U.S. Department of Justice

Bureau of Alcohol, Tobacco,
Firearms and Explosives

National Response Team

Fire & Arson Investigation Branch
www.atf.gov

752420:ATF-1
3510

September 19, 2024

MEMORANDUM TO: Chief
Fire & Arson Enforcement Branch

THRU: Team Supervisor, East Team
National Response Team

FROM: ATF-1, SSA/CFI
National Response Team

SUBJECT: Fire Scene Examination – ATF NRT Response to and Assessment of the Maui Wildfires, Specifically the Lahaina Fire

This memorandum serves to issue to the attached ATF Summary of Findings and Conclusions for the Fire Scene Examination – ATF NRT Response to and Assessment for the Lahaina, HI Wildfire.

This report is intended to document and summarize those investigative efforts and the origin and cause analysis. Additional information may be available from the participating agencies involved in the investigation of the incident.

Assessment and identification of parties having possible civil and/or criminal responsibility/liability for the fire/explosion incident is beyond the scope of the analysis contained in this report.

ATTACHMENTS:

ATF Summary of Findings and Conclusion
ATF Electrical Examination Report
Maui Fire Department/ATF Lahaina Fire Origin and Cause Timeline

SSA/CFI Signature/Date

NRT Team Supervisor Signature/Date

U.S. Department of Justice

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September 19, 2024

Reference: Maui Fires
ATF Case Number: 787025-23-0030

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Please note that ATF will post on its website for access by the general public a version of the report with certain Personally Identifiable Information and proprietary information redacted.

Any and all inquires related to this incident should be directed to ATF Seattle Field Division at 206-204-3205.

ATF NRT Team Supervisor

BUREAU OF ALCOHOL, TOBACCO, FIREARMS, AND EXPLOSIVES

LAHAINA FIRE

SUMMARY OF FINDINGS AND CONCLUSIONS

SPECIAL AGENT / CERTIFIED FIRE INVESTIGATOR

ATF-1

TABLE OF CONTENTS

ATTACHMENTS

- ELECTRICAL EXAMINATION REPORT, FIRE RESEARCH LABORATOY ENGINEERING SCENE EXAMINATION REPORT NUMBER 2023-F-000051S(2), PREPARED BY ELECTRICAL ENGINEER MICHAEL G. ABRAHAM, PE

- LAHAINA FIRE ORIGIN AND CAUSE TIMELINE

EXECUTIVE SUMMARY

Between August 7 and 8, 2023, the Maui Fire Department (MFD) responded to multiple wildfires fires throughout the island of Maui, Hawaii, with the most severe occurring in the area surrounding Lahaina Town in West Maui. The fires referenced within this report are identified as The Morning Fire and The Afternoon Fire for clarity purposes.. This report was prepared at the request of the MFD and is intended as an attachment to MFD's Origin and Cause Report (23-0012446 and RMS #23-0012492).

The scenes for both the Morning Fire and the Afternoon Fire were not secured from the time the fire occurred until the arrival of ATF. Furthermore, MFD investigators as well as various investigators from private investigative services accessed and examined locations prior to ATF's arrival. ATF's analysis of the events is based on how the scene presented to investigators on August 18 – 19, 2023, and on subsequent return trips.

At the time of the scene examination on August 18, 2023, the fire scene was ten days old. While the Lahaina area was under lockdown by authorities and off limits to non-residents, the overall fire area was not secure in the typical sense. Residents were allowed to return to their homes and based on items located in the scene (cut branches and spoiled food), it appeared that unknown individuals had in fact been in the areas that were identified as potential areas of interest. In addition, all suppression operations in this area ceased during the Afternoon Fire due to the magnitude of the fire that spread into Lahaina Town.

In addition, the electric company, private evidence collection companies and private fire investigation companies had access to and moved freely throughout the overall fire scene. Maui Electric Company (MECO), also referred to Hawaii Electric Company (HECO) replaced damaged electrical equipment in the overall fire area. Fire Cause Analysis (FCA) had already come in and collected all the electrical utility distribution and transmission equipment as well as other items of evidentiary value in the area. While these items were examined by investigators later, they were not examined *in situ*.

For purposes of this report, investigators referenced both the 2024 Edition of NFPA 921 – Guide for Fire and Explosion Investigation (NFPA 921) and the 2016 Edition of the National Wildfire Coordinating Group (NWCG) – Guide to Wildland Fire Origin and Cause Determination (PMS 412). Portions of each document were utilized to aid investigators in their analysis of these events.

Investigators relied on their overall observations of the scene(s) obtained during the scene examinations, and utilized data in the form of eyewitness statements, witness photos, witness videos, and an ATF Electrical Engineer (EE) examination. These processes formed the basis for the conclusions in this report.

After conducting an examination of the fire scene, conducting interviews, reviewing interviews, and reviewing video and photos of the fire in its early stages, investigators determined the Morning Fire was caused by a broken overhead powerline contacting the ground, while still energized. Investigators were further able to identify several smaller ignition areas within the specific origin area that were caused by the broken overhead powerline "slapping" the ground based on a review of videos and photographs provided by witnesses. This contact resulted in the ignition of vegetation that was growing on the boulevard space located between the street and the sidewalk along Lahainaluna Road.

A separate fire occurred at the same time at the base of Utility Pole 25. Strong winds affected Utility Pole 25 and other, nearby, utility poles. This fire was a result of molten material being ejected and falling into vegetation below due to an electrical event occurring at the top of Utility Pole 25.

Investigators determined the Afternoon Fire was a rekindle from the Morning Fire in that the fire occurred at or very near the boundary or containment line made during the Morning Fire. An undetected firebrand or the inadvertent movement of smoldering materials into the gully or dry creek bed during suppression activities resulted in a delayed ignition of vegetation, which became known as the Afternoon Fire. For purposes of this report, the terms "gully", "dry creek bed" and "creek bed" are used interchangeably.

It should also be noted ATF investigators returned to the scene of the fire(s) from April 30 through May 6, 2024, June 24 through 28, 2024, and July 31 through August 2, 2024, to continue their investigation, to conduct additional interviews and gather more data related to the Morning Fire and the Afternoon Fire.

INVESTIGATIVE PARTICIPANTS

ATF National Response Team

ATF-2, Supervisory Special Agent/Certified Fire Investigator, NRT Team
ATF-3, Special Agent/Certified Fire Investigator
ATF-4 Special Agent/Certified Fire Investigator
ATF-5, Electrical Engineer
ATF-1 Special Agent/Certified Fire Investigator (Lead CFI)

ATF Seattle Field Division

ATF-6, Group Supervisor/Certified Fire Investigator
ATF-7, Resident Agent in Charge
ATF-8, Special Agent/Certified Fire Investigator Candidate
ATF-9, Special Agent
ATF-10, Special Agent
ATF-11, Special Agent

ATF Los Angeles Field Division

, Special Agent/Certified Fire Investigator

Maui Fire Department

MFD-8, Captain – Fire Prevention Bureau
MFD-9, Captain – Fire Prevention Bureau
MFD-10, Lieutenant – Fire Prevention Bureau
MFD-11, Lieutenant – Fire Prevention Bureau

OVERALL MAP WITH AREAS OF INTEREST AND LANDMARKS

OVERALL TIMELINE AND TIMELINE ANALYSIS

As part of the investigation, a timeline was created from information available to investigators through a review of reports, MFD dispatch records, a review of witness statements, witness photographs, and witness videos. This information was utilized to assist in determining the sequence of events related to both the Morning Fire and the Afternoon Fire. Several witnesses provided statements that were accompanied by video and/or photographs. These statements will be discussed in greater detail later in this report.

August 8, 2023

0317 hours Red Flag Warning was issued for leeward areas due to strong winds and low humidity. The Red Flag Warning remained in effect until 6 am HST (Wednesday).

0318 hours High Wind Watch with strong and gusty winds through early Wednesday (6:00 am) East winds of 30 to 45 MPH with localized gusts to around 60 MPH. Impacts: Damaging winds may blow down trees and power lines and damage roofs. Power outages are possible.

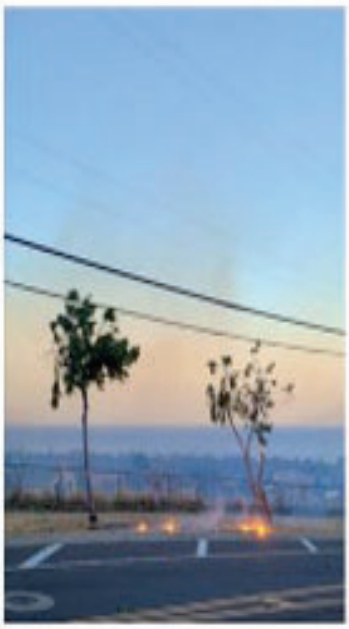
0400 hours Fire Weather Planning Forecast. Discussion: Very dry fuels (KDBI around 600) combined with strong and gusty easterly winds and low humidity's below 45 percent will produce critical fire weather conditions through tonight.

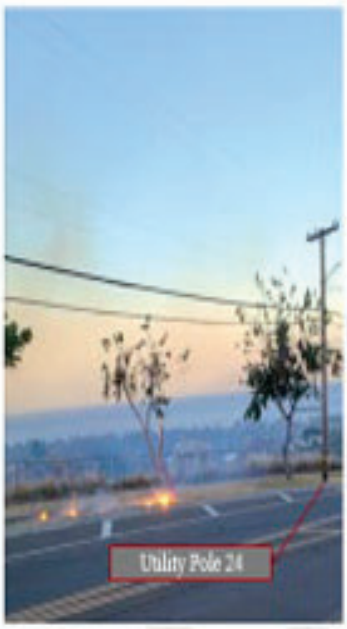
0634 hours Fire reported to 911 by [redacted], who heard a "boom", observed sparks and saw fire at the base of Utility Pole 25.

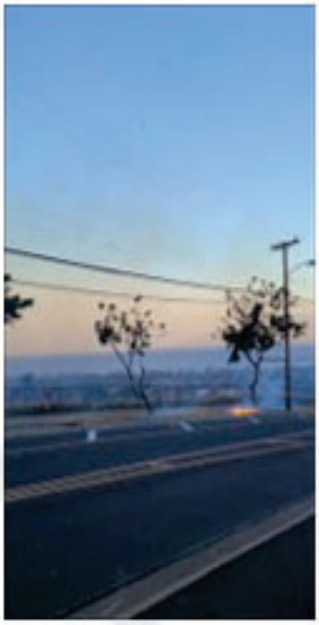
0635 hours Fire reported to 911 by [redacted].

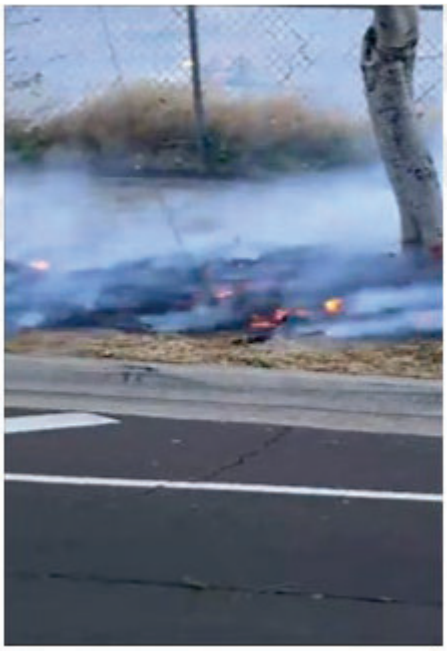
0636 hours MFD dispatched to a brush fire on Lahainaluna Road across from the Lahaina Intermediate School.

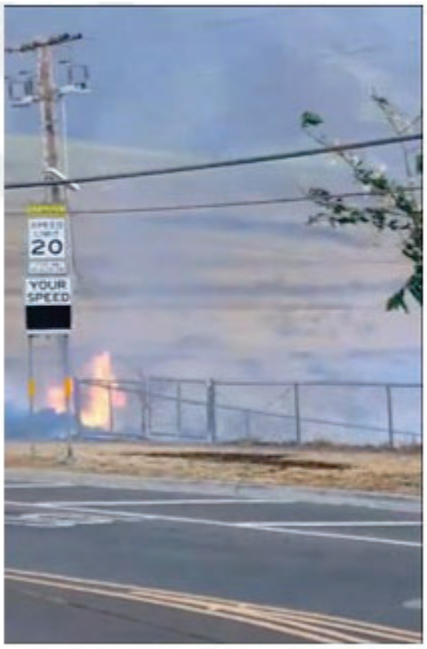
0636 hours [redacted] recorded video of a fire on the ground at Utility Pole 25. Three videos taken from 0636 hours, 0637 hours, and 0638 hours. (Images from videos below)











0643 hours Screenshot of video from [redacted] W-3 showing MFD Engine 3 suppressing the fire at the base of Utility Pole 25. (Image below)

0643 hours W-7 took a photograph showing fire spreading downhill from Utility Pole 25.

0645 hours W-4 recorded a video of fire on the ground between Utility Poles 24 and 25 and fire at the base of Utility Pole 25. (Screenshots from Facebook video)

0820 hours Morning Fire reported to be 90 percent contained per MFD BC5 .

0852 hours Morning Fire reported by MFD-6 to be 100% contained.

0900 – 1230 hours Multiple reports of broken utility poles in the area.

0926 hours NWS social media. Update: High Wind & Fire Weather Alerts. High Wind: 30-45 MPH winds, gusts up to 60 MPH.

0927 hours NWS social medial. 30-45 MPH winds, gusts up to 60 MPH. Red Flag: High fire danger with rapid spread.

1418 hours MFD units returning to quarters. E3 affirmed to dispatch the Morning Fire was extinguished. Last MFD unit cleared the scene.

1430 hours MFD unit drove past Morning Fire scene and reported nothing showing.

1440 hours [redacted] recorded video which did not capture any smoke in the area.

1448 hours MFD unit passed by Morning Fire scene and did not report anything showing.

1452 hours [redacted] called 911 to report a brush fire behind [redacted] .

1457 hours MECO employees captured video that showed smoke between a kiawe treee and Utilitly Pole 1B. (Images Below)

1457 hours [redacted] called 911 and recorded video of the fire to the east of their residence near Utility Poles 1A and 1B. (Images combined from video)

1500 hours MFD E11 is the first unit on scene and reported a 20'x100' brush fire loated where the ealier fire was that day. Fire was in a gully running west toward the bypass at a rapid pace (MFD-7).

1522 hours The fire hopped the bypass per E11.

1538 hours Area Forecast Discussion. SYNOPSIS: Strong and potentially damaging easterly winds along with very dry conditions will persist tonight and Wednesday as Hurricane Dora pass far to the south. Dangerous fire weather conditions will persist through Wednesday afternoon. A return of a more typical trade wind pattern is anticipated later in the week through the weekend.

Overall Scene Information

1. On August 8, 2023, MFD investigators were assigned to investigate the cause of the Morning Fire. While enroute to begin the investigation for the Morning Fire, MFD investigators were informed "mop-up" operations were continuing so investigators stood down.

2. Later in the day on August 8, 2023, MFD investigators were assigned to investigate the cause of the Afternoon Fire. While enroute to begin the investigation, MFD investigators were informed the scene was unsafe for an investigation to occur, so investigators stood down. On August 13, 2023 MFD-10 and MFD-9 conducted an initial scene examination of the Morning and Afternoon Fires.

3. On August 13 through 14, 2023, Fire Cause Analysis (FCA), a private fire investigation firm, was retained as a third party by MECO. FCA was tasked with collecting and securing electrical artifacts or other items of evidentiary value related to the fire. FCA documented the scene and collected evidence. As part of their investigation, ATF examined the evidence collected by FCA. ATF Electrical Engineer ATF-5 examined exhibits collected by FCA and authored a report as to his findings; refer to ATF Electrical Examination Report for details. FCA also provided copies of their documentation process related to the collection of evidence, which included photographs reviewed by investigators.

4. On August 17, 2023, private fire investigators documented the fire scene. On August 18 and 19, 2023, the MFD, members of ATF's National Response Team (NRT), and ATF's Seattle Field Division investigators examined the fire scene.

5. ATF Investigators returned to Maui from April 30 through May 6, 2024, and then again June 24 through 28, 2024, to continue their investigation. From July 31 through August 2, 2024, Special Agent/Certified Fire Investigator (SA/CFI) ATF-1 and Supervisory Special Agent/Certified Fire Investigator ATF-6 returned to the Lahaina area to continue the investigation. All the investigator's findings and observations from these separate trips are incorporated into this report.

6. The 2024 Edition of the NFPA 921 (NFPA 921) – Guide for Fire and Explosion Investigations provides guidance on using data previously collected by others to successfully analyze an incident. Section 4.4.3.3 of the Basic Methodology section states in part

"While it is preferable that all subsequent investigators have the opportunity to conduct an independent examination of the incident scene, in practice, not every scene is available at the time of the assignment. The use of previously collected data from a properly documented scene can be used successfully in an analysis of the incident to reach valid conclusions through the appropriate use of the scientific method. Thus, the reliance on previously collected data and scene documentation should not be inherently considered a limitation in the ability to successfully investigate the incident."

7. Investigators gathered data from several early fire witnesses during the investigation. Investigators determined the Morning Fire was observed in its early stage and was verified with video and photographic submissions that corroborated witness statements regarding the specific origin area for the Morning Fire. In addition to the above-mentioned video and photographic evidence as it relates to the start of the Morning Fire, ATF-5 collected utility data that corroborated witness statements as well as the video and photographic evidence that was obtained. As for the Afternoon Fire, early witness observations and corroborating videos aided investigators with the location where smoke was first observed prior to the Afternoon Fire advancing towards and entering Lahaina.

8. As part of the scene examination and in support of the observations made and examinations conducted by investigators, investigators utilized NFPA 921 as well as PMS 412. The origin area of a wildfire is broken down into the following components:[1] Overall Fire Area, General Origin Area, Specific Origin Area, and Ignition Area. The general origin area is the area of the fire that the wildfire investigator can narrow down based on macroscale indicators, witness statements and the behavior of the fire. Within the general origin area is the specific origin area and contained within the specific origin area is the ignition area. The ignition area is the smallest location in which an investigator can define where a heat source and fuel interacted with each other resulted in a fire. The Point of Origin is the exact physical location within the ignition area where a heat source and the fuel interacted, resulting in a fire.

[1] 2016 Edition of PMS 412, Page 119.

LAND DESCRIPTION

9. The area where both the Morning and Afternoon Fires occurred, is a Wildland and Urban Interface (WUI) area. The WUI is known as the zone where human-made improvements intermix with wildland fuels.[2] The vegetation in this area consisted mostly of koa haole shrubs within thick and unkempt non-native grasses, specifically Guinea grass and possibly Buffelgrass.[3]

Figure 1 – Koa haole shrub at the scene of the fires (August 1, 2024)

[2] NWCG S-130, Firefighter Training , 2021.
[3] ATF Report of Investig a tion (ROI), Report 039: In[redacted].

Figure 2 – Dried grasses at the scene of the fires (August 1, 2024)

Figure 3 – Guinea grass at the scene of the fires (August 1, 2024)

Figure 4 – Small koa haole shrub at the scene of the fire
(August 1, 2024)

Figure 5 – Buffelgrass at the scene of the fires (August 1, 2024)

10. This WUI consisted of a residential sub-division separated from undeveloped land by a chain link fence which formed a border along the backside or east and south sides of the residential structures. In 2019 a firebreak was ordered to be cut behind the sub-division to create a barrier between the undeveloped land and the sub-division. An aerial imaged

taken on August 4, 2020, shows the firebreak.[4] Aerial images collected after August 4, 2020, show the firebreak overgrown with vegetation, and based on the aerial imagery, the firebreak had not been maintained as evidenced by overgrown vegetation at the time of the fires.[5] The fuel load was substantial partially because of a regional drought in the area where the fires occurred. The fuel load provided an ample of amount of fuel to sustain the fires.

11. The land where the Afternoon Fire originated is owned and managed by Kamehameha Schools and was previously controlled by Bishop Estates. Bishop Estates was created in 1884 by the will of Bernice Pauahi Bishop and was formed to preserve the Hawaiian heritage through a private school system knows as the Kamehameha Schools.

12. The land where the fires occurred is part of a tract of land measuring approximately 800 plus acres. The land around where the fires originated was originally utilized as a sugar cane field and once the sugar cane fields were retired, the land became overrun with invasive vegetation, such as Buffel grasses. A gully in the area and extended from Lahainaluna Road towards the west/southwest. The gully measured approximately 30-feet wide and 25-feet deep at its largest point which was just south of Lahainaluna Road.

[4] Maui Fire Department, Ori in and Cause Report.
[5] Table 3: Lahaina Historical Imag ery, created by ATF Senior IRS ATF-13 .

Figure 6 – View of the gully/creek bed looking to the east and along Lahainaluna Rd. (August 1, 2024)

Figure 7 – View of the gully south of Lahainaluna Road and looking east (August 1, 2024)

13. As you moved to the southwest and west through the gully from Lahainaluna Road, it narrowed and measured approximately six to ten feet just east of Utility Poles 1B and 1A. The base of the gully consisted of sporadic boulders with shrubs and grasses interspersed amongst the boulders. The gully eventually became a drainage ditch, which during the wet season, allowed water to move from the higher elevations to a couple of holding/retention ponds on the south side of the Lahaina Bypass.

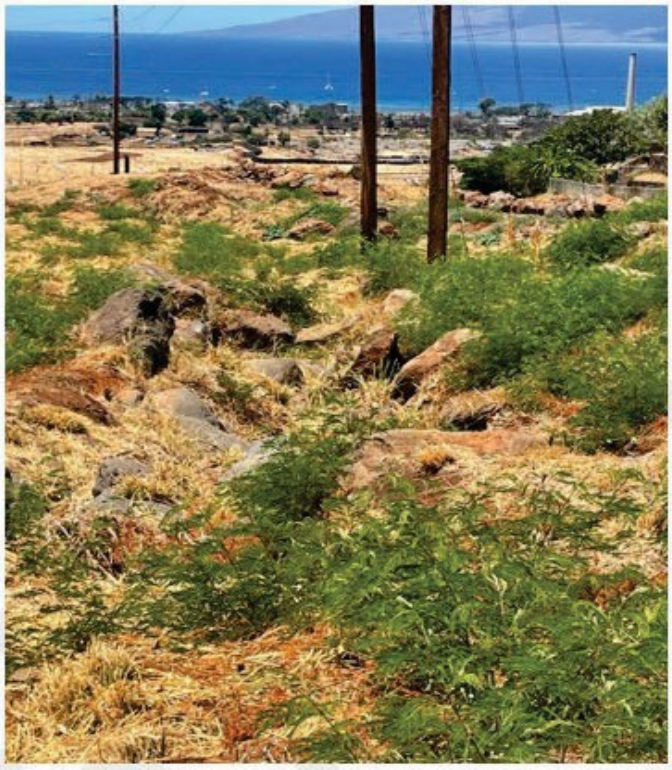


Figure 8 – View of the gully/creek bed northeast of Utility Poles 1A and 1B (August 1, 2024)

14. After the Morning and Afternoon Fires, the Kamehameha Schools built a road along the west side of the gully/dry creek bed and on the east side of the sub-division. The road can be accessed at several points via secured gates and was built as a means of escape in the event of an emergency.

Figure 9 – View of the road put in post-fire (August 1, 2024)

The Morning Fire

SUMMARY OF EVENT:

15. On August 8, 2023, at approximately 0635 hours, the Morning Fire ignited in an area located near the intersection of Ho'okahua Street and Lahainaluna Road, to the south and west of the Lahaina Intermediate School in Lahaina, Hawaii.

NARRATIVE:

16. The Morning Fire was reported by multiple parties, with multiple 911 calls being received at approximately 0635 hours on August 8, 2023. Each of the initial 911 callers reported a fire that originated near what was later identified as Utility Poles 24 and 25.

17. The fire split around a cul-de-sac forming two areas of fire advancement. One area of advancing fire was located to the west and southwest of the start location for the fire, with Kuialua Street to the west and Ho'okahua Street to the south containing the spread of the fire.

18. A second advancing area was directly behind the residential sub-division and this fire traveled to the south/southwest with a chain link fence serving as the western edge of containment and the east flank of the fire was believed to have been contained by a firebreak that was cut with heavy equipment along the gully.

19. According to the MFD, the Morning Fire was reported to be 90 percent contained at approximately 0820 hours, 100 percent contained at 0852 hours and, at 1418 hours, the MFD informed the Maui Police Department (MPD) Dispatch the fire was extinguished.[6] [7]

Figure 10 – Approximate burn location for the Morning Fire

[6] Maui Police Department, Preliminary After-Action Report, Page 31 and Page 33.
[7] MFD/ATF Lahaina Fire Origin and Cause Timeline.

FIRE DISCOVERY:

W-1 – *911 Caller*[8]

20. W-1 , who resided at address , Lahaina, Hawaii, told investigators that on August 8, 2023, between 0600 and 0630 hours, she was outside the front of her house when she heard what she described as a "boom." The sound caused W-1 o look east and up the mountain where she saw sparks coming from the top of a utility pole, which she later identified as Utility Pole 24. Utility Pole 24 was located adjacent to Lahainaluna Road. However, in a separate interview, W-1 told MFD investigators she observed sparks and fire at the base of Utility Pole 25, not the top of Utility Pole 24.

21. According to W-1 , , whom she identified as W-1 spouse, reported seeing what he believed was a transformer fall from a utility pole to the ground. Investigators examined historical photographs, consulted with the utility company, conducted a physical scene examination, but found no evidence of a transformer present at that location.

22. W-1 stated she observed bushes and grass in the vicinity of the pole catch on fire. W-1 entered her residence, called 911 and reported the fire. Computer aided dispatch (CAD) records indicated W-1 made the call at 0635 hours.

23. W-1 estimated it took ten to fifteen minutes for the fire to move to the edge of the road across from her house while looking northeast out her first-floor window. W-1 stated they evacuated their residence during the Morning Fire and returned home around 1000 hours. W-1 did not observe any active fire upon returning.

[8] ATF Report of Investigation (ROI), Report 007: Intervi W-1 .

[redacted]

[redacted] *and* [redacted] *– 911 Caller*[9]

24. On August 18, 2023, ATF and MFD investigators conducted interviews of [redacted], both of whom resided at [redacted], Lahaina, Hawaii.

25. [redacted] recalled hearing strong winds around 0200 hours on August 8, 2023. According to [redacted], he estimated that he woke sometime between 0330 and 0400 hours to use the restroom and noticed the electricity was off at his home. [redacted] added that she noticed the ceiling fan in their bedroom was no longer spinning. Meanwhile, as [redacted] was up, he observed flashing lights from a MECO vehicle when looking outside through his window. [redacted] did not recall seeing any fire department apparatus or vehicles at that time.

26. [redacted] also observed a broken utility pole, identified by investigators as Utility Pole 7A, along Ho'okahua Street, which was a dirt alley [redacted]. [redacted] described the break as having occurred approximately ten to fifteen feet above the ground. The portion of the Utility Pole 7A above the break was described as hanging down with attached overhead powerline above the ground. [redacted] did not report seeing any arcing, sparking

[9] ATF Report of Investigation (ROI), Report 006: Interview of [redacted] and [redacted].

or fire associated with Utility Pole 7A. W-2 also noted the streetlight on Utility Pole 25 across the street that was normally illuminated was dark.

27. told investigators he took photographs of Utility Pole 7A later that morning.

Figure 13 – Utility Pole 7A located north of Utility Pole 25

Figure 14 – Top of Utility Pole 7A on the ground

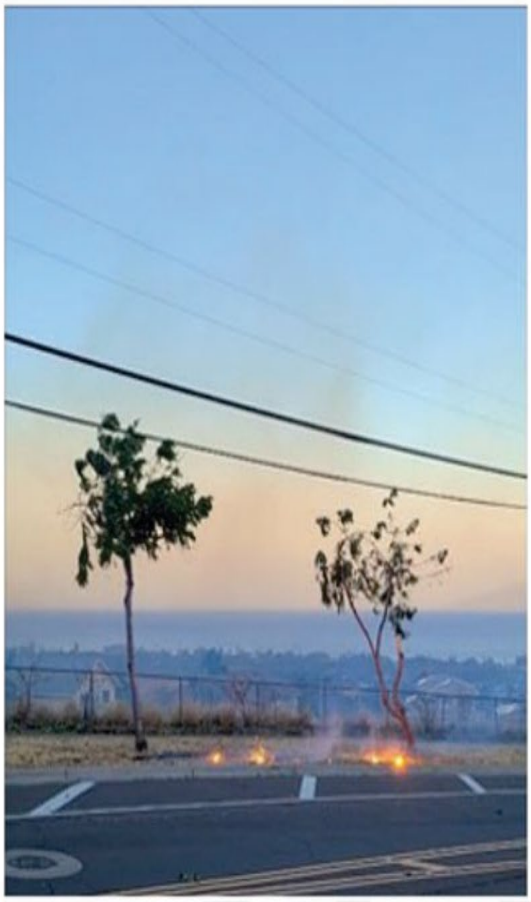
28. Sometime between 0615 and 0630 hours, W-2 observed fire at the base of Utility Pole 25, [redacted]. W-2 described the fire as approximately two to three feet tall and in the grass, which measured the same height, around the base of Utility Pole 25. According to W-2, the overhead powerline between Utility Pole 25 and Utility Pole 24 to the west was broken and "crackling like fireworks" along the grass between the sidewalk and street.

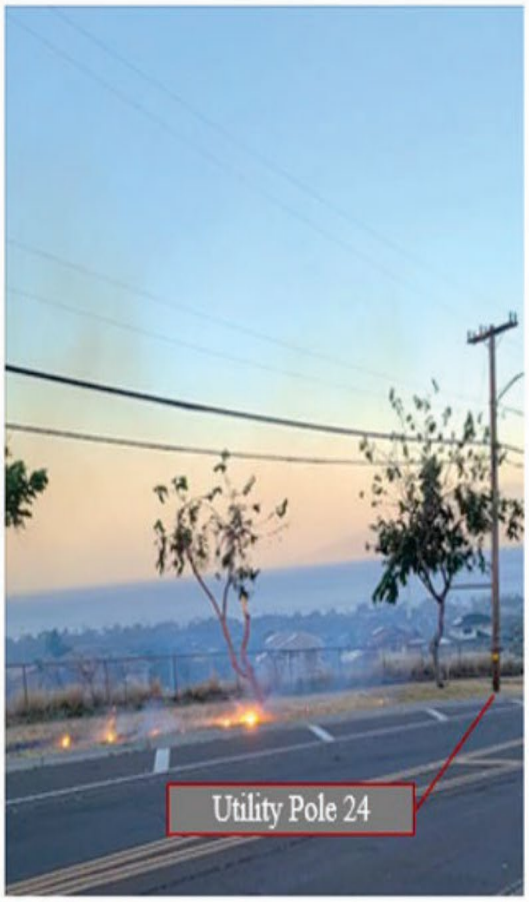
29. W-3 stated she called 911 and reported the fire. W-3 showed her cellphone call log to investigators, which revealed she placed the call at 0635 hours.

30. W-2 attempted to leave for work that morning but returned home around 1230 hours due to ongoing fire department and utility company activity, which prevented him from leaving the area. Neither W-2, nor W-3, reported seeing any fire or smoke along Lahainaluna Road or the field and homes to the south at that time. W-2 and W-3 both noted the overhead powerline between Utility Pole 25 and Utility Pole 24 was still down and laying on a speed limit street sign.

31. W-3 captured video footage of the fire while facing east from her residence, which overlooked Lahainaluna Road. The video showed fire moving south from Utility Pole 25. The date and timestamp associated with W-3 video was August 8, 2023, at 0636:14 hours.

Figure 15 and Figure 16 – Image (cropped) of fire moving south from Utility Pole 25 – from video





Figures 17 and 18 – Images (cropped) facing southwest from [redacted] residence overlooking Lahainaluna Road with energized overhead powerline on the ground – from video

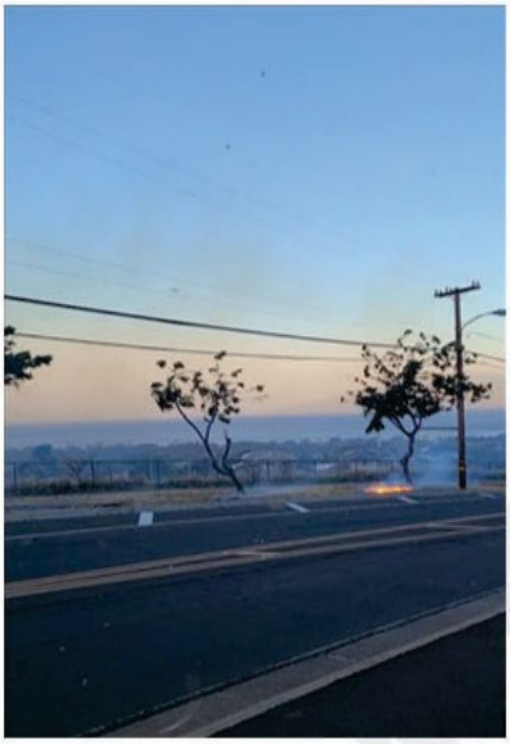


Figure 19 – Image facing southwest from [redacted] residence and overlooking Lahainaluna Road with fire on the ground east of Utility Pole 24 – from video (August 8, 2023, 0638:30 hours)

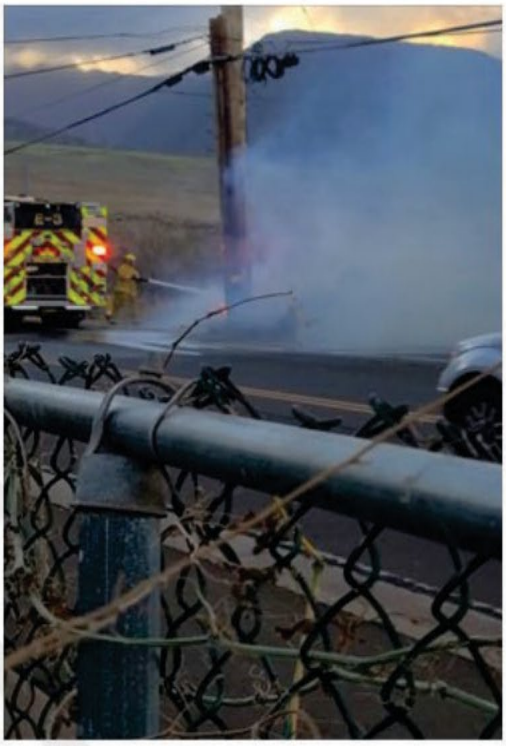


Figure 20 – Image facing east from [redacted] residence and overlooking Lahainaluna Road with fire suppression south of Utility Pole 25 – from video (August 8, 2023, 0643:20 hours)

WITNESS INTERVIEWS:

W-4 [10]

32 W-4 , resided at address , Lahaina, Hawaii, was interviewed by MFD investigators. W-4 stated that on August 8, 2023, at approximately 0500 hours, he noticed that the electrical service at his home had stopped working. [redacted] then reported repairing shingles on his roof that had blown-off because of high winds. At approximately 0600 hours, W-4 noted that his fence along [redacted] also needed repair.

33. At approximately 0630 hours, W-4 reported hearing an overhead powerline "snap." W-4 described seeing the overhead powerline laying on the ground on the dirt median, which was on the south side of Lahainaluna Road. W-4 told investigators the overhead powerline was sparking and creating spot fires along Lahainaluna Road between Utility Poles 24 and 25. W-4 believed this overhead powerline also touched the ground near Utility Pole 25, which was an area he described as having grass that measured

[10] MFD, Interview of W-4 , FIWS 020.

approximately three feet tall. According to W-4, a fire occurred once the overhead powerline contacted the grass.

34. Continuing August 8, 2023, at approximately 0645 hours, W-4 posted a video on his Facebook page. The screenshots below were extracted from that video.

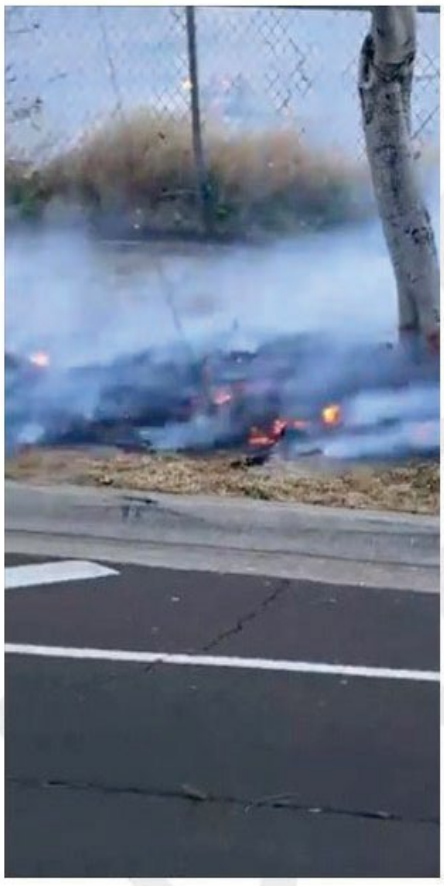


Figure 21 – Fire on south side of Lahainaluna Road between Utility Pole 24 and Utility Pole 25

Figure 22 – Fire on south side of Lahainaluna Road and south of Utility Pole 25

35. W-4 stated that he witnessed fire spread along the fence line of the neighborhood south of Lahainaluna Road. At approximately 0700 hours, he observed that the utility pole east of [redacted] S. Niheu Street was broken in the middle and hanging by the overhead powerline (Utility Pole 7A).

W-5 – *Lahaina Intermediate School Principal*[11]

36. W-5 , the principal at Lahaina Intermediate School, located at [redacted] Lahainaluna Road, Lahaina, Hawaii, told investigators that on August 8, 2023, at approximately 0500 hours, the power went out at her home on address. W-5 stated she drove to work to decide whether to cancel school later that day because of high winds.

37. W-5 said she arrived at work at approximately 0600 hours and learned that the school's security cameras went offline at approximately 0500 hours, which she attributed to a power outage. W-5 then recalled receiving a telephone call from W-6 , the school's custodian.

38. W-6 who was also at work, reportedly told W-5 there was a fire in the southwest corner of campus at classroom Portable 8 (P-8). W-5 and W-6 both went to the area near P-8 and observed a brush fire across the street and on the south side of Lahainaluna Road at Utility Pole 25. W-5 reported seeing a utility pole broken in half near P-8 and west of a red trash dumpster (Utility Pole 7A). W-5 then called 9-1-1, reported the fire and was told by a dispatcher that they were already aware of the fire.

39. W-5 stated she and W-6 tried to extinguish the fire at Utility Pole 25 using a garden hose at the corner of P-8, but the fire department arrived at the same time. W-5 did not recall seeing any overhead powerline on the ground at the time of the fire.

[11] ATF Report of Investigation (ROI), Report 016: Interview of W-5 .

Figure 23 – [redacted] photograph facing south from Lahaina Intermediated School with speed limit sign and overhead powerline outlined in red. (August 8, 2023, at 0639 hours)

40. Investigators examined W-5 photograph and observed the south conductor in the overhead three-phase distribution system laying atop the speed limit sign below Utility Pole 25 on the south side of Lahainaluna Road.

Figure 24 – Figure 15 imaged cropped and magnified showing overhead powerline on top of sign (red arrows)

W-6 – *Lahaina Intermediate School Custodian*[12]

41. **W-6**, custodian at Lahaina Intermediate School, previously told investigators that he was on his way to work on August 8, 2023, at approximately 0500 hours. W-6 stated he arrived on campus at approximately 0530 hours and opened the front gate, at which time he observed fire trucks on Lahainaluna Road. W-6 told investigators he decided to leave campus and lock the front gate because of strong winds. W-6 recalled seeing Utility Pole 7A snapped in half and firefighters illuminating it with lights as he drove away. W-6 did not see any sparking, arcing, smoke, or fire on Utility Pole 7A, nor did he observe any overhead powerlines on the ground.

42. W-6 stated he returned to Lahaina Intermediate School at approximately 0600 hours and encountered **W-5**. W-6 later saw white smoke emanating from the area near classroom P-8 and told **W-5** to call 911.

[12] ATF Report of Investigation (ROI), Report 017: Interview of **W-6**.

43. W-6 told investigators he ran toward classroom P-8 and saw fire on the ground around the base of Utility Pole 25, which was on the south side of Lahainaluna Road. W-6 described the fire as yellow in color, approximately six feet high and ten to twelve feet in diameter. W-6 recalled that MFD arrived a short time later.

Figure 25 – [redacted] stated route of travel where he observed fire at Utility Pole 25 (Google Earth)

W-7 [13]

44. W-7, who resided at address, Lahaina, Hawaii 96761, stated that on August 8, 2023, at approximately 0500 hours, she received a text message from [redacted]. [redacted] reported seeing a bright flash outside her window, northeast of their house, and then the electrical service went out.

45. According to W-7, at approximately 0600 hours, electrical service was restored, but went out approximately 20 to 30 minutes later. W-7 stated she then saw a fire northeast of her home and woke her husband, whom she identified as W-8. W-7 called 911 and took a photograph of the fire with her phone.

[13] ATF Report of Investigation (ROI), Report 010: Interview of W-7.

Figure 26 – W-7 photograph (cropped) facing northeast from her house along the firebreak and south of the chain link fence at address (August 8, 2023, at 0643 hours)

46. W-7 reported she and her family evacuated their home. W-7 told investigators she saw MFD personnel at the cul-de-sac to the east and west of their home.

W-8 [14]

47. W-8, who resided at address, Lahaina, Hawaii, stated that on August 8, 2023, at approximately 0500 hours, his daughter notified his wife, whom he identified as W-7, about a flash outside her window. W-8 told investigators the window his daughter looked through to see the flash faced Lahaina Intermediate School. W-8 also stated electrical service to their home went out after his daughter reported seeing the flash. He reported seeing what he thought was some sort of utility or service vehicle outside because of colored lights stacked atop the vehicle.

[14] ATF Report of Investigation (ROI), Report 026: Interview of W-8.

48. According to W-8 , at approximately 0600, electrical service was restored at their residence. Sometime between 0615 and 0620 hours, [redacted] reported a fire outside their home, which his wife photographed.

49. W-8 said MFD arrived and began suppression efforts as he and his wife gathered their children to evacuate. W-8 described seeing the fire progress to a mango tree, which was south of [redacted] Kuialua Street. Investigators noted [redacted] Kuialua Street was adjacent to a firebreak.

50. W-8 stated he returned home at approximately 0800 hours and produced some videos around 0830 hours. A photograph produced by W-8 captured smoldering along the chain link fence and rocks above the gully. Unburned vegetation was still visible. A [redacted] bulldozer was also captured working along the firebreak.

Figure 27 – W-8 photograph facing east in his yard with smoldering visible (August 8, 2024, at 0831 hours)

51. Investigators provided W-8 with an aerial map of the area around his house. W-8 drew on the map and identified approximate locations of fire or fire related damage that corresponded to three different points in time on August 8, 2023.

FIRE SUPPRESSION:

Engine 3

MFD-1 [15]

52. MFD-1, who was assigned to Engine 3, B-Watch, told investigators that on August 8, 2023, at approximately 0501 hours, Engine 3 was dispatched to a call for service around Lahaina High School, which was located at [redacted] Lahainaluna Road, Lahaina, Hawaii, 96761. Firefighters assigned to Engine 3 responded and left the area at approximately 0512 hours having found no evidence of fire to which the initial 911 call referenced.

53. Engine 3 firefighters noticed a utility pole north of Utility Pole 25 was broken. At approximately 0516 hours, a firefighter assigned to Engine 3 advised dispatch of the broken Utility Pole (Utility Pole 7A) across from Utility Pole 25 and requested a

[15] ATF Report of Investigation (ROI), Report 023: Interview of MFD-1.

representative from the utility company respond.

54. Firefighters assigned to Engine 3 watched the overhead powerline associated with Utility Pole 7A for several minutes and did not see any sparking, smoke or flames. However, they did note the overhead powerlines were low hanging.

55. At approximately 0635 hours, MFD dispatch was notified of a brush fire across the road from Lahaina Intermediate School. MFD-1 and Engine 3 firefighters responded to the call and encountered a brush fire that he estimated measured 100-feet by 100-feet. According to MFD-1 , winds were consistent and approximately 40 miles per hour (MPH).

56. MFD-1 noted an overhead powerline had fallen atop a speed limit sign between Utility Poles 24 and 25 on the south side of Lahainaluna Road. MFD-1 described a lot of debris, identified by investigators as scrap metal, which included an abandoned vehicle in the vicinity of Utility Pole 25. According to MFD-1 , the utility company had not yet arrived.

57. MFD-1 told investigators that sometime between 0830 hours and 0900 hours, A-Watch personnel arrived to relieve B-Watch personnel. According to MFD-1 , A-Watch personnel remained on scene to "mop-up." Fire damage had not extended to the kiawe tree that was located south of Utility Pole 25 on the north side of the gully below the unmaintained firebreak.

58. Investigators provided MFD-1 with an aerial map of the area where he and Engine 3 firefighters responded to the brush fire. MFD-1 drew on the map and identified approximate locations of fire or fire related damage that corresponded to two different points in time on August 8, 2023.

Figure 29 – [redacted] observations of fire damage from when he arrived at the morning brush fire scene highlighted in red ink compared to fire damage observed when he departed highlighted in black ink

[redacted] [16]

59. [redacted], who was assigned to Engine 3, A-Watch, told investigators that on August 8, 2023, at approximately 0800 hours, he arrived on scene.

60. [redacted] described encountering active fire inside the subdivision south of Lahainaluna Road upon arrival. The fire was contained by pavement on three sides. MFD personnel utilized Tanker 3, which was operated by [redacted] [redacted], to extinguish the flames with a bumper turret.

61. [redacted] observed areas of smoldering along the fence line on the west side of the gravel road, which served as a firebreak, to the east, southeast of the houses north of the rock gully. Vegetation, in this case, grasses, along the unmaintained firebreak adjacent to the houses had already been consumed by fire. The consumed vegetation made the firebreak appear as though it were a gravel road. There was no active fire in this area but smoldering in the rocks near Utility Pole 25 and an abandoned vehicle that was a total burn were noted. This was a truck body and frame with no engine or battery located south of Utility Pole 25.

[16] ATF Report of Investigation (ROI), Report 025: Interview of [redacted].

62. MFD-2 expressed concern with overhead powerlines that were south of the access road where the initial fire had progressed. According to MFD-2 , those overhead powerlines were swaying because of strong winds. MFD-2 advised his firefighters to avoid going under the overhead powerlines because he thought they were energized and feared they could break and fall because of the winds.

63. According to MFD-2 , Tanker 3 traveled up and down the firebreak and kept its edge wet. A tanker owned and operated by Company-1 assisted in this area, but reportedly not under the direction of MFD. Company-1 also had earth moving equipment at the scene and at some point during the incident began operating under the direction of the MFD.

64. MFD-2 recalled the only use of a hand line was from Engine 3. The hand line was used to wet the area south of Utility Pole 25 as it was difficult to access due to a pile of rocks. Meanwhile, Company-1 personnel began work on the north side of the gully by cutting a firebreak along the unmaintained firebreak to provide containment of the fire. MFD-2 saw smoldering within the large rocks along the east edge of the firebreak; however, active fire was not observed. No smoldering was observed in the gully or dry creek bed and the vegetation within the dry creek bed was not damaged by fire.

65. MFD-2 stated Engine 11 was released sometime in the morning, but Engine 3, Wildland 3 and Tanker 3 remained at scene. Company-1 personnel departed sometime before 1200 hours.

66. MFD-2 told investigators there was no visible smoldering when his personnel cleared from the Morning Fire. There was no visible fire or smoke around the only kiawe tree in the area, which was south of Utility Pole 25. Grass in that area had not been damaged or consumed by fire. The farthest progression of fire towards the gully from the rocks to the east from the firebreak was located around Utility Pole 1A and Utility Pole 1B, both of which were south of the W-7 & W-8 residence, located at address . The area above Utility Pole 1A and Utility Pole 1B, at the north edge of the firebreak, exhibited the most smoldering and, as a result, was where firefighters applied water until their departure.

67. MFD-2 stated there was no indication of fire within the gully or dry creek bed south and southeast of the initial brush fire. Firefighters applied water to areas that smoldered or had the potential to smolder until sometime after 1400 hours.

68. MFD-2 told investigators the times associated with clearing the scene may have been inaccurate as documented on the CAD report. MFD-2 recalled being dispatched to a downed overhead powerline east of Niheu Street. MFD-2 thought they cleared the morning brush fire at 1420 hours. However, investigators obtained a

radio transmission that occurred at 1418 hours that indicated they were returning to the station and MECO was at scene working-on an overhead powerline.

69. MFD-2 stated he thought the morning brush fire had been extinguished because of the volume of water applied over six hours. Additionally, investigators determined there was no active smoldering observed for several of those six hours. According to MFD-2, he wanted to get his crews and apparatus back in service because of the overwhelming calls for service. MFD-2 stated he and his crew returned to Station 3 at approximately 1430 hours; they were dispatched back to the scene of the Morning Fire at 1455 hours.

70. Investigators provided MFD-2 with an aerial map of the area where he and MFD firefighters responded to the brush fire. MFD-2 drew on the map with approximate locations of fire or fire related damage corresponding to two different time points on August 8, 2023.

Figure 30 MFD-2's observations of fire damage from the morning brush fire highlighted in red ink, compared to fire damage associated with the afternoon fire highlighted in black ink.

Tanker 3

MFD-3 [17]

71. MFD-3, who was assigned to Tanker 3, told investigators that on August 8, 2023, he arrived at work early and on-duty before 0630 hours.

72. MFD-3 stated he was dispatched to a brush fire on Lahainaluna Road. Investigators later learned that MFD-3 was assigned to A-Watch and relieved the driver of Tanker 3, who was assigned to B-Watch. MFD-3 recalled filling the tank for Tanker 3 at least three times during "mop-up" in response to the brush fire. In addition, MFD-2 stated he worked on an unmaintained firebreak during the later stages of "mop-up" and was assisted by a Company-1 water tanker. MFD-3 told investigators that MFD-2 did not want MFD personnel working outside the truck near the unmaintained firebreak to the south because of the extreme wind and the overhead powerlines. MFD-3 stated he cleared the scene at 1418 hours and arrived at Station 3 at approximately 1430 hours.

73. Investigators provided MFD-3 with an aerial map of the area where he responded to the brush fire. MFD-3 identified the same approximate locations of fire or fire related damage he observed in response to the brush fire the morning of August 8, 2023, as MFD-2 and MFD-1 .

[17] MFD, Interview of MFD-3 , FIWS 023.

Figure 31 – MFD-3 observations of fire damage from the morning brush fire highlighted in red

Wildland 3

MFD-4 [18]

74. MFD-4, who was assigned to Wildland 3, A-Watch, told investigators that on August 8, 2023, sometime between 0730 and 0745 hours, he arrived to relieve MFD firefighters who were already at the scene of a brush fire on Lahainaluna Road.

75. Upon arrival, MFD-4 noted Utility Pole 7A, east of [redacted] S. Niheu Street was broken and hanging down. An overhead powerline was broken and on the ground at Lahainaluna Road between Utility Poles 25 and 24. No one from the utility company was at the scene.

76. MFD-4 stated he was assigned to Wildland 3 for the day, but not as its driver. FF Palakiko was at the east end of the cul-de-sac on Ho'okahua Street and helped "mop-up" the Morning Fire from his position to Lahainaluna Road.

77. MFD-4 told investigators he remained in the area until approximately 1400 hours. MFD-4 did not observe any visible "hot spots or smoking areas" when they departed

[18] ATF Report of Investigation (ROI), Report 009: Interview of MFD Firefighter MFD-4 .

the area.

78. Investigators provided MFD-4 with an aerial map of the area where he responded to the brush fire. MFD-4 identified the same approximate locations of fire or fire related damage he observed in response to the brush fire the morning of August 8, 2023, as MFD-2 and MFD-1 .

Figure 32 – MFD-4 observations of fire damage from the morning brush fire highlighted in red

MFD-5 [19]

79. MFD-5 , who was assigned to Wildland 3 A-Watch, told investigators that on August 8, 2023, at approximately 0800 hours, he drove Wildland 3 from Lahaina Station #3 to the area south of the intersection at Lahainaluna Road and Ho'okahua Street. FFWilburn mission was to relieve MFD firefighters who were already at scene of a brush fire.

80. MFD-5 arrived at scene and did not see any active fire. He described seeing several "hot spots" under rocks along both sides of the firebreak that lined the east and south perimeters of [redacted] Ho'okahua Street and [redacted] Kuialua Street. FF Wilburn positioned Wildland 3 near the cul-de-sac at the east end of Ho'okahua Street.

81. MFD-5 stated they extended two 1 ½ inch hand lines and one 1 ¾ inch hand line through and over the chain link fence at the east end of Ho'okahua Street to extinguish

[19] ATF Report of Investigation (ROI), Report 002, Interview of MFD-5 .

the "hot spots." According to MFD-5, all overhead powerlines in the area were "shaking in the wind." MFD-5 recalled incident command directed firefighters to stay clear of the overhead powerlines because it was unknown if they were energized or if they would fall. MFD-5 stated he dug-up and extinguished hot spots until approximately 1400 hours, which was when smoke and hot spots were no longer visible. He and his crew returned to the Lahaina Fire Station.

82. MFD-5 told investigators he responded to several reports of downed overhead powerlines and utility poles in the neighborhood north of Lahainaluna Road. MFD-5 stated he observed numerous utility poles and their associated overhead powerlines along Ho'okahua Street fallen atop houses on the northwest side of South Niheu Street.

83. MFD-5 hypothesized that the origin of the brush fire was located on the south side of Lahainaluna Road where a section of the overhead powerline was laying atop a metal speed limit sign and on the ground.

84. Investigators provided MFD-5 with an aerial map of the area where he responded to the brush fire. MFD-5 drew on the map and identified approximate locations of fire or fire related damage he observed in response to the brush fire the morning of August 8, 2023.

Figure 33 – MFD-5 observations of fire damage highlighted in red

Battalion Chief (IC)

MFD-6 [20]

85. MFD-6 told investigators that on August 8, 2023, he arrived on scene, relieved Engine 3 and assumed incident command of the morning brush fire. The following MFD apparatus were present and engaged: Engine 3, Tanker 3, Ladder 3 and Wildland 3. Air 1 was unavailable, so Air 2 was dispatched. Engine 6 was also dispatched.

86. Engine 11 arrived at scene and was assigned the cul-de-sac at Kuialua Street, along with Wildland 3. Engine 11 and Wildland 3 were tasked with strengthening the downslope perimeter and work upslope to connect with Engine 3.

87. Company-1 had one bulldozer, one tanker and one front loader at scene at the same time Engine 11 and Wildland 3 were given their assignments. Company-1 operators in the bulldozer and front loader were tasked with cutting a firebreak around the perimeter of the fire. The Company-1 operator in the tanker was tasked with extinguishing the fire in vacant lots on Kuialua Street and Ho'okahua Street.

[20] MFD, Interview of BC Shawn Rogers, FIWS 018.

88. Air 2 arrived and landed nearby once assignments were given to Company-1 operators. Air 2 was tasked with spotting fires only due to wind speeds of 40 MPH and overhead powerlines in the area.

89. Engine 6 arrived and was assigned to assist Ladder 3 with wet line work off a dirt access road that was uphill of the Lahaina Bypass.

90. MFD-6 stated the fire had been knocked down at that point, which included no more fire growth. Efforts to improve the firebreak by bulldozer remained underway. According to MFD-6 , water was applied liberally to the fire area and that water conservation was not an issue due to multiple hydrants in the neighborhood.

ADDITIONAL WITNESS INFORMATION:

W-9 [21]

91. W-9 , who resided at address , Lahaina, Hawaii, told investigators that on August 8, 2023, he was awake before 0500 hours. According to , h logged-into a Zoom meeting. W-9 stated electrical service to his house went out at 0500 hours and came back on at 0830 hours.

W-10 [22]

92. W-10 , who resided at address , in Lahaina, Hawaii, told investigators that on August 8, 2023, he woke-up at 0300 hours and noticed the electricity at his house was not working and went back to bed. W-10 stated he woke-up again at 0500 hours and noted the electricity was still not working. At approximately 0545 hours, he and his wife smelled smoke, went outside and did not see any fire. At approximately 0648 hours, he saw fire at the property across Lahainaluna Road from his house. W-10 stated the fire appeared to be contained and there was no smoke between 1300 hours and 1400 hours.

[21] ATF Report of Investigation (ROI), Report 008: Interview of W-9
[22] MFD, Interview of W-10 , FIWS 019.

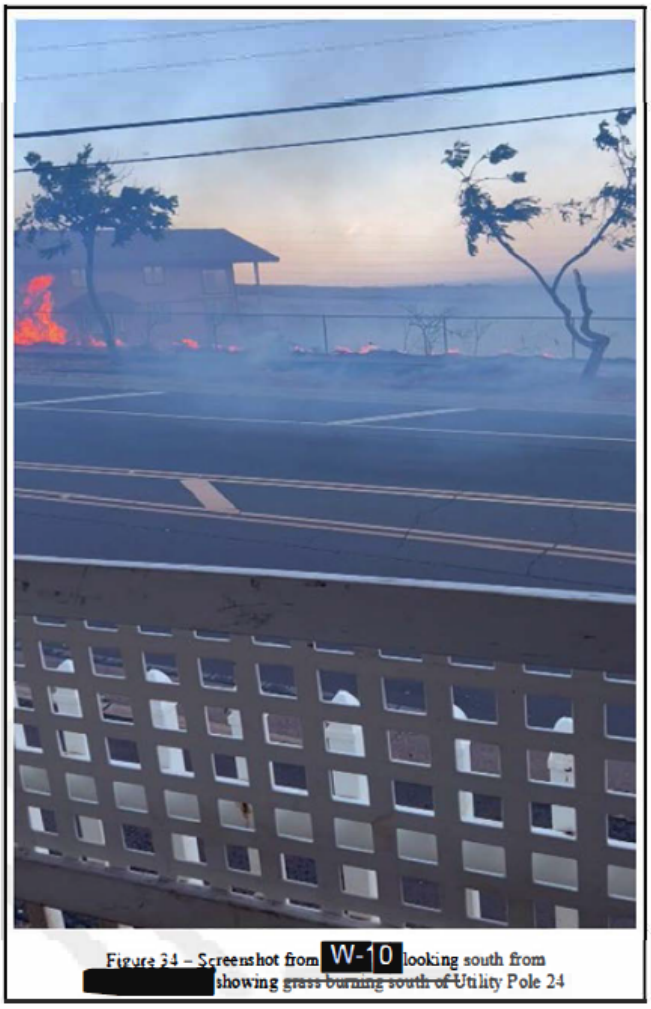


Figure 34 – Screenshot from W-10 looking south from [redacted] showing grass burning south of Utility Pole 24

W-11 [23]

93. W-11 told investigators he was working at Lahainaluna High School (LHS), on August 8, 2023. At approximately 0502 hours, electrical service stopped working and W-11 notified LHS administration via electronic mail. At approximately 0610 hours, electrical service was restored. At approximately 0620 hours, electrical service stopped working. W-11 recalled he was notified that school was cancelled. At approximately 0636 hours, he was notified by a co-worker that there was a fire on the south side of Lahainaluna Road, across the street from Lahaina Intermediate School. W-11 stated he stood facing west in the driveway at LHS and observed smoke near utility poles (Utility Pole 25) on the south side of Lahainaluna Road and across the street from Lahaina Intermediate School.

[23] ATF Report of Investigation (ROI), Report 027: Interview of W-11

W-12 [24]

94. W-12, who resided at address, Lahaina, HI 96761, told investigators that on August 8, 2023, at approximately 0500 hours, while it was still dark outside, she and her younger sister, whom she identified as [redacted] observed a bright white flash of light that came through her windows. The flash of light lasted approximately one second and then electrical service stopped working at their house.

W-13 and W-14 [25]

95. W-13 and W-14 were vacationing at Lahaina Shores Beach Resort, located at [redacted] Front Street, [redacted], Lahaina, Hawaii, on August 8, 2023. At approximately 0500 hours, W-13 and W-14 stated they woke-up to electrical service going out in their hotel room. W-13 and W-14 walked outside near the beach to get coffee and observed strong winds, small dust devils and downed trees. At approximately 0652 hours, they reported seeing smoke and a fire northeast of their balcony. They also observed firefighters at the scene of the fire. W-13 took a picture of the fire and shared it with investigators.

[24] ATF Report of Investigation (ROI), Report 005: Interview of W-12.
[25] ATF Report of Investigation (ROI), Report 011: Interview of W-13 and W-14

Figure 35 – Image facing NE from Lahaina Shores Beach Resort after the advancing fire southwest of Utility Pole 1A and Utility Pole 1B along the firebreak (August 8, 2023, at 0652 hours)

Heavy Equipment Company-1

96. W-15 was identified as owner of Company-1, a company that provided heavy equipment services to include clearing and digging, demolition, hauling, and draining systems. On August 19, 2023, ATF and the MFD conducted a joint interview of W-15. From May 9, 2024, through May 14, 2024, investigators from ATF returned to Lahaina to continue the investigation. During this timeframe, ATF made attempts both directly and

through the MFD to conduct a follow-up interview with W-15 . Despite several attempts, W-15 did not respond to investigators and a follow-up interview was not conducted. W-15 [26]

97. W-15 told investigators that on August 8, 2023, at approximately 0630 hours, a friend called and told him there was a fire near W-15 [redacted] s' home, which was located at address Lahaina, Hawaii. Sometime between 0700 and 0730 hours, W-15 brought a bulldozer and water tanker to help MFD battle the fire. The bulldozer cut a firebreak around the neighborhood while the tanker assisted MFD in extinguishing the fire. The water tanker was also used to wet the area.

98. W-15 described the fire as being "contained" at approximately 1200 hours, at which time he did not see fire or smoke. W-15 stated he and his crew then departed the area while MFD personnel remained at scene.

99. Investigators provided W-15 with an aerial map of the area where he responded to the brush fire. W-15 drew on the map and identified approximate locations of fire or fire related damage he observed in response to the brush fire the morning of August 8, 2023.

Figure 36 – W-15 's observations of fire damage highlighted in red ink from when he responded to the morning brush fire, red lines to the west and south of the burned area for the morning fire indicate the extension of the firebreak around the neighborhood that they completed prior to departing.

[26] ATF Report of Investigation (ROI), Report 029: Interview of W-15 .

SCENE EXAMINATION AND OBSERVATIONS

THE MORNING FIRE

100. During the examinations of the location of the Morning Fire, the scene was documented with photographs. Based on the witness statements which clearly identified the fire in its earliest stage, the examination began around Utility Pole 25. While Utility Pole 25 would normally indicate a single utility pole, in this case, it involved two utility poles, both of which were marked Utility Pole 25. The taller pole, identified as Utility Pole 25 for purposes of this investigation, had overhead powerlines and transmission lines. The shorter pole was also labeled Utility Pole 25, but it had telecommunications lines only. Both poles were spaced approximately two feet from each other.

Figure 37 – Image of both utility poles identified as Utility Pole 25 at the intersection of Lahainaluna Road and Ho'okahua Street

101. The area directly below Utility Pole 25 contained various sized rocks and the remains of some shrubs. The trunks of the shrubs measured up to approximately 2 inches in diameter. Evidence of a lower intensity backing fire was present to the east of Utility Pole 25 in the form of fallen grass stems and other vegetation that was not affected by the fire. The overall lack of complete consumption of vegetation in this area was also consistent with a lower intensity fire backing into this area. The undeveloped area to the

east of Utility Pole 25 also showed signs of a low intensity fire backing or spreading laterally into this area. Although the foliage was no longer present on the shrubs, the shrubs were still intact and most of the burning was located at the base of the shrubs.

102. This low burning to the base of the shrubs, coupled with the spotty patches of grass that remained post-fire is also consistent with a low intensity fire moving into this area from the area of Utility Pole 25. Based on the reported weather conditions at the time of the Morning Fire, a fire extending into this area from the vicinity of Utility Pole 25 would have spread against the prevailing winds, which were out of the east/northeast.

Figure 38 – Surface fuel damage northeast of Utility Pole 25

103. Additional fire indicators to the south of Utility Pole 25 were no longer present or had been altered due to heavy equipment usage. A fire hydrant and photovoltaic speed sign were located on the south side of Lahainaluna Road, both of which were approximately 50-feet from Utility Pole 25. Lastly, five small trees with foliage and browned flowers were located between the sidewalk and Lahainaluna Road. Based on a review of pre-fire images and a post-fire examination, evidence of shrubs and taller grasses was noted at the base of Utility Pole 25.

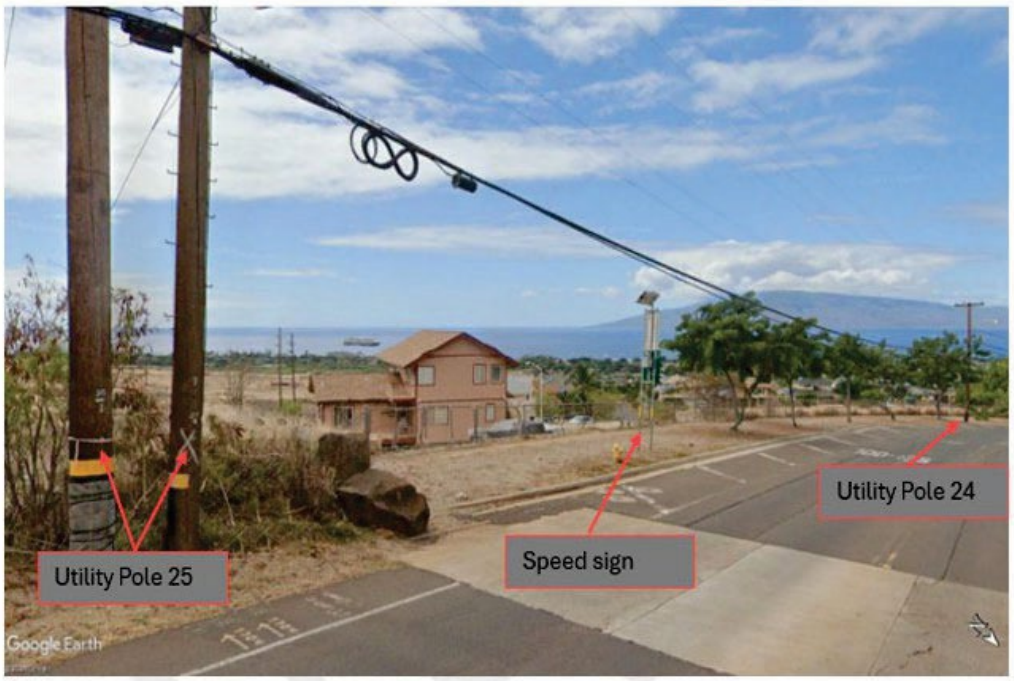


Figure 39 – Space between Utility Pole 25 and Utility Pole 24

104. Moving to the west of Utility Pole 25, investigators located fulgurites along the grassy area below the overhead powerline. Fulgurites[27] generally take place in soils with a sandy composition. They can be created by both electrical discharges during a lightning strike or through contact between an energized electrical conductor and the ground or rock. The heat created from the strike heats the sandy particles and fuses the soil or rock at the location the strike discharges to the ground. When a powerline discharges to the ground, the shape and size of the fulgurites created by powerlines will typically be solid and on or very near the surface of the soil and may include glass bubble looking formations on the surface.[28]

[27] 2016 Edition of NWCG PMS 412, Page 200.
[28] 2016 Edition of NWCG PMS 412, Page 251.

Figure 40 – Image facing east from Utility Pole 24 depicting location of fulgurites marked with green flags and burned grass from morning fire (ATF-5 DSC_9337)

105. Investigators observed corresponding burn damage to the grass around the fulgurites. The fulgurites were approximately three to five inches below the surface of the ground with melted soil on top of the ground. Investigators removed some of the fulgurites and found that the soil around the removed portions formed a subterranean channel that was hard and glassy.

Figure 41 – Close-up of fulgurite (ATF-5 DSC_9194)

106. Investigators continued to examine the area where the energized overhead powerline contacted the ground and found localized areas of burning at the bases of trees with slight charring to the trunks between Utility Poles 25 and 24. There was no continuity to these areas of burning. The burning was individual to each tree. Investigators examined the grassy area between the street and sidewalk but did not observe any fire pattern indicators that could be attributed to any other cause for the fire besides an energized overhead powerline contacting the ground, which ignited the grass.

107. Investigators used a ladder to examine the top of the speed sign that was west of Utility Pole 25. Videos of the Morning Fire depicted an overhead powerline atop the speed sign. Investigators located arc melting atop the metal frame for the sign, which indicated the overhead powerline that fell was energized when it contacted this sign (refer to ATF Electrical Examination Report).

108. Investigators examined the area around the base of Utility Pole 25, as well as the area to the south, which included rocks, metal debris, and remnants of a truck. The truck contained no engine, battery or wheels. The grasses in the area immediately caught fire per witness statements (W-1 , W-4 , W-2 and W-3) and videos, which described and depicted fire moving south and then west along the firebreak and chain-

link fence. Much of the grass on the east side of the dirt and rock mound that was south of Utility Pole 25 and close to the firebreak did not burn. Fire from the dirt and rock mound advanced west through the fence and into vacant lots that were overgrown with dry grasses. Fire consumed most of the grass in this area until it encountered paved roads on the south, west, and north sides during the Morning Fire.

109. As reported previously in an interview with of Company-1 , a firebreak was cut along what was the eastern edge of the Morning Fire. This firebreak was bordered by a chain link fence on the west side and an area of grasses, shrubs, rocks, and a small gully along the east side. Within this gully appeared to be a dry creek bed or drainage area. Rocks, shrubs and grasses made up this drainage area. Based on the statements of firefighters, the original Morning Fire did not appear to cause any active or discernable burning in this gully area.

110. Investigators documented the area where the firebreak was cut with photographs and made note of what appeared to be some freshly cut branches that had been thrown across the firebreak and into an area that burned during the Afternoon Fire. Based on the condition of these branches, investigators believe unknown individuals accessed this area to dispose of branches cut from an unknown location after the fires had occurred and prior to the investigator's arrival.

MORNING FIRE CAUSE HYPOTHESES

111. According to NFPA 921, *"In some instances, a single item, such as an irrefutable article of physical evidence or a credible eyewitness to the ignition, or a video recording, may be the basis for a determination of origin."*[29]

112. For the Morning Fire, the general origin area was identified through witness statements, a review of photographs and video, and a scene examination. Using the same information to identify the general origin area, investigators were able to narrow this area down to a specific origin area and an ignition area. Based on the discovery of fulgurites within the hypothesized ignition area, the argument could be made that even more defined point of origin were identified, while a separate specific origin area was identified directly below Utility Pole 25.

113. PMS 412 and NFPA 921 identify common causes of wildfires. Several cause factors identified in PMS 412 and NFPA 921 were considered and excluded as causes for the fire. These cause factors were excluded after cognitively examining each of them as a hypothesized cause of the fire in light of all other data. Additionally, if there was no affirmative data or supporting evidence to support a specific cause category for the fire, the cause was excluded.

114. Many of the hypothesized causes were excluded based on the same set of facts available to investigators. Witness statements, witness videos, witness photographs, ATF-5 [redacted] examination, and fire scene examination, all supported a cause of the fire being a broken energized overhead powerline contacting the ground and igniting the grasses in various locations.

115. Even with investigators having corroborated information that supported a hypothesis of a broken energized overhead powerline contacting the ground and starting the fire, investigators still explored some of the more common hypotheses related to wildfires. The following hypotheses were considered and evaluated:

Lightning

116. There were no reported or recorded lightning strikes in or within 200 kilometers (km) of the island of Maui according to the Worldwide Lightning Network (WWLN) prior to the fire; refer to ATF Electrical Examination Report for details. Based on the above information, this cause hypothesis was excluded.

[29] NFPA 921 (2024), Chapter 18, Section 18.2.1.2.

Fireworks

117. There were no reports of fireworks in the area the morning of or day before the fire. Investigators located and examined a small empty cardboard tube that measured approximately four inches by one inch that was consistent with an aerial firework. The cardboard tube was located outside of the specific origin area and ignition area. The thought of a shower of sparks raining down from an aerial firework was hypothesized, however the tube was covered in dirt and the colored stripes on the tube were weathered, which indicated it had been discarded for some time prior to the fire.

118. A witness to the south heard a noise who said it was not "fireworks." The reported noise came from the direction of Utility Pole 25, which was also described in a separate interview as Utility Pole 24. The witness observed a shower of white sparks from the top of the utility pole that fell to the ground around its base. According to the witness, a vegetation fire immediately ensued.

119. FCA recovered firework related exhibits from the Princess Nahi'ena'ena School, all of which were documented, photographed and examined by ATF-5 ; refer to ATF Electrical Examination Report for details. The exhibits were identified as two "ground flower" type fireworks and one small aerial shell type firework. The three fireworks recovered from the school were eliminated based on the distance (approximately 0.19 miles) from Utility Pole 25. In addition, the firework examined in the unburned area east of Utility Pole 25 was also eliminated based on its size and condition. Based on the above information, this hypothesis was excluded.

Equipment Use

120. The only reported and documented use of heavy equipment in the area occurred after the ignition and spread of the fire. The heavy equipment was used to "water down" the fire and another piece of heavy equipment was used to cut a firebreak along the east boundary of the fire. The heavy equipment use will be further discussed in the Afternoon Fire section of this report. Based on the above information, this cause hypothesis was excluded as it related to the Morning Fire.

Vaping Devices

121. Investigators observed three vaping devices on the south side of Lahainaluna Road, east of Utility Pole 25 and across from Lahaina Intermediate School. Two of the three were undamaged. The plastic casing on the third was melted on one end but showed no damage indicative of an internal battery fire or evidence of venting during thermal runaway. Additionally, each of these devices were located outside of the identified specific origin area. Refer to ATF Electrical Examination Report for details Based on the above information, this hypothesis was excluded.

Intentional Human Act

122. An open flame from a lighter, match or incendiary device is a competent ignition source for the first fuels that were ignited. Investigators considered if a person or persons might have intentionally started the fire. No persons were observed in the area prior to or after the fire was first observed.

123. Investigators reviewed surveillance video from Lahaina Intermediate School between 0000 hours until electrical service stopped working at 0502 hours. The video provided a southern view that included the gate, Lahainaluna Road and Utility Pole 26. Two vehicles traveled up the road during those five hours, both of which were identified as being associated with Lahaina High School, which was farther east on Lahainaluna Road. Neither vehicle slowed nor changed course of travel around Utility Pole 26, which was one pole east of Utility Pole 25. No pedestrians or other persons were observed on the video along Lahainaluna Road around Utility Pole 26 approximately 90 minutes before the fire.

124. Video evidence of an energized overhead powerline contacting the ground and the presence of fulgurites, were inconsistent with an intentional act caused by humans. Based on the above information, this hypothesis was excluded.

Vehicle Causation

125. Despite the evidence previously mentioned of a broken energized overhead powerline contacting the ground and starting the fire, the proximity of Lahainaluna Road to the specific origin area led investigators to examine a potential cause for the fire being a vehicle. Investigators considered that a vehicle caused the fire(s) via a roadside ignition. Fire causation from vehicles along roadways in receptive fuel conditions can involve, but are not limited to, ejected carbon from an exhaust system, ejection of hot pieces of a catalytic converter, overheated brakes that fail or cause sparks or similar sparks from dragging chains or other metallic vehicle parts contacting the roadway being heated by friction.

126. An abandoned truck body and frame was located in tall grass and south of Utility Pole 25. It was determined the abandoned truck had been in that location since at least 2008 based on a review of satellite imagery. No ignition sources specific to the abandoned vehicle were located. Witness statements and a review of surveillance video from Lahaina Intermediate School did not support a hypothesized cause of a vehicle starting the Morning Fire. Based on the above information, this cause hypothesis was excluded.

Powerlines (Electric Utility Equipment)

127. Per PMS 412, Chapter 6, the category of powerlines includes all electrical equipment associated with the production, transmission, and use of electricity.[30] PMS 412 lists Powerline Ignition Factors which in part state *"The ignition of a powerline fire often occurs due to high winds, contact with vegetation, equipment failure, or human or animal contact".* PMS 412 continues, *"Fires from powerlines can start as a result of conductor contact with standing vegetation due to inadequate clearances or with wildland fuels on the ground when electrical equipment, such as a conductor, falls to the ground and comes into contact with dry fuels. Sparks or molten metal from conductors or transformers can fall to the ground and ignite fires".*

128. NFPA 921, Chapter 27 Wildfire Investigations, Section 27.10.1.8 - Electricity describes similar ignition scenarios as those described above from Chapter 6 of the PMS 412.

129. Early video, witness statements, and the scene examination identified multiple ignition areas in the short grass between the sidewalk and Lahainaluna Road and an immediate fire in the tall grass and shrubs below Utility Pole 25. The fire below Utility Pole 25 moved south/southwest along a fence line. Witnesses and video from the north side of Lahainaluna Road stated that the fire beneath Utility Pole 25, as well as the smaller fires between the sidewalk and Lahainaluna Road, were associated with an energized overhead powerline laying on the ground.

[30] 2016 Edition of NWCG PMS 412, Page 245.

Figures 42 and 43 – Screen capture from fire witness depicting energized overhead powerline between Lahainaluna Road and sidewalk and between Utility Poles 24 and 25.

130. The first fire witness told investigators that she heard a "boom" or loud noise that startled her. The noise caused her to look towards Utility Pole 25, which she referred to as Utility Pole 24 in another interview and described seeing a cascade of white sparks from the top of the pole to the ground below. The cascade of sparks caused the grass at the base of the utility pole to ignited immediately and catch fire.

131. The perspective of the witness was approximately one block southwest looking across an unmaintained grass lot up the hill towards Utility Pole 24 and Utility Pole 25. Early witnesses stated the fire was located around the south side of the base of Utility Pole 25 in the tall grasses and on the ground in between the two utility poles.

132. Photographs of the specific origin area taken by first witnesses, to include video from the witness on the north side of the street across from Utility Pole 24, show that the south overhead powerline at the top of the utility poles along Lahainaluna Road was laying atop the speed limit sign and dropped to the ground. The witnesses reported that this powerline was sparking on the ground, which indicated it was still energized, as

observed on the video. Investigators observed evidence of arc melting on the metal speed sign frame that was consistent with an energized overhead powerline contacting the sign.

133. As mentioned previously, the presence of fulgurites corroborates the witness statements, witness video and witness photographs. Although fulgurites can also be caused by a lightning strike, the hypothesis of a lightning strike causing the fire was excluded.

134. The events and information described in this report, to include ATF's Electrical Examination Report and Conclusions, support that this fire was associated with utility equipment at and around Utility Pole 25. More specifically, the fire was caused by a failure at Utility Pole 25 and a downed overhead powerline that was energized connected to Utility Pole 24. Based on the information available to fire investigators at the time of this report, this cause hypothesis could not be excluded.

MORNING FIRE CONCLUSION

135. Investigators used the Scientific Method according to the NFPA 921 and PMS 412 to determine the Morning Fire originated at Utility Pole 25, which was located on Lahainaluna Road and included the grass between the roadway and sidewalk from north to south and the space between Utility Pole 25 and Utility Pole 24 from east to west. The ignition of dried and overgrown vegetation below Utility Pole 25 was caused by the ejection of molten metallic material that was ejected during the failure of the utility equipment and resulted in arcing and severing of the energized overhead powerline. The failure of the utility equipment at the top of Utility Pole 25, which resulted in "sparks" cascading down to the vegetation below, could have been due to the strain, displacement of conductors, and movement due to wind put on Utility Pole 25 and its equipment by the breaking of Utility Pole 7A that was located approximately 85-feet to the north of Utility Pole 25. Severing of the energized overhead powerline resulted in the ignition of vegetation, in the form of short grass between Utility Poles 25 and 24. Refer to ATF Electrical Examination Report for a more detailed explanation. The fire was classified as *Accidental*.

The Afternoon Fire

SUMMARY OF EVENT:

136. On August 8, 2023, at approximately 1452 hours, what is being referred to as the Afternoon Fire ignited in an area located near the end of the cul-de-sac of Kuialua Street. The fire was behind a residential subdivision in a gully/creek bed area that had previously been the east and southern border of the Morning Fire.

NARRATIVE:

137. The Afternoon Fire was reported by multiple parties, with multiple 911 calls being received at approximately 1452 hours on August 8, 2023. The callers each described a fire burning behind their residences, in a gully/creek bed. This gully/creek bed was located south of Utility Pole 25, which was the origin for the Morning Fire.

138. The fire quickly grew and aided by strong winds, advanced towards the south and west. Firebrands carried by wind led to spot fires ahead of the advancing front of the fire. This wildfire spread rapidly due to the strong winds associated with strong high-pressure system situated northwest of the State. The fire burned over 2,000 acres, advancing into Lahaina Town, and destroyed most of the structures resulting in 102 confirmed fatalities, to date. According to the Pacific Disaster Center and FEMA, damage assessments related to the Lahaina Fire resulted in approximately 2,719 structures exposed; 2,207 structures damaged or destroyed; and 2,170 acres burned. Eighty-six percent of the structures exposed to fire were residential. Financial losses were estimated at approximately $6 billion.

139. A review of the MFD CAD showed Engine 11 leaving the scene of the Morning Fire at 1418 hours. At 1430 hours and then again at 1448 hours, MFD Engine 11 drove on the Lahaina Bypass and reported nothing showing from the scene.

WITNESS ACCOUNTS FOR AFTERNOON FIRE

140. Some of the interviewed witnesses observed both the Morning and Afternoon Fires. Subsequently, their statements were reviewed for information pertinent to the first observations of the Afternoon Fire. Refer to report matrix in Table 1 below for reports specific to each witness statement.

FIRE DISCOVERY:

W-16 [31]

141. W-16, who was at [redacted], located at address [redacted], Lahaina, Hawaii, told investigators that on August 8, 2023, she estimated at 1530 hours, she observed white smoke while standing on the upstairs lanai. She also observed what she described as the beginning of flames on the south side of the fence. However, according to CAD records, W-16 was the first 911 caller to report the Afternoon Fire, at 1452 hours.

142. W-16 told investigators the fire originated on flat ground. She reported feeling heat inside the house within one minute. She described the flames as orange in color and reached the height of the two-story house she was visiting. The fire spread rapidly. W-16 estimated that from the time smoke appeared to the moment flames were visible was less than one minute. She reported evacuating her friend's house as the fire grew in intensity.

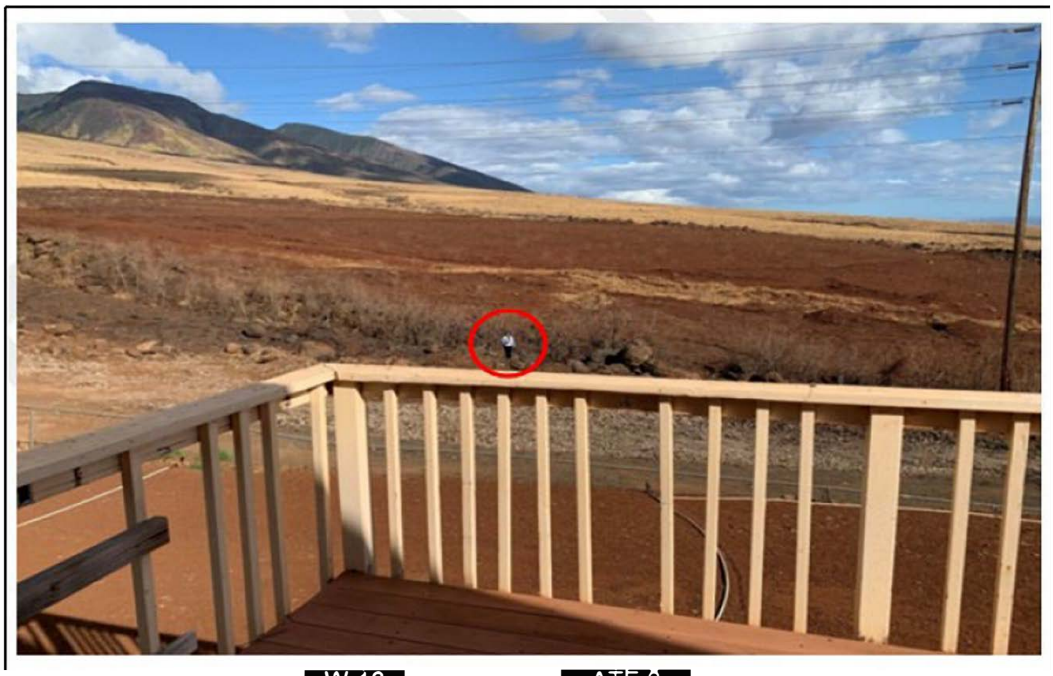


Figure 44 – W-16's perspective with ATF-8 outlined in red and representing approximate location of smoke, which is in a gully/dry creek bed between Utility Pole 1A and Utility Pole 1B and a kiawe tree to the east (not visible)

[31] ATF Report of Investigation (ROI), Report 012: Interv W-16.

W-8 *– 911 Caller*[32]

143. W-8 , stated that on August 8, 2023, sometime between 1415 and 1430 hours, the last MFD crew left the area. According to W-8 , there were no MFD firefighters or apparatus at the scene as of 1440 hours. Two photographs of the area were extracted from a video W-8 captured of the area at that time.

Figure 45 – Image facing south, southeast of W-7 & W-8 residence depicting gully and firebreak (August 8, 2023, at 1440 hours)

Figure 46 – Image facing south, southeast of W-7 & W-8 residence depicting gully and firebreak (August 8, 2023, at 1440 hours)

144. At 1453 hours, W-8 observed smoke billowing from a nearby creek bed and notified his wife, W-7 . At 1457 hours, W-8 observed smoke towards the "highest rock" in the nearby gulch which was when his wife called 911. W-8 later walked the area with investigators and identified the "highest rock". W-8 told investigators that he did not see any persons in or around the gully or along the firebreak prior to or after he observed the start of the Afternoon Fire.

[32] ATF Report of Investigation (ROI), Report 026: Interview of W-8

Figure 47 – Rock formation identified by W-8 as the location where he first observed smoke

Figure 48 – View looking to the south with Utility Poles 1A and 1B in the background and rock identified by W-8 in the foreground

145. W-8 stated he initially observed smoke that became denser from the east within the gully/creek bed. At 1455 hours, W-8 observed flames that moved west in the gully/creek bed. At 1456 hours, he observed flames near utility poles (Utility Poles 1A and 1B) within the creek bed, which his wife video recorded. W-8 stated he noticed MFD crews arrive, and he and his family evacuated.

146. According to W-8 he stopped along Lahainaluna Road, near the Lahaina Bypass on-ramp and saw the fire had already crossed the road (moving west).

W-7 *– 911 Caller*[33]

147. W-7 stated that on August 8, 2023, sometime between 0815 and 0830 hours, she and her husband, whom she identified as W-8 returned to their home after evacuating from the Morning Fire. At approximately 1452 hours, her husband alerted her about a fire on the south side of their residence.

148. At approximately 1457 hours, she called 911 and reported the fire. W-7 also captured a video of the fire from her living room, a still photograph extraction of which is below.

Figure 49 – Images taken from W-7 video and combined. Utility Pole 1A is visible in the combined image (August 8, 2024, 1457 hours)

[33] ATF Report of Investigation (ROI), Report 010: Interview of W-7 .

149. W-7 stated she and her husband evacuated their residence for the second time that day, this time around 1500 hours. She recalled seeing MFD crews arrive as she and her husband left. W-7 also noted the fire had progressed to the Lahaina Bypass while driving on Lahainaluna Road.

W-17 *– 911 Caller*[34]

150. W-17 stated he was working as a line crew employee for MECO on August 8, 2023. He was in the Lahaina area working with W-18 , another MECO line crew employee. W-17 stated he and W-18 responded to reports of downed overhead powerline and utility poles that resulted from high winds.

151 W-17 stated they parked their MECO vehicle along the shoulder off Lahainaluna Road near Utility Pole 25. He did not observe anything unusual upon arrival, except for high winds, nor did he see any people south of Lahainaluna Road.

152. Sometime between 1415 and 1430 hours, he observed smoke approximately 80 yards south of Utility Pole 25. W-17 described the smoke as white in color that got denser coming from inside the gully and below the only kiawe tree in the area. W-17 did not see fire at that time. W-17 stated he called 911 and reported the fire.

153. According to W-17 smoke quickly became denser, and it moved rapidly to the west within the gully. W-17 hypothesized that the fire originated down in the gully below and south of the only kiawe tree in the area. W-17 estimated he was as close as 50 yards to the fire.

[34] ATF Report of Investig ation (ROI), Report 019 and Report 035: Interview of W-17 .

Figure 50 – First video (IMG_1120) timestamped 1457 hours from [redacted]W-17 showing smoke to the south and west of the Kiawe tree, as observed from Utility Pole 25, standing on the dirt mound

Figures 51 and Figure 52 – Facing south from the firebreak near Lahainaluna Road. Figures are still images taken from video at 1458 hours, 4 seconds and 1458 hours, 7 seconds, each on August 8, 2023.

W-18 – *911 Caller* W-17)[35]

154. W-18 stated he was working as a line crew employee for MECO on August 8, 2023. At approximately 1455 hours, he was working with W-17 near [redacted] Kuialua Street. He and W-17 were parked along Lahainaluna Road for approximately 15 to 30 minutes before seeing smoke coming from the south of their location. W-17 reportedly called 911. [redacted] did not see any people in that area and made some video recordings on his phone. W-18 stated wind conditions consisted of heavy gusts with directional shifting.

155. W-18 stated he exited their vehicle and walked towards Utility Pole 25 and then down towards Utility Pole 6, which was south of Utility Pole 25. W-18 did not see any flames. However, when he continued walking down the hill toward Utility Pole 6, he saw flames approximately three feet in height above the north edge of the gully. The north edge of the gully was west of where he initially saw smoke.

156. According to W-18 smoke and fire were located within the gully and approximately below and to the west of the only kiawe tree in the area. W-18 noted smoke and fire moved rapidly west, in the direction of Utility Poles 1A and 1W-18 repeatedly said the wind was blowing hard with stronger gusts that kept changing directions.

WITNESS INTERVIEWS:

W-1 [36]

157. W-1 stated that approximately one hour after MFD left her neighborhood, she observed smoke behind the W-7 & W-8 , which was located at address . W-1 described the initial smoke as "light in color" and later "thick like a cloud."

158. W-1 prepared to return to her cousin's house down the hill after seeing the change in smoke density. According to W-1 it took her ten to fifteen minutes to evacuate and drive away when she noticed the fire had progressed down the hill to the Lahaina Bypass.

[35] ATF Report of Investigation (ROI), Report 036: Interview of W-18 .
[36] ATF Report of Investigation (ROI), Report 007: Interview of W-1 .

W-2 *and* W-3 [37]

159. W-2 and W-3 stated that on August 8, 2023, they were both at home later in the afternoon. The W-2 & W-3 both reported observing smoke and fire in the area south of Lahainaluna Road. W-3 captured video recordings of what they described seeing, two screenshots of which are below.

Figure 53 and Figure 54 – Screenshots from W-2 video facing south from their residence and overlooking Lahainaluna Road (August 8, 2023)

[37] ATF Report of Investigation (ROI), Report 006: Interview of W-2 and W-3.

FIRE SUPPRESSION:

Engine 3

MFD-2 [38]

160. MFD-2, who was assigned to Engine 3 told investigators he thought he and firefighters who worked the Morning Fire departed the scene at approximately 1420 hours. The CAD report documented MFD-2 's departure at 1418 hours. According to MFD-2, they returned to Station 3 for a few minutes before getting dispatched to the Afternoon Fire.

161. MFD-2 told investigators the wind increased with "violence" and conditions worsened throughout the day. He also noted the wind direction changed frequently, but was primarily out of the east, northeast.

162. According to MFD-2, Engine 11 was first at scene for the Afternoon Fire. MFD-2, who was assigned to Engine 3, decided to drive up the dirt road below the fire to get in front of it due to the wind. Investigators found this area to be consistent with the location where Company-1 created a firebreak during the Morning Fire.

[38] ATF Report of Investigation (ROI), Report 025: Interview of MFD-2 .

163. MFD-2 set-up to attack the head of the fire, but there were no active flames. There was, however, thick smoke from above and smoldering within vegetation above the head of the fire. MFD-2 left Wildland 3 and two firefighters on the dirt road south of the mango tree, which was along the unmaintained firebreak west of the W-7 & W-8 residence. Firefighters assigned to Wildland 3 were tasked with preventing the fire from crossing the dirt road.

164. MFD-2 then ran up the south side of the gully with MFD-3 and Tanker 3 being driven behind them. There was no longer visible fire in that area other than to the east, which he was moving towards with the goal of extinguishment. For reference, the visible fire was east of the kiawe tree that was visible on the aerial map.

165. Tanker 3 was parked south of the kiawe tree on the opposite side of the gully from the Morning Fire. MFD-2 pulled a handline from the truck and climbed over the rocks and into the gully. According to MFD-2 , he pulled the handline because he did not want his firefighters under overhead powerlines because the lines were whipping back and forth and was unsure if they were energized.

166. MFD-2 told investigators it was impossible to attack the fire with the bumper turret on Tanker 3 because rocks blocked access and wind blew water sideways. He originally applied water to the kiawe tree and its surrounding brush when Engine 11 called on the radio and advised the fire crossed the highway. A review of radio transcripts indicated this occurred at 1522 hours. Tanker 3 overheated and was unable to move for a few minutes.

167. MFD-2 ran down the hill in an attempt to reach Wildland 3, which had repositioned below for structure protection. MFD-2 rode in a civilian passenger vehicle to get to Wildland 3 and help them while Tanker 3 was unable to move.

168. Tanker 3 joined back with MFD-2 a few minutes later and helped fight the fire that was encroaching on the first structures. Wildland 3 needed a pumper truck to help with suppression at the first house they encountered. Conditions were reportedly very bad with low visibility due to smoke. Multiple houses were on fire by the time firefighters were set-up for structural firefighting. MFD-2 noted their egress was cut off by a downed overhead powerline behind them. MFD-2 stated they nevertheless drove over the downed overhead powerline to evacuate.

Figure 56 – MFD-2 observations of fire damage from the morning brush fire highlighted in red, compared to fire damage associated with the afternoon fire highlighted in black.

MFD-3 [39]

169. MFD-3 , was assigned to Tanker 3 and stated that at 1418 hours, he and his fellow firefighters left the Morning Fire scene. At approximately 1430 hours, they returned to Station 3. At approximately 1455 hours, there was a call for a brush fire in the area they left less than an hour earlier.

170. MFD-3 stated Tanker 3 responded, along with Engine 11, Engine 3 and Ladder 3. He noticed more utility poles had fallen compared to when they returned to Station 3 around 1430 hours. The wind was reportedly constantly blowing and increasing throughout the day.

171. MFD-3 was assigned to chase the heel of the fire uphill around the kiawe stump, which was on fire on the north side of the gully. He recalled Tanker 3 overheated, which caused MFD-2 to run to Wildland 3 after they learned the fire crossed the highway. MFD-3 also noted the foam system and at least one window were inoperable on Tanker 3.

[39] MFD, Interview of MFD-3 , FIWS 023.

MFD-4 [40]

172. MFD-4, who was assigned to Wildland 3 stated that on August 8, 2023, he remained around the Morning Fire until approximately 1400 hours. According to [redacted], there were no "hot spots or smoking areas" when they left and returned to the Lahaina Fire Station. MFD-4 stated they were at the Lahaina Fire Station for approximately 20 minutes before they were dispatched to a fire in the area they just left.

173. MFD-4 arrived at scene of the Afternoon Fire in Wildland 3. They proceeded slowly on the dirt road entrance below the subdivision because of poor visibility caused by dark smoke. They initially positioned Wildland 3 along the dirt road near [redacted] Ho'okahua Place. A fire adjacent to the nearby fence was progressing to a rock pile near the cul-de-sac, which MFD-4 attempted to extinguish.

174. MFD-4 stated the wind was strong and negatively affected their hose stream. The wind blew water away from the fire unless he was very close to the actual fire. Dense smoke continually blew in his face.

175. MFD-4 attempted to extinguish hotspots that emerged behind them, but there were embers flying all around him. MFD-4 then moved closer to the houses in attempts to extinguish fire near the fence line.

176. Wildland 3 was repositioned after they knocked-down fire that was near the houses. However, the fire that remained moved faster and spot fires occurred near houses to the west, which resulted in Wildland 3 being moved to the intersection of Kalena Street and Kaakolu Street.

177. Wildland 3 was positioned facing south, southeast behind [redacted] Ho' okahua Place. MFD-4 pulled one handline. He did not see fire south of thei.i· position because of low visibility caused by dense smoke. MFD-4 recalled seeing blowing embers at that same time. He ended up hying to extinguish fire along the fence line behind the houses on Ho'okahua Place.

178. The fire went beyond Wildland 3 once again and they were redirected to Mauka Park. MFD-4 observed fire on both sides of Lahainaluna Road below the Lahaina Bypass.

[40] ATF Report of Investigation (ROI), Report 009: Interview of MFD Firefighter MFD-4 .

Figure 57 – MFD-4 observations of fire damage from the morning brush fire

MFD-6 [41]

179. **MFD-6** stated that on August 8, 2023, MFD's initial response for the Afternoon Fire deployed Engine 3 and Tanker 3 to a brushfire at [redacted] Kuialua Street. Engine 11 was returning from a cancelled assignment on Keawe Street at that same time. Therefore, MFD-6 directed Engine 11 to respond to the brushfire on Kuialua Street. MFD-6 subsequently directed Reserve Engine 11 and Ladder 3 to respond as well.

180. According to MFD-6, Engine 11 was first at scene on Kuialua Street and established incident command. MFD-6 stated he arrived after Engine 3, Wildland 3 and Tanker 3, all of which were on the dirt access road that paralleled the Lahaina Bypass.

181. MFD-6 arrived in the cul-de-sac where Engine 11 was positioned and assumed incident command. The fire was still inside the perimeter of the downhill side of the dirt access road, which was where Wildland 3 and Tanker 3 were positioned. RE11 was positioned on the downwind side along the dirt access road to strengthen their downhill flank.

[41] MFD, Interview of MFD-6, FIWS 018.

182. MFD-6 recalled dispatch advised that a shed between two houses at [redacted] Ho'okahua Place was on fire and impacting nearby houses. Therefore, Engine 3, which had a single operator, repositioned to Ho'okahua Place and used its line to address the burning shed and affected houses. The remainder of Engine 3's crew remained on the dirt access road with Wildland 3 and Tanker 3.

183. MFD-6 requested air support but was denied due to wind conditions. MFD-6 [redacted] also requested additional apparatus and received Engine 1 and Engine 6 in response. MFD-6 then drove down Lahainaluna Road for a better view. He noticed the grass along the lower part of Kelawea Mauka Park was on fire and impacting houses on Kaakolu Street and Kaalo Place.

184. MFD-6 directed all units to reposition to Kaakolu Street and Kalena Street to make a stand along Kaakolu Street. He also directed Tanker 3 come down Lahainaluna Road and use its bumper turret to take energy from the fire while the other units were getting in position. However, Tanker 3 was unable to respond due to a mechanical issue.

MFD-7 [42]

185. MFD-7 , who was assigned to Engine 11, stated that on August 8, 2023, winds increased prior to the Afternoon Fire. Engine 11 was sent to the Lahaina area and passed the area where the Morning Fire occurred. Engine 11 was cancelled from its call and redirected while on Hokiokio Place, around 1440 hours.

186. MFD-7 stated Engine 11 passed the scene of the Morning Fire once again but did not see any smoke or fire. Radio transmission records indicated this occurred at 1448 hours.

187. At 1455 hours, Engine 11, Engine 3 and Tanker 3 were dispatched to a call for smoke and fire at [redacted] Kuialua Street. Engine 11 turned around at Foodland Lahaina and proceeded to Kuialua Street. Radio transmission records indicated this occurred at 1456 hours.

188. At 1500 hours, MFD-7 and Engine 11 arrived at scene of a 20-foot by 100-foot brush fire located where the fire occurred earlier that morning. The Afternoon Fire was in a ravine (gully) and moving west at a high rate of speed.

[42] MFD, Interview of Captain MFD-7 , FIWS 026.

189. MFD-7 established Lahaina Command and moved communications to channel FD2. Engine 11 and Mini 11 started a direct attack with a 200-foot, 1 ½ inch pre-connected handline as well as two Gnass Packs, which totaled approximately 600-feet of hose. Firefighters progressed around the rear of [redacted] and [redacted] Ho'okahua Place with the handlines. Engine 3 and Tanker 3 arrived and directed down to the utility road below the subdivision from Lahainaluna Road where Tanker 3 worked earlier. Engine 3 and Tanker 3 were to start attacking from that point to prevent fire from passing beyond them. Wildland 3 arrived and positioned with Engine 3 and Tanker 3.

190. MFD-6 arrived at scene and assumed incident command. MFD-7 recalled dispatch notification regarding a shed fire on Ho'okahua Place. Ladder 3 and Relief Engine 11 were dispatched to assist with the shed fire.

191. A gust of wind carried a shower of embers through the area and over their heads. The driver of Engine 11 was knocked down by this gust. The fire moved rapidly down the ravine (to the east in the gully), jumped over a new firebreak from the Morning Fire and passed Engine 3, Tanker 3 and Wildland 3. Fire passed Wildland 3 along the fence at the firebreak behind [redacted] and [redacted] Ho'okahua Place. The fire then jumped the Lahaina Bypass and through the basin of the Lahainaluna cutoff. Radio transmission records indicated this occurred at 1522 hours.

ADDITIONAL WITNESS INFORMATION:

[redacted] [43]

192. [redacted] stated that on August 8, 2023, between 1300 and 1400 hours, the Morning Fire appeared to be contained. W-10 stated there was no visible smoke in the area either. At approximately 1430 hours, W-10 observed smoke across the street by two utility poles (Utility Poles 1A and 1B), both of which were in the vicinity of the Morning Fire. CAD records indicated the fire was reported at 1452 hours. Citizens and firefighters assigned to Engine 11 reported seeing no smoke to the east or west prior to 1452 hours.

[43] MFD, Interview of W-10, FIWS 019.

W-15 [44]

193. W-15 stated that on August 8, 2023, at 1400 hours, he received a text message that reported a fire restarted. W-15 stated he returned to the subdivision with his tanker to help fight the fire. W-15 and his crew assisted with extinguishing fires they encountered along the Lahaina Bypass as they made their way back to the subdivision. According to W-15 they arrived at the subdivision between 1600 and 1630 hours; however, the fire had already advanced toward Lahaina Town.

SCENE EXAMINATION AND OBSERVATIONS

THE AFTERNOON FIRE

194. During the examinations of the location of the Afternoon Fire, the scene was documented with photographs. Investigators determined the area where the Afternoon Fire was first observed was within the gully and approximately 65-feet east/northeast from Utility Pole 1B. This information was obtained through witness statements, and by reconstructing the scene using satellite imagery. This reconstruction was based on witness statements and landmarks they used to describe where they first saw smoke.

195. From July 31 through August 2, 2024, SA/CFI ATF-1 examined the scene of the Afternoon Fire. As part of the examination, SA/CFI ATF-1 stood on the same lanai that W-16 stood on the day she first observed smoke for the Afternoon Fire. SA/CFI ATF-1 compared the image previously taken of W-16 perspective and marked with flags the approximate location W-16 previously described. After marking the location, SA/CFI ATF-1 measured the distance from the approximate location to Utility Pole 1B, which measured 65-feet. SA/CFI ATF-1 plotted this approximate location on a Google Earth map to provide some perspective on the first observed smoke location and the larger scene.

196. The firebreak present during investigator's initial scene examination measured approximately 50-feet wide and began at Lahainaluna Road as referenced above. The firebreak ran adjacent to fencing to the east, south and southwest sides of the houses along Ho'okahua Street, Kuialua Street and Ho'okahua Place.

197. The investigation revealed the firebreak was covered with dense and dry grasses (fuel load) that were not maintained prior to the Morning Fire. Investigators also learned that shrubs and small trees had grown within the chain-link fence that separated houses

[44] ATF Report of Investigation (ROI), Report 029: Interview of W-15 .

from the north side of the firebreak. The Morning Fire consumed vegetation that covered the firebreak.

Figure 58 – March 2023 Google Imagery showing the firebreak overgrown with vegetation (Approximate firebreak outlined in yellow)

Figure 59 – Example of shrub growing into the chain link fence

198. A gully with a dry creek bed at its bottom existed on the east side of the firebreak. As described previously in the Land Description section of this report, the gully had varying depths and widths, and was wider to the north/northeast and narrower to the west/southwest. The dry creek bed also varied in depth. Investigators learned the dry creek bed contained a large amount of vegetation, which consisted of dense grasses interspersed with haole koa shrubs, and large boulders.

199. The north edge of the gully, which abutted the east boundary of the firebreak, was lined with large rocks that acted as a border between the firebreak and gully. A kiawe tree was located to the east/northeast of Utility Poles 1A and 1B and was growing out of the south aspect of the gully wall. The kiawe tree that was visible to the east/northeast of the first visible smoke was lying on the ground as the base of the tree had burned away. The distal ends of these branches exhibited varying degrees of damage with intact leaves and bark remaining on some branches. Witnesses stated the tree was undamaged during the Morning Fire.

200. Utility Pole 1A and Utility Pole 1B, as well as a utility pole stump in between them, were located approximately 65-feet south of where smoke was first reported. Utility Poles 1A and 1B were located within the gully/dry creek bed and Utility Pole 1B was located to the north of Utility Pole 1A.

Figure 60 – Image facing southwest from gully of kiawe tree stump

201. Investigators progressed west/southwest along the firebreak observing that most grasses on the firebreak had been consumed during the Morning Fire, which corresponded to the video footage received from witnesses. However, small patches of grasses survived the Morning Fire. Heavy equipment operated along the firebreak to remove both burned and unburned fuels during the Morning Fire. Based on how the firebreak was cut and the amount of soil and rocks distributed by the heavy equipment, and based on the scene examination it appeared as though while cutting the firebreak, dirt and rocks were displaced down into the gully area from above.

Figure 61 – Image facing west toward Utility Pole 1A and Utility Pole 1B with the chain-link fence that separated firebreak from houses (MFD-8 (DSC_2439)

202. Investigators observed areas of dried grasses and brush between and underneath large rocks in the gully that had not been burned or impacted by fire. The absence of burned vegetation is consistent with a lower intensity fire burning before weather and topography affected the fire resulting in a higher intensity advancing fire. Investigators observed some charred wood limbs and trunks in and around the rocks northeast of Utility Pole 1A and Utility Pole 1B along the south edge of the firebreak.

203. A patch of shrubs was noted slightly west of Utility Pole 1A and Utility Pole 1B. Although much of the foliage had been burned from the shrubs, some remaining foliage was noted at the tops of several of the shrubs. Survivability of the foliage was consistent with the video provided by W-7 of the fire advancing to the west/southwest around Utility Poles 1A and 1B. More specifically, SA/CFI ATF-1 combined two images taken from the W-7 video to give more of a panoramic view of what was transpiring near Utility Poles 1A and 1B at the time of the fire.

204. When reviewing these combined images, it was noted the fire that was entering the left part of the picture or moving from the area of Utility Pole 1B towards Utility Pole 1A did not have the same flame heights as the fire that was noted extending to the west/southwest of Utility Pole 1A. This lower intensity burning, or shorter flame heights was consistent with the survivability of the foliage documented on scene. As the fire continued to advance past Utility Pole 1A, the flame heights grew dramatically and became the head of the fire.

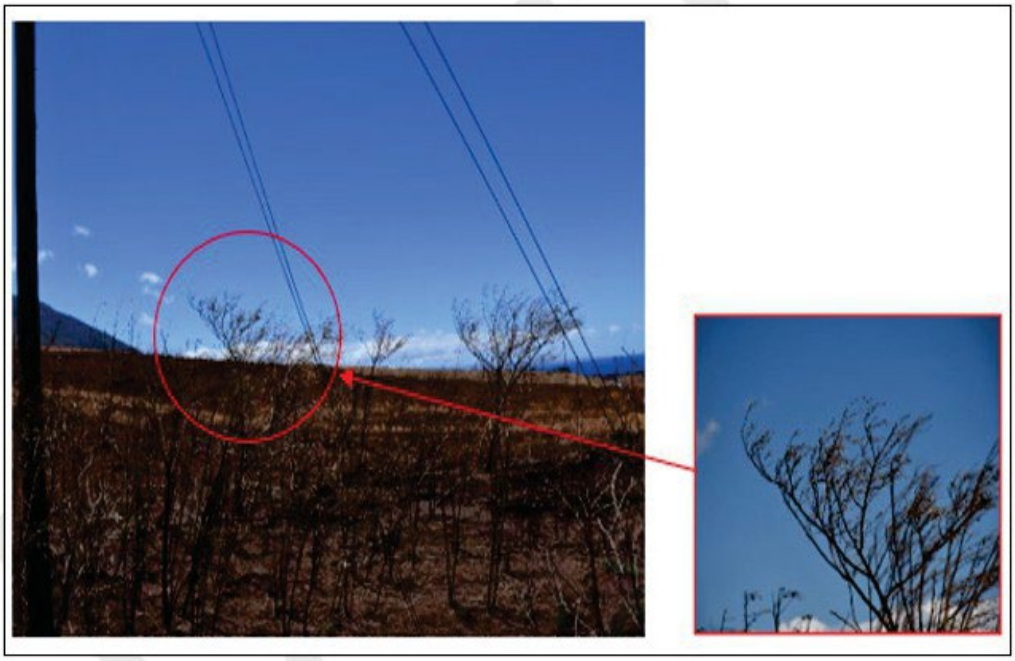


Figure 62 – Remains of shrubs to the south of Utility Pole 1A (Lahaina (160)) and close-up of foliage (Lahaina 161))

Figure 63 – Stitched image from W-7 video showing the progression and growth of the fire (Figure 49 above)

205. A utility pole stump was located between Utility Poles 1A and 1B. The stump was pulled from the ground during a joint examination. ATF-5 examined the utility pole stump at FCA's evidence storage location; refer to ATF Electrical Examination Report for details. The pole stump did not exhibit any damage indicative of subterranean smoldering. The fire damage observed was consistent with the exposed portion of the utility pole stump smoldering or burning for an extended period once the Afternoon Fire began.

206. Several large metal and concrete pipes, commonly known as culverts of varying diameters and lengths were northeast of Utility Poles 1A and 1B and located within the gully. Some of the culverts were partially buried. Investigators observed dried grasses within and around some of these culverts that had not been burned during the fire. Survivability of the grasses was consistent with a lower intensity fire, and the location would put it just east of where W-16 and W-8 first reported seeing smoke. This evidence of a lower intensity fire would also be consistent with the video provided by W-7 showing the flame heights increasing as the fire moved from Utility Pole 1B past Utility Pole 1A.

Figure 64 – Image facing north at Utility Pole 1B with metal and concrete pipes nearby (ATF-8 ATF Photo 290)

207. Vegetation along the firebreak and along the south aspect of the of the gully showed evidence of an advancing fire in that much of the vegetation was consumed as the fire progressed in a west/southwest direction. The degree of damage on this side of the gully could also be attributed to the south facing aspect as south facing slopes receive direct sun rays and the higher temperatures attained on south facing slopes results in a lower humidity, a rapid loss of fuel and soil moisture, and drier, lighter fuels such as grasses. These factors coupled with the strong winds out of the east/northeast allowed for the fire to rapidly grow and spread in a west/southwest direction.

208. SA/CFI ATF-1 examined the scene of the Afternoon Fire and although many characteristics of the scene had changed, the original gully walls and dry creek bed remained intact, specifically around Utility Poles 1A and 1B. SA/CFI ATF-1 located the remains of the kiawe tree and working towards the west/southwest, marked the ATF-1 western edge of the gully all the way down to Utility Poles 1A and 1B. In so doing, SA/CFI compared the images and videos of the heavy equipment working to cut a firebreak along the west edge of the gully with the edges mapped out by SA/CFI ATF-1 .

Figure 65 – Image looking south towards Utility Poles 1A and 1B with
pink flagging marking edge of gully (Pink line drawn to aid in seeing the edge of the gully)

Figure 66 – Image looking north from near Utility Poles 1A and 1B with pink flagging marking edge of gully (Pink line drawn to aid in seeing the edge of the gully)

209. SA/CFI [redacted] ATF-1 reviewed videos of the heavy equipment working during the Morning Fire and reviewed photos and videos of what the area of the firebreak looked like after the Morning Fire. The west edge of the gully narrowed as it approached Utility Poles 1A and 1B and as a result, the firebreak that was cut in this area appeared to be close to the north edge of the gully. This narrowing resulted in the heavy equipment having to take a sharp turn to the west due to follow the topography of the gully. This sharp turn resulted in a build-up of rocks and other vegetation on the outside edge of the blade and led to the heavy equipment displacing undetected smoldering debris into the gully or very near the north edge of the gully. The approximate location where the heavy equipment made this turn was near the location where smoke was first observed by

W-8 and W-16. Based on the scene examination and incorporating the witness observations into the scene examination, investigators believe the smoke and ensuing fire originated approximately 65-feet east/northeast of Utility Pole 1B.

AFTERNOON FIRE CAUSE HYPOTHESIS

210. The area where smoke and fire were first observed was identified through witness statements, a review of photographs and video,and a scene examination. This rekindle of the Morning Fire became known as the Afternoon Fire and was reported at approximately 1452 hours. The first witnesses and videos show smoke east of the area burned during the Morning Fire. Smoke quickly transitioned to an uncontrolled fire that broke containment efforts set by the MFD at approximately 1518 hours. Fire rapidly moved in a west/southwest direction and "jumped" the Lahaina Bypass at approximately 1522 hours. The first residential structure lost to the Afternoon Fire, located at [redacted] Lahainaluna Road was reported on fire at 1528 hours.

211. Taking a closer look at the location where the rekindle was first observed and subsequently named the Afternoon Fire, investigators reviewed images, videos, and the statements provided by witnesses. Two independent witnesses both put the first observed smoke in the same approximate location, which was approximately 65-feet east/northeast of Utility Pole 1B. Additional information was provided by MECO employees monitoring the scene of the Morning Fire. Videos clearly show smoke coming from the area of the gully located to the east of the housing subdivision. The kiawe tree located in the videos and captured in still frames from the video, is not involved in fire and the smoke appears to be further to the west/southwest as the smoke is obscuring the lower portion of Utility Pole 1B, which would place the source of the smoke east/northeast of Utility Pole 1B and south of the kiawe tree.

212. When plotted on a Google Earth aerial image, the area where their vantage points overlap is also in the area described previ W-8 W-16 where they first observed smoke prior to seeing flames.

Figure 68 – W-18 W-17 images combined to give overall representation.

Figure 69 – Photo 14 from MFD Report, showing kiawe tree and Utility Poles 1A and 1B

213. NFPA 921 and PMS 412 identify common causes of wildfires. Although the Afternoon Fire was determined to be a rekindle of the Morning Fire, investigators cognitively analyzed several hypotheses to refute the hypothesis of the Afternoon Fire being a rekindle from the Morning Fire.

214. Several cause factors that were previously identified and discussed in the Morning Fire section of this report were excluded as a cause of the Afternoon Fire based on the same fact pattern laid out in the Morning Fire section. Additionally, if there was no affirmative data or supporting evidence to support a specific cause category for the fire, the cause was excluded as a cause of the fire.

215. The cause hypotheses that were analyzed included the following:

- Smoking Materials
- Fireworks
- Intentional Human Act
- Equipment Use
- Electrical Utility Equipment
- Rekindle

Smoking Materials

216. Under ideal conditions, carelessly discarded smoking materials can be a competent ignition source for receptive fuels. No persons present during the suppression of the Morning Fire were reported to be in the gully or dry creek bed where smoke was first observed during the Afternoon Fire. Investigators determined the general origin area for the Afternoon Fire had not been burned during the Morning Fire based on witnesses and video. The gully was overgrown with thick vegetation and the steep and rocky footing made access difficult.

217. No persons were observed after witnesses first observed smoke from the Afternoon Fire in the general origin area, specifically down in the gully or dry creek bed, prior to the fire being reported. Fire personnel had departed approximately 34 minutes prior to the Afternoon Fire and reported no other persons present near the general origin area when they departed, other than MECO employees. MECO personnel who were on or at the roadway near Utility Pole 25 were there to make repairs. The known location of MECO personnel was approximately 270-feet from where smoke from the fire was observed. The MECO personnel did not report seeing persons in the area where the smoke originated from. MECO produced asset GPS data, which was examined by investigators and was found to support the description of their locations.

218. Residents who reported the fire were present when firefighters departed after 1400 hours. They did not report any persons in or near the area of or within the gully, other than firefighters who were above the gully along the firebreak. A homeowner witness stated he was actively outside checking his property and fence line prior to observing smoke within the gully to the east. Based on the above information that no individuals were down in the general origin area, this hypothesis was excluded.

Fireworks

219. There were no reports of fireworks in the hours leading up to the Afternoon Fire. Fire department personnel had departed the area approximately 34 minutes prior to the fire being reported. MECO personnel were on scene above the east side of the general area of origin when fire personnel cleared the scene W-8 , who reported the start of the Afternoon Fire, was outside on the south side of his hom W-8 had an unobstructed view of the area where smoke was first observed and did not report hearing or seeing fireworks after fire personnel left, nor did they see other persons in the area.

220. No expended fireworks or identifiable items associated with fireworks were observed in the gully. Based on the above information, this hypothesis was excluded.

Equipment Use

221. NWCG 921 and PMS 412 list Equipment Use and/or Vehicles as a potential cause for a wildfire. In each of these guides, fires caused by equipment use and/or vehicles are discussed in terms of a failure occurring with the equipment itself or the overheating of equipment resulting in a fire via radiant or conductive heat transfer.

222. After firefighters arrived to suppress the Morning Fire, Company-1 assisted with a bulldozer, front end loader, and a water tanker. The equipment was used along the firebreak to the north of the gully to assist MFD suppression efforts and to aid in the containment of the Morning Fire. Video produced by Company-1 showed at approximately 0900 hours that morning, no fire was visible but burned vegetation and displaced soil to the west side of the kiawe tree along the edge of the gully.

223. In the videos, grasses along the firebreak were moved by strong winds blowing towards the gully area where the general origin area was identified. The video also reveals the firebreak was cut close to the northern edge of the gully leaving little terrain between the firebreak and the gully. Excavation equipment departed at approximately 1200 hours with MFD firefighters remaining on scene for another two plus hours.

224. It was reported that at 1527 hours, Tanker 3 overheated during suppression efforts for the Afternoon Fire. Approximately 35 minutes had passed from the initial report of this fire since overheating was reported. Tanker 3 was not witnessed to have started a fire at any time while in operation during the Morning or Afternoon Fire and there were no reports of mechanical problems (such as overheating) during the Morning Fire. Based on the above information, a hypothesis involving the mechanical failure of this equipment or vehicle was excluded.

225. Although a mechanical failure of the equipment was excluded as a cause for the Afternoon Fire, the close proximity of the freshly cut firebreak to the edge of the gully does not afford the investigators the ability to rule out the possibility that while cutting the firebreak, the equipment moved still burning debris or smoldering vegetation into the gully along with rocks, where it would have remained undetected until the still burning debris or smoldering vegetation produced enough energy to ignite additional grasses or other vegetation.

226. Based on conditions captured in the videos provided by Company-1 , the strong and inconsistent winds could have transported a firebrand from the area of the Morning Fire to the general origin area of the Afternoon Fire where it would have remained undetected until the still burning vegetation produced enough energy to ignite additional grasses or other vegetation. After the start and spread of the Afternoon Fire, it was reported that embers being carried by the winds were causing spot fires in front of the advancing fire. Based on the above information, a hypothesis of an equipment

causing the fire due to a failure occurring with the equipment itself or the overheating of equipment resulting in a fire via radiant or conductive heat transfer was excluded.

227. Although equipment use was excluded as a cause of the fire, the equipment used during the Morning Fire may have aided in the spread of undetected embers or smoldering debris during the containment of the Morning Fire.

Powerlines (Electric Utility Equipment)

228. Based on early witness statements and video, smoke from the Afternoon Fire was first observed in the gully between the kiawe tree to the east and Utility Poles 1A and 1B to the west. ATF-5 conducted an examination of the overhead powerlines in this area and no visible damage was noted. In fact, these overhead powerlines were still intact at the time of the Afternoon Fire. ATF-5 determined that at the time smoke from the Afternoon Fire was first observed, the overhead powerlines in this area were not energized based on data produced by the utility company, see ATF Electrical Examination Report for details.

229. Based on the findings in the conclusion section of the Afternoon Fire, if the Afternoon Fire was a rekindle of the Morning Fire, the utility equipment that caused the Morning Fire caused the Afternoon Fire.

Intentional Human Action

230. Investigators considered if a person or persons might have intentionally started this fire. The fire department departed approximately 34 minutes prior to the Afternoon Fire was reported and there was no person(s) in or around the gully at that time. Engine 11 twice drove by on the Lahaina Bypass below this area within approximately 20 minutes before the Afternoon Fire was reported. They said there was no visible smoke, fire, or persons in the area as seen looking uphill (to the east). The residents, some of whom were witnesses, who lived at the cul-de-sac to the north of Utility Pole 1A and Utility Pole 1B at the west side of the area, and observed smoke for the Afternoon Fire had a very good view of the area from an elevated position and did not observe anyone in the area. One of these witnesses (W-16 was outside prior to observing flames from the Afternoon Fire on the east side of the home with an unobstructed view to the north/east, and south along the firebreak that was now clear of vegetation after the Morning Fire. The witness did not observe any persons or activity in this area prior to observing the smoke and then fire.

231. The two MECO employees who were interviewed were located with MECO equipment on Lahainaluna Road to the north of the east side of the gully below the kiawe tree and approximately around Utility Pole 25. The MECO employees were reported to

be present in their parked vehicles along the road when fire personnel departed after the Morning Fire. The presence of their vehicles in this location was confirmed by utility GPS data provided to investigators. These employees noticed and reported the smoke within the gully for the Afternoon Fire. The position where they were parked was also elevated when looking slightly downwards at the east end of the gully. Based on the witness observations as well as early video of the fire, investigators developed a general origin area in the gully that was below the rocks at the south edge of the previously burned area from the Morning Fire. These witnesses, at both the east and west end of the area of origin, did not observe any person(s) present in or around the general origin area for the Afternoon Fire prior to or after observing smoke. Witnesses who lived to the north, such as W-1 and -2 & W-3 did not observe any person leaving the area on foot around the time the smoke was discovered.

232. The first responding firefighters did not observe any persons in the area, nor did Engine 11 observe persons present as viewed from the highway looking uphill to the east while driving by enroute to other assignments prior to this fire being reported. Furthermore, the gully where the Afternoon Fire started was overgrown with unkempt vegetation, steep banks with loose soil and large rocks making access on foot very difficult. If a person had been present, given the rapid development of the fire described by witnesses and observed on the videos they produced, such a person should have been observed by witnesses leaving the area in any direction. As a result, investigators excluded this as a cause of the Afternoon Fire.

Rekindle of the Morning Fire

233. Due to the relatively short amount of time between the declaration of the Morning Fire being extinguished and the start of the Afternoon Fire, a hypothesis of the Afternoon Fire being a rekindle of the Morning Fire cannot be excluded. The following times are relevant to both the Morning Fire and the Afternoon Fire:

- 0635 hours – 911 calls placed regarding the Morning Fire
- 0819 hours – MFD declares the fire 90 percent contained
- 0852 hours – MFD declares the fire 100 percent contained
- 1418 hours – MFD declares the fire "out"
- 1418 hours – MFD (E-11) leaves the scene of the Morning Fire
- 1430 hours – MFD (E-11) drives by the scene and reports no problems
- 1448 hours – MFD (E-11) drives by the scene and reports no problems.

234. The Afternoon Fire was reported at 1452 hours and located below and to the south of the area that burned during the Morning Fire. The Morning Fire had burned along Lahainaluna Road and along the firebreak to the south and west between the chain-link

fence that divided the properties to the west and the gully to the east. MFD personnel, Company-1 personnel, and residents all placed the Morning Fire in approximately the same area as evidenced by diagrams contained within each of their witness statements. They further described that the Morning Fire consumed the unkempt grass along the firebreak between the gully and the fence, which created the appearance of a "road." The road appearance was enhanced by Company-1 cutting a tactical firebreak in this area with heavy equipment. Witnesses and firefighters all said they never observed fire down in the gully or dry creek bed during the Morning Fire, but fire had been observed around some of large rocks/boulders at the north edge of the gully with the deepest penetration of fire into the gully and rocks located to the northeast of Utility Pole 1A and Utility Pole 1B.

235. Fire personnel and other witnesses stated the fire from the Morning Fire was contained with no additional fire growth or flames observed at approximately 0852 hours. However, smoldering conditions continued after this time with varied reports from both firefighters and other witnesses as to when the smoldering was no longer observed. Firefighters who arrived to replace the initial crews remained on scene for approximately six hours, using water tankers to flow water along the rocks above the gully due to concerns about unseen smoldering or fire around or under these rocks. Firefighters cleared the scene at 1418 hours after informing dispatch the fire was extinguished. Investigators met with firefighters at the scene regarding both fires and they confirmed that the furthest visible penetration of fire from the Morning Fire along the firebreak was into the rocks above Utility Pole 1A, Utility Pole 1B, and the pole stump, but they never observed flames, smoke, or smoldering in the dense undergrowth down in the gully at any time while they were present.

236. Firefighters drew outlines on maps showing the extent of burned area for the Morning Fire. The videos provided by a Company-1 employee, timestamped at approximately 0900 hours, did not show active fire, or burned vegetation northeast or west of the uphill kiawe tree or within the gully within the general origin area of the Afternoon Fire. They confirmed that firefighters, with their assistance, had continued to water down the rocks above the gully as this was the area they were most concerned with after the Morning Fire. Firefighters said they wanted to get water under and in between these boulders and rocks above the gully as this was the area most likely to hold a smolder or hidden fire.

237. After the Afternoon Fire rekindled and began moving west/southwest the high school principal, athletic director, intermediate school principal and other witnesses said the Afternoon Fire continued to slowly back up the gully and field to the east uphill, but

against the wind, throughout the afternoon until approximately 2000 hours. The backing fire was stopped by the gravel access road for the MECO Lahainaluna substation.

238. This movement of the fire into the winds was possible in-part based on the slight downward slope of the gully from the area of the MECO Lahainaluna substation to Utility Poles 1A and 1B. The rate of spread of a fire moving uphill is increased because the flames are closer to the fuels resulting in a faster dehydrating, preheating, and igniting of the fuels. Upslope fires can also create a draft, which would also increase the rate of spread of the fire. This movement of the fire upslope and extending to the east allowed for previously uninvolved fuels to ignite and allow the fire to spread against the wind. This was corroborated by video(s) provided by W-10 showing active fire and embers moving east around Utility Pole 24 in the grass between the street and sidewalk. This occurred well after fire had already entered Lahaina Town.

239. High winds continued throughout the day and pushed fires downhill until they ran into previously burned areas having no remaining fuels, which can be referred to as reburn. These secondary burns were corroborated by the burned-out areas of vegetation just below the MECO Lahainaluna substation uphill to the east of the Afternoon Fire, as well as consumed vegetation along the road east and south of Utility Pole 25 that was not burned when firefighters left the Afternoon Fire to try and stop the fire from advancing towards Lahaina Town. Due to this, investigators were unable to determine if observed fire damage to the vegetation within and around the general origin area was associated with the start of the Afternoon Fire or the subsequent fire that likely impacted the general origin area throughout the afternoon and early evening.

240. Investigators watched numerous videos that showed fire behavior in vegetative fuels on that date in and around Lahaina, specifically within the grasses and shrubs. Due to the extreme wind conditions and other factors related to wildfire risks, grass fuels were observed to burn very rapidly with long flame lengths. These grasses are a lightweight or short-duration fuel above the ground surface.

241. Investigators further considered if the Morning Fire could have led to the undetected burning of subsurface fuels such as tree or shrub roots. These subsurface fires can be difficult to extinguish and may burn underground along a root jut to surface at another location.[45] Investigators observed charred roots that were exposed above the ground during the scene examination, as well as limbs or trunks between the rocks. Furthermore, the general origin area was overgrown with shrubs and bushes of varying sizes, which created a risk of a smoldering event going undetected.

[45] NWCG S-190: Introduction to Wildland Fire Behavior.

242. Investigators reviewed video provided by W-15 of Company-1 (obtained by MFD) that was reported to have been made around 0900 hours. This video was made from inside the bulldozer, and it showed a bucket loader pushing dirt uphill from the west to the east near the kiawe tree. This loose soil, to include burned vegetation from the firebreak, was piled at the edge of the gully on the west side of the kiawe tree. As discussed earlier, the close proximity of the freshly cut firebreak to the western edge of the gully does not afford the investigators the ability to rule out the possibility that while cutting the firebreak, the operator unknowingly moved still burning vegetation or smoldering debris into the gully along with rocks, where it would have remained undetected until the still burning vegetation produced enough energy to ignite additional grasses or other vegetation.

243. Given the initial fire description for the Afternoon Fire, as well as the video(s) and the described winds, the more likely general origin area was east/northeast of Utility Poles 1A and 1B, within the gully. Each of the four initial fire witnesses placed smoke and ultimately fire within this general origin area. Video provided by three of these four witnesses corroborated their statements.

244. The two MECO employees located above this area did not initially observe flames, but both described heavy smoke coming from within the gully approximately below the kiawe tree and above the gully moving to the west. The video provided by the MECO employees of the smoke corroborated the hypothesis that the smoldering event that was producing the smoke was to the east of Utility Pole 1A as it was obscured by the smoke in the video. This is also consistent with the early observation of the resident witnesses to the west above the power poles who described initial smoke to the east/northeast of Utility Poles 1A and 1B, followed quickly by advancing flames as observed on the video they provided.

245. The Morning Fire was reported to be "contained" at approximately 0852 hours. In a wildfire situation, containment is the status of a wildfire suppression action signifying that a control line has been completed around the fire, and any associated spot fires, which can reasonably be expected to stop the fire's spread. Although the advancement of the Morning Fire was halted, some of the burned areas from the Morning Fire continued to smolder for some time as firefighters continued to wet these areas down until no smolders were observed prior to their departure.

246. Given the footprint (burned area) of the Morning Fire, the possible extension of fire into the large rocks and unkempt vegetation dividing the firebreak, along with the high sustained windspeeds, gusts, and reported changes in wind direction per witnesses

and firefighters at the scene, investigators considered the possibility of an undetected smoldering fire resulting from a firebrand or the inadvertent movement of materials in to the gully as a possible source of the Afternoon Fire. Investigators could not rule out that the Afternoon Fire was a rekindle of the Morning Fire. Therefore, this hypothesis was not excluded.

AFTERNOON FIRE CONCLUSION

247. Investigators used the Scientific Method according to the NFPA 921 and PMS 412 to determine the Afternoon Fire was the result of an undetected smoldering event (rekindle) from the Morning Fire occurring in the gully/creek bed east of Utility Pole 1B and west of the kiawe tree. This smoldering event could have been the result of a firebrand landing in this area due to the strong and erratic winds blowing at the time of the fire. This smoldering event could have also been the result of some still burning debris being inadvertently pushed into the gully/creek bed area by heavy equipment during the haste of cutting a firebreak during the Morning Fire. These smoldering fuels remained undetected until they produced enough energy to ignite additional grasses or other vegetation at which time smoke would become visible to witnesses. The cause was determined to be a rekindle of the Morning Fire and as such is classified as *Accidental*.

WEATHER INFORMATION AND ALERTS (NATIONAL WEATHER SERVICE)

248. The Weather factored into the ignition and subsequent spread of the Morning Fire and the Afternoon Fire. The National Aeronautics and Space Administration (NASA), Global Modeling and Assimilation Office (GMAO) prepared a report titled *"Meteorologic Analysis of the August 2023 Maui Wildfires".*[46] The report went on to explain the unusually high regional winds in the area of Lahaina fires were caused by an anomalously strong high-pressure system for the time of year which shifted the wind direction to due easterly. This induced efficient, katabatic winds down the west side of Pu'u Kukui Mountain in western Maui, accelerating through gaps in the terrain of the area. Although Hurricane Dora is referenced in National Weather Service reports, the GMAO did not assert Hurricane Dora played a vital role in the ignition and spread of the wildfires.

249. The following weather data was obtained from the Fire Safety Research Institute, Lahaina Fire Comprehensive Timeline Report, Appendix 6.2 National Weather Service (NWS) Products Released (Communications).

- 8/8/2023 at 3:17 am – a Red Flag Warning was issued for leeward areas due to strong winds and low humidity. The Red Flag Warning remained in effect until 6 am HST (Wednesday).
- 8/8/2023 at 3:18 am – High Wind Watch with strong and gusty winds through early Wednesday (6:00 am) East winds of 30 to 45 MPH with localized gusts to around 60 MPH. Impacts: Damaging winds may blow down trees and power lines and damage roofs. Power outages are possible.
- 8/8/2023 at 4:00 am – Fire Weather Planning Forecast. Discussion: Very dry fuels (KDBI around 600) combined with strong and gusty easterly winds and low humidities below 45 percent will produce critical fire weather conditions through tonight.
- 8/8/2023 at 9:26 am – NWS social media. Update: High Wind & Fire Weather Alerts. High Wind: 30-45 MPH winds, gusts up to 60 MPH.
- 8/8/2023 at 9:27 am – NWS social medial. 30-45 MPH winds, gusts up to 60 MPH. Red Flag: High fire danger with rapid spread.
- 8/8/2023 at 3:38 pm – Area Forecast Discussion. SYNOPSIS: Strong and potentially damaging easterly winds along with very dry conditions will persist

[46] NASA, Global Modeling Assimilation Office, Meteorologic Analysis of the August 2023 Wildfires (GMAO - Global Modeling and Assimilation Office Research Site (nasa. ov)

tonight and Wednesday as Hurricane Dora passes far to the south. Dangerous fire weather conditions will persist through Wednesday afternoon. A return of a more typical trade wind pattern is anticipated later in the week through the weekend.

TABLE 1

INTERVIEWEE REPORT MATRIX

INTERVIEWEE	ATF ROI NUMBER	MAUI REPORT NUMBER	RMS NUMBER
W-1	7	FIWS 004	None
W-4	None	FIWS 20	None
W-2 and W-3	6	FIWS 003	None
W-5	16	FIWS 010	None
W-6	17	FIWS 011	None
W-7	10	FIWS 007	None
W-8	26	FIWS 015	None
MFD-1	23	None	*23-0012439, 23-0012441, 23-0012431*
MFD-2	25	None	None
MFD-3	None	FIWS 023	None
MFD-4	9	FIWS 006	None
MFD-5	2		None
MFD-6	None	FIWS 018	None
W-9	8	FIWS 005	
W-10	None	FIWS 019	None
W-20	15	FIWS 017	None
W-11	27	None	None
W-12	5	None	None
W-13 and W-14	11	None	None
W-15	29	FIWS 016	None
W-17	19 and 35	FIWS 002	None
W-18	36	FIWS 002	None
W-21	4	None	None
W-16	12	None	None
MFD-7	None	FIWS 026	None

TABLE 2

TABLE OF FIGURES

FIGURE #	DESCRIPTION OF FIGURE	SOURCE OF MEDIA
1	Koa Haole shrub at the scene of the fires	ATF-1 (IMG_0416)
2	Dried grasses at the scene of the fires (August 1, 2024)	ATF-1 (IMG_0388)
3	Guinea grass at the scene of the fires (August 1,	ATF-1 (IMG_0410)
4	Small koa haole shrub at the scene of the fire (August 1, 2024)	ATF-1 (IMG_0411)
5	Buffelgrass at the scene of the fires (August 1,	ATF-1 (IMG_0416)
6	View of the gully/creek bed looking to the east along Lahainaluna Rd. (August 1, 2024)	ATF-1 (IMG_0404)
7	View of the gully south of Lahainaluna Road	ATF-1 (IMG_0405)
8	View of the gully/creek bed northeast of Utility Poles 1A and 1B (August 1, 2024)	ATF-1 (IMG_0409)
9	View of the road put in post-fire (August 1,	ATF-1 (IMG_0386)
10	Approximate burn location for the Morning Fire overlayed on Google Earth	Google Earth (7/2016)
11	Aerial image of neighborhood with W-1 house outline in blue and Utility Pole 24 circled	Google Earth (7/2016)
12	W-2 & W-3 residence outlined in blue and utility poles circled in red	Google Earth (7/2016)
13	Utility Pole 7A located north of Utility Pole 25	SBZI4059
14	Top of Utility Pole 7A on the ground	HADZ7479
15	Image (cropped) of fire moving south from	20230808_063614
16	Image (cropped) of fire moving south from Utility Pole 25 – from video	20230808_063614
17	Images (cropped) facing southwest from W-2 & W-3 residence overlooking Lahainaluna Road with energized overhead powerline on the ground – from video	20230808_063614
18	Images (cropped) facing southwest from W-2 & W-3 residence overlooking Lahainaluna	20230808_063614

	Road with energized overhead powerline on the ground – from video	
19	Image facing southwest from W-2 & W-3 residence and overlooking Lahainaluna Road with fire on the ground east of Utility Pole 24 – from video (August 8, 2023, 0638:30 hours)	20230808_063614
20	Image facing east from W-2 & W-3 residence and overlooking Lahainaluna Road with fire suppression south of Utility Pole 25 – from video (August 8, 2023, 0643:20 hours)	20230808_064320
21	Fire on south side of Lahainaluna Road between Utility Pole 24 and Utility Pole 25	W-4 Video – Facebook
22	Fire on south side of Lahainaluna Road and south of Utility Pole 25	W-4 Video – Facebook
23	W-5 photograph facing south from Lahaina Intermediated School with speed limit sign and overhead powerline outlined in red. (August 8, 2023, at 0639 hours)	W-5 Photo - 639AMfirst fire pic71320556094_4EA55D19-8009-43B1-9B42-137A825BA330.fullsizerender
24	Figure 23 imaged cropped and magnified showing overhead powerline on top of sign (red arrows)	Figure 23 (magnified and cropped)
25	W-5 stated route of travel where he observed fire at Utility Pole 25 (Google Earth)	Google Earth (7/2016)
26	W-7 photograph (cropped) facing northeast from her house along the firebreak and south of the chain link fence at address (August 8, 2023, 0643 hours)	W-7 (IMG_6741)
27	W-8 photograph facing east in his yard with smoldering visible (August 8, 2023, 0831 hours)	20230808_083139
28	Highlighted areas correspond to W-8 's observed fire damage and appox. time. Orange – 0630 hours; Blue – 1000 hours; Purple – 1430 hours (Google Earth)	Google Earth (7/2016)
29	MFD-1 's observations of fire damage from when he arrived at the morning brush fire scene highlighted in red ink compared to fire damage observed when he departed highlighted in black ink	Google Earth (7/2016) Overall Map from Page 7 of this report
30	MFD-2 observations of fire damage from the morning brush fire highlighted in red	Google Earth (7/2016) Overall Map from Page 7 of this report

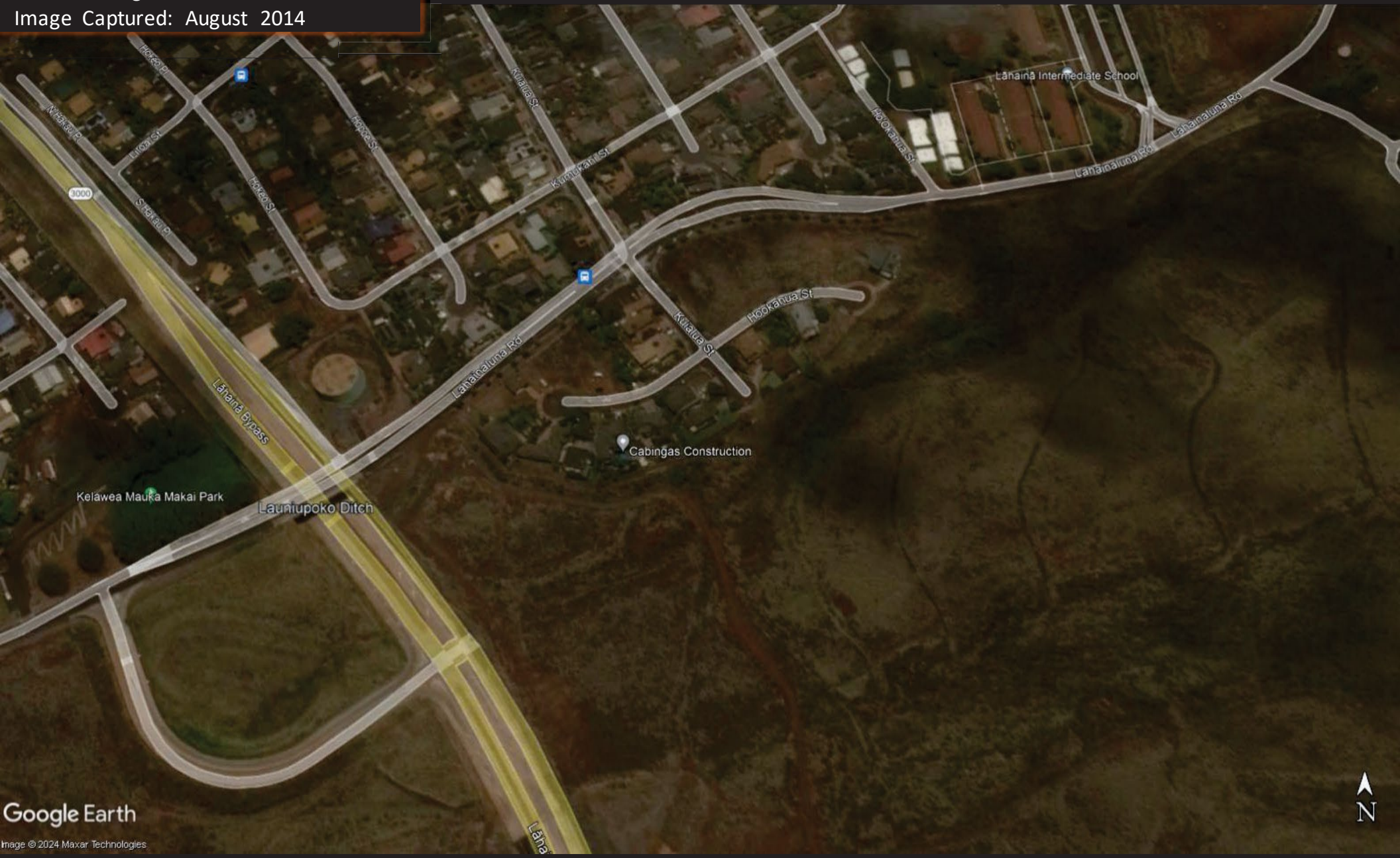
	ink, compared to fire damage associated with the afternoon fire highlighted in black ink	
31	MFD-3 's observations of fire damage from the morning brush fire highlighted in red	Google Earth (7/2016) Overall Map from Page 7 of this report
32	MFD-4 's observations of fire damage from the morning brush fire	Google Earth (7/2016) Overall Map from Page 7 of this report
33	MFD-5 's observations of fire damage in red	Google Earth (7/2016) Overall Map from Page 7 of this report
34	Screenshot from W-10 looking south from address showing grass burning south of Utility Pole 24	W-10 Video 5226
35	Image facing NE from Lahaina Shores Beach Resort after advancing fire moved west of Utility Pole 1A and Utility Pole 1B along the firebreak (August 8, 2023, at 0652 hours)	Video (IMG_0213)
36	W-15 observations of fire damage in red ink from when he responded to the morning brush fire, red lines to the west and south of the burned area for the morning fire indicate the extension of the firebreak around the neighborhood that they completed prior to departing	Google Earth (7/2016) Overall Map from Page 7 of this report
37	Image of both utility poles identified as Utility Pole 25 at the intersection of Lahainaluna Road and Ho'okahua Street	Google Earth (2019)
38	Surface fuel damage northeast of Utility Pole 25	ATF ATF-5
39	Space between Utility Pole 25 and Utility Pole 24	Google Earth (2019)
40	Image facing east from Utility Pole 24 depicting location of fulgurites marked with green flags and burned grass from morning fire	ATF (ATF-5 DSC_9337)
41	Close-up of fulgurite	ATF (EE Abraham, DSC_9194)
42	Screen capture from fire witness depicting energized overhead powerline between Lahainaluna Road and sidewalk and between Utility Pole 24 and Utility Pole 25	20230808_063614
43	Screen capture from fire witness depicting energized overhead powerline between	20230808_063614

	Lahainaluna Road and sidewalk and between Utility Pole 24 and Utility Pole 25	
44	W-16 perspective with ATF-8 outlined in red and representing approximate location of smoke, which is in a gully/dry creek bed between Utility Pole 1A and Utility Pole 1B and a kiawe tree to the east (not	ATF-9 (IMG_1187)
45	visible) Image facing south, southeast W-7 & W-8 of residence depicting gully and firebreak (August 8, 2023, at 1440 hours)	20230808_144019
46	Image facing south, southeast of W-7 & W-8 residence depicting gully and firebreak (August 8, 2023, at 1440 hours)	20230808_144019
47	Rock formation identified by W-8 as the location where he first observed smoke	ATF Lahaina (302)
48	View looking to the south with Utility Poles 1A and 1B in the background and rock identified by W-8 in the foreground	ATF Lahaina (304)
49	Images taken from W-7 video and combined. Utility Pole 1A is visible in the combined images (August 8, 2024, 1457 hours)	W-17 (IMG_6754)
50	First video timestamped 1457 hours from W-17 showing smoke to the south and west of the Kiawe tree, as observed from Utility Pole 25, standing on the dirt mound	W-17 (IMG_1120)
51	Facing south from the firebreak near Lahainaluna Road. Figures are still images taken from video at 1458 hours, 4 seconds and 1458 hours, 7 seconds, each on August 8, 2023	W-17 (IMG_1120)
52	Facing south from the firebreak near Lahainaluna Road. Figures are still images taken from video at 1458 hours, 4 seconds and 1458 hours, 7 seconds, each on August 8, 2023	W-17 (IMG_1120)
53	Screenshots from W-2 & W-3 video facing south from their residence and overlooking Lahainaluna Road (August 8, 2023)	20230808_150649
54	Screenshots from W-2 & W-3 video facing south from their residence and overlooking Lahainaluna Road (August 8, 2023)	20230808_150649
55	Google Earth image depicting W-2 & W-3 residence and vantage point of Images 53 and 54 taken from video	Google Earth (7/2016)

56	MFD-2 's observations of fire damage from the morning brush fire highlighted in red, compared to fire damage associated with the afternoon fire highlighted in black ink	Google Earth (7/2016) Overall Map from Page 7 of this report
57	MFD-4 observations of fire damage from the morning brush fire	Google Earth (7/2016) Overall Map from Page 7 of this report
58	March 2023 Google Imagery showing the firebreak overgrown with vegetation (Approximate firebreak outlined in yellow)	Google Earth (3/2023)
59	Example of shrub growing into the chain link fence	ATF Lahaina (170)
60	Image facing southwest from gully of kiawe tree stump	MFD-8 , (DSC_2427)
61	Image facing west toward Utility Pole 1A and Utility Pole 1B with the chain-link fence that separated firebreak from houses	MFD-8 (DSC_2439)
62	Remains of shrubs to the south of Utility Pole 1A and close-up of foliage	ATF Lahaina (160) ATF Lahaina (161)
63	Stitched image from W-7 video showing the progression and growth of the fire (Figure 49 above)	W-7 (IMG_6754)
64	– Image facing north at Utility Pole 1B with metal and concrete pipes nearby	ATF Lahaina (290)
65	Image looking south towards Utility Poles 1A and 1B with pink flagging marking edge of gully (Pink line drawn to aid in seeing the edge of the gully)	ATF-1 (IMG_0407)
66	Image looking north from near Utility Poles 1A and 1B with pink flagging marking edge of gully (Pink line drawn to aid in seeing the edge of the gully)	ATF-1 (IMG_0401)
67	Google Earth image with areas where witnesses first observed smoke for the Afternoon Fire	Google Earth (8/2023)
68	W-18, W-17 images combined to give overall representation.	W-17 (IMG_1120)
69	Photo 14 from MFD Report, showing kiawe tree and Utility Poles 1A and 1B	MFD Report, Page 14

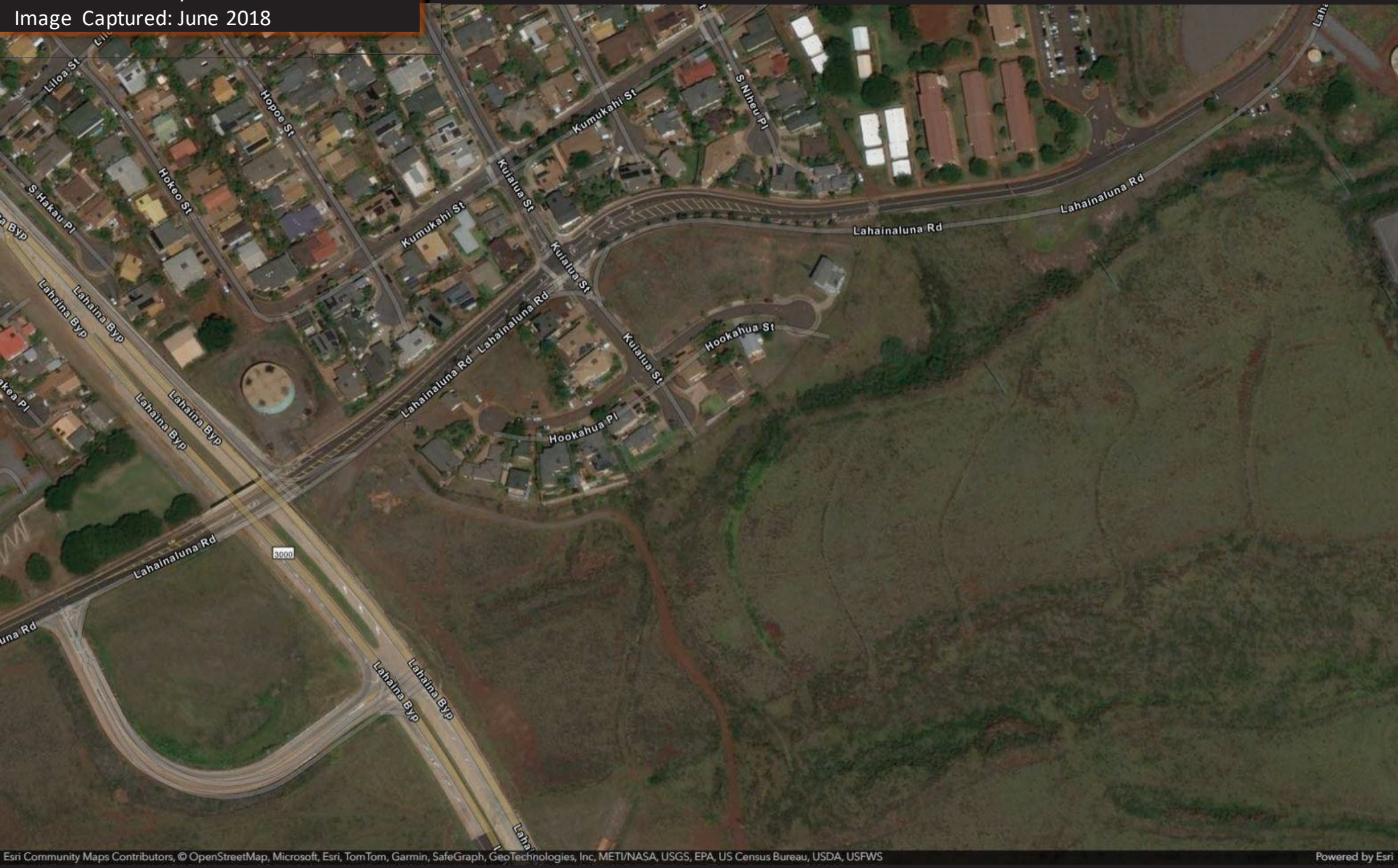
LAHAINA, HI HISTORICAL IMAGERY

Source: Google Earth
Image Captured: August 2014

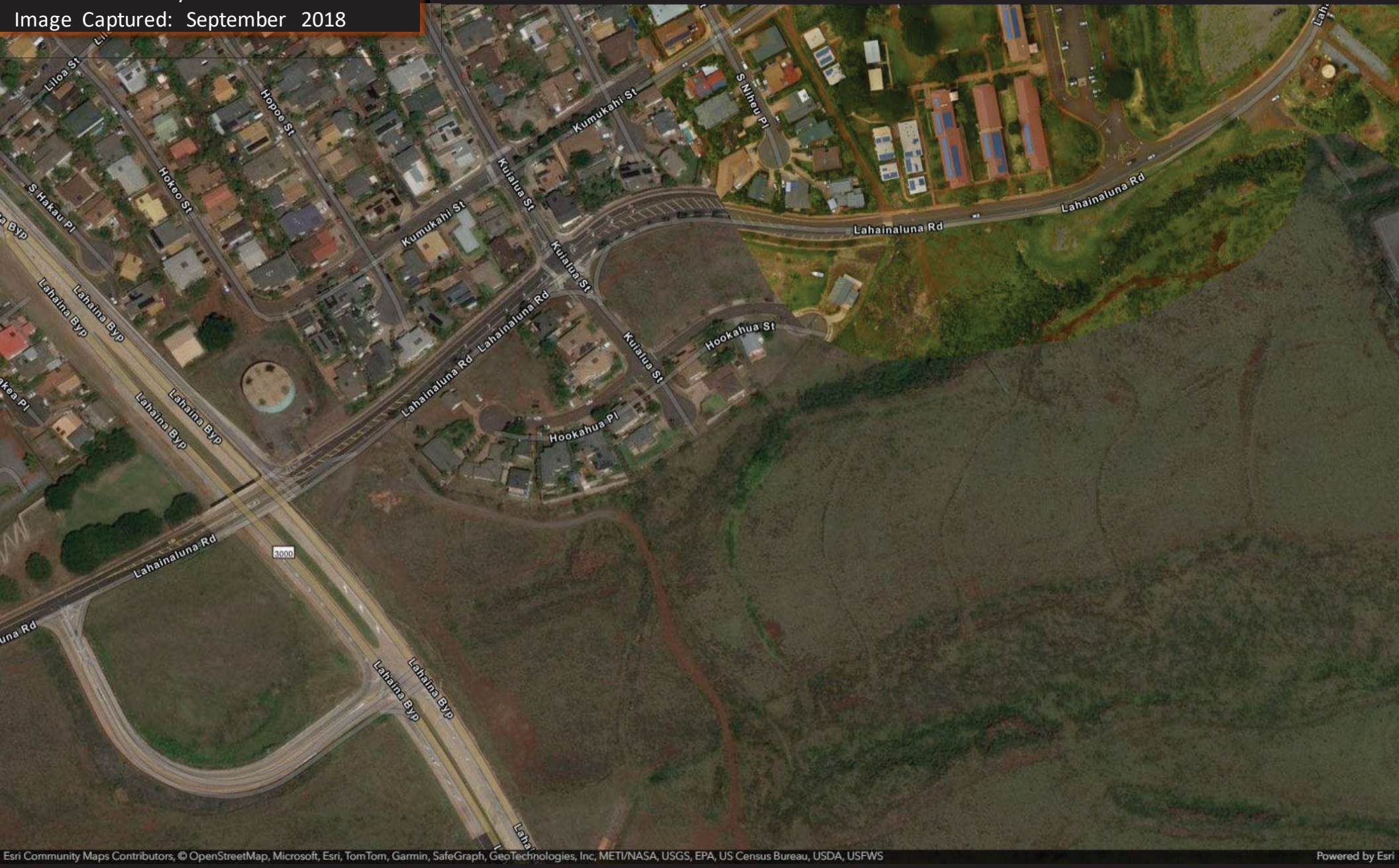


Source: Google Earth
Image Captured: July 2016

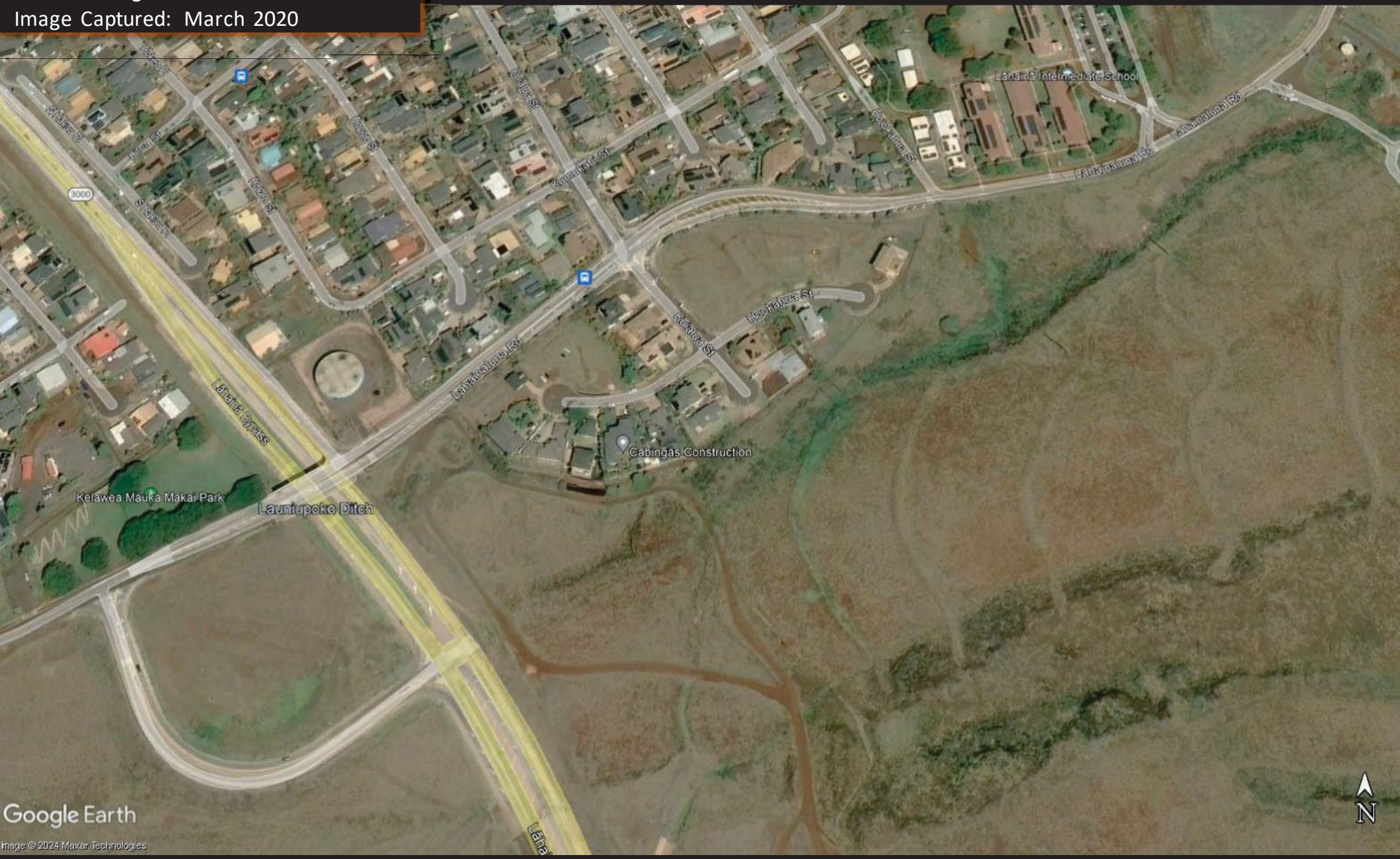
Source: ESRI Wayback
Image Captured: June 2018



Source: ESRI Wayback
Image Captured: September 2018

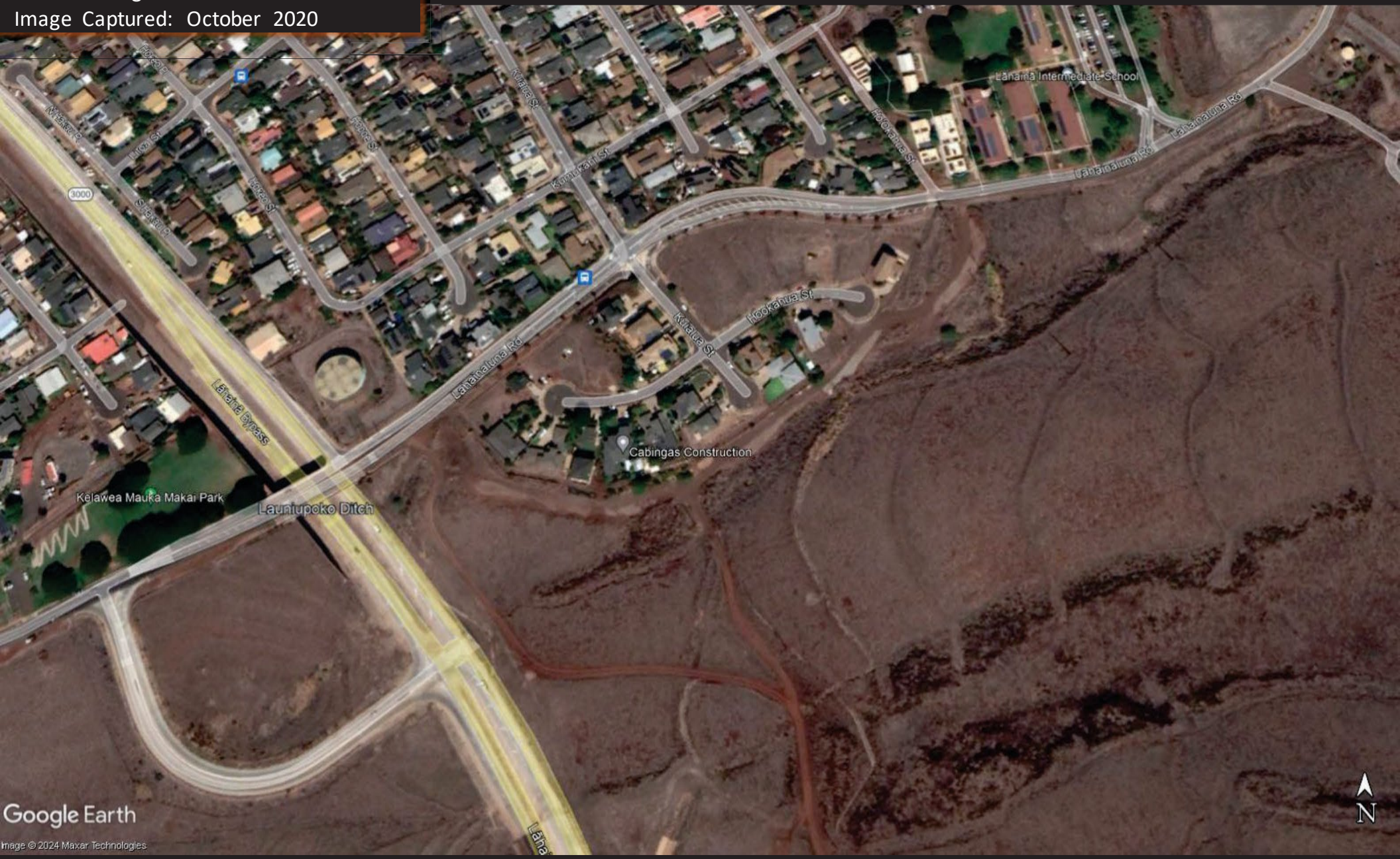


Source: Google Earth
Image Captured: March 2020



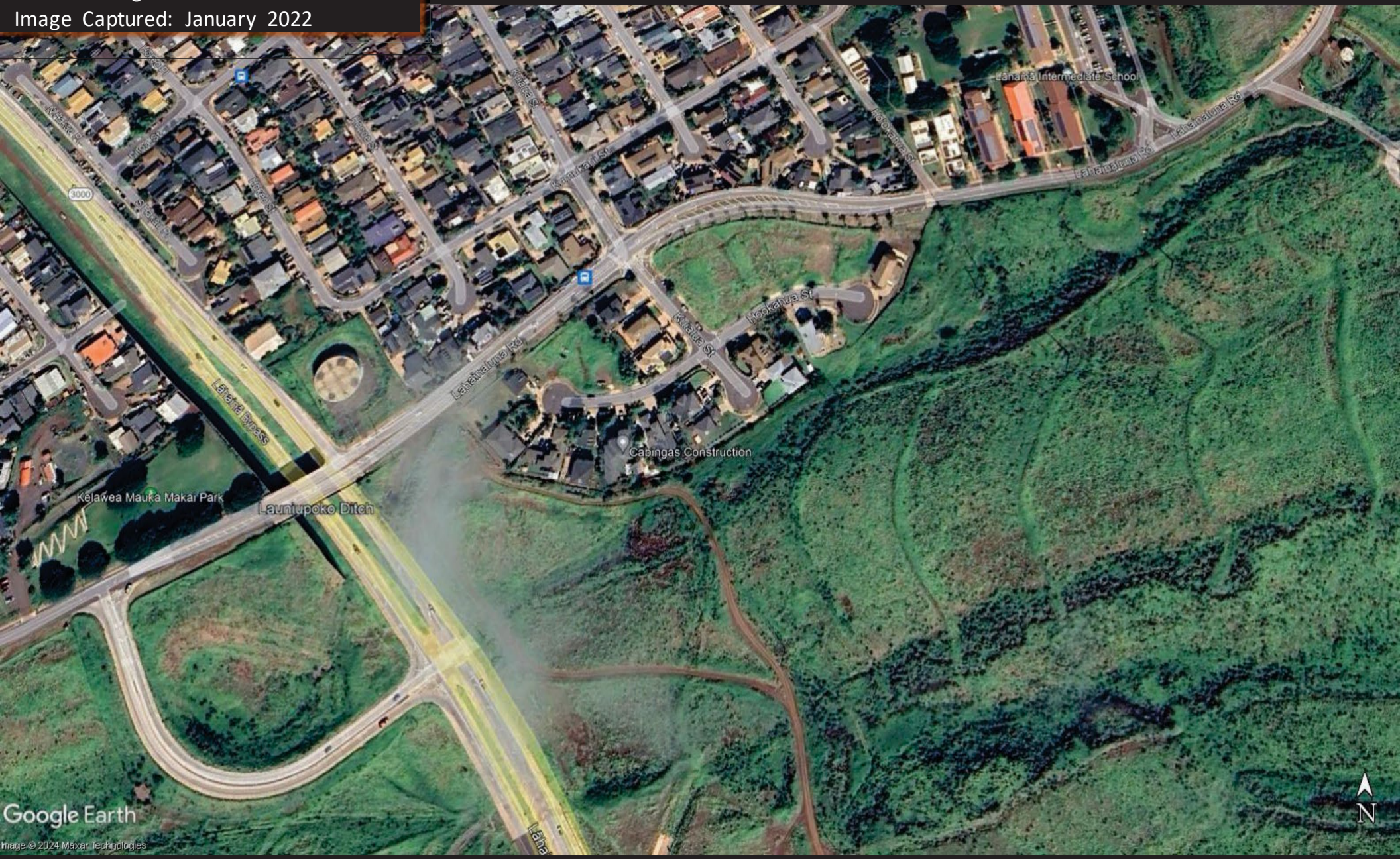
Source: ESRI Wayback
Image Captured: April 2020

Source: Google Earth
Image Captured: October 2020

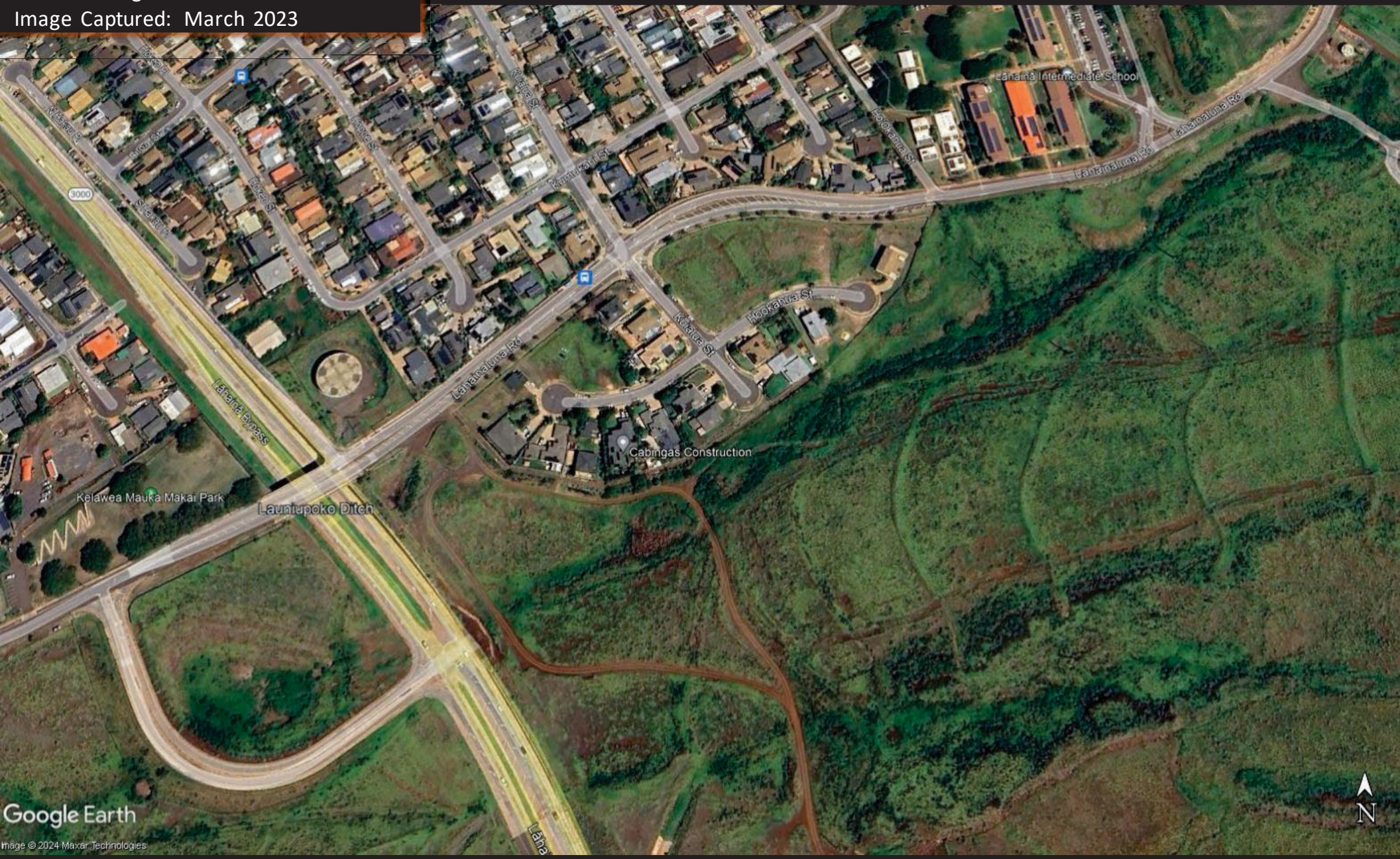


Source: ESRI Wayback
Image Captured: February 2021

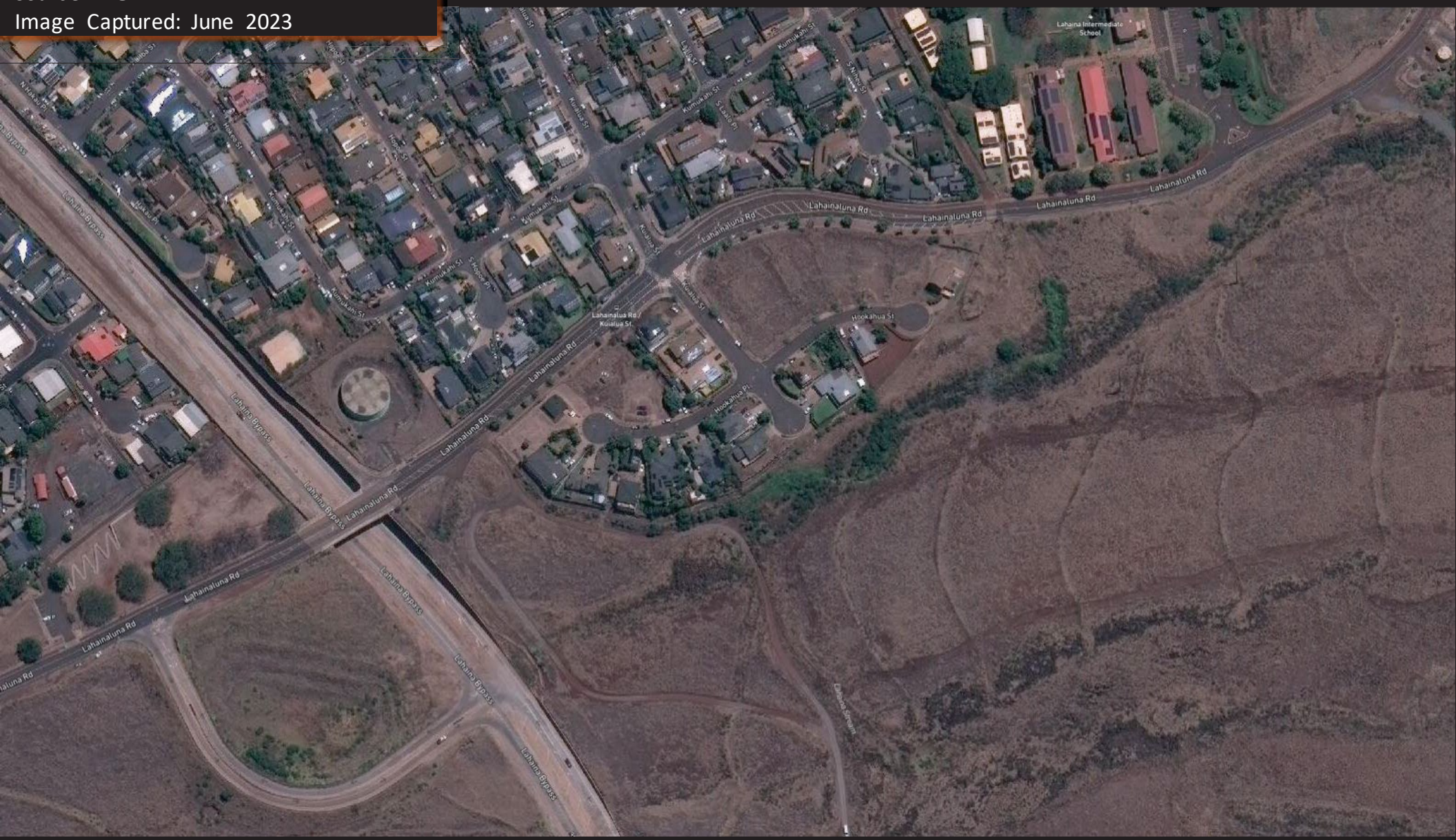
Source: Google Earth
Image Captured: January 2022



Source: Google Earth
Image Captured: March 2023



Source: EGD
Image Captured: June 2023

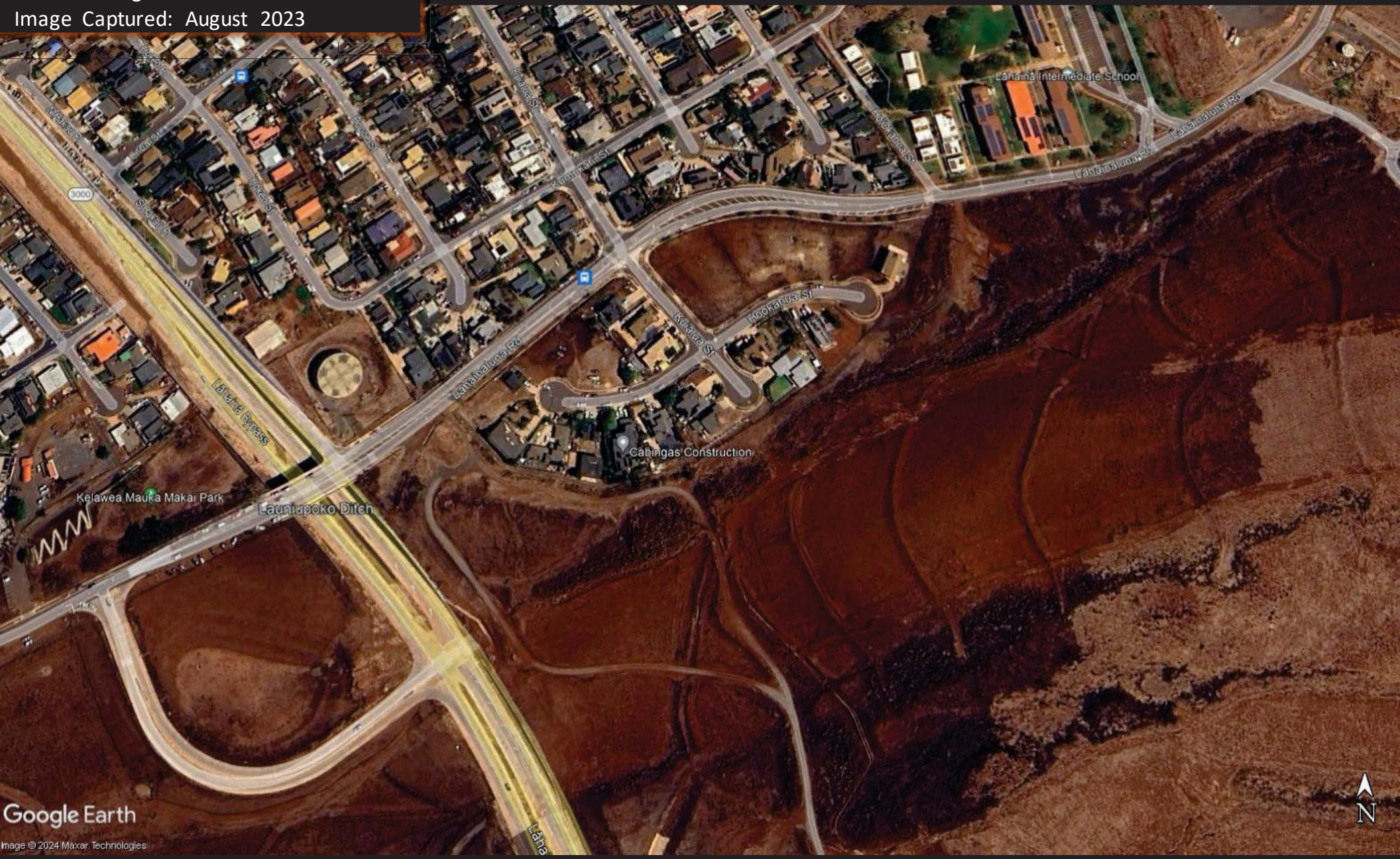


Source: Vivid - EGD
Image Captured: July 2023

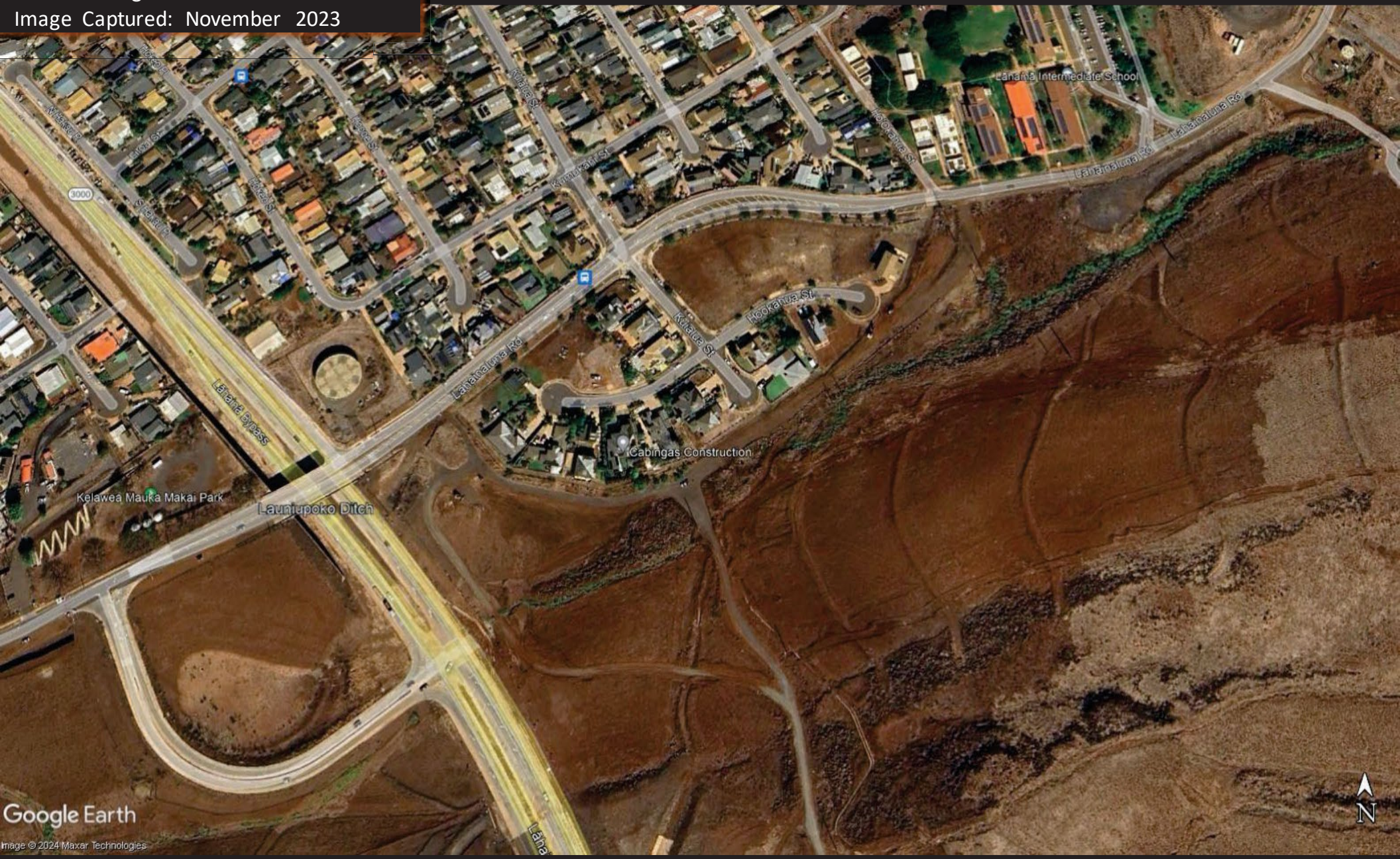
Source: Google Earth
Image Captured: August 2023

Source: Google Earth
Image Captured: August 2023

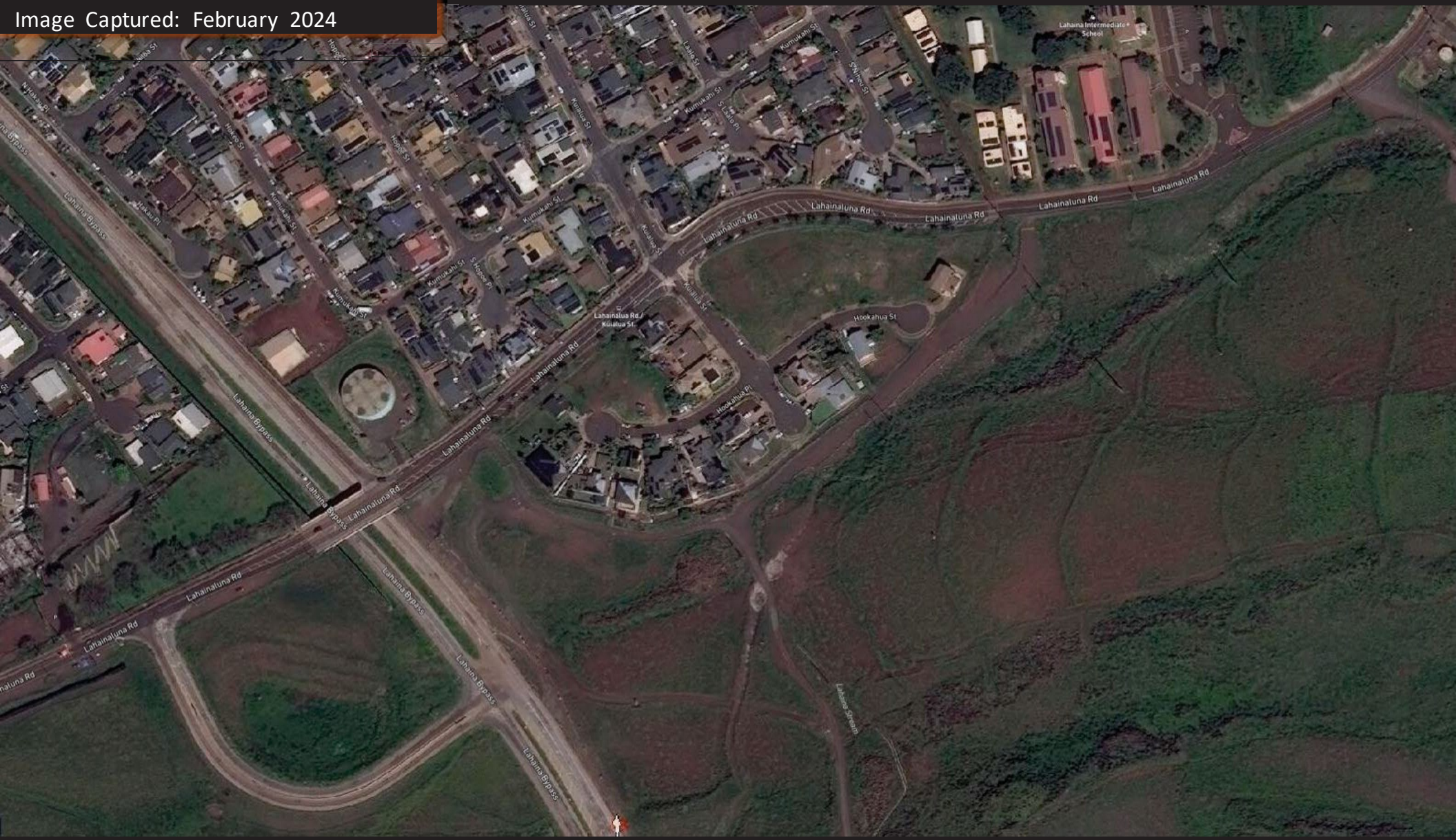
Source: Google Earth
Image Captured: August 2023



Source: Google Earth
Image Captured: November 2023



Source: EGD
Image Captured: February 2024



Source: EGD
Image Captured: July 2024

ATTACHMENTS

U. S. Department of Justice

Fire Research Laboratory
BUREAU OF ALCOHOL, TOBACCO, FIREARMS AND EXPLOSIVES
6000 Ammendale Road
Beltsville, MD 20705-1250

Laboratory Report

ANAB ISO/IEC 17025:2017
Accredited Forensic Testing Laboratory

To: **Special Agent** ATF-1
Bureau of Alcohol, Tobacco, Firearms and Explosives
National Center for Explosives Training and Research
3750 Corporal Road
Huntsville, AL 35898

Date of Report: **August 7, 2024**
Lab Number: **2023-F-000051S(2)**
Reference: **787025-23-0030**
Title of Investigation: **Maui Fires (08.08.2023) (Lahaina Fire)**
Type of Exam: **Engineering – Scene Examination**

SCENE SUPPORT REQUEST

The Fire Research Laboratory responded to an activation of the National Response Team (NRT), on August 15, 2023, to assist with examining the scene of a wildland fire on the Island of Maui in the State of Hawaii.

DESCRIPTION OF SCENE SUPPORT

Electrical Engineer ATF-5 provided scene support from August 18, 2023, to August 30, 2023. Field notes and photographs were taken.

The initial area of involvement of the Lahaina wildland fire, as identified by the Maui Fire Department (MFD), was examined. This area was near the intersection of Lahainaluna Road and the dirt alley known as Ho'okahua Street (Figure 1).

The electric utility retained Fire Cause Analysis (FCA) to document, collect and preserve utility involved equipment from the scene of the Lahaina fire as evidence before this scene examination was conducted. The evidence was stored at a warehouse in the Wailuku area of Maui (Figures 2 through 4). The evidence was examined at the warehouse from August 28, 2023, to August 30, 2023.

EXAMINATION/ANALYSIS AND INTERPRETATION OF RESULTS

According to the State of Hawaii Public Utilities Commission, each of Hawaii's six main islands has its own electrical grid, not connected to any other island. Collectively, HECO, MECO and HELCO are known as the "HECO Companies" and serve about 95% of the State's population [1].

For the purposes of this report, utility produced documents by the Hawaiian Electric Company (HECO) are referred to as data produced by the Maui Electric Company (MECO).

Data for analysis was obtained from several sources, including but not limited to:

- MFD Record Management System (RMS) and Computer Aided Dispatch (CAD) Narratives

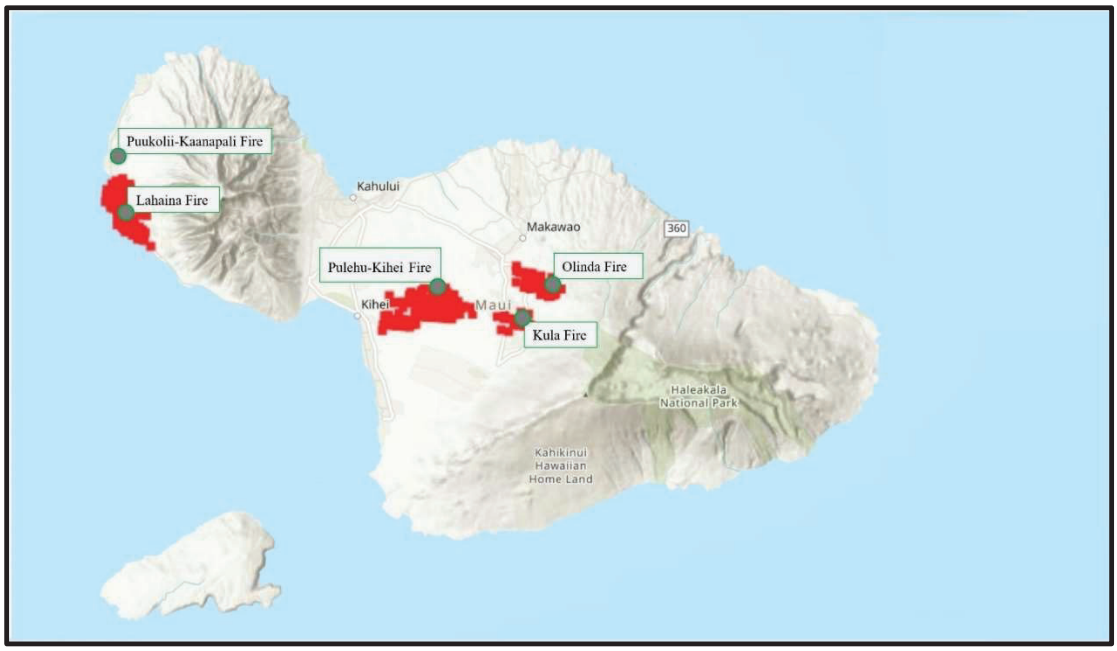
- Interviews, photographs, and videos documented via ATF Reports of Investigation (ROI)

- MECO produced Bates numbered data in the form of:
  - Single-line diagrams
  - Geographic Information System (GIS) maps reflecting circuit routing, pole locations, and substations
  - Supervisory Control and Data Acquisition (SCADA) system event data
  - Relay data and oscillography
  - Advanced Metering Infrastructure (AMI) system event data
  - Utility Vehicle (Asset) Global Positioning System (GPS) location data
  - Communications reporting outages and other incidents
  - FCA evidence collection and inventory documentation including photographs, video, and LiDAR scan data

- Whisker Labs produced time stamped fault data associated with Ting sensor device locations on the Island of Maui. Whisker Labs provides "…sensor technology…monitoring the resiliency…of the…electrical grid" utilizing "electromagnetic and atmospheric sensor expertise combined with AI to detect electrical faults in the home and on the grid [2]."

- ATF National Geospatial Intelligence Branch produced time-based location maps for analysis of data for the following:
  - MECO Calls (Figures 5 and 6)
  - MECO Vehicle GPS Data (Figures 7 and 8)
  - Whisker Labs Ting Sensor Fault Detection (Figure 9)

- Lightning strike data from the Worldwide Lightning Location Network (WWLLN)



Figme **1.** Fire Locations, 187721_763791

Figme 2. 187721_738773 -FCA Evidence Warehouse

Figure 3. 187721_738774-FCA Evidence Warehouse

Figure 4. 187721_738775 -FCA Evidence Warehouse

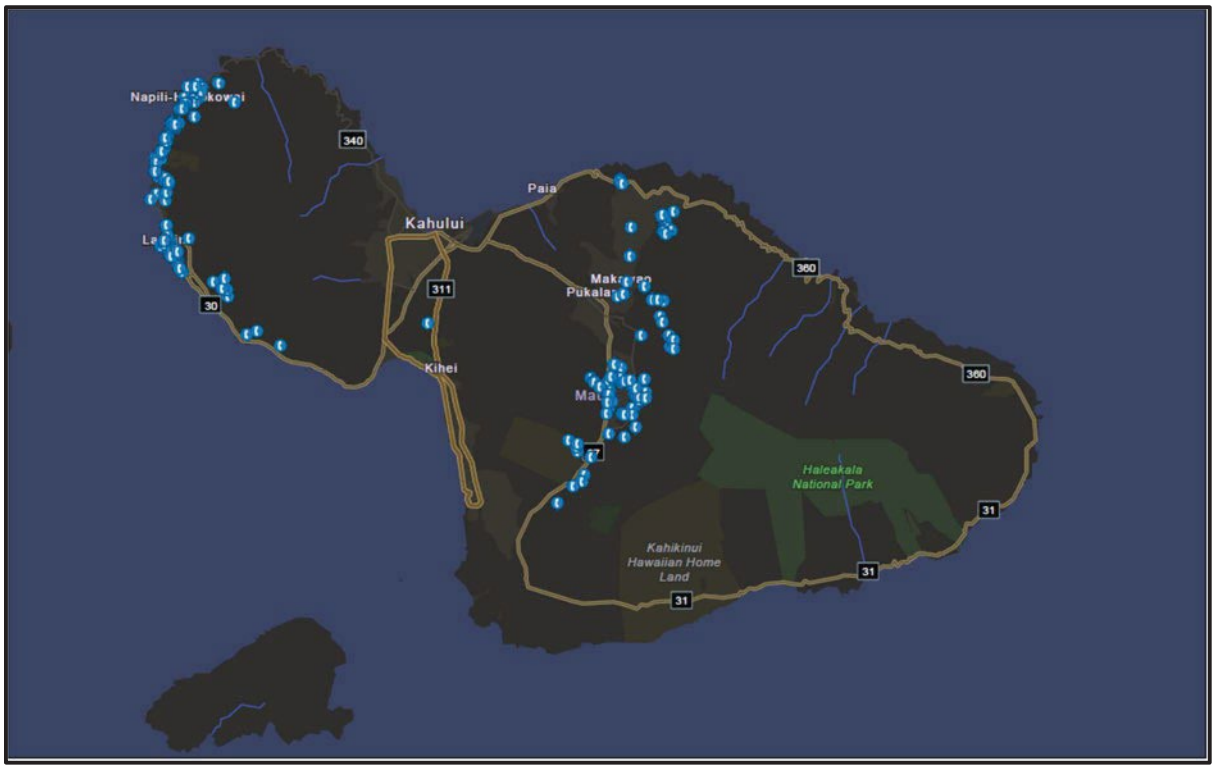


Figure 5. ATF GIS MECO Customer Calls Overall

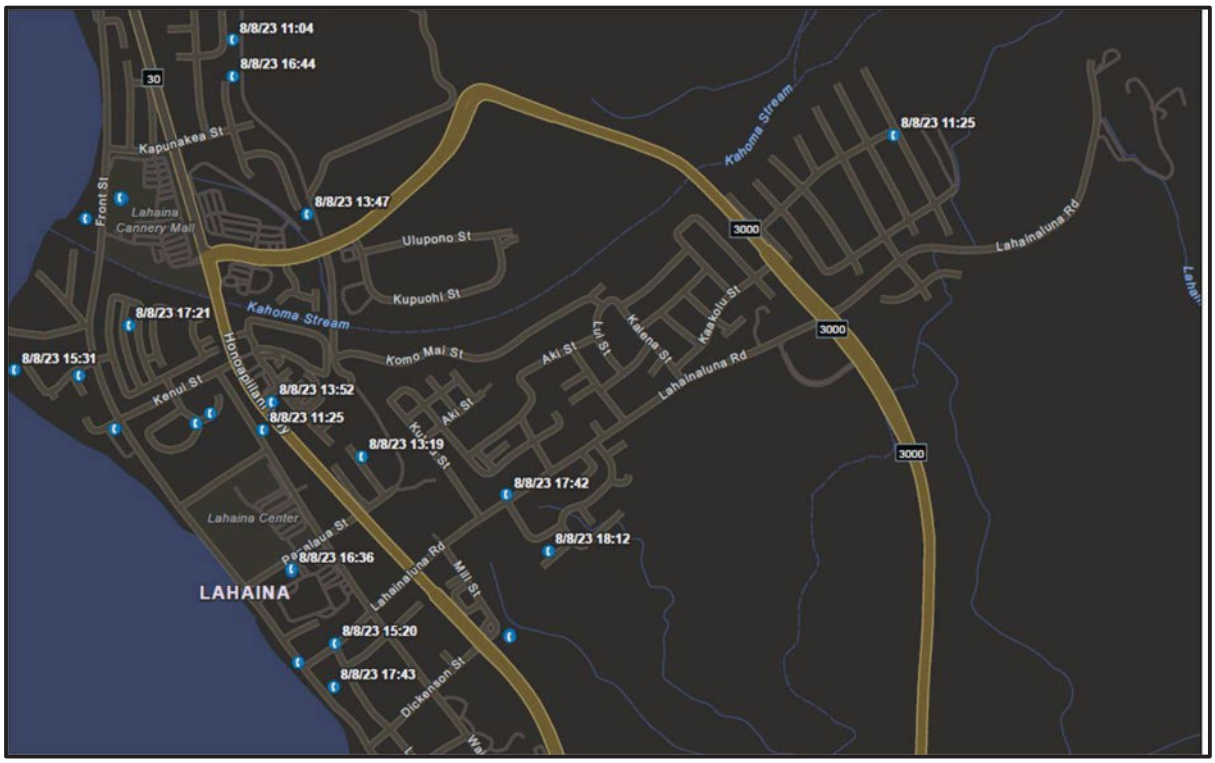


Figure 6. ATF GIS MECO Customer Calls - Lahaina

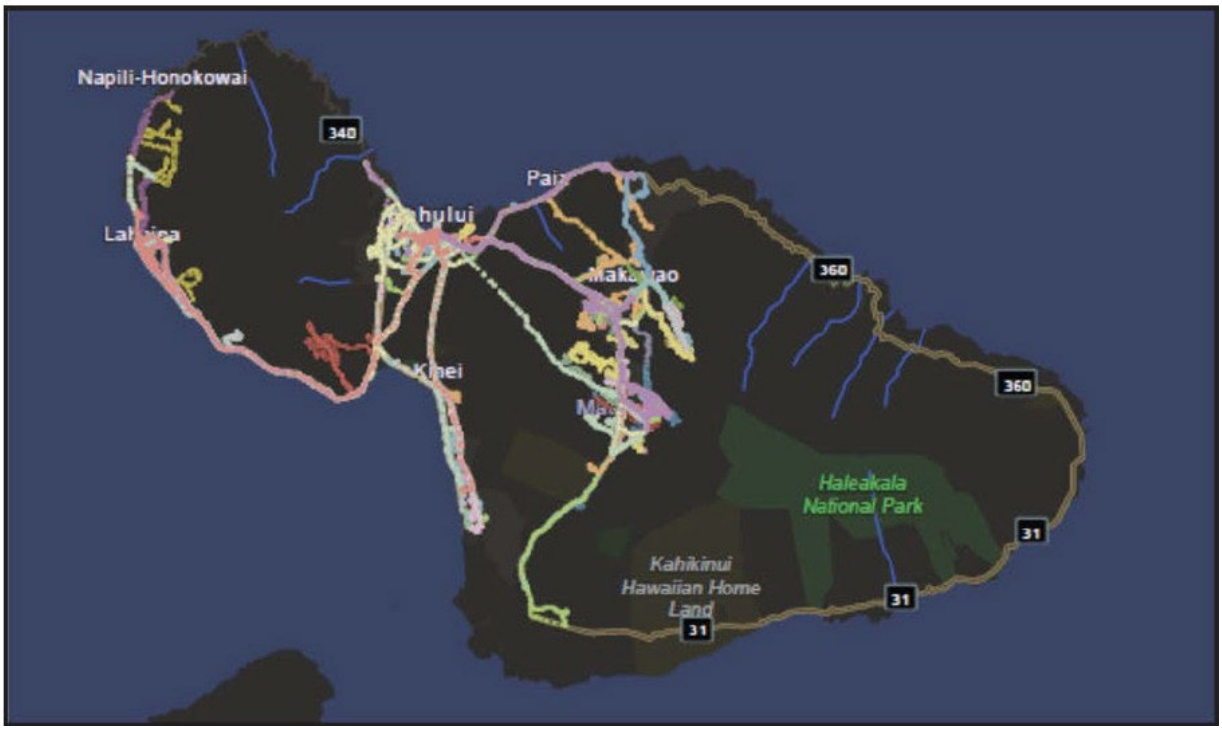


Figure 7. ATF GIS MECO Vehicle GPS Overall

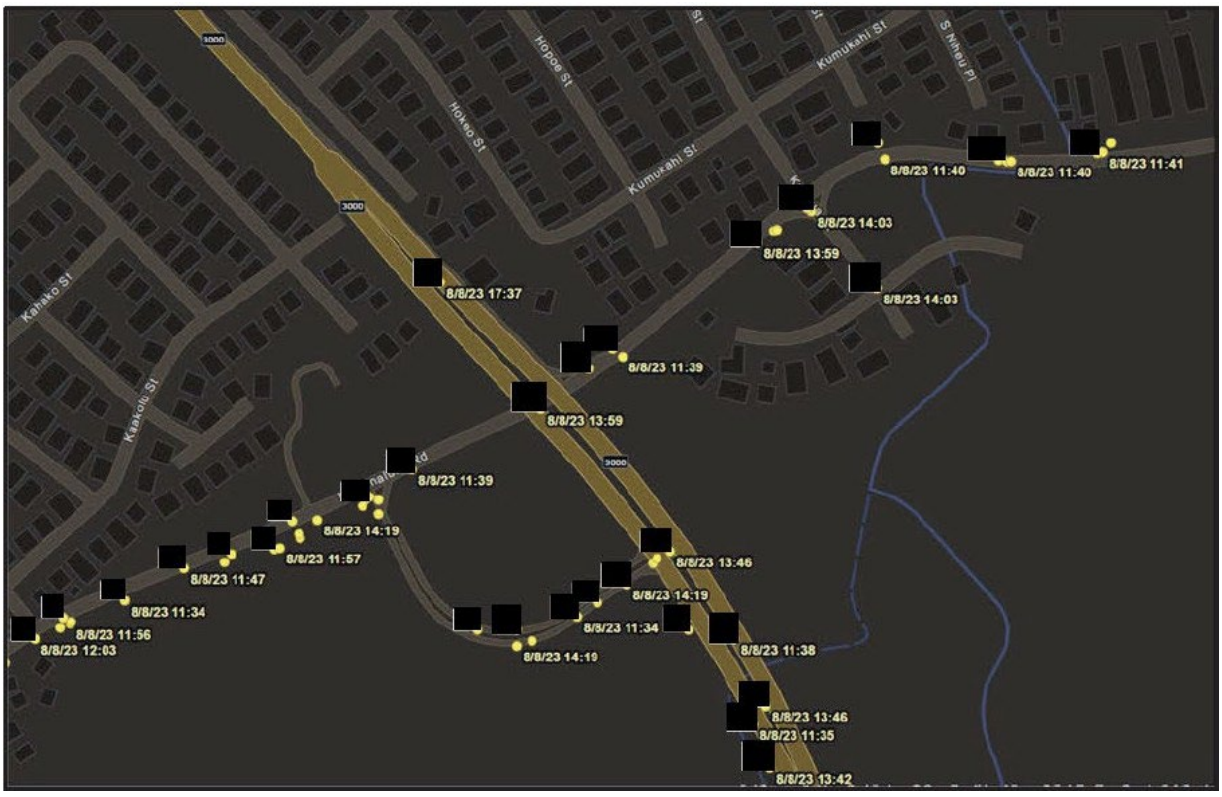


Figure 8. ATF GIS MECO Vehicles GPS Asset [redacted]

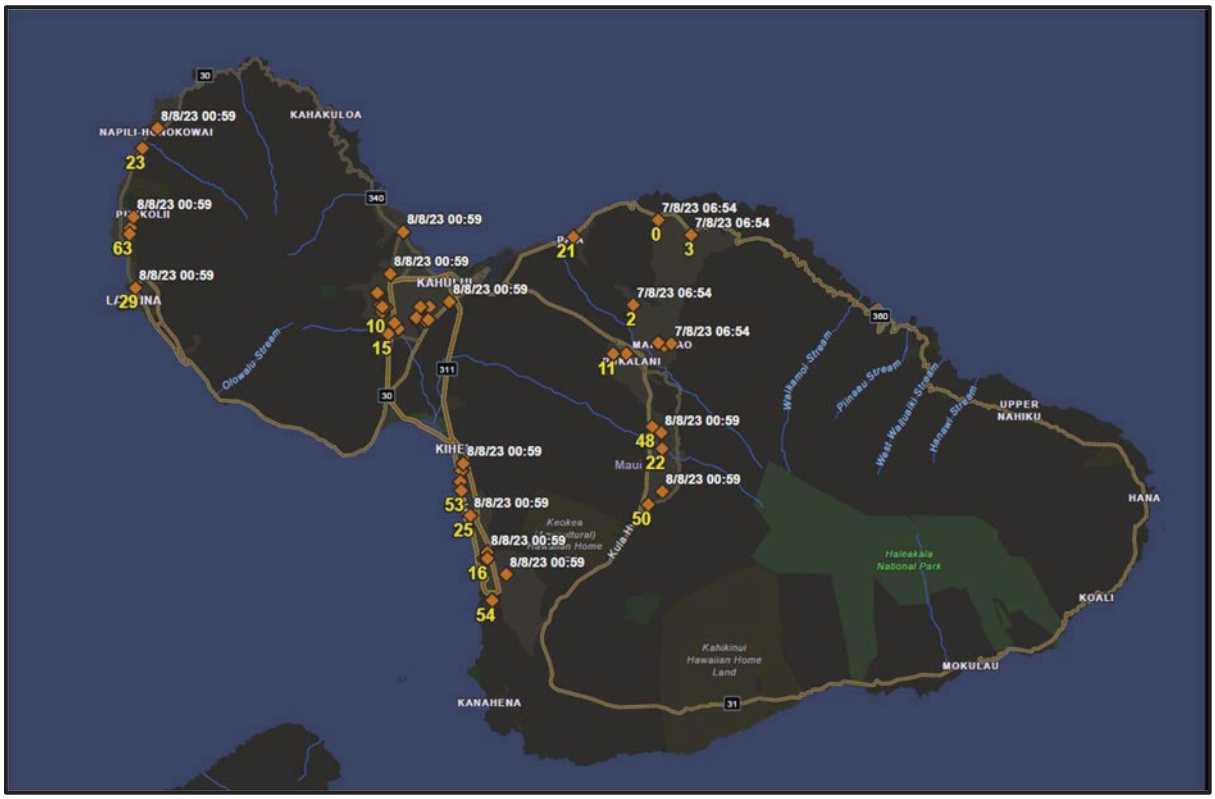


Figure 9. ATF GIS Whisker Labs Ting Sensor Faults

EXAMINATION

Lighting strike data was obtained from Professor-1, Director of the Worldwide Lightning Location Network (WWLLN) based out of the University of Washington (Figure 10). There were no detected strokes between 18:00 hours on August 7, 2023 through 23:59 hours on August 8, 2023 within a 200 km radius of the Island of Maui.

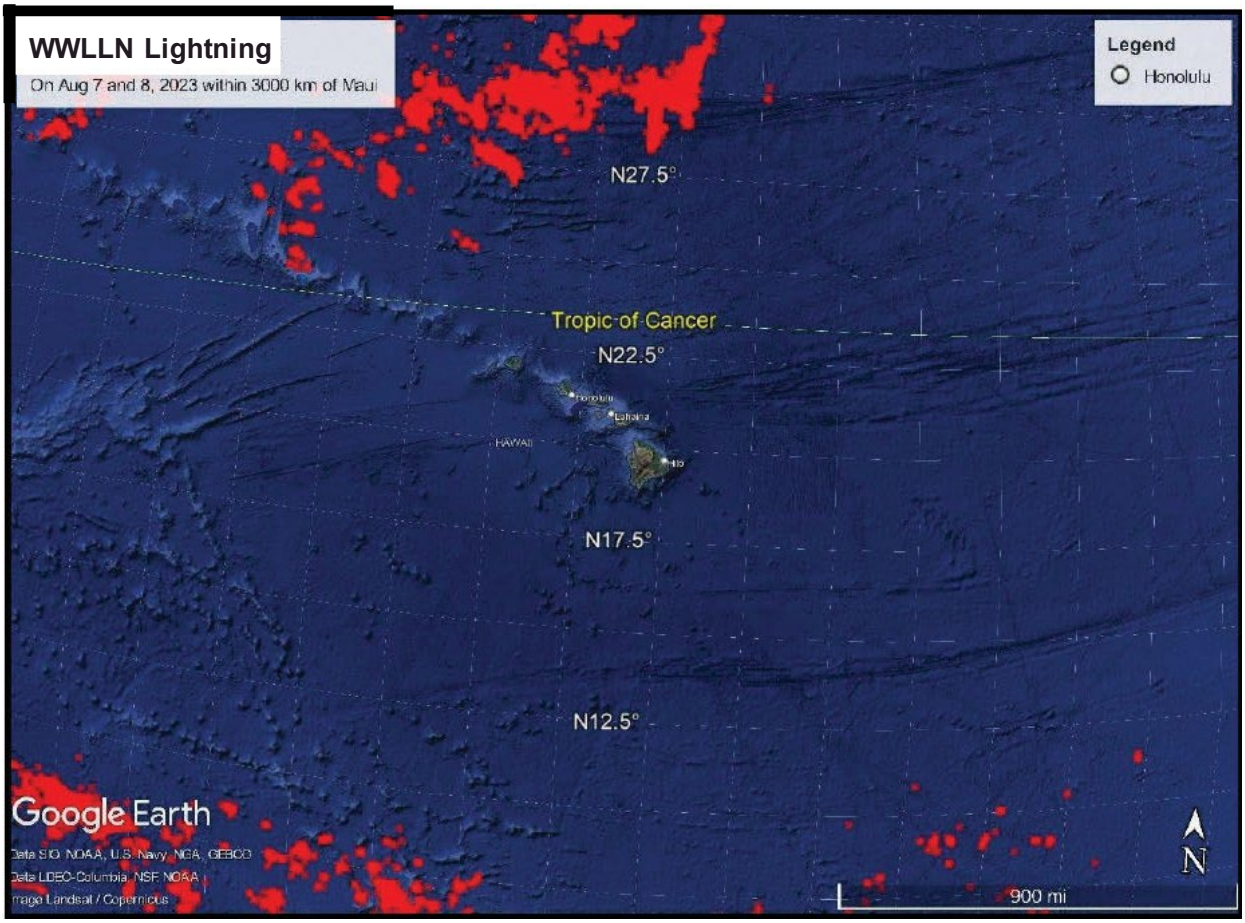


Figure 10. Lightning3000km_fromMauiAug7-8_2023, 187721_763724

Based on MFD RMS info1mation, the Lahaina morning fire was reported on August 8, 2023, at approximately 06:34 hours and initially involved an area South of the intersection of Lahainaluna Road and the dirt alley identified as Ho'okahua Street. The afternoon fire was repo1ied at approximately 14:52 hours and initially involved an area in the gully to the East of Kuialua Street. Figures 11 shows the overall Lahaina fire extents. Figure 12 is zoomed into the initially involved area.

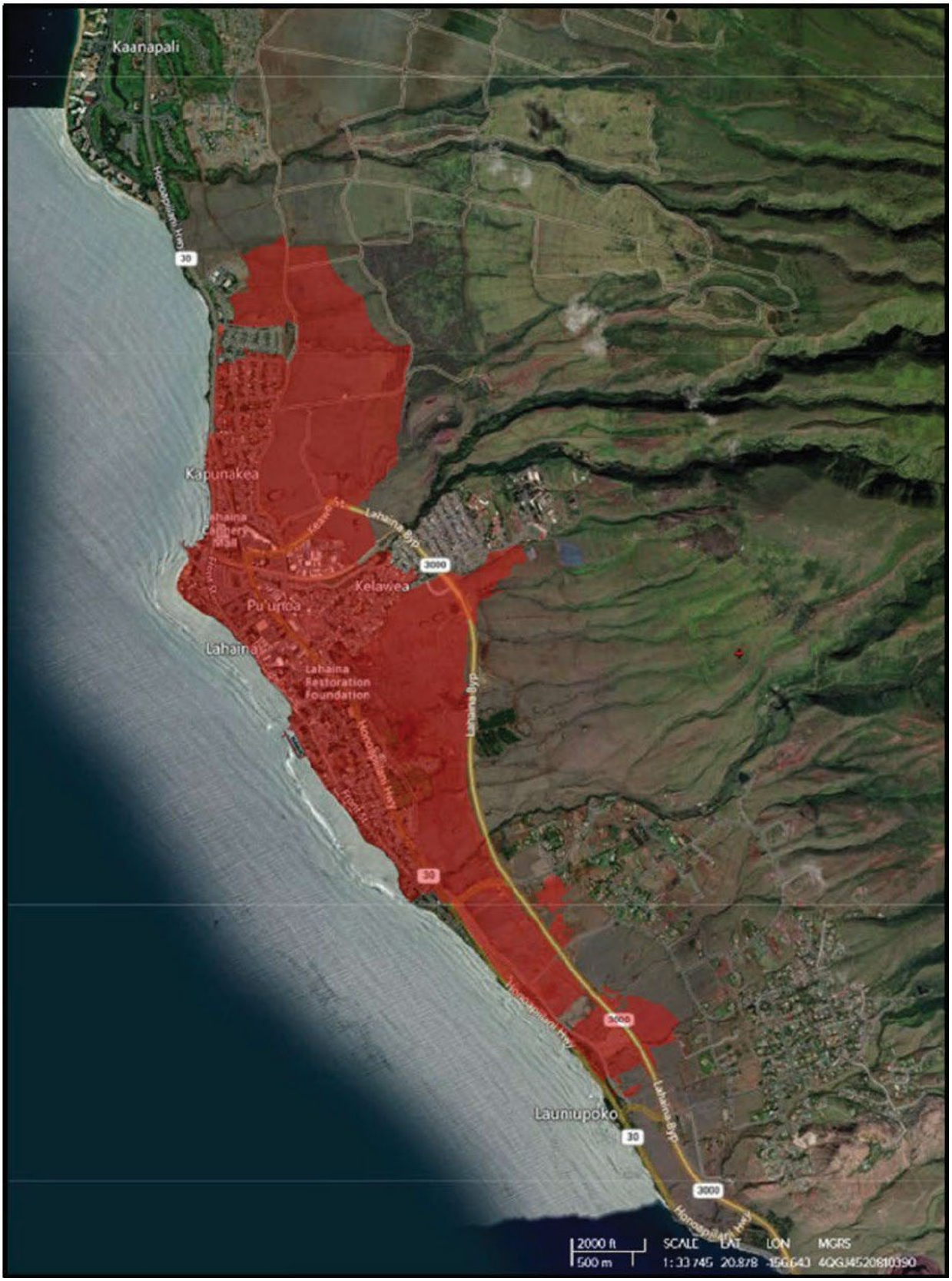


Figure 11. Lahaina whole Screenshot 2024-06-04 135259, 187721_763660 - Overall

Figure 12. Lahaina Mid Screenshot 2024-06-04 140050, 187721_763657 - Zoomed

Electrical power to the Lahaina area is supplied by the Maalaea Diesel Plant, through the Maalaea Substation [redacted] and from the Lahainaluna Substation [redacted] and Lahaina Substation (Figure 13). The Lahaina Substation is in downtown Lahaina and the Lahainaluna Substation is located on the hillside along Lahainaluna Road.

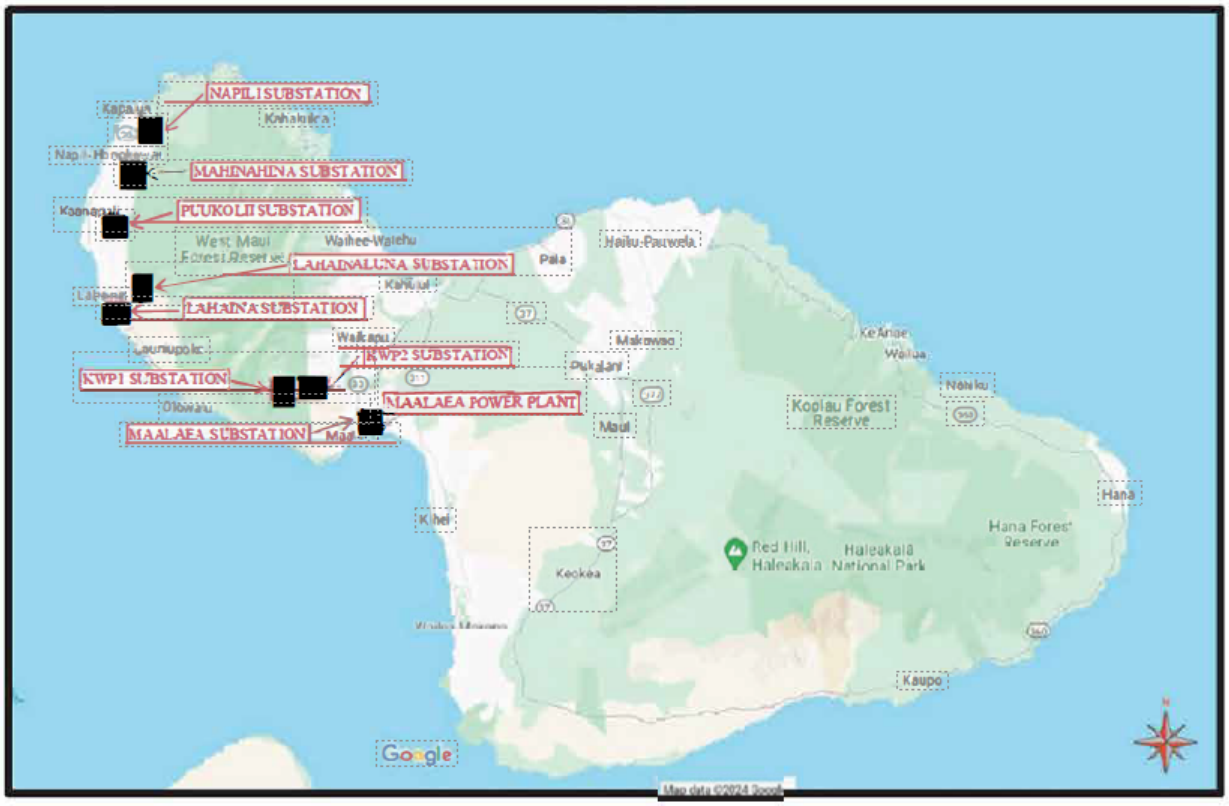


Figure 13. Lahaina Power Substation Map

The Kuia Solar Frum (also known SSA Solar 2) located near the Lahainaluna Substation has been de-energized since November 13, 2022, due to a fire near Lahaina at that time based on a letter from MECO to the Hawaii Public Utilities Commission dated Januaiy 31, 2024 (MECO-ATF-4596).

A system diagram showing the transmission and distribution of electric power through associated substations and relevant circuit breakers for Lahaina is shown in Figure 14.

Utility pole locations in the area of interest are depicted in Figure 15 and 16.

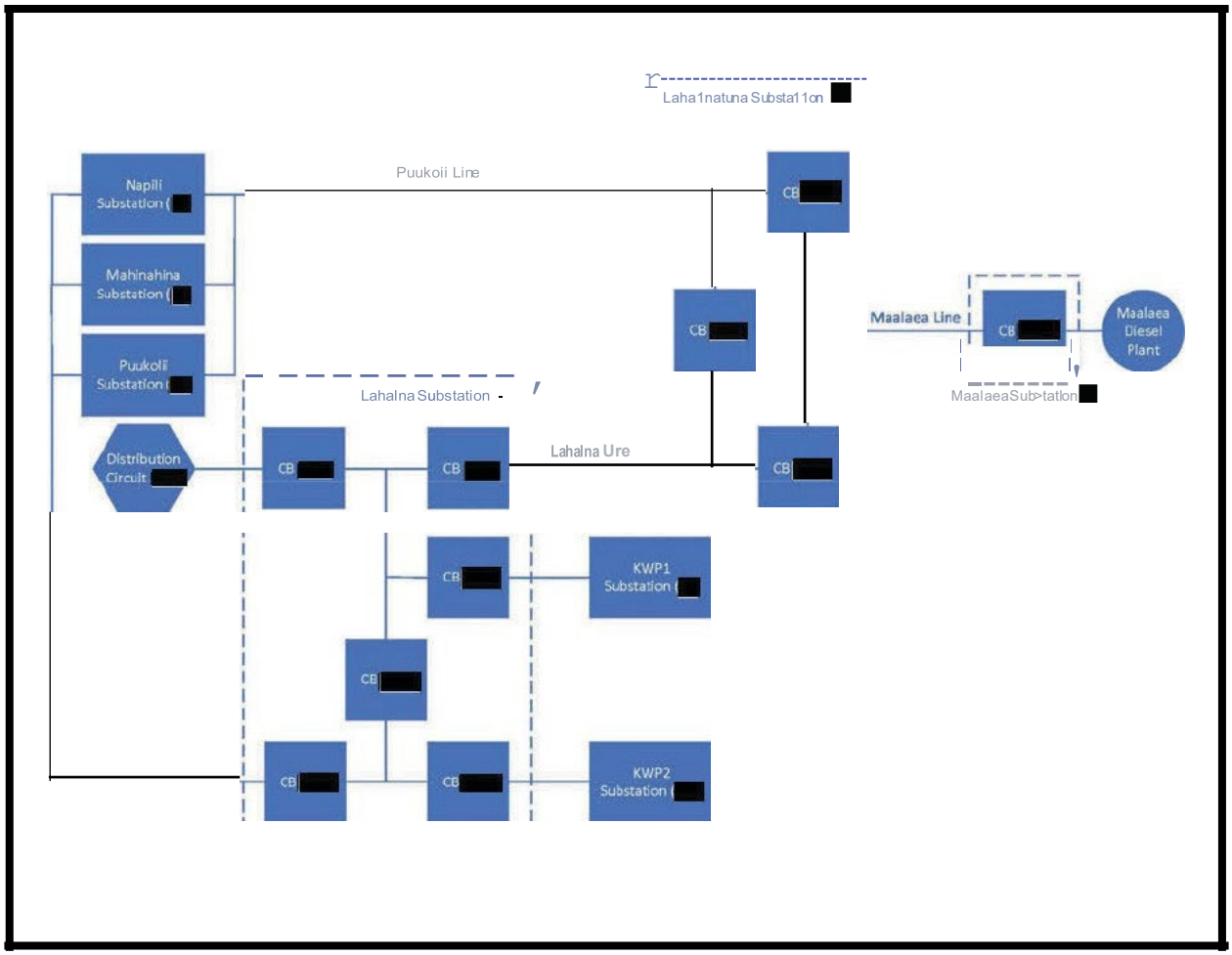


Figure 14. Lahaina Electrical System Diagram

Figure 15. Lahainaluna Road Overall, 187721_765745 -Pole locations

Figure 16. Lahainahma Road Closeup, 187721_765747 - Pole locations

The morning fire coincides with 12.47 kV Overhead Distribution Circui[redacted] routed between Utility Poles 23, 24, 25, 26, and 7A. Distribution Circu[redacted] provides electrical service to areas that include Lahainaluna Road, Niheu Street, and Kuialua Street.

The afternoon fire was identified in the gully located in the area beneath overhead 69 kV Puukolii (Lahaina #2) and 69 kV Lahaina (Lahaina-Lahainaluna) transmission lines routed between Utility Poles 1A/1B, 6/3-25, and 4-25/2T.

The utility provided SCADA data and AMI metering data provided information regarding electrical grid events that occurred on August 8, 2023.

A comprehensive timeline of all electrical events analyzed during the Lahaina fire is attached in the Appendix.

MECO provided communications, including phone calls and emails, were analyzed and indicated numerous electrical events and outages that were reported to the utility.

A sequence of events that summarizes the incident and electrical timelines is as follows:

- On August 8, 2023, beginning at 00:03 hours until 02:44 hours, the electric meter for Lahaina Intermediate School began experiencing Phase A and Phase C sagging voltage.

- This coincides with observed intermittent outages of illumination provided by the Utility Pole mounted light on the South side of Lahainaluna Road. The school surveillance camera identified as camera “6 Front Gate and Sign” recorded several outage events for the light from 00:00 until the camera system goes offline at 05:00 hours (Figures 17 and 18) [3].

Figure 17. Inte1mediate School Screenshot 1, 187721_764382-Playback time 00:07

Figure 18. Inte1mediate School Screenshot 2, 187721_764383 -Playback time 02:44

- At 00:03 hours, 56 Whisker Labs Ting sensors indicated detection of electrical faults on the system providing power to the sensors. Ting sensors are in various locations on the Island of Maui on the customer side of the electric utility transmission and distribution system.

- At 02:44 hours, a fault on the KWP2 69 kV transmission line results in a trip on Circuit Breaker[redacted] and an open circuit. Circuit Breake[redacted] is in the Lahaina substation. Transmission Line KWP2 is routed towards Substatio[redacted] .

- At 02:44 hours, Whisker Labs Ting sensors detected faults on the electrical system.

- At 03:30 hours, a fault on the KWP1 69 kV transmission line results in a trip on Circuit Breaker[redacted] and an open circuit. Circuit Breake[redacted] is in the Lahaina Substation. Transmission line KWP1 is routed towards Substatio[redacted] .

- At 03:30 hours, Whisker Labs Ting sensors detected faults on the electrical system.

- At 03:37 hours, Circuit Breake[redacted] an[redacted] open. Circuit Break[redacted] is in the Lahainaluna Substation and is a tie between the 69 kV Puukolii and Lahaina transmission lines. Circuit Breaker[redacted] is in the Lahainaluna Substation and is a circuit breaker serving the Puukolii transmission line.

- At 03:37 hours, Whisker Labs Ting sensors detected faults on the electrical system.

- Between 03:44 hours and 04:03 hours, various overload alarms are recorded on the Lahaina and Puukolii transmission line.

- Between 03:53 hours 04:03 hours, Whisker Labs Ting sensors indicated detection of faults on the electrical system.

- Beginning at 04:04 hours, the electric meter for[redacted] S. Niheu Street begins experiencing Phase A sagging voltages.

- At 04:57 hours, Whisker Labs Ting sensors detected faults on the electrical system.

- At 04:59 hours, [redacted] called 911 (CAD RMS 23-0012439) to report flames in the distance towards Lahaina High School [4].

- At 05:00 hours:
    - Circuit Breakers [redacted] and [redacted] open. Circuit Breaker [redacted] is in the Lahainaluna Substation and is a circuit breaker serving the Lahaina transmission line. Circuit Breaker [redacted] is in the Lahaina Substation and is at the other end of the Lahaina transmission line coming from the Lahainaluna Substation Circuit Breaker [redacted] .
    - The Lahaina Intermediate School camera system goes offline.
    - A fault on the 69 kV Lahaina (Lahaina-Lahainaluna) transmission line results in a tripped circuit breaker and an open circuit.
    - The meters at the following locations go offline:
        - Lahaina High School
        - [redacted] S. Niheu Street
        - Lahaina Intermediate School
        - [redacted] S. Niheu Street
        - [redacted] S. Niheu Street
        - [redacted] Kuialua Street
- At 05:00 hours, Whisker Labs Ting sensors detected faults on the electrical system.
- At approximately 05:00 hours W-9 described a power outage at the location of [redacted] [5].
- At 05:01 hours [redacted] W-12 [redacted] described a power outage at the location of [redacted] after observing a flash through her bedroom window that faces the mountain [6].
- An interview with W-2 at the location of address stated that he woke up sometime around 03:30 hours (estimated based on his recollection) to use the bathroom and noticed that the power was out when he tried to turn on the lights. He noticed flashing lights through his window and observed what he described as a utility vehicle. He noted a broken pole (later identified as Utility Pole 7A) along the dirt alley behind his house (later identified as Ho'okahua Street). He described the break about 10-15 feet above the ground with the upper part hanging down and the wires still attached. He stated that there was no arcing, sparking, or fire at that time. He noted that the streetlight, which was normally on at this time, at the Utility Pole across the street from his backyard (later identified as Utility Pole 25) was off at that time. W-2 provided a photo taken later that morning after sunrise of broken Utility Pole 7A (Figure 19) [7].

Figure 19. W-2 photo ofLahaina Snapped Pole 7A, 187721_763291

- At 05:10 hours, Circuit Breaker [redacted] opens. Circuit Breaker [redacted] is in the Lahaina Substation.

- At 05:14 hours, MFD-1 from MFD Engine 3 reported "snapped power pole across from pole 25" (actually Utility Pole 7A) to dispatch (8].

- At 05:29 hours, MPD dispatch contacted MECO advising about "power pole 25 (actually Utility Pole 7A) at Lahainaluna Road and Kuialua Street.

- At 05:35 hours, Circuit **Breaker** [redacted] is opened by an operator. Circuit Breaker [redacted] is in the Lahaina Substation and sereves the transmission linetowards the Puukolii [redacted] Mahinahina [redacted]), and Napili [redacted] Substations.

- At approximately 05:39 hours, Utility Asset [redacted] (utility vehicle also known as Trnck [redacted]) proceeds along Lahainaluna Road, just West of the intersection ofLahainaluna Road and Kuialua Street (9]. This info1mation was developed from review of ATP GIS analysis of utility providedvehicle GPS data.

- Between 05:39 hours and 05:42 hours, Utility Asset [redacted] proceeded up Lahainaluna Road past the area of Utility Pole 25 and the dnt alley (Ho'okahua Street) containing Utility Pole 7A (9].

- Between 05:42 hours and 05:45 hours, Utility Asset [redacted] appeared to tum around in the Lahaina Inte1mediate School parking lot (9].

- Between 05:45 hours and 05:47 hours, Utility Asset [redacted] proceeds down Lahainaluna Road past the area of Utility Pole 25 and the dirt alley (Ho'okahua Street) containing Utility Pole 7A [9].

- At 06:00 hours, Circuit Breake[redacted] is closed by an operator.

- At approximately 06:00 hours Principal W-5 arrives at the Lahaina Intermediate School and reports the power is on [10].

- At 06:01 hours, Circuit Breake[redacted] is closed by an operator.

- At 06:01 hours, Whisker Labs Ting sensors detected faults on the electrical system.

- At 06:04 hours, Circuit Breake[redacted] is closed by an operator.

- At 06:05 hours, Circuit Breake[redacted] is opened by an operator.

- At 06:07 hours, Circuit Breake[redacted] is closed by an operator.

- At 06:07 hours, the electric meters at the following locations go online:

    - Lahaina High School
    - [redacted] S. Niheu Street
    - Lahaina Intermediate School
    - [redacted] S. Niheu Street
    - [redacted] S. Niheu Street
    - [redacted] Kuialua Street

- At 06:07 hours, Whisker Labs Ting sensors detected faults on the electrical system.

- At 06:09 hours, the electric meter for the Lahaina Intermediate School began experiencing sagging voltages on Phases A, B, and C.

- Between approximately 06:10 hours and 06:20 hours, the Lahaina High School Food Service Manager, W-11, reported the three evaporator fans located on the back wall of the walk-in freezer were spinning at half speed. He stated they are usually on or off, not operating at half speed [11].

- Between approximately 06:15 hours and 06:30 hours (estimated based on his recollection) W-2 observed a fire at the base of the Utility Pole across the street (later identified as Utility Pole 25) from the garden in his backyard along Lahainaluna Road. He described the 2-3 ft. tall grass around the base on fire with the power line running from this pole to the next Utility Pole to the West (later identified as Utility Pole 24) as broken and "crackling like fireworks" along the grass between the sidewalk and the street [7].

- At 06:33 hours, the electric meters recorded power going on and off for the following locations:
  - [redacted] S. Niheu Street
  - Lahaina futel mediate School
  - [redacted] S. Niheu Street
  - [redacted] S. Niheu Street
  - [redacted] Kuialua Street
- At 06:33 hours, Whisker Labs Ting sensors detected faults on the electrical system.
- At 06:34 W-1 called 911 (CAD RMS 23-0012446) to report hearing a boom and observing sparks at the base of Utility Pole 25 [12].
- At 06:35 W-3 called 911 to repo1t a fire and later provided videos taken at that time (Figures 20 through 22) [7].

Figure 20. W-3 063614 Screenshot I (Playback time 00:01), 187721_763292

Figure 21. W-3 _063614 Screenshot 2 (Playback time 00:03), 187721_763293

Figure 22. W-3 _063830 Screenshot I (Playback time 00:06), 187721_763295

- At 06:39 hours:
    - Circuit Breakers [redacted] and [redacted] open.
    - A fault on the Lahaina (Lahaina-Lahainaluna) transmission line results in a trip and an open circuit
    - The meters at the following locations go offline:
        - Lahaina High School
        - [redacted] S. Niheu Street
        - Lahaina Intermediate School
        - [redacted] S. Niheu Street
        - [redacted] S. Niheu Street
        - [redacted] Kuialua Street
- At 06:39 hours, Whisker Labs Ting sensors detected faults on the electrical system.
- At 06:41 hours, Circuit Breake[redacted] is opened by an operator.
- At 07:48 hours, Circuit Breake[redacted] is opened by an operator. Circuit Brea[redacted] is in the Maalaea Substation and ties in the Maalaea Diesel Plant.
- At 14:52 hours, [redacted] W-16 [redacted] called 911 reporting a brush fire behind [redacted] Ho'okahua Street.
- At 15:44 hours, Circuit Breake[redacted] is opened by an operator.
- At 19:40 hours, Circuit Breake[redacted] is opened by an operator.

The utility provided voltage and current data plots for Distribution Circuit[redacted] and the Lahaina and Puukolii transmission lines above the gully indicates they were de-energized at the time of the afternoon fire.

The utility also provided data plots for the transmission lines to the Lahaina Substation.

The data shows the circuits were de-energized as follows:

The KWP2 transmission line was de-energized at 02:45 hours (Figure 23).

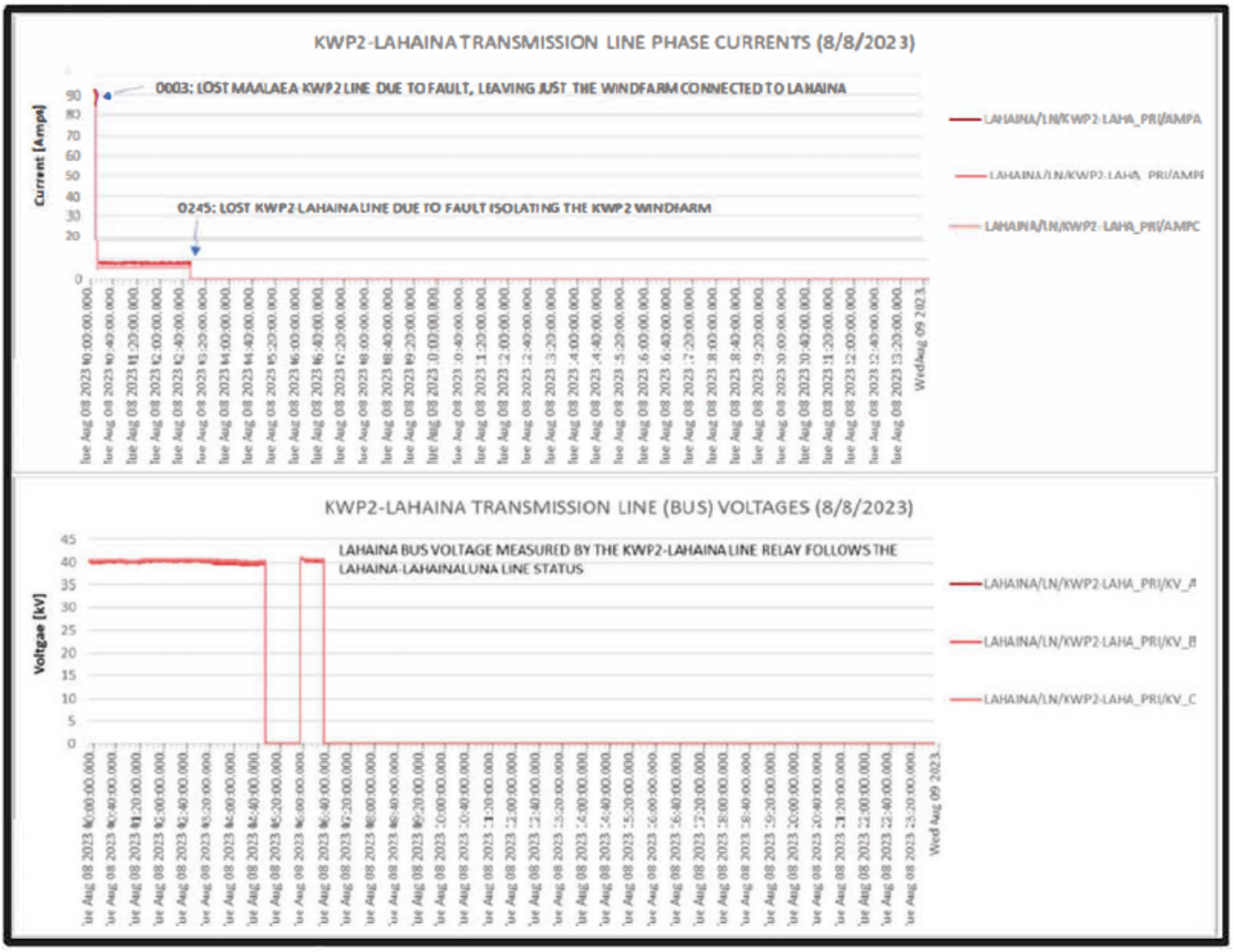
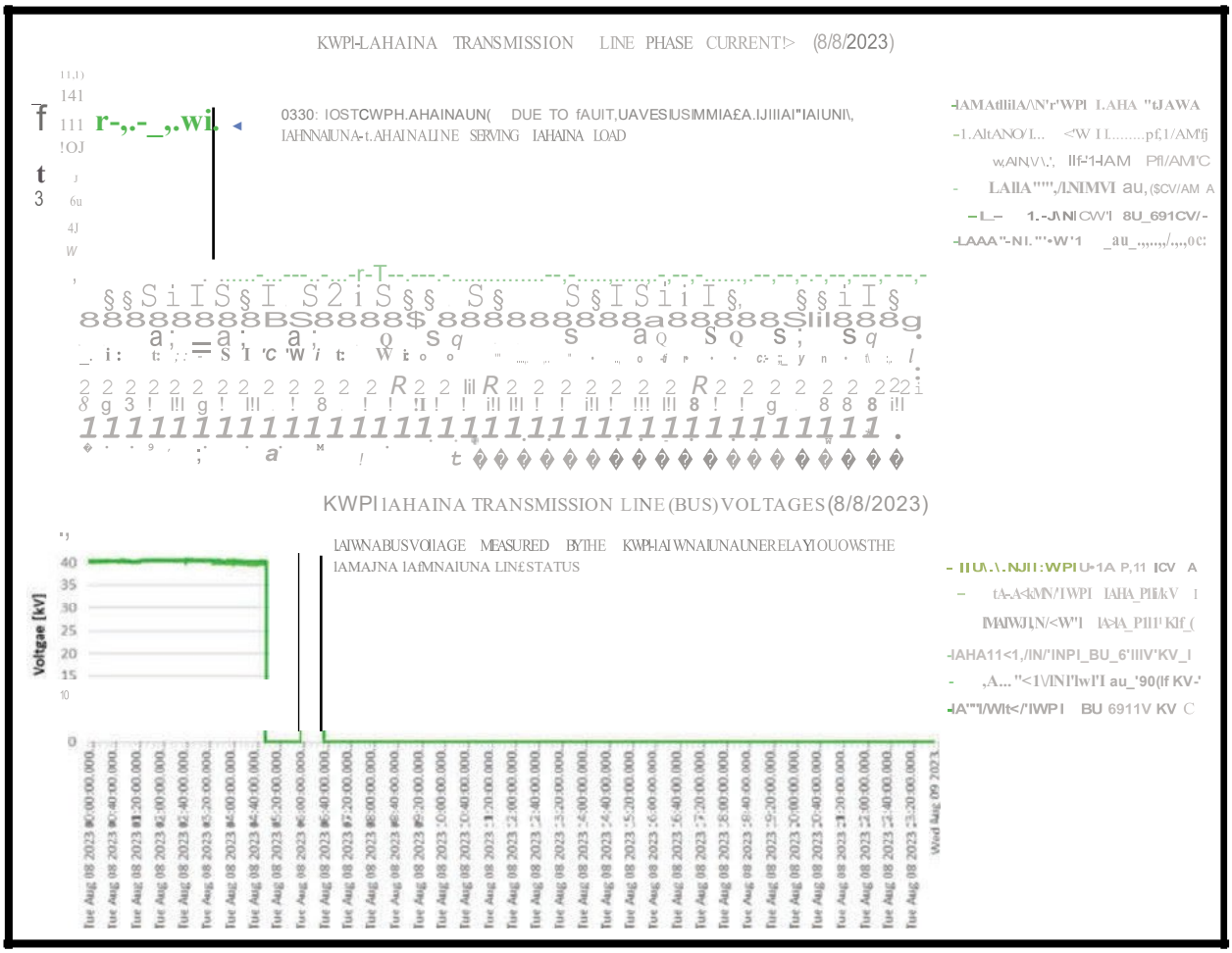


Figure 23. KWP2 Plot, MECO-ATF006 DATA-PLOT

The KWPl transmission line was de-energized at 03:30 homs (Figure 24).



Figme 24. KWPl Plot, MECO-ATF006 DATA-PLOT

The Puukolii transmission line was de-energized at 03:37 homs (Figure 25)

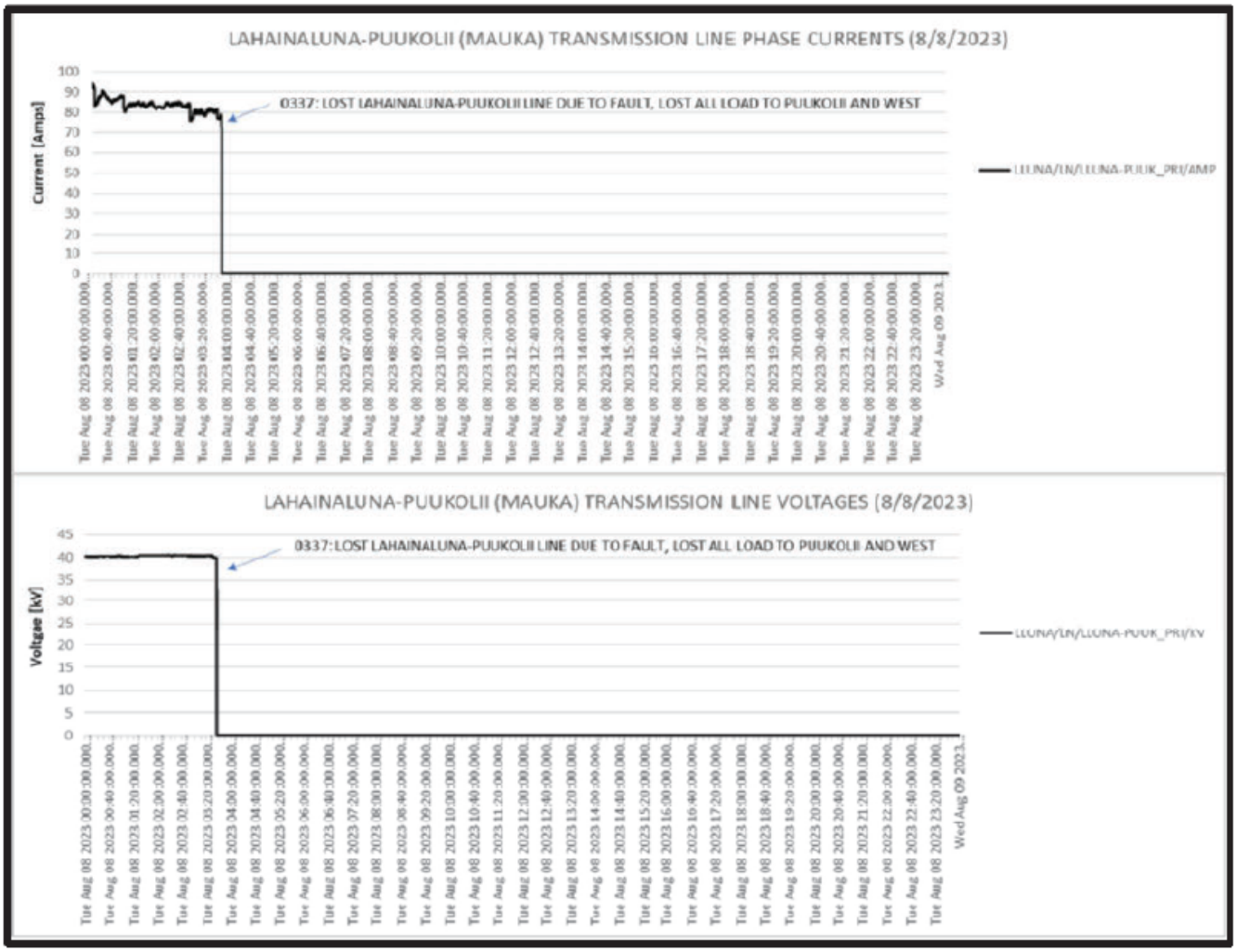


Figure 25. Puukolii Plot, MECO-ATF006 DATA-PLOT

The Lahaina transmission line was de-energized at 06:39 hours (Figure 26).

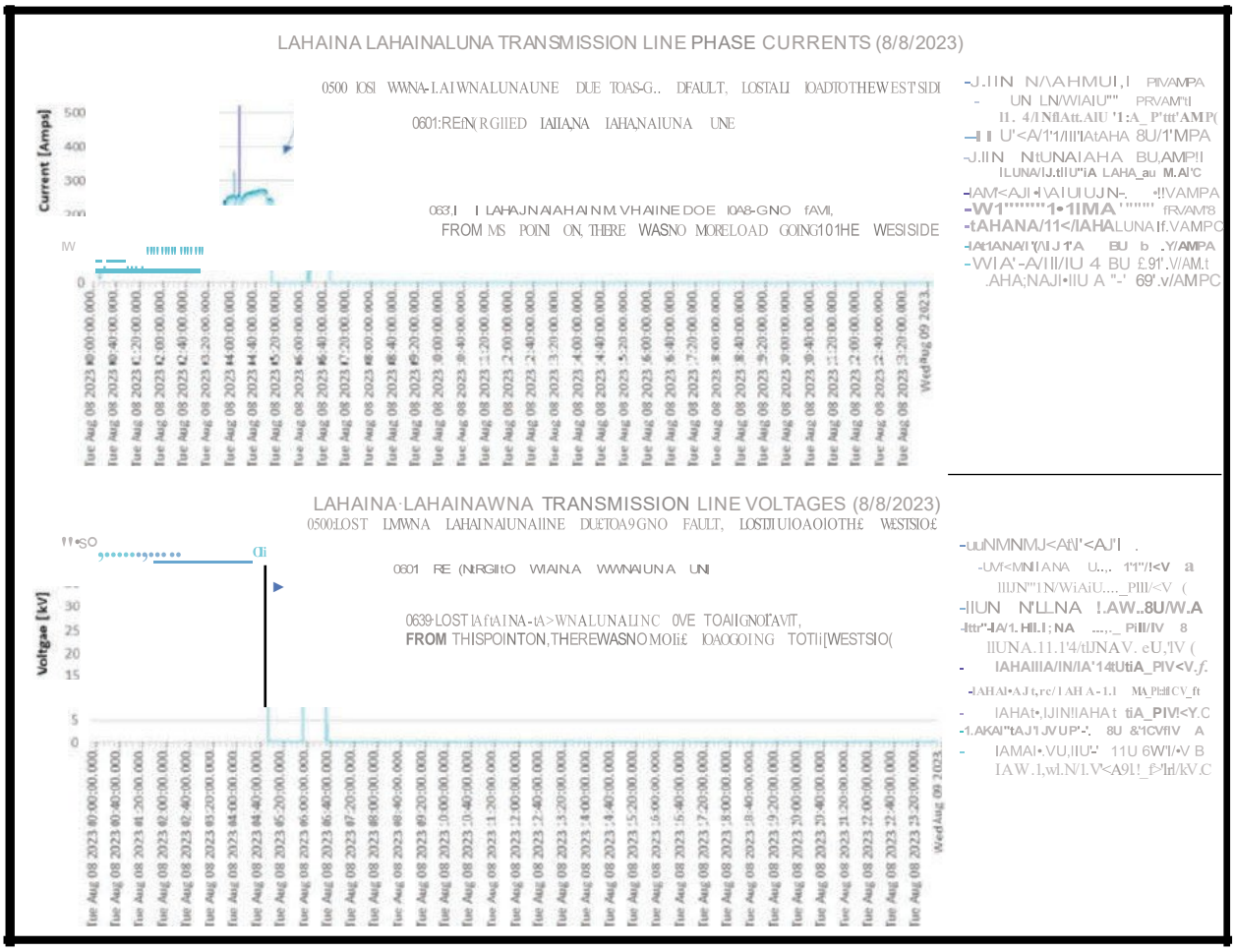


Figure 26. Lahaina Plot, MECO-ATF006 DATA-PLOT

The Maalaea transmission line was de-energized at 06:39 homs (Figure 27).

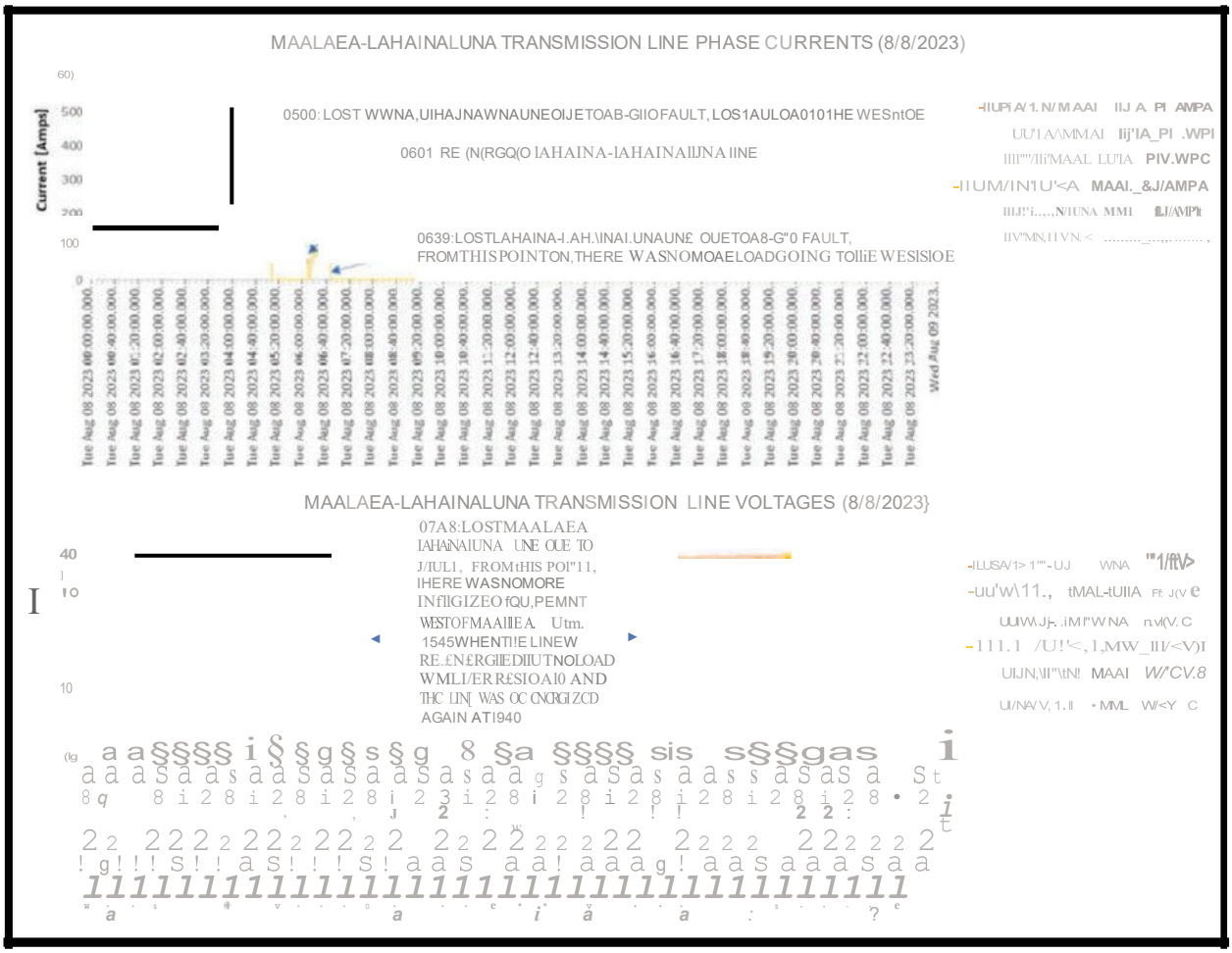


Figure 27. Maalaea Plot, MECO-ATF006 DATA-PLOT

Distribution Circuit 1223 was de-energized at 06:39 hours (Figure 28).

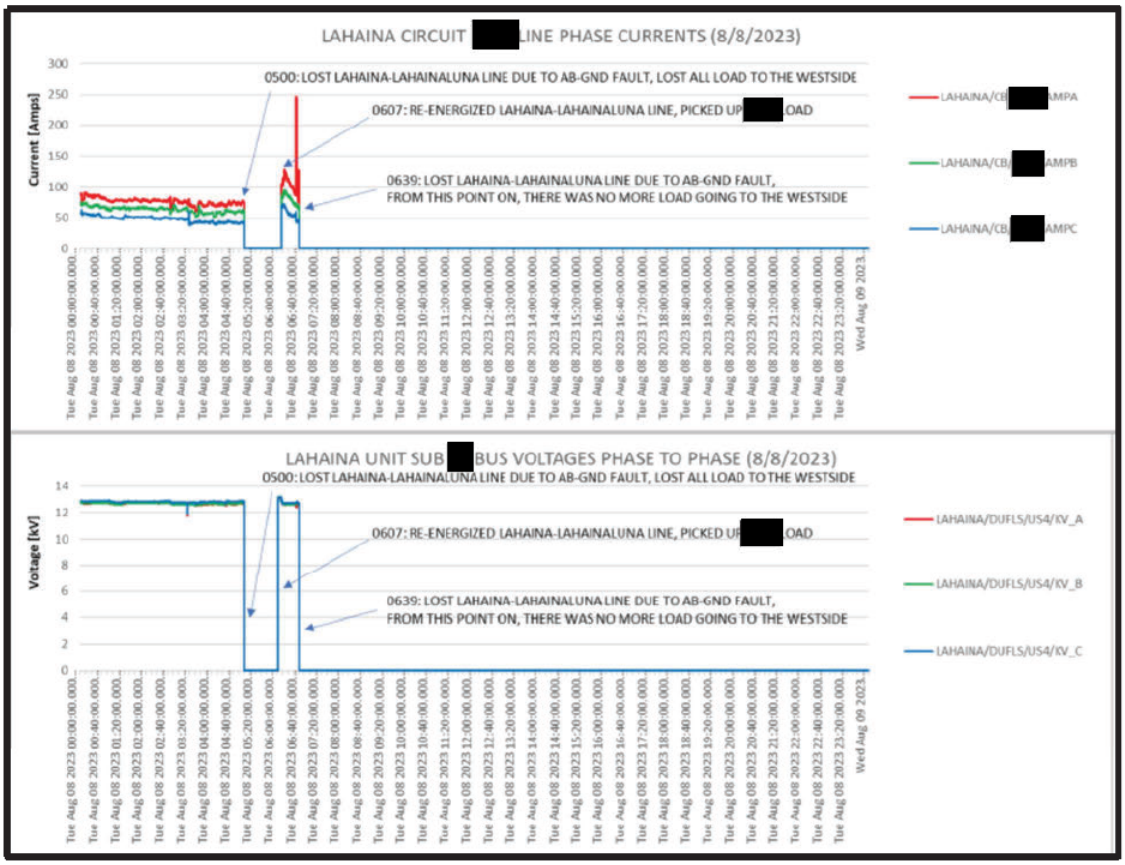


Figure 28. Distribution Circuit [redacted] Plot, MECO-ATF007 DATA-PLOT

The utility stated that the circuits remained de-energized until the following dates and times (MECO-ATF007):

- Maalaea transmission line was energized at 11:20 hours on August 11, 2023
- Puukolii transmission line was energized at 12:49 hours on August 11, 2023
- P01iions of Distribution Circuit [redacted] were energized at 17:39 hours on August 14, 2023
- Lahaina transmission line was energized at 13:03 hours on August 20, 2023
- KWPl transmission line was energized at 13:03 hours on August 20, 2023
- KWP2 transmission line was energized at 11:31 hours on August 22, 2023

A cropped and zoomed screenshot from one of [redacted] videos (Figure 29) [7] shows the intersection of overhead lines at Utility Pole 25. The screenshot shows the South phase conductor for Overhead Distribution Circuit [redacted] not present at Utility Pole 25 at the time of the morning fire.

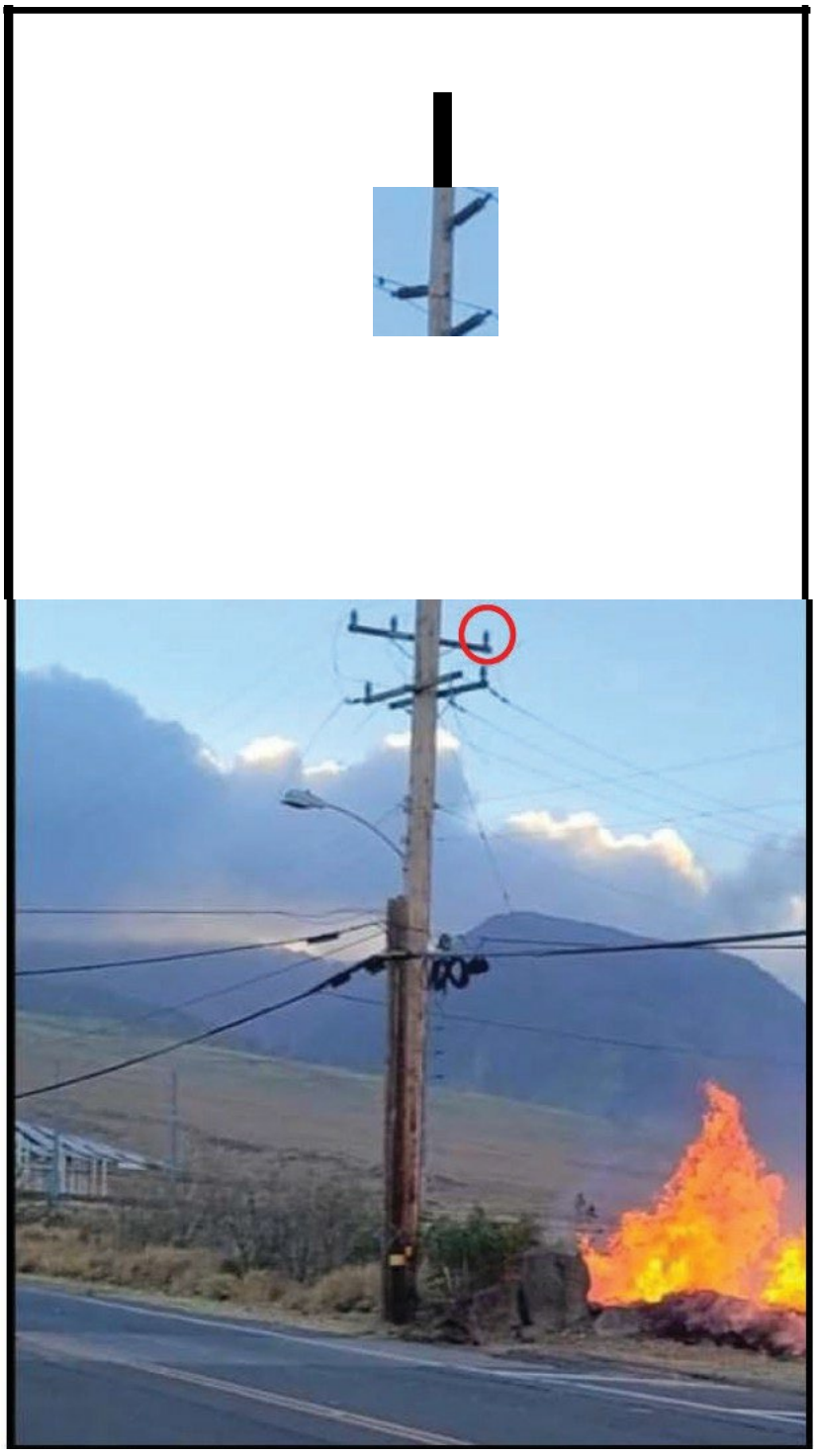


Figure 29. [redacted]_063725 Screenshot **1** (Playback time 00:01), 187721_763294-Cropped, Zoomed, and Annotated with red circle

A cropped and zoomed screenshot from a video taken by [redacted] W-10 provided thm 11:FD [redacted] MFD-11 (Figure 30) shows the South phase conductor for Overhead Distribution Circuit [redacted] attached at Utility Pole 24 with the severed end hanging in the adjacent tree at the time of the morning fire.

Figure 30. [redacted] W-10 _IMG_5228 Screenshot 1 (Playback time 00:15), 187721_763299-Cropped, Zoomed, and Annotated with red circle

This area was documented during a scene examination. Although repairs to the involved electrical system in this area had been completed at the time of the examination, the conditions reflect the pre-fire configuration for reference.

Figure 31 shows the area of Utility Pole 25 looking West and shows a speed sign and trees located in the grassy area between Lahainaluna Road and the sidewalk as well as overhead conductors for Distribution Circui[redacted] towards Utility Poles 24 and 23 (located on the North side of Lahainaluna Road.

Figure 32 is looking East and shows Utility Pole 25, the four-way intersection of overhead conductors for Distribution Circui[redacted] , and overhead conductors toward Utility Pole 26.

Figure 33 is looking South and shows Utility Pole 25, the four-way intersection of overhead conductors for Distribution Circui[redacted] , overhead conductors for Distribution Circ[redacted] towards toward Utility Poles 1-25 and 2-25. It also shows the 69 kV overhead Puukolii (Lahaina#2) transmission line running between Utility Pole 25 and Utility Pole 6.

Figure 34 is looking at the speed sign near Utility Pole 25 and the four-way intersection of overhead conductors for Distribution Circui[redacted] . It also shows the 69kV overhead Puukolii (Lahaina#2) transmission line running South and North from Utility Pole 25.

Figure 35 is looking South and shows Utility Pole 7A located in the dirt alley known as Ho'okahua Street, and overhead conductors for Distribution Circ[redacted] running from Utility Pole 7A towards Utility Pole 25.

Figures 36 and 37 show the grassy area located between Lahainaluna Road and the sidewalk between Utility Pole 24 and Utility Pole 25 that contains the speed sign and trees.

Figures 38 through 43 shows the location of fulgurites and re-solidified metallic material along the grassy area located between Lahainaluna Road and the sidewalk between Utility Pole 24 and Utility Pole 25.

Figures 44 shows the overall location of fulgurites and re-solidified metallic material marked with green flags in the grassy area located between Lahainaluna Road and the sidewalk between Utility Pole 24 and Utility Pole 25.

Figures 45 and 46 show arc melting on the speed sign observed during the scene exam.

Figure 31. Lahaina, 187721_744695-Near Utility Pole 25 looking West

Figure 32. Lahaina, 187721_744752-Near Utility Pole 25 looking East

Figure 33. Lahaina, 187721_744901-Near Utility Pole 25 looking South

Figure 34. Lahaina, 187721_744922-Near Utility Pole 25 looking at overhead conductors and speed sign

Figure 35. Lahaina, 187721_744705 -Ho'okahua St. looking South at Utility Pole 7A (foreground) and Utility Pole 25 (background)

Figure 36. Lahaina, 187721_744732-Near Utility Pole 25 looking West

Figure 37. Lahaina, 187721_744730-Near Utility Pole 25 looking West

Figure 38. Lahaina, 187721_744753 -Fulgurites and molten metallic material between Utility Poles 24 and 25

Figure 39. Lahaina, 187721_744754-Fulgurites and molten metallic material between Utility Pole 24 and 25

Figure 40. Lahaina, 187721_744759 -Fulgurites and molten metallic material between Utility Pole 24 and 25

Figure 41. Lahaina, 187721_744760 - Fulgurites and molten metallic material between Utility Pole 24 and 25

Figure 42. Lahaina, 187721_744762-Fulgurites and molten metallic material between Utility Pole 24 and 25

Figure 43. Lahaina, 187721_744765 -Fulgurites and molten metallic material between Utility Pole 24 and 25

Figure 44. Lahaina, 187721_744902-Flagged Fulgurites between Utility Pole 24 and 25

Figme 45. IMG_1812, 187721_765748 - Speed sign ai-c melting

Figme 46. IMG_1816, 187721_765749- Speed sign arc melting

Three vaping devices (vapes) were identified along Lahainaluna Road outside the area of interest for the morning and afternoon fire. All three were identified as disposable type vapes with rechargeable lithium-ion batteries.

The first was a SWFT vape that was undamaged (Figure 47). The second was a Lost Ma1y vape that was undamaged (Figure 48). The third was an Elf Bar Model BC5000 vape that was damaged by fire impingement (Figure 49).

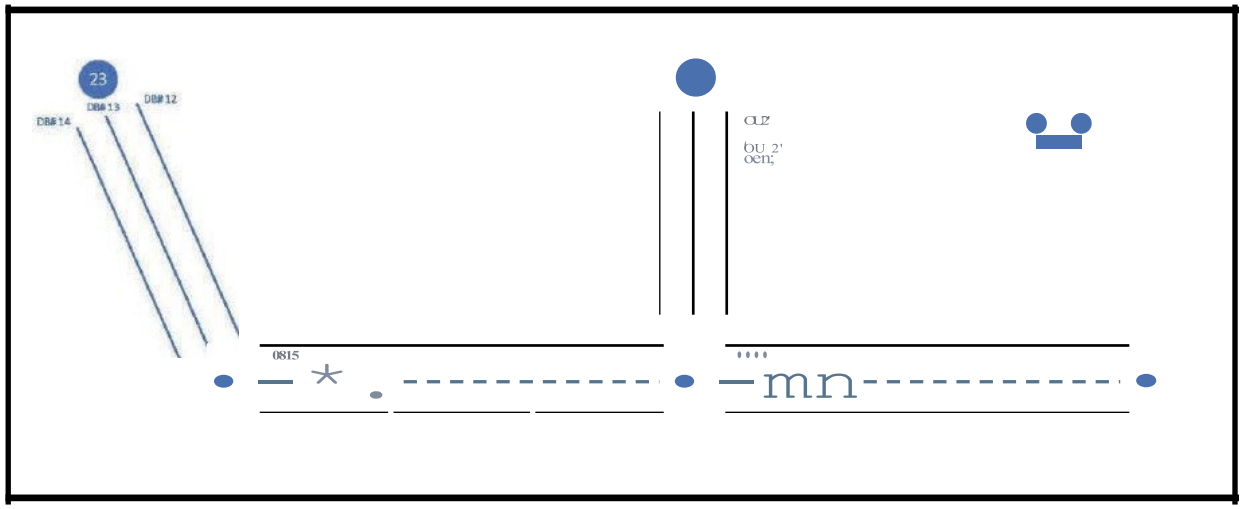
Figure 47. 187721_764459-Lahaina SWFT vape

Figure 48. 187721_764626-Lahaina Lost Maiy vape

Figure 49. 187721_764637 -Lahaina Elf Bai·Model BC5000 vape

FCA documented and collected utility involved equipment from the scene prior to the anival of ATP investigators.

A list of the FCA collected evidence items and descriptions associated with the Lahaina fire available at the time of the examination is included below. Evidence items with notable observations and associated photographs are summarized in the table below. A reference diagram for evidence numbers associated with Overhead Distribution **Circuitllll** is depicted in Figme 50.



Figme 50. Exam Diagram, 187721_763730

The broken South phase conductor between Utility Poles 24 and 25 consists of evidence items DB#l, DB Loose Components, and DB#7

Table 1: Lahaina Evidence Items

EVIDENCE NO.	DESCRIPTION	FIGURES
DB#1	Conductor between Utility Poles 24 and 25 (South phase)	Figures 51 - 61
Observations: • Segment 1 is approximately 104' 4" in length with arc severed ends and arc melting at a location about 2' 6" from one end. • Segment 2 is approximately 43' in length with one arc severed end and one cut end. • Segment 3 is approximately 13' 6" in length with one arc severed end and one cut end. • Segment 4 is approximately 19' in length with arc severed ends. • Total length is approximately 179' 10"		
	Loose Components - 5 Segments	Figures 62 - 69
Observations: • Segment 1 is approximately 11" in length with one arc severed end and one cut end. • Segment 2 is approximately 36" in length with arc severed ends. • Segment 3 is approximately 39" in length with one arc severed end and one cut end. • Segment 4 is approximately 51" in length with one arc severed end and one cut end. • Segment 5 is approximately 70" in length with one arc severed end and one cut end. • Total length is approximately 17' 3"		
DB#1A	Conductor remains	
DB#2	Conductor between Utility Poles 25 and 26 (South phase)	
Observations: • Cut at both ends with white tape. Single white tape end is East. • Total length is approximately 244' 9"		
DB#2A	Conductor between Utility Poles 25 and 26 (South phase)	
Observations: • Segment created due to damage during collection and handling. • Cut at both ends with blue tape and lashing segment attached to single tape end. Single blue tape is East. • Total length is approximately 38' 6"		
DB#3	Conductor between Utility Poles 25 and 26 (North phase)	
Observations: • Cut at both ends with red tape and lashing segment attached to single tape end. Single red tape end is East. • Total length is approximately 271' 9"		

DB#4	Conductor between Utility Poles 25 and 26 (mid phase)	
Observations: • Cut at both ends with white tape. Single white tape end is East. • Total length is approximately 273’ 2”		
DB#5	Conductor between Utility Poles 24 and 25 (North phase)	Figure 70
Observations: • Cut at both ends with red tape. Single red tape end is East. • Total length is approximately 242’ 7” • Wire measuring gauge indicating a solid copper conductor of 4 AWG (typical)		
DB#6	Conductor between Utility Poles 24 and 25 (mid phase)	
Observations: • Cut at one end with white tape. Single white tape end is East. • Total length is approximately 244’ 4”		
DB#7	Conductor between Utility Poles 24 and 25 (South phase)	Figure 71
Observations: • Cut at double blue tape end. Arc severed at single blue tape end. Single blue tape end is East. • Total length is approximately 27’ 8” • Attached/Cut end noted as attached to Utility Pole 24 and arc severed end hanging in tree.		
DB#8	Disconnect blade from Utility Pole 23 (North phase)	
DB#9	Disconnect blade (middle phase)	
DB#10	Disconnect blade from Utility Pole 23 (South Phase)	
DB#11	Ground strap found in street near Utility Pole 24	
DB#12	Conductor between Utility Poles 23 and 24 (North phase)	Figures 72 - 75
Observations: • Cut at both ends with red tape. Single red tape end is East. • Two lashing segments approximately 2’ 4” in length • Total length is approximately 217’ 3” • Arc melting at approximately 32’, 152’, and 192’ feet from the East end.		
DB#13	Conductor between Utility Poles 23 and 24 (mid phase)	Figures 78 - 81
Observations: • Cut at both ends with white tape. Single white tape end is East. • One lashing segment approximately 2’ 4” in length. • One lashing segment approximately 2’ 9” in length.		

• Total length is approximately 215’ 9” • Arc melting at approximately 152’ and 192’ feet from the East end.		
DB#14	Conductor between Utility Poles 23 and 24 (South phase)	
Observations: • Cut at one end with blue tape. Single blue tape end is East. • One lashing segment approximately 1’ 10” in length. • One lashing segment approximately 2’ in length. • One lashing segment approximately 2’ 6” in length. • Total length is approximately 240’		
DB#15	Neutral between Utility Poles 25 and 26	
Observations: • Cut at both ends. • Total length is approximately 240’ • One lashing segment approximately 2’ 8” in length.		
DB#15A	Neutral between Utility Poles 25 and 26	
Observations: • Cut at both ends with double black tape on West end. • Total length is approximately 35’		
DB#16	Neutral between Utility Poles 24 and 25	
Observations: • Cut at both ends with double black tape on West end. • Total length is approximately 240’		
DB#17	Fuse from Utility Pole 7a (Middle phase)	
Observations: • ABB, 27kV, 07/12/18, 100 Amps. Cont., 8,000A IC w/ Solid Cap • Fuse observed OPEN.		
DB#18	Branch Remains at base of Utility Pole 24	Figure 82
Observations: • Charring and abrasion marks		
DB#19	Top section of Utility Pole 7a with 2 fuses	Figure 83
	Guy wire roll	
	Bag of devices	
	Guy wire and fault detectors from DB#19	
Observations: • No fuse in middle phase • Outer two phases present and intact. ABB, 27kV, 07/12/18, 100 Amps. Cont., 8,000A IC w/ Solid Cap		

DB#19a	Middle section of Utility Pole 7a	
DB#19b	Bottom section of Utility Pole 7a	
DB#20	Section remains of Utility Pole 25	
DB#20a	Utility Pole 6a, subterranean section	
DB#20b	Utility Pole 6e, bottom section	
DB#20c	Utility Pole 6e, middle section	
DB#20d	Utility Pole 6e, top section	
DB#21	Remains at approx. 12’ from base of Utility Pole 25	Figures 84 - 86
Observations: • Arc melting		
DB#22	Conductor between Utility Poles 7a and 25	Figure 87
Observations: • Discoloration		
DB#23	Conductor remains between Utility Poles 7a and 25	
DB#24	Conductor between Utility Poles 7a and 25	
DB#25	Conductor between Utility Poles 7a and 25 about 4’ 6” length (curved)	Figure 88
Observations: • Mechanical damage • Discoloration		
DB#26	Conductor remains from top of Utility Pole 24	
DB#27	Jumper remains	
DB#28	Jumper remains about 3’ in length	Figures 89 - 90
Observations: • Arc melting at end of copper fragment.		
DB#29	Dead end remains about 11’ 8”	Figure 91
Observations: • Discoloration and melting		
DB#30	Dead end remains about 4’ wide loop	Figures 92 - 94
Observations: • Discoloration • Arc Melting		
DB#31	Guide bolt	
DB#32	Anchor	
DB#33	Utility pole remains from area of Utility Pole 8	
	Bag with insulator remains from area of Utility Pole 8	
DB#34	Utility pole base remains from area of Utility Pole 8	
DB#35	Utility pole remains from area of Utility Pole 8 w/ metal arms	

DB#36	Utility pole section from area of Utility Pole 8 with section of cross member	
DB#37	Utility pole remains from area of Utility Pole 8 w/ID 343614#8	
DB#38	Metallic like object near Utility Pole 2	
DB#39	Possible remains of ground cable from South of Utility Pole 25, North of Utility Pole 24	Figure 95
Observations: • Arc melting		
DB#40	Misc. Utility Pole components from near Utility Pole 8	
DB#41	Fuse holder/insulator from near Utility Pole 8	
DB#42	Fuse found near Utility Pole 8	
Observations: • ABB, 27kV, 04/*XX/XX* (damaged label), 100 Amps. Cont., 8,000A IC w/ Solid Cap • Fuse intact via continuity check with digital multimeter.		
DB#43	Fuse found in debris near Utility Pole 8	
Observations: • ABB, 27kV, 04/16/15, 100 Amps. Cont., 8,000A IC w/ Solid Cap • Fuse intact via continuity check with digital multimeter.		
DB#44	Small cross members section found near Utility Pole 8	
DB#45	Pole section from area of Utility Pole 8	
DB#46	Pole remains found near Utility Pole 8	
DB#47	Pole remains from area of Utility Pole 8	
DB#48	Pole remains from area of Utility Pole 8	
DB#49	Pole remains from area of Utility Pole 8	
DB#50	Pole remains from area of Utility Pole 8	
DB#51	Remains of fireworks from parking area of Princess Nahienaena School	
DB#52	Pole remains from area of Utility Pole 8	
DB#53	Pole remains from area of Utility Pole 8	
DB#54	Cross member remains found near Utility Pole 8	
DB#54a	Cross member remains from near Utility Pole 8	
DB#55	Firework remains from Princess Nahienaena School	
DB#56	Firework remains from Princess Nahienaena School	
DB#57	Fuse from ground debris near Utility Pole 8	
DB#58	Fuse found in debris pile near Utility Pole 8	
DB#59	Crossmember remains	
DB#60	Cross member remains from ground debris near Utility Pole 8	
DB#61	Insulator with ground strap to cross member piece	
DB#62	Fuse holder with insulator and ground wire	

DB#63	Fuse mount with cross member section	
DB#64	Remains of cross member from near Utility Pole 8	
DB#65	Insulator found near Utility Pole 8	
DB#66	Insulator with conductor	
DB#67	Insulator with conductor	
DB#68	Insulator with conductor	
DB#69	Insulator remains	
DB#70	Insulator remains	
DB#71	Insulator remains	
DB#72	Insulator remains	
DB#73	Insulator remains	
DB#74	East side guy wire	
DB#75	Insulator remains	
DB#76	Ground rod	
DB#77	Ground rod	
DB#78	Insulator found near Utility Pole 8	
DB#79	Remains of Utility Pole 9 (top)	
DB#79A	Metal cross member section from Utility Pole 9	
DB#80	Remains of Utility Pole 9 (bottom)	
DB#81	Insulator found near Utility Pole 9	
DB#82	Insulator found near Utility Pole 9	
DB#83	Insulator found near Utility Pole 9, lowest arm	
JS#1	Battery, removed during examination	
Observations: • Power Sonic Model PS-12350B 12V 35AH Rechargeable Sealed Lead-Acid Battery • Measured approximately 12.73 VDC via Digital Multi-meter.		
JS#2	Battery, removed during examination	
Observations: • Power Sonic Model PS-12350B 12V 35AH Rechargeable Sealed Lead-Acid Battery • Measured approximately 8.73 VDC via Digital Multi-meter.		
JS#3	Solar Radar Sign	Figures 96 - 98
Observations: • Arc melting on top cross brace • Arc melting on base of both support posts • Intact and undamaged solar panel, batteries, and connections.		
JS#4	Utility pole stump between 1A-1B	Figure 99

Figure 51. 187721_738778 -Lahaina DB#l

Figure 52. 187721_738833 -Lahaina DB#l Segment 1

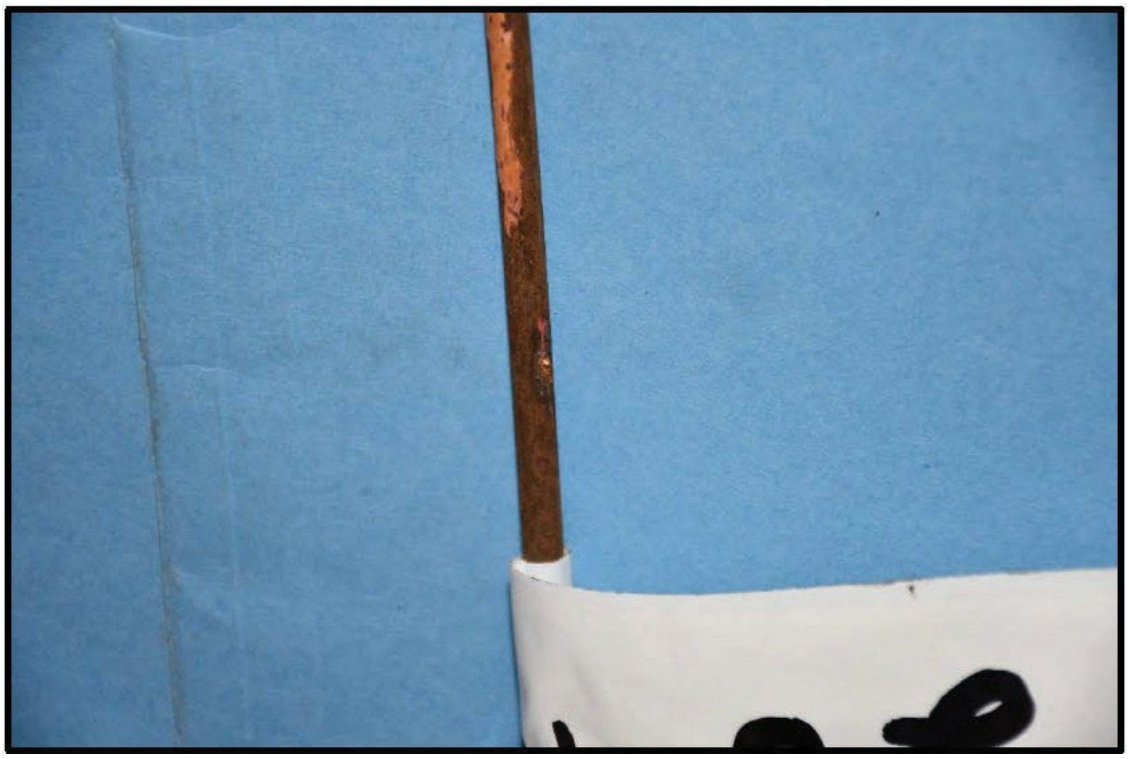


Figure 53. 187721_738856-Lahaina DB#l Segment 1

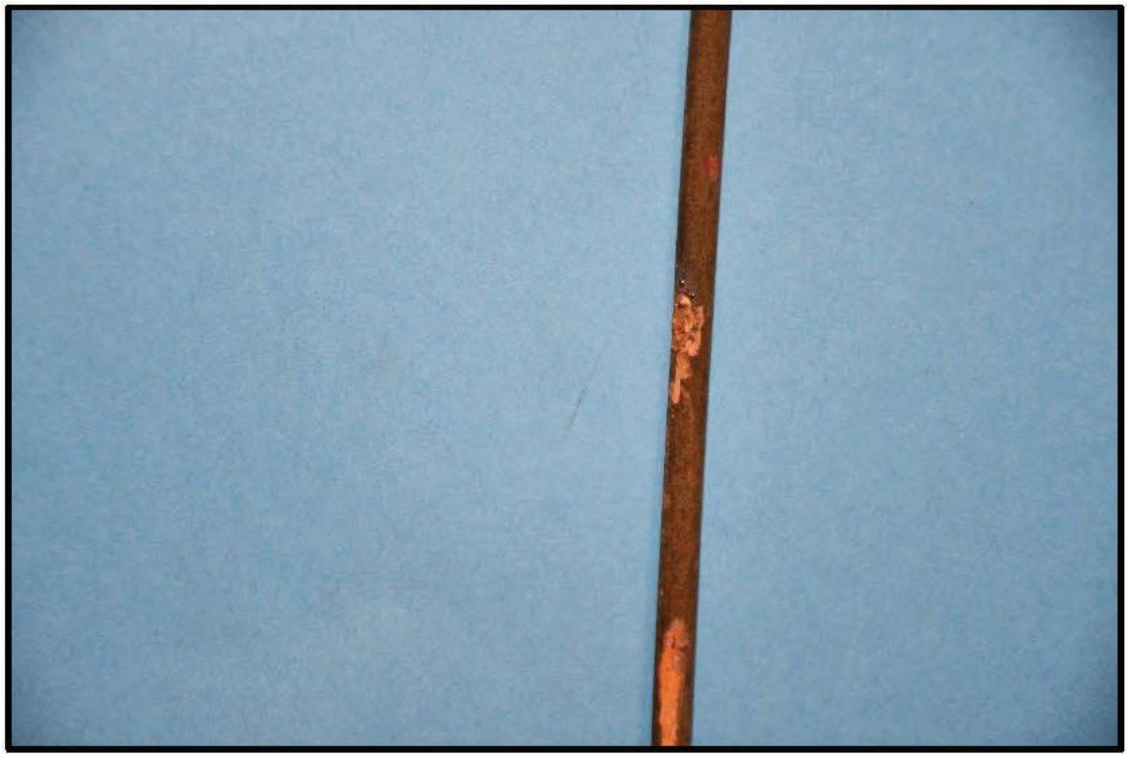


Figure 54. 187721_738858 -Lahaina DB#l Segment 1

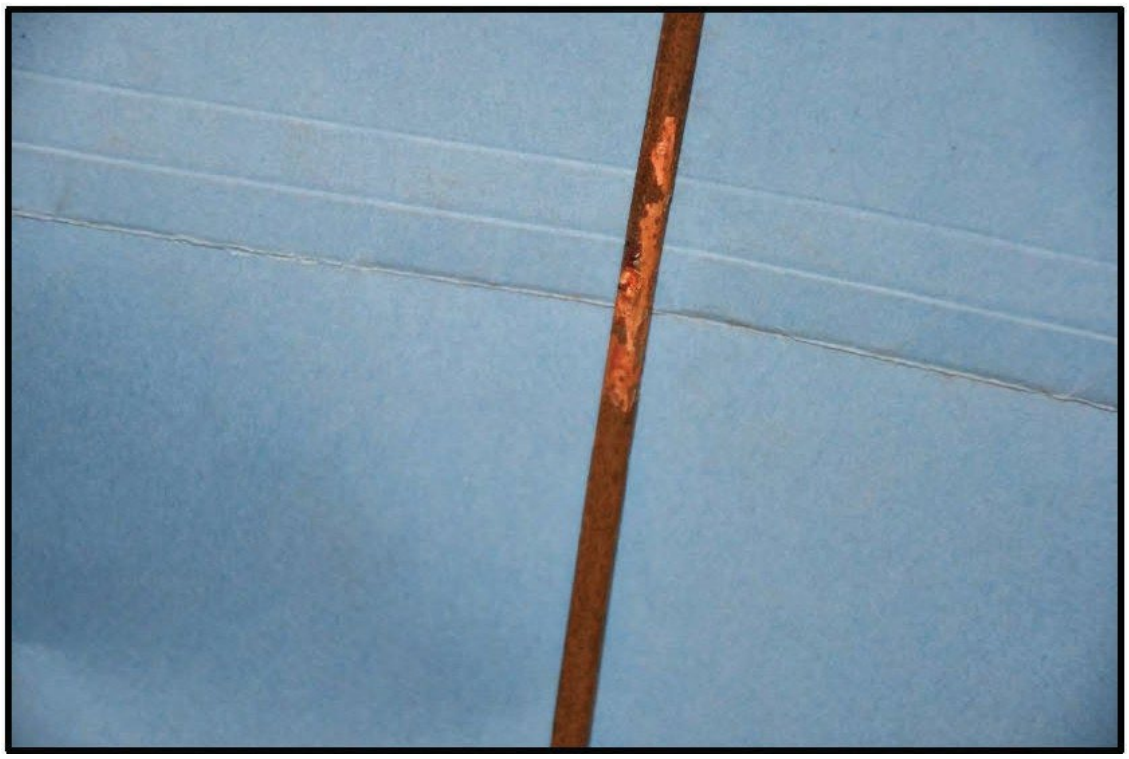


Figure 55. 187721_738860-Lahaina **DB#l** Segment **1**

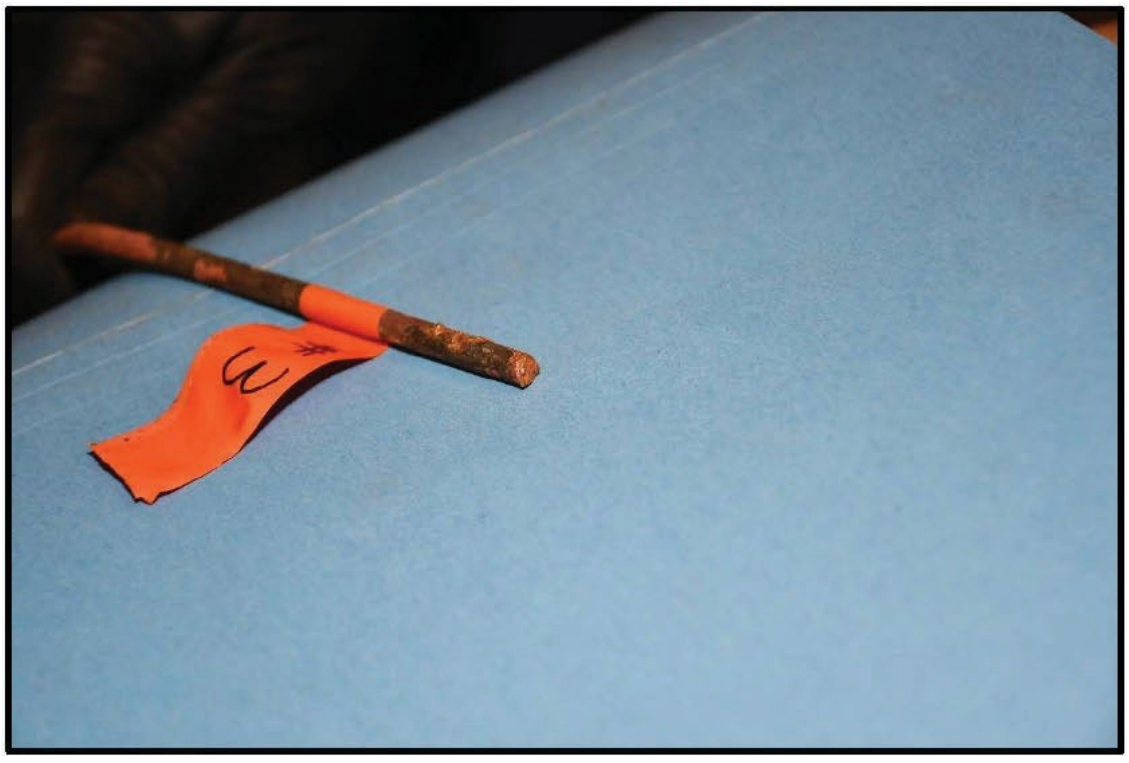


Figure 56. 187721_738870-Lahaina **DB#l** Segment **1**

Figure 57. 187721_738898 -Lahaina DB#l Segment 2

Figure 58. 187721_738933 -Lahaina DB#l Segment 3

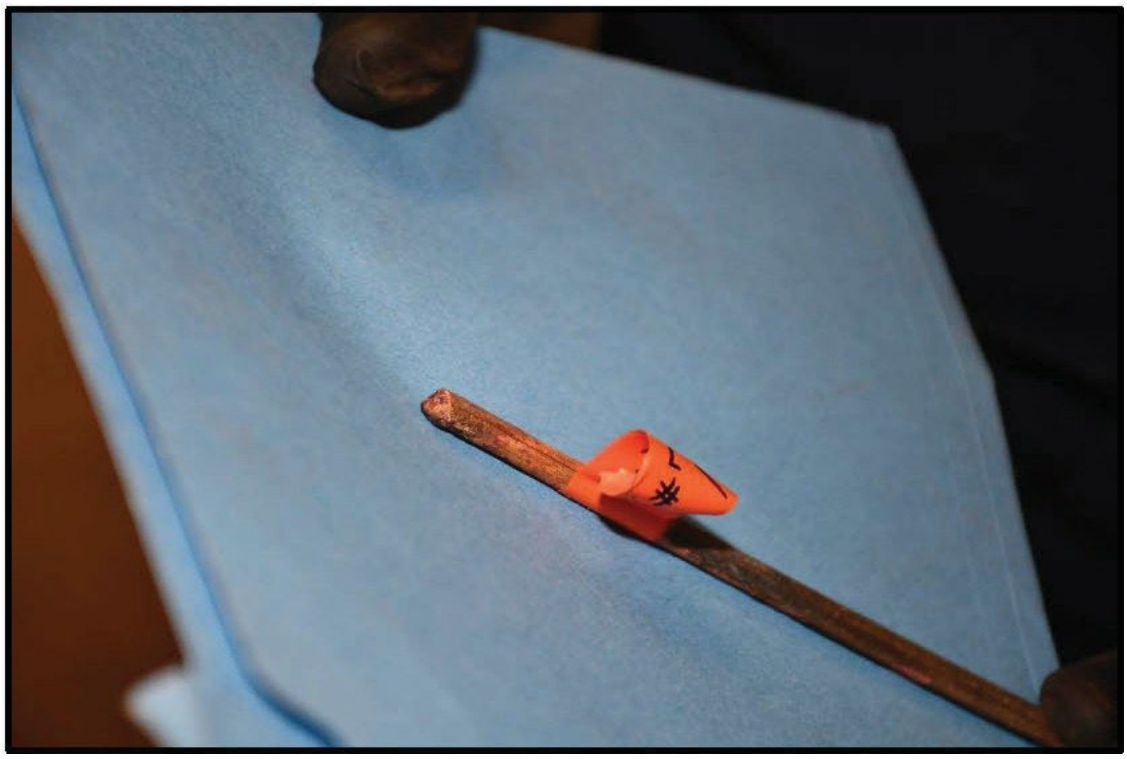


Figure 59. 187721_738946-Lahaina DB#l Segment 4

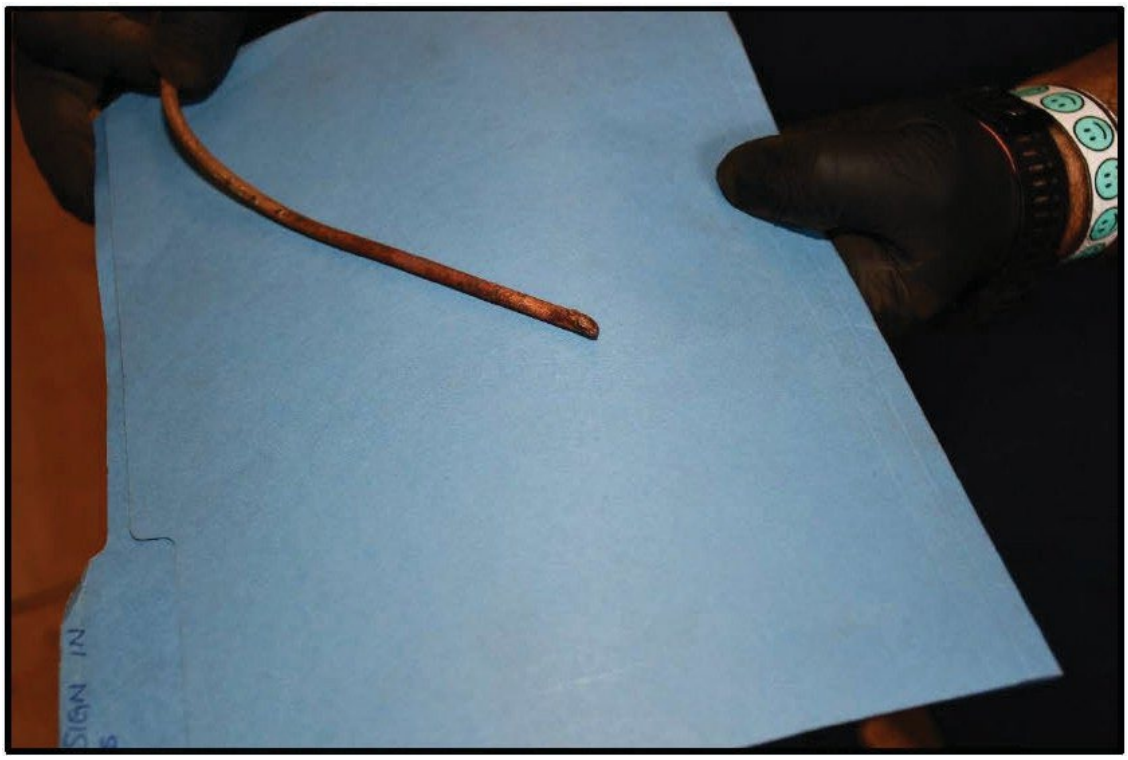


Figure 60. 187721_738948 -Lahaina DB#l Segment 4

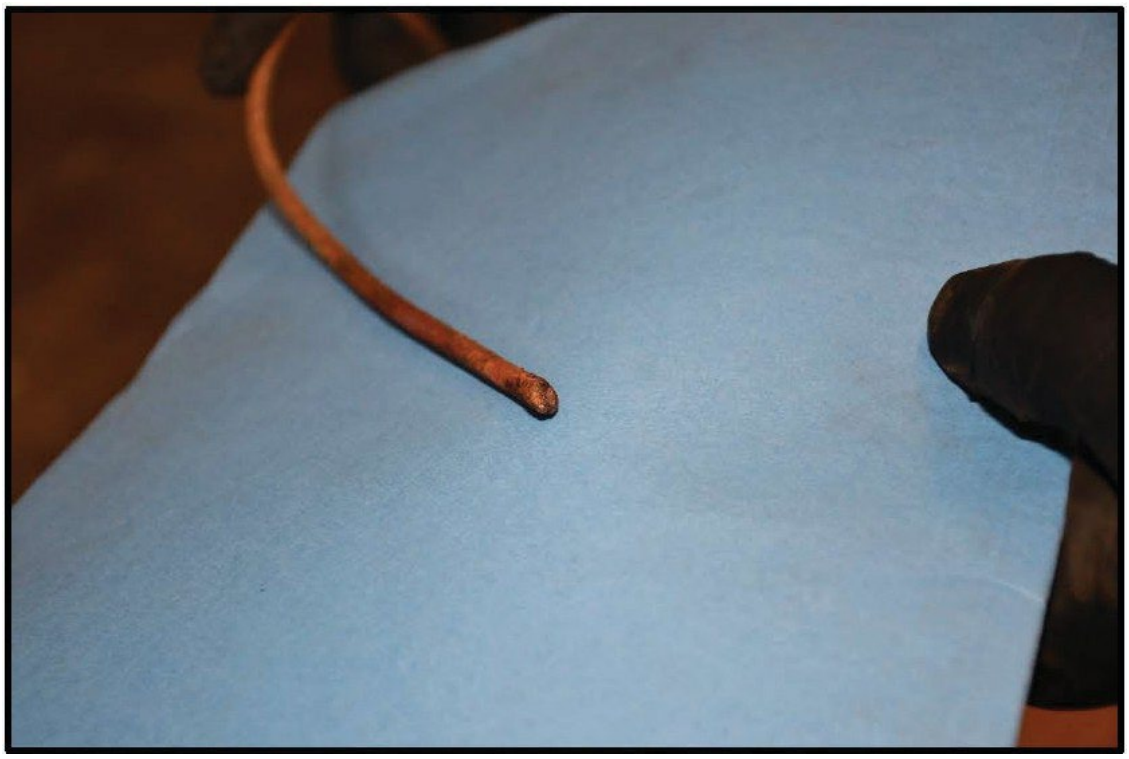


Figure 61. 187721_738951-Lahaina **DB#l** Segment 4

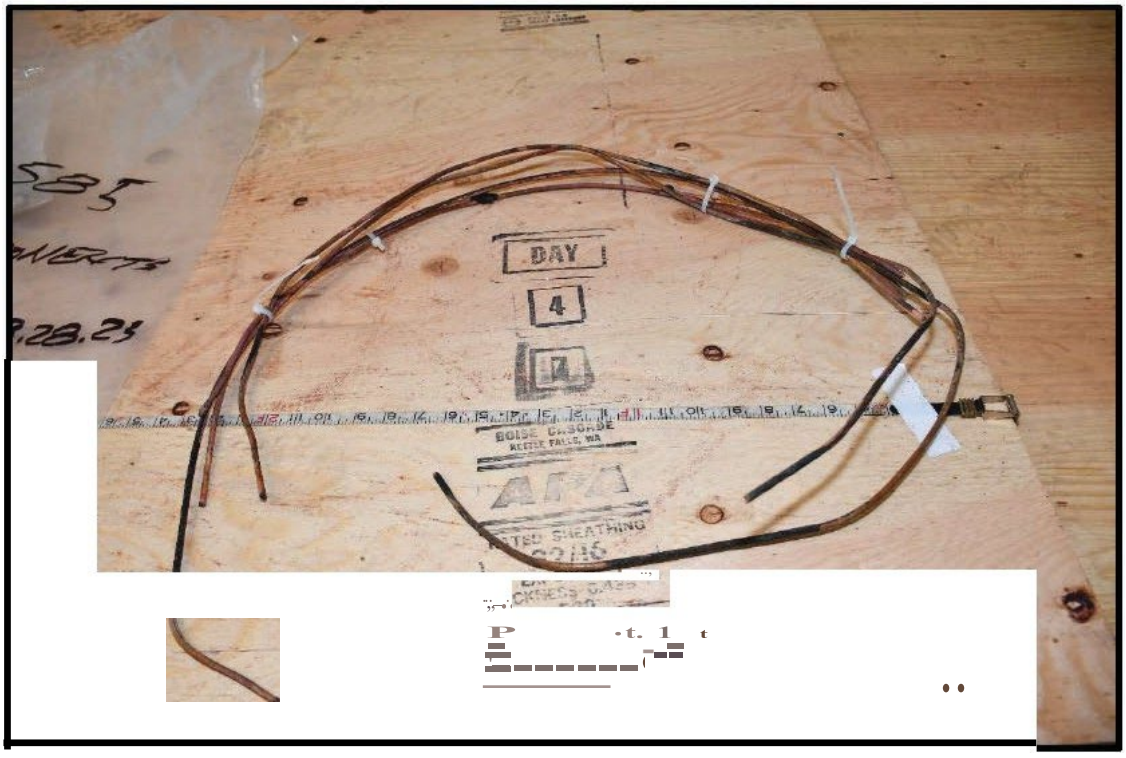


Figure 62. 187721_739500-Lahaina **DB#l** Loose Components

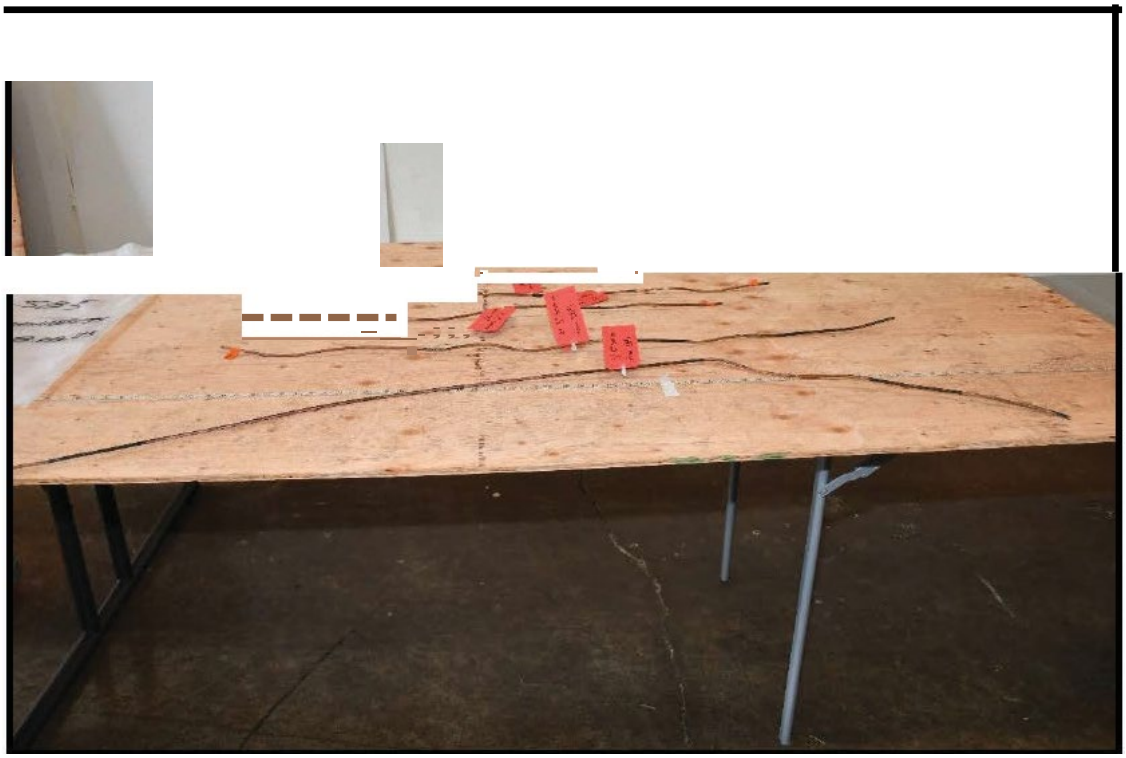


Figure 63. 187721_739558 -Lahaina **DB#l** Loose Components

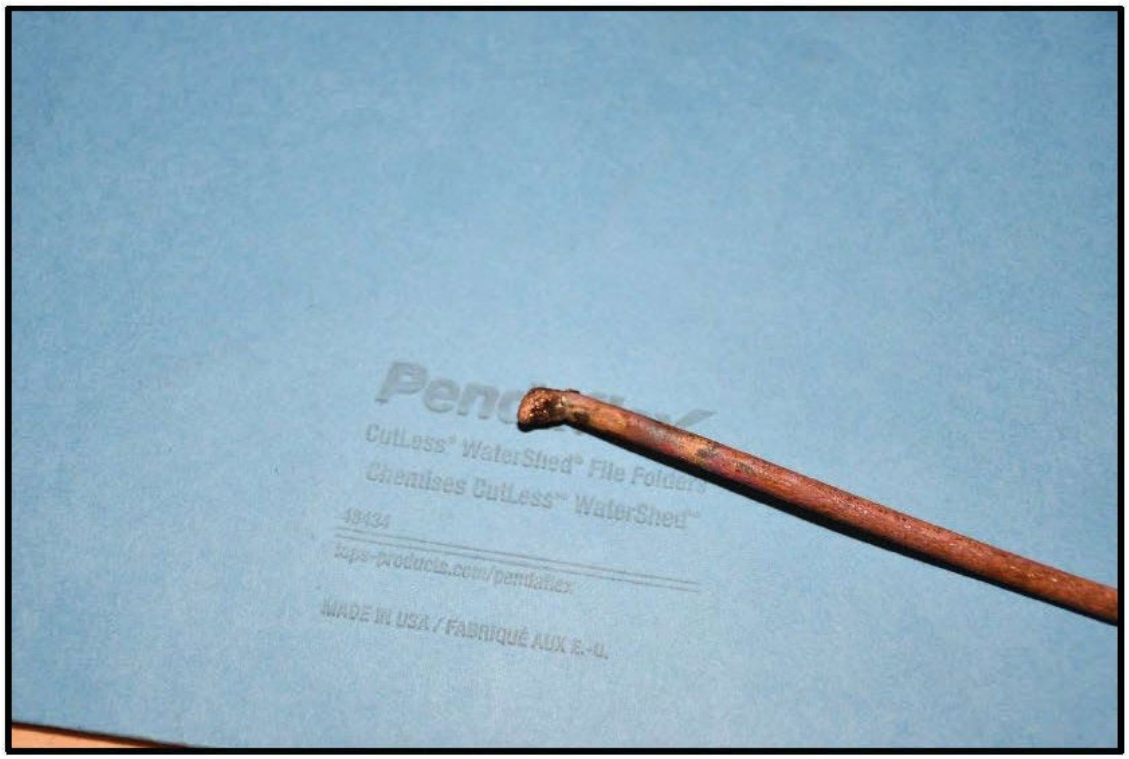


Figure 64. 187721_739515 -Lahaina **DB#l** Loose Components

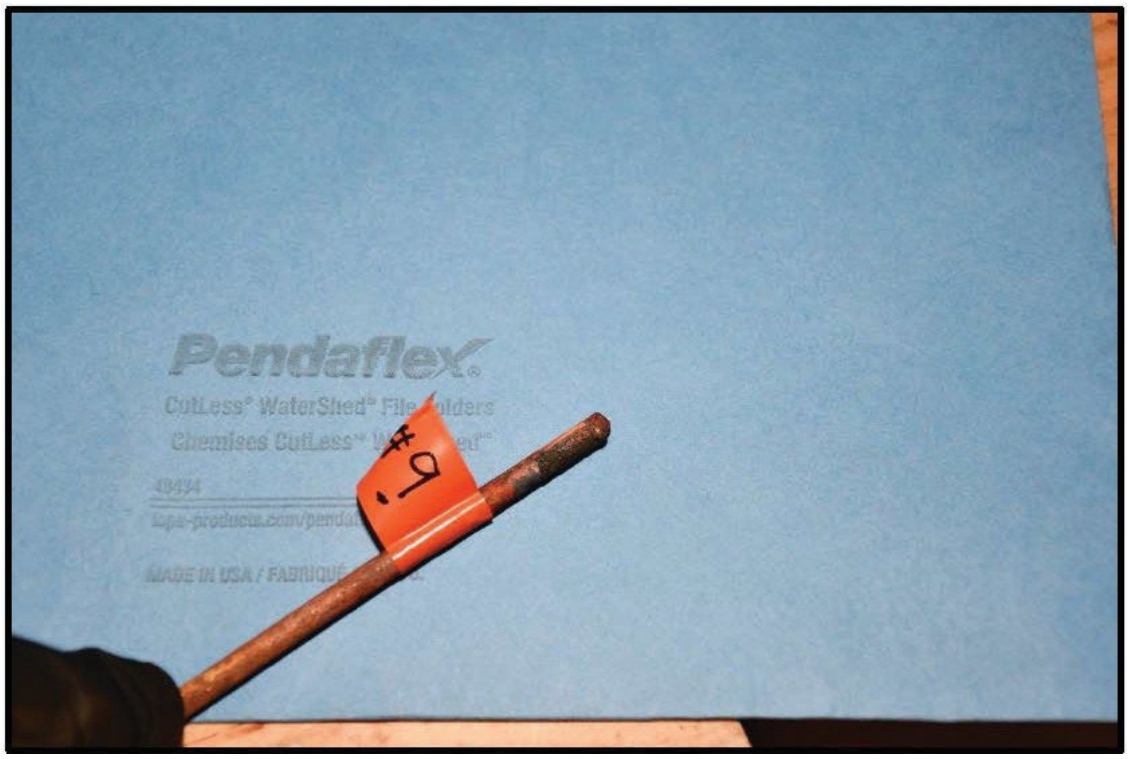


Figure 65. 187721_739516-Lahaina **DB#l** Loose Components

Figure 66. 187721_739527 -Lahaina **DB#l** Loose Components

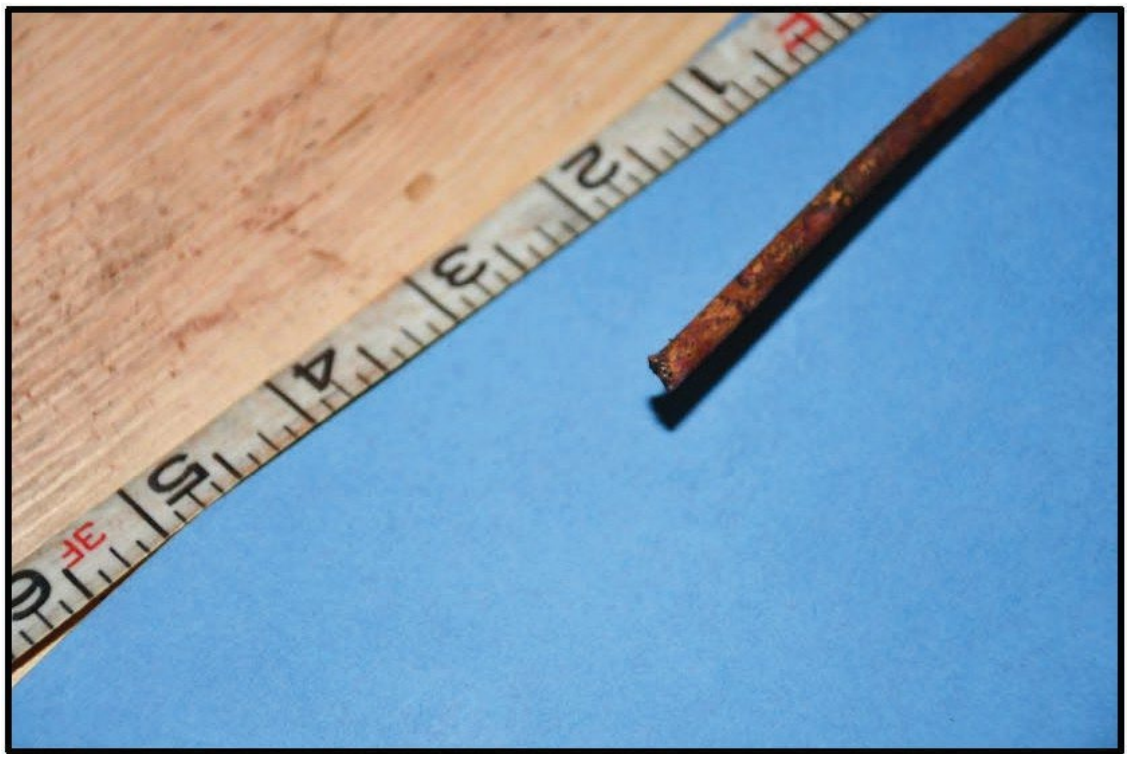


Figure 67. 187721_739528 -Lahaina **DB#l** Loose Components

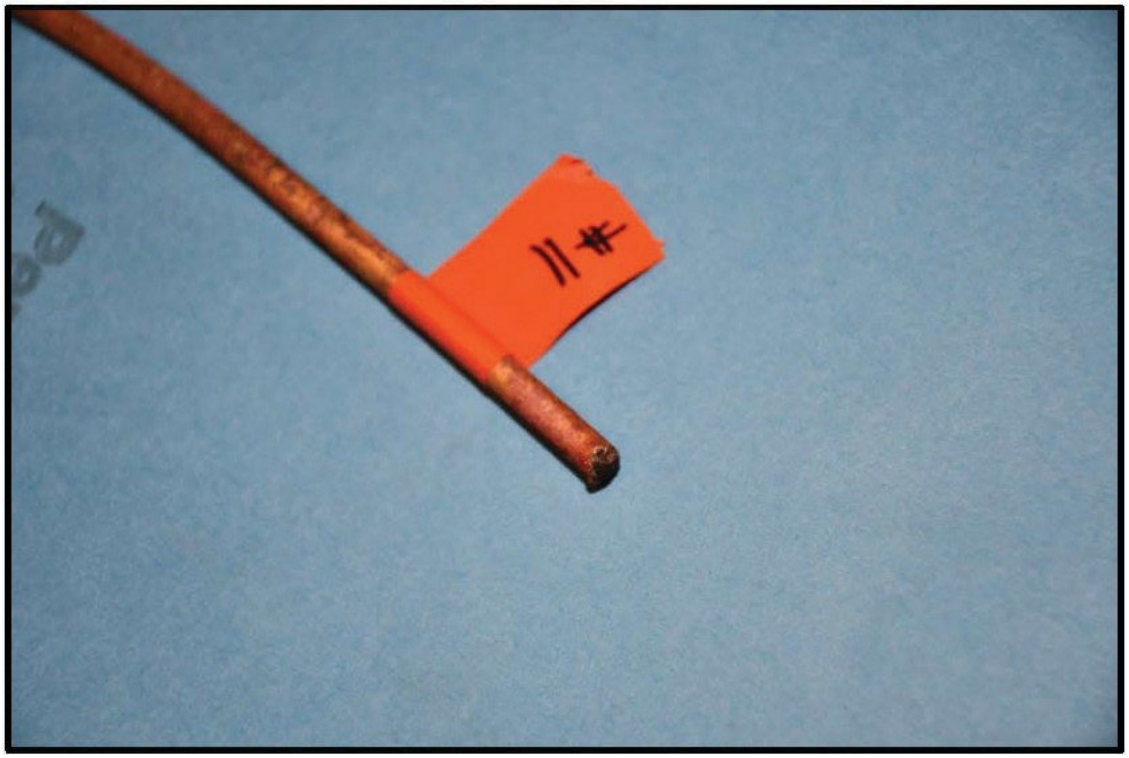


Figure 68. 187721_739537 -Lahaina **DB#l** Loose Components

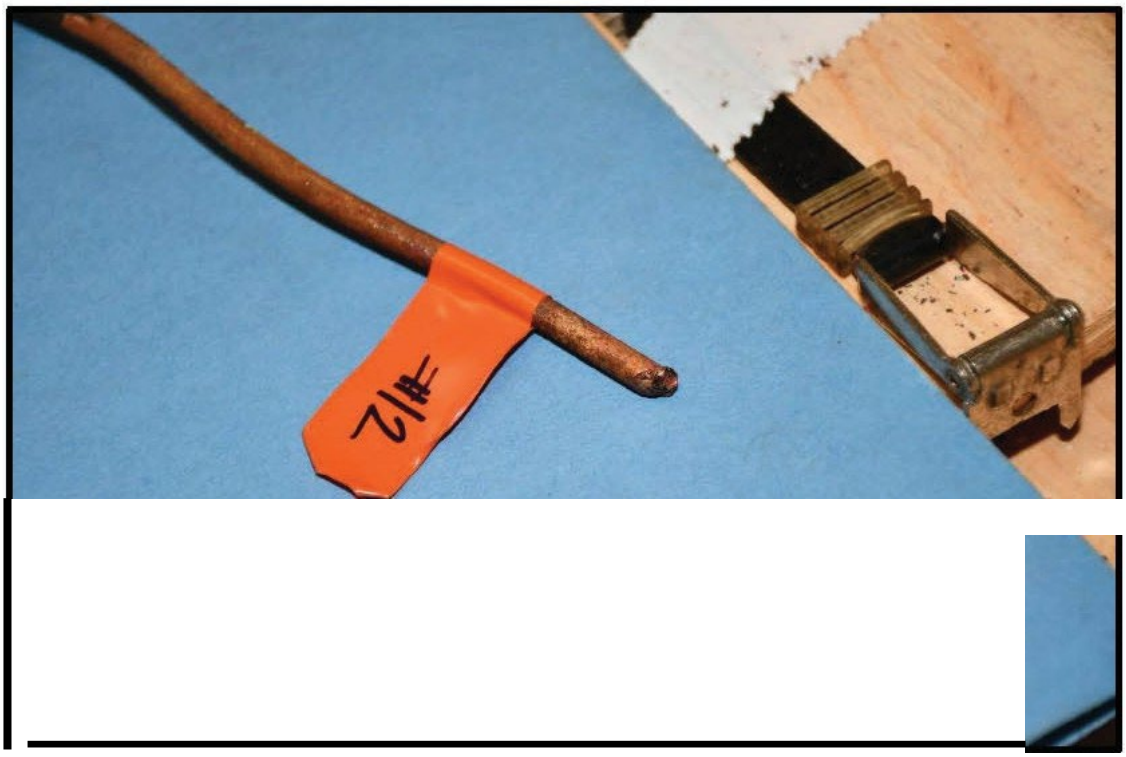


Figure 69. 187721_739553 -Lahaina **DB#l** Loose Components

Figure 70. 187721_739623 -Lahaina DB#5

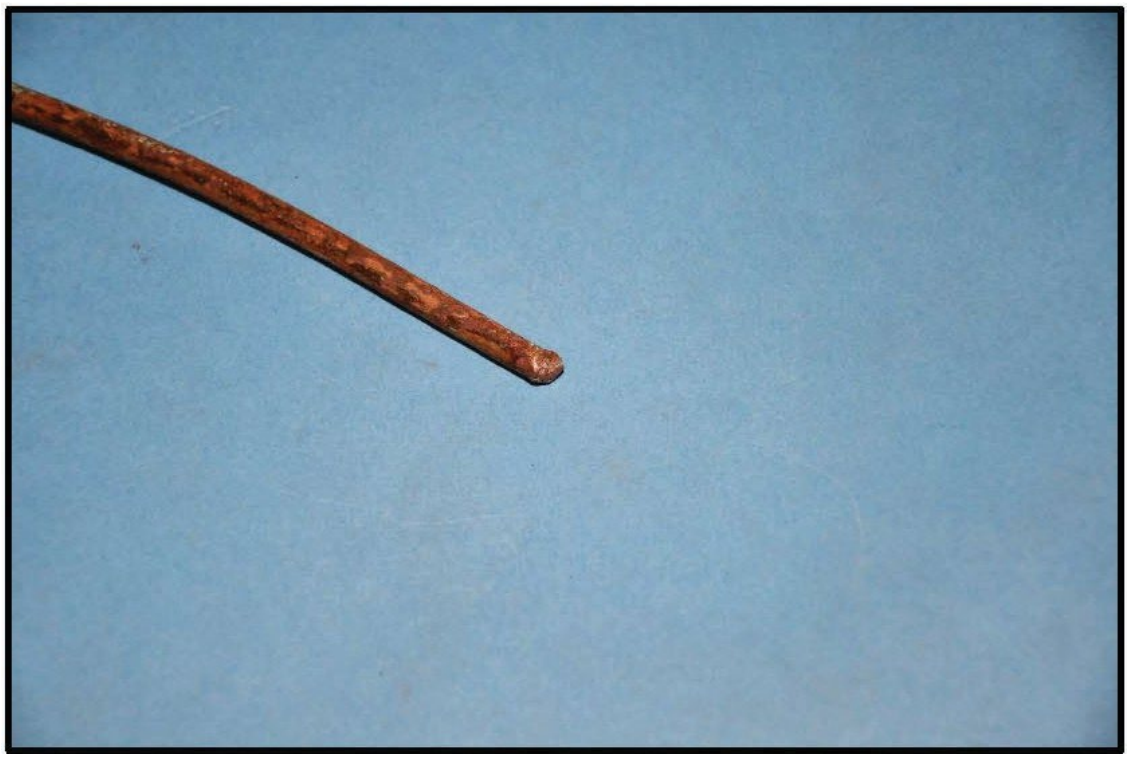


Figure 71. 187721_739963 -Lahaina DB#7

Figure 72. 187721_740014-Lahaina DB#12

Figure 73. 187721_740023 -Lahaina DB#12

Figure 74. 187721_740058 -Lahaina DB#12

Figure 75. 187721_740063 -Lahaina DB#12

Figure 76. 187721_740068 -Lahaina DB#12

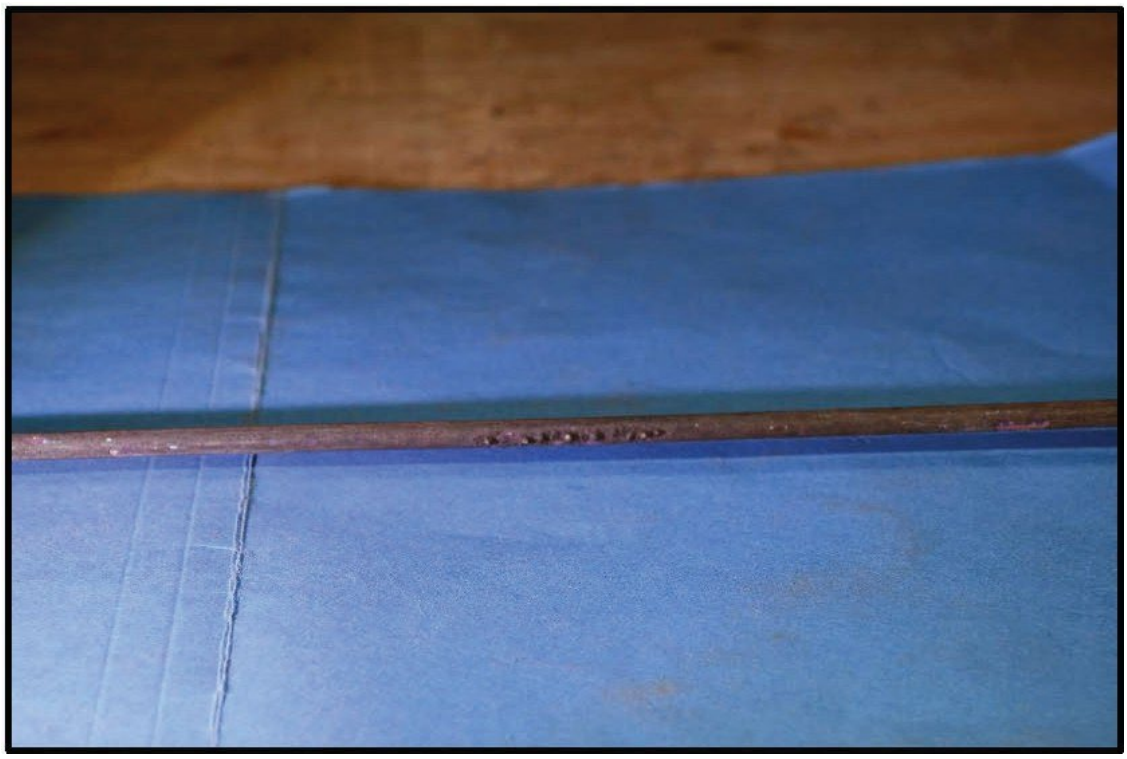


Figure 77. 187721_740073 - Lah•ama DB#12

Figure 78. 187721_740282-Lah•ama DB#13

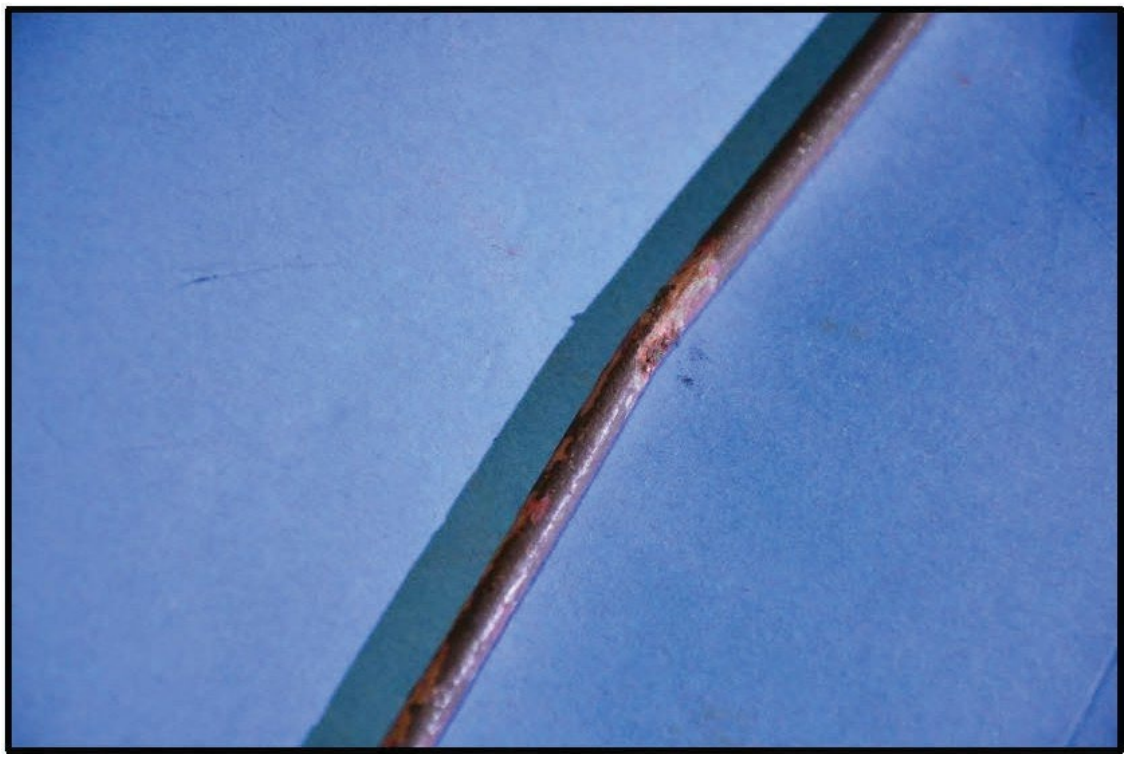


Figure 79. 187721_740290-Lahaina DB#13

Figure 80. 187721_740294-Lahaina DB#13

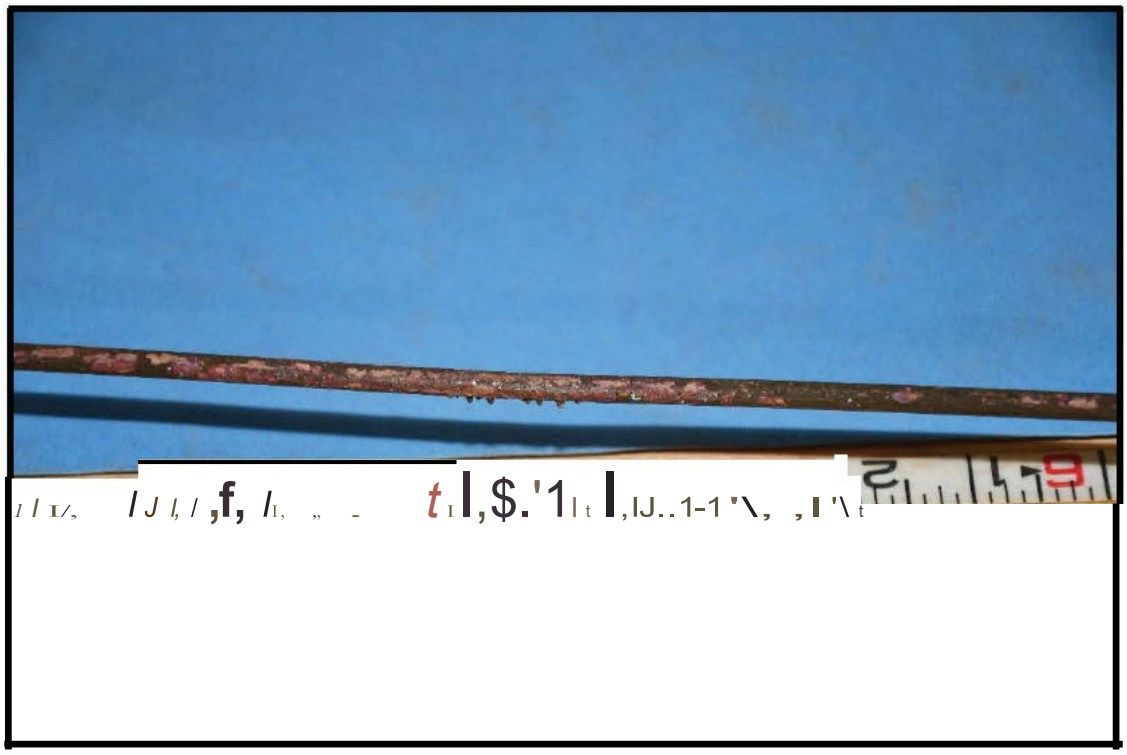


Figure 81. 187721_740296-Lahaina DB#13

Figure 82. 187721_742764-Lahaina DB#18

Figure 83. 187721_743716-Lahaina DB#19

Figure 84. 187721_741175 -Lahaina DB#21

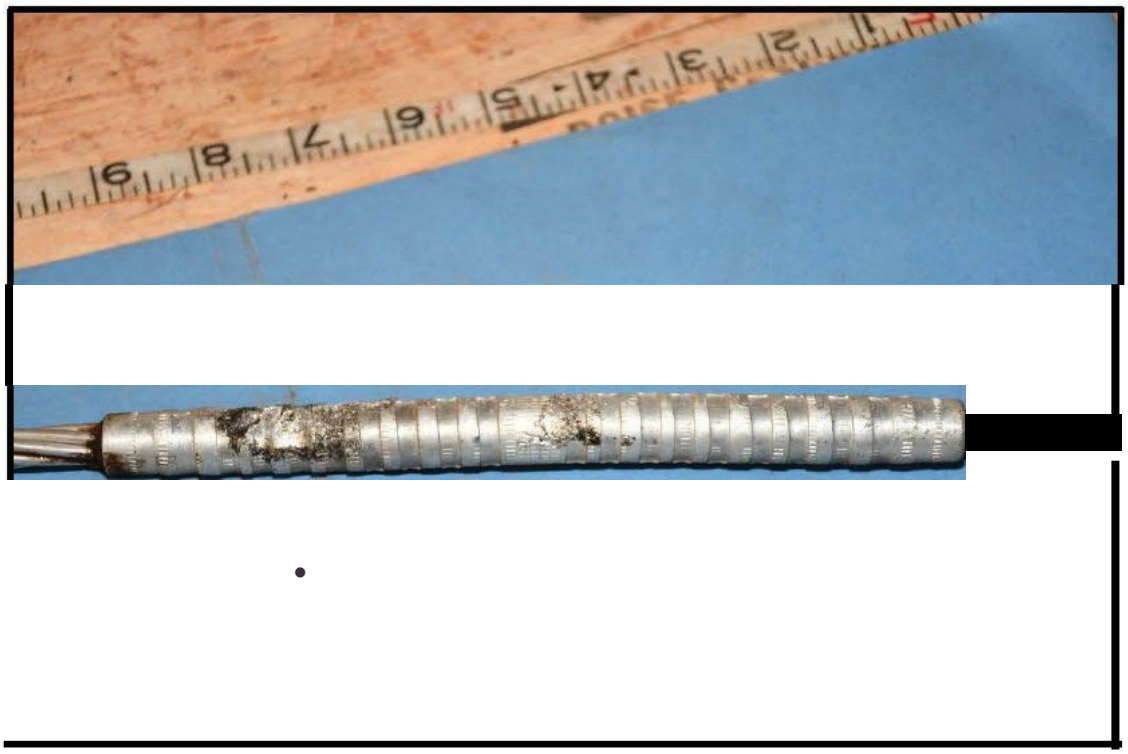


Figure 85. 187721_741182-Lahaina DB#21

Figure 86. 187721_741194-Lahaina DB#21

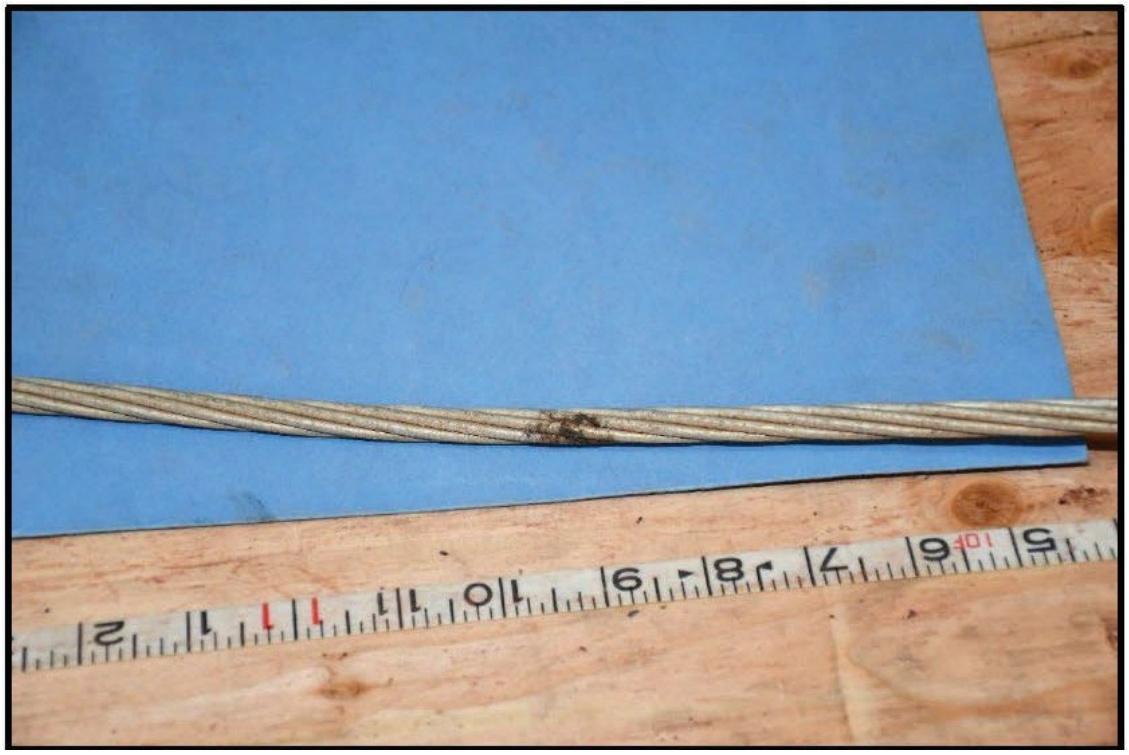


Figure 87. 187721_741239-Lahaina DB#22

Figure 88. 187721_741402-Laha·ma DB#25

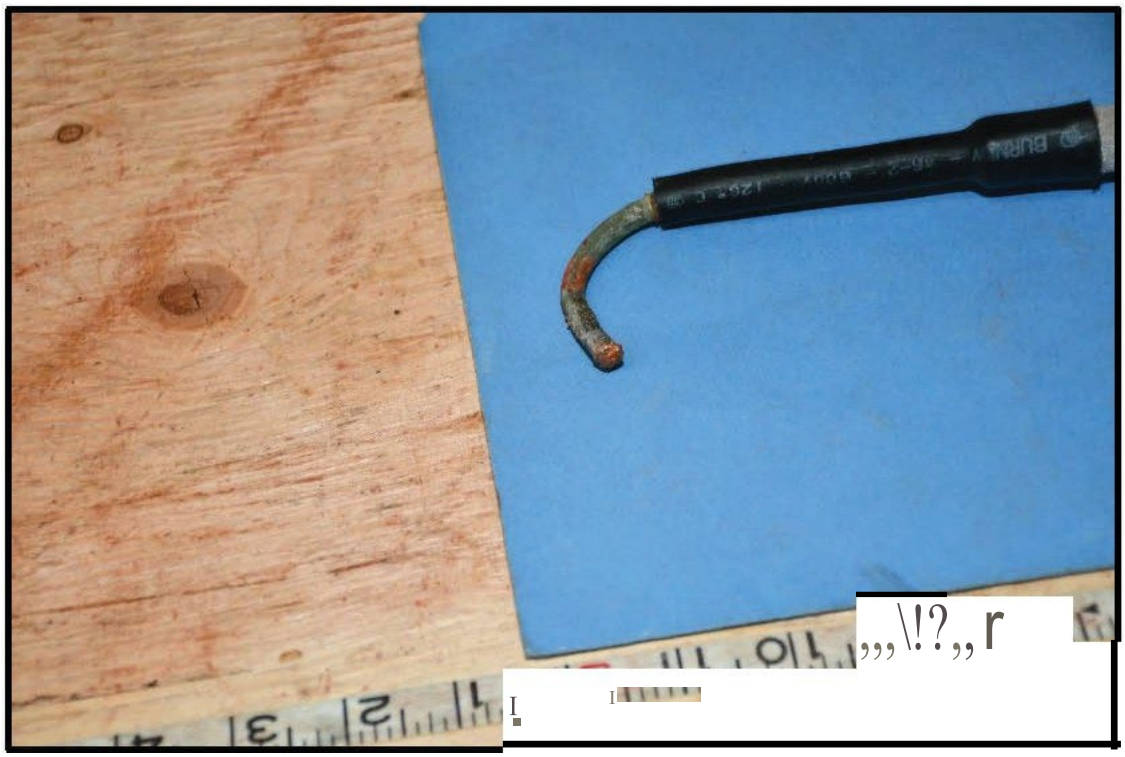


Figure 89. 187721_741362-Lahaina DB#28

Figure 90. 187721_741382-Lahaina DB#28

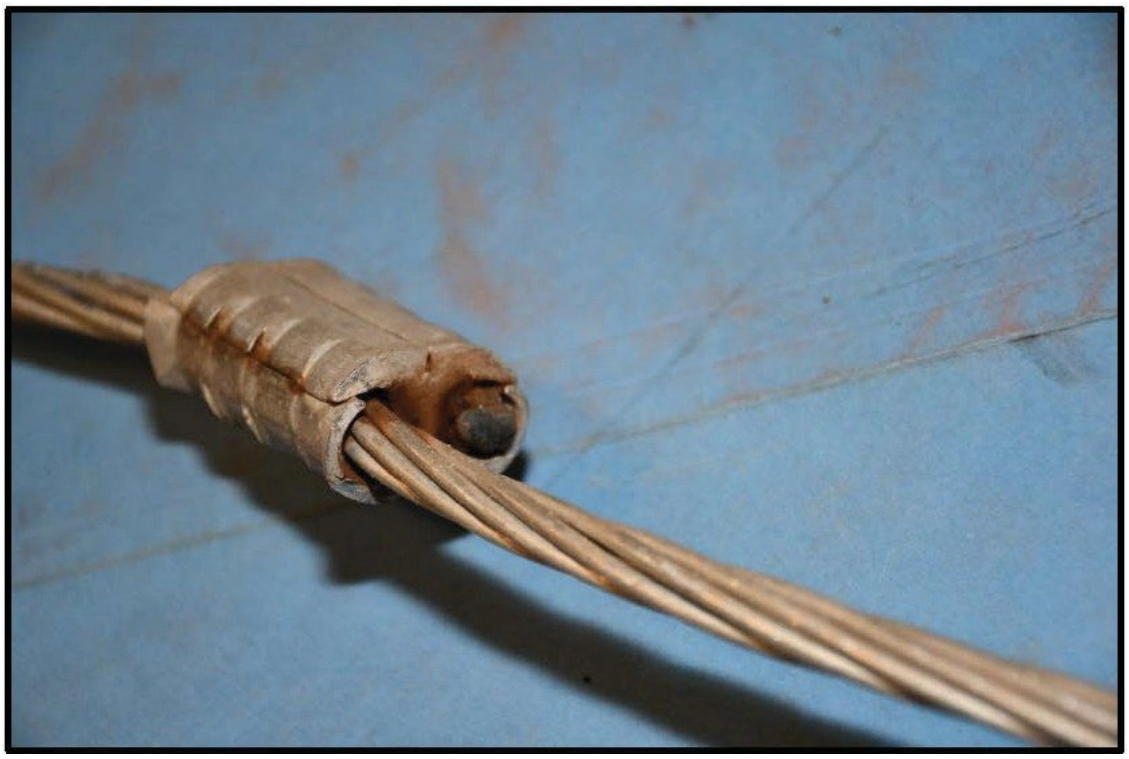


Figure 91. 187721_741490-Lahaina DB#29

Figure 92. 187721_741439-Lahaina DB#30

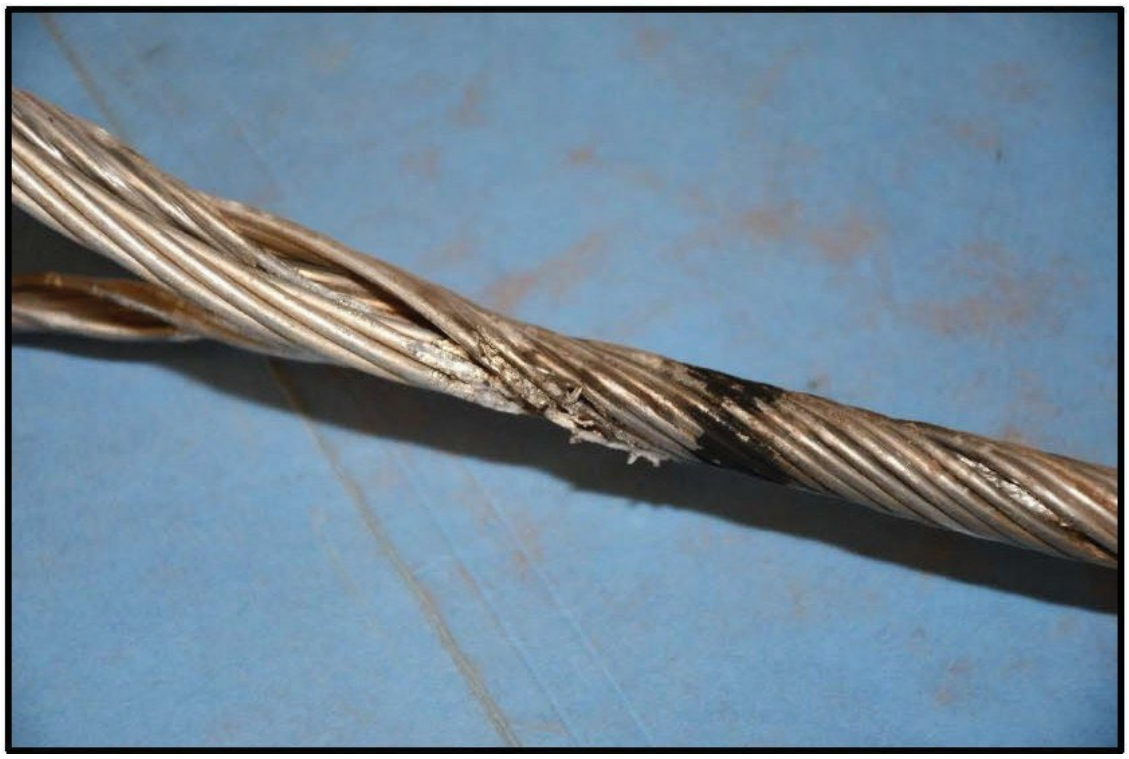


Figure 93. 187721_741442-Lahaina DB#30

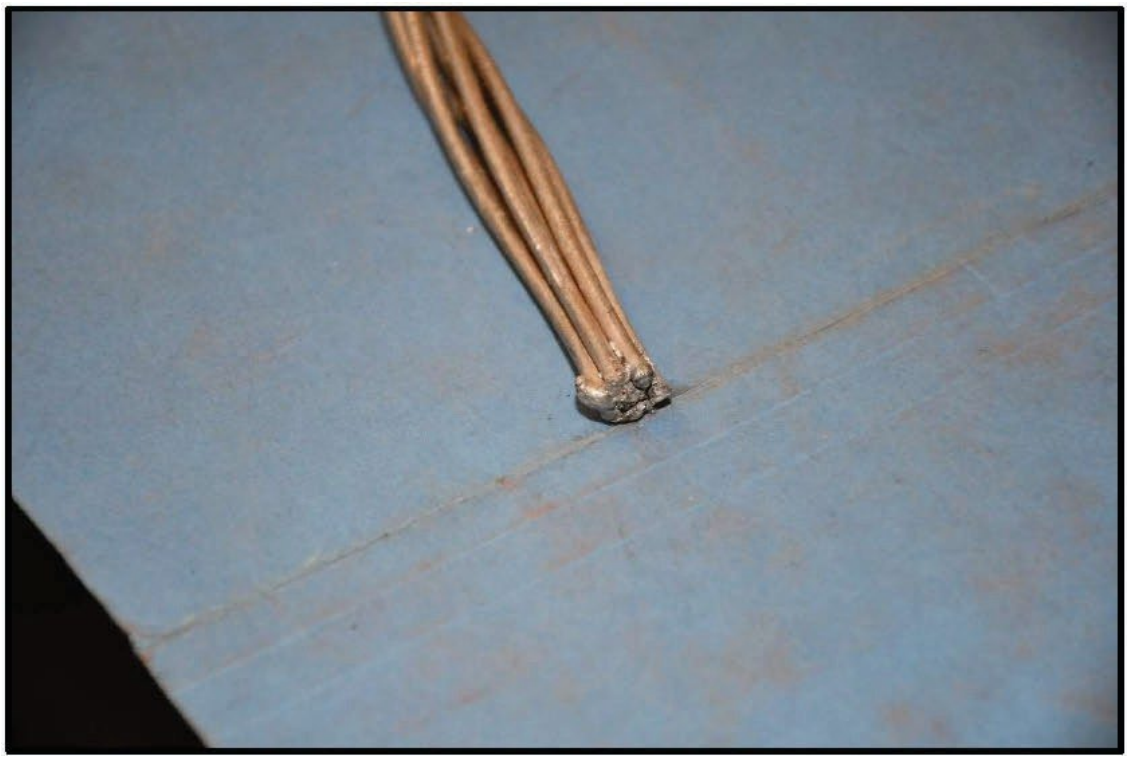


Figure 94. 187721_741457 -Lahaina DB#30

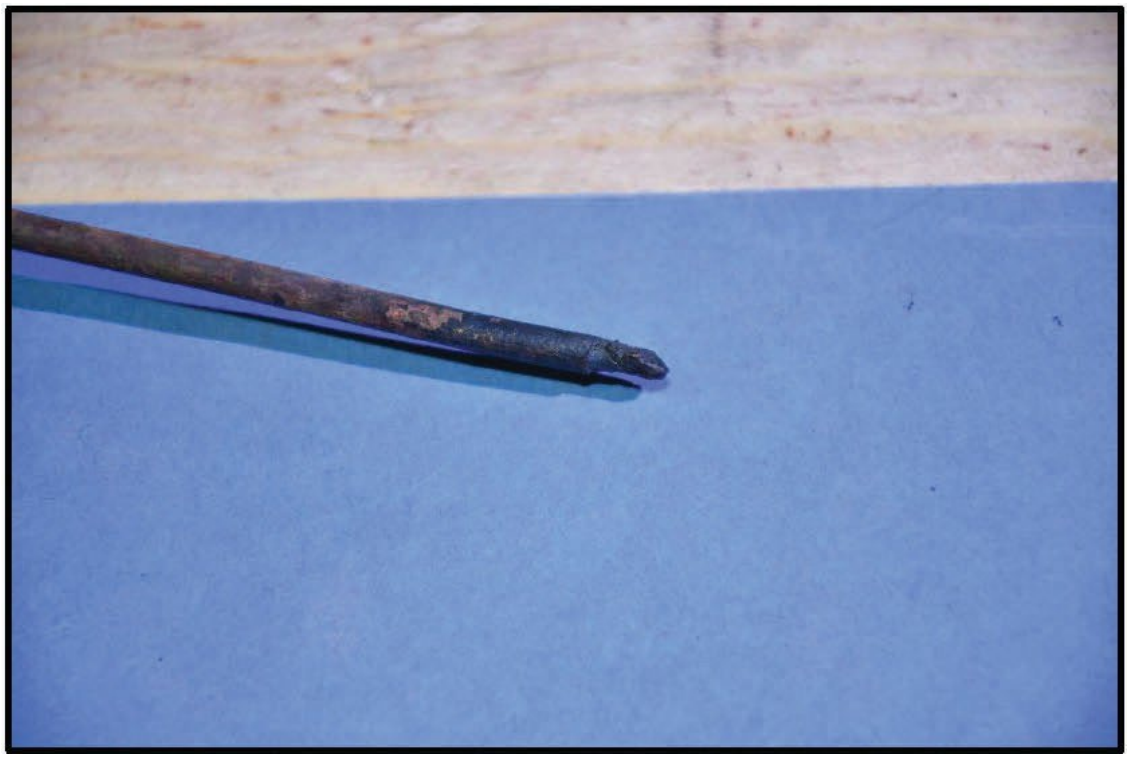


Figure 95. 187721_741649-Lahaina DB#39

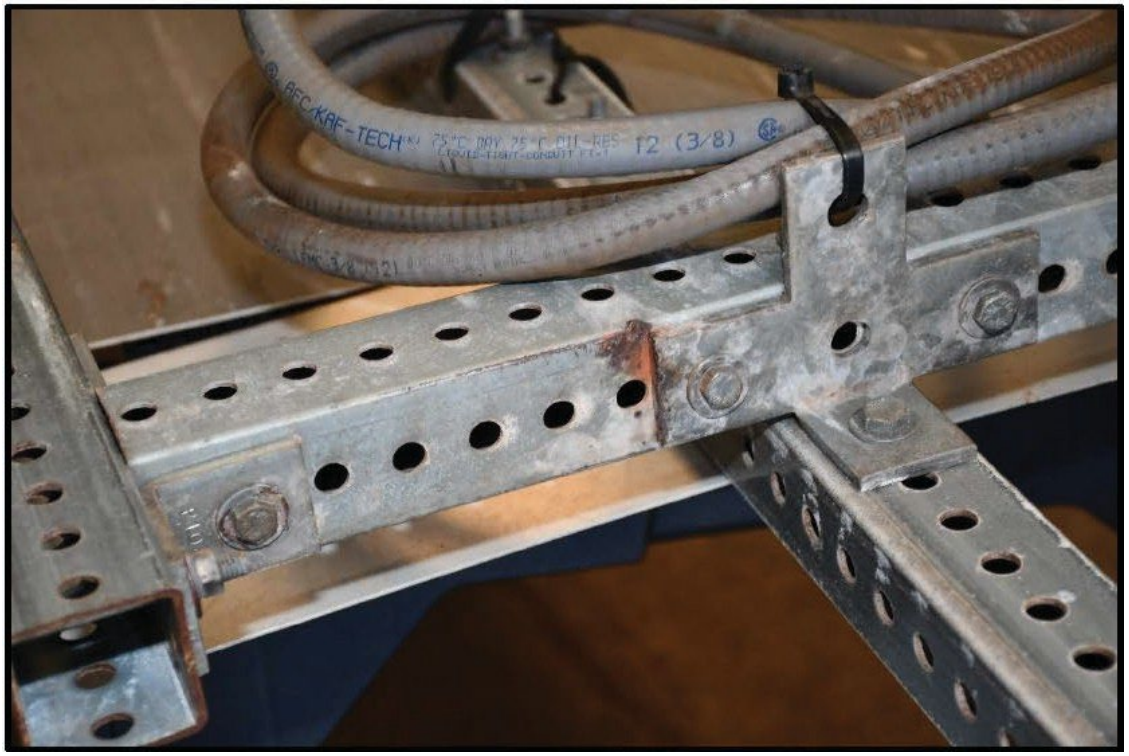


Figure 96. 187721_744069-Lahaina JS#3

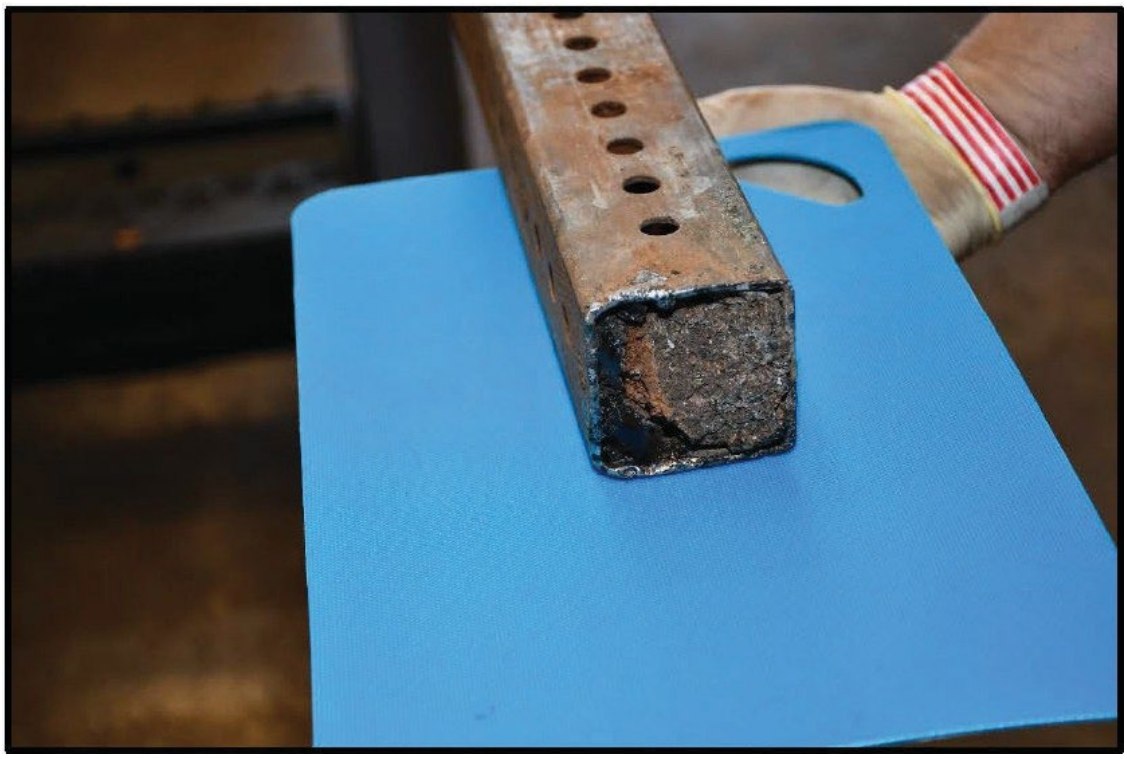


Figure 97. 187721_744114-Lahaina JS#3

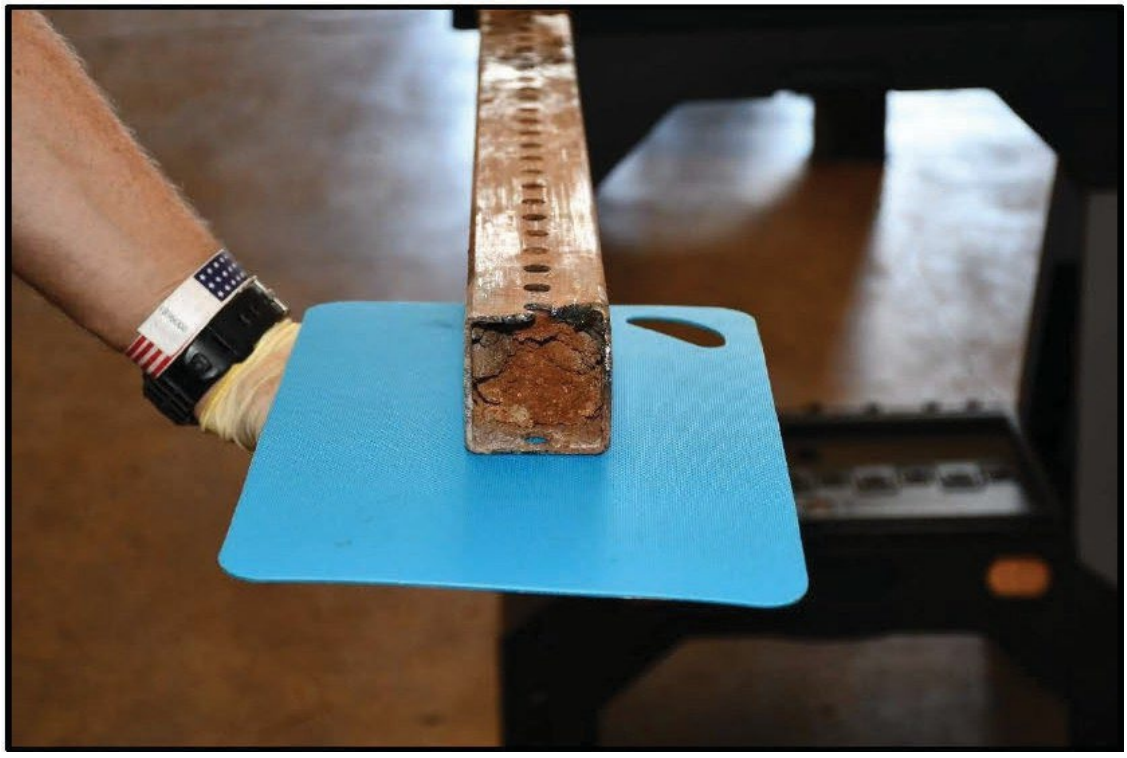


Figure 98. 187721_744120-Lahaina JS#3

Figure 99. 187721_744659-Lahaina JS#4

DISCUSSION

Based on analysis of utility electrical event data, witnessed and reported events, and co-incidental events from witness memory at estimated times:

- The 04:59 hours flash towards the Lahaina High School observed and reported to 911 [redacted] flash observed by W-12 at approximately 05:00 hours (based on recollection) towards the mountain, coincide with the MECO electrical events that occurred at 05:00 hours which resulted in a loss of power to the area, including addres[redacted] ([redacted] W-2).

- The 911 call resulted in the dispatch of E3 to investigate a call in the area of [redacted]hainaluna Road (Lahaina High School). E3 reports no fire in that area at 05:11 hours but reports broken Utility Pole 7A to dispatch at 05:14 hours, who then notify MECO at 05:29 hours.

- This is followed by MECO Asset [redacted] travelling through the area of Lahainaluna Road and Ho'okahua Street between 05:39 [redacted]urs and 05:47 hours. This vehicle is likely the vehicle with flashing lights described by W-2 after waking up to no power in the area (based on no power at his residence and the streetlight being off across the street). Per the utility, MECO Asset [redacted] (also known as truck [redacted]) is equipped with an amber warning light) and was operated by a troubleman in response to the 05:00 hour faults indicated on the Lahaina-Lahainaluna transmission line. This transmission line runs between the Lahainaluna Substation and the Lahaina Substation and serves Distribution Circuit [redacted] . The utility described the troubleman's primary responsibility during this response was to visually inspect the transmission line located in the field to the South of the intersection of Lahainaluna Road and the dirt alley known as Ho'okahua Street where Utility Pole 7A was located. Upon completion of this survey, the Troubleman did not report any observed down transmission or distribution equipment to the control center.

- The sequence of electrical events at 05:00 and subsequent witness events are likely associated with Utility Pole 7A breaking.

The "crackling" broken power line observed along the grassy area between the sidewalk and the street indicate it was still energized after the initial electrical events and morning fire was reported. The arcing and creation of fulgurites continued until a sufficient fault occurred at 06:39 hours on the utility provided electrical data which resulted in a circuit breaker tripping.

Arcing on bare distribution circuit conductors can be caused by the flow of fault current due to inadequate separation (distance) or direct contact between energized conductors or components.

Fault current can flow during contact between energized utility components at different voltage potentials. This can include contact between energized phase conductors, neutral conductors, grounding conductors, grounded metallic objects, the ground itself or vegetation, such as the Golden Shower (Cassia Fistula) trees located on the grassy area between the roadway and sidewalk.

CONCLUSION

The fulgurites and re-solidified metallic material in the grassy area located between Lahainaluna Road and the sidewalk between Utility Pole 24 and Utility Pole 25 and corresponding arc melting observed on multiple points of the South Phase Conductor of Overhead Distribution Circuit [redacted] are consistent with arcing that occurred before the morning fire was reported at approximately 06:34 hours on August 8, 2023.

Utility Pole 25 contains a four-way intersection for Overhead Distribution Circ[redacted] with jumpers allowing for transition between the Northern portion of the circuit routed towards Utility Pole 7A, Southern portion of the circuit routed towards pole 25-1, Eastern portion of the circuit routed towards Utility Pole 26, and Western portion of the circuit routed towards Utility Pole 24.

Contact between overhead circuit components, including connection points, conductors, jumpers, the speed sign, and trees in the area between Utility Pole 24 and Utility Pole 25 due to wind related movement and tension and displacement created by the broken upper portion of Utility Pole 7A can result in arcing and the production of ejected molten metallic material in the form of sparks after the circuit was re-energized.

When the afternoon fire was reported at approximately 14:53 hours, the overhead lines associated with Distribution Circui[redacted] and the Lahaina, Puukolii, KWP1, KWP2, and Maalaea transmission lines were de-energized. There was no evidence of a local back-feed to the Lahaina and Puukolii transmission lines over the gully through distribution side connected generators, photovoltaic systems, battery storage systems, or other sources of electricity through Distribution Circuit Breaker[redacted] which remained opened after 06:41 hours.

REFERENCES

[1] "Hawaii Public Utilities Commission – Energy" Retrieved from https://puc.hawaii.gov/energy/ on July 10, 2024

[2] "About Us", Whisker Labs, Retrieved from https://www.whiskerlabs.com/about-us/ on July 10, 2024

[3] ATF-3 , Bureau of Alcohol, Tobacco, Firearms, and Explosives Report of Investigation (ROI 34), ATF IN# 787025-23-0030, June 4, 2024

[4] ATF-6 , Bureau of Alcohol, Tobacco, Firearms, and Explosives Report of Investigation (ROI 15), ATF IN# 787025-23-0030, August 24, 2023

[5] ATF-5 , Bureau of Alcohol, Tobacco, Firearms, and Explosives Report of Investigation (ROI 8), ATF IN# 787025-23-0030, August 23, 2023

[6] ATF-8 , Tobacco, Firearms, and Explosives Report of Investigation (ROI 5), ATF IN# 787025-23-0030, August 23, 2023

[7] ATF-5 , Bureau of Alcohol, Tobacco, Firearms, and Explosives Report of Investigation (ROI 6), ATF IN# 787025-23-0030, August 23, 2023

[8] ATF-8 , Bureau of Alcohol, Tobacco, Firearms, and Explosives Report of Investigation (ROI 23), ATF IN# 787025-23-0030, August 25, 2023

[9] ATF-2 , Bureau of Alcohol, Tobacco, Firearms, and Explosives Report of Investigation (ROI 33), ATF IN# 787025-23-0030, April 3, 2024

[10] ATF-4 , Bureau of Alcohol, Tobacco, Firearms, and Explosives Report of Investigation (ROI 16), ATF IN# 787025-23-0030, August 24, 2023

[11] ATF-7 , Bureau of Alcohol, Tobacco, Firearms, and Explosives Report of Investigation (ROI 27), ATF IN# 787025-23-0030, August 25, 2023

[12] ATF-6 , Bureau of Alcohol, Tobacco, Firearms, and Explosives Report of Investigation (ROI 7), ATF IN# 787025-23-0030, August 25, 2023

PHOTOGRAPHS, IMAGES, OR VIDEO

Photographs, radiographic (X-ray) images, or video taken during the examination are stored in the FRL's data retrieval system, FireTOSS.

Examiner:

ATF-5

Electrical Engineer
ATF Fire Research Laboratory

Technical Reviewer:

ATF-14

Chief, Engineering Section
ATF Fire Research Laboratory

Administrative Reviewer:

ATF-15

Chief
ATF Fire Research Laboratory

APPENDIX - LAHAINA ELECTRICAL TIMELINE

No.	TIME	CIRCUIT	EVENT	SOURCE
1	00:03:25	Lahaina Intennediate School Meter [redacted]	Sag Started Phase C	MECO-ATF-1621
2	00:53:24	Lahaina Inte1mediate School Meter [redacted]	Sag Stopped Phase C	MECO-ATF-1621
3	00:53:24	Lahaina Inte1mediate School Meter [redacted]	Sag Stopped Phase A	MECO-ATF-1621
4	01:01:58	Lahaina Intennediate School Meter [redacted]	Sag Started Phase A	MECO-ATF-1621
5	01:04:15	Lahaina Inte1mediate School Meter [redacted]	Sag Started Phase C	MECO-ATF-1621
6	01:28:46	Lahaina Inte1mediate School Meter [redacted]	Sag Stopped Phase C	MECO-ATF-1621
7	01:28:50	Lahaina Inte1mediate School Meter [redacted]	Sag Stopped Phase A	MECO-ATF-1621
8	02:44:30	LN LAHA-KWP2 BU 69KV (Subl [redacted] KWP2 Line)	FLTA A PHASE FAULT	MECO-ATF-1615
9	02:44:30	LAHAINA LN LAHA-KWP2 BU 69KV (Sub [redacted] KWP2 Line)	FLTC C PHASE FAULT	MECO-ATF-1615
10	02:44:30	LAHAINA LN LAHA-KWP2 BU 69KV (Sub. [redacted] KWP2 Line)	TRIP TRIP	MECO-ATF-1615
11	02:44:30	LAHAINACB [redacted]	BKROPEN	MECO-ATF-1615
12	02:44:44	Lahaina Inte1mediate School Meter [redacted]	Sag Started Phase A	MECO-ATF-1621
13	02:44:45	Lahaina Inte1mediate School Meter [redacted]	Sag Started Phase C	MECO-ATF-1621
14	03:51:29	LAHAINA RE LAY LAHA-KWP2 (Sub [redacted] KWP2 Line)	BU MBIT CHAN RLYl ALARM	MECO-ATF-1615
15	03:30:41	LAHAINA LN LAHA-KWPl BU 69KV (Sub [redacted] KWPl Line)	FLTA A PHASE FAULT	MECO-ATF-1615
16	03:30:41	LAHAINA LN LAHA-KWPl BU 69KV (Sub [redacted] KWPl Line)	FLTG GND FAULT	MECO-ATF-1615
17	03:30:41	LAHAINA LN LAHA-KWPl BU 69KV (Sub [redacted] KWPl Line)	TRIP TRIP	MECO-ATF-1615
18	03:30:41	LAHAINA CB [redacted]	BKROPEN	MECO-ATF-1615
19	03:37:30	LLUNA LN LLUNA-LAHA PRI 69KV (Sub [redacted] Lahaina Line)	LOSP LOSS SYNC POT	MECO-ATF-1617
20	03:37:30	LLUNACB [redacted]	BKROPEN	MECO-ATF-1617
21	03:37:30	LLUNACB [redacted]	BKROPEN	MECO-ATF-1617

22	03:44:37	LLUNA LN LLUNA-LAHA PRI 69KV (Sub [redacted] Lahaina Line)	AMPA OVERLOAD HIGH cuffent value: 251.3 high limit: 250.0	MECO-ATF-1617
23	03:51:17	LLUNA LN LUNA-LAHA BU 69KV (Sub [redacted] Lahaina Line)	AMPB OVERLOAD HIGH c1ment value: 250.3 high limit: 250.0	MECO-ATF-1617
24	03:51:17	LLUNA RELAY LUNA-LAHA (Sub [redacted] Lahaina Line)	PRI DIFF CHANN RLY1 ALARM	MECO-ATF-1617
25	03:51:24	LAHAINA LN LAHAINA-LLUNA PRI 69KV (Sub [redacted] To LLUNA Line)	MW OVERLOAD LOW Cllffent value: -30.1 low limit: -30.0	MECO-ATF-1615
26	04:02:27	LAHAINA LN LAHAINA-LLUNA PRI 69KV (Sub [redacted] To LLUNA Line)	MW OVERLOAD LOW c1ment value: -30.1 low limit: -30.0	MECO-ATF-1615
27	04:03:49	LAHAINA LN LAHAINA-LLUNA PRI 69KV (Sub [redacted] To LLUNA Line)	MVAR EMERGENCY LOW cm1·ent value: -25.6 low lin1it: -24.0	MECO-ATF-1615
28	04:03:49	LAHAINA LN LAHAINA-LLUNA PRI 69KV (Sub [redacted] To LLUNA Line)	AMPA IN SATURATION UNREASONABLE VALUE 640.5 LIMIT VALUE600.0	MECO-ATF-1615
29	04:03:49	LAHAINA LN LAHAINA-LLUNA PRI 69KV To LLUNA Line)	AMPC EMERGENCY HIGH cm1·ent value: 519.2 high lin1it: 350.0	MECO-ATF-1615
30	04:03:49	LAHAINA LN LAHAINA-PUUKOLII 69KV (Sub [redacted] To Puukolii Line)	MVAR OVERLOAD HIGH c1ment value: 25.9 high limit: 24.0	MECO-ATF-1615
31	04:03:49	LAHAINA LN LAHAINA-PUUKOLII 69KV (Sub [redacted] To Puukolii Line)	AMPA IN SATURATION UNREASONABLE VALUE 609.5 LIMIT VALUE400.0	MECO-ATF-1615
32	04:03:49	LAHAINA LN LAHAINA-PUUKOLII 69KV (Sub [redacted] To Pukalani Line)	AMPC IN SATURATION UNREASONABLE VALUE 432.6 LIMIT VALUE400.0	MECO-ATF-1615
33	04:04:07	[redacted] S. Niheu Street Meter	Sag Started Phase A	MECO-ATF-1621
34	04:04:08	[redacted] S. Niheu Street Meter [redacted]	Sag Stopped Phase A	MECO-ATF-1621
35	04:50:19	Lahaina Intennediate School Meter [redacted]	Sag Stopped Phase C	MECO-ATF-1621
36	05:00:33	LLUNA CB [redacted]	BKROPEN	MECO-ATF-1617
37	05:00:33	LAHAINA CB [redacted]	BKROPEN	MECO-ATF-1615

38	05:00:33	Lahaina High School Meter	Power Down	MECO-ATF-1621
39	05:00:34	MAALAEA CB	AMPA EMERGENCY HIGH c1ment value: 490.0 high limit: 450.0	MECO-ATF-1617
40	05:00:35	LLUNA LN LUNA-LAHA BU 69KV (Sub [redacted] Lahaina Line)	FLTA A PHASE FAULT	MECO-ATF-1617
41	05:00:35	LLUNA LN LUNA-LAHA BU 69KV (Sub [redacted] Lahaina Line)	FLTB B PHASE FAULT	MECO-ATF-1617
42	05:00:35	LLUNA LN LUNA-LAHA BU 69KV (Sub [redacted] Lahaina Line)	FLTGGNDFAULT	MECO-ATF-1617
43	05:00:35	LLUNA LN LUNA-LAHA BU 69KV (Sub [redacted] Lahaina Line)	TRIP TRIP	MECO-ATF-1617
44	05:00:35	LLUNA RELAY LUNA-LAHA (Sub [redacted] Lahaina Line)	BU DIFF RELAY RLYI ALARM	MECO-ATF-1617
45	05:00:37	[redacted] S. Niheu Street Meter	Power Down	MECO-ATF-1621
46	05:00:48	Lahaina Inte1mediate School Meter	Power Down	MECO-ATF-1621
47	05:00:52	[redacted] S. Niheu Street Meter	Power Down	MECO-ATF-1621
48	05:00:52	[redacted] S. Niheu Street Meter	Power Down	MECO-ATF-1621
49	05:01:14	[redacted] Kuialua Street Meter	Power Down	MECO-ATF-1621
50	05:10:00	LAHAINA CB [redacted]	BKR OPEN	MECO-ATF-1615
51	05:35:35	LAHAINA CB [redacted]	BKR OPEND By [redacted]	MECO-ATF-1615
52	06:00:30	LLUNA CB [redacted]	BKR CLOSED By [redacted]	MECO-ATF-1617
53	06:00:30	LLUNA LN LUNA-LAHA BU 69KV (Sub [redacted] Lahaina Line)	FLTANORMAL	MECO-ATF-1617
54	06:00:30	LLUNA LN LUNA-LAHA BU 69KV (Sub [redacted] Lahaina Line)	FLTBNORMAL	MECO-ATF-1617
55	06:00:30	LLUNA LN LUNA-LAHA BU 69KV (Sub [redacted] Lahaina Line)	FLTGNORMAL	MECO-ATF-1617
56	06:00:30	LLUNA LN LUNA-LAHA BU 69KV (Sub [redacted] Lahaina Line)	TRIPNORMAL	MECO-ATF-1617
57	06:00:30	LLUNA RELAY LUNA-LAHA (Sub [redacted] Lahaina Line)	BU DIFF RELAY RLYI NORMAL	MECO-ATF-1617
58	06:01:37	LAHAINA CB [redacted]	BKR CLOSED By [redacted]	MECO-ATF-1615

59	06:04:00	LAHAINA CB [redacted]	BKR CLOSED By [redacted]	MECO-ATF-1615
60	06:05:11	LAHAINA CB [redacted]	BKR OPEN By [redacted]	MECO-ATF-1615
61	06:07:00	LAHAINA CB [redacted]	BKR CLOSED By [redacted]	MECO-ATF-1615
62	06:07:35	Lahaina High School Meter [redacted]	Power Up	MECO-ATF-1621
63	06:07:41	[redacted] S. Niheu Street Meter [redacted]	Power Up	MECO-ATF-1621
64	06:07:52	Lahaina Inte1mediate School Meter [redacted]	Power Up	MECO-ATF-1621
65	06:07:56	[redacted] S. Niheu Street Meter [redacted]	Power Up	MECO-ATF-1621
66	06:07:56	[redacted] S. Niheu Street Meter [redacted]	Power Up	MECO-ATF-1621
67	06:08:17	[redacted] Kuialua Street Meter [redacted]	Power Up	MECO-ATF-1621
68	06:09:00	Lahaina Inte1mediate School Meter [redacted]	Sag Started Phase B	MECO-ATF-1621
69	06:09:13	Lahaina Inte1mediate School Meter [redacted]	Sag Started Phase C	MECO-ATF-1621
70	06:09:13	Lahaina Intennediate School Meter [redacted]	Sag Started Phase A	MECO-ATF-1621
71	06:33:19	[redacted] S. Niheu Street Meter [redacted]	Power Down	MECO-ATF-1621
72	06:33:21	[redacted] S. Niheu Street Meter [redacted]	Power Up	MECO-ATF-1621
73	06:33:30	Lahaina Intennediate School Meter [redacted]	Power Down	MECO-ATF-1621
74	06:33:33	[redacted] S. Niheu Street Meter [redacted]	Power Down	MECO-ATF-1621
75	06:33:33	[redacted] S. Niheu Street Meter [redacted]	Power Down	MECO-ATF-1621
76	06:33:34	[redacted] S. Niheu Street Meter [redacted]	Power Up	MECO-ATF-1621
77	06:33:36	[redacted] S. Niheu Street Meter [redacted]	Power Up	MECO-ATF-1621
78	06:33:55	[redacted] Kuiaiua Street Meter [redacted]	Power Down	MECO-ATF-1621
79	06:33:57	[redacted] Kuialua Street Meter [redacted]	Power Up	MECO-ATF-1621
80	06:39:48	LAHAINA CB [redacted]	BKROPEN	MECO-ATF-1615
81	06:39:50	LLUNA CB [redacted]	BKROPEN	MECO-ATF-1617
82	06:39:49	Lahaina High School Meter [redacted]	Power Down	MECO-ATF-1621
83	06:39:50	LAHAINA LN LAHAINA-LLUNA PRI 69KV (Sub [redacted] To LLUNA Line)	TRIP TRIP	MECO-ATF-1615
84	06:39:50	LLUNA LN LUNA-LAHA BU 69KV Su [redacted] Lahaina Line	FLTA A PHASE FAULT	MECO-ATF-1617

85	06:39:50	LLUNA LN LUNA-LAHA BU 69KV (Sub [redacted] Lahaina Line)	FLTBB PHASE FAULT	MECO-ATF-1617
86	06:39:50	LLUNA LN LUNA-LAHA BU 69KV (Sub [redacted] Lahaina Line)	FLTG GND FAULT	MECO-ATF-1617
87	06:39:50	LLUNA LN LUNA-LAHA BU 69KV (Sub [redacted] Lahaina Line)	TRIP TRIP	MECO-ATF-1617
88	06:39:50	LLUNA RELAY LUNA-LAHA (Sub [redacted] Lahaina Line)	BU DIFF RELAY RLYl ALARM	MECO-ATF-1617
89	06:39:52	LLUNA LN LLUNA-LAHA PRI 69KV (Sub [redacted] Lahaina Line)	TRIP TRIP	MECO-ATF-1617
90	06:39:52	LLUNA RELAY LUNA-LAHA (Sub [redacted] Lahaina Line)	PRI DIFF CHANN RLYl ALARM	MECO-ATF-1617
91	06:39:53	[redacted] S. Niheu Street Meter [redacted]	Power Down	MECO-ATF-1621
92	06:40:02	[redacted] Kuialua Street Meter [redacted]	Power Down	MECO-ATF-1621
93	06:40:08	[redacted] S. Niheu Street Meter [redacted]	Power Down	MECO-ATF-1621
94	06:40:08	[redacted] S. Niheu Street Meter [redacted]	Power Down	MECO-ATF-1621
95	06:41:00	LAHAINA CB [redacted]	BKROPENBy [redacted]	MECO-ATF-1615
96	07:48:08	MAALAEA CB [redacted]	BKROPEN	MECO-ATF-1617
97	15:44:11	MAALAEA CB [redacted]	BKR CLOSED By [redacted]	MECO-ATF-1617
98	19:40:27	MAALAEA CB [redacted]	BKR OPEN By [redacted]	MECO-ATF-1617

Maui Fire Department/ATF
Lahaina Fire Origin and Cause Timeline

EVENT	TIME	TYPE	EVENT	SOURCE
01	00:03 – 02:44	HARD	LAHAINA INTERMEDIETE SCHOOL METER SAGGING VOLTAGE	MECO
02	00:03 – 05:00	SOFT	STREETLIGHT ON UTILITY POLE 26 DIMMING ON/OFF/ON/OFF…	LAHAINA INTERMEDIATE SCHOOL VIDEO, ROI 34
03	02:44	HARD	LAHAINA LN LAHA-KWP2 BU 69KV TRIP	MECO
04	03:00	SOFT	RESIDENT AT address (W-10) SAYS POWER IS OUT AT 0300	MFD REPORT FIWS 019
05	03:03 – 04:00	SOFT	address - POWER GOES OUT PER W-3 / W-2 *REFER TO ATF ELECTRICAL EXAMINATION REPORT FOR CLARIFICATION	ROI 006
06	03:30	HARD	LAHAINA LN LAHA-KWP1 BU 69KV TRIP	MECO
07	03:37	HARD	CIRCUIT BREAKER [redacted] AND [redacted] OPEN.	MECO
08	03:44 – 04:03	HARD	VARIOUS OVERLOAD ALARMS ON THE 69 KV LAHAINA AND 69 KV PUUKOLII TRANSMISSION LINE.	MECO
09	04:00	SOFT	W-2 & W-3 (address LOOKS OUT WINDOW SEES YELLOW FLASHING LIGHTS OF WHAT HE ASSUMES IS A MECO VEHICLE *REFER TO ATF ELECTRICAL EXAMINATION REPORT FOR CLARIFICATION	ROI 006
10	04:02	HARD	911 CALL - SECURITY REPORTS A LOUD EXPLOSION FROM [redacted] IPU WAI	CAD RMS 23-0012437

			LN – FIRE RESPONDS AND DOES NOT FIND ANYTHING IN THE AREA – THEY ARE LOCATED TO THE SOUTH OF ORIGIN TO THE WEST OF HIGHWAY	
11	04:04	HARD	ELECTRIC METER FOR [redacted] S. NIHEU STREET VOLTAGE SAGGING	MECO
12	04:59	HARD	911 CALL [redacted W-20] - CALLER ADVISES THEY SEE "FLAMES" IN DISTANCE TOWARD HIGH SCHOOL FROM HER BEDROOM WINDOW ON [redacted]. ([redacted]). E3 RESPONDS TO INVESTIGTATE.	CAD RMS 23-0012439, ROI 015
13	05:00	HARD	CIRCUIT BREAKER [redacted] AND [redacted] OPEN. THE LAHAINA INTERMEDIATE SCHOOL CAMERA SYSTEM GOES OFFLINE. A FAULT ON THE 69 KV LAHAINA (LAHAINA-LAHAINALUNA) TRANSMISSION LINE RESULTS IN A TRIP AND AN OPEN CIRCUIT. METERS GO OFFLINE FOR: ▪ LAHAINA HIGH SCHOOL ▪ [redacted]NIHEU STREET ▪ LAHAINA INTERMEDIATE SCHOOL ▪ [redacted]NIHEU STREET ▪ [redacted]NIHEU STREET ▪ [redacted]IALUA STREET	MECO
14	05:00	HARD	BASED ON SCHOOL VIDEO THE POWER DROPS IN THE AREA – LAHAINA INTERMEDIATE SCHOOL PRINCIPAL	ROI 016
15	05:00	SOFT	[redacted address] - POWER GOES OUT PER RESIDENT ([redacted W-9])	ROI 008

16	05:00	SOFT	address – W-12 SEES A FLASH – HER BEDROOM FACES TOWARDS THE MOUNTAIN – ALSO SAYS POWER WENT OUT BECAUSE LIGHTS WENT OUT IN HOUSE	ROI 005
17	05:01	HARD	MFD E3 DISPATCHED TO INVESTIGATE AN ODOR OF SMOKE IN THE AREA OF 980 LAHAINALUNA ROAD.	CAD RMS 23-0012439
18	05:05	SOFT	W-6 (INTERMEDIATE SCHOOL CUSTODIAN) ON WAY TO WORK AT INTERMEDIATE SCHOOL SAYS POWER LINES AT TOP OF POLE ABOVE BUS STOP ON LAHAINALUNA RD AND KUIALUA ST WERE SPARKING AT POLE 21B	ROI 017; MFD FIWS 011
19	05:10	HARD	CIRCUIT BREAKER [redacted] OPENS.	MECO
20	05:11	HARD	E3 ADVISES DISPATCH THAT THEY CONTACTED CALLER AND NO FIRE	RT 2023-AUG-08 05_11_44 CH=FD 1.WAV
21	05:14	HARD	MFD E3 SELF-REPORT TO DISPATCH FOR SNAPPED POWER POLE ACROSS FROM POLE 25 (7A) BELOW HIGH SCHOOL – MFD-1	CAD RMS 23-0012441, ROI 23, ROI 37 RT 05_13_54 CH=FD 1
22	05:29	HARD	MPD DISPATCH CONTACTS MECO ADVISING THAT POWER POLE 25 (ACTUALLY 7A) AT LAHAINALUNA RD AND KUIALUA ST.	POLE 25 LLUNA RD080823.WAV CAD RMS 23-0012441 ROI 37
23	05:35	HARD	CIRCUIT BREAKER [redacted] IS OPENED.	MECO
24	05:39	HARD	MECO ASSET [redacted] HEADED NEE UP LAHAINALUNA RD, JUST WEST OF	MECO ASSET GPS DATA SPREADSHEET/ROI 33

			INTERSECTION OF LAHAINALUNA RD AND KUIALUA ST [redacted] LAHAINALUNA RD)	
25	05:39 – 05:42	HARD	MECO ASSET [redacted] PROCEEDS UP LAHAINALUNA RD PAST AREA OF POLE 25 AND ALLEY CONTAINS POLE 7A (HOOKAHUA ST)	MECO ASSET GPS DATA SPREADSHEET/ROI 33
26	05:42 – 05:45	HARD	MECO ASSET [redacted] APPEARS TO TURN AROUND IN INTERMEDIATE SCHOOL PARKING LOT (882 LAHAINALUNA RD	MECO ASSET GPS DATA SPREADSHEET/ROI 33
27	05:45 – 05:47	HARD	MECO ASSET [redacted] PROCEEDS DOWN LAHAINALUNA RD PAST AREA OF POLE 25 AND ALLEY CONTAINING POLE 7A (HOOKAHUA ST)	MECO ASSET GPS DATA SPREADSHEET/ROI 33
28	06:00	HARD	CIRCUIT BREAKER [redacted] IS CLOSED.	MECO
29	06:00	SOFT	PRINCIPAL [redacted] W-5 ARRIVES AT SCHOOL – POWER IS ON	ROI 016
30	06:01	HARD	CIRCUIT BREAKER [redacted] IS CLOSED.	MECO
31	06:04	HARD	CIRCUIT BREAKER [redacted] IS CLOSED.	MECO
32	06:05	HARD	CIRCUIT BREAKER [redacted] IS OPENED.	MECO
33	06:07	HARD	CIRCUIT BREAKER [redacted] IS CLOSED.	MECO
34	06:07	HARD	ELECTRIC METERS GO ONLINE FOR: ○ LAHAINA HIGH SCHOOL ○ [redacted] S. NIHEU STREET ○ LAHAINA INTERMEDIATE SCHOOL ○ [redacted] S. NIHEU STREET [redacted] S. NIHEU STREET	MECO

			○ [redacted] KUIALUA STREET	
35	06:09	HARD	THE ELECTRIC METER FOR LAHAINA INTERMEDIATE SCHOOL BEGAN EXPERIENCING PHASE A, PHASE B, AND PHASE C VOLTAGE SAGGING.	MECO
36	06:10 – 06:20	SOFT	LAHAINA HIGH SCHOOL FOOD SERVICE MANAGER W-11 [redacted] REPORTS WALK-IN FREEZER FANS INSIDE THE UNIT RUNNING AT ½ SPEED. NORMALLY THEY ARE OFF OR RUNNING AT FULL SPEED.	ROI 027
37	06:15 – 06:36	SOFT	W-3 / W-2 .) TAKES PICTURE OF TOP OF POLE 7A DURING SUNLIGHT. W-2 & W-3 OBSERVED A FIRE AT THE BASE OF THE UTILITY POLE ACROSS THE STREET (LATER IDENTIFIED AS UTILITY POLE 25). HE DESCRIBED THE 2-3 FT. TALL GRASS AROUND THE BASE ON FIRE. HE STATED THAT A POWER LINE RUNNING FROM THIS POLE TO THE NEXT POLE TO THE WEST (LATER IDENTIFIED AS UTILITY POLE 24) WAS BROKEN AND "CRACKLING LIKE FIREWORKS" ALONG THE GRASS BETWEEN THE SIDEWALK AND THE STREET	ROI 006 W-2 & W-3 PHOTOS PONG8109, SBZI4059
38	06:33	HARD	ELECTRIC METERS FLUCTUATE FOR: ○ [redacted] S. NIHEU STREET ○ LAHAINA INTERMEDIATE SCHOOL ○ [redacted] S. NIHEU STREET ○ [redacted] S. NIHEU STREET ○ [redacted] KUIALUA STREET	MECO

39	06:34	HARD	FIRE REPORTED TO 911 BY [redacted] W-1 [redacted] ([redacted] Address [redacted] KU'IALUA ST.) HEARS A BOOM, OBSERVES SPARKS, SEE FIRE AT THE BASE OF POLE 24	CAD RMS 23-0012446, ROI 007 2023-AUG-08 06_34_45 CH=CFT1-911.WAV
MORNING FIRE REPORTED				
40	06:35	HARD	FIRE REPORTED TO 911 BY [redacted] W-3 [redacted] ([redacted] address [redacted])	2023-AUG-08 06_35_16 CH=CFT1-911.WAV ROI 006
41	06:36	HARD	E3, T3 DISPATCHED TO BRUSH FIRE ON LAHAINALUNA RD ACROSS FROM INTERMEDIATE SCHOOL	CAD RMS 23-0012446, RT 06_36_30 CH=FD 1
42	06:36	HARD	VIDEO FROM [redacted] W-3 [redacted] ([redacted] address [redacted]) OF THE FIRE ON THE GROUND AT POLE 25– 3 VIDEOS FROM 0636, 0637, AND 00638	ROI 006
43	06:39	HARD	○ CIRCUIT BREAKER [redacted] AND [redacted] OPEN. ○ A FAULT ON THE 69 KV LAHAINA (LAHAINA-LAHAINALUNA) TRANSMISSION LINE RESULTS IN A TRIP AND AN OPEN CIRCUIT ○ METERS GO OFFLINE FOR: ▪ LAHAINA HIGH SCHOOL ▪ [redacted] S. NIHEU STREET ▪ LAHAINA INTERMEDIATE SCHOOL ▪ [redacted] S. NIHEU STREET ▪ [redacted] S. NIHEU STREET ▪ [redacted] KUIALUA STREET	MECO
44	06:40	SOFT	[redacted] W-5 [redacted] / [redacted] W-6 [redacted] ATTEMPT TO FIGHT FIRE FROM LAHAINA INTERMEDIATE SCHOOL	ROI 016, ROI 017 MFD FIWS 010, 011

			USING WATER HOSE BY TEMP CLASSROOM UNIT (P8)	
45	06:41	HARD	CIRCUIT BREAKER [redacted] IS OPENED.	MECO
46	06:42	HARD	FIRST UNIT ON SCENE (ENGINE 3)– CAD – 500'X 500' ACRE WINDS BLOWING 30/NORTH APPROACHING HOUSES / HITTING TOP SIDE AND DEFEND THE HOMES	CAD RMS 23-0012446
47	06:42	HARD	E3 ARRIVES AT POLE 25; [redacted]. DESCRIBES 100'X100' BRUSH FIRE OPP. OF SCHOOL	ROI 023
48	06:43	HARD	PHOTO FROM W-7 (address) LOOKING NE SHOWING FIRE TRAVELLING DOWNHILL FROM UTILITY POLE 25	ROI 010
49	06:43	HARD	VIDEO FROM W-3 (address .) – ENGINE 3 IS FLOWING WATER AND HOSES OUT AT POLE 25 AND IT SHOWS THE GRASS ON FIRE TO THE EAST INSIDE THE FENCE NEAR [redacted] AND [redacted] HO'OKAHUA ST.	ROI 006
50	06:45	SOFT	FACEBOOK LIVE VIDEOS - [redacted] W-4 (address .) SHOWING THE FIRE ALONG ROAD BETWEEN POLES 25 AND 24 – VIDEO SHOWS Company-1 CONSTRUCTION TANKER ON SCENE	MFD REPORT FIWS 020
51	06:48	HARD	VIDEO FROM W-10 address .) SHOWING THE FIRE ALONG THE ROAD AT THE DOWNED POWER LINE	MFD REPORT FIWS 019 ATF HD IMG_5226

52	07:00	SOFT	W-7 & W-8 (address ST.) EVACUATES AND SEES FIRE APPARATUS IN CUL DE SAC AND ABOVE THEM – RADIANT HEAT ON THEIR DRIVEWAY FROM FIRE ALONG THE FENCE LINE TO THE SOUTH	ROI 010
53	07:48	HARD	CIRCUIT BREAKER [redacted] IS OPENED.	MECO
54	08:19	HARD	MFD-6 E3/E11/TANKER 3 – 08:20 HRS FIRE REPORTED 90% CONTAINED	CAD RMS 23-0012446
55	08:29	HARD	W-8 (address) – HAS 2 VIDEOS AND PHOTOS OF THE FIRE – ALL OF THEM SHOWING THE FIRE IS SMOLDERING ALONG THE FENCE LINE AND ALONG ROCKS ABOVE THE GULLY – VEGETATION STILL VISIBLE SHOWS TRUTH EXCAVATION ON SMALL Company-1 DOZER IN THE SCENE	ROI 26
56	08:52	HARD	MFD-6 [redacted] REPORTED TO [redacted]) AT THE EOC VIA THE MAUI FIRE DEPARTMENT WHATSAPP FIRE GROUP CHAT THAT THE LAHAINA FIRE WAS 100% CONTAINED.	ROI 024
MORNING FIRE DECLARED 100% CONTAINED				
57	09:00	SOFT	W-4 (address) REPORTS POLE BROKEN IN BACK ALLEY NEAR PRINCESS NAHIENAENA SCHOOL	MFD REPORT FIWS 020

58	11:24	HARD	PHOTO FROM W-22 (ATHLETIC DIRECTOR AT HIGH SCHOOL) SHOWING WINDSPEED SUSTAINED OF 44.5MPH FROM THE HIGH SCHOOL FROM HIS KESTREL (ANEMOMETER)	MFD REPORT FIWS 034
59	12:26	HARD	PER E3 MULTIPLE POLES (4) BROKEN IN DIRT ALLEY OF HO'OKAHUA ST. NEW BROKEN POLES WITH LINES DOWN ACROSS HOUSES.	RT 2023-AUG-08 12_26_36 CH=FD 1
60	12:30	SOFT	W-2 & W-3 (address) OBSERVE THE POWER LINE IS STILL ON GROUND ON LAHAINALUNA RD. – THERE IS NO FIRE OR SMOKE VISIBLE ANYWHERE	ROI 006
61	14:18	HARD	DISPATCH RADIO TRAFFIC – E3: CENTRAL FROM E3, MECO WORKING ON POWERLINE SITUATION ON NIHEU ST AND THE FIRE IS OUT. E3 LEAVING SCENE, TANKER 3, WILDLAND 3 RETURNING TO QUARTERS. DISPATCHER ASKS IF KU'IALUA AND HO'OKAHUA IS EXTINGUISHED. E3 RESPONDS AFFIMATIVE. (FIRE EXTINGUISHED) LAST APPARATUS CLEAR	CAD RMS 23-0012446 RT 2023-AUG-08 14_17_58 CH=FD 1
MORNING FIRE DECLARED EXTINGUISHED				
62	14:30	SOFT	E11 DRIVES PAST THE INCIDENT FIRE SCENE ALONG THE BYPASS HEADING S WHILE BEING REASSIGNED FROM THE NAPILI TO KAHULUI AND REPORTS NOTHING SHOWING	(E11 MFD-7 WRITTEN STMT) MFD REPORT FIWS 026

63	14:40	HARD	W-8 (address) HAS VIDEO SHOWING NO FIRE OR SMOKE IN AREA	ROI 26
64	14:48	HARD	E11 TRAVELLING FROM HOKIOKIO TO LAHAINA E11 DRIVES PAST FIRE SCENE AGAIN HEADING N AFTER BEING CANCELLED AND REPORTS NOTHING SHOWING	E11 MFD-7 REPORT FIWS 026 RT 2023-AUG-08 14_48_55 CH=FD 1.WAV
65	14:52	HARD	W-16 CALLS 911 ADVISING OF BRUSH FIRE BEHIND address HO'OKAHUA ST.	2023-AUG-08 14_52_40 CH=CST1-911.WAV
AFTERNOON FIRE REPORTED				
66	14:56	HARD	E3/T3/BC5 DISPATCHED BACK TO SCENE FOR FIRE AT KU'IALUA/HO'OKAHUA	CAD RMS 23-0012492 RT 2023-AUG-08 14_56_07 CH=FD 1.WAV
67	14:57	HARD	FROM W-7 (KU'IALUA ST) THE FIRE HAS STARTED AND IS GROWING RAPIDLY INSIDE THE CREEK BED TO THE SOUTH OF THEIR HOUSE. OBSERVED WEST END OF GENERAL ORIGIN AREA	ROI 010
68	14:57	HARD	VIDEO FROM W-17 AND W-18 (MECO EMPLOYEES) OF VISIBLE SMOKE AROUND THE KIAWE TREE. OBSERVED EAST END OF GENERAL ORIGIN AREA.	ROI 019
69	15:00	HARD	E11 FIRST UNIT ON SCENE REPORTING 20'X100' BRUSH FIRE, LOCATED WHERE THE EARLIER FIRE	CAD RMS 23-0012492 RT 2023-AUG-08 15_00_37

			WAS THAT DAY. FIRE WAS IN THE GULLY RUNNING WEST TOWARD THE BYPASS AT A RAPID PACE. (MFD-7)	CH=FD 1.WAV
70	15:07	HARD	MPD OFFICERS RESPOND TO SHED FIRE ON HOOKAHUA ST REPORTING A SHED ON FIRE AND ARE ATTEMPTING TO EXTINGUISH WITH GARDEN HOSE. PROPANE AT LOCATION.	RT 2023-AUG-08 15_07_30 CH=FD 2.WAV
71	15:09	HARD	E11 REPORTS A SHED ON FIRE (SHED THAT MPD IS ATTEMPTING TO EXTINGUISH)	RT 2023-AUG-08 15_09_12 CH=FD 2.WAV
72	15:13	HARD	RE11 - RESPONDING KUIALUA AND HOOKAHUA CUL-DE-SAC FOR SMALL SHED FIRE. E3 - WL3 IS ON BOTTOM (BACKSIDE OF HOMES ALONG HOOKAHUA PL) TO CONTAIN DOWNWIND SIDE, T3 ATTEMPTING TO HIT TREE AREA WITH UNINTERRUPTED BRUSH.	RT 2023-AUG-08 15_13_10 CH=FD 2.WAV
73	15:18	HARD	E11 – FIRE MOVING TOWARDS BYPASS QUICKLY RE11 ATTEMPTS TO STOP FIRE FROM JUMPING THE BYPASS FROM THE FIREBREAK. L3 ARRIVES ON SCENE AT THE BYPASS	2023-AUG-08 15_18_41 CH=FD 2.WAV
74	15:22	HARD	E11 – FIRE HOPPED BYPASS	CAD RMS 23-0012492 RT 2023-AUG-08 15_21_55 CH=FD 2.WAV
75	15:23	HARD	BC5 TELLS L3 TO COME TO KELAWEA MAUKA PARK THAT FIRE HAS JUMPED LAHAINALUNA ROAD AND IS BURNING TOWARD THE	RT 2023-AUG-08 15_23_41 CH=FD 2.WAV

			CARS IN THE PARK AREA. "FIRE IS WHIPPING QUICK"	
76	15:26	HARD	COMM – EXTREME FIRE CONDITIONS … SOUTH OF KELAWEA MAUKA PARK – POLICE NEED TO EVACUATE THE RESIDENTS	CAD RMS 23-0012492 RT 2023-AUG-08 15_25_36 CH=FD 2.WAV
77	15:26	HARD	COMM – ALL RESIDENTS NEED TO EVACUATE	CAD RMS 23-0012492
78	15:27	HARD	COMM – ALL RESIDENTS BELOW THE BYPASS	CAD RMS 23-0012492
79	15:27	HARD	T3 TELLS COMM THAT T3 IS INOPERABLE	RT 2023-AUG-08 15_27_34 CH=FD 2
80	15:28	HARD	L3 – WE HAVE A STRUCTURE ON FIRE (ADDRESS [redacted] LAHAINALUNA RD – L3 AO K. HO	CAD RMS 23-0012492 RT 2023-AUG-08 15_28_25 CH=FD 2.WAV
81	15:29	HARD	E3 - ATTEMPTING TO GET LOCATION OF WL3. WL3 - MAUKA PARK LOCATION ATTEMPTING TO PROTECT HOUSE. RE11 - TWO STRUCTURE ON FIRE [redacted] LAHAINALUNA RD, [redacted] KALENA)	RT 2023-AUG-08 15_29_48 CH=FD 2.WAV
82	15:31	HARD	RE11 – FIRE AT KAAKOLU ST	RT 2023-AUG-08 15_31_13 CH=FD 2.WAV
83	15:32	HARD	T3 BACK UP AND RUNNING	RT 2023-AUG-08 15_32_51 CH=FD 2.WAV
84	15:33	HARD	E11 - LINES BROKE READY TO REDEPLOY	RT 2023-AUG-08 15_33_43 CH=FD 2.WAV
85	15:34	HARD	L3 - SOMEONE IN BURNING HOUSE NORTH OF L3 POSITION (POSSIBLY [redacted] KALENA)	RT 2023-AUG-08 15_34_15 CH=FD 2.WAV

86	15:34	HARD	DISPATCH - TRAPPED PERSON [redacted] LAHAINALUNA RD. E11 DIRECTED TO RESCUE.	RT 2023-AUG-08 15_34_35 CH=FD 2.WAV
87	15:35	HARD	L3 - TWO ADDITIONAL STRUCTURES ON FIRE WITH POSSIBLY TWO PEOPLE INSIDE	RT 2023-AUG-08 15_35_52 CH=FD 2.WAV
88	15:36	HARD	L3 (STATED E3) - STRUCTURE WITH TWO PEOPLE IS [redacted] LAHAINALUNA RD.	RT 2023-AUG-08 15_36_51 CH=FD 2.WAV
89	15:37	HARD	RE11 - LOCATED KAALO PL STRUCTURES ON FIRE. (IN FIWS 013, STATED [redacted] AND [redacted] KAALO PL) E3 - STRUCTURE FIRE [redacted] KAAKOLU. POSSIBLY MORE ON FIRE. (IN FIWS 026, E11 STATED THAT [redacted], [redacted], AND [redacted] KAAKOLU STREET WERE ON FIRE)	RT 2023-AUG-08 15_37_34 CH=FD 2.WAV, AG 3552, FIWS 013
90	15:44	HARD	CIRCUIT BREAKER [redacted] IS OPENED	MECO
FIRE TRANSITIONS INTO LAHAINATOWN				