



WILDLAND FIRE ORIGIN & CAUSE REPORT

Incident Date	10/14/2016
WildCAD Number	NV-NWS-30641
LEI Number	

LOCATION						
Fire Name	Fire Number	State	District	Field Office	County	
LITTLE VALLEY	KR6X	NV			WASHOE	
Origin Location: Describe geographic landmarks, highways, roads, trails, etc.		Township	Range	Section	¼ Sec	Median
Little Valley area 3 miles directly west of 395A (Old Highway 395). 0.28 miles southwest of Little Valley road (NF-042).		16N	19E	17	SW	Mt. Diablo
		Latitude (D - M - S)			Longitude (D - M - S)	
		39	14	39.8	119	52 44.8

JURISDICTION (at origin)		
Agency	Lead Origin & Cause Investigator	Assistant Origin & Cause Investigators
STATE OF NEVADA	DENNIS TERRY	RYAN ELLIOTT MARTIN AZEVEDO

EVENT SEQUENCE															
Estimated Time of Ignition				Time of Fire Report				Time Origin Protected				Time Origin Released			
Mo.	Day	Year	Time	Mo.	Day	Year	Time	Mo.	Day	Year	Time	Mo.	Day	Year	Time
10	14	2016	0030	10	14	2016	0135	10	14	2016	1130	10	14	2016	1400
Who		N/A		Who		911		Who		RYAN ELLIOTT		Who		DENNIS TERRY	

FIRE BEHAVIOR				WEATHER				
Estimated Acres	Fuel Type @ Origin Material First Ignited			Weather Observer (On Scene)	Temperature	Relative Humidity	Wind Direction	Wind Speed
2291	CURED GRASS							
Slope %	Aspect: N E S W		Elevation	Weather Station	Temperature	Relative Humidity	Wind Direction	Wind Speed
FLAT	FLAT		6460'	Little Valley (LVYN2)	52°F	32%	W	16mph

CAUSE DETERMINATION (I) = Included Cause (E) = Excluded Cause (P) = Partially Included/Excluded (Explanation in Narrative)	
<input type="checkbox"/> E	Lightning (Detection Method)
<input type="checkbox"/> E	Equipment Use (Exhaust, Break Shoe, Aircraft, Vehicle Fire, Other)
<input type="checkbox"/> E	Smoking (Tobacco, Other)
<input type="checkbox"/> E	Campfire (Cooking, Warming, Ceremonial, Other)
<input type="checkbox"/> I	Fire Use (Agricultural, Land, Slash, Refuse, Burn Barrel, Other)
<input type="checkbox"/> E	Railroad (Ignition Activities Associated with Railroad Companies)
<input type="checkbox"/> E	Incendiary (Arson) (Ignition Component/ Material First Ignited)
<input type="checkbox"/> E	Children (Ignition Activities Associated with Children: 12 - years and younger)
<input type="checkbox"/> E	Miscellaneous (Power lines, Fireworks, Cutting/Welding/Grinding, Firearms Use, Blasting, Structures, Spontaneous Combustion, Flare Stack/Pit Fires, Other)
<input checked="" type="checkbox"/> X	Cause Determined: Explanation in Narrative
	Cause Undetermined: Explanation in Narrative

SYNOPSIS (Brief summary of fire investigation)

I (Dennis Terry) was asked by BLM Duty Officer Palma the morning of the 14th that I had been requested to be part of an investigation team tasked with discovering how the Little Valley fire had started. Myself, Ryan Elliott (BC 3908), and Martin Azevedo from the State Fire Marshall's office conducted an Origin and Cause investigation and determined that the cause of the Little Valley fire was the result of an escape from the Little Valley prescribed fire that had been initiated on 10/4. The last unit that was burned is adjacent to the Specific Origin Area of the Little Valley fire. We followed macro fire pattern indicators that enabled us to determine a Specific Origin Area. This area is approximately 15 to 20 feet from the control line for the Prescribed fire. Winds at the time of the escape were measured as sustained winds of 16 to 20 mph out of the west / westnorthwest with gusts of over 80 mph. Within the perimeter of the Prescribed fire we found and photographed multiple areas with reignited dead fuels and a still-hot stump hole. We also found fresh seedlings that appeared to have been freshly burned. The Specific Origin Area and fire pattern indicators are at a vector of downwind from the Prescribed fire conducted the previous week.

It is the finding by this investigation team that the Little Valley fire was caused by an escape from the Little Valley Prescribed fire.

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NARRATIVE *(Facts of Investigation)*

I (Dennis Terry- BC 3906) was contacted by BLM Duty Officer Jonathan Palma early on the morning of October 14, 2016 and was asked if I would be willing to participate on an Investigation team for the Little Valley fire which had occurred that morning. I told him I would be willing to participate. I responded to the fire at 0941 hours.

Enroute to the fire I was contacted by Ryan Elliott (BC 3908) and was told he too had been ordered as an investigator for the Little Valley fire. I was also notified that he had met with Martin Azevedo from the State Fire Marshall's office who would assist us in investigating the fire.

INVF's Elliott and Azevedo made their way into the heart of the Little Valley fire arriving at the General Origin area at approximately 1020 hours but were unable to begin their investigation due to hazardous conditions of high winds and falling trees. This General Origin Area is also proximate to the far southern end of the Little Valley Prescribed fire. At approximately 1130 hours they were able to do initial site reconnaissance and at the time I was told it was safe to come up the road to the General Origin Area. I made my way up there and arrived at approximately 1230 hours. By that time Elliott and Azevedo using the Scientific Method and analyzing fire pattern indicators had worked their way to the Specific Origin Area of the Little Valley fire.

I arrived at the Specific Origin Area at approximately 1230 hours and met with Elliott and Azevedo. They showed me all the flags they had placed identifying fire pattern indicators to arrive at the Specific Origin Area. Upon review, I concurred with their findings and we began to photograph, sketch and document the General and Specific Origin Areas. Azevedo took photographs of the flagged fire pattern indicators as well as the General and Specific Origin Areas. As Azevedo took photographs, I sketched the General Origin Area documenting the placement of flags and the Fire Pattern Indicators. Once the photography and sketching was concluded, we placed two Reference Point stakes along the control line for the Prescribed fire and GPS'd those points. We then began to measure distances between the Fire Pattern Indicators and each Reference Point. Measurements were concluded at approximately 1400 hours and the scene released at 1410 hours.

I then returned to the Specific Origin Area on 10/20/2016 @ 1030 hours with a GIS Specialist and GPS'd all the indicators that were used in this investigation in order to provide a more accurate sketch for this report.

Fire pattern indicators used to determine fire direction of spread and the Specific Origin Area included:

- **Angle of char**
- **Protection**
- **Staining**
- **Foliage freeze**

The following fire causes were **eliminated**:

Lightning: Records were obtained from the BLM Lightning Detection System from the Wildland Fire Management Information website (lightning.nifc.gov) for the previous 72 hours from the time the fire was reported. No lightning was detected.

Equipment Use: This category includes any type of mechanical equipment that creates heat either through use of internal combustion engines, electronic motors, or friction caused fires. The use of mechanical equipment leaves easily identified signs. The Specific Origin Area did not contain physical evidence of motor vehicle use or other equipment use.

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Smoking: Fires can be caused from any type of smoking activity. This includes discarding any unextinguished smoking materials including cigarettes, cigars, pipe tobacco, illegal narcotics, matches, or other lighting devices or paraphernalia. A very unique set of weather conditions, fuel types and orientation are required to cause a wildfire with a discarded cigarette. The Specific Origin Area or fire area in general did not contain any evidence of smoking related activities.

Campfire: Campfire caused fires are generally associated with cooking, warming, or lighting. This type of activity will normally leave physical evidence that includes food items or packaging, rock rings, signs of human occupancy, remains of collected wood, or damaged/discarded portable stoves, flammable liquids, or barbecue briquettes. Examination of the Specific Origin Area revealed no evidence associated with campfires.

Railroad: There is no railroad activity with 5 miles of the Specific Origin Area of the fire.

Incendiary (Arson): Arson fires are deliberately, maliciously, or recklessly set. These fires can be ignited using any open flame device. Arson may be established by finding physical evidence or identifying a pattern of suspicious or known arson fires in a geographic area, which has not been established in this case. Individuals committing wildland arson often choose a location along a road that provides easy egress by motor vehicle. That was not the case in this instance. Access to the Specific Origin Area was blocked by locked gates at the time this fire started.

Children: Children caused fires are generally associated with children playing and their curiosity with fire. These fires are generally found near residential areas, playgrounds, schools, and campgrounds. This fire was in a very remote area far from any of the above mentioned locations. Children caused fires will normally contain evidence of children playing in the immediate area. No evidence was found to suggest children had been playing near the Specific Origin Area.

Miscellaneous: This category includes fireworks, shooting, welding, blasting, spontaneous combustion, reflective or magnifying objects, power lines, and other less common ignition sources. No evidence to suggest any miscellaneous cause was found near the Specific Origin Area.

CONCLUSION:

FIRE CAUSE: FIRE USE

Based on fire pattern indicators, mapping, witness statements, and utilizing the Scientific Method, this fire was caused by an escape from the Little Valley Prescribed fire (burn). All other possible causes for this fire were eliminated. With winds coming out of the west/west northwest at a steady speed of 16 to 20 mph with gusts of over 80 mph, embers from smoldering or reignited vegetation crossed the control line for the prescribed fire and ignited unburned vegetation outside the prescribed fire.

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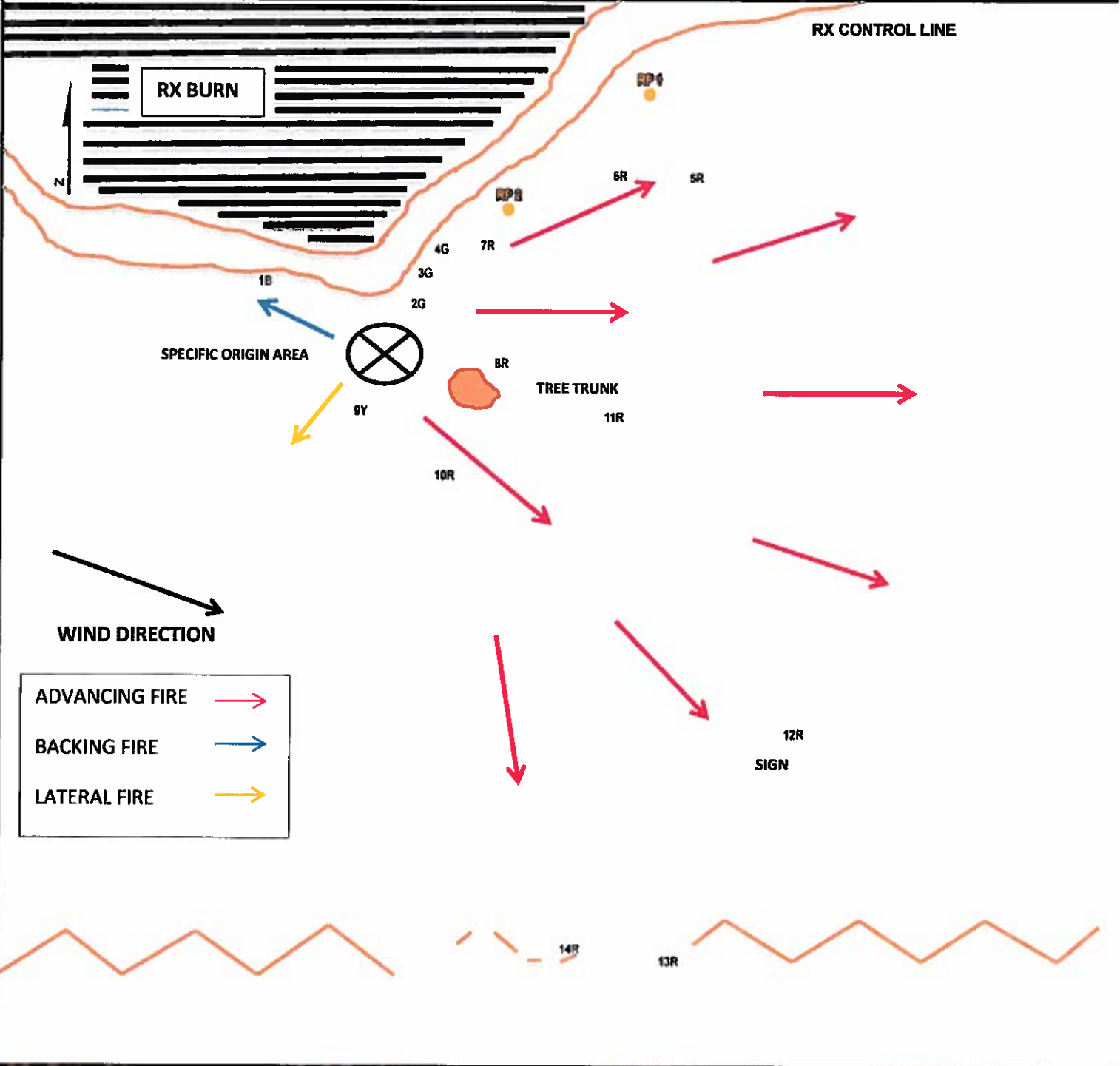
V.1.0 W/1P.2015

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GENERAL ORIGIN AREA SKETCH / MAP UTILIZING GIS POINTS

Fire Name	Fire Number	Latitude			Longitude		
LITTLE VALLEY	KR6X	39	14	39.8	119	52	44.8



Scale	Not to Scale	Author	DENNIS TERRY	Date	10/21/2016	Time	1400
Prepared By (Print and Signature)		Date		Reviewed By		Date	
DENNIS TERRY		10/22/2016					

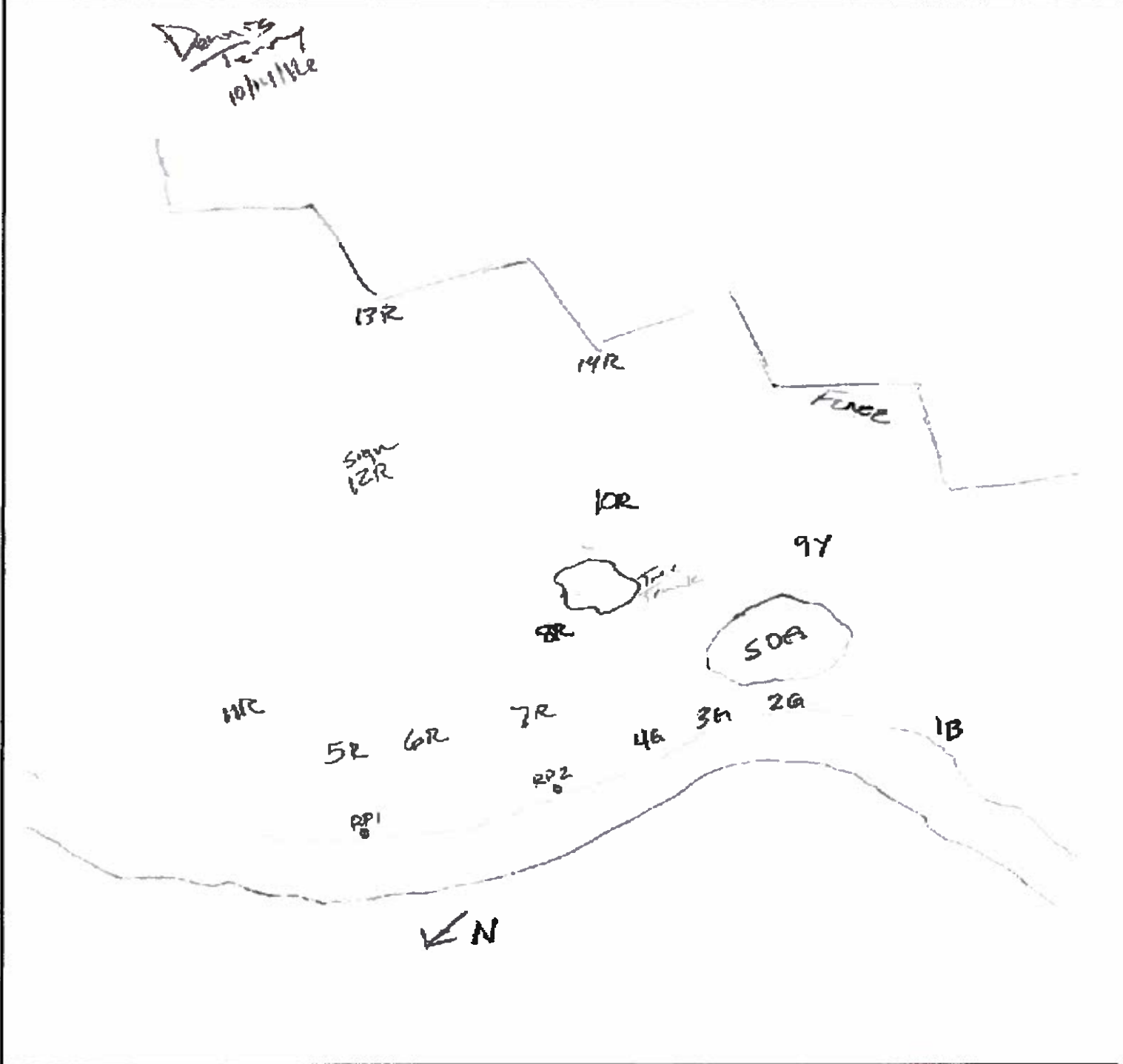


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GENERAL ORIGIN AREA SKETCH / MAP

Fire Name	Fire Number	Latitude			Longitude		
LITTLE VALLEY	KR6X	39	14	39.8	119	52	44.8



Scale	Not to Scale	Author	DENNIS TERRY	Date	10/14/2016	Time	1315
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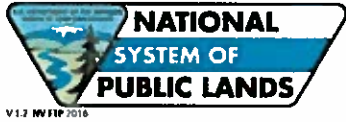
SPECIFIC ORIGIN AREA IN GOOGLE EARTH WITH INDICATOR FLAG LOCATIONS

Fire Name	Fire Number	Latitude			Longitude		
LITTLE VALLEY	KR6X	39	14	39.8	119	52	44.8



Scale	TO SCALE	Author	DENNIS TERRY	Date	10/18/2016	Time	11:37
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PHOTOGRAPH LOG

Photographer		Camera		Lens		
MARTIN AZEVEDO		Canon EOS DIGITAL REBEL XT		ISO-400:f-5: 1/80 sec		
Photo Number	File Name	Printed For Report	Description			
IMG_6939	LITTLE VALLEY		General Origin Area taken facing northwest.			
IMG_6940	LITTLE VALLEY		General Origin Area taken facing southeast.			
IMG_6941	LITTLE VALLEY		General fire area facing east.			
IMG_6942	LITTLE VALLEY		Little Valley Meadow in RX taken facing northwest.			
IMG_6943	LITTLE VALLEY		Little Valley meadow in RX taken facing south.			
IMG_6944	LITTLE VALLEY		General fire and RX burn area taken facing southeast showing heat in RX with control line.			
IMG_6945	LITTLE VALLEY		General fire area and RX area taken facing southeast showing heat in RX.			
IMG_6946	LITTLE VALLEY	x	General fire area and RX burn area taken facing east. Control line for RX in middle. RX left. New fire right.			
IMG_6947	LITTLE VALLEY		General Origin area taken facing north.			
IMG_6948	LITTLE VALLEY		General Origin area taken facing east.			
IMG_6949	LITTLE VALLEY		RX burn area taken facing north.			
IMG_6950	LITTLE VALLEY	x	Three green flags (2G, 3G, 4G-areas of interest) taken facing southwest indicating small spot fires that didn't continue to burn.			
IMG_6951	LITTLE VALLEY	x	Area of interest (4G). Showing a spot fire that didn't continue to burn.			
IMG_6952	LITTLE VALLEY	x	Area of interest (3G). Showing a spot fire that didn't continue to burn.			
IMG_6953	LITTLE VALLEY	x	Area of interest (2G). Showing a spot fire that didn't continue to burn with burning pine cone.			
IMG_6954	LITTLE VALLEY		RX burn facing east showing heat.			
IMG_6955	LITTLE VALLEY		RX burn facing east showing heat.			
IMG_6956	LITTLE VALLEY		Little Valley meadow facing north showing ignition pattern.			
IMG_6957	LITTLE VALLEY	x	RX burn area facing east showing heat.			
IMG_6958	LITTLE VALLEY	x	RX burn area facing southeast showing heat. Investigators in background are in the new fire with control line visible.			
IMG_6959	LITTLE VALLEY		RX burn facing east showing heat.			
IMG_6960	LITTLE VALLEY		RX burn facing east showing heat.			
IMG_6961	LITTLE VALLEY		RX burn facing east showing heat.			
IMG_6962	LITTLE VALLEY	x	RX burn facing east. Showing control line and new fire with flagging. Showing angle of char.			
IMG_6963	LITTLE VALLEY		Hot stump hole with the RX burn.			
IMG_6964	LITTLE VALLEY		Hot stump hole with the RX burn.			
IMG_6965	LITTLE VALLEY	x	Hot stump hole within the RX burn. Showing heat in the background.			
IMG_6966	LITTLE VALLEY		RX burn facing east showing angle of char.			
IMG_6967	LITTLE VALLEY		RX burn area facing southeast showing angle of char.			
IMG_6968	LITTLE VALLEY		RX burn facing east showing control line, new fire, and angle of char.			
IMG_6969	LITTLE VALLEY		RX burn facing east showing heat.			
IMG_6970	LITTLE VALLEY		RX burn facing northeast showing heat.			
IMG_6971	LITTLE VALLEY		RX burn facing north showing heat.			
IMG_6972	LITTLE VALLEY		Specific Origin Area facing east showing fire spread direction.			
IMG_6973	LITTLE VALLEY	x	Flag 7R facing southeast showing advancing with protection.			
IMG_6974	LITTLE VALLEY		Flag 8R facing east showing advancing with staining and angle of char.			
IMG_6975	LITTLE VALLEY		Flag 11R facing southeast showing advancing with protection, angle of char, and foliage freeze.			
IMG_6976	LITTLE VALLEY		Flag 12R facing southeast showing advancing with staining.			
IMG_6977	LITTLE VALLEY		Flag 14R facing north showing advancing with protection.			
IMG_6978	LITTLE VALLEY	x	Flag 13R facing southeast showing advancing with protection.			
IMG_6979	LITTLE VALLEY	x	Flag 13R facing southeast showing advancing with protection and staining.			
IMG_6980	LITTLE VALLEY		General fire area facing east showing green tree across the road.			
IMG_6981	LITTLE VALLEY		General fire area facing east showing green tree across the road.			
IMG_6982	LITTLE VALLEY		General fire area facing east showing green tree across the road.			
IMG_6983	LITTLE VALLEY		Flag 1B facing south showing backing with protection and angle of char.			
IMG_6984	LITTLE VALLEY	x	Flag 1B facing south showing backing with protection and angle of char.			
IMG_6985	LITTLE VALLEY		Flags 2G, 3G, and 4G facing northeast showing items of interest. Spot fires.			
IMG_6988	LITTLE VALLEY	x	Flag 5R facing south showing advancing with protection.			

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IMG_6989	LITTLE VALLEY		Flag 6R facing south showing advancing with staining and foliage freeze.
IMG_6990	LITTLE VALLEY	x	Flag 6R facing south showing advancing with staining and foliage freeze
IMG_6991	LITTLE VALLEY		Flag 7R facing south showing advancing with staining and protection.
IMG_6992	LITTLE VALLEY	x	Flag 8R facing east showing advancing with angle of char.
IMG_6993	LITTLE VALLEY	x	Flag 9Y facing southeast showing flanking with protection and angle of char.
IMG_6994	LITTLE VALLEY	x	Flag 10R facing east showing advancing with protection, foliage freeze, and angle of char.
IMG_6995	LITTLE VALLEY	x	Flag 11R facing east showing advancing with protection, foliage freeze, and angle of char.
IMG_6996	LITTLE VALLEY	x	Flag 12R facing southeast showing advancing with staining.
IMG_6997	LITTLE VALLEY		Flag 13R facing east showing advancing with protection and staining.
IMG_6998	LITTLE VALLEY	x	Flag 14R facing east showing advancing with protection.

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