

CAL FIRE



CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION
Humboldt – Del Norte Unit
118 S. FORTUNA BLVD.
FORTUNA, CA 95540

INVESTIGATION REPORT

CASE NUMBER: 17CAHUU008828

CASE NAME: BLUE

DATE: October 8th, 2017

INCIDENT TYPE: Wildland Fire

INCIDENT INVESTIGATORS: Jeremy Ward, Fire Captain Specialist, HUU
Layne Crist, Fire Captain, HUU

1 **1 - VIOLATIONS:**

2 **Public Resources Code 4421**

3 A person shall not set fire or cause fire to be set to any forest, brush, or other
4 flammable material which is on any land that is not his own, or under his legal control,
5 without the permission of the owner, lessee, or agent of the owner or lessee of the land.

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2 - SUMMARY:

On October 8th, 2017, at approximately 4:38 PM, a vegetation fire was reported near the City of Blue Lake, Humboldt County, California (Attachment 1). The incident was given the name "Blue". The fire started during a red flag warning for strong northeast winds and low relative humidity (Attachments 2 and 3). However, it was strong west winds which most contributed to the fire's growth. The Blue Fire burned approximately 12.3 acres of grass, brush, and timber litter in State Responsibility Area on the north side of Highway 299 near the east end of Greenhill Lane (Attachment 4).

I was assigned to investigate the origin and cause of the fire. CAL FIRE Captain Layne CRIST assisted with the investigation. Information provided by first responders and civilian witnesses, along with an examination of fire pattern indicators showed the fire originated east of residences on Greenhill Lane near a downed power line, which included a conductor and attached connector on the ground. A splice (where the connector joined two conductors) had separated, allowing the conductor and connector to fall. The power lines belong to Pacific Gas and Electric Company (PG&E). A PG&E employee admitted the connector was an old style that was no longer allowed to be used. The downed conductor with attached connector was determined to be the only source of ignition at the origin.

When the power line appeared to have failed where two conductors were joined by the connector, the energized conductor fell, contacted the grass fuels below, and ignited the Blue Fire. The Blue Fire burned onto multiple properties not owned or under the control of PG&E, violating PRC 4421.

1 **3 - SUSPECT:**

2 Pacific Gas and Electric Company

3 77 Beale Street

4 San Francisco, CA 94105

5 *Pacific Gas and Electric Company operates the power line that was determined*
6 *to have caused the Blue Fire.*

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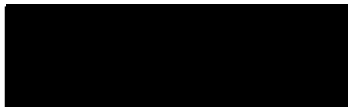
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1 **4 - VICTIMS & WITNESSES:**

2 **VICTIMS**

3 V-1

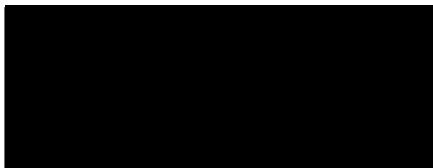
4 Percy REID




7 *Listed property owner of parcels:* 

8 V-2

9 Michael and Vera ALVES



13 *Listed property owners of parcels:* 

14 V-3

15 State of California

16 *Fire burned on State Highway 299 Right of Way.*

18 **WITNESSES**

19 W-1

20 Ron MCLAUGHLIN

21 Battalion Chief, CAL FIRE

22 118 S. Fortuna Blvd.

23 Fortuna, CA 95540

24 707-725-4413

25 *Incident Commander of Blue Fire directed me to first-arriving CAL FIRE engine.*

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1 W-2

2 Layne CRIST
3 Fire Captain, CAL FIRE
4 118 S. Fortuna Blvd.
5 Fortuna, CA 95540
6 707-725-4413

7 *Assisted with origin and cause investigation*

8 W-3

9 Josh SMITH
10 Fire Captain, CAL FIRE
11 118 S. Fortuna Blvd.
12 Fortuna, CA 95540
13 707-725-4413

14 *Observed wind and weather conditions upon arrival after initial fire dispatch.*

15 W-4

16 Ray STONEBARGER
17 Fire Chief, Blue Lake Fire Department
18 111 1st Ave.
19 Blue Lake, CA 95525
20 707-668-5765

21 *Photographed fire near its origin.*

22 W-5

23 Robert RICHARDSON
24 Fire Fighter I, CAL FIRE
25 118 S. Fortuna Blvd.
26 Fortuna, CA 95540
27 707-725-4413

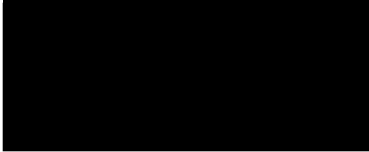
28 *Described heel of fire to be east of 301 Greenhill Lane.*

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1 W-6

2 Don SWANSON

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6 *Observed fire burning in field where downed power line was located.*

7 W-7

8 Tony GARISTO

9 Troublemaker, Pacific Gas and Electric Company

10 707-834-6311

11 *PG&E employee at scene.*

12 W-8

13 Travis STAPLETON

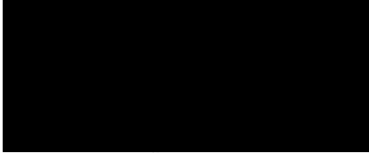
14 Troublemaker, Pacific Gas and Electric Company

15 209-471-2478

16 *PG&E employee at scene.*

17 W-9

18 Betty SWANSON

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22 *Noted power being out at her house the afternoon of the fire.*

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1 **5 - EVIDENCE:**

2 Item 1

3 Connector, approximately 9" long metal device used to splice, or join, two
4 conductors to make an electrical connection. Connector is silver in color and
5 was cut from conductor at one end. Opposite end was found open where it
6 appeared a conductor had broken or pulled free from the connector.

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8 Item 2

9 CD containing photographs related to the Blue incident, including Photos 1
10 through 25, AA120 1, AA120 2, and RS1.

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12 See Attachment 5 for the Evidence Log.

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1 **6 – CONDITIONS:**

2 The Blue Fire started in a grass field east of residential structures on Greenhill
3 Lane in Blue Lake, California. The slope was approximately 10 percent with a
4 southwest aspect. The fire burned both upslope and east along Highway 299 which
5 paralleled the south side of the fire. A red flag warning was in effect for strong
6 northeast winds and low humidity. The Blue Fire was primarily influenced by a local
7 west wind estimated to be 12 to 15 miles per hour with gusts to 20 by CAL FIRE
8 Captain Josh SMITH. He said the wind subsided around sundown. This is consistent
9 with my observations and those recorded by CRIST using a digital weather meter.

10

11 **WEATHER:**

12 Date: Sunday, October 8th, 2017
13 Time: 8:00 PM
14 Temperature: 55 degrees Fahrenheit
15 Relative Humidity: 73 percent
16 Wind Speed: Calm
17 Wind Gust: 0
18 Wind Direction: None
19 Source: Kestrel 3000 Pocket Weather Meter
20 Elevation: 274 feet
21 Description: Clear

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1 Weather observations from the Arcata/Eureka RAWS (KACV) are included for
2 the time CRIST recorded weather and for the approximate start time of the incident
3 (Attachment 6). The RAWS is located approximately 8.3 miles northwest of the origin.
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5 Time: 8:00 PM
6 Temperature: 55.4 degrees Fahrenheit
7 Relative Humidity: 67 percent
8 Wind Speed: 4.6 miles per hour
9 Wind Gust: None recorded
10 Wind Direction: North-Northeast

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12 Time: 4:40 PM
13 Temperature: 64.4 degrees Fahrenheit
14 Relative Humidity: 45 percent
15 Wind Speed: 18.4 miles per hour
16 Wind Gust: 24.2 miles per hour
17 Wind Direction: North

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1 **7 –EQUIPMENT:**

2 Pacific Gas and Electric Company

3 Blue Lake 1102 Circuit

4 Humboldt Division

5 12,000-volt power lines

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1 **8 - PROPERTY:**

2 The Blue Fire burned approximately 12.3 acres of vegetation on the following
3 parcels, all located in Humboldt County:

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5 APN 312-171-023
6 APN 312-171-028
7 APN 312-171-030
8 APN 312-171-037
9 APN 312-171-038

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11 The fire also burned on property within the right-of-way for State Highway 299.

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13 The specific origin area of the Blue Fire was located at approximately:

14 North 40° 53.272'

15 West 123° 59.512'

16 WGS 84

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18 Based on Humboldt County GIS data, the origin was located on parcel 312-171-
19 037.

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1 **9 - NARRATIVE:**

2 On Sunday, October 8th, 2017, I was assigned fire prevention coverage for the
3 CAL FIRE Humboldt – Del Norte Unit. That afternoon I was investigating the Creek Fire
4 (17CAHUU008825) at Guthrie Creek near Ferndale, California when I heard broken
5 radio traffic of a new vegetation fire near Blue Lake, California. The Fortuna
6 Emergency Command Center (ECC) had received a report of the new fire at
7 approximately 4:38 PM. I heard radio traffic requesting multiple additional air tankers
8 for the incident, indicating the fire had significant potential for growth. The fire was
9 given the name, "Blue." I responded to the Blue Fire at approximately 6:17 PM, after
10 completing investigation of the Creek Fire.

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12 I arrived at the Incident Command Post (ICP) just after 7:00 PM. There I met
13 with the Incident Commander (IC), CAL FIRE Battalion Chief Ron MCLAUGHLIN.
14 Chief MCLAUGHLIN told me a CAL FIRE engine was at 311 Greenhill Lane and
15 reported they believed that was near the origin. They had also reported there were
16 power lines down in the area. After CAL FIRE Captain Layne CRIST arrived at the ICP,
17 we both drove to Greenhill Lane. While driving to the reported address, I could see the
18 fire extended farther to the east, on the north side of Highway 299. The fire did not
19 appear to have burned around most of the homes on Greenhill Lane. Based on the
20 reports I heard and my own observations, the fire behavior seemed consistent with the
21 west wind influence I had observed earlier at the Creek Fire. Both fires were in coastal
22 areas along a creek or river drainage where west or northwest winds are common.

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24 We met the operator of the CAL FIRE engine, Captain Josh SMITH, on Greenhill
25 Lane. He confirmed the fire had spread east from the influence of the west wind.
26 Captain SMITH later told me he estimated the winds were blowing 12 to 15 miles per
27 hour with gusts of 20 when he arrived. He said the wind had subsided by sundown.
28 Blue Lake Fire Chief Ray STONEBARGER was with SMITH. STONEBARGER told me
29 he had taken a photograph of the fire before responding, and indicated the same
30 general area to be the origin. See Attachments 7 and 8 for the Photographic Log and

1 photographs of the incident. Chief STONEBARGER later sent me the photograph
2 (RS1) electronically. CRIST and I continued to where Captain SMITH's engine was
3 parked. The address was later determined to be 301 Greenhill Lane. CAL FIRE Fire
4 Fighter I Robert RICHARDSON was by the engine. RICHARDSON told CRIST and I
5 the heel of the fire was just behind him, and pointed to the field area to the east.
6

7 At 301 Greenhill Lane, I met with a Pacific Gas and Electric Company (PG&E)
8 Troublemaker who told me there was a power line down behind the residence. I walked
9 with him to the area, and he said the power line had pulled out of an old-style connector
10 (device used to splice two wires together). He said they were not supposed to use
11 those anymore, and now use a different style connector. I believe the Troublemaker I
12 spoke with then was Travis STAPLETON. Later that night, I spoke with two
13 Troublemakers at a PG&E truck along Greenhill Lane, STAPLETON and Tony GARISTO.
14 They provided me their names and phone numbers. I spoke to STAPLETON on the
15 phone on April 26th, 2018. STAPLETON told me GARISTO was at the scene first. On
16 May 17th, 2018, I spoke with GARISTO on the phone. GARISTO told me he had stayed
17 at the truck the night of the fire, and was never at the site where the power line was
18 down. I then called STAPLETON and left a message for him to call me. STAPLETON
19 had not returned my call by the time this report was completed.
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21 The Troublemaker led me to where the power line was on the ground. I observed
22 a connector on the ground with a conductor attached at one end and running toward
23 the northern pole in the span (Photo 8). The conductor had already been removed from
24 the northern pole by PG&E to make it safe. The other end of the connector did not
25 have a conductor coming from the end of it. The hole where the conductor would be
26 inserted was open and there was also a jagged hole on the side of the connector near
27 the open end (Photos 10 and 11). The two poles spanning the break were marked with
28 the numbers 2/7 and 2/8. The PG&E Troublemaker explained the top number indicated
29 what mile the pole was from the substation. He said the bottom number meant which
30 pole it was within that mile. This meant these were the seventh and eighth poles in the

1 second mile from the substation. This also indicated the electricity flowed from Pole 2/7
2 to Pole 2/8. Pole 2/7 was uphill toward the north. Pole 2/8 was lower on the slope
3 toward the south and was closest to where the connector was found. Photo 5 shows
4 what appeared to be the end of the power line on Pole 2/8 previously joined by the
5 connector.

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7 After the PG&E Troubleman confirmed it was safe for us to work in the area, we
8 began looking at fire pattern indicators starting at the perimeter of the area indicated by
9 the firefighters to be the origin area. I progressed clockwise around the area looking at
10 macroscale fire pattern indicators. Between the grass field where the conductor was
11 down and 301 Greenhill Lane, there was a line of brush along the fence line. This was
12 a portion of the west side of the fire. Grass stem fall indicators here showed the fire
13 had spread generally from the east toward the west and somewhat northwest. Farther
14 uphill toward the north, angle of char, consumption of grass stem, and protection
15 indicators showed the fire moved uphill toward the north and east. On the east side of
16 the grass field, the fuels transitioned to brush and timber, with lighter brush and grass
17 lower on the slope closer to Highway 299. Angle of char and protection indicators in the
18 brush and timber showed the fire had spread to the northeast and east. Between Pole
19 2/8 and the south edge of the fire were indicators consistent with backing fire.

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21 Further examination of fire pattern indicators showed the area of the downed
22 conductor to be within the General Origin Area (GOA) of the fire. Due to the low light
23 conditions, we were unable to satisfactorily examine macroscale fire pattern indicators.
24 We decided to return the following morning to continue examination of the scene when
25 we could better observe indicators. I considered the connector to be potential evidence
26 due to its presence in the GOA, and because the PG&E Troubleman indicated it had
27 failed by pulling apart from the conductors. I decided to collect it before it was
28 removed. A bolt cutter was used to cut the conductor approximately two inches from
29 the northern end of the connector. The connector was collected as Item 1.

30

1 The scene was left under the control of responders still at scene. As we were
2 about to leave for the night, we met a local resident who identified himself as Don
3 SWANSON. SWANSON said his adult son lived at the house at [REDACTED].
4 He said the son and his stepson were at the house during the fire. He said the stepson
5 had tried to use a fire extinguisher to stop the fire. SWANSON also said he came to
6 help, and they used garden hoses around the house to protect it from the fire.
7 SWANSON said the fire looked like it started somewhere in the middle of the field. This
8 was the approximate area we determined as the GOA based on fire pattern indicators.
9 He said it did not make sense to him because he did not know what was in the field that
10 could have started the fire.

11

12 I arrived back at scene the following morning on October 9th shortly before 10:00
13 AM. I began placing fire pattern indicator flags in the GOA. Again, I started near the
14 perimeter of the fire. At the north side of the heel, uphill from Pole 2/7, indicators of
15 advancing fire were found, including those of: protection, sooting, staining, white ash
16 deposits, foliage freeze, angle of char, and grass stem. These advancing indicators
17 were marked with red flags and showed the fire spread uphill (northeast) toward a dirt
18 road. I worked in an "S" pattern downhill. Along the west side of the grass field, an
19 area of transition was apparent. In this area, protection and grass stem fall indicators
20 showed the fire moved laterally toward the fence separating the grass field from the
21 driveway and residence at [REDACTED]. These indicators were marked with
22 yellow flags to show lateral fire spread. At the northeast corner of the field, where the
23 fuels transitioned to timber, the advancing indicators demonstrated the fire not only
24 burned uphill, but started to angle more toward the east (Photo 21). The high angle of
25 char seen in some of the trees demonstrated this was still the advancing area of the
26 fire.

27

28 A wire fence crossed the path of the power lines between Pole 2/7 and 2/8. The
29 wire fence and its wooden fence posts had signs of sooting, staining, and protection
30 showing the fire originated downhill from the fence. West of this power line path, lateral

1 fire spread indicators of grass stem fall were prevalent indicating lateral fire spread
2 toward [REDACTED]. Below the fence that crossed the power line path, east of
3 the power lines, another area of transition was observed. This area had indicators of
4 sooting, staining, and protection showing the fire moved east from the power line path
5 to an area of brush at the east side of the field. From here the fire burned in taller fuels
6 and was more exposed to the west wind, and developed into an advancing fire vector.
7

8 Continuing downhill, the lateral fire indicators on the east and west sides became
9 closer together under the path of the power lines between Poles 2/7 and 2/8. This was
10 also approaching an area near Pole 2/8 where backing indicators were evident.
11 Working around and into this area, I found signs of lower intensity backing fire downhill
12 from Pole 2/8. These indicators included grass stem fall, angle of char, and protection.
13 They were marked with blue flags. These fire pattern indicators were found at the
14 south edge of the heel of the fire to just uphill from Pole 2/8 (Photos 18 and 20).
15

16 The area where advancing, lateral, and backing fire spread came together was
17 identified as the Specific Origin Area (SOA). This area was found to be roughly
18 rectangular and in-line with the path of the power lines, uphill from Pole 2/8. This area
19 is shown in Photos 24 and 25. The SOA was approximately 8 feet by 20 feet in size.
20

21 Captain Specialist CRIST arrived as I was nearing completion of placing fire
22 pattern indicator flags. CRIST evaluated the flags I had placed and concurred with my
23 evaluation of the fire pattern indicators (Attachment 9). I conducted a visual search of
24 the SOA, looking for signs of a competent ignition source. No sources of ignition were
25 found during the visual search. However, a portion of the downed conductor, and the
26 connector collected the previous night, had been within this area. I did not perform a
27 magnet search of the SOA.
28

29 Based on the investigation of the Blue Fire, the following cause class was
30 included. All other cause classes were excluded as there was no evidence to indicate

1 they were involved in the fire.

2
3 **Electrical Power**

4 Only one source of ignition was found within the SOA identified through
5 examination of fire pattern indicators. This was the downed conductor and connector.
6 As the PG&E Troubleman described, it appeared the connector had failed where the
7 conductor on the southern end was found to be separated from that end of the
8 connector. Based on the description of how the power poles are identified by number,
9 this would mean electricity normally travelled from Pole 2/7 to Pole 2/8. The portion of
10 conductor in contact with the ground following failure of the connector came from Pole
11 2/7. This meant the conductor and connector were likely energized when they
12 contacted the vegetation. A request to PG&E (Attachment 10) for fault data elicited
13 information on two outages based on the request criteria. In a letter dated February
14 20th, 2018 (Attachment 11), PG&E indicated the two outages occurred on the Blue Lake
15 1102 Circuit (both on October 8th, 2017) within their Humboldt Division. The first outage
16 was momentary and began at 4:37 PM. The second was a sustained outage starting at
17 4:41 PM. The time of the momentary outage was just before the ECC received report
18 of the fire. Based on the fire's proximity to the City of Blue Lake and State Highway
19 299, the daylight hours, and the wind conditions, quick detection and report of the fire
20 would be expected.

21
22 Don SWANSON reported the fire to have been burning in the grass field east of
23 [REDACTED] Greenhill Lane. He said he did not think there was anything in that area that could
24 have started the fire, however the downed conductor and connector were found in that
25 area. I spoke on the phone with SWANSON several times after the fire (Attachment
26 12). During one phone call he told me a transformer blew when he was trying to put out
27 the fire. I did not see a transformer on Pole 2/7 or Pole 2/8.

28
29 Prior to leaving the scene on October 9th, I met a female who identified herself as
30 Betty SWANSON. Betty SWANSON told me there was a power outage the previous

1 afternoon that occurred while she was at her home nearby on Greenhill Lane. She
2 could not identify the time of the outage because she believed she had been asleep
3 when it happened.

4
5 **Conclusion**

6 Based on my knowledge, training, and experience, I believe the Blue Fire was
7 caused by the downed conductor and connector contacting vegetation on the ground.
8 The overall fire area (heel of the fire) was determined based on witness statements and
9 fire behavior context. Photograph RS1 taken by Chief STONEBARGER as he prepared
10 to respond to the fire shows smoke coming from the area around what appears to be
11 Pole 2/8. Examination of fire pattern indicators revealed the SOA was beneath the path
12 of the power lines between Poles 2/7 and 2/8. Within this SOA, the only source of
13 ignition found had been a downed conductor with a connector attached at that end. I
14 believe the connector failed during the strong west winds that were evident by the east
15 run of the fire. While the fire did make an uphill advancing run in the light grass fuels,
16 this open area was slightly sheltered due to the line of trees and brush on the west end
17 of the fire. As the fire burned uphill, it spread laterally to the east side of the field and
18 into taller fuels where the sheltering effect lessened and the wind pushed the fire east.
19 The energized conductor contacting the ground following separation of the connector
20 was the only source of ignition identified.

21
22 I reserve the right to reexamine this investigation if additional information is
23 discovered or provided to me that could amend or reinforce my opinions or conclusion.

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 5-23-2018

28 Signature Date

29 Jeremy Ward, #4005
30 Fire Captain Specialist

10 - ATTACHMENTS:

1. Interagency Report of Incident and Dispatch Action – 23 pages
2. Red Flag Warning Message – 1 page
3. Fire Weather Zone Map – 1 page
4. Fire Perimeter Map – 1 page
5. Evidence Log – 1 page
6. Arcata/Eureka RAWS Weather Data – 2 pages
7. Photographic Log – 2 pages
8. Photographs 1-25, AA120 1, AA120 2, and RS1 – 14 pages
9. Supplementary Investigation Report (CRIST Summary) – 1 page
10. PG&E Emails – 2 pages
11. PG&E Response Letter – 2 pages
12. Supplementary Investigation Report (Witness Follow-up) – 1 page
13. Wildland Fire Investigation Origin and Cause Report – 3 pages
14. Incident Sketch – 1 page