

## Cause Determination

| Code: | E = Excluded; I = Included; P = Possible (if Included or Possible is used, further explain in the Details Section below). |  |
| :---: | :---: | :--- |
| E | Natural | Specific Cause: No evidence of lightning, volcano, etc. DNR lightning map checked 07/02/23 \& no 24 hr <br> or 7 day lightning noted. |
| E Undetermined | General Cause: <br> Specific Cause: <br> Activity/Group (Optional): |  |
| I | Human | General Cause: Railroad Operations <br> Specific Cause: Right of Way Vegetation Maintenance; Brakes or Wheels; Exhaust Particles <br> Specific Cause Detail (Optional): <br> Age Category: N/A <br> Prohibited: N/A <br> Activity/Group (Optional): Railroad <br> No probable evidence of another Human fire cause was located in the origin areas. |

## INVESTIGATION

## DETAILS

On Sunday, 07/02/23, at aprx 1315 hours, I was contacted by Central Washington Interagency Communications Center (CWICC) and informed of the need for a Wildland Fire Investigator for the Tunnel 5 Fire near White Salmon, Skamania County, WA. I spoke on the phone with Incident Commander (IC) Al Lawson. I checked the DNR Wildfire Dashboard Lightning Map and saw that no 24-hour or 7-day lightning had been recorded in that area. I contacted Skamania County 911 Dispatch who informed me they received many 911 calls about the fire beginning at aprx 1117 hours, but none of the calls provided useful information on the possible cause of the fire. At aprx 1930 hours, I arrived near the origin area using the GPS coordinates provided by CWICC. The coordinates brought me to BNSF Railroad (RR) MP 70 on the North side of Highway 14.

I observed a BNSF crew parked in a pullout East of the GPS coordinates. I stopped and asked about the fire origin location and was told it was aprx $1 / 4$ mile further West and that there were cones in the road. I exchanged business cards with a BNSF employee, RC Miller, 360-442-3361. When I asked for a train schedule for the trains which had gone through this area today, before the fire, he referred me to a Nate Hendrix, 406-672-4339. I was interested in speaking with those locomotive engineers or obtaining video from the train engines to gather useful investigative information such as persons seen, vehicles seen, suspicious items, and location of the fire if any when the trains passed through. I called Nate Hendrix, who stated he was currently on the BNSF Fire Suppression Train at Tunnel 5, and that he would speak with me when they were done doing fire suppression. I drove toward Tunnel 5, observed the cones in the road near the GPS coordinates provided by CWICC, and drove just West of Tunnel 5. I saw the BNSF Fire Train on the West side of Tunnel 5. I photographed the train as it moved slowly EB into Tunnel 5, back toward the CWICC coordinates and the cones in the road. The train was actively involved in fire suppression, spraying water on the tracks, the North shoulder of the tracks, and attempting to hit trees and brush which were fully involved with fire on the steep slope North above the tracks. I saw that the train contained a command caboose, 4 - 16,000-gallon tanker cars, and one engine pulling it East into the tunnel. I returned to where the cones were tipped over pointing toward the tracks above the North shoulder of Highway 14. Based on my training and experience, the tipped over pointing North cones signaled to other arriving responders that this was an entry point for the fire. I parked and climbed NB up the steep $80 \%$ sloped embankment. Once on the North side of the tracks, I looked back WB and saw the front light on the train engine, coming EB through Tunnel 5 very slowly toward me. I performed a brief walk around and observed two origin areas which stood out based upon the distinct " $U$ " fire pattern indicator and clear signs of advancing fire going with the westerly wind toward the NE and up the steep slope North of the tracks. I also observed backing indicators moving to the West of both origins indicating the fire had backed to the West into the wind. I quickly took pictures of these areas as the fire train approached slowly from the West. Prior to the train reaching these origin areas, I returned to my truck for flagging tape, which I used later that evening to flag off the two origins. I watched the fire train pass by slowly EB as it sprayed water for fire suppression on the tracks, onto the North shoulder of the tracks, and onto active flames on the steep
slope to the North. I called Nate Hendrix again to advise him I had found what I believed to be fire origin areas and that I hoped to get a train schedule soon. Hendrix stated he was just completing a second pass with the fire train through that area and would contact me once they were finished. After the fire suppression train passed EB by me, I flagged off the origin areas and cleared the scene for the evening at aprx 2140 hours.

On Monday, 07/03/23, I arrived back at the scene at aprx 0930 hours. This area of Highway 14 was barricaded on both the East and West sides and was guarded by law enforcement personnel and had been so since aprx noon on Sunday 07/02/23. This area was still barricaded upon my arrival on 07/03/23. The scene flagging was still in place. Fixed wing planes and helicopters were engaged in fire suppression on the steep slope along the North side of the origin area. I walked 360 degrees around this General Origin Area (GOA) twice, first clockwise from the North edge of the tracks West of the West origin area near a large boulder, East up to a deep gully filled with still burning railroad ties and tree snags at the far East end of the origin area, and back WB to an area West of the large boulder. I then performed this same walk counterclockwise. I observed backing indicators consisting of protection, angle of char, grass stems, and the $U$ burn patterns in the heel of each Specific Origin Area (SOA), which confirmed my belief that these were two SOAs for the Tunnel 5 fire. During my clockwise and counterclockwise walk arounds, I noticed a lot of what appeared to be metallic pieces of varying size, many of which had sheared off or had sharply cut fine shiny edges. Upon closer inspection, they appeared to be possible train brake pad parts. Several were within each of the SOAs. I also observed what were possibly two clean and black larger diesel engine emission carbon particles, both on the North side of the tracks and aprx the same distance from the North rail, 155 inches and 166 inches. I later learned from the BNSF that these shiny metallic looking pieces were a solid polymer lubricating pad which rubs against the moving train wheels and is manufactured by MPLTECHNOLOGY.com. IC AI Lawson arrived at my location at aprx 1030 hours after being released from management duties by the Type 2 team. I pointed out to him all the shiny pads I was seeing along with the two possible carbons. We then began a search of both SOAs, followed by the North and South track edges. IC Lawson was called back by the Type 2 team, and I finished the search along the Highway 14 North shoulder by myself, South of the tracks. The area searched included the GOA, both SOAs, both sides of the BNSF tracks, and the North shoulder of Highway 14, from the East side of Tunnel 5 to the furthest West sign for Spring Creek State Recreation Area. I took GPS waypoints for the start and end location of the search area. The search area was aprx 3,000 feet long $X 70$ feet wide $=210,000$ square feet. I collected a total of 72 solid polymer pads and 2 possible carbon emission particles. The collection of items was as follows:
12 pad pieces from South side of the tracks.
26 pad pieces from North side of the tracks.
18 pad pieces from North shoulder of Highway 14.
2 possible carbons North of the rail, at 155 inches North and 166 inches North of the North rail.
9 pad pieces from East SOA.
7 pad pieces from West SOA.
At aprx 2100 hours, I cleared the scene. Between 2100 and 2130 hours, I located two BNSF hotboxes. One aprx 1 mile West of the GOA, and the other aprx $1 / 2$ mile East of the GOA. I photographed them for identification and an inquiry will be made later to BNSF for any mechanical issues picked up by those hotboxes. On Tuesday, $07 / 11 / 23$, I transferred the evidence items to INV Eugene Duprey for storage at the Tumwater Evidence Facility.

On Tuesday, 07/04/23, at aprx 1030 hours, I arrived back at the scene. Both barricades were still in place and were occupied by law enforcement on each side of this location. The scene flagging was still in place. At aprx 1100 hours, I ran my metal detector and magnet over the two SOAs, the East SOA and the West SOA. I found no useful items of interest. I then placed metal reference point stakes in the Ignition Areas (IA) within each SOA. I took GPS coordinates of each stake using waypoint averaging to obtain a more precise location. I also ran my metal detector over each stake to confirm they could be located later. At aprx 1220 hours, I removed the scene flagging, released the scene, called the incident command post, and advised them I was leaving the area.

On Tuesday, 07/04/23, at aprx 1230 hours, just as I was entering my vehicle, WSP Trooper Dean Gallanger approached in his marked patrol vehicle and stated he had important information for me. Trooper Gallanger stated that while working the Highway 14 roadblock East of the origin on Sunday, 07/02/23, after the fire was reported and Highway 14 was closed, a man named Bryan Baller contacted him there in person. Baller told him he had seen a train go by before the fire started, he had taken a picture of the train, and wanted to pass it along to the investigator. Trooper Gallanger provided me the name Bryan Baller, 541-561-2718, bryanballer48@gmail.com. On 07/05/23, I called Bryan Baller at the number provided. Baller stated
he works for Union Pacific Railroad as a locomotive engineer. He was with his teenage son and their hobby is to take pictures of trains, especially older "Heritage" trains not commonly seen. Baller stated he and his son were driving WB on Highway 14 in the vicinity of White Salmon, WA, East of the origin area. They spotted an old BNSF green and white locomotive leader engine with a newer orange and black engine behind it. The older lead engine had the number 2322 on it, and the newer orange and black engine had the number 2600. These engines were pulling $12-15$ loaded cars which appeared to have lumber on them. This train was WB from White Salmon, going toward Vancouver, WA. Baller explained the green and white engine (2322) was possibly more than 40 years old, was likely non-turbocharged. In his experience with Union Pacific (UP) this green and white engine is not commonly used on open tracks in the Columbia River Gorge area. Being a non-turbocharged engine, it has a high likelihood of emitting diesel carbon emissions from the exhaust which could start a fire. Baller added that it was UP practice to not use these older non-turbocharged engines in the Columbia Gorge during summer months due to their propensity to start fires. UP primarily used these older engines within train yards/depots, and not out on open tracks in summer months. On Sunday, 07/02/23, at 1053 hours, Bryan Baller took a picture of this train going WB from where he was parked on the south shoulder of Highway 14, just East of the origin area. There is a brown and white sign there stating, "Spring Creek Recreation Area". His teen son also took pictures of the same train. Bryan confirmed the time on his camera was accurate at 1053 hours, but his son's camera time is about 40 minutes ahead/fast. He didn't notice anything wrong with the train and thought it was going 40 to 45 mph WB. On Sunday, $07 / 09 / 23$, I met with Bryan Baller and his son at their home in Richland, WA. I obtained copies of their photos. Bryan added that as they were driving WB on Highway 14 on Sunday, 07/02/23, just after taking pictures of the WB BNSF train 2322, they saw another BNSF train parked facing East at Cook's Siding which is just West of Tunnel 5. He took a picture of that train, and it had number 4787 on the engine. Bryan provided me a written statement.

On 07/05/23, I spoke with a Lisa Macy, 541-490-0737, who resides nearby. She confirmed Bryan Baller and his son were in the area on the day/time Baller had stated, aprx 1100 hours, and that they were taking pictures of the passing train. She was in that same area East of the origin, South of Highway 14 on Sunday 07/02/23. She stated she observed a man matching the description of Bryan Baller, and his son, parked in the same area she was. She provided a vehicle description for Bryan Baller's car which also matched. She saw them taking pictures of a WB train going by. The train was short in length, not many cars, and was very loud. Lisa Macy stated the time was about 1100 hours. About 15 minutes after the train passed by going WB, at aprx 1115, she noticed smoke coming from the origin area West of where she was at. She then saw flames to the West, observed emergency vehicles responding, and then left the area at 1152 hours. Lisa Macy provided a written statement.
Bryan Baller photo of train at Spring Creek Rec Area, East of the origin, taken 07/02/23 at 1053 hours


On 07/05/23, I spoke with Amtrak Detective Erik Vanderfange, 503-969-5399. He stated that on Sunday, 07/02/23, Amtrak's Empire Builder was WB near Bingen, WA, East of the origin area at aprx 0915 hours, and that at aprx 1117 hours when the fire was first reported, the same train was parked in Portland, OR. The EB Amtrak Empire Builder passed through the origin area later at aprx 1800 hours on Sunday, 07/02/23. On Wednesday, 07/12/23, DET Vanderfange provided me with still frame photos from the 0915 WB Amtrak train. The origin area was not burned, and specifically the two SOAs identified early in the investigation were not burned. The still photos do show a small burn scar aprx 4 feet X 4 feet in size at the far East end of the origin area at the lip of the deep gorge to the East. DET Vanderfange also stated their WB Empire Builder had not reported any mechanical issues nor had it triggered any hotbox warnings.

On Wednesday, 07/12/23, I spoke on the phone with Maeli Ready of Hood River, OR. She lives directly across the Columbia River from the origin area. She remembered specifically that on Tuesday evening, 06/27/23, between 2100 and 2200 hours, she saw a very bright light coming from a rail track grinding machine operating in the origin area of the Tunnel 5 fire. As this machine moved EB away from the origin area, she saw a fire start after the machine had left the area EB. She saw the machine back-up and extinguish the fire using fire suppression equipment on the same machine. The machine then moved away again EB, and there was no more fire. This occurred 5 days prior to the Tunnel 5 fire. She described to me other landmarks in the vicinity of where this small fire was started by the track grinding machine, and it made sense that this 4 ft X 4 ft small burn scar picked up on the Amtrak video was the fire Maeli observed on the evening of 06/27/23. On Friday, $07 / 14 / 23$, I spoke on the phone with Rick Pfeifer, 360-844-0405. He stated he was driving WB on Highway 14 near the Tunnel 5 fire origin area on Tuesday, 06/27/23 at aprx 2200 hours. As he was driving along the highway, he observed what was likely the same track rail grinding machine working on the tracks that Maeli Ready observed in the same area. As he drove passed WB, the machine showered his vehicle with sparks from the rail griding. He was somewhat familiar with the area and knew the vegetation to be very dry. He thought it was dangerous for BNSF to be track grinding in these conditions.

Amtrak Train Forward Camera


On Thursday, 07/06/23, IC AI Lawson met with Skamania County FD\#1 Firefighters Tim Newell \& Todd Anderson. I was on speaker phone with them as they walked through the scene. They were the first on-scene firefighters at the origin area North of Highway 14 and North of the BNSF tracks. They had originally responded with a brush truck containing 400 gallons of water and a tanker truck with 3000 gallons of water. They dispersed no more than 1000 gallons of water when they realized the fire was going to make it to the ridge top where the residences were and they would need the water up there. They cleared Highway 14 and drove to the ridgetop residences. They recalled upon arriving the fire was in the area of the large boulder and the large solar powered yellow road sign. Both Newell and Anderson provided statements. Todd Anderson further recalled that earlier a BNSF track grinding machine started a brush fire East of the Tunnel 5 fire origin near downtown Underwood, aprx 2 miles to the East of Tunnel 5. I received the report on that fire from the Skamania FD\#1 Chief. That fire occurred on Saturday, 06/24/23, at 0242 hours. BNSF was on-scene with their track grinder which had started the fire, BNSF extinguished, and agreed to mop up the fire. Prior to the Tunnel 5 fire on 07/02/23, BNSF caused 2 track grinding fires in the area between Tunnel 5 and Underwood, on 06/24/23 \& 06/27/23, just 5 and 8 days prior. According to the Skamania FD\#1 Chief, there had been no other fires in the area other than the track fires started by BNSF.

On Sunday, 07/09/23, at aprx 1445 hours, myself and DNR Police SGT Gary Margheim arrived back at the origin area. SGT Margheim and I measured from the painted white North shoulder line of Highway 14 to the North rail, a horizontal distance of 38 feet, and a height increase of aprx 18 feet. The distance to the East IA from the North shoulder line was aprx 55 feet, and to the West IA was aprx 58 feet. We then drove to the Debbi Trumbull residence in Hood River, OR, which is directly across the Columbia River from the origin area. Debbi Trumbull had taken some still photos and later provided them to the fire incident command post (ICP). Debbi provided us with her original photos directly from her cellphone. Having these original digital photos allowed us to zoom in with less distortion. Using her provided photos and our binoculars from where she took the photos on her deck, we were able to zoom in on the photos and with binoculars could see that there may have been a fire start further to the West, closer to Tunnel 5 , than I had originally thought on 07/02/23. A solar powered yellow street sign could be seen in between the original West SOA near the large boulder, and another possible fire start further to the West. SGT Margheim and I returned to the origin area at 1845 hours on Sunday, 07/09/23. I walked two full circles around this area, West of the West SOA near the large boulder, once clockwise and once counterclockwise. SGT Margheim was able to identify an area where backing indicators such as vegetation protected on the West side of rocks had transitioned into advancing indicators such as angle of char on grass clumps leading to the NE. Based on my training and experience, the area between the backing indicators and the advancing indicators would be a Specific Origin Area (SOA). I walked in a crisscross fashion between the North rail and the slope to the North within this new West SOA, placing colored pin flags at fire pattern indicators as I went through this area. The pin flags led me to a new Ignition Area (IA). I took a GPS coordinate of this IA, labeling it as New West IA. I photographed the area and used by metal detector and large magnet over this IA, not finding anything useful. After SGT Margheim and I finished examining the entire origin area for the Tunnel 5 Fire, we determined there were 3 SOAs, all on the North side of the tracks within the origin area. At 2035 hours we cleared the scene.


On 07/17/23, I called the five 911 callers documented by Skamania 911 Dispatch, who all called 911 at about the same time, 1117 hours, as follows:
Suzanne Vail, 360-355-2860. She was EB on Highway 14 driving toward the Hood River Bridge with her husband Patrick Vail. She had seen a train aprx 2 miles West of Tunnel 5, parked facing EB. This was likely BNSF engine \# 4787 as mentioned by Bryan Baller. Her husband was driving, and they have front and rear facing dashcams on their vehicle. As they drove through the origin area East of Tunnel 5, their dashcams recorded the fire in its early stages. This was at 1117 hours, and Suzanne called 911. They provided me their dashcam recordings which I have reviewed. Their time stamp is 1 hour behind the actual time, showing 1017. Suzanne said the fire was small, was above the tracks on the North side, and there were no suspicious vehicles or persons in the area.
Karen Williams, 360-600-0308. She was EB on Highway 14 driving toward Walla Walla, WA. She saw only smoke in the origin area, all above the tracks to the North. The smoke was 2 to 3 feet above the tracks and 3 to 4 feet wide. She saw no suspicious vehicles or persons in the area.
Jarrod Edwards, 253-230-6446. He was driving EB on Highway 14 toward White Salmon. He saw a fire above the tracks, about the size of a small van, aprx 100 yards East of Tunnel 5. There were no suspicious vehicles or persons in the area. Mallory Fry, 913-304-4811. She was driving EB toward the Hood River Bridge. She saw 4-foot-tall flames, all above the tracks on the North side, East of Tunnel 5, in an area aprx 50 feet long. She saw no suspicious vehicles or persons. She took pictures while driving and she did forward me one.
Dana Love, 541-490-1669. He was at Spring Creek Fish Hatchery, exiting the water after wind surfing. He saw smoke coming from the origin area. He was too far away to see the fire. He saw no suspicious vehicles or persons.

## Mallory Fry, earliest photo taken at 1118 hours



On 07/02/23, I originally requested the BNSF train schedule for the origin area of the Tunnel 5 fire. I received a schedule on $07 / 11 / 23$. The Excel spreadsheet received showed times starting in West Bingen and ending at East Cooks, a distance of aprx 9 miles. The Excel spreadsheet times were in Central Time, and I converted them to Pacific Time for this report, a difference of 2 hours. The Amtrak came through WB between 0922 and 0930 hours, as verified by DET Vanderfange. BNSF \#2600 came through EB at 0956. BNSF \#2600 is shown coming through EB again at 1058 hours, and I believe it was the engine being led by the green and white \#2322 leader engine that Bryan Baller took photos of aprx 25 minutes prior to the fire being reported at 1117 hours. BNSF \#2600 was being led by BNSF \#2322, but BNSF \#2600 was still facing EB as it was WB while BNSF \#2322 was facing WB, travelling WB, and leading \#2600. The Excel spreadsheet shows BNSF \#2322 came through WB at 1112 hours, but the photos show the \#2322 and \#2600 are tied together while WB, meaning one of their time stamps is off. The Tunnel 5 fire was reported to 911 at 1117 hours. The persons seeing the fire at 1117 hours were near the origin area. Bryan Baller and Lisa Macy were just East of the origin area, in the same place, at the same time, and stated the train was there between aprx 1053 and 1100 hours. The BNSF \#2600 timer has it there at aprx 1058 hours. I am theorizing the timer of BNSF\#2322 is not accurate. At 1112 hours, a camera on top of Skyline Medical in White Salmon, WA shows an unknown long semi-truck or train WB toward the origin area. The origin area itself is obscured by a hilltop. The camera is too far from the origin area to see a definitive description. At 1118 hours, the Skyline Medical camera shows the smoke rising from behind the hilltop where the origin area is. Both Lisa Macy and Bryan Baller saw a train pass through the origin area between 1053 and 1100 hours. Lisa Macy was approximating her time, Bryan Baller states his time stamp on his camera is accurate, and in speaking with Skyline Medical they state their camera time stamp is accurate. Lastly, witness Rozalind Plumb provided a statement that she was trail running on Dog Mountain which is West of the origin area. The trailhead where she parked is very near the BNSF tracks and Highway 14, but not within sight of the tracks. She finished up her run and was entering her car at aprx 1100 hours, and at the same time she was listening to an unknown train go by which was out of her view but very loud. This trailhead is aprx 5 miles West of the origin area for Tunnel 5 . This would match up with what Bryan Baller and Lisa Macy observed. At 1122 hours, Rozalind Plumb was driving EB through the origin area, saw the flames above the tracks on the North side, and she called 911.

On 07/12/23, I requested the video from the BNSF engines travelling through the origin area. On 07/21/23, BNSF Attorney Chris Lopez responded that I could view those videos with BNSF Investigator Andrew Day on Wednesday, 07/26/23, in Spokane, WA. I met with BNSF Investigator Andrew Day at the BNSF offices in Spokane, WA. The videos showed the following, again with Central Time converted to Pacific Time for this report:
0829 hours, BNSF engine \#6092 WB, the origin area was not burned, no suspicious vehicles or persons observed. 1058 hours, BNSF engine \#2600 EB, the origin area was not burned, no suspicious vehicles or persons observed. 1112 hours, BNSF engine \#2600 WB, BNSF Investigator Day stated engine \#2600 was in the $2^{\text {nd }}$ position, being led by another engine, and its forward-facing camera was now facing backwards toward the East as it went through the origin area WB. Since \#2600 was now backwards facing EB while going WB and pulling loaded cargo containers, the camera on \#2600 was blocked and nothing but the North hillside could be seen. There was no video from BNSF \#2322. I asked BNSF Investigator Day about the times from the videos not matching the times from the provided Excel spreadsheet. He stated he didn't know the answer, and doubted these different devices and train engines would be time synchronized. Since the time stamps cannot be determined accurate for all of these devices/engines, I believe the statements of Baller, Macy and Plumb verify the train came through WB at aprx 1053 to 1100 hours, and the fire was reported to 911 at 1117 hours.

Weather was somewhat difficult to analyze for the timeframe the fire was reported. There were no nearby RAWS stations and the publicly available personal weather stations had widely varying details. I asked the two first arriving Skamania FD\#1 firefighters, and they both stated the wind was from the West at aprx $20+\mathrm{mph}$. They suggested I use a local windsurfer weather station called Wind Archives which reports wind speeds in that area and at that elevation. Wind Archives had the low wind speed at 12 mph with gusts at 22 mph near the time the fire was reported at 1117 hours. Various personal weather stations reporting in that area had the average temperature at 75 degrees $F$ and average humidity at $47 \%$.

Numerous other persons provided pictures or videos of the fire in its beginning stages as follows:
Cierra Perez, perezcierra3@gmail.com, provided a video showing the fire only on the North side of the tracks in the origin area, but both the date and time are off. I emailed Perez but never received a reply.
Patrick Vail, 360-355-2860, provided front and rear facing dash camera video taken at 1117 hours, with his device time being 1 hour slow.
Debbi Trumbull, 541-399-3854, provided pictures taken at 1126, 1128, \& 1144 hours.
Vince Ready, vready@gmail.com, provided a picture and a video taken at 1135 hours.
The hypothesis developed is WB BNSF engines \#2322 and \#2600, pulling 12 to 15 loaded cars, emitted something which started 3 fires within the origin area along the North side of the BNSF tracks near RR MP 70. Receptive fuels growing in soil along the tracks consisting of seasonally dry grass and small brush growing in the origin area just North of the North rail was ignited in 3 areas by the emitted object(s). Multiple witnesses driving along the tracks or observing the fire from across the river provided photos and videos. The photos and videos provided show the fire in its beginning stages near these 3 SOAs within the origin area. No other evidence was located which can explain the 3 simultaneous fires starting with in the same time frame and inside this 690-foot-long area, all on the North side of the BNSF tracks. Fire suppression efforts by the first arriving Skamania FD\#1 crews, the BNSF fire suppression train making two passes through the origin area, and aerial fire suppression efforts the following day along the North side of the origin area may have contributed to some loss of fire pattern indicators and possible evidence.


## EVIDENCE / PROPERTY

E1 through E6, containing 74 total items collected on 07/03/23, turned over to INV Eugene Duprey for storage in Tumwater, WA on 7/11/2023.

## CONCLUSION / FINDINGS

A BNSF train travelled through the origin area of the Tunnel 5 fire at aprx 1053 to 1100 hours on Sunday, 07/02/23. This train emitted some object(s) which started fire in 3 areas over an aprx 690-foot distance, all on the North side of the tracks and East of Tunnel 5. Several witnesses not known to each other identified this origin area along the North side of the BNSF tracks near Railroad MP 70, just East of Tunnel 5, North of Highway 14 in Skamania County, WA. Two witnesses photographed an older vintage non-turbocharged BNSF engine pulling 12 to 15 loaded cars WB through the origin areas aprx 25 minutes prior to the fire being seen and reported. I examined advancing, backing, and lateral/transition fire indicators in and near the 3 SOAs. I collected 72 possible train wheel solid polymer lubrication pad parts, and 2 possible emission carbons, within and near the SOAs and IAs. These items were deposited into fine and seasonally dry grass/small brush growing in mineral soil on the North side of the BNSF tracks. Gusty winds were from the West at 12 to 22 MPH, mild humidity at $47 \%$, and the aprx temperature was 75 degrees F. A steep and heavily wooded $85 \%$ slope was on the North side of the origin area, and according to local fire personnel this slope had not been burned in decades. Additionally, BNSF track maintenance activities had ignited two other fires in the same vicinity just 5 and 8 days earlier. These two track maintenance fires occurred during hours of darkness when temperatures would have been cooler and humidity higher. A localized fire danger along the tracks in this general area should have been known to BNSF.

After eliminating other probable causes for this fire, the Wildland Fire Investigation determined this fire was started by Human means: Railroad Operations; Right of Way Vegetation Maintenance; Wheel Lubrication Parts; and Exhaust Particles.

This is a preliminary report. There may be supplemental reports to follow. I reserve the right to change my conclusion based on new or future information.

| Attachments (check all that apply) |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\square$ Burn Ban Order | X Weather Observations | X Fire Perimeter Map |  | X Photograph Log(s) |  |  |
| $\square$ Burn Permit | $\square$ Fire Weather Watch | X Fire Origin Location Map |  | X Statement(s) |  |  |
| $\square$ Citation(s) | $\square$ Red Flag Warning | X Fire Scene Sketch |  | $\square$ Field Notes |  |  |
| X Incident Narrative | $\square$ WildCAD Incident Card | $\square$ Lightn | ning Detection Map(s) | X Contacts (list) |  |  |
| X Other: Property/Evidence Control and Chain of Custody (Transfer) Form |  |  |  |  |  |  |
| $\square$ Other: IFPL (Tool Inspection) |  |  |  |  |  |  |
| X Other: Skamania County 911 Dispatch CAD Log |  |  |  |  |  |  |
| X Other: BNSF \& Amtrak Information |  |  |  |  |  |  |
| Signatures |  |  |  |  |  |  |
| I, the undersigned investigator, certify under penalty of perjury under the laws of the State of Washington that the foregoing is true and accurate to the best of my knowledge. |  |  |  |  |  |  |
| Reviewed By (print): |  | Signature: |  |  | Date: | / /2023 |
| Approved By (print): |  | Signature: |  |  | Date | 08/25/2023 |


| Incident Name： |  | Tunnel 5 |
| :--- | :--- | :--- | Incident Date：07／02／2023

## LEGEND

| $\checkmark$ | Advancing Fire Indicator | Wind（Direction／Speed） <br> （WEST／12－22 MPH） |  | －ロロー■ | Trail | 1111 | Power line |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| I | Lateral Fire Indicator |  |  |  | Fence | 2 | Structure |
| 5 | Backing Fire Indicator | $\cdots$ | Creek |  | Secondary Road | $\Delta>$ | Aerial Retardant Drop |
| 5 | Fire Perimeter | （ | Reference Point（s） | －－－－－E | Highway | XXXXX | Completed Dozer Line |
| Q | Fire Origin | 0 | Spot Fire | 1H4H | Railroad | － | Completed Hand Line |




## DSC_3437

Looking NE; Bryan Baller pic of BNSF engines 2322 \& 2600 WB toward the origins at 1053hrs, 17 min before fire.


## 3

Looking N; Debbie Trumbull pic at 1126hrs from OR side, shows 3 possible origin areas, furthest East is smallest.


IMG_2250
Looking E; Mallory Fry pic of fire at 1118 hrs while driving WB.


## P7020001

Looking NE; BNSF fire train, 1944hrs, w 4-16,000 gallon water tanks, EB in tunnel back toward origin on 2 nd pass.


P7020005
Looking W; BNSF fire train EB in tunnel toward origins, on $2^{\text {nd }}$ pass through with fire suppression water.


## P7020020

Looking E; West origin just prior to fire train making $2^{\text {nd }}$ pass with fire suppression water.


P7020007
Looking N; cones placed by first FFs, directing others to initial attack site near fire head just West of East origin.


## P7020030

Looking E; East origin just prior to fire train making $2^{\text {nd }}$ pass with fire suppression water.


P7020032
Looking W; West \& East origins in relation to each other, West origin is to the left of boulder.


P7020039
Looking W; both West \& East origins flagged off by me on the previous day, 07/02/23.


## P7090009

Looking W; New West origin, West of solar sign, 07/09/23 after Trumbull interview. Fire backed W \& advanced NE.


## P7030076

Looking NW; original West origin with pin flags. Fire backed W \& advanced NE.


P7030077
Looking E; original West origin with pin flagging. Fire backed W \& advanced NE.


## P7030078

Looking SE; original West origin with pin flagging. Fire backed W \& advanced NE.


P7030091
Possible solid polymer train wheel lubricant pad parts in East origin.


P7080004
2 possible carbon particles, 155" \& 166" North of North side of tracks between original West \& new West origins.


9 possible solid polymer train wheel lubricant pad parts
from East origin area, North side of tracks.

## P7080005



## P7080006

7 possible solid polymer train wheel lubricant pad parts from West origin area, North side of tracks.


## P7080002

26 polymer wheel lubricant pad parts from North side of tracks, outside of the origin areas. 72 pieces collected.






