**Guidance for writing a FEMO report**

The purpose of a FEMO report is to document observations of weather, fire behavior, and fire effects during a prescribed burn. Due to the wide variation in fuel types, objectives, and complexity, no single report template would work for every burn. Instead, here is a checklist of what needs to be in a FEMO report, some hints about what probably should and should not be included, and a few examples of different report styles.

A FEMO report will be used for fine-tuning future burn plans. It is generally not read from beginning to end like a story, but scanned like a lab report for information such as:

How effective was this burn prescription for meeting these objectives?

What was the temperature and RH when the fire behavior changed?

What was the rate of spread in shrub thickets versus open needle cast?

Why did the lighting pattern change from what was planned?

Was the weather still within prescription when the burn escaped?

For some kinds of information, a data table or chronological list will be clearer than a descriptive paragraph. Use your best judgment to create a report that provides all the relevant information in an understandable manner. It is a legal document, and thoroughness is important, but brevity is appropriate: if you can say the same thing in five pages versus ten pages, you’ve done a good job.

**These things go in every FEMO report:**

1. Name of the burn unit and administrative unit.
2. Name of the FEMO and trainee.
3. Date(s) of the burn.
4. Acres burned. (If the plan was to burn 200 and only 20 got burned, note that.)
5. Fuel type.
6. Objectives/goal. (From Element 5 of the burn plan, plus any additional ones from the burn boss.)
7. Time of ignition, lighting pattern.
8. Time and reason for any change in lighting pattern.
9. Fire behavior (rate of spread, flame length, consumption by category, torching, etc.)
10. Time and possible reason for any change in fire behavior (shading, slope, wind, etc.)
11. Time, size, and cause of spot fires.
12. Were objectives met?
13. Table of hourly weather observations. See examples on next page:

If you calculate the fine-dead fuel moisture (FDFM) or probability of ignition (POI), clearly indicate whether you are giving the shaded or unshaded value, or give both.

If weather was taken in different places around the unit, especially if the unit is large and has variable topography and fuels, then describe the locations.

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **9-15-2015 Tamarack Rx Weather Observations – taken in front of lighters on east flank.** | | | | | | | |
| **Time** | **Dry Bulb** | **Wet Bulb** | **RH** | **Wind (mph)** | **Direction** | **POI** | **Clouds** |
| 1100 | 72 | 58 | 44 | <2 | variable | 20 / 30u | 20% cirrostratus in west |
| 1200 | 75 | 59 | 39 | 2-5 | SSW | 30 / 40u | 65% stratocumulus |
| 1300 | 79 | 59 | 30 | 5-7 (G12) | W | 40 / 50u | 100% overcast |
| 1400 | 71 | 57 | 44 | 3-5 | NW | 20 / 30u | 100% overcast, light rain |

Note the specific time of observation of any significant fire-weather events such as fire-whirls, suddenly erratic/gusty winds, smoke inversion forming/lifting, etc. Either include these events in the weather table, as shown below, or in the body of the report if it is organized chronologically.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Time** | **Location** | **Dry Bulb** | **Wet Bulb** | **RH** | **Wind (mph)** | **FDFM (sh/unsh)** | **Clouds** |
| 1500 | E. flank  betw. DPs 1-2 | 73 | 58 | 42 | W 5-7  G10 | 10/7 | 50% cumulus, building in southwest |
| 1525 | Active T-cell 5 miles SW reported by Pisgah Tower. All personnel sheltered in rigs until all-clear given at 15:55. | | | | | | |
| 1600 | DP3 | 75 | 58 | 41 | NW 3-5  G10 | 9/6 | 25% cumulus, scattered and dissipating |

**These things should be mentioned, if they occurred:**

* Were there logistical issues, unusual preparations, or unusual events?
* Were there any communication issues; if so, how were they resolved?
* Was the fuel mix hotter or cooler than usual?
* Were sprinklers or wet-lines used for holding; if so, were they effective?
* Did roads have to be closed or traffic guards posted?
* Was law enforcement involved at any point?
* Were additional holding resources requested; if so, did they arrive?
* Were planned holding resources called out to help with other fires or burns?
* If the burn plan was adjusted after burning began, explain what happened. For example:

‘The plan was to black-line the perimeter on day one and use aerial ignition on day two. However, toward the end of the black-line operation, increasing and erratic winds carried fire across most of the unit. Lighting was suspended and all resources switched to holding until the fire laid down. With a new spot forecast and favorable winds on day two, strip-lighting was used to burn the remaining 200 acres.’

**These things should *not* go in a FEMO report:**

* Anything that is already documented in the burn plan, the IAP, or the spot weather forecast.

(Except for the objectives, because monitoring them was your primary reason for being on the burn.)

* Graphs of things that don’t need to be in a graph, like weather observations.
* Maps, unless you are showing the location of something significant that happened.
* Multiple photos showing basically the same thing.
* Out-of-focus photos.
* Irrelevant photos: people at a briefing, helicopter in the sky, parked engine, guy lighting a drip torch, hotshots lined up, vague silhouettes in the smoke.

**About photographs:**

Adding photos to your report is a good idea, but not entirely necessary. If you’re going to include photos, they should show relevant things such as:

* Typical fire behavior in the major fuel type.
* Typical consumption of fine fuels, heavies, piles, etc.
* Amount of scorch/char in shrubs, ladder fuels, wildlife clumps, old growth stands.
* Flame lengths relative to tree canopy base.
* Effects from different lighting techniques.
* Effects from a change in RH/temperature/shading.
* Mosaic pattern over a large area.
* Before and after from the same point, especially if showing one of the above effects.

A report loaded with photos can sometimes create issues with printing, copying, and emailing, so be selective and pick the best few. If you have a lot of useful photos, consider putting them in a separate photo document (with captions) or provide the photo files in a labelled folder for the district share-drive.