CAL FIRE

CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION
SONOMA-LAKE NAPA UNIT
1199 Big Tree Rd
St Helena, CA 94574

INVESTIGATION REPORT

CASE NUMBER:	17CALNU010055
CASE NAME:	Sulphur
DATE:	10/09/2017
INCIDENT TYPE:	Wildland Fire
INCIDENT INVESTIGATOR:	Joseph BALDWIN, Battalion Chief– LNU

1 - VIOLATION:

CALIFORNIA HEALTH AND SAFETY CODE § 13001

Every person is guilty of a misdemeanor who, through careless or negligent action, throws or places any lighted cigarette, cigar, ashes, or other flaming or glowing substance, or any substance or thing which may cause a fire, in any place where it may directly or indirectly start a fire, or who uses or operates a welding torch, tar pot or any other device which may cause a fire, who does not clear the inflammable material surrounding the operation or take such other reasonable precautions necessary to insure against the starting and spreading of fire.

PUBLIC RESOURCES CODE § 4292

Except as otherwise provided in Section 4296, any person that owns, controls, operates, or maintains any electrical transmission or distribution line upon any mountainous land, or forest-covered land, brush-covered land, or grass-covered land shall, during such times and in such areas as are determined to be necessary by the director or the agency which has primary responsibility for fire protection of such areas, maintain around and adjacent to any pole or tower which supports a switch, fuse, transformer, lightning arrester, line junction, or dead end or corner pole, a firebreak which consists of a clearing of not less than 10 feet in each direction from the outer circumference of such pole or tower. This section does not, however, apply to any line which is used exclusively as telephone, telegraph, telephone or telegraph messenger call, fire or alarm line, or other line which is classed as a communication circuit by the Public Utilities Commission. The director or the agency which has primary fire protection responsibility for the protection of such areas may permit exceptions from the requirements of this section which are based upon the specific circumstances involved.

2 - SUMMARY:

On Monday, October 9, 2017, at approximately 12:53 AM, CAL FIRE and cooperating agency units responded to a reported vegetation fire near Sulphur Bank Road and Pomo Road near the community of Clearlake Oaks in Lake County. Fire units contained the fire on October 20, 2017. The fire destroyed approximately 2207 acres, 134 residential structures, two commercial structures, and 26 outbuildings. The Sulphur Fire also damaged three outbuildings and five residential structures. The fire originated on the privately owned property north of Sulphur Bank Road and east of Pomo Road in the community of Clearlake Oaks.

During the origin and cause investigation I determined the fire was caused when a PG&E power pole weakened by bird damage, consistent with a woodpecker nesting cavity, broke and caused the top of the pole to fall to the ground. When the pole fell to the ground, it caused arching of the conductors which resulted in molten material being dropped into the fine dead fuels below causing the vegetation to catch fire. The fire burned uncontrolled onto numerous properties not owned or controlled by PG&E.

The fire occurred during a high fire hazard, red flag condition which was declared by the National Weather Service.

3 - SUBJECTS:

S-1 Pacific Gas and Electric Company
77 Beale Street, 24th Floor
Mail Code B24W
San Francisco, CA 940105
Phone: (415)973-8200

Owns electrical equipment which failed and caused the fire.

4 – VICTIMS, WITNESSES, & OTHERS:

VICTIMS:

The Sulphur Fire burned approximately 2207 acres within Lake County. The fire destroyed approximately 162 structures. See Attachment # 2 for the initial Sulphur Incident Damage Inspection Report. This summary does not account for all damage to infrastructure, mobile property, miscellaneous property improvements, natural vegetation, livestock, wildlife or other miscellaneous damage.

WITNESSES:

W-1 Greg Roath
1809 Fairlane Rd
Yreka, CA 96097
Phone: (530)842-3516
CAL FIRE Investigator

W-2 Mike CIANCIO
[redacted]
Phone: [redacted]
North Shore Fire Protection District

W-3 Adrian JOHN
[redacted]
Witnessed fire in early stage and took video

W-4 George MURCH
[redacted]
Lake County Fire Battalion Chief

W-5 Dan TOWERS

[redacted]

Phone: [redacted]

Took photographs of fire

W-6 Ron PETERSON

[redacted]

Phone: [redacted]

Reported Sulphur Fire and witnessed it in early stages

W-7 Jay BERISTIANOS

[redacted]

Phone: [redacted]

North Shore Fire Chief, can testify to not giving any variance to PG&E

W-8 Anastasia STANISH

6105 Airport Rd

Redding, CA 96002

(916)616-8643

CAL FIRE Senior Environmental Scientist- Forest Practice Biologist, can testify to woodpecker behavior

5 – EVIDENCE:

E-1 Fuse Insulator from southern end of cross arm
E-2 Fuse Insulator from middle of cross arm
E-3 Fuse Insulator from northern end of cross arm
E-4 End of broken pole top 1447
E-5 End of broken pole bottom 1447
E-6 Broken pieces of power pole
E-7 South fuse
E-8 Middle fuse
E-9 North fuse
E-10 Compact Discs containing photographs and video

6 – PHYSICAL CONDITION OR CONDITIONS:

The weather was obtained from Konocti Remote Weather Station (RAWS). I obtained the stored data on November 3, 2017. On October 9, 2017, at 1:00 AM, the Konocti RAWS recorded the following weather; the temperature was 60 degrees Fahrenheit, 16% relative humidity, wind speed up to 28 MPH from the northeast. The region was in high fire hazard red flag condition which was declared by the National Weather Service. The recorded conditions on October 8, 2017, from 11:00 PM until midnight includes wind speeds up to 40 miles per hour at the Konotci RAWS.

The Konocti RAWS is located approximately seven and one half air miles south of the origin of the Sulphur Fire.

The fire originated on flat terrain in annual grasses. It burned in a southerly direction influenced by a north wind. After crossing Sulphur Bank Road to the south, the fire burned 2207 acres of annual grasses and brush, 134 residential structures, two commercial structures, and 26 outbuildings. The Sulphur Fire also threatened the lives of hundreds of civilians, firefighters, and law enforcement. The origin of the fire was located on privately owned property, away from the roadway behind a locked gate.

7 – EQUIPMENT:

Pacific Gas & Electric Corporation Redbud 1102 Circuit powerline facilities.

8 – PROPERTY:

The Sulphur Incident originated on the following property:

APN: 010-002-370-000

Address: 1350 Sulphur Bank Dr, Clearlake Oaks, CA 95426

Owner: [redacted]

Latitude: N 39 00.458

Longitude: W -122 39.486

The fire ultimately burned approximately 2207 acres within Lake County

9 – NARRATIVE:

On Monday, October 9, 2017, at approximately 12:53 AM, a wildland fire occurred in the area of Sulphur Bank Road and Pomo Road near the community of Clearlake Oaks in Lake County. Fire units from CAL FIRE and cooperating agencies responded. Fire Units contained the fire on October 20, 2017. The fire burned approximately 2207 acres and damaged or destroyed 162 structures.

I responded to the fire from St. Helena, departing at approximately 2:30 AM to investigate the fire. I arrived at the Incident Command Post (ICP) for the Sulphur Fire located on Sulphur Bank Road at approximately 4:00 AM. I met with North Shore Chief Mike CIANCIO who was the first fire resource to arrive at the fire. I asked CIANCIO if he knew where the fire started. CIANCIO told me he did not know and the fire was at least ten acres and rapidly growing when he arrived at scene. CIANCIO told me he assumed it started on the north side of Sulphur Bank Road near the Elem Colony.

After meeting with CIANCIO, I left the ICP at approximately and drove towards the fire to attempt to locate the origin. When I arrived at the fire's eastern edge on Sulphur Bank Road, I observed the fire had crossed the road and was over the ridge, burning to the southwest. I drove to the intersection of Sulphur Bank Road and Sulphur Bank Mine Road. The fire appeared to be progressing to the southwest. Sulphur Bank Mine Road is where the intersection of Pomo Road is located stemming off of Sulphur Bank Road. The fire was burning laterally toward the Elem Colony to the west at the end of Pomo Road, but had not yet reached the Elem colony. There was fire to the north of Sulphur Bank Road from this location and on two sides of a gated dirt road that extended off of Sulphur Bank Road.

I saw power lines to the east of the dirt road which ran north to south. The power lines appeared to be sagging on the north side of Sulphur Bank Road. I did not drive down the dirt road because of darkness and I did not know if the lines were energized. I

wanted to wait for daylight for safety reasons before I returned. I then drove up Sulphur Bank Road to the intersection of North Drive. I drove to a vantage point where I could see the rest of the fire. The fire appeared to have burned into the city limits of Clearlake to the south and over a ridge to the west. I continued on Sulphur Bank Road to the south and eventually stopped on San Joaquin Ave. The fire had burned to the shore of Clearlake and I could see dozens of structures on fire.

I then received a phone call from CAL FIRE Battalion Chief Mike THOMPSON. THOMPSON told me he had just arrived in Clearlake and wanted to meet with me. I met with THOMPSON and CAL FIRE Captain Russell WEST at the Clearlake Police Department. THOMPSON and I discussed investigative needs for the multiple fires currently burning in the Sonoma-Lake-Napa unit. After talking with THOMPSON, I waited for daylight so I could safely investigate the Sulphur Fire.

I returned to the area of Sulphur Bank Road and Pomo Road at approximately 8:00 AM on October 9, 2017. I began to look for macro fire pattern indicators. I drove to the end of Pomo Road into the Elem Colony looking at macroscale fire pattern indicators. I observed angle of char, protection, and stem fall. Based on my observations, I determined the fire progressed laterally toward the Elem Colony. I drove down a dirt road located off of Pomo Road to the north until I reached a dozer line used to contain this portion of the fire. I walked the area and observed stem fall and protection fire pattern indicators. The fire pattern indicators I located were from fire moving in both a lateral and backing direction. I then drove back to Sulphur Bank Road and parked near the power lines east of the intersection of Pomo Road. I walked Sulphur Bank Road to the east looking at fire pattern indicators. I located both advancing and lateral fire pattern indicators in the form of angle of char in the trees and protection behind rocks and other debris. These fire pattern indicators showed the fire originated on the north side of Sulphur Bank Road.

When I returned to my vehicle there were several utility company vehicles parked near the power and utility lines. One was a white PG&E pick-up. I asked if the power lines on the pole were energized. One of the men wearing a blue shirt told me they were not. After speaking to the individuals, I walked north along dirt road, crossing back and forth in a serpentine pattern, following fire pattern indicators. I came to an area in the road where there were three conductors on the ground which had been cut and pulled off of the road (ROATH Photograph IMG_0005, Attachment 10). I later learned the conductors had been cut and removed from the road by PG&E (Attachment 24). All of the fire spread indicators I had seen from the south to this point were either advancing or lateral. When I reached the area to the north of the conductors on the ground, I located the transitional zone where the fire pattern indicators changed from advancing and lateral to backing. I identified the transitional zone by the increase in grass stem fall. I then walked back to my vehicle so I could move it closer to the area of the transitional zone.

When I arrived at my vehicle I was contacted by personnel on a fire engine who told me there was a man at the Elem Colony who had a video of the fire when it started. He described where he was located so I drove to that location. At approximately 11:30 AM, I interviewed an adult male who identified himself as Adrian JOHN. JOHN told me the following in summary: at approximately 1:00 AM the power went out at his house. He drove down Pomo Road toward Sulphur Bank Road to see what had happened. He saw the field was on fire and began to take a video of the fire with his cellular phone. JOHN described the fire to be approximately 100 yards long and four feet wide. JOHN told me the fire was located on the east side of the fence located adjacent to the dirt road. JOHN told me the fire was from the area where the top of the power had pole broken off burning to the south. JOHN told me the fire was closer to the pole with the top broken off and had not burned to a power pole laying on the ground which was located to the west of the one with the broken top. JOHN told me the pole laying on the ground was still standing when he first saw the fire. JOHN told me he went back to his house and

watched throughout the night as the fire burned into the hills. JOHN then sent the video to me via email.

After speaking with JOHN, I returned to the dirt road off of Sulphur Bank Road to the area of the backing fire pattern indicator transitional zone near three downed conductors. I walked to the north and went through a gate on the east side of the dirt road. I looked for fire pattern indicators as I worked my way to the south in a serpentine pattern. I identified several backing indicators until I approached a power pole with black and yellow number 1447 attached to it. This location is where the three conductors were previously attached to the lines servicing the Elem Colony which had been cut and were now on the ground. The top of the pole was broken off above a communication line and two woodpecker nesting holes. The top portion of the pole had three open fuses between the conductors running north to south and the conductors running to the west, servicing the Elem Colony. The top broken portion of the power pole was approximately 30 feet from the fence adjacent to the dirt road (ROATH Photograph IMG_0006, Attachment 10). I could see no foot prints in the fragile burned grass leading to the fuses.

I walked to the east of PG&E pole 1447 and to the south to Sulphur Bank Road. From this location, I searched in a serpentine pattern to the north. I observed lateral and advancing indicators in the form of protection, staining, sooting and angle of char. I came to a power pole with a raptor nest in it. The power pole was detached from its base at ground level. The base of this power pole had received heavy burn damage. This area contained areas of low intensity burning.

I continued working in a serpentine pattern and as I approached PG&E pole 1447 I identified the area to the north where the transitional zone showed backing fire pattern indicators. I identified this area as the General Origin Area (GOA). It was approximately 70 feet by 70 feet in size. I walked twice around the GOA in opposing directions looking at fire pattern indicators and confirmed my previous findings.

I returned to my vehicle and retrieved yellow barrier flagging. I flagged two separate areas with yellow barrier flagging which were approximately 70 feet by 70 feet each. The first flagged off area was around the power pole with the broken top which I identified as the GOA (ROATH Photograph IMG_0008, Attachment 10). The second area was the power pole detached at ground level containing the raptor nest. I placed yellow and black flagging at the second area around the pole with the raptor nest because of the lower intensity burning which appeared to have occurred because I wanted to protect it for closer examination.

After flagging off both areas I began to place pin flags to mark fire pattern indicators. I started at the northern power pole with the broken top. I walked around the GOA in opposing directions two more times. I observed fire pattern indicators along the southern edge of the GOA showing advancing fire. On the northern edge of the GOA I observed stem fall, protection, and sooting indicators showing the fire backed north away from broken PG&E pole 1447. The indicators showed the fire moved laterally to the west toward the fence and Elem colony and to the east through the grass field. Within the GOA was the base of PG&E pole numbered 1447 and the broken top of the PG&E pole also numbered 1447 containing the three open fuses. I entered the GOA from the side with advancing fire pattern indicators. I walked in a serpentine pattern across the advancing indicators placing red pin flags as I progressed. I was also able to identify lateral fire pattern indicators which I marked with yellow pin flags. I continued my serpentine search of indicators until I identified the Specific Origin Area (SOA) which was approximately eight feet by ten feet in size (ROATH Photograph IMG_0021, Attachment 10). Within the SOA was the standing base of PG&E pole 1447 as well as the broken top portion. The fuel in the SOA contained burned annual grasses.

After identifying the SOA near the broken PG&E pole number 1447, I went to the southern pole with the raptor nest which I had previously placed yellow and black barrier tape around. I began to place pin flags in the area within the barrier tape working from

the southern advancing fire pattern indicators. I was only able to locate advancing indicators in this location. The fire spread indicators I located were protection and staining of various rocks. The fire was lower in intensity but did not contain either a GOA or SOA. There were several small diameter sticks consistent with those located in the raptor nest scattered on the ground in this area. All of the sticks appeared to have landed on the ground after the fire passed and had very little fire damage.

After examining the area of the power pole with the raptor nest I returned to my vehicle and drove it closer to the GOA. I received a phone call from CAL FIRE Captain Greg ROATH informing me he was on his way to assist me.

At approximately 1:30 PM on October 9, 2017 CAL FIRE Investigator ROATH arrived at my location. I asked ROATH to look at both areas with the barrier flagging to evaluate my findings. ROATH began at PG&E pole 1447 and then worked his way to the north, well outside of the yellow and black barrier flagging. ROATH told me his findings were consistent with mine. ROATH then examined the area of the pole with the raptor nest to the south. He again confirmed the fire appeared to be low intensity advancing within the barrier tape. We then removed the barrier tape and pin flags from the area of the pole with the raptor nest and returned to my vehicle. I assigned ROATH to photograph my GOA and SOA around PG&E pole number 1447 (See Attachments 9 and 10). ROATH took the photographs and left at approximately 4:00 PM to respond to a different fire investigation. I instructed ROATH to get the photographs to me when he was able to along with a Supplemental Investigation Report (LE 71) (Attachment 9).

After ROATH left, I searched the SOA near PG&E pole 1447. Within the SOA was the standing portion of the pole and the broken top of the pole containing the three fuses (ROATH Photograph IMG_0021, Attachment 10) . I conducted a serpentine grid search of the SOA. I divided the SOA into grids with string to ensure I thoroughly searched for ignition sources. I visually searched with a magnifying glass and carefully removed overburden burned grass with a hair pick as I progressed. I then swept a

magnet over the area I had previously searched visually. I continued past the base of PG&E pole 1447 searching to the north into the backing indicators. The base of the broken power pole top was resting on the ground being suspended by the conductor wires running north to south. The open fuses and insulators were approximately four feet above the ground (BALDWIN Photograph IMG_0005, Attachment 11). I observed a wire fence to the west which appeared could have been contacted by the three downed conductors (BALDWIN Photograph IMG_0012, Attachment 11). I found no evidence of energized conductors contacting the wire fence. The copper wire attaching to the top of the fuse insulator (Evidence Item #2) in the middle of the cross arm appeared to have been stressed near its point of attachment. It appeared stressed because the wire was pulled into a straighter line than the other wires attached to insulators. Additionally, the connecting bracket at the cross arm appeared bent (BALDWIN IMG_0021, Attachment 11). The same situation with a bent connecting bracket existed with the fuse insulator at the northern portion of the cross arm (Evidence Item #3). It appeared the force of the impact from falling caused the stress on the copper wire and bent the insulator brackets. I examined the ends of the fuses and their contact points at the insulator and observed what appeared to be evidence of arcing. It appeared the force of impact caused all three fuses to open and arch. I examined the top of the broken PG&E pole 1447 with binoculars. I saw two woodpecker nests near the attached communication line (BALDWIN Photograph IMG_0027, Attachment 11). PG&E pole 1447 had no fire damage on the standing bottom portion in the area where it broke (ROATH Photograph IMG_0016, Attachment 10). After examining and photographing my findings, I maintained security of the GOA until private security arrived.

At approximately 8:45 PM on October 9, 2017, Brothers In Law security officer Daniel BOOTH arrived at my location. I instructed BOOTH not to allow anyone into the area with yellow and black barrier tape and to document anyone who came into or near the area. I instructed BOOTH to call me if anyone went into the area surrounded by barrier tape. I provided BOOTH with a note pad and instructed him to document the names of anyone who came into the area. I then left the scene.

On October 10, 2017 at approximately 8:30 AM, while returning to the GOA, I met CIANCIO at the intersection of Sulphur Bank Road and Sulphur Bank Mine Road. CIANCIO told me the following in summary: He responded to the Sulphur Fire from another call, which delayed his response. The other call was for power lines down near the intersection of Highway 20 and High Valley Road in the community of Clearlake Oaks in Lake County. He was the first fire resource to arrive at the Sulphur Fire. He estimated the fire to be greater than ten acres, and it was on both sides of Sulphur Bank Road when he first saw it. He said he did not see where the fire started. He met with Lake County Fire Protection District Battalion Chief George MURCH shortly after arriving at the fire who responded from the opposite direction. MURCH told him the fire was at least 50 to 75 acres.

I asked CIANCIO if he could send personnel to my location later with a ladder and a chain saw.

After interviewing CIANCIO, I returned to the GOA and relieved BOOTH. BOOTH told me nobody came in the area all night. He did not document anything in the notebook I provided him because there was no breech of the GOA. I released BOOTH and told him I would advise the security company if there was an additional need for officers.

After releasing BOOTH, I began to collect evidence. I removed the fuse insulators and fuses from the cross arms and marked them with the appropriate item numbers. At approximately 9:30 AM on October 10, 2017, the ladder and saw arrived at my location. I placed the ladder against PG&E pole 1447. I climbed the pole to examine the broken top. The top of the pole was hollowed out by what appeared to be a woodpecker and was full of acorns (BALDWIN Photograph IMG_0039, Attachment 11). The exterior wall thickness of the pole was approximately an inch or less around the entire perimeter. I photographed the broken power pole top. I then instructed CAL FIRE Firefighter Jack STERN to climb the ladder and remove the top of the pole above the communication line with a chainsaw (BALDWIN Photograph IMG_0040). STERN began to cut the top of the pole. The pole fell into pieces because of being in a weakened state from the

woodpecker damage. I marked the top of the pole as Evidence Item E- 5. STERN then removed the bottom portion of the of PG&E pole 1447 which previously contained the fuses. I marked this as Evidence Item E-4. I located two aluminum tags attached to pole 1447 which appeared to be inspection markers. One inspection tag was dated 2000 (BALDWIN Photograph IMG_0042, Attachment 11) and the other was dated 2013 (BALDWIN Photograph IMG_0043, Attachment 11). I finished collecting evidence and left the scene. I locked all of the evidence in the prisoner compartment of my vehicle until I could store it in the evidence locker in Middletown in Lake County on October 11, 2017.

On Wednesday, October 11, 2017, PG&E reported to the California Public Utilities Commission (CPUC) an event occurring on the Redbud 1102 Circuit. PG&E reported the top portion of Cutout Pole 1447 had broken off and fallen to the ground with an additional pole one span to the west burning and falling to the ground (Attachment 14).

On October 13, 2017, at approximately 12:00 PM I interviewed MURCH. MURCH told me the following in summary: He responded to the Sulphur Fire from his home. His response was delayed. When he approached the fire, he got to the ridge on Sulphur Bank Drive and heard CIANCIO give a report on condition over the radio. He heard CIANCIO report the fire was larger than 10 acres. From his vantage point he estimated the fire to be between 50 and 75 acres. As he traveled to the fire, he noticed the fire was across Sulphur Bank Road and east of Pomo Road, but had not crossed Pomo Road yet. He did not know where the fire started.

On October 13, 2017, at approximately 1:00 PM I interviewed Dan TOWERS. TOWERS is a resident of Clearlake Oaks and witnessed the Sulphur fire when it was small in size, shortly after it started. TOWERS told me the following in summary: He saw two fires from the south facing deck of his home located at [redacted] Oaks. When he first saw the fire, he estimated one was larger than a bus and the other was smaller than a car. The larger fire was the one located farthest to the north. He

estimated the time he first saw the fires to be approximately 12:55 AM on October 9, 2017. He called 911 and reported the fires. After calling 911 he began to take photographs of the fires with his cellular phone. He took photographs from approximately 1:04 AM until approximately 2:30 AM as the fire progressed into the hills. He provided the pictures to Lake County Fire Protection District Firefighter Eric VINYARD who later emailed them to me (Attachment 12). On November 9, 2017, I went to TOWERS home located on Lakeview Drive in Clearlake Oaks. I met with TOWERS and he showed me the location he took the pictures from, and he described and pointed out the location of the fires when he first saw them. The location TOWERS described the fires to be was in the same location I identified as the GOA. Based on the pictures provided to me by TOWERS' and his description of size along with the fact it was located downwind of the larger fire, it appeared the smaller fire to the south of the larger fire was a spot fire.

On November 9, 2017 at approximately 3:37 PM I interviewed Ron PETERSON via telephone. PETERSON reported the Sulphur Fire in its early stages. PETERSON's phone number was listed on a Lake County Computer Aided Dispatch (CAD) Incident Report I obtained from North Shore Fire Protection District for the Sulphur Fire. PETERSON's phone number was in the box on the CAD Incident Report labeled "Caller Phone". PETERSON told me the following in summary: He was at his home located at [redacted] in Clearlake Oaks and the power went out. He got up to light some candles. He then went outside and saw the fires and called 911. There was one large fire and a smaller one a little farther away. The large fire was about 100 yards long when he first saw it. They were located next to the dirt road that comes off of Sulphur Bank Road. A couple days later he saw the power pole being replaced in exactly the same spot he saw the fires when he called 911.

In December, 2017, I started receiving PG&E maintenance and inspection records from CAL FIRE Assistant Chief Shawn ZIMMERMAKER. In reviewing these records, PG&E identified a pole with excessive bird damage in the top requiring further inspection

Equipment ID 10214746 (Attachment 18). The inspection date for this pole was April 8, 2013. PG&E pole 1447's most recent inspection tag was dated 2013 (BALDWIN Photograph IMG_0043, Attachment 11). I was unable to determine the pole location referenced in the inspection for Equipment ID 10214746 because the GPS coordinates were incorrect and the report did not include a pole number. I determined the GPS coordinates were incorrect by having the St Helena Emergency Command Center (ECC) enter them in their map as I observed. The location was near PG&E pole 1447, but there were no power poles at the exact coordinates provided with the PG&E inspection records (Attachment 22). I requested clarifying information for this record from PG&E through ZIMMERMAKER. On May 25, 2018, I received an email from ZIMMERMAKER with a letter (ATTACHMENT 25) attached clarifying this information. PG&E's Pole 1447 equipment ID Number is 102215609. The inspection report for PG&E Pole 1447 dated April 8, 2013 indicated shell rot, insect or animal damage, and excessive checking and cracking with 100% wood strength. The most recent inspection indicated on the report provided by PG&E occurred on April 8, 2013. The Pole Report Detail PG&E provided also indicates PG&E Pole 1447 was manufactured and installed in 1956. Information received from PG&E by ZIMMERMAKER is on a USB drive located in the CAL FIRE evidence locker located in Santa Rosa, CA (See Attachment 23).

On Friday, February 16, 2018, PG&E wrote a letter to CPUC informing them they had thrown away a "tap pole" (ROATH Photograph IMG_0004, Attachment 10) located to the west of Fuse Cutout Pole 1447. This appears to be the same pole PG&E identified in an area of concern in their October 11, 2017, report to the CPUC. General Order 95 rule 19 which states, in part, "*Any and all documents or evidence collected as part of the utility's own investigation related to the incident shall be preserved for at least five years".* (Attachment 15)

On Thursday, March 8, 2018, I met with James NOLT. NOLT is an electrical engineer and owns J H Nolt and Associates. I had NOLT look at Redbud 1102 circuit Supervisory Control and Data Acquisition (SCADA) data provided to me by PG&E (Attachment 16).

NOLT told me the data indicated a power outage occurred on October 9, 2017, at 12:51:46 AM.

On Thursday, March 8, 2018 I spoke with CAL FIRE Senior Environmental Scientist-Forest Practice Biologist, Anastasia STANISH. I asked STANISH if she knew how long it would take a woodpecker to bore a hole in a power pole for a nest. I also provided STANISH with a picture of the pole in question. STANISH told me in summary woodpeckers are usually looking for imperfections or soft spots in wood to make nests. This could have been accomplished over a couple days, but most likely over the course of weeks or even months.

On Wednesday, April 4, 2018, I evaluated the three fuses I collected as evidence (E-7, E-8, E-9) with an ohm meter for conductivity. Two of the fuses appeared to have failed, and there was no resistance when tested with the ohm meter. These two fuses were E-7 and E-8. When I looked into the end of each of the fuses, E-7 and E-8 were damaged and E-9 was intact. E-9 showed resistance when tested with the ohm meter. I utilized my Powerline Equipment Identification Pocket Guide to identify the three fuses as universal fuses. The pocked guide was prepared by Robert LOGGINS, PG&E VC Project Manager.

On Friday, May 25, 2018, I received the Sulphur Incident Description & Factual Summary from PG&E (Attachment 24). The document confirms an issue with PG&E equipment near the SOA I identified on October 9, 2017. PG&E also discloses the event occurred at 12:51 AM on October 9, 2017. This is approximately two minutes before the Sulphur Fire was first reported at 12:53:28 AM to Lake County Sheriff's Office Central Dispatch via 911 (Attachment 2).

OPINIONS & CONCLUSIONS

Based on my experience, training as a wildland fire investigator, and the facts documented above, it is my opinion the cause of the Sulphur Fire was electrical. There were no other ignition sources near the SOA which could have caused the fire. For an unknown period of time prior to the fire starting, PG&E pole 1447 was being utilized by woodpeckers to cache acorns and build nesting cavities. PG&E pole 1447 is part of the Redbud 1102 Circuit. Records provided by PG&E indicated the most recent inspection occurred on April 8, 2013. Shell rot, decay, insect or animal damage, and excessive checking or cracking are noted on the report for PG&E Pole 1447 which was installed in 1956.

PG&E pole 1447 also contained a total of three universal fuses which I identified utilizing PG&E's Powerline Equipment Identification Pocket Guide. Universal fuses are nonexempt and subject to Title 14 California Code of Regulations § 1254 Minimum Clearance Provisions – PRC 4292, which states; *The firebreak clearances required by PRC 4292 are applicable within an imaginary cylindroidal space surrounding each pole or tower on which a switch, fuse, transformer or lightning arrester is attached and surrounding each dead end or corner pole unless such pole or tower is exempt from minimum clearance requirements by provisions of 14 CCR 1255 or PRC 4296. The radius of the cylindroid is 3.1 m (10 feet) measured horizontally from the outer circumference of the specified pole or tower with height equal to the distance from the intersection of the imaginary vertical exterior surface of the cylindroid with the ground to an intersection with a horizontal plane passing through the highest point at which a conductor is attached to such pole or tower. Flammable vegetation and materials located wholly or partially within the firebreak space shall be treated as follows:*
(a) At ground level -remove flammable materials, including but not limited to, ground litter, duff and dead or desiccated vegetation that will allow fire to spread, and;

(b) From 0-2.4 m (0-8 feet) above ground level -remove flammable trash, debris or other materials, grass, herbaceous and brush vegetation. All limbs and foliage of living trees shall be removed up to a height of 2.4 m (8 feet).
(c) From 2.4 m (8 feet) to horizontal plane of highest point of conductor attachment - remove dead, diseased or dying limbs and foliage from living sound trees and any dead, diseased or dying trees in their entirety. All limbs and foliage of living trees shall be removed up to a height of 8 feet. The vegetation surrounding the pole had not been cleared pursuant to PRC 4292 as evidence by the remaining burned grass surrounding the pole. The fire started in Local Responsibility Area and ultimately burned into the State Responsibility area which is within 300 yards of PG&E pole 1447. I spoke with North Shore Fire Protection Chief Jay BERISTIANOS and he told me North Shore Fire Protection District did not give any exemptions to PG&E regarding clearance requirements. The SOA for the Sulphur Fire was approximately eight feet by ten feet and within the SOA were both the bottom and the top of broken PG&E pole 1447.

Based on the facts and information provided above, on the morning of October 9, 2017, at approximately 12:51 AM, the north winds caused the portion of PG&E pole 1447 which was severely weakened by woodpeckers to break. When the pole broke, the top portion containing the three universal fuses fell to the ground. The impact with the ground caused all three fuses to open and two of them to fail. This process caused the dried grass at the base of PG&E pole 1447 to ignite. When the grass ignited, the north wind caused the fire to quickly grow, crossing Pomo Road and Sulphur Bank Road, becoming both wind and topography driven. The resulting fire burned approximately 2207 acres of vegetation and 162 structures.

*I reserve the right to amend or augment this opinion if new pertinent information is provided to me or is discovered by me at a later date.

5/27/15

Signature Date

Joseph BALDWIN, Badge #2488

Battalion Chief

10 – ATTACHMENTS:

1 - FC- 34 Interagency Report of Incident Dispatch Actions
2 - Lake County Sheriff's Central Dispatch CAD Report
3 - Evidence Log
4 - Weather Data
5 - Lightning Map
6 - Parcel Map of Origin
7 - Operations Map
8 - Progression Map
9 - Sketch
10 - ROATH LE 71
11 - ROATH Photographic Log
12 - BALDWIN Photographic Log
13 - Dan TOWERS Photographs
14 - Additional Photographs
15 - CPUC Electrical Safety Incident Report- PG&E Incident No: 171011-8562
16 - PG&E Notification to CPUC of Destruction of Evidence
17 - PG&E SCADA Report
18 - PG&E Inspection Records
19 - PG&E GO 165 Pole Inspections
20 - PG&E Evidence Collection Log
21 - Victim List and Damage Inspection Report
22 - Google Earth Image Indicating location of PG&E Pole 1447 in relation to GPS Coordinates documenting bird damaged pole
23 - ZIMMERMAKER LE 71's
24 - PG&E Sulphur Incident Description and Factual Summary
25 - PG&E Letter to CAL FIRE Dated 5/25/18