendix 7

General Appendix 7 Guidelines

- Conduct an initial in-office technical review of Appendix 7 and prepare a list of specific things to evaluate and questions to answer during the on-site review.
- Conduct the on-site review. Refer to the On-Site Review Guidelines & Checklist below.
- An Act 38 NMP for a farm that does not have a Conservation or Ag E&S Plan meeting the requirements of Chapter 102 cannot be approved.

Date of Site Evaluation

- The date the site evaluation was conducted must be recorded. Failure to conduct the site evaluation or record the date renders the NMP incomplete.

Statement Documenting Areas Evaluated During Site Evaluation

- A statement documenting the areas evaluated on all crop fields and pastures included in the plan, both owned and rented.

Identification of Critical Runoff Problem Areas

- The location of each identified critical runoff problem area must be listed. These are areas defined as non-vegetated gullies or ditches that discharge directly to a stream or other water body.
- A common mistake is to list more minor erosion problems on the farm. These are addressed in the overall Chapter 102 Conservation of Ag E&S Plan.

BMPs to Address Critical Runoff Problem Areas

- Each critical runoff problem area must be addressed by an agreement to install appropriate and adequate BMPs.

- The BMPs must be included on the Manure Management and Stormwater BMP Implementation Summary table in the NMP Summary. Reference to BMPs must be consistent with the practice names, codes and units used in the PA Technical Guide.
- Requirements of ongoing NMP implementation and record keeping, such as soil testing and manure testing should not be listed in summary table.

Appendix 8

General Appendix 8 Guidelines

- Conduct an initial in-office technical review of Appendix 8 and prepare a list of specific things to evaluate and questions to answer during the on-site review.
- Conduct the on-site review for operations exporting manure to known operations for agricultural land application. Refer to the On-Site Review Guidelines & Checklist below.

Exporter Agreements

- Ensure that the plan includes appropriate agreements for each importer or broker taking the manure that are fully completed, signed and dated.
 - If using a broker, ensure that the broker is a certified broker under Act 49. Check on the PAPlants website or with the staff at PDA.
 - When using a broker, manure cannot be applied back on the exporting farm (no longer exported manure) or to land the broker manages (the broker is then an importer).
- Make sure that Nutrient Balance Sheet Summary and the Nutrient Balance Worksheets are completed for each importer.
 - Give these NBSs a quick review to see if there are any obvious issues that indicate they were developed inappropriately or inaccurately.
 - Ensure the NBS information is complete regarding the NBS planning option used:
 1. If option 1 used, make sure P applications are within the appropriate phosphorus removal rate.
 2. If option 2 is used, make sure all the soil tests are listed on the farm and all the tests for the selected fields don't exceed 200 ppm P.
 3. If option 3 is used, make sure the P Index is complete for each field using this option.
- Ensure maps are included with the NBSs and that the appropriate setbacks are delineated on the maps. This does not require a site visit on each importer. If there are concerns an on-site visit should be conducted. You do have the right to coordinate with the importer to visit the site if you believe that is necessary.
- Ensure that the application rates seem reasonable.
- If manure is applied during the winter, the winter matrix must be included.

On-Site Review Guidelines & Checklist

The following list outlines areas that must be evaluated during the on-site review.

In-Office Review List

- Make sure that each of the items noted during the in-office review are addressed.

Records Not Submitted With Plan

- The following items that are required to be maintained on the operation should be reviewed. Spot checks of soil and manure reports are recommended unless there is reason for a more thorough review.
 - Soil Test Reports
 - Manure Analysis Reports
 - Manure Spreader Calibration Records
 - Operation's Emergency Response Plan (ERP)
 - Conservation Plan or Ag E&S Plan meeting Chapter 102 for all acres contained in the submitted NMP. Is the NMP consistent with the conservation plan?

Appendix 5 – Phosphorus Index

- Check the following phosphorus index issues for a representative number of fields:
 - Distance from a stream
 - Buffers listed in the plan for near stream fields including pastures [*Important*]
 - Direct connections for distant fields [*Important*]
 - Erosion numbers from the conservation plan

Appendix 6 – Manure Management

- This part of the on-site review should be conducted as if you were writing the NMP.
- Evaluate and confirm the following:
 - Were all manure management related areas on the operation listed as evaluated in the plan?
 - Existing manure storages (size, duration of storage, integrity, maintenance).
 - ACAs (size, location, collection of manure, runoff). All pastures must be walked and checked for congregation areas that have a direct discharge.
 - Do you agree with the planner's assessment of inadequate manure management practices and proposed BMPs?
 - New storage locations (setback issues) and emergency stacking sites (if included in the plan).
 - Briefly interview the operator to determine what aspects of this evaluation the planner discussed with him. What questions does the operator have about identified inadequate manure management practices and selected BMPs to address identified problems?

Appendix 7 – Stormwater Control

- This part of the on-site review should be conducted as if you were writing the NMP.
- Evaluate and confirm the following:
 - All crop fields and pastures included in the plan, both owned and rented.
 - Do you agree with the planner's assessment of critical runoff problem areas and proposed BMPs?

General Plan Issues

- The following areas are possible areas that could be assessed by observation or discussion with the operator. If comfortable with the information in the plan further assessment is not necessary. If not comfortable, they should be assessed during the on-site review. Those that should be evaluated during each on-site review are noted with (Important).
 - Animal numbers per species and per growth stage
 - Crop rotation
 - Crop yields
 - Crop acres
 - Commercial fertilizer used
 - Evidence of past crop history (alfalfa or grass, bare ground or cover, etc.)
 - Manure application procedures, incorporation, etc. (Important)
 - Type of tillage used on the farm. Do the NMP and Ag E&S plan agree? (Important)
 - Manure application setbacks (Important)
 - Field stacking locations (Important)
 - Pasture condition – is it really a pasture? (Important)
 - Fields proposed for fall and winter application of manure (Important)

Exported Manure Importing Farms

- Check farm receiving exported manure for the following for manure importing sites (this could be done outside of site visit if prior knowledge of the area):
 - Does the map adequately represent the importing operation (location of fields and setback areas)?
 - Does the signed agreement and NBS adequately represent other animals, other manures, total acres, crops and yield potential for the importing operation?