STATEMENT OF WORK Amending Soil Properties With Gypsum Products (333) Ohio NRCS

These deliverables apply to this individual practice. For other planned practice deliverables refer to those specific Statements of Work.

DESIGN

Deliverables:

- 1. Design documents that demonstrate criteria in NRCS practice standard have been met and are compatible with planned and applied practices.
 - a. Practice purpose(s) as identified in the conservation plan.
 - b. List of required permits, if required, to be obtained by the client.
 - c. Practice standard criteria-related computations and soil analyses to develop plans and specifications including but not limited to:
 - i. Results of applicable soil sampling, analyses, and tests provided by the client.
 - ii. Planned gypsum amendment application rates, methods, and timing of application.
 - iii. Validation of the Gypsum product demonstrating concurrence with Table 1 of the standard (Screening values for elements in gypsum derived products for use as a soil amendment).
- 2. Written plans and specifications shall be provided to the client that adequately describes the requirements to implement the practice and obtain necessary permits. Plans & specifications include:
 - a. Maps that identify areas on which gypsum will be applied.
 - b. The source of the product, e.g., flue gas desulfurization, mined.
 - c. Purpose(s) for its use and the planned outcomes.
 - d. Chemical analysis of the amendment product.
 - e. Soil analyses demonstrating the need for the amendment.
 - f. Application methodology, including rates, timing, sequence of application with other nutrient materials (i.e., manures, biosolids, fertilizers), mixing instructions when mixed with manure prior to field application.
 - g. Soil and/or plant analyses after application should continue in conjunction with an overall nutrient management system to determine if additional applications are needed.
- 3. Certification that the design meets practice standard criteria and complies with applicable laws and regulations.
- 4. Design modifications during installation as required.

INSTALLATION

Deliverables

- 1. Pre-implementation conference with client to review the plan
- 2. Verification that client has obtained required permits, if required for installation.
- 3. Location of and communication of application methodology, including rates, timing, sequence of application with other nutrient materials (i.e., manures, biosolids, fertilizers), mixing instructions when mixed with manure prior to field application.
- 4. Installation guidance as needed.
- 5. Facilitate and implement required design modifications with client and original designer.
- 6. Advise client/NRCS on compliance issues with all federal, state, tribal, and local laws, regulations and NRCS policies during installation.
- 7. Certification that the application process and materials meets design and permit requirements.

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CHECKOUT

Deliverables

- 1. Records of implementation.
 - a. Extent of practice units (acres) applied and tons applied per acre.
- 2. Guidance for record keeping (implementation records maintained by the producer or agent)
 - a. Records of tons applied, application dates, source of gypsum, gypsum analyses.
 - b. Records of soil tests used to implement the plan.
 - c. Records of recurring review of the plan including the dates or review, individual performing the review, and recommendations that resulted from the review.
- 3. Certification that the application meets NRCS standards and specifications and is in compliance with permits.
- 4. Progress reporting.

REFERENCES

- NRCS Field Office Technical Guide, Section IV, Conservation Practice Standard Amending soil Properties with Gypsum Products (Code 333)
- Baligar, V. C., R. B. Clark, R. F. Korcak, and R. J. Wright. 2011. Flue Gas Desulfurization Products Use on Agricultural Land. *In* Donald L. Sparks, editor: Advances in Agronomy. Vol. 111. Academic Press, pp 51-86.
- Chaney, R.L. 2012. Food safety issues: Mineral and organic fertilizers. Adv. Agron. 117:51-116.
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- Holmgren, G.G.S., M.W. Meyer, R.L. Chaney and R.B. Daniels. 1993. Cadmium, lead, zinc, copper, and nickel in agricultural soils of the United States of America. J. Environ. Qual. 22:335-348.
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- Sumner, M.E. Gypsum and acid soils: The world scene. P. 1 32. In D.L Sparks (ed). Advances in Agronomy, Vol. 51. Academic Press Inc, San Diego, CA.
- Torbert, H. A., and D. B. Watts. 2013. Impact of flue gas desulfurization gypsum application on water quality in a coastal plain soil. J. Environ. Qual. 10.2134/jeq2012.0422.
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