

Sink's Canyon Prescribed Fire (TB- 68)
Lander Field Office
April 10, 2003 Incident Review

Background:

On April 10, 2003 the personnel on Unit PF2 of the Sink's Canyon prescribed fire experienced a wind shift that caused the fire to burn into the established MMA (Maximum Management Area) and subsequently out of the MMA. The fire also flared up from a spot fire on April 13 and burned four more acres outside of the MMA and into the MMA for Unit 3. Initial mapping on April 10 estimated that the burn was outside of the MMA, but still on land covered by the signed landowner agreement. After the spot fire on April 13, GPS mapping was done and it clearly showed that the prescribed fire had exceeded the MMA. Due to weather conditions the area was not accurately mapped until the week of April 21. This mapping determined that 12.76 acres had burned out of the MMA onto private land.

Review:

The Southern Zone Fire Management notified the Wyoming BLM State Office of the updated mapping on April 28 and requested that the BLM State Fuels Specialist perform a review on the incident. The review was arranged for May 5 through 7. The review consisted of interviewing the personnel involved, a site visit, and review of all burn plan documentation.

Events:

04/7-8 0900 - On scene constructing hand line – 5 foot brush line w/ 1 ½ foot handline
04/10 1001 – Spot Weather Forecast issued
1130 – Test fire initiated, results within blacklining parameters
1200 – Blacklining started – working from NE corner down hill, then cross slope along road
1400 – Start interior firing in NE corner with spot ignitions
1640- Wind switch from E/SE to W/SW, relative humidities drop to 15% – fire burns decadent bitterbrush in bowl and jumps line. Fire continues following heavier fuels (bitterbrush and juniper) cross-slope above rock cliffs and snow banks. Personnel engage in suppression actions, hot spotting and flanking fire. Fire stops at rock outcropping in NE corner.
2000 – Wind switches to N/NW. Sun goes behind ridgeline and fire lays down.
2030 – Wyoming Honor Farm personnel released back to Riverton for night.
2100 – 2 BLM personnel released
2400 – 3 BLM and BIA personnel released.
04/11 0800 – 20 personnel (same as 04/10) on scene mopup all day, grid for spots.
1800 - Wyoming Honor Farm personnel released.
1830– BLM Personnel released back to Lander for the night.

- 04/12 0830 – 5 personnel are on scene to finish mopup and gridding. No active fire, no visible heat within 1 chain of the line.
1800 – All personnel released.
- 04/13 1500 – Lander Fuels Specialist informed of smoke on burn unit by F.O. Manager.
1600 – 2 USFS employees who live in the area hike to unit (They were the reporting parties to the Field Office Manager)
1730 – Fuels Specialist arrives with Lander Fuels Planning Specialist. Spot fire was actively spotting and torching. Spot fire location was 200 feet away from the previous fire line across the rock outcropping that had stopped the fire advance on April 10.
2000 – Spot fire contained.
2030 - Personnel released to Lander for night.
- 04/14 0830 – 10 BLM personnel on scene.
1000 – 16 Wyoming Honor Farm personnel on scene.
1730- Mopup completed, personnel released.
- 04/15 0900 – 8 BLM personnel on scene.
1000 – Wyoming Honor Farm on scene.
1130 - 4 BLM personnel released.
1630 – All personnel released, no smokes showing.
- 04/16 1000 to 1600 - 2 BLM personnel on scene monitoring spot fire. No smokes found.

Issue 1: Did the burn plan meet BLM requirements?

Finding: The burn plan was reviewed and it meets the minimum Wyoming BLM Standard that mirrors the National Standard.

Recommendation: There were several sections that need to be reviewed and a decision made on modification to enhance its usefulness. They are:

1. Modifying some prescribed environmental parameters to better reflect conditions encountered in the field. They include making the slope a constant rather than a variable and modifying the temperature and relative humidity to better reflect desired one-hour fuel moisture ranges.
2. Reviewing the other units in the project to ascertain if there are significant inclusions of fuel models other than fuel model 2 that would change fire behavior.
3. Modify wording on blacklining and ignition section to reduce the ambiguities found.
4. There was no substantial definition of an escaped fire in the prescribed fire units of this project. A solid definition needs to be included so there is no question of what is an escape.
5. A review of the remaining MMA's for the project to determine if modifications should be made in size and boundary location to facilitate future operations.

Responsible Parties: Lander F.O./BIA Fuels Specialist and Lander F.O. Fire Planning Specialist. Zone FMO for Technical Review if modifications are made.

Issue 2: Determine if the prescription, actions and procedures in the prescribed fire were followed.

Finding: Prescription – for the majority of the unit the prescription was adequate. The un-modeled inclusion of decadent bitterbrush (Fuel Model 6) that was close to the line in the southern portion of the unit was not modeled. The environmental conditions (wind speed and relative humidity) in the spot forecast and at the time of the wind switch gave fire behavior predictions for the modeled fuels that were within the scope of the acceptable range of fire behavior parameters. The un-modeled inclusion of bitterbrush was outside of the acceptable range.

Actions and Procedures - The actions and procedures established in the burn plan were followed.

Recommendations: See Issue 1 Recommendations.

Responsible Parties: Lander F.O./BIA Fuels Specialist.

Issue 3: Was safety of the firefighters ever compromised?

Finding: The safety of the firefighters was never compromised. In spite of very steep and rocky terrain, there were no injuries on the fire. All firefighting and prescribed fire activities followed the 10 Standard Firefighting Orders and the 18 Watch Out Situations. Briefings were done.

Recommendation: None. The personnel assigned performed their duties professionally and safely.

Issue 4: Were all personnel appropriately qualified and recarded for positions held.

Finding: All BLM employees were appropriately qualified for their positions on the burn. The BLM Burn Boss trainee had been certified as a Burn Boss Type 2 but desired an additional trainee assignment. The State of Wyoming Honor Farm crew had appropriately qualified crew bosses and firefighter Type 2's on the crew. The BIA Burn Boss Type 2 may or may not have been current in the position. Current IQCS printout of the employee, show him as being out of currency. In an interview he stated that he had performed as a burn boss in 2001 in Colorado. Until the BIA verifies this assignment and inputs the valid information into the computerized system he must be assumed to be out of currency.

Actions Taken: The reviewer (BLM State Fuels Specialist) has made informal contact with the BIA National Office (04/28) to determine their standards for re-currency training. Contact will be made again to inform them of the situation. Contact was also made with Wind River BIA FMO on 05/07 to discuss this issue and to get resolution. The BIA FMO has said that he would work on it to try to verify the 2001 assignments and have verifiable records input into IQCS.

Recommendation: The BIA is responsible for maintaining accurate and current records for their employees. Ultimately it is their responsibility for their employee. The BLM is responsible for assuring that all personnel assigned to RX fire activities be qualified for the positions assigned. BLM Wyoming needs to determine the steps to be taken for this. As part of the review of the new 9214 Handbook, the issue of standardized re-currency within the agency and interagency community should be addressed as a recommendation for inclusion.

Responsible Parties: BLM State Fuels Specialist for BIA National Contact and Handbook recommendation. State FMO and South Zone FMO for follow-up to Wind River BIA. State FMO and all Zone FMOs to make recommendation for WY BLM policy for cooperator redcard compliance on prescribed fire activities

Issue 5: Was a Spot Weather Forecast requested and was it accurate?

Finding: A spot weather request was submitted. The spot weather forecast was not accurate. The forecast called for easterly and winds for the day of the burn (April 10) and the following day with 20 foot wind speeds of 6-10 gusts to 18, the eye level equivalent of 2 to 4 mph with gusts to 7. At 1640 the wind switched to West to Southwest at 4 to 8 mph eye level with gusts to 10. The relative humidity was within 2%. Winds had been from E to SE and upslope for the previous 5 days – no W/SW winds.

In conversations with another zone burn boss working in the southern part of the Zone it was stated that their spot weather forecasts has been inaccurate for both Wind Speed and Direction for that same time period. All the forecasts originated at the Riverton National Weather Service (NWS) Office.

Recommendation: The Southern Zone needs to collect all the weather readings from prescribed fires in that time period along with the spot forecasts and talk directly to the Fire Weather Office at Riverton NWS about this issue.

All burn bosses need to give timely feedback to the NWS offices when spot forecasts are issued, to assist the NWS in increasing the accuracy of spot forecasts.

Responsible Parties: Zone Fire Management Officer and Zone burn bosses.

Issue 6: Was the Complexity Analysis Rating commensurate with the values at risk.

Finding: This prescribed fire was within the urban interface. According to the BLM Prescribed Fire Management Handbook 9214 (July 2000), any urban interface burn is a High Complexity burn (Type 1) (Chapter 4, A. page 25). This is defined as not so much by location but as a “set of conditions where structures and/or other improvements are reasonably within the reach of an escaped prescribed fire.”

This prescribed fire was rated as a Moderate Complexity (Type 2) burn. The mitigating measures were extensive snow banks from 50 to 150 feet in width and from 3 to 10 feet deep that protected the three uphill (north side of the road) structures. The only structure on the south side of the road had a snow bank on the uphill side and bare dirt from construction on the other three sides for an approximate 50-foot radius. The personnel also constructed a handline through the unit to protect the structure. The presence of the snow banks removed the conditions listed above, so the level was appropriately a Moderate Complexity

Recommendation: Perform careful analysis of all urban interface burns and assign a Complexity rating of High to when the set of conditions defined in the Handbook is met and cannot be mitigated.

Responsible Parties: Zone Fire Management Officer and all Zone Burn plan preparers.

Issue 7: Was the Sink’s Canyon prescribed fire ever declared an escaped fire?

Finding: It was never declared an escaped prescribed fire. Due to the lack of a clear-cut definition in the burn plan, there was never a definite decision point. The fire was outside of the MMA on April 10th and also grew due to the spot fire on April 13th. All suppression activities were performed by the personnel assigned to the project, with no additional assistance. Normally, parameters for escape can include the following: 1- Fire outside of the MMA, 2- Additional resources dispatched, 3- timeframes for containing/controlling slopovers, 4- fire encroaching on areas of critical concern.

Recommendation: Develop a clear definition of an escape based on values at risk, resistance to control or other parameters for each prescribed fire.

Responsible Parties: Lander F.O./BIA Fuels Specialist.

Issue 8: Was the documentation from the burn complete?

Finding: The burn package contained all the pre-burn materials, signed releases from the private landowner and USFS, spot weather forecasts, on-site weather readings, test fire documentation, prescribed burn boss report and signed go-no-go form. There were no unit logs from the personnel assigned. Also some valuable weather observations during the time period of April 10 and April 13 were not collected because the person assigned to take the weather became engaged in suppression activities.

Recommendations: All personnel assigned as burn bosses, ignition specialists and resource advisors need to fill out an ICS 214 Unit Log or the equivalent for documentation purposes. As opportunities allow, the Field Office should get other non-fire staff trained in weather observations, so a pool of employees exists who can be assigned to the weather observation/photo documentation position with no suppression duties assigned. This would allow for better documentation of weather and fire behavior.

Parties Responsible: Zone FMO and Field Office Manager to develop a larger cadre of resource specialists that can assist in the weather observer role as well as in implementation.

Attachments: Unit Map
Burn Plan
Spot Weather Forecasts
On-Site Weather Observations
Prescribed Burn Boss Report
Go-No-Go Checklist
Test Fire Documentation
Prescribed Fire Briefing
IQCS printouts for RXB2 and RXB2(T)

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