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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
Protecting Texas by Reducing and Preventing Pollution

March 25, 2025

Board of Directors
Caldwell-Travis Counties SWCD #304
111 E. MLK Jr. Industrial Blvd., Ste. B
La Grange, Texas 78945

Members
Plum Creek Conservation District
P.O. Box 328
Lockhart, Texas 78644

Honorable Hoppy Haden, County Judge
Caldwell County Commissioners Court
110 S. Main Street
Lockhart, Texas 78644

Subject: Lower Plum Creek WS SCS Site 38 Dam – TX04369
Caldwell County
Dam Safety Inspection Report

Dear Board, Members and The Honorable Judge Haden,

We wanted to extend our appreciation for allowing the Texas Commission on Environmental Quality (TCEQ) Dam Safety staff to visit the above-mentioned dam on October 7, 2024. We have completed our inspection report and have enclosed a copy of the inspection report for your reference.

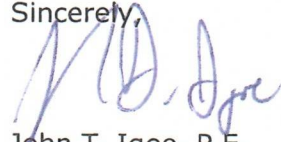
Lower Plum Creek Site 38 Dam was found in good condition. The primary issues of concern included small bare spots on the crest, a larger bare spot on the downstream slope of the embankment, excessive vegetation covering the upstream riprap, spalling at the end of the principal spillway outlet pipe and pipe joint sealant degradation on the outlet pipe.

Please review the enclosed report and provide our office a written response by June 25, 2025 with a plan of action for addressing each area of concern for the dam. It is understood that some of the requirements/recommendations may require a Licensed Texas Professional Engineer (PE) to be retained, and your written corrective action plan can be limited to notifying us of a time frame to secure the services of a PE.

Thank you for your time and if you would like to discuss any of this in further detail, please feel free to contact me by email john.igoe@tceq.texas.gov or by phone at 512-239-1259.

Caldwell-Travis Counties SWCD #304
Plum Creek Conservation District
Caldwell County Commissioners Court
March 25, 2025
Page 2

Sincerely,



John T. Igoe, P.E.
Engineer, Dam Safety Section
Critical Infrastructure Division MC-177

Enclosed: Inspection Report
TCEQ's November 30, 2022 EAP Comment letter

cc: Ms. Karen Green, P.E., NRCS-Texas Dam Safety
Mr. Steve Bednarz, P.E., Texas State Soil and Water Conservation Board

Jon Niermann, *Chairman*
Emily Lindley, *Commissioner*
Bobby Janecka, *Commissioner*
Toby Baker, *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

November 30, 2022

Daniel Meyer
Executive Manager
Plum Creek Conservation District
1101 W. San Antonio St
Lockhart, TX 78644

Robert Barron
Plum Creek Conservation District
1101 W. San Antonio St
Lockhart, TX 78644

Re: **Emergency Action Plan – Draft Updates**
Plum Creek Conversation District Watershed Sites (21 dams):
1 (TX01582), 2 (TX01589), 3 (TX01590), 4 (TX01591), 5 (TX01575), 6
(TX01576), 7 (TX04711), 10 (TX01577), 12 (TXTX01579), 14 (TX03423), 16
(TX04657), 17 (TX03425), 18 (TX03426), 21 (TX03428), 24 (TX03429), 26
(TX03430), 28 (TX03420), 29 (TX03432), 31 (TX03421), 34 (TX03418), 38
(TX04369)

Dear Mr. Meyer:

The Texas Commission on Environmental Quality (TCEQ) Dam Safety Section received updated draft Emergency Action Plans (EAPs) on November 10, 2022, for the dams listed above. The updated sheets, including the signed Approval and Implementation pages included with the submittal, have been replaced in our copies of each EAP. However, the items below were requested in TCEQ's August 2, 2021, letter (attached) and have not been received or addressed.

Please note that TCEQ is still showing Sites 24, 26, 28, 29, 31, 34, & 38 named as Lower Plum Creek WS SCS sites in the dam safety database. If the names of these dams need to be updated to Plum Creek Conservation District as indicated on the front cover of the EAPs that were submitted, please indicate so in your response to this comment letter. If not, please update and submit the associated cover pages.

Please note/provide the following:

- Confirm Distribution List, Directory of Personnel (Tab 5), Annual EAP Evaluation Checklist (Tab 7), and Training Record (Tab 9) forms are complete and current.
Distribution List -Please note that the address for TCEQ should be as follows:
Texas Commission on Environmental Quality (TCEQ)
Dam Safety Section, MC-177
P.O. Box 13087
Austin, TX 78711

Tab 5 - Please note that the telephone number for TCEQ on the Directory of Personnel is incorrect and should be 512-239-0326

- The inundation maps are not dated and the addresses for the structures/ buildings impacted are not clearly noted on the inundation maps. The exception to this comment is TX03421 Site 31 because no structures are impacted, but streets and roadways impacted should still be marked clearly. Please update the *inundation maps* with this information or provide a list of addresses for the residences/buildings impacted by inundation. It is recommended that a list of contacts with phone numbers be included in the notification charts for area residences/businesses. If this list is maintained by the County Sheriff's Office, please indicate this in the Notification Flowchart or in the EAP.

Please ensure the inundation maps contain the following:

- Label the dam.*
 - Label all applicable street names and river/stream names.*
 - Include a north arrow.*
 - Scale the map appropriately to ensure all applicable features are visible. Include a scale bar.*
 - Circle the potential hazards that could be affected by a dam failure.*
 - Call out affected roads and low-water crossings.*
 - Label potentially affected structures with street addresses.*
 - Date map is made.*
- The page numbering for Sites 4, 10, 12, & 14 are incorrect in the Table of Contents beginning with Tab 8 – please check and update.

Regarding the Site 5 EAP inundation map – I have not yet received the breach analysis report in referred to in the EAP. Please send that report so that I may verify the maps.

Once you have reviewed these comments, please revise your draft EAPs accordingly. If more time is needed for the inundation maps, please state so in your response letter as we understand these may take coordination with your engineer. We ask that you submit a response letter and updated EAPs by March 1, 2023. It is not necessary to submit a full report; replacement sheets of the revised pages can be included with your response.

Thank you for your work to improve the safety of dams in Texas. If you require further assistance or have questions, please contact me at (512)239-2443 or Dee.Mccalley@tceq.texas.gov.

Regards,



Denice "Dee" McCalley, P.E.
Dam Safety Section
Critical Infrastructure Division, MC-177

Enclosure: August 2, 2021 TCEQ EAP Comment Letter



DAM SAFETY SECTION

CRITICAL INFRASTRUCTURE DIVISION

DAM SAFETY INSPECTION REPORT

GENERAL INFORMATION

INVENTORY No.: TX04369

DAM: Lower Plum Creek WS Site 38 Dam

OWNER: Caldwell-Travis SWCD and Plum Creek Conservation District

STREAM: Salt Branch

BASIN: Guadalupe River Basin

COUNTY: Caldwell

GENERAL LOCATION: 1 mile Northwest of Luling

LATITUDE / LONGITUDE: 29.691585 / -97.657731

DAM HEIGHT: 30 ft

SIZE CLASSIFICATION: Intermediate

NORMAL CAPACITY: 113 ac-ft

MAXIMUM CAPACITY: 1993 ac-ft

NORMAL WATER LEVEL: 389.6 ft above mean sea level (ft-msl)

CURRENT WATER LEVEL: 381.6 ft-msl

PREVIOUS INSPECTION DATE: October 20, 2020

CURRENT INSPECTION DATE: October 7, 2024

INSPECTION BY TCEQ PERSONNEL: John Igoe P.E., Jeff Thomas P.E., P.G., and Juan Valera P.E.

PERSONNEL CONTACTED: Daniel Meyer, Executive Manager of Plum Creek Conservation District, was contacted by phone.

Texas Commission on Environmental Quality • PO Box 13087 • Austin, Texas • 78711-3087

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SUMMARY

Lower Plum Creek 38, an intermediate size earthen dam, was inspected by TCEQ staff on October 7, 2024, as part of the TCEQ regular inspection schedule. The owner was notified of the inspection on September 19, 2024.

The dam was found in overall good condition. The primary issues of concern included some small bare spots on the crest, a larger bare spot on the downstream slope of the embankment, excessive vegetation covering the upstream riprap, spalling at the end of the principal spillway outlet pipe and pipe joint sealant degradation on the outlet pipe. A verbal exit interview, explaining the results of the inspection, was conducted on the same day of the inspection with Alan Burklund, project manager with the Plum Creek Conservation District.

BACKGROUND

The dam was designed by the U.S Department of Agriculture Soil Conservation service (SCS) with construction being completed in 1976. The Caldwell-Travis Soil and Water Conservation District (SWCD), the city of Luling and Plum Creek Conservation District are the sponsors. The Plum Creek Conservation District (PCCD) is currently responsible for the operation and maintenance of the dam.

The 2020 NRCS inspection reported the dam in good condition with adequate operation, however, it was noted that the embankment crest had little grass cover and that the downstream embankment had several bare spots. The owner's representative noted that a recent re-seeding had occurred.

The dam was designed and constructed as a high hazard dam and the NRCS and TCEQ currently classify the dam as high hazard.

PRE-INSPECTION MEETING

There was no pre-inspection meeting, however, the owner's representative, Alan Burklund, project manager with the PCCD, did attend the inspection.

POST-INSPECTION MEETING

A verbal exit interview, explaining the results of the inspection, was conducted on the same day of the inspection with Alan Burklund. An email was sent to the PCCD Manager, Daniel Meyer, as well as Alan Burklund post inspection with a general summary of the findings.

INSPECTION FINDINGS

Figure 1 is a location map for Lower Plum Creek Site 38 Dam. Figure 2 is an aerial (2017) view of the dam with 10-foot contours. Figure 3 is an aerial (2017) showing the approximate photograph locations. Note that right and left indications are from the perspective of an observer looking downstream. Field measurements were taken during the inspection using a hand-level and survey rod. The water level was at approximately 381.6 ft-msl, or 8 feet below the lower inlet ports of the principal spillway.

Crest

- The dam crest has a length of approximately 1,485 feet using aerial photography and the crest width was measured during the inspection to be 14 foot wide.
- The crest was found to be in good condition, however, there were several areas with no grass cover. See photographs 1 and 2.

Upstream Slope

- The 2.5 horizontal to 1 vertical [2.5H:1V] upstream slope of the earthen embankment was covered with grass, and the grass was of sufficient density.
- The upstream riprap was performing well, and no excessive erosion was noted, however, there was significant vegetation growing within the riprap.
- The upstream slope was found to be in good condition.
- See photographs 3 and 4.

Downstream Slope

- The 2.5H:1V downstream slope of the earthen embankment was covered with grass except for a bare strip located at the right end of the embankment approximately 280 ft. from the principal spillway.
- The downstream slope was found to be in fair condition.
- See photograph 5.

Principal Spillway

- The principal spillway consists of an open top rectangular riser with a 2.5 ft. by 7.5 ft. drop inlet with invert height of 6 ft. The spillway drop inlet had four 2.5 ft. by 1 ft. ungated inlet ports (two on each side).
- The 190 ft. long 2.5 ft ID prestressed, concrete lined steel cylinder discharge outlet pipe was in fair condition, however, there was spalling at the end of the pipe and pipe joint sealant degradation. Both appeared to be repaired in the past.
- There were two 6-inch toe drain pipes bolted to the base of the outlet cantilever. The toe drains were dry and not flowing. The pipes were found in good condition.
- The spillway was found to be in good condition.
- See photographs 8, 9, 10, 11 and 12.

Emergency Spillway

- The emergency spillway, located at the right (southwest) side of the dam, was found to be in good condition.
- Per the NRCS as-built plans, the spillway is a 150 ft wide earthen channel with a control elevation of 340.6 ft-msl. It was found with mostly grass and small weed cover.
- See photograph 13.

Low Flow Outlet

- Via email, Alan Burklund of the PCCD, stated the low flow outlet valve is exercised annually. The valve was last inspected and exercised on July 19, 2024.
- The 12-inch gated low flow outlet valve is located at the bottom of the principal spillway.
- The low flow outlet was found to be in good condition.
- See photograph 14.

Instrumentation

- Via email, both Alan Burklund and Daniel Meyer indicated the weather station instrument located on the upstream slope is out of service. The instrument used to measure precipitation and reservoir level.
- See photograph 15.

Downstream Channel

- The channel downstream of the plunge pool contained trees and brush that have the potential to restrict flow from the plunge pool.
- See photograph 9.

CONFIDENTIAL: DOWNSTREAM HAZARDS, SECURITY

This dam is classified as a high hazard dam due to several downstream houses that could be impacted by a dam failure. The nearest house is approximately 485 ft. from the dam crest.

A full breach analysis was conducted in April 2016 by Halff. The analysis used was sufficient to accurately and conservatively estimate the inundation limits. The model followed TCEQ's rules and guidelines and showed that several roads, bridges, and residences were in the inundation limits. Due to the number of structures and roads potentially impacted by a breach, the high hazard was confirmed.

It should be noted that the hazard classification is not a description of the condition of the structure, but rather, a description of the potential for loss of downstream life or property in the event of a failure of the dam. The high hazard classification indicates that some potential for loss of life exists.

The dam is located on private property and public access to the dam is not permitted. There is a gate located at the northeast side of the site and a fence that runs the length of the upstream embankment near its toe and a partial fence along the downstream embankment near its toe.

HYDROLOGIC / HYDRAULIC (H&H) ANALYSES

A hydrologic and hydraulic analysis was conducted by Halff in April 2016. The analysis showed the dam met 75% PMF. This dam was designed and built by the NRCS to safely pass a class "c" design flood.

Therefore, the dam is **hydraulically adequate**.

OPERATION AND MAINTENANCE (O&M) PLAN

Alan Burklund, the owner's representative, stated in an email that a district-wide written Operation and Maintenance plan exists for this dam. The following was noted related to the O&M plan:

The low flow outlet valve is exercised annually by a contractor. The valve was most recently exercised and inspected on July 19, 2024.

EMERGENCY ACTION PLAN (EAP)

A draft Emergency Action Plan was received on November 10, 2022. Comments were provided by letter on November 30, 2022. A letter was received from the PCCD on January 12, 2023, indicating updates would be made to the EAP, however, a final version has not been received. The November 30, 2022 letter is enclosed for your reference.

A tabletop exercise was conducted on January 8, 2024 at the L.W. Scott Annex in Lockhart, TX.

REQUIREMENTS/RECOMMENDATIONS

The following requirements and/or recommendations are provided (not prioritized):

1. In 30 TAC Chapter 299, §299.61, an EAP is required.

The *Guidelines for Developing Emergency Action Plans for Dams in Texas* (and associated electronic templates) can be downloaded at:

https://www.tceq.texas.gov/compliance/investigation/damsafetyprog.html#guide_eaps

Please also note the additional requirements regarding your EAP (30 TAC §299.61 (g)-(h)). The owner shall:

- Review the EAP annually,
 - Update the EAP as necessary,
 - Submit a copy of the updated portions of the EAP, or written notification that no updates were necessary, to TCEQ annually; also, establish a procedure to ensure that all the copies of the EAP (per the Distribution List) get revised,
 - Perform a tabletop exercise at least every five years. Please notify our office of the planned date of this exercise and provide written documentation of lessons learned following the exercise.
2. Your Operations and Maintenance (O&M) plan shall include items addressed in the requirements/recommendations portion of this report. The method and the timeframe for addressing these items are left up to the owner, and it is recognized that finances may govern when the work can be undertaken. The following deficiencies need to be monitored in conjunction with your O&M plan:

- a. Monitor on a regular basis the spalling and pipe joint sealant degradation at the discharge outlet pipe until repairs are made.
- b. Monitor on a regular basis the plunge pool discharge flow to ensure it is not restricted excessively. If the flow is restricted then clear a path for the discharge.

If conditions worsen with any of the deficiencies, then a Texas Licensed Professional Engineer (PE) should be consulted to determine the level of damage and recommend repairs/improvements, if needed.

3. All excessive vegetation, brush, and trees with a trunk diameter less than 4 inches should be removed from the dam embankment's crest, slopes, and the area located within 15-20 feet of the embankment's downstream toe. After removal, a short grass cover should be established over the affected area(s). A short grass cover provides an ideal surface to protect against erosion, prevents harborage for burrowing animals, and allows for easier detection of incipient problems. Mowing should be performed as needed (prior to any future inspections (including owner inspections), and/or typically not less than twice yearly).
 - a. Trees that are larger than 4 inches in diameter may remain until their natural death, at which time the tree and roots are to be removed, the resulting holes backfilled with properly compacted non-dispersive clay, and a vegetative cover established. Removal of larger trees and backfill repairs should be supervised by a PE with dam experience. Trees provide a cover for burrowing animals, prevent a thorough inspection of the embankment, limit grass growth, provide avenues for seepage as roots decay, and if a large tree is uprooted during heavy winds, the loss of soil around the root mass can lead to a slope failure.

Additionally, larger trees on the downstream slope and along the toe should be pruned up high to facilitate mowing and light penetration for grass growth. Associated vines growing around the trees should also be removed.

- b. All trees (regardless of size) should be removed from within the spillways, inlets/outlets, and discharge channels to ensure adequate flow conveyance.
- c. For any larger/mature trees immediately adjacent to conduits and/or concrete structures (headwall, training walls, etc.), it may

be preferred to cut the tree and leave the stump in place, if removal of the rootball would cause damage/movement to the conduit, concrete, etc. Any remaining stump(s) should be treated with a sealant to inhibit/prolong decay.

- d. Once the upstream and downstream slopes are clear of woody vegetation, the slope should be inspected by your PE to determine if slides and/or benching are occurring. Proper repairs to these problems should be developed and implemented under the supervision of a PE. After tree removal, a proper grass cover should be reestablished.
 - e. Appendix C of the *Guidelines for Operations and Maintenance of Dams in Texas* discusses possible pre-emergent herbicides (acceptable for use near reservoirs) for use on the vegetation covered upstream slope riprap.
4. Repair erosion channels or gullies (and determine cause if unknown or if new occurrence).
- a. Use good, compacted fill and protect from a reoccurrence, for example, cover with rock riprap or a high-performance turf reinforcement mat (TRM); proper grade/quality and installation is critical for successful TRM applications.
 - b. Establish a good grass cover in repaired areas.
 - c. Erosion around inlets and along conduits may require a PE to determine the problem and recommend a correction.
 - d. Until repairs are implemented, the eroded areas in the spillway and discharge
 - e. Until repairs are implemented, the eroded areas in the spillway and discharge channel should be routinely monitored for further erosion, especially after spillway engagements. If the erosion worsens significantly, the reservoir may need to be lowered or drained to prevent an emergency situation from developing.
 - f. Livestock access should be restricted, or at a minimum controlled, to prevent erosion, benching, overgrazing, etc. The livestock trails on the embankment can lead to erosion and loss of embankment materials. Consideration should be given to

installing a fence to restrict access of livestock, the trailing should be repaired, and vegetation allowed to regrow.

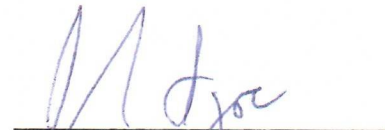
5. The bare spots on the crest and bare strip on the downstream slope should be reseeded to prevent further erosion, as shown in photographs 1 and 5, respectively. Discuss a grazing plan with the landowner(s) to restrict livestock from these areas while the new grass takes root.
6. The excess vegetation within the upstream slope riprap should be sprayed with an approved herbicide or removed to facilitate future inspections. See photograph 4.
7. The low flow (or 'drain') valve should be exercised at least on an annual basis to ensure it is in good working order and capable of lowering/draining the reservoir should an emergency situation ever warrant such.

CONCLUSIONS

The owner of this dam may be liable for downstream damages in the event of a spill or breach. It is the owner's responsibility to maintain the dam in a safe condition in order to prevent loss of life and limit the potential for property loss. In addition, regular maintenance may reduce future rehabilitation and repair costs. This structure will be scheduled for reinspection in 5 years, or in conjunction with any modifications.

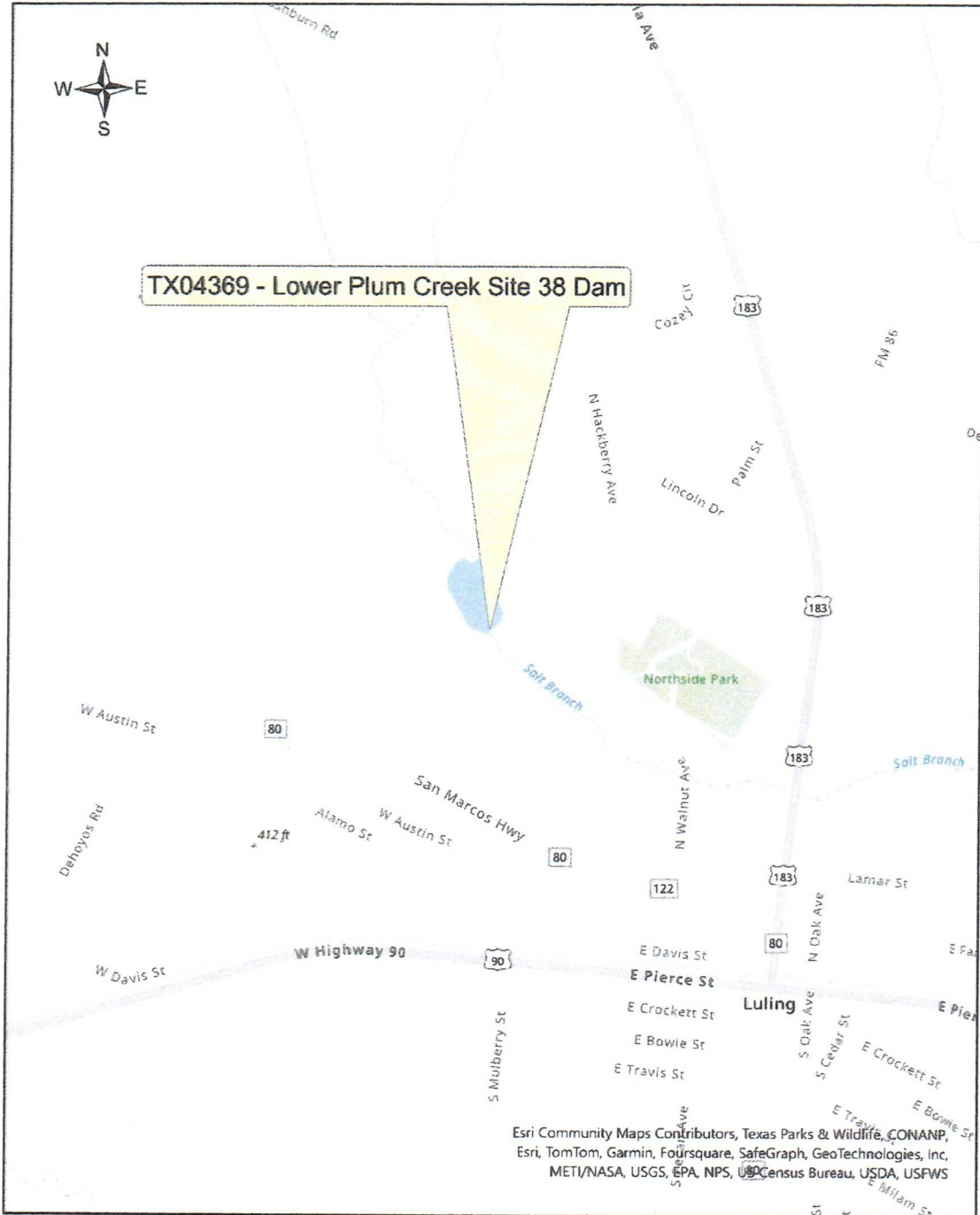


Jeff Thomas, P.E., P.G.
Dam Safety Section
Critical Infrastructure Division



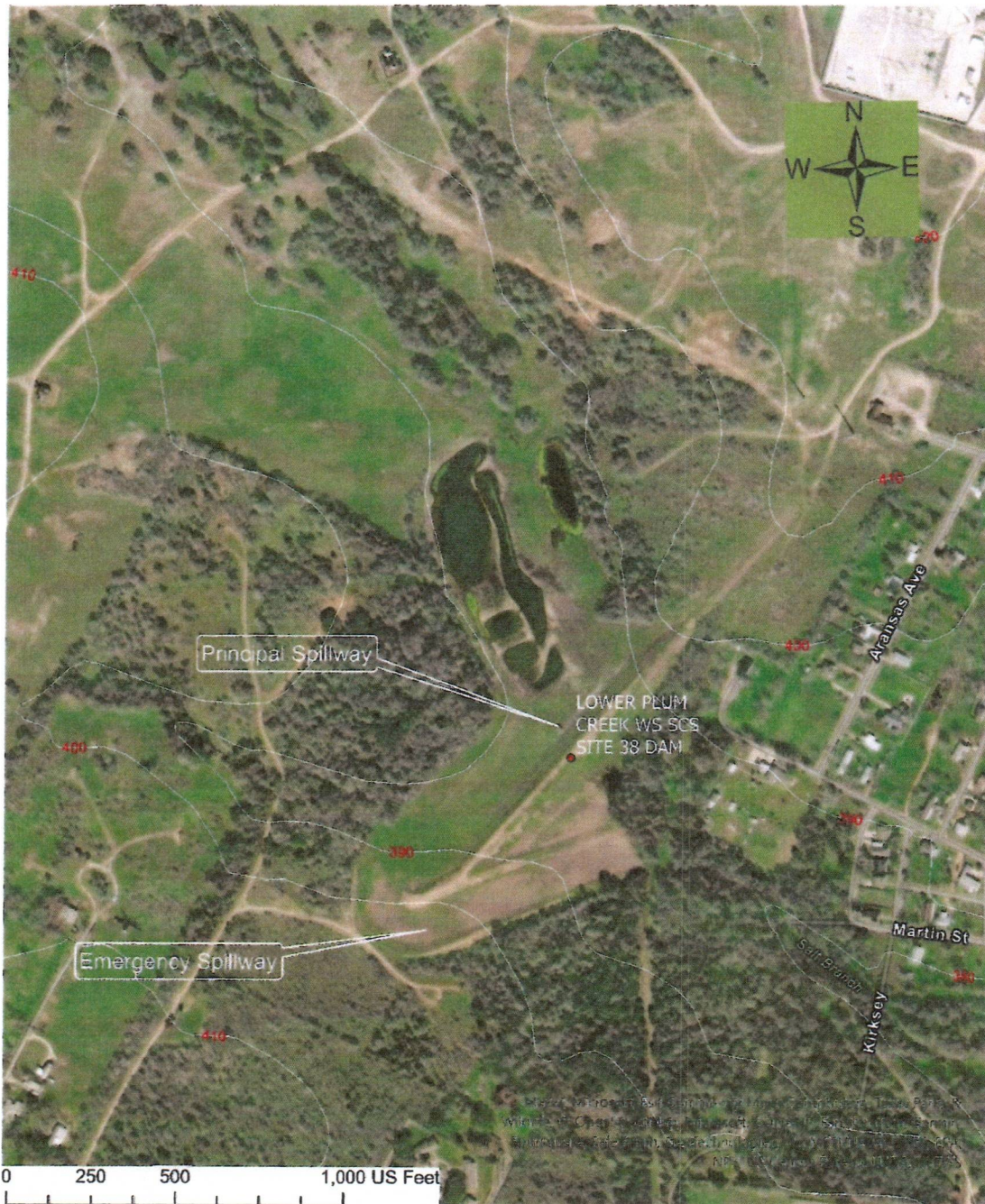
John Igoe, P.E.
Dam Safety Section
Critical Infrastructure Division

Figure 1: Location Map



TX04369 - LOWER PLUM CREEK SITE 38 **CALDWELL COUNTY, TEXAS**
 This map was generated by the Critical Infrastructure Division of the Texas Commission on Environmental Quality. This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries. For more information concerning this map, contact the Critical Infrastructure Division at 512-239-1510.

Figure 2: Aerial View



TX04369 - LOWER PLUM CREEK SITE 38

CALDWELL COUNTY, TEXAS

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Figure 3: Photograph Map



TX04369 - LOWER PLUM CREEK SITE 38 DAM

CALDWELL COUNTY, TEXAS

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Photograph 1. Crest looking right. Note bare spots.



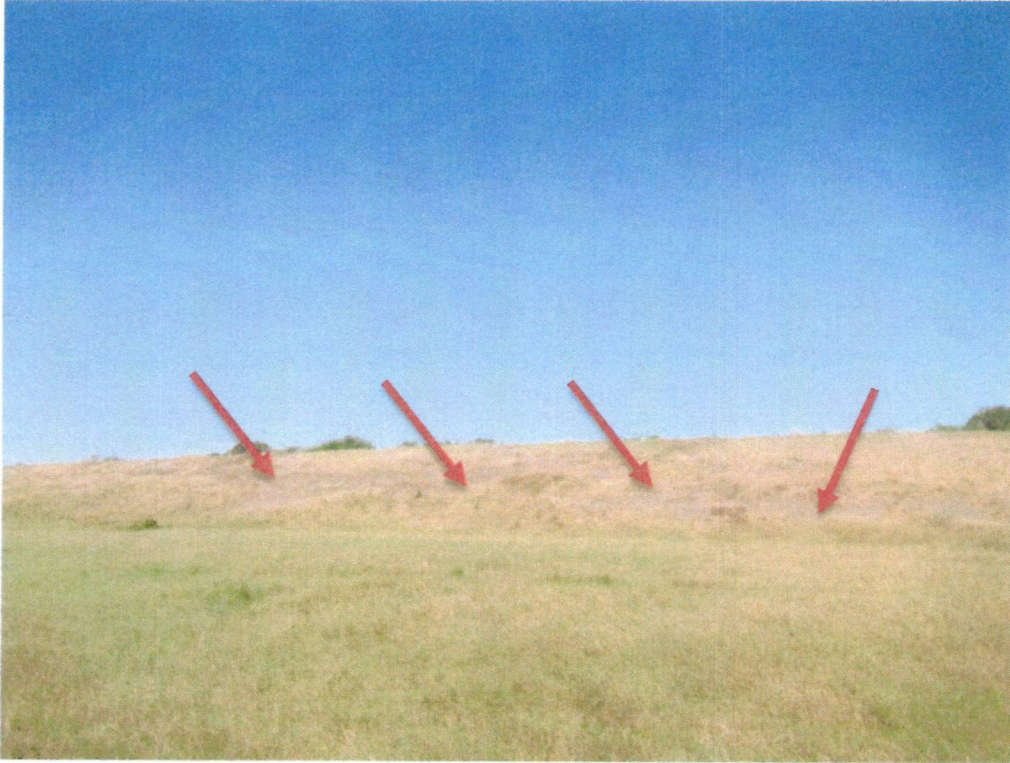
Photograph 2. Crest looking left.



Photograph 3: Upstream looking right.



Photograph 4: Upstream looking left. Note vegetation among riprap.



Photograph 5: Downstream slope with bare spots.



Photograph 6: Downstream slope looking left.
Note brush new toe area.



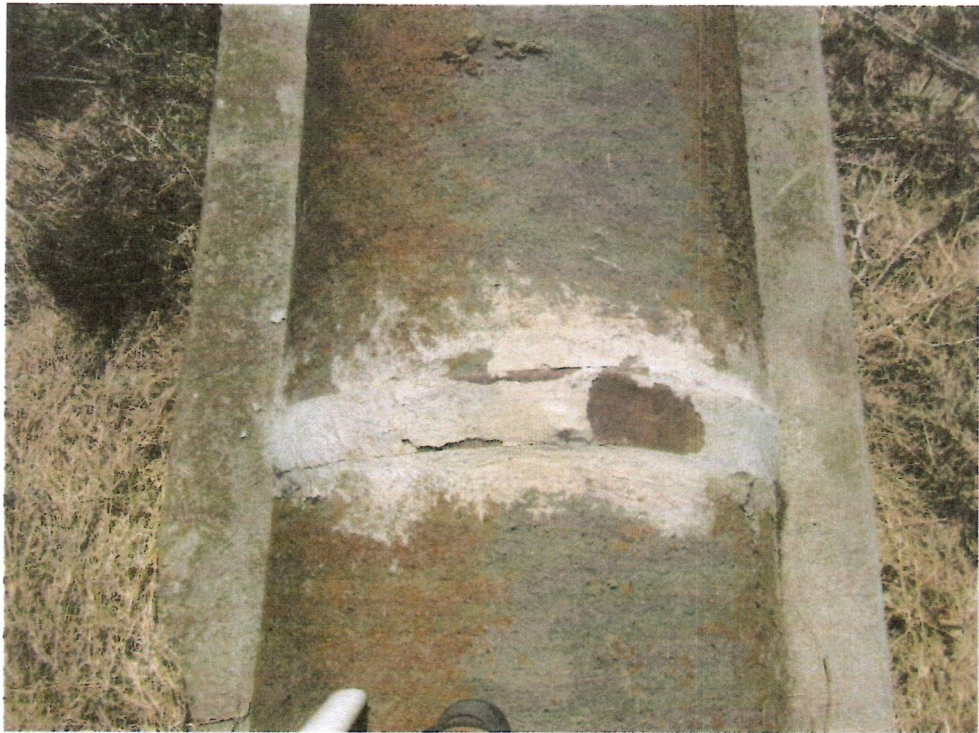
Photograph 7: Downstream slope looking right.



Photograph 8: Principal Spillway inlet and reservoir.



Photograph 9: Principal Spillway outlet pipe and plunge pool.



Photograph 10: Principal Spillway outlet pipe sealant degradation.



Photograph 11: Spalling at outlet pipe discharge.



Photograph 12: Toe drain outlets.



Photograph 13: Emergency Spillway.



Photograph 14: Low flow outlet valve.



Photograph 15: Out of service weather station.