DISCUSSION OF PUBLIC COMMENTS ON THE *INTERIM SITE ASSESSMENT GUIDANCE FOR FORMER AGRICULTURAL SITES IN MIAMI-DADE COUNTY (DATED SEPTEMBER 16, 2020)*

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Presented via Zoom™ Webinar

Presented by Wilbur Mayorga, P.E., MS
Chief Environmental Monitoring and Restoration Division
RER-DERM

SUMMARY

- On 9-16-2020, DERM released the "Interim Guidance for Site Assessment at Former Agricultural Sites" and provided a 30-day period during which the public was afforded the opportunity to provide comments on the document.
- The comment period was subsequently extended for an additional 30 days to November 16, 2020.
- DERM received a total of 139 comments, 109 of those were repeats.
- Comments were provided by multiple stakeholder groups:

  Agricultural community, private citizens, environmental consultants, attorneys, etc.
- The comments were used to guide the revisions to the Guidance, as applicable.
- Thank you! All feedback and comments were greatly appreciated.

REVISIONS

SUBSTANTIVE REVISIONS

1. Background Section :

Revised to include

I. Rationale for need for the Guidance.

> *The conversion of former agricultural lands into nonagricultural uses, (e.g., residential land uses, schools, etc.) results in different exposure populations (e.g., expectant mothers, children, construction workers, etc.) different exposure scenarios (e.g., increased exposure frequency and duration, etc.) and different exposure pathways."*

II. Code reference for DERM's regulatory authority.

III. Reason for development of the guidance.

IV. Further clarification regarding golf courses.

V. Language allowing for the submittal of an alternate assessment plan.

SUBSTANTIVE REVISIONS

2. Soil Assessment Section

- Expands on the use of discrete sampling.
- Revised contaminants of concern.
- Revised sampling frequency for subset of samples and criteria for releasing discrete samples.
- Expands on criteria for SPLP analysis.
- Expanded discussion regarding acute toxicity, bioavailability and the use of background concentrations.

SUBSTANTIVE REVISIONS

3. Groundwater Assessment Section

- Revised COC list.
- Revised sampling frequency for subset of samples and criteria for additional analyses for COCs in Group B.

4. General Guidance Section (new)

- Includes minimum information for inclusion in a Site Assessment Report prepared for submittal to DERM.

RESPONSE TO COMMENTS

RESPONSE TO COMMENTS

- DERM acknowledges that this presentation does not provide an explicit response to each individual question asked/comment provided. Instead, the comments/questions have been grouped by broad topics for ease of response, to avoid duplicity, and in the interest of time. A response to each topic is provided.

- Several comments have already been addressed in the previous presentations.

- The comments and responses are not presented in any specific order and the sequencing is not intended to reflect the order of priority or importance.

TOPIC: SAMPLING METHODOLOGY

1. **DISCRETE SAMPLING**
   a. Clarification requested on discrete sampling and requests DERM accept discrete sampling at larger parcels for calculation of 95% UCLs.

The Guidance was updated to clarify that discrete sampling is an option and to provide a reminder of the framework for the criteria for designing decision units if 95% UCL is utilized.

   b. Discuss the requirement to analyze the 8 discrete samples that comprise a composite sample, when the laboratory results for that composite exceed the soil cleanup target level (SCTL).

- Direct exposure SCTL exceedances: All the subsamples need to be released for analysis for the parameter that exceeds. The number of subsamples to be released may be reduced on a case-by-case basis with appropriate justification (e.g., engineering control, closure options, localized source removal, etc.,).
- Exceedance is based on leachability concerns: The Department may utilize actual groundwater data to guide decisions pursuant to applicable provisions of Chapter 24-44(2) of the Miami-Dade County Code.

The Guidance recommends archiving subsamples to eliminate the need for remobilization.

TOPIC: SAMPLING METHODOLOGY

2. **SUB SAMPLES**

   a. Define a "trigger" concentrations for releasing discrete subsamples in composite samples.

   b. Provide guidance regarding the number of discrete samples if an ISM sample exceeds the SCTL.

      - The Guidance is intended to provide a general sampling strategy with respect to assessment at former agricultural sites while retaining the flexibility to allow the environmental professional to utilize professional judgement based on the site-specific conditions (e.g., contaminant distribution, site topography, stormwater design, selected closure option, property boundary, etc.) to develop a site-specific sampling strategy. The decision to release discrete subsamples or the decision to conduct discrete sampling within the decision unit for an ISM sample is site-specific and as such general "trigger" concentrations are not appropriate.

The revised Guidance recommends that a representative number of individual subsamples be archived for analysis depending on the result of the composite sample.

TOPIC: SAMPLING METHODOLOGY:

3. ISM

a. Request for clarification on ISM requirements in Guidance.

- The use of ISM sampling is provided as an option for an alternative to composite sampling.
- The ISM methodology provided in the publication Interstate Technology & Regulatory Council's (ITRC's) Incremental Sampling Methodology (ISM) guidance document (February 2012 updated October 2020) provides the ISM sampling procedures.

  https://itrcweb.org/search?s=tags%3A%22Incremental%20Sampling%20Methodology%22&executesearch=true

- The size, layout, and number of increments of the Decision Units (and/or Sampling Units) for any ISM sampling plan is site specific and should be based on the Conceptual Site Model.

b. Guidance on the appropriate number of discrete samples needed to represent an ISM unit should be provided.

- The appropriate number of discrete samples will be site and parameter dependent as provided in Slide 10.
- Example - For parameters with acute toxicity concerns, discrete sampling should account for the size of the exposure units after development (if development plans are available).
- The responsible party may propose a maximum ISM concentration below which the individual discrete samples which comprise the composite/ISM sample will not be reasonably expected to be a concern.

Guidance revised to indicate that because ISM sampling does not allow for subsequent analysis of individual subsamples, supplemental sampling techniques (discrete, etc.) may be required.

TOPIC: SAMPLING METHODOLOGY

4. Request for alternative sampling methodology/frequency for both soil and groundwater depending on closure option.

Clarifications provided in the updated Guidance

> "if a NFAC with Engineering Controls (EC) is selected as the site closure option early in the process, assessment activities may be more targeted to the property boundary or areas that will not be subjected to an EC…" or in areas proposed for drainage in the case of groundwater.

5. Request for clarification of sampling intervals.

Clarification provided in revised Guidance.

TOPIC: SAMPLING METHODOLOGY

6. **Sampling flexibility**
   a. Initial sampling should be targeted to areas most likely for "contaminant accumulation" (e.g., agrichemical storage/mixing areas, etc.). The results of these initial sampling should determine the need or not for additional assessment and dictate COCs if additional assessment is determined to be warranted.

   - In most cases reviewed by DERM, information regarding the historical agrichemical storage/mixing or other areas of potential contamination accumulation is not available.

   - Based on the data set reviewed; the COCs detected, and the contaminant distribution patterns are non-homogenous and not correlated.

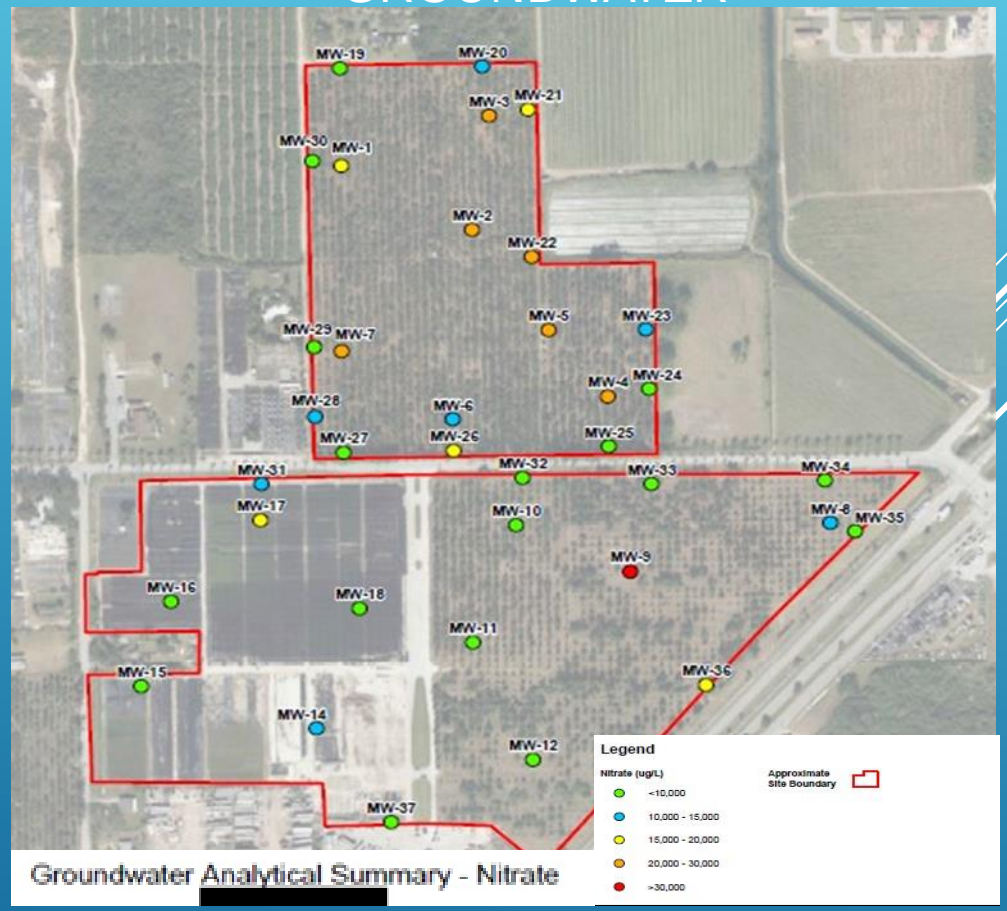
   b. The Guidance should account for crop types.

The Guidance allows for the development of alternative sampling plan based on professional judgement supported by available data (including information on historical and current crop type).

SOIL

HETEROGENITY OF SOIL AND GROUNDWATER CONTAMINANT DISTRIBUTION

GROUNDWATER



TOPIC: SAMPLING METHODOLOGY

7. The Division should differentiate the sampling frequency for residential vs. nonresidential properties, with a significant reduction in sampling frequency for properties which have a low potential for human exposure to soils such as industrial or utility sites.

   For re-development of former agricultural sites that require at least two feet of blanket fill (meeting "clean" fill criteria) to bring the site to construction grade, and wherein developers are receptive to risk-based closure (institutional controls and fill layer serving as engineering control), we urge the Division to reduce the required soil sampling frequency or, in some cases, eliminate soil assessment.

   The Guidance in its revised form recognizes that the selected closure option and ultimate proposed land use for the property will impact the potential for exposure to agrichemical residuals in soil and hence the resulting potential risk. The revised Guidance provides that the Department will evaluate, for approval, any proposal for alternate assessment strategies based on site-specific information, including closure options, etc.

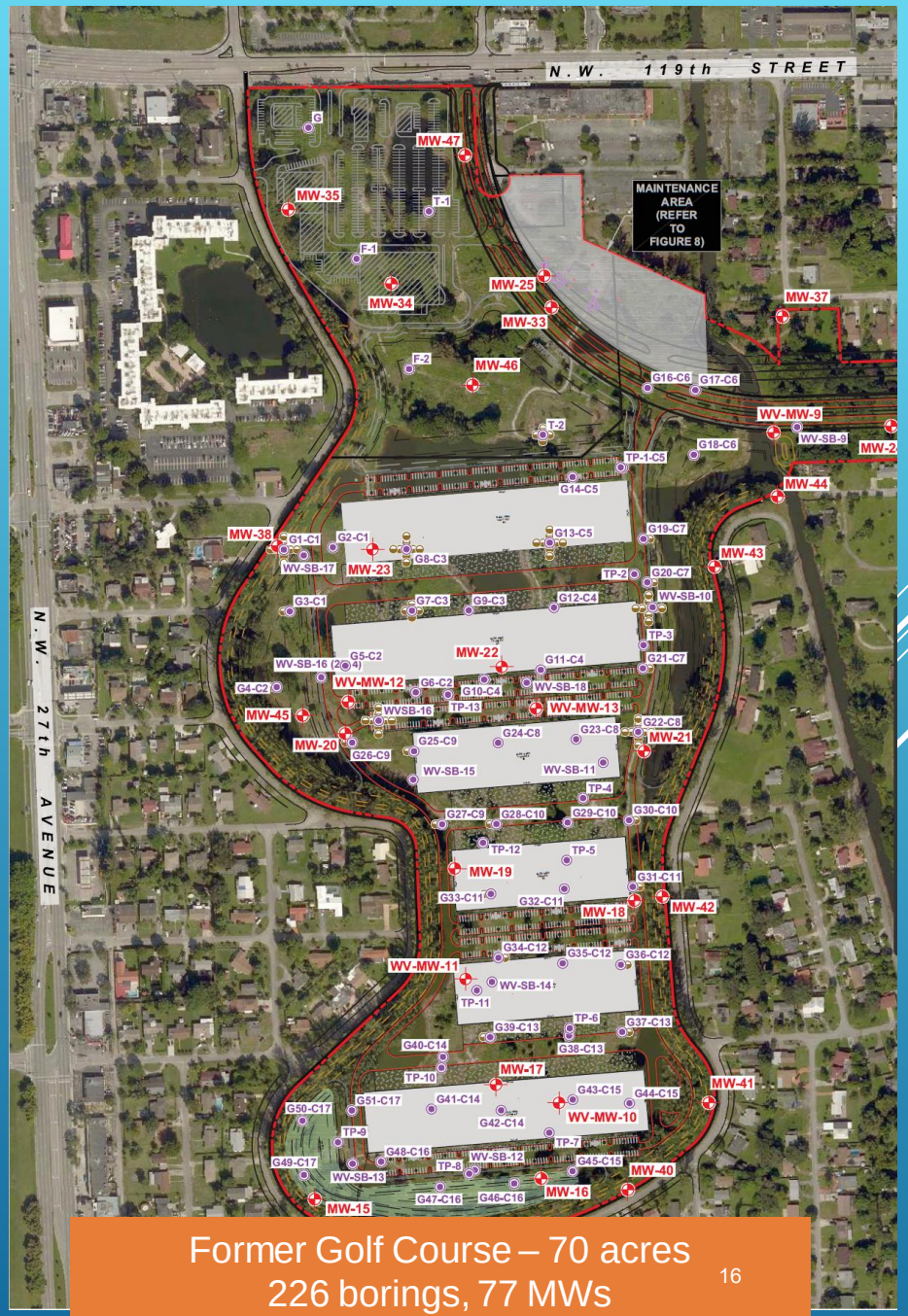
8. We urge the Division to reduce the frequency (sample per acre) of sampling as the size of the property increases using a logarithmic function or sliding-scale approach.

   - The heterogenicity of contaminant distribution does not lend itself to the development of a scientifically defensible sliding scale approach to determining sampling frequency. Additionally, especially with respect to COCs with an acute toxicity mode of action, the sampling frequency needs to account for the ultimate exposure unit. The environmental professional has the option to submit an alternative assessment strategy as previously provided.

Groundwater sampling frequency pursuant to Guidance (i.e., one well per acre) vs groundwater sampling frequency at other types of land use.

1.19-acre gas station property
(11 monitoring wells and 11 soil borings)

18-acre lakefill 25 wells



Former Golf Course – 70 acres
226 borings, 77 MWs

TOPIC: SAMPLING METHODOLOGY

10. The practice of delineating the horizontal and vertical extent of impacted groundwater (most commonly arsenic) is futile since: 1) past widespread and uniform (broadcast) application of agrichemicals is expected to result in ubiquitous impacts to groundwater.

    - The data evaluated by DERM does not support the assumption of ubiquitous impacts to groundwater. (see previous presentation *"Revised Site Assessment Guidance for Former Agricultural Sites in Miami-Dade County")*

11. The Division should clarify its position on why it believes that introduction of fresh water (stormwater) into the groundwater system via infiltration (such as from ponds or exfiltration trenches) in areas of past regional agricultural use will adversely affect the groundwater system greater than existing infiltration and drainage patterns.

    - The ratio of pervious to impervious surface is dramatically different in the case of an open agricultural field vs a development. The change from sheet flow natural percolation to localized recharge areas, results in storm water being channeled to specific areas resulting in significant increase in loading to these specific recharge areas of the site. This increased hydraulic head may cause groundwater dispersion resulting in or exacerbating migration of a contaminant plume. The requirement for sampling in these areas is to ensure that stormwater is not recharged over contaminated groundwater.

TOPIC - CONTAMINANTS OF CONCERN

1. Basis for contaminants of concern (COCs) How they were chosen? What is the evidence of COCs at agricultural sites in Miami-Dade County?

   - The COCs were originally selected based on reasonable expectation pursuant to DERM's experience, the approach utilized by other regions, and literature research.
   - The revised guidance provides COC lists based on the analysis of the data from the 60+ sites that DERM has reviewed as presented in previous presentation.

The revised Guidance provides an amended COC list.

2. Testing for SPLP ammonia in agricultural soils is unnecessary.

   - The revised Guidance does not include a requirement for ammonia SPLP. However, if muck soils are proposed to be reused below the water table (e.g., lakefills), characterization may be required pursuant to the DERM Soil Reuse Guidance.

The revised Guidance does not require SPLP ammonia analysis.

TOPIC- CONTAMINANTS OF CONCERN

3. Clarify if all the Group B COCs will be to be analyzed for in all the samples if one COC exceeds the SCTL or if only the COC that exceeds the SCTL will require expanded analysis.

Clarification provided that the requirement for analyzing all samples pertains only to the COC that exceed applicable CTL.

4. Pesticides containing arsenic were not used in “the area”.
   - The COCs developed are based on not only current agricultural practices but considers historical uses which may have contributed to the accumulation of agrichemical residuals in soil and groundwater e.g., historical use of sodium arsenate on potato.
   - DERM acknowledges that arsenical pesticides are no longer used in the southern Miami-Dade agricultural area however, arsenic is an element and as such it is persistent in the environment.
   - Additionally, arsenic may be present as a contaminant of fertilizer.

TOPIC- CONTAMINANTS OF CONCERN

5. The Guidance has higher compliance level requirements on soil contamination then FDEP and USEPA.

- The cleanup target levels (compliance targets) provided in the Miami-Dade County Code are equivalent to and were developed utilizing the same assumptions and inputs as those provided in the state's cleanup rules.

COC	MDC Code Chapter 24 Residential SCTL	FDEP Chapter 62-777 Residential SCTL	EPA Region IV Regional Screening Level Residential soil
Arsenic	2.1	2.1	0.68

LEACHABILITY

1. "Contaminants do not readily move into the water column"
   "COCs that have a strong affinity to organic carbon (e.g., dieldrin) are rarely found in the groundwater, even when leachability/SPLP failures are noted"

   - The data indicates that agrichemical residual leaches through the soil column and can and does contaminate groundwater. Groundwater contamination is documented at 72% of the former agricultural sites evaluated.

2. Correlation between total, SPLP, and groundwater concentrations is generally poor, particularly for the primary agricultural COCs (arsenic, chromium and dieldrin).

   - Although SPLP analysis typically required if the total concentration of a COC exceeds the default leachability SCTL or, in the case of inorganics without a default leachability SCTL, SPLP analysis is required if the total concentration exceeds the applicable Miami-Dade County background concentration, as provided in the Miami-Dade County Code, actual groundwater data may be used to supersede SPLP results or in lieu of SPLP analysis.

The revised Guidance includes a Section on SPLP – Section B.4.

TOPIC - BACKGROUND CONCENTRATIONS

1. Several comments received requesting reference to DERM background reports in Guidance and requesting clarification on the use of background concentrations (e.g., for arsenic) at former agricultural sites.

Background concentrations are addressed in Section B.7. which also provides a link to the MDC background study.

2. "Background guidance includes too few samples from actual agricultural areas."
   "Levels of arsenic and other putatively potentially harmful substances are not a product of any agricultural or industrial activity but rather at the same natural background levels as found in locally undisturbed land (Everglades)"

- This issue was extensively addressed in the previous presentation, "Revised Site Assessment Guidance for Former Agricultural Sites in Miami-Dade County."

TOPIC: BIOAVAILABILITY

The Guidance should discuss the bioavailability of arsenic and other inorganics especially with respect to the unique soil types found in the agricultural areas of southern MDC.

The revised Guidance includes a section, Section 6, that addresses bioavailability. Additionally, bioavailability was addressed in the previous presentation, “Soil Ingestion and Bioavailability of Contaminants from Soil”.

TOPIC: APPLICABILITY OF GUIDANCE TO OTHER LAND USES

1. Why are Golf Courses not included in the Guidance?

The question is addressed in Background Section of Guidance.

TOPIC: THE CONCEPT OF "FARMSTEADING"

Is the Guidance applicable to the situation where a portion of a currently operating agricultural property, is proposed for residential development but the remainder of the property will remain as agricultural use?

- Based on the change in land use from agriculture to residential, and the potential for exposure to the residents and visitors to the residence, that portion of the property to be utilized for the construction of the house along with the areas that will be as accessible as "yard areas" without any agricultural activities will need to be assessed. Soil assessment in this area will be targeted to those area that will remain as open ground. If the home is to be served by a potable well, the safety of the water quality will need to be determined.
- The Department will evaluate these sites on a case-by-case basis.

TOPIC: DUE DILIGENCE

The guidance cannot and should not serve as a substitute for the Phase I/Phase II procedure.

- The Guidance is not intended to be a substitute for the ASTM Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (Phase I) or the ASTM Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process (Phase II) but as a complement to the ASTM procedures.

- In the absence of any information to the contrary the Phase I ESA should identify the potential presence of agrichemical residuals at a former agricultural land use as a recognized environmental concern.
  - DERM has experience with cases in which, environmental professionals had failed to identify the potential presence of agrichemical residues as a potential environmental concern as such development plans failed to account for the possible contamination. The discovery of contamination during the construction plan phase resulted in the need for significant changes to the design and significantly delays the development.

- DERM recognizes the utility of the Phase I ESA in assisting in obtaining information related to the historical activities at the site (e.g., crop type, historical agrichemical used and patterns, areas of likely contamination (storage areas, mixing areas) changes in topography, drainage systems, etc.). As provided in the revised Guidance, this information may be used to support alternative assessment strategies.

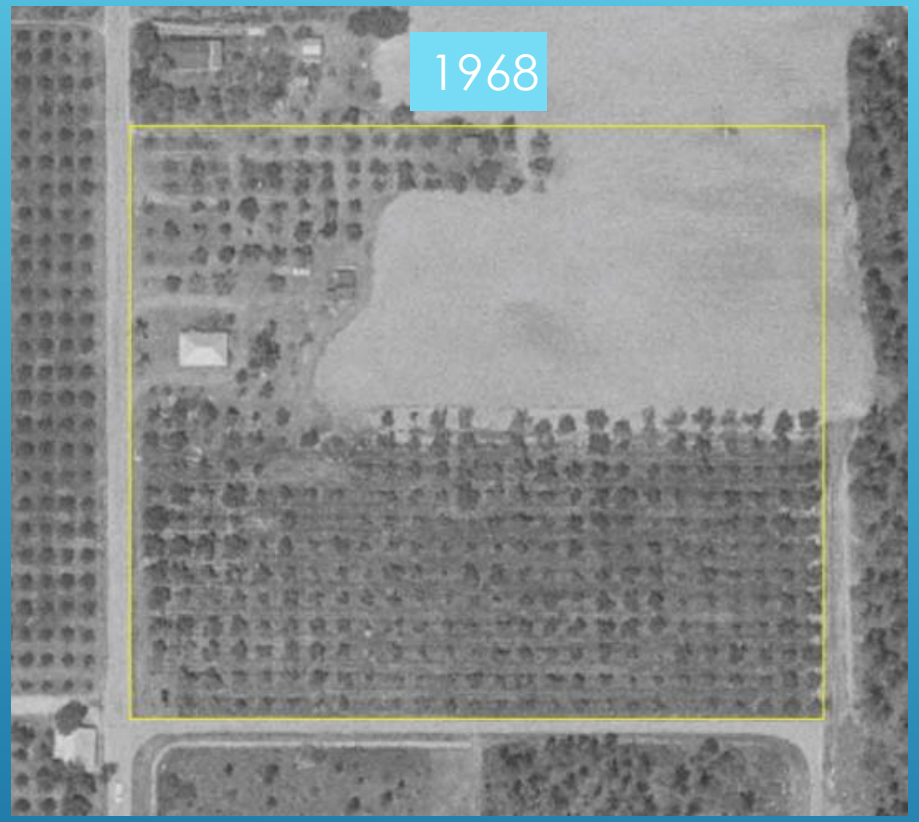
TOPIC: DUE DILIGENCE

- The Phase II process builds on information obtained during the Phase I which informs decision regarding where to target assessment:

  Section 6.4.2 of the ASTM Phase II document indicates that "the assessor should identify areas to be investigated in light of reasonably ascertainable information" and Section 6.4.3 requires "development of a conceptual site model that considers areas where target analytes are present or likely to be present…"

- In DERM's experience, with respect to former agricultural properties, there is typically insufficient information to inform such decisions. Furthermore, based on the changes in crop type over time, and the resulting changes in type and usage pattern of agrichemicals (especially at sites that have been farmed for decades), the distribution of agrichemical residues in the environment is not homogeneous.

  To this end the Guidance was developed to be used in tandem with the Phase II process to provide the environmental professional with clear guidance for evaluating potential environmental concerns at sites transitioning from a former agriculture land use to a non-agricultural use.



Example of change in crop type over agricultural land use history of a site

PATH FORWARD

1. The presentations from today's webinar will be posted on the Department's website within a couple days.
2. Today's webinar marks the beginning of a sixty (60) day public comment period for the revised guidance. Comments may be submitted via email to emrdtech@miamidade.gov. The deadline for submittal is Tuesday October 5, 2021.
3. After the close of the public comment period the Department will revise the guidance as appropriate.
4. Any revision to the guidance will be posted on the Department's website.

THANK YOU.