Chips Fire Review
Plumas National Forest
USDA Forest Service

June 2013

Review Objectives:

- Identify Best Business Practices Used on Fires This Past Season
- Identify How Social and Political Issues Factored Into Our Decision Making
- Identify Which Current Procedures Can Be Enhanced or Expanded
- Identify Improvements That Can Be Made In Sharing and Clarifying Expectations

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Purpose

In September of 2012, the leadership of the Pacific Southwest Region commissioned the National Incident Management Organization (NIMO) to conduct a review of the Chips Fire (CA-PNF-001001) on the Plumas National Forest (report attached).

On November 26, 2012, James Hubbard, Deputy Chief for State and Private Forestry (SPF) issued a letter requiring several large fires of Fiscal Year 2012 be reviewed by the National Incident Management Organization (NIMO). The letter emphasized the responsibility of the Forest Service to evaluate management actions and assure they were appropriate, risk based and effective. The fires were selected based on complexity and national significance ensuring the selected fires provide a cross section of our risk management performance in fires of various final costs, sizes and oversight complexity.

On January 28, 2013, Tom Harbour, Director of Fire and Aviation Management (FAM), issued a letter to Dan Kleinman defining expectations for the review of the Chips fire (Three additional members were recruited including Curtis Coots, Acting Assistant Director Northern Operations R-5, Brent Spencer, NIMO Logistics Section Chief, and Tom Johnston NIMO Safety Officer). The purpose of the review was to identify areas that need improvement and carry recommendations forward for best management practices in the future. The reviews were conducted using the 2012 Risk Decision Framework which was included with the 2012 Wildfire Guidance letter signed by James Hubbard, dated May 25, 2012.

Background

The review team reviewed incident documents, WFDSS, and other incident related documents. They interviewed forest leadership, fire management, Incident Management Team (IMT) personnel, and stakeholders. The team found that there were many factors that

influenced the outcome of the Chips Fire. It was a very complex incident located in very difficult terrain, with many stakeholders, extreme weather and fuel conditions and on any given day, with a multitude of activities going on at the same time. The team focused on the items outlined in the memorandum, and on the objectives of the review. The team was very cognizant of not being influenced by hindsight bias when reviewing documents or interviewing people. The team had several discussions with fire personnel regarding what was important to share regionally and nationally as lessons learned.

The timeline (attachment 3) showed that the initial attack (IA) activities were not only aggressive but had a contingency plan based on good risk management principles. The initial plan was to commit the resources to a strategy of full suppression in accordance with the Plumas National Forest's 'Land and Resource Management Plan' (LRMP); utilizing direct line construction support by aviation assets while providing for protection of the community of Maggie's Maple Leaf. The plan was supported by the Interagency Hotshot Crew (IHC) Superintendent(s) and was making progress until the fire spotted over a mile to the east. The IA and extended attack organization (personnel) were involved with cooperators and stakeholders, including: California Department of Transportation (Caltrans), Pacific Gas and Electric (PG&E), Union Pacific Railroad, Plumas County Sheriff's Office, California Highway Patrol (CHP) and private landowners.

As the fire activity increased with short and long range spotting, the Forest Leadership conducted a review and discussion of the incident. They completed a complexity analysis and a relative risk, organizational needs assessment, which identified the need for ordering a Type 1 IMT. The decision was made to have the T2 IMT that was managing the Peak Fire on the eastern side of the forest assume command of the Chips Fire along with the Peaks Fire until the T1 IMT arrived. The T1 IMT assumed command on August 3, 2012, after being briefed by the Plumas and Lassen Forests, the T2 IMT, and associated partners, cooperators, and stakeholders.

Fire Chronology and Incident Management Transitions

Date	%	Command	Acres	+	Comments	Person	Cost
7/28	0	Initial Attack	25		Direct, steep terrain, etc.	130	0.15 mil
7/29	0	T3 Murphy	50	50	Try and hold in Belden fire footprint, direct attack	175	0.30 mil
7/30	0	T3 Murphy	250	200	Direct with contingency lines	200	0.40 mil
7/31	20	T3 Murphy	1,000	750	Active, inaccessible terrain, VAR	230	0.75 mil
8/1	5	T3 Murphy	5,541	1541	Active, T1 McGowan ordered	230	1.3 mil
8/2	5	T2 Whitcome	2,700	159	Direct and indirect, T1 McGowan shadowing	285	1.5 mil
8/3	5	T1 McGowan	4,862	2162	WFDSS modified, developed MAPs 1-3	426	2.7 mil
8/4	5	T1 McGowan	6,814	1952	Active fire behavior, Red Flag	502	2.7 mil
8/5	0	T1 McGowan	10,387	3573	Long range spotting, evac Rush Creek	688	3.1 mil
8/6	0	T1 McGowan	13,867	3480	Active, critical resource shortage Crews T1/T2IA	742	4.1 mil
8/7	10	T1 McGowan	16,787	2920	Developed MAPs-3-9, very active, VAR	765	5.2 mil
8/8	10	T1 McGowan	18.001	1214	Backing, torching, building contingency lines-indirect	1005	6.4 mil
8/9	10	T1 McGowan	18,681	680	Backing downhill, active spotting	1018	7.7 mil
8/10	16	T1 McGowan	27,000	8319	Slopovers, spotting, active	1045	8.9 mil
8/11	8	T1 McGowan	30,010	3010	Active, significant growth	1076	10.3 mil
8/12	8	T1 McGowan	31,720	1710	T1 Oplinger ordered, good progress	1009	11.7 mil
8/13	12	T1 McGowan	35,800	4080	Inversion, burn-outs successful, active fire behavior	1009	13.8 mil
8/14	12	T1 McGowan	37,581	1681	Spotting, new starts	1054	14.8 mil
8/15	20	T1 McGowan	42,136	4655	Evac. Rush, Canyon Dam	1174	16.1 mil
8/16	20	T1 McGowan	43,746	1610	Prep Seneca structures	1154	17.5 mil
8/17	20	T1 Oplinger	44,343	597	New starts within the TFR	1154	19.0 mil
8/18	34	T1 Oplinger	44,793	450	Erratic fire behavior, extreme weather	1182	20.4 mil
8/19	38	T1 Oplinger	47,040	2247	Indirect,-contingency lines	1063	22.1 mil
8/20	32	T1 Oplinger	50,860	3820	Spotting an issue, starting night firing	1022	23.8 mil
8/21	37	T1 Oplinger	62,541	11681	Progress on SW side, spots in inaccessible areas.	1058	25.4 mil
8/22	37	T1 Oplinger	63,147	606	Direct and indirect strategy, building contingency lines.	1174	26.8 mil
8/23	55	T1 Oplinger	63,147	0	Using contingency lines, night firing, active	1164	29.3 mil

				behavior		
8/24	55	T1 Oplinger	64,214 1067	Spotting, inaccessible, contingency lines.	1176	29.3 mil
8/25	55	T1 Oplinger	66,750 536	Fire Repair group established, spotting, etc.	1196	30.8 mil
8/26	61	T1 Oplinger	68,582 1832	Fire active, spotting, extreme weather.	1419	33.3 mil
8/27	65	T1 Oplinger	73,193 4611	Line and burn-out completed, hold	1502	35.6 mil
8/28	71	T1 Oplinger	74,125 932	Moderate activity, T2 Molhoek ordered	1529	37.8 mil
8/29	87	T1 Oplinger	74,125 0	Minimal activity, patrol, mop up, back haul equip	1527	40.3 mil
8/30	91	T1 Oplinger	75,217 92	Minimal activity, patrol, mop up, back haul equip.	1398	41.8 mil
8/31	100	T1 Oplinger	75,217 0	T2-Molhoek shadows	1207	44.2 mil
9/1	100	T2 Molhoek	75,431 214	Mop-up continues, back haul equipment	992	46.7 mil
9/2	100	T2 Molhoek	75,431 0	Low fire growth, low potential, back haul equip.	416	53.3 mil
9/3-10	100	T2 Molhoek	75,431 0	Patrol, mop-up -300-500 ft	350	53.3 mil
9/11	100	T3 IMO	75,431 0	Suppression repair, rehab.	50	53.3 mil

Fire Environment

The T1 IMT (McGowan) assumed command on August 3, 2012, after being briefed by the Plumas and Lassen Forests, the T2 IMT, and associated partners, cooperators, and stakeholders.

The Team was briefed regarding the values to be protected, which included private timber lands, communities, communication sites and the PG&E infrastructure. During the next few days, significant fire activity continued with short and long range spotting in several areas on the fire. The course of action within WFDSS was updated on August 6, 2012 to reflect the fire's growth. Additional Management Action Points (MAPs) are developed. The strategy of using direct and indirect containment lines to suppress the fire was developed.

During the next week (August 7-8, 2012) the fire made a push into private timber lands on the northwest portion of the fire and was impacting the Red Hill Communication site and moved into Mosquito Creek, enabling the fire to move toward the northeast. Resources were committed to save as much of the private timber land as possible and prep Red Hill. The Chips Fire grew in size by several thousand acres per day.

The Plumas County Sheriff's Office issued a mandatory evacuation for Butt Reservoir, Ohio Valley, Humbug, Humboldt Area, and Yellow Creek. An evacuation advisory was issued to all Canyon Dam, Big Meadows, Rocky Point Campground, Prattville, Almanor, and West Almanor residents and visitors. The distribution lines powering the City of Quincy and the Eastern Feather River were damaged by fire. PG&E crews were working to restore damaged distribution lines. A mandatory evacuation was ordered for Seneca and Ohio Valley, with voluntary evacuations for Rush Creek, Canyon Dam, Big Meadow, and Rocky Point. A Sheriff's advisory was in effect for West Almanor, Almanor, and Prattville. Structure group applied Gel in Seneca, and prepped structures. MAPs were developed and numerous contingency lines in front of the fire were constructed.

During the next week the fire continually grew (inaccessible terrain, spotting, erratic fire behavior and hot/dry weather), the fire spread around the south end of Butt Reservoir and into the Clear Creek and Ohio Valley area east of Butt Reservoir. Resources completed burnout from the 1510 road east to the Butt Lake Reservoir on the north portion of the fire. Structures in Seneca continued to be prepped. PG&E crews continued to restore damaged power poles feeding the Red Hill communications site while it ran off of emergency power. Rocky Oplinger's T1 IMT transitioned with McGowan's IMT.

Steep terrain and fire behavior prevented night shift crews from containing the fire spread in the Seneca and Butt Valley Dam area (Division M – a geographic area on the perimeter of the fire). On August 19, 2012 at 1130 PDT, crews working in Division M had disengaged due to fire activity. A spot fire occurs across the North Fork Feather River, ¼ mile down river from Ohio Creek. As fire behavior increases, the Operations Section Chief (OSC) and Incident Commander (IC) agreed that the current strategy of direct attack in Division M was ineffective. They decided to back off to the contingency lines and initiate firing operations later that afternoon. The IC, OSC1 and Liaison Officer (LOFR) met with cooperators to describe the situation, explain rationale for burnout, and obtain unanimous agreement. After this meeting crews initiated firing operations in Division M and V (geographic area on the fire perimeter, 4 miles south of Canyon Dam).

The fire behavior and fire growth started to moderate during the third week and night resources continued firing and brought the fire down to DP 13 (Drop Point-4 miles east of Caribou Lake) in DIV V, and continued firing into Division W (geographic area on the fire perimeter-10 miles south of Canyon Dam). A recovery and suppression repair group was established. Fire activity increases in Division X (geographic area on fire perimeter- 2 miles southeast of Caribou Lake), threatening the power transmission lines running from the Caribou powerhouse to the east. PG&E was notified and requested a two hour notice

prior to fire impacting the power lines so that they would have time to divert power to Quincy.

In addition a wind event was forecast, it began in the morning (August 26, 2012) and continued all day. Multiple spot fires and slop overs were discovered on the NE side of the fire, all were contained. All aircraft stood down at 1300 PDT due to high winds. By 2000 PDT the winds died down and crews burned out the remaining control lines. For the next several days very little fire activity occurred during the day. Late in the afternoon (August 12, 2012) a power outage was reported in Quincy and Greenville. Soon after it was discovered, an area adjacent to the Caribou power house had become active and had impacted a series of power poles. PG&E requested permission to access an area of the fire that was closed; they were allowed access and restored power to the affected communities before daylight on August 29, 2012.

On August 31, 2012, T1 IMT (Oplinger) declared the Chips Fire 100% contained.

The next day a T2 IMT (Molhoek) assumed command with an operational strategy to complete 300 feet mop-up in areas of "clean black," while expanding to 500 feet in Divisions that had a component of unburned fuel. Suppression actions were done concurrently with suppression repairs activities.

Critical Values at Risk

Two questions were asked regarding values at risk or values to be protected. They were:

1. Were the values at risk or values to be protected clearly identified?
2. How did the values influence the selection of strategies or tactics?

One IMT member felt values at risk were clearly identified as private timber to the north, Butts Valley Lake area, Red Hill communication site, structures and infrastructure along Caribou Road. The team member felt values at risk were used to set priorities and develop the overall strategy; however, strategies and tactics were more based on what could be accomplished. Long range spotting made burn outs and thus the use of indirect strategies very limited. The team member felt they may have tried a direct attack strategy too much but with values at risk and extreme fire behavior they felt it was the best option.

A member of the other IMTs that was interviewed also stated priority was placed on protecting private holdings and private timber and felt this may have influenced the team to be more aggressive with direct attack to try to keep the fire off private land. Even if it

was not successful by going direct, "we could prove to ourselves, the AA and the public that we tried everything we could". The team member stated that the team kept trying to go direct because they just did not want to burn up that much timber. The expected wind event and the probability of it pushing the fire onto State Responsibility Area land, which would have made the incident more complex and bring in Cal Fire and add to the values at risk, drove a lot of the effort.

Observation by Objective

The following are key observations and corresponding lessons learned organized by the four objectives of the review.

1. Identify Best Business Practices Used on Fires This Past Season

At multiple levels within the Forest Service, leader's intent with respect to safety integration in fire operations was communicated during the 2012 fire season and for the Chips Fire. This leader's intent has been expressed in:

- Chief Tidwell's February 29, 2012 letter
- Deputy Chief Hubbard's May 25, 2012 letter
- Region 5 Regional Forester Randy Moore's June 19, 2012 letter
- All published WFDSS decisions for the Chips Fire
- Chips Fire IMT August 3, 2012 Delegation of Authority
- Chips Fire IMT August 16, 2012 Delegation of Authority

All of these consistently expressed leader's intent that firefighter and public safety is the number one priority for Forest Service (FS) incident response during the 2012 fire season and in management of the Chips Fire. Each of these documents were consistent in identifying the importance of assessing and managing risk in all operations. These statements are commonly expressed in pre-season leader's intent letters and IMT Delegations of Authority (DOA). Our challenge was to ensure these statements did not become platitudes and that this intent was translated into decisions and actions made on the ground for fires such as the Chips Fire.

The first objective listed in the first WFDSS decision for the Chips Fire on July 29, 2012 stated: "*Provide for fire fighter and public safety.*" In later WFDSS decisions, this objective was re-written to read: *"Ensure all actions are prioritized for fire fighter and public safety utilizing accepted risk management processes."* The number one incident objective listed in every incident action plan (IAP) for Chips Fire stated: *"Provide for Firefighter and Public*

Safety by utilizing a risk management process." So, safety and risk management were clearly identified in incident objectives prepared for the Chips Fire.

Risk management was performed at three levels on the Chips Fire: the strategic level, which is the responsibility of the Agency Administrator (AA) to complete; the deliberate level, which is the responsibility of the IMT to complete; and the time critical level, which is everyone's responsibility to complete but most commonly performed by firefighters at the ground level. The Strategic Risk Assessment (SRA) completed for the Chips Fire followed the 2012 Risk Decision Framework that was included in Deputy Chief Hubbard's May 25, 2012 Wildfire Guidance letter. Since the SRA was included in every WFDSS decision, including the first one published on July 29, 2012 the SRA process was used in a timely manner and completed before the first IMT assumed command of the fire on August 2, 2012. This is the goal for the SRA process. The SRA in each published decision contained more detail than the previous one and were adjusted as the fire grew. For example, the SRAs in the July 29, 2012 and July 31, 2012 published decisions identified five critical values at risk while the SRA in the August 6, 2012 published decision identified twenty critical values at risk.

A deliberate risk assessment was completed by the Safety Officer (SOF) for California Interagency Incident Management Team 1 (CIIMT1) and was included in the August 6, 2012 WFDSS decision.

Specifically, in the spring of 2012 the Plumas National Forest (PNF) developed the "Risk Management Analysis for Wildland Suppression Activities in the North, Middle, and South Forks and tributaries, the Feather River and North Fork Yuba River". This risk management process was adopted to mitigate hazards encountered during past fire operations on steep terrain within these canyons and replaced the "Canyon Job Hazard Analysis" (JHA). This process was used to formulate strategy and tactics implemented by the local Type 3 Incident Management Organization (IMO). This analysis was shared with the incoming IMTs.

A review of Incident Action Plan (IAP) medical plans (ICS-206), emergency medevac maps, emergency medical procedures, and responses to interview questions indicates that the 2010 NWCG Dutch Creek Protocols were followed by all those managing the Chips Fire. All ICS 206 medical plans reviewed were Dutch Creek compliant and a map of emergency medevac sites, along with their coordinates, was made available each day.

The Dutch Creek Protocols were implemented a number of times on the Chips Fire. Two of the helicopter medical transports were done by hoist from remote locations that flew the

patients directly to the hospital in Chico. One was for a head injury from a falling tree branch (faller) where the patient was delivered to the hospital within 34 minutes from the report of the injury. The other was for a rib injury from a fall and this patient was delivered to the hospital within 55 minutes of the report of injury. These quick responses were greatly facilitated by the fact that a hoist-capable helicopter (Kern County Helicopter H407) was assigned to the incident and dedicated as the medevac helicopter. This is an extremely valuable resource to have available when fighting fire in areas of remote, steep, inaccessible terrain, such as the Chips Fire. The cost of this resource (H407) was approximately $5,000 per day.

In addition to having H407 at the Chips Fire, the Geographic Area Coordination Center (GACC) had worked out an agreement with the California National Guard (CNG) to position a CNG hoist capable helicopter in Redding to be available for all incidents across northern California. Ordering information for this resource was made available to all the incidents in the Geographic Area.

The decision to order Type 1 Interagency Hotshot Crew (IHC) crews to initially engage the Chips Fire was a sound decision. Given the terrain conditions, snag presence, and lack of road access to the fire origin area, this was an appropriate decision. The injuries experienced on the fire during the first six days would likely have been more numerous and serious in nature had more T2 crews been utilized. Fire managers received inquiries, starting as soon as day 2 or 3, from the GACC for a plan for releasing the IHCs as soon as possible. The initial/extended attack IC was regularly questioned by the GACC as to why and how long they needed their assigned IHCs and aircraft. Because of inadequate information on the ICS 209, the question was being asked by the GACC, *"Why do you need so many people for only a 25 acre fire?"* The ICS 209 is an important tool for identifying critical resource needs, such as IHCs, for a fire like Chips. <u>The lessons to be learned here</u> is for fire managers, especially at the Type 3 level, to be sure and describe their critical needs and articulate why, on their 209s. This should lead to better understanding and support from the GACC.

2. Identify How Social and Political Issues Factored Into Our Decision Making

It is apparent that the identified values at risk did influence the selection of strategies and tactics. A primary focus of the suppression effort was to minimize the spread of the fire on high value private timber lands on the north side of the fire owned by Collins Pine Company, Sierra Pacific Industries, and Beatty and Associates. Another identified critical value at risk affecting strategy and tactics was the Red Hill Communications site. This is a very important communication site not only for the FS but also for many cooperators in

Plumas County. One response to the question on how identified values affected strategies or tactics stated that there was a lot of firefighter exposure trying to protect Red Hill and that in hindsight, the exposure on Red Hill might have gone on too long.

A monetary value was not established or estimated for the values at risk (VAR). However it was clear that when comparing values such as PG&E's electrical power infrastructure, thousands of acres of private timberlands with many established investments, and a critical communications site for all of Plumas County, the dollar value of the VARs would far exceed the suppression cost of the fire estimated at $55 million.

Equipment and personnel were moved out of area(s) on the fire that was identified to have Natural Occurring Asbestos (NOA). NOA is commonly found in ultramafic rock formations, including serpentine, and the soils where these rock types occur. It has been found to be present in the majority of counties in California (50 out of 58 counties). Not all serpentine rock contains asbestos, so testing is the only way to verify whether NOA is present in bands of identified serpentine geology. Maps of known serpentine rock bands within the Chips Fire area were presented to the IMT after both hand and dozer fire line had been constructed through these areas. The PNF Forest Safety Officer requested a geologic analysis of this dozer and hand line for the presence or absence of NOA on August 9, 2012. Field sampling was conducted on August 9-10, 2012 and 33 samples were collected. Six of the samples tested positive for NOA levels greater than what State and Federal OSHA regulations permit without mitigation treatments. Later findings based on the sampling conducted by the industrial hygienist concluded that personnel working in the Chips Fire areas were not exposed to dangerous levels of asbestos particles.

The Agency lacks the organizational awareness and subject matter expertise to plan and provide a timely and appropriate response to a hazardous materials incident such as NOA. With the lack of a national, regional, and forest plan, this created confusion and unproductive efforts.

Aviation assets were used extensively on the Chips Fire. The use of aviation was very political, but not very useful in the canyon(s) or this fuel type. It is not uncommon to hear the "public" quote "if you are not flying helicopters, you are not fighting fire". Extensive risk management processes and analysis needs to be conducted on every mission and public understanding has to be ensured during use.

3. Identify Which Current Procedures Can Be Enhanced or Expanded

The use of Wildfire Decision Support System (WFDSS) tools as a part of the decision making process is mandatory. The amount of information contained in WFDSS for the Chips Fire was substantial. It permitted those not on the fire to gather a significant amount of information about the fire from a distance. The published decision of September 2, 2012 contains 69 pages of information including a daily summary of actions starting with July 29, 2012 pictures of the fire, fire indices information, numerous maps, weather reports, risk assessments, etc. As a documentation tool, WFDSS was utilized effectively for the Chips Fire and proved to have value as a single source of information.

While having this amount of information available was helpful to those not directly involved with managing the fire, it came at a cost; a cost of a substantial amount of employee time in inputting all of this information. One PNF employee interviewed stated that WFDSS *"became a sink"* in the way it was consuming their time and that it didn't really benefit the folks fighting the fire. The PNF managed this situation by not tying up their primary fire personnel with completing the WFDSS inputs. The initial/extended attack IC responded that WFDSS was a low impact to his time.

IMT members interviewed on the effectiveness of WFDSS stated the process was useful for identifying values at risk, cost and establishing priorities but the overall process is "clunky" and "cumbersome". There are parts of WFDSS that are helpful but the entire document is not and makes for clutter. The IMT had clear direction from the AA but the time it took to enter it into WFDSS made the documentation lag behind. The fire behavior modeling in WFDSS was greatly underestimating fire behavior and was misleading.

One IMT was told by the Forest that WFDSS, 209s, and InciWeb all had to match which the IMT did not understand. The information in all three should be consistent but these are developed for different reasons and the IMT felt spending time to match up exactly was not necessary.

Roles and responsibilities in WFDSS for the hosting agency and the IMT need to be clearly defined and understood to avoid confusion. IMTs were looking for clear direction and intent from WFDSS products and the volume of information seems to be clouding the issue. Clear communication of leader's intent, values at risk and priorities needs to be communicated between the AA and IMT and clarification of crucial content in WFDSS documentation. There is a need for better predicting tools outside of WFDSS. Models are not accurately reflecting what is happening on the ground - greatly underestimating fire behavior.

4. Identify Improvements That Can Be Made In Sharing and Clarifying Expectations

The engagement with communities, Cooperators and key stakeholders is vital for successful outcomes in fire management. Throughout the review of documents and interviews it was apparent that the direction from the LOFRs was to ensure that the communities were kept abreast and the key stakeholders were involved in the decision making process. Starting with the IA organization and continuing throughout the life cycle of the incident there appeared to be a concerted effort to include the key stakeholders. In an interview with a Collins Pine Company representative, he spoke of his concerns that some of the information that was being related at the Division level in the field was not getting moved all the way through the organization to operations regarding road systems or where dozer lines would be most effective. The term "Big Box" was not well understood and caused confusion regarding the strategy.

A few people commented that the lack of a LOFR on the first T1 team may have hampered their ability to clearly facilitate the interactions between the stakeholders and the IMT. They did note that the IC trainee who was filling the role worked hard but appeared to be drawn in several directions. The fact that the second team had an assigned LOFR as well as a Deputy IC helped in communications with the stakeholders. A private timber representative did feel he should have been able to attend the tactics meeting to have a better understanding of what was being planned for operations on their land prior to the next operational briefing.

McGowan's T1 IMT assigned a Cal Fire representative to be a liaison with private timberland owners during their time at the Chips Fire. This appears to have been effective as one landowner interviewed felt like things went a lot better for them after this was done. It is invaluable to use a representative, such as CAL FIRE, who understands local issues/concerns as the connection between the IMT and stakeholders. This is especially true when private lands are involved, and a specific knowledge and expertise is needed to develop strategies and alternatives.

PG&E moved their mobile command vehicle into the ICP so they could better interact in a timely manner. PG&E had approximately one billion dollars of infrastructure within the fire area. Even the Corporate CEO attended a cooperators meeting.

Other agencies including CAL EMA, CAL FIRE, CAL TRANS, CHP, and other county and local agencies were part of the cooperators group. Each brought additional resources during critical times that demonstrated commitment and cooperation when resources were scarce.

There were many community meetings that allowed for interaction between the public, IMT's and Subject Matter Experts (FBAN, SOF, and OSC). A line officer commented that one of the biggest lessons he learned was that the public is actually afraid of fire, and that they really do have a fear in their hearts about fire and its potential impact to their lives. It's something most of us know, but we need to be reminded of this occasionally so that we can truly place ourselves in the public's shoes; "their perception is their reality." Another quote that I think of when working with the public is; "no one cares what you know until they know you care." He understood this and his awareness of this fact probably made the public meetings go much better than they could have.

Lessons Learned, Observations and Recommendations

National Priority

1. Incident management needs to adapt to the information needs of today's public. The use of social media and the need for information sharing in a timely manner requires more and new tools. GIS sections are being asked to produce multiple products for a number of clients other than the suppression operations. This requires more GIS personnel with different skill sets than most teams carry to meet the expectations of these products.

2. A review of the Forest mop-up standards for the Chips Fire indicated that the standard 300' and 500' mop-up specifications were used. The IMTs and Forests involved in incident management should consider revising this practice so that they actually defer to firefighter expertise to determine necessary mop-up standards for a particular area. A "canned" standard does not value Firefighters knowledge, expertise or skill. Firefighters that have been working on wildfires can determine what needs to be mopped up and what doesn't. They are the best persons to make this risk informed decision. Mop-up standards with language such as *"secure the perimeter by mopping up the minimum distance required to prevent escape without jeopardizing firefighter safety"* is an example of this. In some areas cold trailing the edge might be sufficient, and in other areas of unclean burn, it may be necessary to mop-up 500 feet or even more. The final direction for mop-up standards should be developed in concert with all of the personnel involved and should always weigh the risk of proposed actions with the benefits expected and the values at risk.

3. Having a hoist-capable helicopter assigned to an incident is a real asset and helps ensure that emergency medical transports occur in time to give the patient the best

possible chance of a positive outcome. This is especially important when suppression operations are occurring in steep, rugged, inaccessible terrain with a high snag component, as was the case with the Chips Fire. The hoist-capable Kern County helicopter assigned to the Chips Fire (H407) was assigned to the fire for most of the period of active suppression operations. This helicopter is night vision capable and is equipped with a 250 foot long line. It was used twice to hoist injured firefighters out of tough spots and transport them quickly to Enloe Hospital in Chico. This resource cost $5,000 per day. When viewed against the total costs of large, long duration complex fires, this is cheap insurance to help better provide for firefighter safety, health and welfare. It is recommended that the Region look for opportunities to assign a resource like this as standard procedure for fires like the Chips Fire. The GACC was proactive in staging a CNG hoist-capable helicopter in Redding that was available to all incidents in northern California. All of the fires were given information on how to order this resource. In addition, the GACC orchestrated coordination of procedures between H407, the CNG helicopter, and the GACC. This is commendable and truly is putting words into action when we state that firefighter safety is our number one priority.

4. Helicopter operations in steep, river canyon country containing power lines and snags involves a high level of risk. As evidenced by the SAFECOMs filed, there were two close calls on the Chips Fire involving helicopter bucket operations. A recommendation concerning this situation is for IMTs to complete a deliberate risk assessment as part of their daily planning cycle that not only assess the risk for these operations, but compare this risk to the identified values at risk so a decision on risk vs. benefit can be made.

5. The Agency and DOI Bureau of Land Management aviation group have developed an Aviation Risk Management Workbook, identifying hazards, risks and suggested mitigations of each operational mission. This workbook and associated processes are not standard protocol for flight operations on fires. It is strongly recommended that IMTs and their aviation assets use the information within the workbook to assess risk and mission implementation.

6. The Agency and the Region need to decide whether WFDSS' primary purpose is in decision making and support or as a place to store information and document decisions made. Secondly, leader's intent should be provided in how much information and documentation is adequate to meet the needs of the incident. There was a substantial amount of information stored in WFDSS for the Chips Fire. More focused, specific information will probably aid in decision support more than

the volume of information. For example, the September 2, 2012 published WFDSS decision lists 25 active incident objectives. Most are general in nature. A shorter, more focused, specific list of incident objectives would provide more meaning to IMTs and firefighters engaging the fire. Off-season training to those on WFDSS teams could aid in returning WFDSS to a tool more in line with its original intent, and hopefully lead to more focused, specific WFDSS inputs. Guidance, training, and leader's intent given to those with WFDSS duties and responsibilities might help solve this issue.

7. A cooperator/stakeholder interviewed felt like the situation improved for them, and the fire was being better understood, when Oplinger (CIIMT4) was managing the fire vs. McGowan (CIIMT1). This could be for two reasons: 1) CIIMT4 instituted regular cooperator meetings so that important information could be shared and issues discussed with the cooperators. 2) CIIMT1 used their Deputy IC as their LOFR where CIIMT4 utilized a qualified, dedicated LOFR on their assignment. The LOFR position can go a long way in improving cooperator and stakeholder relationships and it is recommended that this position be utilized for fires like the Chips Fire that affect many cooperators, partners, and stakeholders. Similarly, the cooperator meetings established by CIIMT4 appeared to have been effective at the Chips Fire and it is recommended that they be instituted as soon as possible on large complex incidents. One PNF employee interviewed stated that phone traffic to the Forest was reduced greatly once CIIMT4 instituted the cooperator meetings.

8. NOA is found in numerous locations in the western United States. Forest Service personnel (Unit Safety Officers, Soil Scientists, Fire Management Officers, Staff Officers, etc.) do not have the experience, familiarity or training in identification of and mitigations measures of NOA. A cohesive policy or plan of action does not exist for implementing fire suppression or any other activity in areas of NOA. Historically when NOA areas are identified, avoidance is the primary initial method of mitigation. Develop a JHA (Job Hazard Analysis) nationally and/or regionally for Naturally Occurring Asbestos describing mitigations for Agency personnel working within those areas.

Regional & Local Priority

1. Preseason meetings with cooperators and partners that simulate fires in difficult locations, such as the Feather River Canyon, have proven to be effective in building relationships and identifying roles, responsibilities, and suppression objectives/constraints and common understanding. The annual cooperators meeting held by the PNF reviews the standard agreements and operating plans and

did not include any fire simulations or fire scenarios. It is recommended that the PNF conduct a fire simulation with cooperators and the community in the preseason and simulate a challenging fire scenario. This could help build important relationships before fire season. One cooperator/stakeholder interviewed felt like they don't get much cooperation from the PNF vs. other neighboring national forests. Preseason simulations and discussions could help change this perception.

2. Since 2000, fires burning off of FS lands in northern California have impacted thousands of acres of private lands. This has adversely affected relationships between the FS and landowners, who are also partners, cooperators and stakeholders. One of the companies interviewed claims to have lost 30,000 acres to fires burning off of FS lands within the last 12 years. They also claimed that before this interview, no one from the FS had attempted to sit down with them, listen to their concerns or ask for their input during this time. While suspicious of the reason for the interview at first, in the end it was obvious the two individuals interviewed (company president and chief forester) appreciated the opportunity to provide input, feedback, and be heard. After action reviews and meetings such as this can go a long way in improving cooperator and partner/stakeholder relationships. It is recommended that they be instituted as standard practice following fires like the Chips Fire that impact private lands.

3. Lack of specific information on the incident strategy/tactics caused members of the public to make assumptions about what they thought was going on during the fire and some of them to spread false information that they perceived as factual. Some members of the public felt the information (rumors) they were hearing was fact, since they didn't have specific information from the Agency or IMT that would dispute what they were hearing (e.g., a concerned citizen interviewed believed that air tankers were not used on the IA of the incident, when in fact 33 loads of retardant (39,000 gallons) were dropped on the fire during the first day, in addition to 130,000 gallons of water dropped by helicopters.). It is recommended that different avenues (public meeting with fire specialists, timely media notices, cooperator meetings, open houses, etc.) be used to get the facts out to the public about our tactics and strategy on incidents be examined/enhanced.

4. A full suppression response with aggressive IA on the incident was not recognized by some members of the community. When the story of the IA from the IA IC was shared in an interview, it was clear that aggressive and thoughtful actions occurred during the initial response. If the public could have heard this individual's passion while he described the actions of the IA forces, very few people would doubt that

these individuals gave a valiant effort to aggressively control this fire under very difficult circumstances. Develop an early communication plan for emerging incidents that will enable the public, media and key stakeholders to understand the hazardous environment firefighting personnel work in.

5. There were missed training opportunities for line officers on this longer term, complex incident. It was said by IMT members that the assigned AA did a very good job of interaction, and gave good leader's intent. If more up and coming Line Officers could have shadowed him they could have gained valuable experience, knowledge and skill. Request and assign new or inexperienced AAs to complex incidents as mentees, enabling them to gain, skill, knowledge and experience in managing fires.

6. The influence of the objective to protect values at risk, including private timber lands (with the recent history of fire litigation settlements), the communications sites, communities and PG&E may have led to a sense of urgency on where to place resources when the fire moved in a different direction. Fire personnel need to understand why the value is important and be able to weigh the risk verses benefit. The Delegation of Authority (DOA) and Incident Objectives developed by the AA and the IC needs to be briefed thoroughly and/or be in the IAP so fire personnel understand why the described values are important.

7. A question asked in the Risk Decision Framework is: *"What is the relative probability of success associated with the alternatives being considered?"* It is recommended that alternative courses of action be considered be listed here and an estimated probability of success percentage be assigned for each. This would provide important decision support information to an AA in selecting a course of action among several alternatives. The main issue that needs to be collected is that alternative courses of action for controlling the fire are considered but were rejected because of low probability of success, too expensive, not enough time, etc. be documented as Lessons Learned so other IMTs can learn from the decisions.

8. The local unit was able to staff a very functional Type 3 (T3) IMO for this incident, in a relatively short amount of time. T3 incidents are fairly common for this area. The local unit however, did not have a standing Type 3 IMO or a training program. In February 2013, the forests conducted T3 IMO training and are prepared for the future. It is recommended this program includes cooperators such as Cal Fire and local fire department personnel so that all forests and cooperators are prepared for multi-jurisdictional incidents.

ATTACHMENTS

- Attachment 1 Chips Fire Aerial Photograph
- Attachment 2 2012 Northern California Fire Season Outlook
- Attachment 3 Plumas NF ERC Table
- Attachment 4 Decision Timeline and Significant Events
- Attachment 5 Plus NF Natural Occurring Asbestos Report/Letter

Attachment 1

Chips Fire
Plumas National Forest Service
July 29, 2012

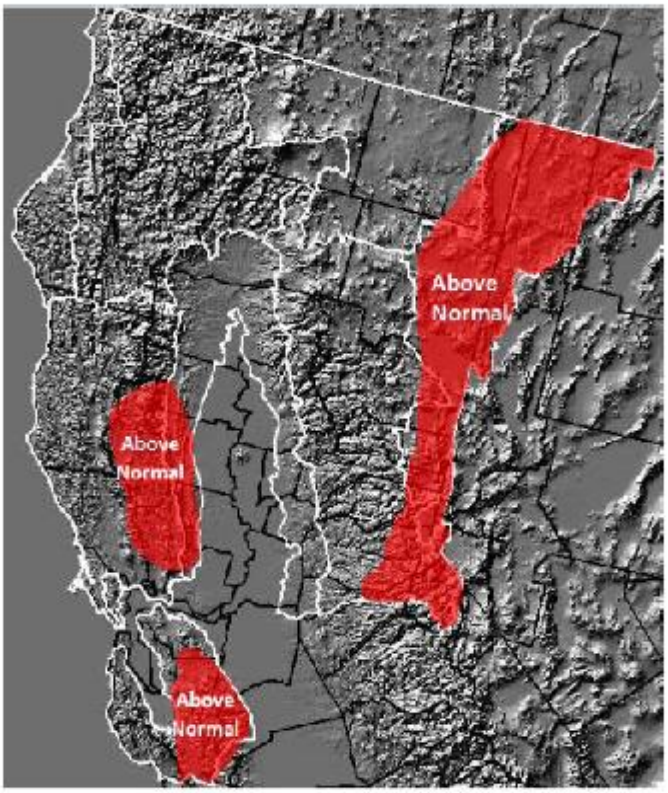
"I was there that first day and they hit it with everything they had. Two heavy helicopters ran laps on this thing all day, with a reservoir less than one-half mile away right at the bottom of the fire. There was a lead plane, cobra/helco/air attack, one P2V, and 2-4 S2s on it, and about 5 Hotshot crews. The hit-it-hard plan works 97% of the time, but this is one of the 3% that we'll always lose." Unknown

Attachment 2

Predictive Services

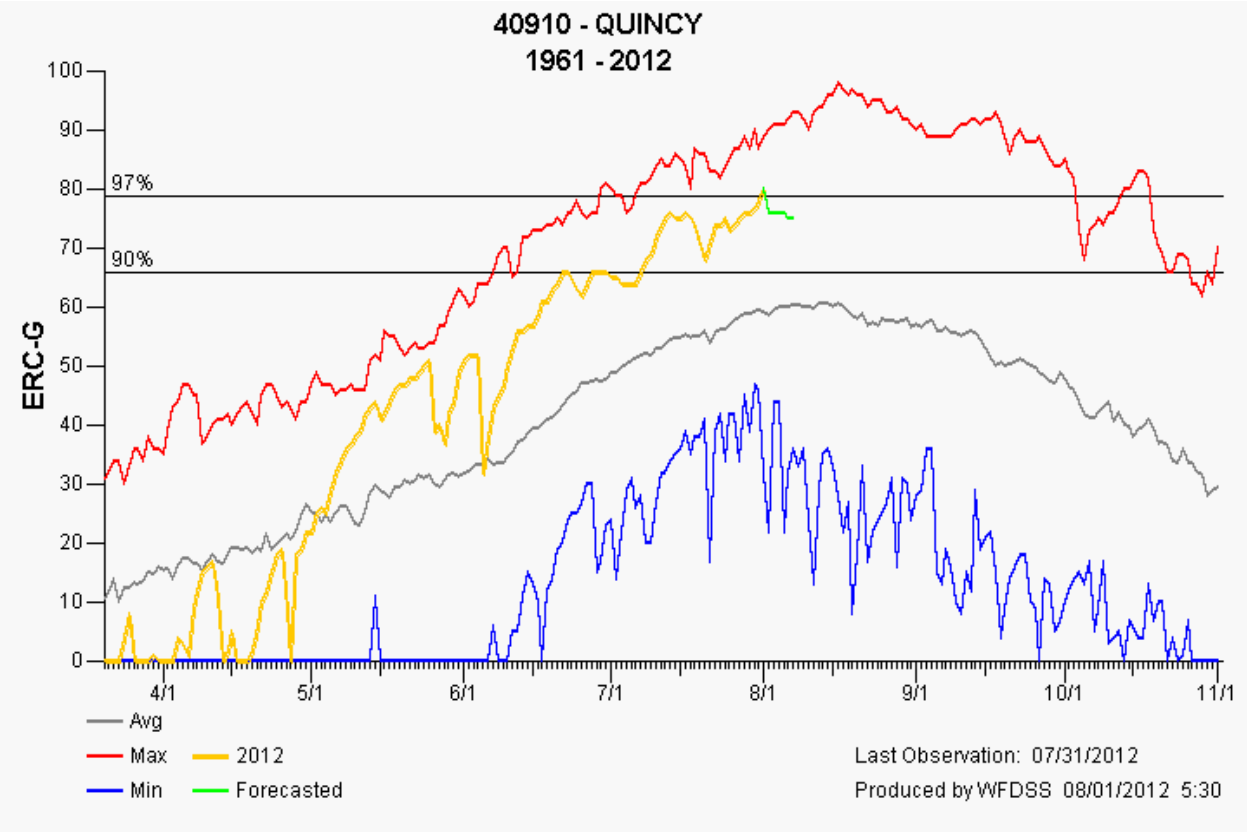
2012 Northern California Fire Season Outlook

Outlook for late June through October, 2012



- Both precipitation from October 2011 to late June 2012, and the past winter snowpack, ranged from 50-90% of normal across the bulk of Northern CA.
- North Ops drought reappeared in the dry early winter months, and it has since expanded to now cover nearly half the Geographic Area with moderate or severe drought.
- Live fuel moistures are at or below seasonal averages in many areas of the Geographic Area.
- Tall residual dead grass from last year is still standing in eastern areas of Northern California. This has proven to be a problem across much of the Western U.S. so far this fire season.
- As of mid-June, the PSA-averaged Energy Release Components (ERCs) were nearly all Above Normal for the date, and not far below record levels for the date in two of the low-elevation PSAs.
- Mid June 1000-Hour TL Fuel Moistures were all at or below normal for the date, and in two PSAs were not far off from record dryness.
- Several forests in the Northern Sierras have reported localized areas of frost-killed brush at elevations above 4,500 feet.

Attachment 3



Attachment 4

Decision Timeline and Significant Events

July 29

ICT4 Jeff Dupras transitions to ICT3 Steve Murphy, Dupras continues to serve as ICT3 (T)

0152: Fire discovered by Engine 25, fire is up Chips Creek on the east side, initial view estimates fire at approximately 10 acres.

0206: Better view from Engine 25 is now estimating the fire at approximately 25 acres. Fire investigator is on scene, requesting ETA of Law Enforcement Officer (11E4).

0215: LEO (11E4) responding.

0330: BC23 (Jeff Dupras) assumes command as ICT4. Jeff orders 6 agency Type 1 crews, Engine 25 is on scene.

0420: ICT4 gives size-up at 15+ acres. Safety concerns include steep terrain, powerlines, lots of snags, drainage that lines up with predominate SW winds, and midslope fire. Law enforcement and IC scout line (possible grow site) prior to crews arriving.

0425: ICT4 requests an ICT3 to assume command.

0500 to 0600: ICT4 assessed probability of success using direct attack. "Looked difficult but doable." Due to the uncertainty of success, ICT4 scouts contingency opportunities for Indian Creek and Indian Springs Trail.

0608: Steve Murphy assigned as ICT3, Jeff Dupras will continue serving as ICT3 (T).

0630: First handcrew arrives on scene (Firestorm Type 2 crew from Chico).

0820: ATGS requested to be over fire at 0900.

0930: Type 3 Engine Strike Team (3675C) arrives on scene; they are diverted to Chips from the Peak Incident.

1113: ATGS orders multiple air tankers.

1130: First air tankers arrive on scene.

1302: Five Type 1 crews and one Type 2 crew are building line up both flanks of the fire, with support from helicopters (2-Type 1 and 2-Type 2) and air tankers (Tanker 06, 93, 86, & 96).

Chips Fire is burning within the old Belden Fire (2008) footprint, which was a fire that burned within the Storrie Fire (2000) foot print. Fuels include 7 to 10 foot brush with grass understory, numerous (50-100+ snags per acre) 30" to 50" DBH snags, heavy dead and down fuels, and some timber stringers. Fire is burning at midslope on extremely steep terrain. Contingency lines are scouted and structure protection is established at Maggies. Six Type 1 crews and one Type 2 crew go direct on the fire edge with the support of 33 air tanker loads of retardant and 130,000 gallons of helicopter bucket drops. Line construction is very slow due to terrain, fuels and hazards.

Jeff Dupras ICT3 (T) and Steve Murphy ICT3 discuss their roles and decide to divide up the IC workload. Jeff focuses on the fire operations and Steve takes the liaison workload, working with the Forest and numerous cooperators. Agencies, cooperators, and stakeholders immediately involved with the fire include; Plumas NF, Lassen NF, Cal Trans, PG&E, Union Pacific Railroad, Plumas County Sheriff's Office, CHP, and numerous private landowners.

Retardant effectiveness is limited due to midslope fire, heavy loading of dead and down fuel, snags, extremely dry fuels, and frequent spot fires. Crews were not utilized during the night due to the steep terrain, rolling material, and numerous snags that were falling continuously.

Strategy/Tactics: Plan to hold fire within the 2008 Belden fire footprint by aggressive initial attack by Hotshot crews w/ support from helicopters and air tankers.
Resources: Numerous resources were immediately dispatched to the Chips fire, including 6-Type 1 Handcrews, 1-Type 2 Handcrew, 6-Type 3 Engines, 2-Type 1 helicopters, 2-Type 2 Helicopters, and numerous Air Tankers. Some of the resources were diverted from the Peak Incident. Five additional Type 1 crews and numerous other resources were ordered or en-route by the end of shift.
Size: Fire size is approximately 25 to 50 acres at end of shift.

Management Action Point #1 developed
Shape: Old Belden Fire Boundary
Condition: If fire crosses the old Belden fire line of 2008.
Action: Initiate complexity analysis to determine appropriate level of IMT.

July 30

ICT3 Murphy, ICT3 (T) Dupras

When crews arrive on scene, 50 to 60 acres of fire has burned through the retardant lines. Fire demonstrates moderate fire behavior and rates of spread. Crews continue direct attack on flanks. One engine is on night shift for structure protection. Helicopters dropped 116,000 gallons of water to support direct attack operations.

Strategy/Tactics: IC meets with IHC Superintendents and Divisions; all agree to continue direct attack and to continue prep of contingency lines to the East.
Resources: 11-Type 1 handcrews, 1-Type 2 handcrew, 7 engines, 5 DIVS, 4-Type 1 helicopters, 1-Type 2 helicopter, 1-Type 3 helicopter
Size: Fire is approximately 250 acres at end of shift.

Objectives From IAP:

1. Provide for Firefighter and public safety
2. Keep the fire South of the Plumas-Lassen NF Boundary
3. Keep the fire North of Highway 70
4. Keep the fire East of Chips Creek
5. Keep the fire West of Indian Creek

July 31

ICT3 Mike Homes, ICT3 (T) Dupras

At 1818, a firefighter from Firestorm handcrew receives a serious shoulder injury and is transported to the hospital by ambulance. Fallers are assigned to assist with indirect line construction. Slow going for the fallers, numerous snags slow down line construction on

contingency lines. Fire behavior increases with spotting into Indian Ck. drainage and slop over in Division A toward Chips Ck. IHC crews are becoming more concerned about snags and rolling material. A Type 2 IMT, NorCal Team 1 (Whitcome) is assigned to the nearby Peak Incident and is requested to assume command of the Chips fire at 0600 on 8/2.
Fourteen air tanker loads delivered 17,000 gallons of retardant and helicopters delivered another 186,000 gallons of water to the fire.

Strategy/Tactics: Crews continue direct attack on flanks of the fire, while the road system above Caribou Rd is prepped as primary contingency line. Caribou road is scouted for secondary contingency line. Course of action in WFDSS is changed with specific containment objectives.
Resources: Resources same as day before, with the addition of some miscellaneous overhead and fallers. Approximately 230 personnel assigned.
Size: Fire is estimated at approximately 1,000 acres by ATGS, but visibility is limited due to heavy smoke.
Objectives from IAP: No change in objectives from previous day.

August 1

ICT3 Murphy, ICT3 (T) Dupras

Fire becomes very active, driven by dry fuels and slope, becomes plume dominated. Long range spotting up to 1.5 miles. Fire spreads significantly to the north with spotting into the bottom of Yellow Creek. One significant spot fire is well established on the top of Caribou Ridge (east of the proposed secondary contingency line) and spreads down into the North Fork Feather River drainage. Maggies trailer park is evacuated, Belden and Little Haven is on precautionary evacuation. NorCal Team 1 (Whitcome) Type 2 team shadows the Type 3 team. At 1525, CIIMT 1 (McGowan) is ordered for the Chips Incident.

Strategy: Strategy changed from direct attack to a combination of indirect and direct attack.
Resources: Approximately 230 personnel assigned.
Size: Approximately 2,541 acres at end of shift.
Objectives from IAP: No change in objectives from previous day.

August 2

ICT2 Whitcome

NorCal Team 1 (Whitcome) assumes command of the incident at 0600. CIIMT 1 (McGowan) is in briefed at 1000 and shadows NorCal Team 1.
At 1103, a dislocated knee injury of a firefighter is reported and a medevac ship is requested. The Enloe life flight helicopter from Chico arrives at Rogers Flat at 1336 and transports the patient to the Enloe hospital in Chico. Fire behavior is moderated due to shading from the smoke column. Short range spotting up to ¼ mile is observed. Fire backs down to Hwy 70 on the south end. Crews continue indirect line construction and prepare for potential burnout to secure indirect firelines. Personnel scout for additional secondary control lines, and evaluate needs for structure protection. Course of Action in WFDSS is changed to reflect change in containment objectives.

Strategy: Strategy remains a combination of indirect and direct attack. Course of action in WFDSS is changed.
Resources: Approximately 285 personnel assigned.
Size: Approximately 2,700 acres at end of shift.

Objectives from IAP:

Control Objectives
1. Provide for Firefighter and Public Safety by utilizing the Risk Management Process
2. Keep Fire:
a. South of the Humbug Summit Road
b. North of Highway 70 and Tobin
c. West of USFS Road 27N26 (Caribou Road)
d. East of Phibrook Reservoir
3. Protect private property and infrastructure within and adjacent to the planned perimeter

Management Objectives
1. Avoid fireline construction with dozers on slopes steeper than 40%
2. Minimize suppression damage to identified heritage resources
3. Minimize suppression damage to identified T&E species habitat
4. Avoid misapplication of aerial delivered fire retardant in pre-identified avoidance areas
5. Use screening devices for water drafting pumps to minimize removal of aquatic species

Management Action Point #3 developed
Shape: Soda Creek Public Advisory Threshold
Condition: Fire crosses the Soda Creek management action threshold
Action: IMT will consult with Plumas County Sheriff's Office to evaluate the need for Public Safety Advisories for Butt Valley Reservoir and the west shore of Lake Almanor.

Management Action Point #4 developed
Shape: South Side
Condition: Fire crosses onto the south side of the South side MAP, into the Bucks Lake Wilderness
Action: IMT will coordinate with Forest to close the Pacific Crest Trail and the Three Lakes Trailhead and Campgrounds, and with Union Pacific Railroad concerning possible closure of the UP railway if needed.

August 3
ICT1 McGowan

California IMT1 (McGowan) assumes command at 0600. Kern County Helicopter 407 arrives at helibase to provide 24 hour medevac and hoist capability. Crews continue indirect line construction and scouting for line locations. Helicopters are used to slow fire spread on north flank. Persistent fire movement due to large quantities of dry, heavy fuels and steep slopes.

Strategy: Continue to scout for line locations, construct indirect line, prep road system for future burnout and continue structure protection measures. Due to safety considerations related to extremely steep terrain, crews are not conducting direct attack.
Resources: 426 personnel assigned
Size: Approximately 4,862 acres at end of shift
Objectives from IAP: No change in objectives from previous day.

August 4

ICT1 McGowan

Another firefighter is injured and transported by ground. Red Flag warning put into effect at 1700 for dry lightning (LAL 6) over the next 24 hours. A public meeting was held in the community of Chester at 1800. Crews continued to scout containment lines and the indirect line to the north of the fire was strengthened with retardant drops. Snags and large dead and down fuels combined with difficult access for resources continues to reduce the ability for direct fire attack. A major concern continues for threatened critical infrastructure. Kern County helicopter H407 is assigned to the incident and available from helibase. H407 is a hoist capable night flying helicopter, used for medevac. Course of Action in WFDSS is updated to reflect change in containment objectives.

Strategy: Reduction in containment from 5% to 0% due to a strategic decision to switch from direct fire attack to indirect attack therefore increasing the future containment line. Course of Action in WFDSS is changed.
Resources: 502 personnel assigned
Size: Approximately 6,814 acres at end of shift.
Objectives from IAP: No change in objectives from previous day, except that "timberlands" was included in Control Objective #3.

August 5

ICT1 McGowan

Significant active fire was observed with long range spotting on all perimeters of the fire. Fire spots across North Fork Feather River and a 200 acre spot fire is established, along with multiple large spots over Division Y (an additional 200 acres). Fire perimeter is now within ¼ mile of private timber lands to the north. A voluntary evacuation notice was issued for the Rush Creek area and for areas south of Hwy 89 to include: Butt Valley Reservoir and Humbug Reservoir. Heavy aircraft use to include 11 loads of retardant for total of 10,000 gallons, along with an additional 211,000 gallons of water dropped by helicopters.

Strategy: Direct attack operations are being assessed for the spot fire east of Caribou Road downslope from the communications towers on Red Hill. Overall strategy remains unchanged.
Resources: 688 personnel assigned
Size: Approximately 10,387 acres at end of shift.

Objectives from IAP: No change in objectives from previous day, except that: "4. Provide initial attack support to local unit within specified IA area" was added to control objectives.

August 6

ICT1 McGowan

Active fire behavior with single and group tree torching with some short range spotting. Crews attempt direct attack on spot fire over the North Fork Feather River and spot fires in Division Y. Winds surfaced midafternoon and produced additional spot fires in the private land plantations to the north. Crews continued to go direct through the night. Five Type 1 crews, Two Type 2 IA crews, Two Strike Teams of Type 3 Engines, 5 Type 3 Engines, and one STEN are critical resource needs due to IHC crews timing out and need for resources to contain spot fires.

Strategy: Overall strategy remains unchanged from the previous day, other than going direct on new spot fires. Course of Action in WFDSS is updated to reflect change in containment objectives.
Resources: 742 personnel assigned
Size: Approximately 13,867 acres at end of shift.

Objectives from IAP:

Control Objectives

1. Provide for Firefighter and Public Safety by utilizing the Risk Management Process
2. Keep Fire:
    a. South of the Humbug Summit Road
    b. North of Highway 70 and Tobin
    c. West of Butt Lake transmission lines and Rich Fire boundary
    d. East of Phibrook Reservoir
3. Protect private property, timber lands, and infrastructure within and adjacent to the planned perimeter
4. Provide initial attack support to local unit within specified IA area

Management Objectives

1. Avoid fireline construction with dozers on slopes steeper than 40%
2. Minimize suppression damage to identified heritage resources
3. Minimize suppression damage to identified T&E species habitat
4. Avoid misapplication of aerial delivered fire retardant in pre-identified avoidance areas
5. Use screening devices for water drafting pumps to minimize removal of aquatic species

Management Action Point #5 developed
Shape: Yellow Creek Camp
Condition: Fire becomes established on the west slope of Humbug Creek.
Action: OSC1 will assign a DIVS as Camp Structure Protection Supervisor. Initiate evacuation of Yellow Creek Fire Base Camp, account for all personnel, and rally evacuees at USFS

Almanor RD office. Camp evacuation order will be issued by Incident Commander upon recommendation from Ops and Safety. All equipment will be left in place at Yellow Creek Camp.

Management Action Point #6 developed
Shape: Lotts Lake/Morris
Condition: Fire becomes established south of Upper Chips Creek, and threatens infrastructure around Lotts Lake and Morris lake areas.
Action: Aggressive perimeter control with heavy helicopters, hand crews and engines.

Management Action Point #7 developed
Shape: Red Hill Communication Site
Condition: If fire is established on the south and/or west side of the North Fork Feather River above Belden and threatens the Red Hill communications site.
Action: Utilize aerial retardant, helicopters, and/or ground resources if safe to do so, to defend the communications site from fire.

Management Action Point #8 developed
Shape: Private Timber Land
Condition: Fire spots over established containment line onto private timber lands
Action: Aggressive perimeter control with helicopters, hand crews, engines, and dozers as needed, based on size-up by DIVS. IC to notify timber company representative upon notification of a spot fire. IC to also notify Cal Fire agency representative.

Management Action Point #9 developed
Shape: Mosquito Creek
Condition: Fire becomes established in Mosquito Creek drainage.
Action: Relocate Yellow Creek Base Camp to a new location.

Management Action Point #10 developed
Shape: Butt-Caribou Transmission Lines
Condition: Fire reaches Butt Lake Dam – Caribou Powerhouse transmission lines.
Action: Consult with Forests and PG&E regarding the need to consider evacuation of campgrounds north of Highway 89 along the Lake Almanor west shore. Notify and consult with Cal Fire regarding the need to establish a unified command structure.

August 7
ICT1 McGowan

Fire experiences significant growth. Numerous spot fires were found in the private timberland along the northern flank of the fire; resources utilized direct attack to contain spots but disengaged several times due to fire behavior. Critical resources needs include 9 Hotshot crews, 3 Type 2 crews, 20 Type 3 engines, and 10 Type 2 Dozers. Resources completed some burning, but discontinued due to unfavorable conditions and fire behavior. Resources provided IA on ½ acre new fire outside of the delegated IA area.

Strategy: Overall strategy remains unchanged other than going direct on new spot fires.
Resources: 765 personnel assigned
Size: Approximately 16,787 acres at end of shift.
Objectives from IAP: No change in objectives.

August 8

ICT1 McGowan

At 1750, Helicopter 407 is dispatched to hoist and medevac an injured firefighter off the Reading fire. Persistent active fire spread on Northeast side of fire toward Mosquito Creek. Minimal fire spread on the remainder of the perimeter. IMT relocates Yellow Creek Base Camp to the Almanor campground on the north side of the fire. Crews continued to build contingency lines to the east and south.

Strategy: Overall strategy remains unchanged.
Resources: 1,005 personnel assigned
Size: Approximately 18,001 acres at end of shift.
Objectives from IAP: No change in objectives.

August 9

ICT1 McGowan

Fire spread is moderated, with backing and torching. Crews made good progress with burnout operations on the North side of the fire, from Div F towards Div Y, until conditions became unfavorable. A firing group is in place and working a swing shift of 1300 to 0300 with the initial mission of burning out from Div Y east toward Butt Reservoir. Crews continue to build contingency lines to the east and south.

Strategy: Overall strategy remains unchanged.
Resources: 1,018 personnel assigned
Size: Approximately 18,681 acres at end of shift.
Objectives from IAP: No change in objectives.

August 10

ICT1 McGowan

Fire experiences significant growth. Active fire behavior in the northwest portion of the fire, moving into Soda Creek drainage. Crews continue to make progress with burnout and holding on the north perimeter. The active slop-over in Mosquito creek continues to spread; crews make progress on indirect line around the head of the slop-over. Another spot fire on Red Hill is discovered at 1630. PG&E de-energizes the distribution line servicing the Red Hill communications site. Two branches were added to the fire for today's operation.

Strategy: Overall strategy remains unchanged.
Resources: 1,045 personnel assigned

Size: Approximately 27,000 acres at end of shift.
Objectives from IAP: No change in objectives.

August 11

ICT1 McGowan

Fire again burns actively and experiences significant growth. Crews make good progress on containment lines around large spot fire on Red Hill. Crews continue containment efforts on the multiple spot fires in the Little Grizzly Valley south of Humbug Rd. Crews are still unable to take direct action on the northeast portion of the fire due to fire behavior. PG&E re-energizes the distribution line to Red Hill that was shut down during the previous shift.

Strategy: Overall strategy remains unchanged with combination direct and indirect attack methods.
Resources: 1,076 personnel assigned
Size: Approximately 30,010 acres at end of shift.
Objectives from IAP: No change in objectives.

August 12

ICT1 McGowan

West side of the fire is very active and is now established in the Crablouse Ravine and the Diggers Creek area. Fire makes crowning runs towards Mosquito Ridge. Crews continue burnout operations on the East side of Humbug Valley.
At 2040, CIIMT 4 (Opliger) is ordered as replacement for CIIMT 1 (McGowan) when they time out.

Strategy: Overall strategy remains unchanged.
Resources: 1,009 personnel assigned
Size: Approximately 31,720 acres at end of shift.
Objectives from IAP: No change in objectives.

August 13

ICT1 McGowan

Plumas County Sheriff's Office issues a mandatory evacuation for Butt Reservoir, Ohio Valley, Humbug, Humboldt Area, and Yellow Creek. An evacuation advisory was issued to all Canyon Dam, Big Meadows, Rocky Point Campground, Prattville, Almanor, and West Almanor residents and visitors. Decision points are identified on a map in conjunction with the Sheriff's office, with final decision regarding issuance of advisements and evacuations resting with the Plumas County Sheriff. Highway 70 corridor is in patrol status. Persistent inversion layer limited fire activity to minimal movement. Crews make significant progress with burnout operations on the northeast side of the fire towards Butt Reservoir.

Strategy: Overall strategy remains unchanged.
Resources: 1,009 personnel assigned
Size: Approximately 35,800 acres at end of shift.
Objectives from IAP: No change in objectives.

August 14

ICT1 McGowan

Thunder cell over the fire brings strong gusty winds, pushing fire downhill toward Caribou Road. Several spot fires occur along Caribou Road and west of Butt Reservoir. Crews attempt to take direct attack actions on the spots.

Strategy: Overall strategy remains unchanged.
Resources: 1,054 personnel assigned
Size: Approximately 37,481 acres at end of shift.
Objectives from IAP: No change in objectives.

August 15

ICT1 McGowan

Distribution lines powering the City of Quincy and the Eastern Feather River are damaged by fire. PG&E crews working to restore damaged distribution lines. Mandatory evacuation of Seneca and Ohio Valley, with voluntary evacuations for Rush Creek, Canyon Dam, Big Meadow, and Rocky Point. A Sheriff's advisory is in effect for West Almanor, Almanor, and Pratville. Structure group applies Gel in Seneca, and prepped structures.

Strategy: Overall strategy remains unchanged.
Resources: 1,174 personnel assigned
Size: Approximately 42,136 acres at end of shift.
Objectives from IAP: No change in objectives.

August 16

ICT1 McGowan
Fire spreads around the south end of Butt Reservoir and into the Clear Creek and Ohio Valley area east of Butt Reservoir. Resources complete burnout from 1510 road east to the Butt Lake Reservoir on the north portion of the fire. Structures in Seneca continue to be prepped. CIIMT 1 (McGowan) will be shadowed by CIIMT 4 (Opliger) today. PG&E crews continue to restore damaged power poles feeding the Red Hill communications site while it runs off of emergency power.

Strategy: Overall strategy remains unchanged.
Resources: 1,154 personnel assigned
Size: Approximately 43,746 acres at end of shift.
Objectives from IAP: No change in objectives.

August 17
ICT1 Opliger

CIIMT 4 (Opliger) assumes command at 0600. Crews take action on new start near the fire, contained at ¼ acre. Crews are able to access the area between Seneca Mine and Butt Valley Reservoir Dam.

Strategy: Overall strategy remains unchanged.
Resources: 1,154 personnel assigned
Size: Approximately 44,343 acres at end of shift.
Objectives from IAP: No change in objectives.

August 18
ICT1 Opliger

The area between Seneca and Butt Valley Reservoir Dam (DIV M) was the priority for resources. Crews make good progress in the morning with containment actions, but afternoon winds and lack of sufficient air and ground resources make suppression efforts ineffective. No significant activity on other portions of the fire.

Strategy: Overall strategy remains unchanged.
Resources: 1,182 personnel assigned
Size: Approximately 44,793 acres at end of shift.
Objectives from IAP:
Management Objectives are changed to reflect the following.

1. Ensure all actions are prioritized for firefighter and public safety utilizing accepted risk management processes.
2. Provide and coordinate protection of structures, timber lands and infrastructure on public and private lands
3. Manage costs commensurate with values at risk
4. Provide timely public information, notifications and communication
5. Ensure close coordination with cooperators and administering agencies on key natural resources and other considerations.
6. Provide initial attack support within the identified initial attack area
7. Mitigate fire suppression damage by adhering to the Suppression Repair Pla

August 19
ICT1 Opliger

A firefighter falls and is seriously injured in DIV X, hoisted by Helicopter 407 and en-route to the hospital via helicopter within one hour. Steep terrain and fire behavior prevent night shift crews from containing the fire spread in the Seneca and Butt Valley Dam area (DIV M). By 1130, crews working in DIV M had to disengage due to fire activity. A spot fire occurs across

the North Fork Feather River, ¼ mile down river from Ohio Creek. As fire behavior increases, the OSC and IC agree that the current strategy of direct attack in DIV M is ineffective. They decide to back off to the contingency lines and initiate firing operations later that afternoon. IC, OSC1 and Liaison Officer meet with cooperators to describe the situation and explain rationale for burnout. After this meeting crews initiate firing operations in DIV M and V.

Strategy: Overall strategy remains unchanged.
Resources: 1,063 personnel assigned
Size: Approximately 47,040 acres at end of shift.
Objectives from IAP: No change in objectives.

August 20

ICT1 Opliger

At 1000 hours, a faller receives a serious head injury on DIV G. Helicopter 407 hoists the patient out and airlifts him to Chico, arriving at Enloe Hospital at 1043. Resources discover a spot fire in DIV X that was not accessible. Crews continue firing in DIV V & M making significant progress.

Strategy: Overall strategy remains unchanged.
Resources: 1,022 personnel assigned
Size: Approximately 50,860 acres at end of shift.
Objectives from IAP:
Tactical Objectives are changed to reflect the following changes.
Keep the Fire

1. South of Humbug Summit Road and the contingency line from Drop Point 12 to Canyon Dam.
2. North of contingency line from Spring Valley Lake to Highway 70, Highway 70 to Gansner and the contingency line to Drop Point 13
3. West of contingency line form Drop Point 13 to Canyon Dam
4. East of contingency line from Spring Valley lake to Humbug Summit Road

August 21

ICT1 Opliger

IMT established Charlie Spike for resources inserted into DIV C. Several new Hotshot crews arrive which allowed significant progress to be made in DIV D (SW side of fire). Fire activity on the NE side of the fire increases significantly, fire makes a significant run igniting spot fires across Hwy 89 near Almanor Lake spillway. Planned burning that evening wasn't completed as crews were committed to securing spot fires and slop overs.

Strategy: Overall strategy remains unchanged.
Resources: 1,058 personnel assigned

Size: Approximately 62,541 acres at end of shift.
Objectives from IAP: No change in objectives.

August 22

ICT1 Opliger
Night resources secured spot fires and slop overs from previous day. Crews continued progress on direct and indirect line construction in DIV X, V, C & D.

Strategy: Overall strategy remains unchanged.
Resources: 1,174 personnel assigned
Size: Approximately 63,147 acres at end of shift.
Objectives from IAP: No change in objectives.

August 23

ICT1 Opliger

Spot fires were discovered in DIV G, M, V & X; all were contained. Night shift continued firing in DIV V.

Strategy: Overall strategy remains unchanged.
Resources: 1,146 personnel assigned
Size: Approximately 63,147 acres at end of shift.
Objectives from IAP: No change in objectives.

August 24

ICT1 Opliger

Spot fires discovered in DIV V, all were contained quickly. At approximately 0930, a spot fire in DIV X was deemed inaccessible and a decision was made to withdraw to the contingency line and use it as the primary control line.

Strategy: Overall strategy remains unchanged.
Resources: 1,176 personnel assigned
Size: Approximately 64,214 acres at end of shift.
Objectives from IAP: No change in objectives.

August 25

ICT1 Opliger

Night resources continued firing and brought fire down to DP 13 in DIV V, and continued firing into DIV W. A Recovery and Suppression Repair group was established. Fire activity increases in DIV X, threatening the power transmission lines running from the Caribou powerhouse to the east. PG&E is notified and request a 2 hour notice prior to fire impacting the powerlines so that they would have time to divert power to Quincy.

Strategy: Overall strategy remains unchanged.
Resources: 1,196 personnel assigned
Size: Approximately 66,750 acres at end of shift.
Objectives from IAP: No change in objectives.

August 26

ICT1 Opliger

Wind event is forecasted, began in the morning and continued all day. Multiple spot fires and slop overs were discovered on the NE side of the fire, but all were contained. All aircraft stood down at 1300 due to high winds. By 2000 winds die down and crews burnout remaining control lines.

Strategy: Overall strategy remains unchanged.
Resources: 1,419 personnel assigned
Size: Approximately 68,582 acres at end of shift.
Objectives from IAP: No change in objectives.

August 27

ICT1 Opliger

Resources assist with a new start 5 miles down canyon from DIV A. One spot fire found near Rattlesnake RAWS. Acreage growth due to burnout operations completed overnight.

Strategy: Course of Action in WFDSS is updated to reflect change in containment objectives.
Resources: 1,502 personnel assigned
Size: Approximately 73,193 acres at end of shift.
Objectives from IAP: No change in objectives.

August 28

ICT1 Opliger

Very little fire activity occurred over the day. Late in the afternoon a power outage was reported in Quincy and Greenville. Soon after it was discovered that an area adjacent to the Caribou power house had become active and had impacted a series of power poles. PG&E requested permission to access an area of the fire that was closed; they were allowed access and restored power to the affected communities before daylight on 8/29. At 1300, NorCal Team 2 is ordered to replace CIIMT 4.

Strategy: Overall strategy remains unchanged.
Resources: 1,529 personnel assigned
Size: Approximately 74,125 acres at end of shift.
Objectives from IAP: No change in objectives.

August 29
ICT1 Opliger

Crews continued hold and mop-up of control lines. Resources continue to prep around Seneca.

Strategy: Overall strategy remains unchanged.
Resources: 1,527 personnel assigned
Size: Remained at approximately 74,125 acres at end of shift.
Objectives from IAP: No change in objectives.

August 30
ICT1 Opliger

Night resources completed firing the area around the community of Seneca. Fire activity was minimal and suppression repair progressed.

Strategy: Overall strategy remains unchanged.
Resources: 1,398 personnel assigned
Size: Approximately 75,217 acres at end of shift.
Objectives from IAP: No change in objectives.

August 31
ICT1 Opliger

NorCal Team 2 (Molhoek) shadows CIIMT4. Fire is declared 100% contained at 0600.

Strategy: Overall strategy remains unchanged.
Resources: 1,207 personnel assigned
Size: Approximately 75,217 acres at end of shift.
Objectives from IAP: No change in objectives.

September 1
ICT2 Molhoek

NorCal Team 2 assumes command at 0600. Incident objectives are changed based on the Delegation of Authority.

Strategy: Overall strategy remains unchanged.
Resources: 1,053 personnel assigned
Size: Approximately 75,431 acres at end of shift.
Objectives from IAP: The objectives below remained valid throughout the team's assignment.
Management Objectives

- Ensure all suppression and repair actions are prioritized for firefighter and public safety.
- Provide for protection of structures, timber lands and infrastructure on public and private lands.

- Manage cost commensurate with values at risk.
- Provide timely public information, notification and communication.
- Ensure close coordination with cooperators and administrating agencies.
- Provide initial attack support within the initial attack area.

Operational Objectives

- Keep the fire within existing containment lines.
- Coordinate fire suppression repair activities with incident resource advisors.

September 2

ICT2 Molhoek

During the period from 9/2 to 9/11, the overall fire perimeter was unchanged.

Strategy: Operational strategy was to complete 300 feet mop-up in areas of "clean black", while expanding to 500 feet within Divisions that have a component of unburned. Suppression actions were done concurrently with suppression repair operations. Course of Action in WFDSS is updated to reflect change in containment objectives.

On September 11, 2012 the incident was turned back to the Forests and managed by a local Type 3 organization.

Attachment 5

United States Department of Agriculture | **Forest Service** | **Plumas National Forest**
159 Lawrence Street
P. O. Box 11500
Quincy, CA 95971-6025
(530) 283-2050 Voice
(530) 534-7984 Text (TDD)

File Code: 6700 **Date:** February 27, 2013
Route To:

Subject: Plumas National Forest Natural Occurring Asbestos Report Letter

To: Regional Forester

In August 2012, the Chips Fire burned over 75,000 acres on Plumas and Lassen National Forest lands. Some of the fire burned in serpentine rock areas which are known to produce naturally occurring asbestos (NOA). During the suppression operation an incident safety officer raised the issue of firefighter safety in NOA areas. When disturbed, becoming airborne and inhaled, asbestos fibers can irritate tissues and resist the body's natural ability to expel the fibers. Asbestos is a known carcinogen that can cause cancers of the lung and the lining of internal organs, as well as asbestosis and other diseases that inhibit lung function.

Our safety culture resulted in an investigation of the NOA issue. We brought a variety of experts together to focus on this issue including a federal occupational and health specialist, a respirator-trained team, an industrial hygienist and a geologist.

We started the investigation by gathering rock and soil samples to test for the presence of asbestos. The test showed asbestos particles were present in some rock and soil samples. We then took air samples to see if any asbestos particles were airborne. The collected air samples showed no harmful levels of airborne asbestos particles.

Based on the sampling conducted by the industrial hygienist we have concluded that personnel working in the Chips fire areas were not exposed to dangerous levels of asbestos particles. Further, there is no need to wear high-efficiency particulate air respirators while performing duties. As a reasonable safety precaution to minimize exposure, dust mitigation measures including watering roads in serpentine areas during fire suppression activities, will be considered. While we understand working with NOA is a continuous and evolving issue and further testing may be required in the future, we do not consider working or firefighting in the Chips Fire serpentine rock areas to be an asbestos exposure danger.

We also invited the National Institute for Occupational Safety and Health (NIOSH) to examine our data and conclusions. NIOSH agreed with the Chips Fire assessment and added that air-monitoring testing should be conducted before starting heavy equipment activities in non-tested serpentine rock areas.

I want to thank everyone who worked so diligently to resolve the Chips Fire NOA issue and particularly the incident safety officer that posed the question the Forest and Fire leadership; the overall health and safety of our employees is and will always be our first priority.

/s/Earl W. Ford
EARL W. FORD

Forest Supervisor

cc: Dan Kleinman
Stephen A Gage