

INVESTIGATION REPORT

Investigation Date: April 26, 2021

NDEE Incident No.: N/A

NDEE IIS Facility No.: 84069

NDEE Program ID: IWM NE0204447

Investigation Description: Temperature Probing of Wet-cake/Dry Distiller Grain Waste

Investigation Location: AltEn, LLC Facility – 1344 County Road 10, Mead, NE

NDEE Investigators: Jim Borovich & Jason Windhorst

Report by: Jim Borovich



An investigation was conducted at the AltEn, LLC facility near Mead, Nebraska on April 26, 2021, for the purpose of collecting an internal temperature profile of the on-site waste piles consisting of dry distiller grain waste (also referred to as “wet-cake” material) currently placed across the AltEn, LLC facility property. Temperature data collection was performed in accordance with an established Site-Specific Data Collection Plan (attached). For reference, the waste piles, placed in individual windrows of varying length, width, and height, were sub-divided into three separate areas, referred to as the East Pile, West Pile, and Center Pile (see attached site map). Temperature probing was conducted using an industrial composting temperature probe (72-inch probe length).

Data collection was conducted generally between the hours of 0915-1130 hours on April 26, with weather conditions being breezy and progressively warming ambient air temperatures. Data collection was generally confined to the periphery of the piles (see site map) as the presence of water and apparent liquid waste created conditions for which the NDEE field personnel considered accessing the interior of the piles by foot to be a significant safety issue. Individual probe locations were selected based on accessibility, safety considerations, and professional judgement. At each probe location, the data recorded on data sheets (see attached) specifying the designated pile, consisted of the probe location number, time of the recorded temperature, the stabilized temperature reading (in °Fahrenheit), and the latitude/longitude coordinates of the probe location (using a hand-held GPS unit). Locations at which the temperature probe could not be inserted 60-66 inches into the pile due to probe refusal were not recorded.

Temperature reading ranged from a low of 56 °F to a high of 111 °F (see attached record sheets). It was noted that higher temperatures could generally be associated with what were considered by the field personnel to be larger and older waste windrows. It is noted in this report that larger waste windrows are present but were not accessible at this time due to the above referenced safety concerns.

Borovich left the facility at approx. 1145 hours. Windhorst remained on-site to conduct observations of the facility wastewater lagoons.



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Site-Specific Data Collection Plan

AltEn Temperature Probing of Wet-cake/Dry Distiller Grain Waste

April 26, 2021
Final Version

SCOPE AND APPLICABILITY

The site-specific data collection plan is designed to highlight the procedures necessary to collect a general internal temperature profile of the wet-cake/dry distiller grain waste that is stockpiled at various location on the AltEn Ethanol Plant's property in Mead, NE. This plan utilizes procedures from the Nebraska Department of Environment and Energy (NDEE) Generic Quality Assurance Project Plan for the Superfund Site Assessment and Section 128(a) Assessment Program, dated January 2016 and Standard Operating Procedure (SOP) for Waste Characterization, REM-SFA-15, Version 1, dated February 2021. As needed, equipment will be decontaminated in accordance with the NDEE Field Decontamination SOP, REM-SFA-17, Version 1, dated February 2021.

This limited environmental investigation is intended to characterize the internal temperature profile of the waste piles which have been placed in windrows across the AltEn property. The feed product for this waste stream is seed corn that has been treated with a variety of agricultural chemicals that include pesticides.

The sampling team is anticipated to be two people. The sampling team will announce their arrival at the facility and coordinate with the plant manager to collect internal temperature readings using an industrial composting thermometer from existing waste piles on the facility property. The sampling team may be accompanied by facility personnel in order to confirm the locations of the stockpiled waste and to identify best routes for accessing the waste piles, as needed. Due to COVID-19 restrictions, the sampling team will wear masks and practice social distancing according to agency protocols.

EQUIPMENT AND MATERIALS

The equipment and materials that are anticipated to be used to accomplish this assessment event are listed below. Additional equipment and materials may be deemed necessary when conducting the sampling activities. The following equipment and materials will be collected before deploying to the site:

- Industrial composting thermometer (72-inch probe length)
- Camera (optional, pictures may be taken using cellphones)
- Field logbook/record sheets
- Global Positioning System (GPS) unit
- Health and Safety Plan / Safety Plan
- Materials required for decontamination (per NDEE's field decontamination SOP), including distilled water, isopropyl alcohol, and/or non-phosphate laboratory detergent (Alconox, liquid Dawn, etc.)
- Level D (modified) Personal Protective Equipment (PPE), including:
 - Hard hat, safety boots, disposable booties, Tyvek suits, disposable sample handling gloves, safety glasses, respirators (as deemed necessary), dust masks, etc.
- Garbage bags for disposable PPE/equipment

PROCEDURES

PRECAUTIONS

The following precautions should be taken:

- **Sample Locations:** Do not attempt to access probe locations that increase exposure of the sampler to the waste material, such as walking on the waste.
- **Contaminated Waste:** Assume and treat waste piles as containing high levels of contaminants. Wear appropriate PPE during the actual data collection process and follow appropriate decontamination procedures.
- **Equipment Cleanliness:** Once a piece of equipment has been decontaminated, be careful, protect it, keep it in a clean, and useable condition until needed.
- **Investigation Derived Waste:** Disposable materials that are used for this sampling event are to be treated as solid waste based on quantity and waste characteristics.
- **Decontamination:** This plan has procedures that are based on NDEE's SOP for additional guidance for decontamination of sampling equipment.
- **Safety Plan:** Refer to the Safety Plan for a hospital location, route map, and telephone information. In addition, calling 911 in the event of an accident should be considered.

WASTE PILE TEMPERATURE PROFILING PROCEDURES

Identify the waste pile location to be probed and use GPS coordinates to document the location where data are collected and recorded. Data will be recorded on forms specifically created for this activity (see attached).

Waste Pile Identification and Probe Locations:

- For this event, the waste piles areas will be identified as the "East", "Central", or "Northwest" pile area (see Waste Pile Location Map). All three waste pile areas will be investigated.
- Temperature probe locations associated with an individual waste pile area will be based on accessibility of individual windrows, which may be limited due to standing water, deep mud, or other potentially hazardous site conditions. Probe locations will be recorded using hand-held GPS unit.
- During active inspection of the pile note any changes in the texture, color, material composition, moisture content, etc., of the waste to be sampled.

Data Collection:

1. Don PPE.
2. Select probe location. Each probe location will be given a unique designation based on the waste pile area being characterized and its sequential order (i.e., East1, NW9, etc.)

3. Insert temperature probe generally horizontal to ground level into the waste pile approximately 60-66 inches (5-5.5 feet).
4. Allow time enough for temperature as indicated on dial face to stabilize.
5. Record stabilized temperature on record sheet, along with time of recording and latitude/longitude information as established by GPS unit. (Please note that the upper limit of the temperature gauge is 200 degrees Fahrenheit. If any temperature appears to “peg” the gauge, the temperature on the record sheet will be recorded as “>200°”.)
6. Move to next probe location. Repeat Steps 3-6.
7. Collect and dispose of IDW materials prior to travel between the East Waste Pile Area and the Central/Northwest Waste Pile Areas, in accordance with guidance and regulatory requirements. Scrub the probe to remove solid and liquid gross (visible) contamination between these areas.
8. Conduct data collection at other waste pile area as described in Steps 1-7 above.
9. Final decontamination of the temperature probe after data collection is completed. Decontamination will be conducted in an area away from potential contaminants.
 - a. Scrub the probe to remove solid and liquid gross (visible) contamination.
 - b. Scrub the probe using appropriate brush(es), distilled water, and non-phosphate laboratory detergent.
 - c. Rinse or spray off detergent/dirty water with distilled water.
 - d. Rinse or spray probe a second time with distilled water.
 - e. Allow probe to air dry.

DOCUMENTATION

Documentation of field activities shall be presented in the form of a short narrative report along with associated record sheets, site plan sketches/maps with designated probe locations, photos, and/or field logbooks/notes.

Attachments:

- **Waste Pile Location Map**
- **Temperature Probing Record Sheet**
- **Safety Plan**

AITEN LLC February 1, 2021 Site Visit Approximate Wetcake Area in Acres



Address: 11344 County Road 10, Mead NE
NDEQ ID: 84069
Program ID: NE0137634

0 200 400 800 1,200 1,600 2,000
Feet

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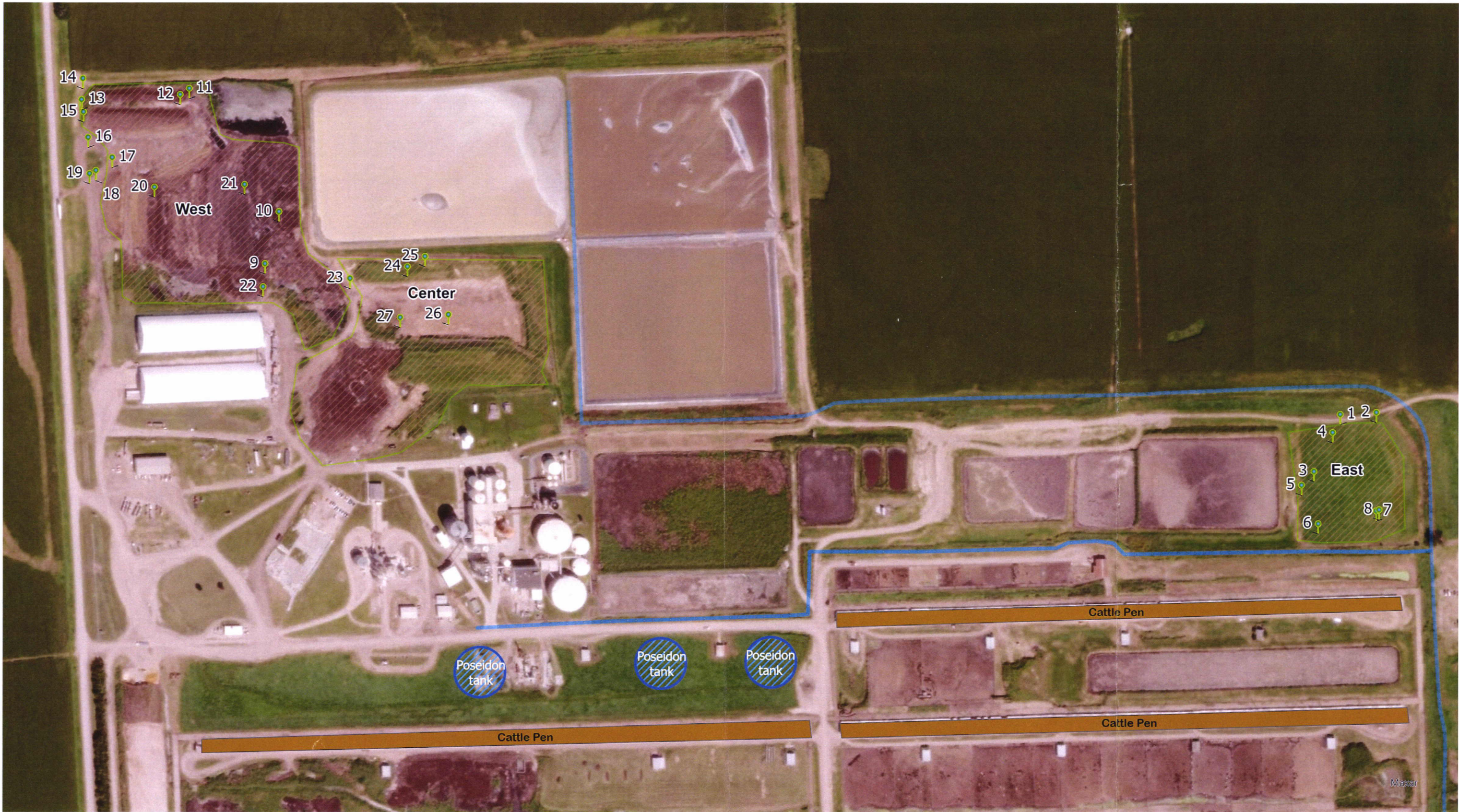
ALTEN WETCAKE PILE TEMPERATURE PROBING RECORD SHEET

Date: _____

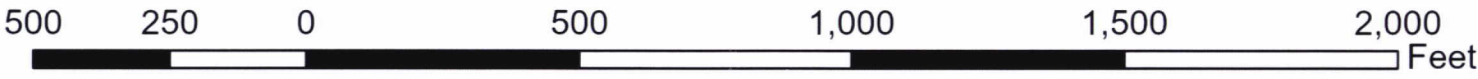
Pile Designation: _____

[illegible]

AltEn LLC - Wetcake Temperature Map



Address: 11344 County Road 10, Mead NE
NDEQ ID: 84069
Program ID: NE0137634 / NER910444



ALTEN WETCAKE PILE TEMPERATURE PROBING RECORD SHEET

Date: 4-26-2021

Pile Designation: East (Area 6)

Probe Location Designation	Time	Latitude (°N)	Longitude (°W)	Temperature (°F)
#431	9:23	41.19683	-96.46613	66°
#432	9:27	41.19697	-96.46563	64°
#434	9:33	41.19621	-96.4652	56°
#435	9:36	41.19661	-96.46624	100°
#436	9:43	41.19607	-96.46670	76°
#437	9:46	41.19566	-96.46749	103°
#438	9:56	41.19577	-96.46568	77°
#439	9:57	41.19576	-96.46564	103°

-4 in to pile
undisturbed

-3.5 in

ALTEN WETCAKE PILE TEMPERATURE PROBING RECORD SHEET

Date: 4-26-2021

Pile Designation: West

Probe Location Designation	Time	Latitude (°N)	Longitude (°W)	Temperature (°F)
NA420105 440	1020	41.19883	-96.44096	72'
441	1024	41.19937	-96.44074	70'
442	1032	41.20070	-96.44191	106'
443	1034	41.20064	-96.44204	78'
444	1040	41.20063	-96.44341	100'
445	1043	41.20085	-96.44336	100'
446	1045	41.20050	-96.44334	84'
447	1046	41.20023	-96.44334	104'
448	1046	41.20001	-96.44302	101'
449	1051	41.19988	-96.44325	90'
450	1053	41.19965	-96.44334	95'
451	1056	41.19968	-96.44245	111'
452	1102	41.19667	-96.44120	64
452	1104	41.19859	-96.44100	103

-47m

ALTEN WETCAKE PILE TEMPERATURE PROBING RECORD SHEET

Date: 4-26-2021

Pile Designation: Central

Probe Location Designation	Time	Latitude (°N)	Longitude (°W)	Temperature (°F)
^{Wet/102m} 454	1106	41.19864	-96.47919	101
455	1111	41.19879	-96.47699	70
456	1114	41.19884	-96.47874	62
457	1117	41.19822	-96.47845	108
458	1119	41.19821	-96.47912	99

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