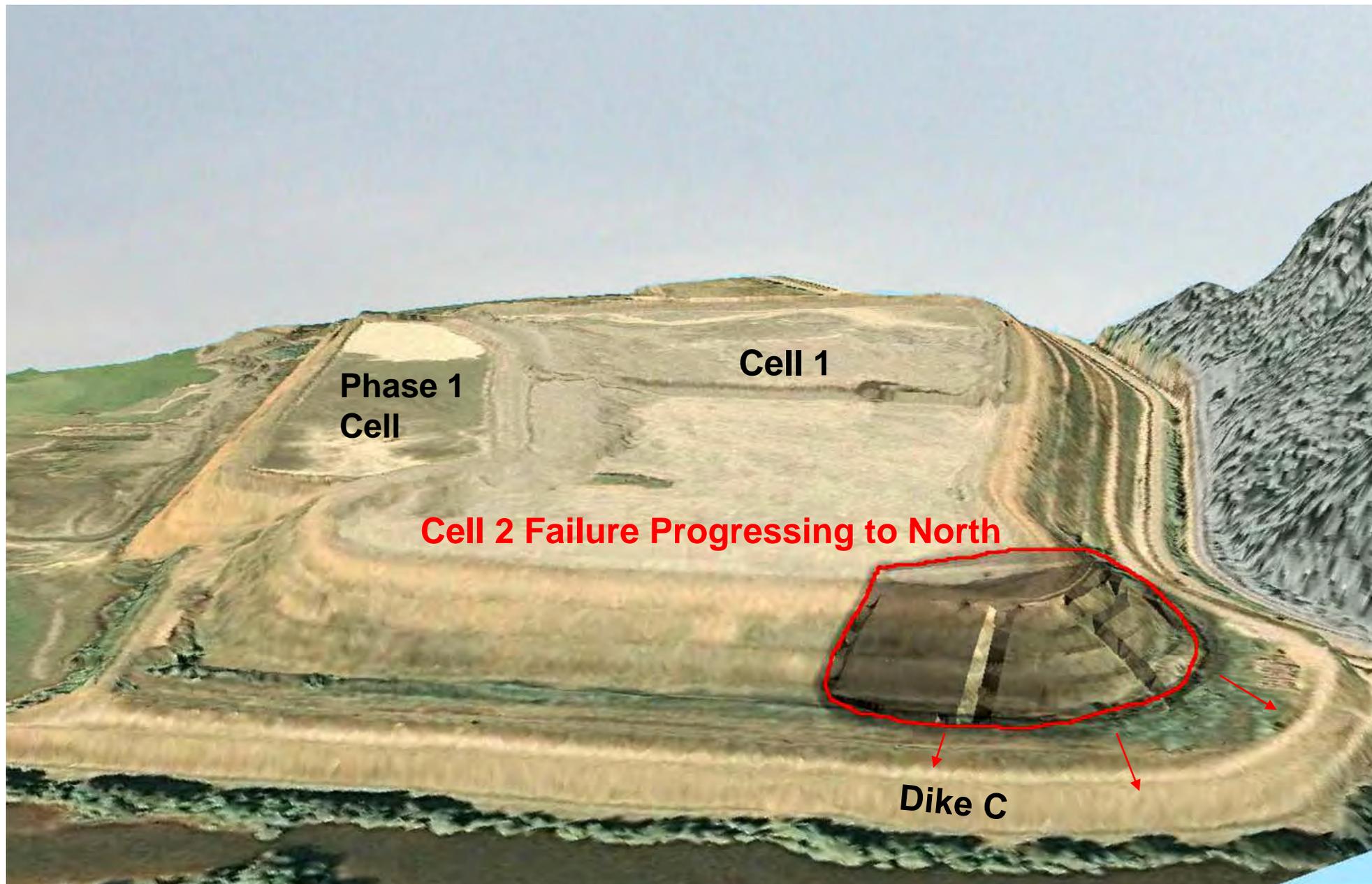
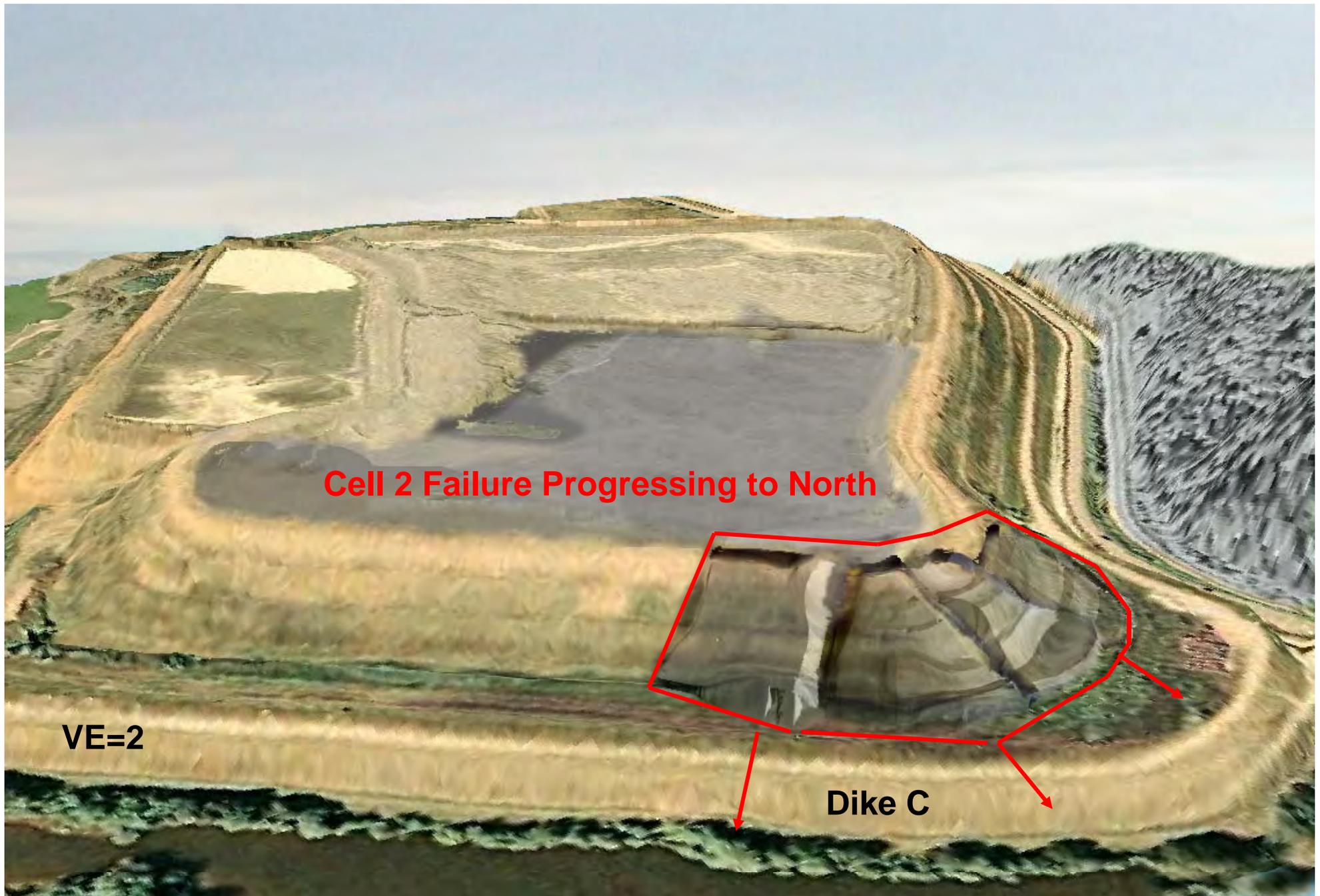


**December 22, 2008 Expected Failure Location at NW Corner of Cell 2**



**December 22, 2008 Expected Failure Location at NW Corner of Cell 2**

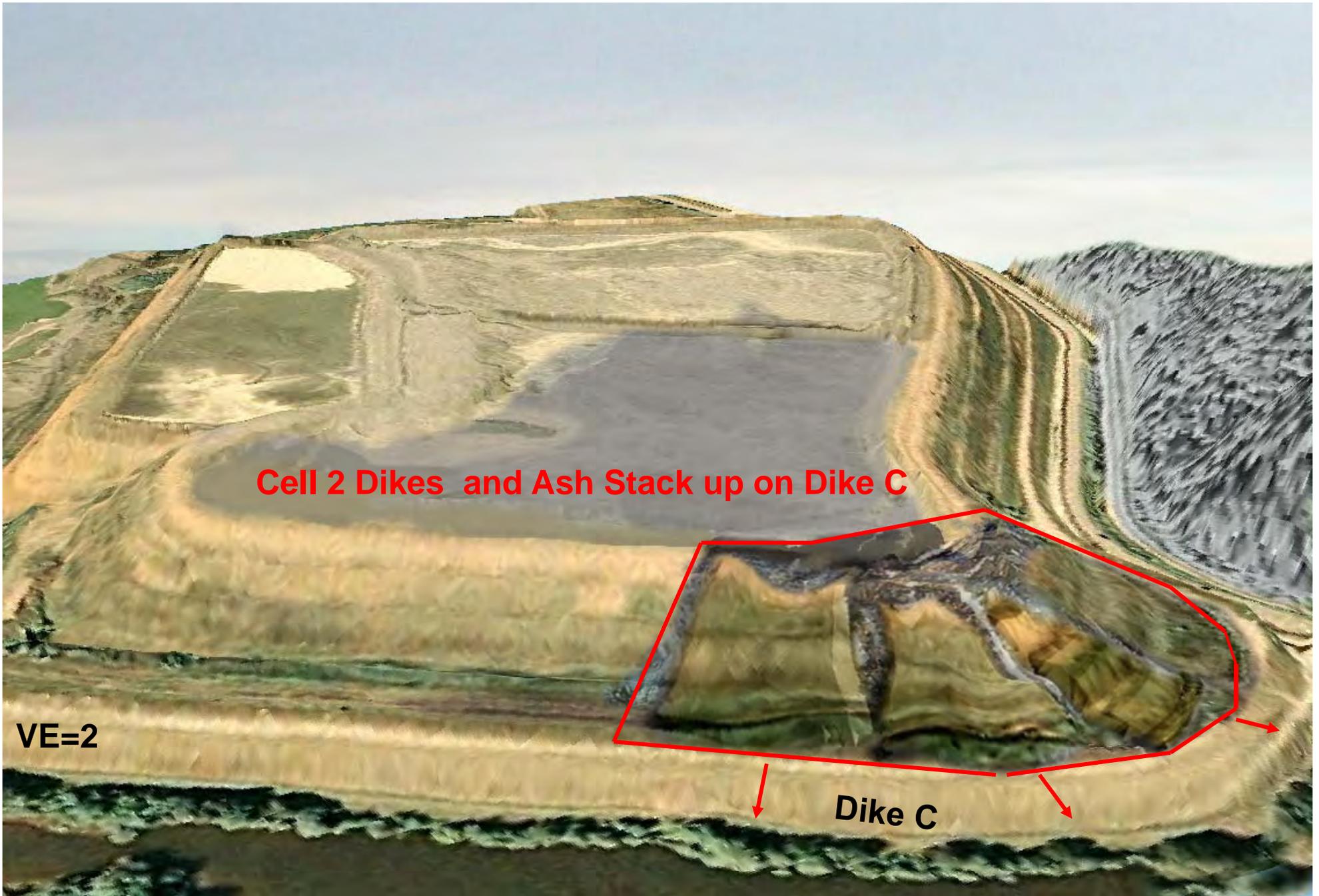


**Cell 2 Failure Progressing to North**

**VE=2**

**Dike C**

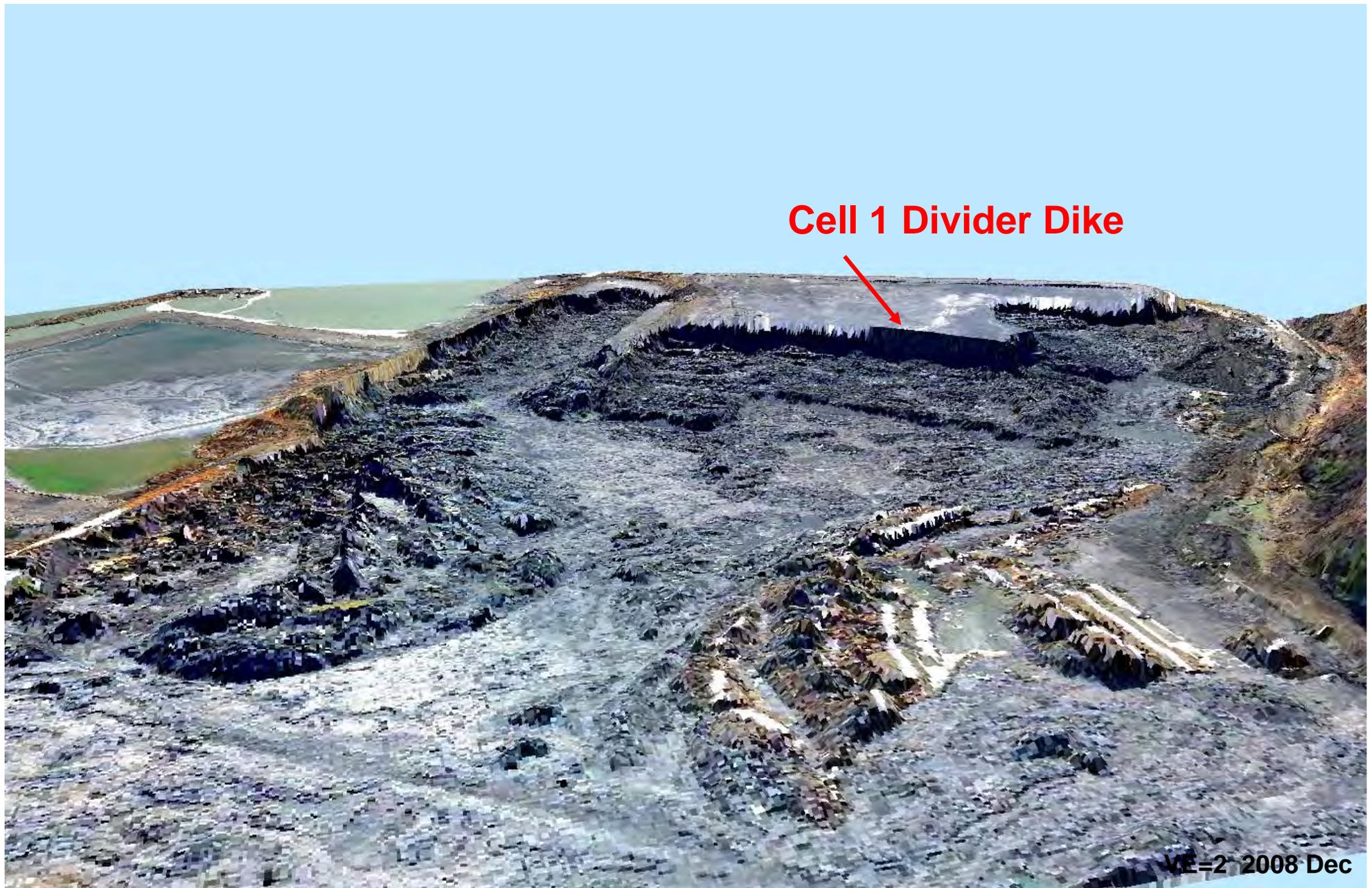
**December 22, 2008 Expected Failure Mode at NW Corner of Cell 2**



**December 22, 2008 Expected Failure Mode at NW Corner of Cell 2**

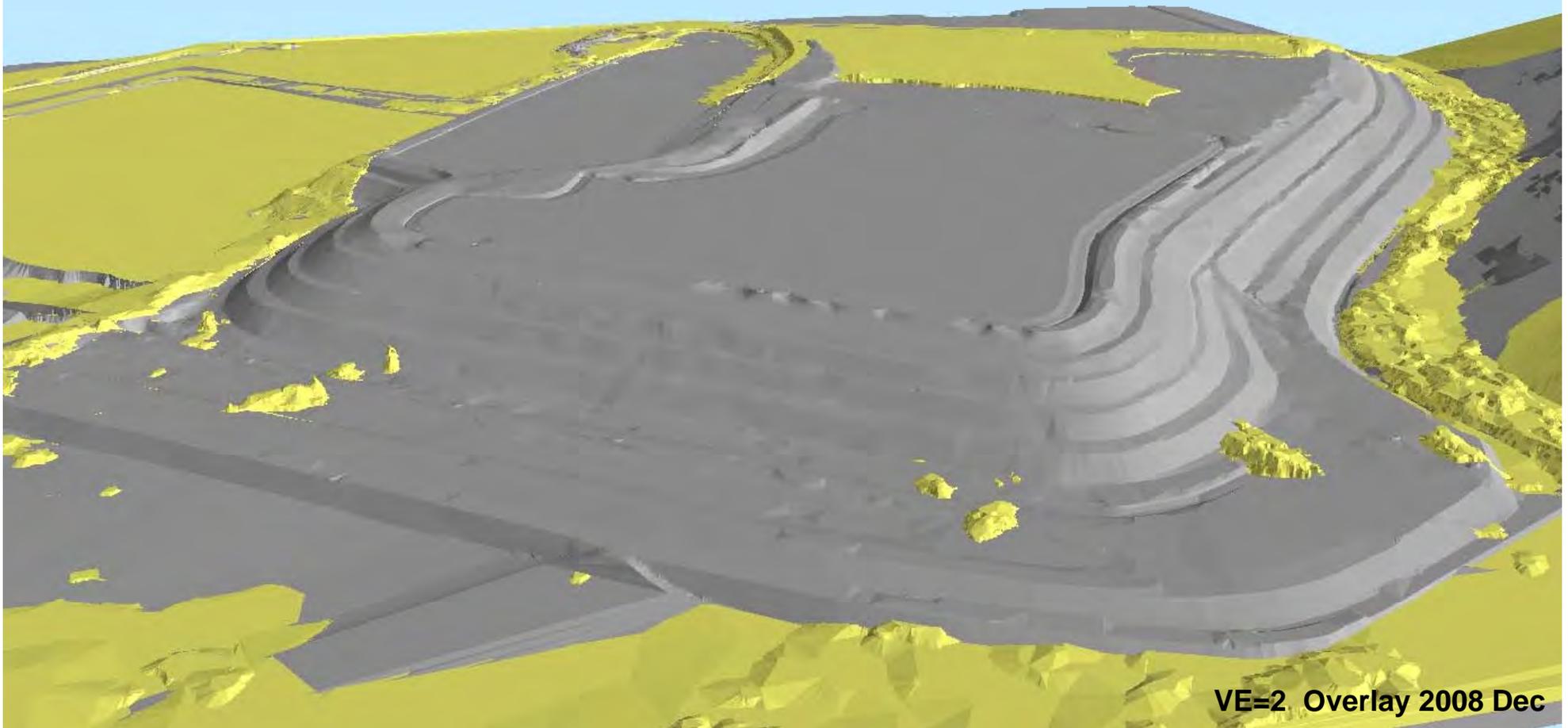


**December 22, 2008 Expected Failure Mode at NW Corner of Cell 2**



**December 23, 2008 Post Failure Photo Overlaid on TVA Surveys**

**5.4 Million Yards Lost**



**Post Failure Overlaid Over Pre-Failure from TVA Surveys**

# CONSTRUCTION DETAILS & HISTORY

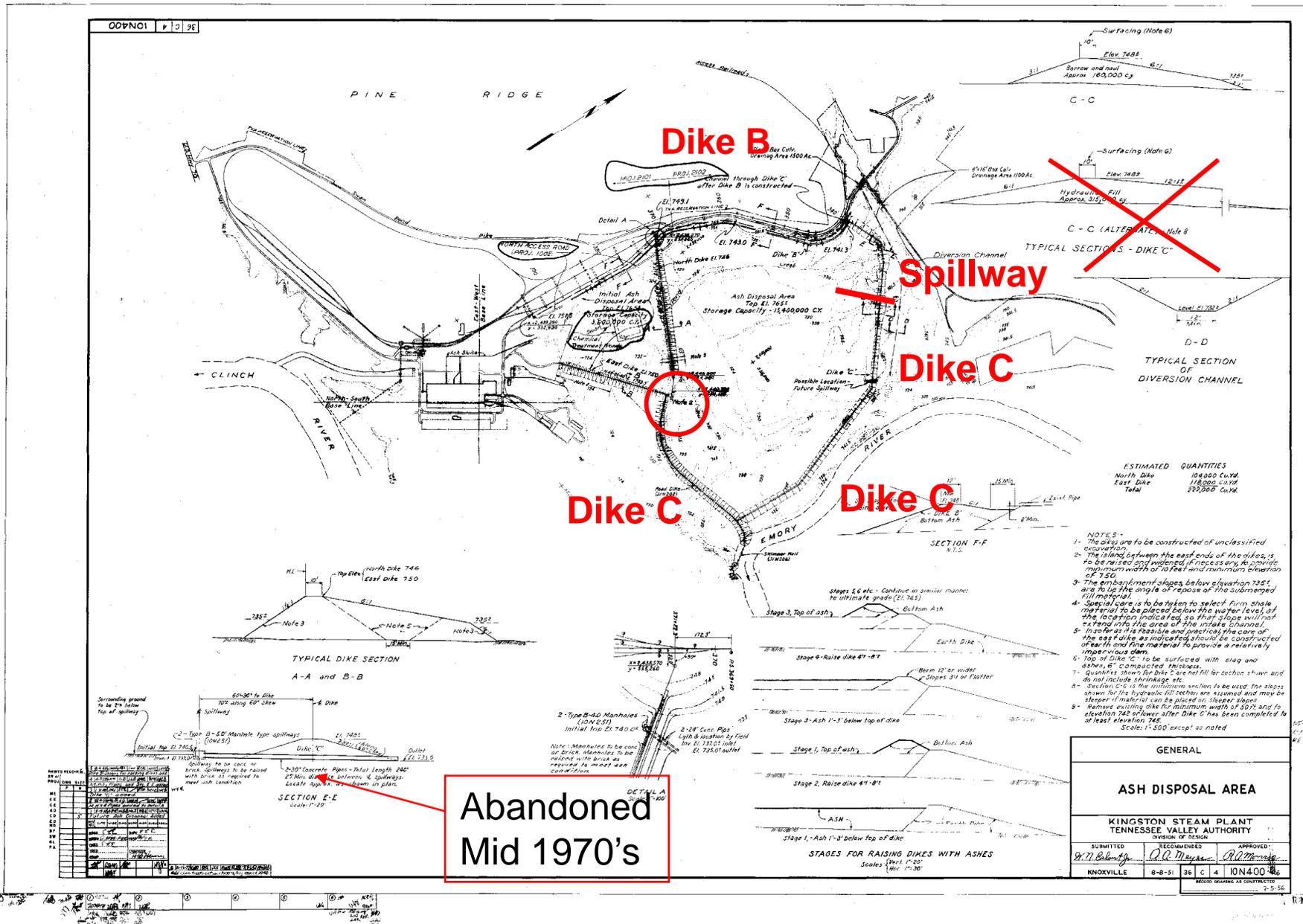
# Kingston Ash Disposal Cells

- Built over former Swan Pond Creek flood plain
- Flyash initially sluiced directly into Watts Bar Reservoir
- Engineered impoundment cells retained 85 feet of ash
- History of wet flyash disposal, except for dike building
- Upstream dike construction method used to raise cells
- No evidence of slope failure or major seepage problems from October 16 to December 22, 2008
- Cell 2 was actively being filled in December 2008
- Failure was unexpected, rapid and the resultant ash flows were nearly level (<0.3 degrees)
- Failure took less than 1 hour

# Design History of the Ash Pond Area

- Field Surveys of Swan Pond - 1924 and April 1940
- Swan Pond Land Map – November 1940
- USGS Maps - 1941
- TVA Drawings showing Ash Pond – August 1951
  - TVA Drawings 10N400, 410 and 420 Series
  - Top of Dike C (3 raisings) El. 774
- TVA Vertical Expansion up to El. 868 – 1995 to 1998
  - TVA Drawings 10N425 Series, Sheet 1 thru 16
  - Dike E3 Capped out in 2014 at El. 844
- Lateral & Vertical Expansions up to El. 972 – 2000's
  - Undated Parsons 10N425 Drawings, Sheets 20 and higher

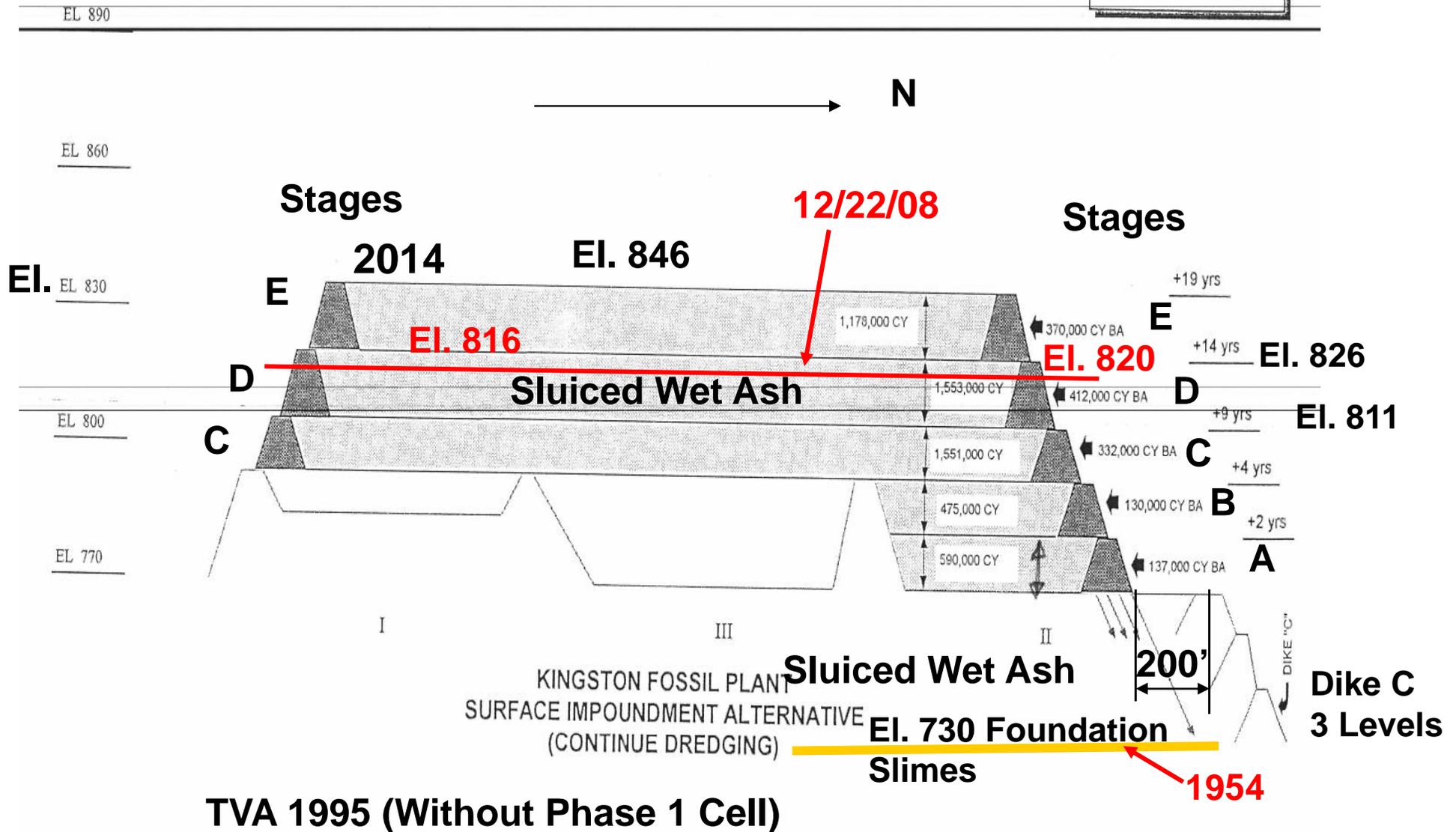
# TVA 1951 to 1977 Ash Pond Design





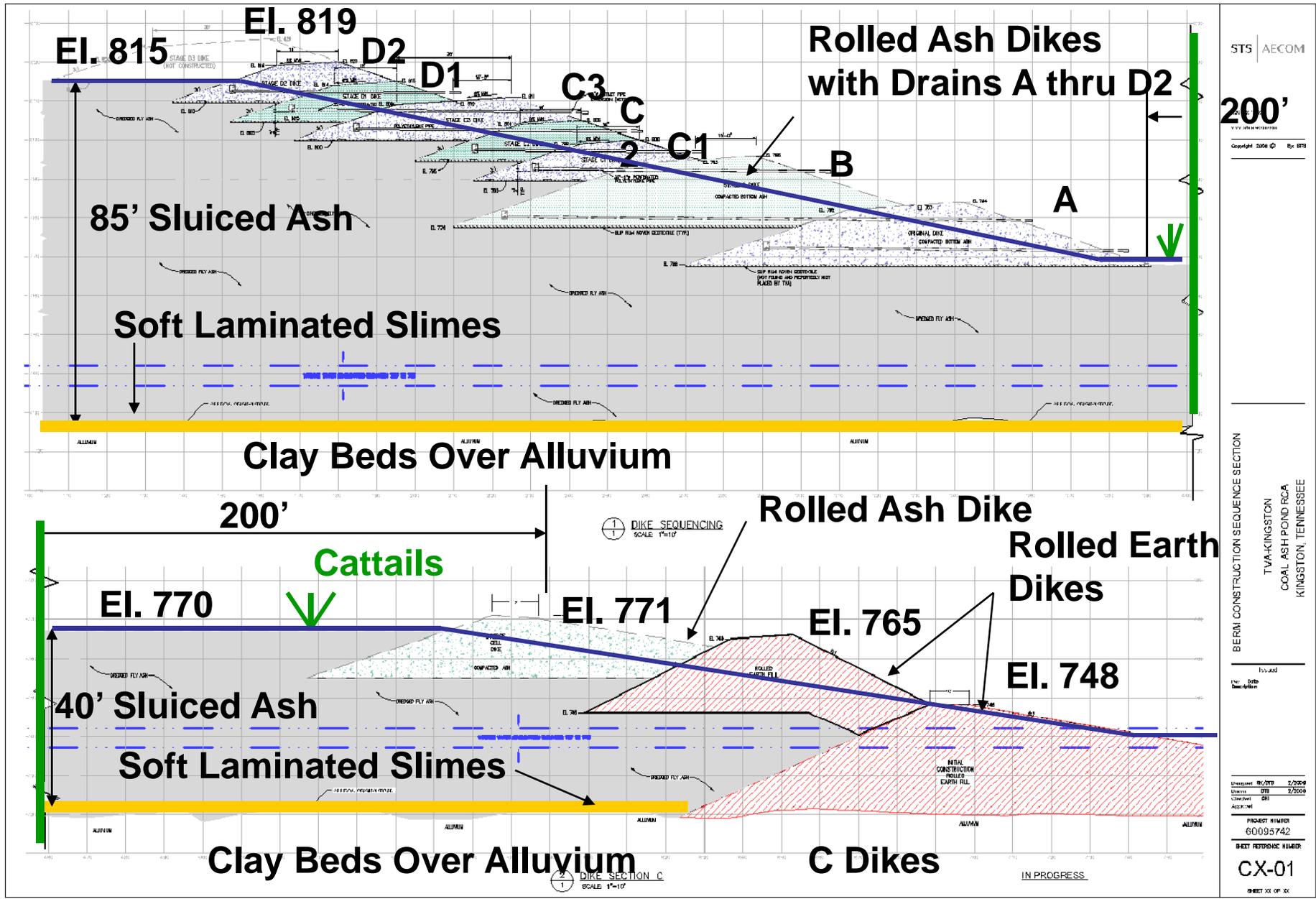
# Cells 1, 3 and 2 Expansion by Dredging

EXHIBIT B





# Cell 2 and Dike C Cross-Section A-A'



STS | AECOM

200'

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BERM CONSTRUCTION SEQUENCE SECTION

TVA-KINGSTON  
COAL ASH POND RCA  
KINGSTON, TENNESSEE

Project Number: 60093742  
Sheet Reference Number: CX-01  
Sheet XX of XX

# **Failure Chronology**

Information based on TVA  
Records and Interviews

# Cell 2 Dredge Operations

- Started filling North Cell 2 on 10/16/2008
- Filled 4 days/week for 10 hours/day
- TVA Annual Inspection 10/20/08 – Erosion & Gullies
- 10-inch dredge reportedly discharged 5,000 gpm to NW corner of Cell 2
- Dike D2 in place at El. 820, pool maintained 4 feet below dike crest using decant weir
- Cell 2 lowest toe drains started flowing
- (N side) - 12/09/08
- Last Cell 2 Dredge Filling - 12/18/08
- Last Inspection - 12/21/08 at Early Afternoon

12-30-08



# Failure Event Records 12/22/08

- TVA's Staff Notified by police ~1:00
  - Drove to Swan Pond Circle, Blocked by police
- TVA's Staff Drives to Dike C 1:30
  - Drove 200 yards past "Y" at Dikes C & D
- TVA's Staff at top of Cell 1 ~1:30
  - No Center Dike Observed
- TVA's Staff goes to "Y" at Dikes C & D ~1:35
  - Felt ground motions and no Dike C
  - Could not proceed beyond "Y"

**EST**

# **Field Observations to Locate Relics**

Field Observations to Understand  
Direction of Movement and  
Failure Sequence





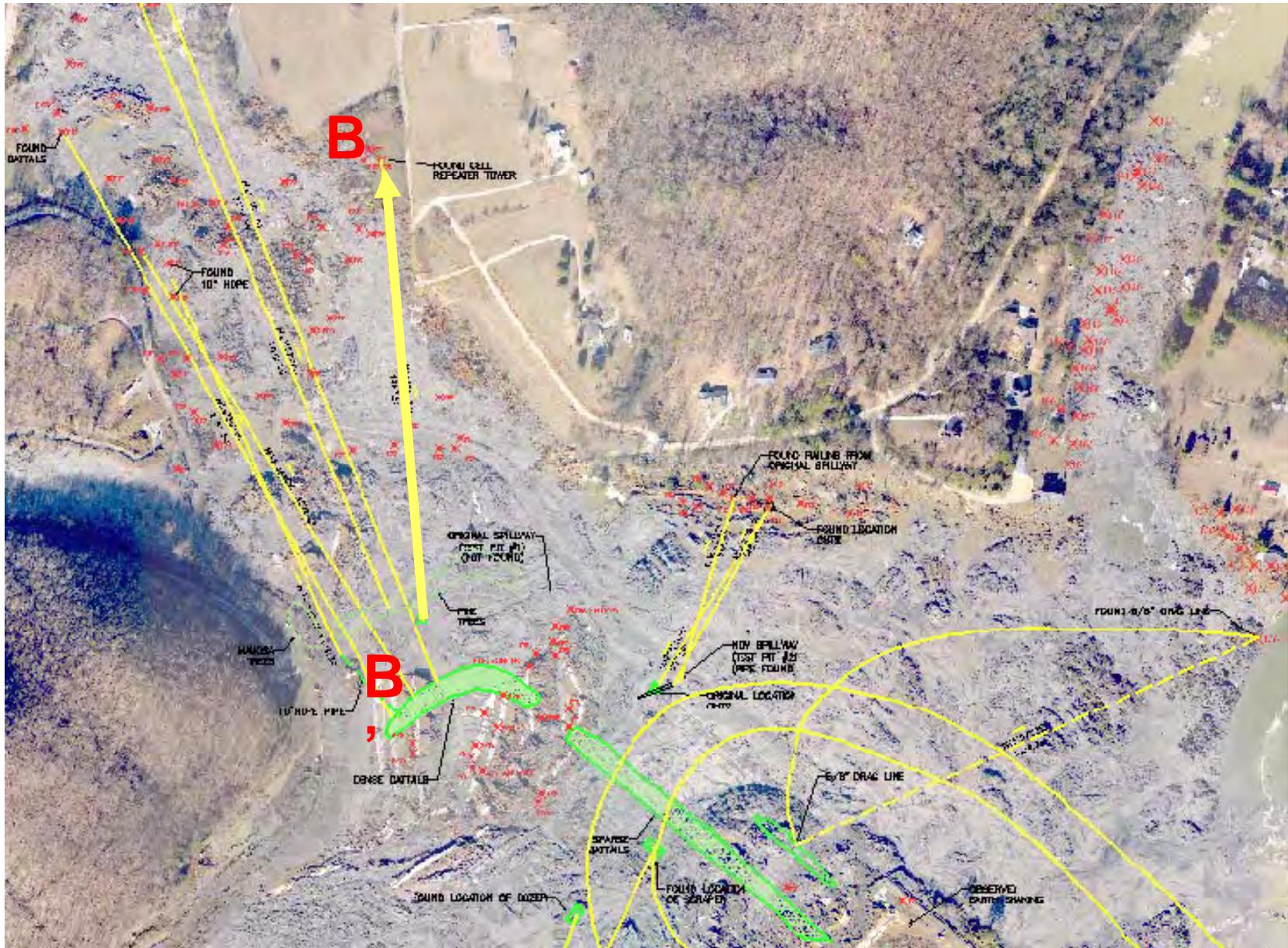
# Relic El. 670 Bench at North End of Slough 2

**A**



Ash Spilled Over Cattails

# Relic Survey Summary 2/13/09



# Relic Cell Tower





# Home Pushed onto Swan Pond Circle





## North Shore – Dike C

**Former Schean  
Home Location**





# Relic Skimmer Before and After Failure

