Revision Number	Revision Description	Revised By	Revision Date
New			
001	Updated Procedure to remove EHS Approval for Excavations	G. Dawson	3/12/15
002	Revised format, revised attachments, changed Texas One Call to Texas 811, add table of contents	R.J. Sumrall	10/23/19
003	Updated 2.4/2.5 Confined Space Requirements	G. Dawson	8/17/23
	Updated Confined Space Requirements	G. Dawson	5/14/24

1. PURPOSE 2
2. DEFINITIONS 2
3. SCOPE 3
4. PROCEDURE 3
   - 4.1. General Safety Requirements 3
   - 4.2. Excavation Requests 5
   - 4.3. Person Requesting the Excavation 5
   - 4.4. TES Manager (or Designated Representative) 6
   - 4.5. Site Electrical Department 6
   - 4.6. Safe Work Permit Issuer 6
   - 4.7. Contractor Performing the Work 7
   - 4.8. Competent Person 7
5. RESPONSIBILITIES 8
6. RELATED DOCUMENTS 8
7. ATTACHMENTS 8
   - 7.1. Attachment A – Excavation Request 9
   - 7.2. Attachment B - Excavation Checklist 10
   - 7.3. Attachment C – Excavation Daily Inspection 11

CONTROLLED DOCUMENT- 24 HRS FROM 10/22/2020 1:31 PM
-- UNCONTROLLED THEREAFTER –

Internal

1. PURPOSE

To establish minimum excavation safety requirements to protect employees, reduce the potential for damaging underground installations and ensure proper handling of excavated soil in accordance with applicable environmental regulations.

2. DEFINITIONS

2.1 Bucket Watch

A person assigned to monitor the excavation work to help ensure that utilities or other underground installations are not contacted by earthmoving equipment.

2.2 Competent Person

One who is capable of identifying existing and predictable hazards in the surroundings, or working conditions that are unsanitary, hazardous or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

2.3 Excavation

Any man-made cut, cavity, trench, drill or depression in an earth surface formed by removal of material.

2.4 Excavations Requiring Confined Space Permit

Work in excavations greater than 4 feet, where there is an atmospheric hazard potential from an energy source being isolated.

2.5 Excavations ONLY Requiring a Safe Work Permit

If there is no potential for oxygen deficiency or hazardous atmosphere from an energy source being isolated, the work can be done under a Safe Work Permit and work must follow OSHA excavation requirements. Continuous monitoring is required to ensure no atmospheric hazards are detected.

2.6 Protective System

A method of protecting employees from cave-ins, from materials that could fall or roll from an excavation face or into an excavation, or from the collapse of adjacent structures. Protective systems include support systems, sloping and benching systems, shield systems, and other systems that provide the necessary protection.

2.7 Support System

Underpinnings, bracing or shoring that provide support to an adjacent structure, underground installation, or the sides of an excavation.

CONTROLLED DOCUMENT- 24 HRS FROM 10/22/2020 1:31 PM
-- UNCONTROLLED THEREAFTER –

2.8 Requestor

The person initiating the excavation request form.

2.9 Field Representative

The BASF unit/department representative following the job in the field during construction/project.

3. SCOPE

This procedure applies to all excavation work at the Beaumont site.

3.1 Excavation requests **(Attachment A)** are required for machine-driven excavation work that penetrates any ground surface (concrete, dirt, gravel, etc.) including grass stripping, auger drilling, pile driving and operations involving machine-driven hoes or rams and jackhammers.

3.2 The following activities may be excluded from the excavation request requirement but must be considered on a case by case basis:

- Hand excavations.
- Chipping concrete up to 2 inches unless underground obstructions exist in the work area.
- Surface maintenance work with road graders or box-blades that does not include repair or modifications below road grade.
- The use of drills for the purpose of installing anchors or form supports that are no longer than 4" in length and 1" in diameter.
- The installation of screw anchors that require only hand power to install.
- The use of machine-driven equipment to remove concrete, asphalt, stabilized limestone, etc.

4. PROCEDURE

4.1. General Safety Requirements

4.1.1. Before starting any excavation work, it shall be determined if there are underground installations or structural support needs.

All excavation four (4) feet or greater in depth are required to have a protective system (shoring, sloping, etc.) in place to protect employees working in the excavations from the danger of ground movement or cave-ins. Continuous air monitoring is required to ensure no atmospheric hazards are detected.

CONTROLLED DOCUMENT- 24 HRS FROM 10/22/2020 1:31 PM
-- UNCONTROLLED THEREAFTER –

4.1.2.

4.1.3. All surface encumbrances that create a hazard to employees shall be removed or supported, as necessary, to safeguard employees.

4.1.4. A stairway, ladder, ramp or other safe means of egress must be located in excavations that are four (4) feet or more in depth so as to require no more than twenty-five (25) feet of lateral travel for employees.

4.1.5. No employee shall be allowed underneath loads handled by lifting or digging equipment.

4.1.6. Employees shall not work in excavations where there is accumulated water or in excavations where water is accumulating unless adequate precautions have been taken to protect employees, i.e. water removal equipment, special support or shield systems, etc.

4.1.7. Excavated material or other materials or equipment shall be placed no closer than four (4) feet from the edge of the excavation.

4.1.8. If heavy equipment is to be operated near the edge of the excavation, the sides of the excavation must be adequately braced to prevent collapse.

4.1.9. Coordination of potentially contaminated soil testing and disposal will be conducted through the site EHS department.

4.1.10. When approaching the estimated location of underground installations, the exact location of the installation shall be determined by safe and acceptable means such as, but not limited to, hand digging, probing, etc.

4.1.11. If ANY underground obstructions are discovered, that were not documented, all work will STOP, the site re-evaluated, and the Safe Work permit reissued.

4.1.12. A bucket watch must be used when machine digging in the vicinity of underground installations.

4.1.13. The Beaumont site Excavation Checklist **(Attachment B)** must be completed by the contractor company or persons performing the excavation work before the excavation work begins. This checklist must be available at the jobsite and made available to BASF upon request.

4.1.14. The designated competent person must inspect excavations daily prior to the start of each shift and as needed throughout the shift. Inspections shall include the adjacent areas, protective systems for evidence of a situation that could result in possible cave-ins, indications of failure of a protective system, hazardous atmospheres or other hazardous condition. Inspections must also be made after every rainstorm or other event that may impact employee safety. Documentation of daily inspections must be maintained by the contractor company and made available to BASF upon request **(Attachment C)**.

CONTROLLED DOCUMENT- 24 HRS FROM 10/22/2020 1:31 PM
-- UNCONTROLLED THEREAFTER –

Internal

4.1.15. All piping within the excavation that is open-ended or has had its mechanical integrity impaired must be properly isolated to prevent material from leaking into the excavation unless adequate precautions have been taken to protect employees. Excavations greater than 4 feet where there is an atmospheric hazard potential from energy isolation requires a Confined Space Permit.

4.1.16. Excavations must have adequate barricades, guardrails, warning lights, orange mesh fence, etc. as needed for the protection of personnel, vehicles or equipment working adjacent to or passing adjacent to the excavation.

4.1.17. A Safe Work Permit is required prior to performing any excavation work.

4.1.18. For excavations outside the BASF Beaumont property line, a notification to **Texas 811** must be made 48 hours prior to digging.

4.2. Excavation Requests

4.2.1. Approved excavation requests will expire three (3) months after the date of issue. If work begins within that time frame the approved request remains in effect until work is complete. If construction has not commenced within three (3) months the excavation request will have to be re-submitted.

4.2.2. Excavation request forms should be submitted as far in advance as possible to allow for proper evaluation.

4.2.3. In the event that an emergency excavation is needed, the EHS Department and the TES Manager must be contacted. Verbal approvals may be obtained in lieu of written approvals for emergency excavations. The name of the person(s) approving the excavation work and the time the approval was given must be documented. The Excavation Request form may not be required for emergency excavations, but all other requirements of this procedure must be followed.

4.3. Person Requesting the Excavation

4.3.1. Fills out the top of the excavation request form prior to the start of excavation work. As a general rule, 48 hours should be allowed to process the request form.

4.3.2. Makes copies of any drawings that show the exact location and size and dimensions of the excavation. If no drawings exist, prepare a sketch.

4.3.3. Forwards the completed request form and drawings to the EHS department for review.

4.3.4. When necessary, walks the excavation site with the appropriate individuals.

CONTROLLED DOCUMENT- 24 HRS FROM 10/22/2020 1:31 PM
-- UNCONTROLLED THEREAFTER –

Internal

4.3.5. Presents properly completed and approved excavation request form to Safe Work Permit issuer in order to obtain a Safe Work permit.

4.4. TES Manager (or Designated Representative)

4.4.1. Reviews the excavation request form for accuracy or missing information.

4.4.2. Reviews the attached drawings to develop an understanding of the excavation location and details.

4.4.3. Searches all existing underground piping and electrical drawings and/or CAD files for the area to be excavated in order to identify underground installations.

4.4.4. Field verifies the actual location of all underground installations within four (4) feet of the proposed excavation and also locates suspected underground installations (records, drawings, general plant knowledge) Identifies all underground installations with paint markings and marks the actual locations on the drawings when applicable.

4.4.5. When necessary, walks the excavation site with the appropriate Individuals.

4.4.6. Notify and follow all requirements of the **Texas 811**, the land's right-of-way owner (third party), and BASF Beaumont site requirements.

4.4.7. Notify State and Federal centers, Beaumont underground facility owners, and/or third-party underground facility owners as needed/required.

4.4.8. Approves the excavation request form and forwards the form and supporting documents to the site Electrical department for review.

4.5. Site Electrical Department

4.5.1. Reviews drawings to develop an understanding of the excavation location and details.

4.5.2. Searches all existing underground drawings and/or CAD files for the area to be excavated.

4.5.3. Field verifies the actual location of underground lines/cables and also identifies any suspected underground installations that are not identified. Identifies all underground installations with paint markings. Mark the actual location of underground installations on the drawings.

4.5.4. When necessary, walks the excavation site with the appropriate individuals.

4.5.5. Approves the excavation request form and returns the form to the requestor.

4.6. Safe Work Permit Issuer

CONTROLLED DOCUMENT- 24 HRS FROM 10/22/2020 1:31 PM
-- UNCONTROLLED THEREAFTER –

Internal

4.6.1. Ensures that excavation work is not started without a properly completed and approved excavation request.

4.6.2. Issues Safe Work Permits/Confined Space Entry Permits as required.

4.6.3. Attaches the excavation request to the Safe Work Permit.

4.6.4. Ensures that the requestor and/or persons performing the excavation work are aware of the locations of underground installations that are identified on the excavation request form and that recommendations on the form are followed.

4.7. Contractor Performing the Work

4.7.1. Evaluate/determine compliance requirements for each excavation.

4.7.2. Completes the Excavation Checklist.

4.7.3. Fully comply with applicable State and Federal laws for excavation work.

4.7.4. Obtain a Safe Work Permit and/or Confined Space Entry Permit prior to the start of work.

4.7.5. Maintain copy of safe work permit, excavation checklist and excavation request form on the job site and comply with all permit requirements

4.7.6. Ensure that all underground obstruction markings remain visible and that all precautions are taken to avoid contact with markings and underground lines during excavation work.

4.7.7. Design and/or use engineered protective systems to protect all employees performing work in excavations.

4.7.8. Design, approve, and install support systems as necessary to protect existing structures, poles, and/or equipment.

4.7.9. Communicate problems or concerns with the excavation requestor and/or Safe Work permit issuer for resolution.

4.8. Competent Person

Conducts inspections of excavations, prior to the start of the work and as needed throughout the shift. Inspections shall include the adjacent areas, protective systems for evidence of a situation that could result in possible cave-ins, indications of failure of a protective system, and hazardous atmospheres or other hazardous conditions.

CONTROLLED DOCUMENT- 24 HRS FROM 10/22/2020 1:31 PM
-- UNCONTROLLED THEREAFTER –

Internal

5. RESPONSIBILITIES

5.1. Beaumont Site Leadership Team

Has primary responsibility for implementation of this procedure.

5.2. H&S Team Leader

Has primary responsibility for the initiation, re-issuance, administration, and/or interpretation of this procedure.

5.3. Beaumont Site Employees and Contractors

Have primary responsibility for adherence to this procedure including identifying deficiencies in the procedure and identifying, reporting and correcting activities not in compliance with the procedure.

6. RELATED DOCUMENTS

OSHA 29 CFR 1926 Subpart P

7. ATTACHMENTS

Excavation Request – Attachment A
Excavation Checklist – Attachment B
Daily Inspection Form – Attachment C

CONTROLLED DOCUMENT- 24 HRS FROM 10/22/2020 1:31 PM
-- UNCONTROLLED THEREAFTER –

Internal

Excavation Request

(To be completed by Requestor)

Attachment A

BMEHS 002.010

Section 1	**Excavation Request Information**
Work Order Number:	
Requested by:	
Date of Request:	Date of Excavation:
Location / Unit:	Area:
Project title:	
Description of excavation:	
BASF Representative:	Phone No:

Section 2	**Excavation Plan**
Applicable drawings (check all that apply below)	Check all that apply below
☐ Process ☐ Lighting ☐ Stormwater ☐ Highway data ☐ Sewer ☐ Grounding ☐ Firewater ☐ Phone / Data ☐ Duct Bank ☐ Electrical ☐ Potable Water ☐ Other (specify)	Drawings Attached? ☐ Yes ☐ No Lines field verified? ☐ Yes ☐ No Method of verification: ☐ Visual ☐ Probe ☐ Metal Detector Excavated soil Disposal site: ☐ Onsite ☐ Offsite Landfill ☐ N/A Texas 811 notified? ☐ Yes ☐ No Special Considerations (detail below):

Section 3	**Excavation Plan Approvals and Signatures**
TES/TSS Manager:	Date:
I/E Supervisor:	Date:
Excavation Competent Person:	Date:
Contract Supervisor:	Date:
Shift Coordinator:	Date:
BASF EHS Specialist:	Date:
Additional Comments:	

NOTE: Each individual signing the above is entitled to a copy of the permit if desired.

CONTROLLED DOCUMENT- 24 HRS FROM 10/22/2020 1:31 PM
-- UNCONTROLLED THEREAFTER –

Internal

NOTE: This form must be completed by the contractor company or persons performing the excavation prior to beginning any excavation work.

Section 1	**Excavation Description**
Work Order #:	
Date:	Time:
Location / Unit:	
Job Description (be specific):	

Section 2	**Excavation Checklist**		
Competent person has authority to remove employees from the excavation?	☐ Yes	☐ No	
Have the individuals assigned to this task been trained in excavation safety?	☐ Yes	☐ No	
Have the utility owners been notified, if applicable?	☐ Yes	☐ No	
Has the ground been previously disturbed?	☐ Yes	☐ No	
Is there a concern for the development of a hazardous atmosphere?	☐ Yes	☐ No	
Has there been a change in vehicular and machinery operation patterns?	☐ Yes	☐ No	
Is water removal equipment needed?	☐ Yes	☐ No	
Are portable trench boxes or trench shields adequate?	☐ Yes	☐ No	
Are support systems needed for adjacent structures?	☐ Yes	☐ No	
Will barricades/warning lights be needed?	☐ Yes	☐ No	
Are highly visible warning vests available for employees exposed to vehicular	☐ Yes	☐ No	
Have underground installations been marked in the field?	☐ Yes	☐ No	
Have electrical lines been de-energized or other precautions taken?	☐ Yes	☐ No	☐ N/A
Are registered professional engineer designs available at the jobsite?	☐ Yes	☐ No	☐ N/A
What method shall be used for entry and exit:	☐ Stairway ☐ Ladder ☐ Ramp		
Size of the excavation in feet:	Depth:	Width:	Length:
Distance in feet to Utilities, Buildings, Footings, Pilings:			
Distance in feet to source of vibrations (heavy equipment operations, roadways, etc.):			
Excavation method:	☐ Backhoe ☐ Hand dig ☐ Ditch-witch ☐ Other		
Check known underground installations:	☐ Electrical ☐ Telephone ☐ Water ☐ Sewer ☐ Steam ☐ Alarm ☐ Drains ☐ Process ☐ Footings ☐ Pilings ☐ Concrete encasement ☐ Other		
Protective system used for excavation? ☐ Sloping ☐ Shoring ☐ Benching (Note: Shoring, sloping and benching systems in excavations greater than 20 feet deep shall be developed by a registered professional engineer.)			
Comments:			

CONTROLLED DOCUMENT- 24 HRS FROM 10/22/2020 1:31 PM
-- UNCONTROLLED THEREAFTER –

Internal

Excavation Daily Inspection

Attachment C BMEHS 002.010

Section 1	**Excavation Inspection**
Work Order #:	
Inspection Date:	Inspection Time:
Location / Unit:	
Competent Person (print & sign):	

Section 2	**Excavation Specifications**
Depth (feet):	Width (feet):
Date opened:	
The excavation is properly:	
Shored ☐ Closed ☐ Open ☐ Wood ☐ Metal ☐ Other (specify)	
Sloped ☐ 3/4:1 ☐ 1:1 ☐ 1.5:1 ☐ 2:1 ☐ Vertical sides	

Section 2	**Excavation Inspection Items**	
Weather conditions:	☐ Clear ☐ Calm ☐ Windy ☐ Rain ☐ Overcast ☐ Hot ☐ High Humidity	
Was atmospheric testing required?		☐ Yes ☐ No
Was atmospheric testing done?		☐ Yes ☐ No ☐ N/A
Is the spoil pile back 4' from the edge?		☐ Yes ☐ No
Have surface encumbrances been removed?		☐ Yes ☐ No
Are there any signs of sloughing or cave-in?		☐ Yes ☐ No
Is there water accumulation in the bottom?		☐ Yes ☐ No
Are there vibration sources near the excavation?		☐ Yes ☐ No
Is there adequate access/egress (ladder, ramp, etc.)?		☐ Yes ☐ No
Are registered professional engineer's drawings available, where required?		☐ Yes ☐ No ☐ N/A
Inspections of the excavation must be made by the competent person prior to the start of work on each shift and as necessary during the shift. Inspections must also be made after every rainfall or other hazard-increasing occurrence.		
Comments:		

CONTROLLED DOCUMENT- 24 HRS FROM 10/22/2020 1:31 PM
-- UNCONTROLLED THEREAFTER –

Internal