



Oregon

John Kitzhaber, Governor

Department of Agriculture

635 Capitol Street NE
Salem, OR 97301-2532

Case Number: 140147

Case Name: Pacific Air Research/Cedar Valley Residents

DRAFT

Case Closed



Overview

Investigator

Jessica Haavisto

Case Reviewer

Sunny Jones

Manager

Date Started 10/22/2013

Date Completed 03/14/2014

ROL Sent? Yes No

Date ROL Sent

Referral to Another Agency? OHA, EPA, ODF, OHA DEQ

Date of Referral

Number of Samples Taken 11

List Test(s) Requested glyphosate, 2,4-D, triclopyr, imazapyr, metsulfuron-methyl, sulfometuron-methyl

Number of Samples Analyzed 11

Complaint? Yes No

Sample Type Air Veg Animal Other Soil Swab Water

Refer to PARC? Yes No

Type of Investigation AUF

Cease & Desist Yes No

Suspected Violation? Yes No

LOA Yes No

Verified Compliance? Yes No

Date Reviewed 03/17/2014

Related Cases 140241
140242
140243
140244

Date Case Completed

Sixty Days 12/21/2013

One Hundred Twenty Days 02/19/2014

Tracking Devices

- Aerial
- AIs of interest
- Drift
- EPA
- Forestry
- Liquid spray application

Nature

Parties Involved

<u>Parties Involved</u>	<u>Last / Business Name</u> <u>Address</u> <u>City</u>	<u>First</u> <u>State</u>	<u>Zip</u>	<u>License #</u> <u>Phone</u>	<u>License Type</u> <u>Expiration Date</u> <u>County</u>	<u>Category</u>
Complainant	Welsh 32855 Cedar Valley Rd Gold Beach	Jim OR	97444	530-510-0747	Curry	home: 541-247-6473
Operator	PACIFIC AIR RESEARCH 660 AVENUE C WHITE CITY	 OR	97503	AG-L0000006CPO 541-826-9450	CPO 12/31/2013 Jackson	AgH, AgIF, FOR, PUB
Complainant	Burns 32830 Cedar Valley Rd Gold Beach	John/Barbara OR	97444	541-247-6452	Curry	
Complainant	Rickard 95791 Ponderosa Drive Gold Beach	Kathyrn/Eric OR	97444	541-247-2329	Curry	
Complainant	Fletcher 95789 Ponderosa Drive Gold Beach	Gary/Aimee OR	97444	541-247-6135	Curry	
Complainant	Hill 95815 Ponderosa Drive Gold Beach	Gary OR	97444	541-247-7675	Curry	
Complainant	Golay 94084 Hilltop dr Gold Beach	Susan OR	97444	547-247-0818	Curry	
Complainant	Sweeney 95416 Grizzly Mountain Rd.b Gold Beach	Jim OR	97444		Curry	
Applicator	OWEN 2788 POPPIE CIRCLE MEDFORD	STEVEN OR	97504	AG-L0074922CPA 541-779-9299	CPA 12/31/2013 Jackson	AgH, AgIF, FOR, PUB
Complainant	Overdevest/ Klus 95740 Ferguson Ranch Road Gold Beach	Mike/ Judy OR	97444	541-247-0877	Curry	
Complainant	Royce Gold Beach	Wood OR	97444	541-247-6317	Curry	

Parties Involved

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Applicator	WOLFORD 32954 HILLSIDE ACRES RD GOLD BEACH	GARY OR	97444	AG-L1002452ppa 541-247-7030	PPA 12/31/2014 Curry	Applicator for Curry County Public Works Road Dept. ROW
Consultant	Richards 555 Lockhart Ave Coos Bay	Craig OR	97420	541-297-9225	Coos	Contractor: Pro Forestry Consulting LLC
Consultant	Barnes & Associates Inc. 3000 Stewart Parkway Suite 204 Roseburg	Rick OR	97470	541-430-7035	Douglas	Rick Barnes, Manager of Crook Timberlands LLC property Tyson Krumley forester for Barnes &
Property owner	Kaufman 32435 Libby Creek Rd Gold Beach	Joseph OR	97444		Curry	Contact: Craig Richards
Government agency	Savona 63612 Fifth Road Coos Bay	Stacy OR	97420	541-808-8675	Coos	Stewardship Forester South Coast Oregon Department of Forestry
Government agency	Curry County Public 28425 Hunter Creek Hts Gold Beach	OR	97444	541-247-7097	Curry	Dan Crumley: Curry County Roadmaster
Property owner	Crook Timberlands LLC 1915 Cottonwood Avenue Coos Bay	OR	97420	541-267-0151	Coos	Ted Fitzgeralds, lawyer for Crook Timberlands, LLC. Contact, Rick Barnes.
Complainant	Pitchford 95865 McKinnon Dr Gold Beach	Melissa OR	97444	541-247-2179	Curry	
Complainant	Hansen 33424 Cedar Valley Rd Gold Beach	Lilly OR	97444	360-389-1257	Curry	Beau & Ada
Complainant	Philipsheck 28445 Hunter Creek Hts Gold Beach	Mike OR	97444		Curry	
Complainant	Webber 32880 Cedar Valley Rd Gold Beach	Warren OR	97444	541-247-6299	Curry	

Parties Involved

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Complainant	Ott 32778 Cedar Valley Rd Gold Beach	Charles OR	97444	541-247-3426	Curry	odimdc3@gmail.com
Consultant	Robertson 555 Lockhart Avenue Coos Bay	Dan OR	97420	541-404-5239	Coos Contractor: Professional Reforestation of Oregon, Inc	
Complainant	Dehart-Smith PO Box 154 Ophir	Sandy OR	97464		Curry	34496 Cedar Valley Rd
Complainant	Fletcher 34885 Rocky Rd Gold Beach	Sherry OR	97444		Curry	
Interested party	Dutton 94125 4th Street Gold Beach	Dorothy OR	97444	541-247-6628	Curry	Family Nurse Practitioner
Veterinarian	Fitzgerald 29641 Ellensburg Ave Gold Beach	Fern OR	97415974	541-247-9244	Curry	Veterinarian Town & Country Animal Clinic
Veterinarian	Berman 3181 SW Sam Jackson Park Road Portland	Fred OR	97201	503-494-7366	Multnomah	DVM: Pesticide Analytical Response Center Consultant - Director, Toxicology Info Ctr CROET, OHSU

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Application Information

Date of Application Start Time End Time Time of Day

Application Note

Category

Location of Application

Squaw 2013 T35S R14W Sec 29-32 86 acres
Squaw 08 T35S R14W Sec 28-29 90 acres
Flynn 08 T37S R14W Sec 8 & 17 93 acres
Kaufman T36S R14W Sec 3 25 acres

Specific Site/Crop

Rate of Application (mixing rate, diluent, rate per area, etc)

Purpose

Method of Application

Pesticides Involved

<u>Type</u>	<u>Manufacturer</u>	<u>Trade Name</u>	<u>EPA Reg. No.</u>	<u>Active Ingredients</u>
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Pesticides Involved

<u>Type</u>	<u>Manufacturer</u>	<u>Trade Name</u>	<u>EPA Reg. No.</u>	<u>Active Ingredients</u>
Herbicide	Monsanto	Roundup Original	524-445	Glyphosate
Herbicide	Dupont	Oust XP	352-601	Sulfometuron methyl
Herbicide	NuFarm	Weedone LV6 EC	71368-11	2,4-d ester
Herbicide	Dow AgroSciences	Element 4	62719-40	Triclopyr
Herbicide	BASF	Arsenal	241-299	Imazapyr
Herbicide	NuFarm	Polaris AC	228-570	Imazapyr
Herbicide	Dow AgroSciences	Accord XRT II	62719-556	Glyphosate
Adulticide	Helena Chemical Company	Brush and Basal Oil		Petroleum oil
Adjuvant	Helena Chemical Company	Induce	5905-50091	Alkyl Aryl Polyoxylkane Ethers & Free Fatty Acids

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Narrative

Parties Involved:

Crook Timberlands LLC : Land Owner of Flynn, Squaw and Grizzly units

Rick Barnes of Barnes & Associates : Manager for Crook Timberlands LLC

Craig Richards of Pro Forestry Consulting LLC : Contractor Forester for Barnes & Associates and Joseph Kaufman

Stacy Savona : Stewardship Forester, Oregon Department of Forestry (ODF)

Steve Owen of Pacific Air Research (PAR): Operator contracted by Craig Richards to spray units for Crook Timberlands LLC and Joseph Kaufman

Cody Owen of Pacific Air Research: Mixer/loader/handler

Connie Owen of Pacific Air Research: Secretary/record keeper

Joseph Kaufman : Land Owner Kaufman units

During the Spring of 2013 Rick Barnes, consultant for Crook Timberlands LLC, and The Oregon Department of Forestry (ODF) had been in contact with Oregon Department of Agriculture (ODA) regarding applications that would take place on private timber property in the Gold Beach area on Grizzly Mountain. There had been some past concerns from citizens living in the area that prompted Barnes and ODF to have ODA perform a use observation during an upcoming application. It was planned, weather permitting, to perform the application and observation on October 15th, 2013. Barnes stated that he would be notifying residents in the area that an application would be taking place.

October 14, 2013: I, **Jessica Haavisto**, ODA pesticide investigator, received a call from **Susan Golay**, resident of Gold Beach, asking about an application that would be made to Crook Timberland property on Wednesday. She wanted to know how to protect herself and how the community members could protect themselves. I explained that an investigator from Oregon Department of Agriculture would try to be onsite for the application as well as the ODF stewardship forester **Savona** to observe the application. I explained that the application would be taking place on private timber property and that the pesticides would be applied in compliance with the Oregon Forest Practices Act and in accordance with the product labels and State and Federal pesticide laws. Golay was unhappy with this answer and continued to explain that drift would occur and wanted to know why we could not stop the application. I offered information to her about the National Pesticide Information Center (NPIC) and also gave her the phone number for the Salem office should she have further questions or concerns to express.

October 15, 2013: **Paul Khokhar**, ODA Pesticide Investigator, traveled to Gold Beach and met with **Craig Richards** of Professional Reforestation LLC and with **Barnes** of Barnes & Associates. **Steve Owen** of PAR would be making an application to the Flynn 08 unit on Grizzly Mountain belonging to Crook Timberlands today. The weather was not cooperative and the application was postponed. Khokhar returned to Salem.

Narrative

Barnes of Crook Timberlands called to inform me that they would try to do the application on Wednesday the 16th in the afternoon. I talked to him about having Savona, the ODF stewardship forester in that district attend the application because I would be out of town and unable to perform an observation. I also spoke with Savona and she agreed to be onsite for the application.

October 16, 2013: Golay called me and briefly spoke about her concerns of the application that would take place later that afternoon. I informed her that a stewardship forester with ODF would be on site to observe the application.

I forwarded Golay's contact information and health concerns to the Pesticide Analytical Response Center (PARC) through a phone call to **Ted Bunch**, PARC Coordinator, and also forwarded information to **Mike Odenthal**, ODA Pesticide Lead Investigator, regarding Golay's concerns.

Several calls came into my desk regarding health concerns after the application and the calls were forwarded to the Salem office as I was out of town between October 17th and October 21st, 2013.

October 17, 2013: Golay called **Sunny Jones**, ODA Investigator, to make a complaint about an application she said took place over the town of Gold Beach around 1:00 pm the previous day. Golay reported health symptoms for her and her daughter. At this time, ODA knew only of an application that was to be made to the Flynn 08 unit on Grizzly Mt. at 4:00 pm the previous day.

October 18, 2013: **Gary Hill**, a resident of Cedar Valley contacted Odenthal and **Lilly Hansen** resident of Gold Beach contacted PARC with concerns about a helicopter that was seen flying over the Cedar Valley area which is northeast of Gold Beach and several miles from Grizzly Mt. All expressed that the helicopter made several trips overhead. The event occurred midday and shortly after seeing the helicopter several neighbors mentioned having some type of health symptom associated with an odor they believed came from the helicopter.

October 21, 2013: Gary Hill, **John Burns**, **Kathryn Rickard**, **Jim Welsh**, residents of Cedar Valley, and several others left messages over the weekend regarding the application that took place on October 16, 2013. I followed up with PARC and provided names and phone numbers of the individuals who called reporting health affects. Many of the calls came from residents that did not live in the Grizzly Mountain area, but rather in the Cedar Valley area. At this time, ODA was unaware of any applications that may have taken place in the Cedar Valley area, but knew that an application to the Flynn 08 unit on Grizzly Mountain was made at 4 pm on October 16th.

I contacted Pacific Air Research (PAR), Commercial Operator hired by Craig Richards of Pro Forestry Consulting to conduct the pesticide application to the Flynn 08 unit and requested a copy of their application record for the Flynn 08 unit.

I requested from Savona at ODF notifications for units that were to be sprayed in the Grizzly Mt area and if she knew of any other applications that had gone on in the Gold Beach area besides Flynn 08.

Narrative

October 22, 2013: I again spoke with Savona requesting all notifications and maps of units in Gold Beach area that were filed by Crook Timberlands. She provided notifications for Crook Timberlands showing that there were units north of Gold Beach area that were much closer to the individuals that had made reports to ODA and to PARC of adverse health.

Savona also informed me that the residents in Gold Beach concerned with the spray had developed a Facebook page to share information. I located the page on Facebook and joined the group to track information shared by the residents. The Facebook page name is **Citizens for a Greener Curry**.

Barnes, of Barnes and Associates, contacted me again and asked if I would be available for an observation of an application that PAR would make on October 23, 2013 in the Grizzly Mt. area.

It was determined that Khokhar and I would travel to Gold Beach and interview residents in the Cedar Valley area on the morning of the 23rd and then perform an observation with PAR south of Gold Beach on Grizzly Mt.

I interviewed Jim Welsh, resident of Cedar Valley about his concerns of a pesticide application that took place on October 16. I spoke with Welsh over the phone because he would be leaving for California in the morning and would miss meeting with Khokhar and I. Welsh stated that around 1:00 pm he was outside his mother's home sitting near a back door talking on the phone when he noticed a yellow helicopter fly over. He said that a few moments later he had a foul taste in his mouth and a burning sensation on his face. He spoke with his neighbor Burns about the incident and called ODA. I asked him if he used pesticide products in his yard and he stated he did not. He said he would leave a written statement with Burns for us the next day. Welsh was referred to PARC.

I coordinated with Khokhar and Crook Timberlands to conduct an observation on the evening of October 23rd. In discussion with Odenthal and Khokhar we made plans to interview residents and take environmental samples from their properties on the morning of October 23, 2013 prior to performing an observation that afternoon at the Grizzly Mt Unit south of Gold Beach.

Dorothy Dutton, Family Nurse Practitioner, called PARC requesting information for toxicology screens for residents from the Cedar Valley area. PARC provided the phone number and web address to her for the National Pesticide Information Center and the web address for the America College of Medical Toxicologists. PARC referred eight individuals to the Pesticide Exposure Safety & Tracking Program Oregon Health Authority (OHA PEST).

Savona sent ODA notifications for Crook Timberlands units (Squaw 08 & Squaw 2013). These units were in the Cedar Valley vicinity.

Narrative

October 23, 2013: Prior to leaving for Gold Beach, I checked the Citizens for a Greener Curry Facebook page to see if any new information had been shared about ODA coming to the area for interviews or if any information had been shared regarding the potential application. A comment was made on the site about the proposed application in the Grizzly Mt. area that if an application happened, citizens were requested to show up with video cameras, BB guns, air cannons, paint ball guns and whatever else that could be legally shot in the direction of the applicator. I took a screen shot of this message on my phone and e-mailed the image to **Dale Mitchell**, Pesticide Program Manager, and Mike Odenthal and discussed how to deal with this information. Mitchell stated he would inform the Curry County Sheriff's Dept. Odenthal stated he would inform Owen. I contacted Khokhar and we would find out if the application would happen after we interviewed residents.

I met with Khokhar at 9:45 am to discuss interview and sample goals and to share information about the day's potential application to the Grizzly Mountain unit. The application was projected to take place around 3:00 pm and Barnes would be contacting Khokhar with information on where to meet.

At 10:30 am, Khokhar and I arrived at John and Barbara Burns' home, residents of Cedar Valley. We were met by other local residents who were concerned about the applications and the health of the community. In attendance was Susan Golay, John Burns, Gary Hill and Jim Sweeney. Jim Welsh had left for the day as he had an appointment in California that afternoon. Khokhar and I presented our state I.D.'s and handed out business cards. Golay and Sweeney proceeded to question Khokhar and I with a video camera about ODA policies and how cases are initiated and pesticide laws. Khokhar explained where they could find information on ODA policies and that we would be taking environmental samples from several homes in the area and that we would interview each person on an individual basis.

Burns asked about samples that they could have tested themselves. It was decided that Khokhar and I would take split samples and let the residents keep a sample to have tested on their own time.

Golay and Sweeney proceeded to video record the entire time Khokhar and I were on site at the Burns residence. The entire group of citizens, including Burns, Hill, Golay and Sweeney followed us from home to home video recording Khokhar and I as we sampled and interviewed residents.

Sample Plan for resident's properties and interviews:

The following section of the narrative is a mix of our sample plan and interviews from each of the residents in the area. The reason the interviews and sample plans are mixed is due to our use of the testimony from each resident to determine whether or not a sample would be taken based on their recollection of the day and further, where to take a sample from on that resident's property.

Narrative

Using new, clean nitrile gloves rinsed with isopropyl alcohol, vegetation samples were collected from plants selected near areas where residents noticed odors or health symptoms, or from a plant the resident believed to be affected. Each sample was collected by stripping branches or stems of leaves and placing them in a large brown paper bag. Once the bag was full, the sample was mixed and equally divided between two brown paper bags. The paper bags were placed in their own plastic bag, and sealed with an ODA seal and labeled A or B. The residents were then able to select which sample they wanted to keep. The residents chose samples labeled A and ODA kept samples labeled B. The samples that the residents kept were placed in a freezer belonging to Burns. The samples that ODA kept were placed on ice and shipped to the ODA laboratory in Portland, OR the next day.

Starting at the Burns residence, two samples were collected. One sample (140147-1b) was collected from an apple tree in the back yard near where Burns had been tending a burn pile the day of the 16th. Khokhar and I selected leaves from the outer canopy circling around 75% of the tree. We pulled the upper branches down so that leaves from the upper level of the tree canopy could be collected. The second sample (140147-2b) was collected from an apple tree in the front yard that could have been in the path of the helicopter according to Burns' recollection of the day. The apple tree vegetation did not appear to have symptoms of herbicide damage nor did any other vegetation in the yard. Burns helped pull branches lower to the ground so that Khokhar and I could collect leaves from the upper canopy. No leaves handled by Burns were collected; nor were leaves that had fallen to the ground collected. We asked Burns if he used any pesticides in his yard, explaining that a herbicide or weed killer is also a pesticide by definition. He stated that he did not, but stated using an organic food grade product (MSM) for insect control on his apple trees earlier in the season.

On October 16, Burns was tending a burn pile in his backyard. He explained that around 12:30 to 1:15 pm he noticed an odor, similar to two-stroke oil or a solvent he thought, after a helicopter flew over the conifers at the edge of his yard. He noted the helicopter flew over at least two times. Burns said he did not feel a mist or notice any vapors, that he just felt ill later that evening. He became very thirsty, tired and congested but the symptoms seemed to subside after three days. Burns' wife Barbara was outside their home that afternoon, but didn't notice any symptoms until the following morning when she awoke with red, swollen hands. She stated using some type of cream on them and the symptoms went away after 5 minutes.

Sample 3 (140147-3b) was taken from the backyard of Welsh's home near where he was sitting when he noticed an odor. This sample consisted of leaves from an ornamental tree in the center of the back yard. The leaves appeared to be in normal senescence given the time of year. No vegetation in the yard appeared to have any symptoms associated with herbicide activity. A signed letter from Welsh is included in the attachments of this report. In my initial interview with Welsh on the phone the day before, he stated he may have felt the chemical drift on him. His story changed several times throughout the course of the conversation and ended with him reporting smelling an odor and then feeling symptoms on his face.

Narrative

Burns and Welsh live across the street from each other on Cedar Valley Rd (see map in attachments).

Samples 4-6 were collected from Kathryn Rickard's property located on Ponderosa Drive. The first, (140147-4b) from a camellia tree near the driveway that she stated did not look healthy. The leaves had scarring that appeared to be from a fungus or insect but no herbicide symptoms were evident. The camellia was in an open exposed area and according to the statement from Burns, was likely in the path of where they had viewed the helicopter flying over. Khokhar and I pulled samples from the upper canopy that were most exposed to the elements.

Sample 5 (140147-5b) consisted of leaves from an apple tree in the back yard near the deck where Rickard reported standing in the morning when she felt a burning sensation on her arms from leaning on the deck railing. The apple leaves appeared to have no symptoms associated with herbicide activity. Hill assisted Khokhar and I with sampling by pulling down branches from the upper canopy so we could collect the leaves from the outer and upper canopy. No vegetation handled by Hill was collected. No vegetation that had made contact with the ground was collected.

Sample 6 (140147-6b) was from clematis that ran along the deck railing. There were two clematis plants, one on each side of the deck stairs and the sample was taken from the plant that appeared less healthy. This plant was also on the north side of the stairs and shaded whereas the healthier plant was not in a shaded area. There appeared to be no herbicide symptoms on any vegetation on Rickard's property. Leaves that were dying appeared consistent with fall senescence.

Rickard did state that she uses weed and feed in her yard but no other pesticides. She could not remember when she had applied the product nor the specific product that she used.

On October 16th, Rickard was home. Her animals, dogs and cats, were outside. She stated hearing a helicopter around midday but thought it was just another helicopter looking for marijuana, which she stated happens often in the area. She did notice, shortly after hearing the helicopter, an odor and heaviness to the air. Her nose began burning and by 3:00 pm, she stated having an awful headache. Her husband came home around 4:30 pm and within a half an hour stated he had a headache. Rickard stated that their dogs did not appear to be feeling well that afternoon and that the cats were in the yard eating grass and throwing up. The dogs were in the garage while Khokhar and I were sampling at her property. Rickard stated that she heard, but never saw the helicopter several times around midday. She experienced an odor off and on over the next several days. Her husband Eric was not up for an interview that afternoon and would contact ODA at a later date.

Gary Hill declined to have us take samples from his property, which is immediately adjacent to Rickard's property. Hill stated he and his property were not affected by the application.

Narrative

Khokhar and I asked if the citizen group knew of any other residents in the area that may have been affected. It was mentioned that a couple (The Fletchers) that lived at the north end of Ponderosa Dr had not been feeling well.

Sample 7 (140147-7b) was collected from the north end of Ponderosa drive at Gary and Aimee Fletcher's home. Leaves were collected from the upper and outer canopy of a mature rhododendron in the back yard.

Aimee was home with their infant and did not see a helicopter but heard one the day of the incident. She said that she had a headache later that day and a fever and stomach cramping the next. Gary was working out of the area that day, but complained of a headache after returning home that night. He also said their dog had issues getting around for a few days after the incident.

October 28, 2013: Pacific Air Research faxed a copy of their application record from Oct. 16 to Odenthal, ODA office in Salem. The record reported that Roundup Original EPA Reg. # 524-445 was applied to the Flynn 08 unit (On Grizzly Mountain) at a rate of 1.5 quarts per acre. Odenthal reported to OHA, PARC and to Gary Hill, who had become the spokesperson of the Cedar Valley residents, that glyphosate was the product used. It was also expressed to Hill that the samples would be tested for glyphosate, along with the other products (2,4-D, triclopyr, imazapyr, metsulfuron methyl) that were listed on the ODF notification for the unit. This way, the residents could inform their health care providers or veterinarians for treatment.

October 29, 2013: Odenthal talked to Eric Rickard, Kathryn's Husband, Cedar Valley residents. Eric stated on October 16th he was at work in town all day. He saw a helicopter in town but did not see anything going on near his home because he was gone. He said he felt fine during the day but when he got home he came down with a severe headache. When he went to work next day the headache got better just to get worse again when he returned home. He stated that a clematis plant on their property was starting to die as was a fir tree in the front yard.

October 30, 2013: Odenthal conducted an initial record review of the application record sent in by Pacific Air Research. The preliminary review indicated there were a couple of items missing from the record. Odenthal contacted Connie Owen at PAR and requested the additional information. Odenthal requested maps of the units sprayed, the supplier of the pesticide products for the application and a supplemental label for Roundup Original for forestry applications.

October 31, 2013: PARC facilitated a conference call for a status update to State and Federal Agencies involved with the investigation. Agencies present for the call included ODA, ODF, OHA, DEQ, US EPA Portland and Seattle.

November 1, 2013: Odenthal e-mailed preliminary investigation information to Curry County Commissioner **Itzen** to keep him apprised of the status of the investigative process.

Narrative

November 4, 2013: Ted Bunch, PARC Coordinator provided me with contact information for a **Melissa Pitchford**, Cedar Valley resident. I called Ms. Pitchford and left a voice message to speak with her about her experience on October 16th. There was no return call.

November 5, 2013: Odenthal received an e-mail from **Mike Phillipscheck** requesting a call back. Odenthal called him and discussed what Phillipscheck had seen on Oct. 16. He stated he was working in the community garden near the airport in Gold Beach and saw the helicopter fly in pretty low and land near a lowboy trailer. He said he went over and looked later and the aircraft was on the trailer and several men were tying it down. He was concerned about what the aircraft was being used for.

Odenthal contacted Savona and Barnes to coordinate taking samples from the three units, Flynn 08, Squaw 08 and Squaw 2013 on November 6. The environmental samples were to be taken to confirm what active ingredients had been applied to the units.

Odenthal received an e-mail from **Mike Overdevest**, resident of Gold Beach, claiming adverse health effects from the spray operations on the 16th. Odenthal replied to him stating that the message would be forwarded to PARC and **Justin Waltz**, OHA, would likely contact him. Overdevest lives at 95740 Ferguson Ranch Rd.

Warren Weber, resident of Gold Beach, called ODA Salem to report that he received a letter explaining what had allegedly happened in Gold Beach and Cedar Valley and that he was sure he was made sick by the applications made on October 16th. The letter had come from another resident (unknown) in the Gold Beach area.

Odenthal received a fax copy of the Roundup Original supplemental label for forestry and utility rights-of-way from PAR.

November 6, 2013: Odenthal met Savona and **Tyson Krumley** (Barnes and Assoc. forester) and traveled to the Flynn 08 unit. This was a forestry release application site with fir trees at about 2-3 feet tall. Odenthal took several photographs but was limited because of the fog layer and then collected a vegetation sample (140147-8) from within the treated area. It was noted there was a little visual evidence that the application on Oct. 16 took place. Some of the shrubs were turning a lighter color than the others. It did not appear like normal senescence. Krumley pointed out some shrubs in a couple of areas near the unit that were dead. He said they had been treated earlier in the season and were not part of this application.

Odenthal then traveled to the Squaw Valley 2013 (86 acres) unit and did the same as in Flynn 08 (sample 140147-9). This unit had been logged with in the last year so there was little regrowth of brush and it had not been replanted.

Odenthal then traveled to the Squaw 08 units and again took photographs and collected a vegetation sample (140147-10) from with in the treated area. This unit was a release application similar to the Flynn 08 application.

Narrative

Sample Plan: After discussions with Pesticide Program Manager Dale Mitchell, Odenthal determined vegetation samples collected from the within the treated areas of the three forest units could provide useful information in confirming what was applied. Odenthal decided a point sample would provide that information. From the edge of the unit Savona and Odenthal determined where the appropriate place to sample in the unit was. Sample locations were marked with GPS coordinates (see maps).

November 11, 2013: Mike Philipscheck, resident of Gold Beach, called me to let me know that he had made and posted flyers in the Gold Beach area regarding the spray event on October 16, 2013. He stated that the flyers informed residents of Gold Beach that they may have been sprayed on that day and if they had been exposed, what their symptoms may be. He informed residents to call me, should they have concerns. I asked where he posted these flyers and he said in several small convenience stores and grocery stores and other public notice boards around town. Philipscheck then informed me that the residents in the area would be having weekly meetings on Mondays for people to come share stories and makes plans of action for next steps. He wanted to extend an invitation for ODA to come to these meetings.

On or around November 13, 2013: I met with Steve Owen (PAR) at his shop to ask for aircraft GPS maps from the Crook Timberlands units that he sprayed on October 16th. Owen again stated that he applied glyphosate and stated that he had Roundup Original in inventory that he took to Gold Beach with him to start the job. I asked where he loaded the helicopter for each of the units and he replied that he mixed and loaded from within the units. The helicopter was brought into the area on a trailer and stored at the airport the night of October 15th which would be the cause of residents seeing a helicopter leave from the airport on the 16th. I asked Owen if I could get GPS maps from him for each of the units that he sprayed for Crook Timberlands. He said he would download them and get them too me as soon as possible. I asked if there were any mechanical issues with the helicopter that may have led to leaking of product and he said he had had no maintenance issues.

November 15, 2013: Connie Owen, PAR employee, faxed GPS maps to me. The maps showed four units had been sprayed. Three of which I could identify as belonging to Crook Timberlands from the ODF notifications but the fourth unit was unknown and located SE of the Squaw units. I called PAR and spoke with Steve Owen and requested an application record for the unit and requested information for who owned the unit. Steve said the fourth unit belonged to **Joseph Kaufman**. Kaufman is not associated with Crook Timberlands. Kaufman is a land owner and Richard's was the contracting forester managing the timber property for Kaufman.

I asked Owen, given the flight path on the maps he provided, when he sprayed the Kaufman units. He stated spraying them while staged at the Squaw 2013 unit. The loads were mixed and loaded from the landing in the Squaw 2013 unit. Owen reported ferrying Richard's to the Kaufman site where Richard's would observe the application.

As an observation on the aircraft GPS map, Owen would likely have flown a path in the vicinity of the cedar valley residents confirming the claims of adverse heath as he was traveling between the Squaw and Kaufman units.

Narrative

November 18, 2013: OHA sent an e-mail to ODA Salem referring a complainant with livestock health concerns. Justin Waltz, OHA, reported that Melissa Pitchford had reported that she and her horses were exhibiting adverse health symptoms. PARC contacted Pitchford and obtained information about the horses and the attending veterinarian. PARC referred the veterinarian's name to **Dr. Berman** (PARC consulting veterinarian) for follow up. I attempted to make contact with Pitchford by phone to provide her with a Report of Loss form but received no return call. I did leave information on her voice mail where she could obtain a Report of Loss form online.

DRAFT

November 20, 2013: A PARC Board meeting was held in Portland, OR and an update about the Curry County investigation was given.

November 21, 2013: Charles Ott, resident of Gold Beach, e-mailed Odenthal regarding concerns from the October 16th application. PARC was notified.

November 25, 2013: I returned a call from **Royce Wood**, resident of Gold Beach, who is concerned about the October 16th application that took place. He is not reporting any symptoms or health concerns related to the application. He is interested in getting a copy of the report once it is completed. I informed him that we could let him know when the report was completed and he could make a formal records request.

November 26, 2013: ODA Laboratory Services reported initial sample results for the environmental samples taken from the complainant's residences. See results below.

Pacific Air Research faxed an application to me of the record for the Kaufman unit. The record stated PAR made a forest release spray on the Kaufman unit using:

1.25 quarts/acre Element 4, EPA Reg #62719-40

1 quart/acre Weedone LV6, EPA Reg #71368-11

1.5 quarts/acre Brush and Basal Oil

November 27, 2013: ODA laboratory reported initial sample results for the samples taken from the Crook Timberland sprayed application sites. See results below.

December 2, 2013: I contacted Savona and asked for notifications for any other applications in the area including roadside applications and the notification for Kaufman. She e-mailed notifications that day. These notifications included the Kaufman unit, and a backpack/roadside notification submitted by Professional Reforestation of Oregon, Inc for work in and around the Squaw 2013 and Squaw 08 units on Crook Timberland LLC property.

Narrative

December 3, 2013: I had a conversation with Rick Barnes about his recollection of the events leading up to and during the application on October 16th. We discussed that there was a contract laid out between PAR and Crook Timberlands prior to any applications being made. This contract, according to Barnes, stated what products and rates were to be applied on each unit. I explained that I was getting information from PAR that just didn't make sense regarding what products were found from samples taken of the units and from what he and Richards had explained was applied the day of October 16th. The information that I had been given by PAR did not match what Barnes understood was applied and agreed upon in the contract between Crook Timberlands and PAR. Barnes said he would e-mail me a spreadsheet of the chemical list that was in the contract. I received the spreadsheet later that afternoon.

December 11, 2013: When I arrived at my office, there was a fax from PAR that contained an amended application record for the Crook Timberland units. The amended application record indicated applications made with products more consistent with the ODF notifications and the contracted list of products provided by Barnes. Connie Owen explained on the cover sheet that she had made a mistake when she submitted the first record. Information was shared with Odenthal and PARC.

The amended application record showed products applied as follows:

The amended record provided by PAR on December 11, 2013 states PAR made a site preparation spray on the Squaw V 2013 unit using:

1 gallon/acre Accord XRT II = 8 pints/acre
0.25 pounds/acre Oust XP = 4 ounces/acre
0.125 gallons/ acre Polaris AC = 16 ounces/acre
0.5 gal/acre Element 4 = 2 quarts/acre
0.0625 gal/acre Induce = 5 pints/acre

and a forest release spray on the Squaw 08 and Flynn units using:

0.3125 gallons/acre Accord XRT II = 2.5 pints/acre
0.25 gallons/acre Weedone LV6= 1 quart/acre
0.375 gallons/acre Forest Crop Oil = 3 pints/acre

I talked to **Dan Robertson** of Professional Reforestation Of Oregon, Inc and asked for application records for backpack applications made in the units owned by Crook Timberlands. Application records were e-mailed that afternoon. Robertson's records indicated applications were made on October 28 and 29 of Polaris AC (imazapyr) Element 4(triclopyr) with crop oil by hand as a backpack application in the vicinity of the Squaw valley units.

Dr. Fern Fitzgerald, DVM, called ODA Salem requesting information about products used in the applications made in the Cedar Valley area in order to treat dogs allegedly made sick. ODA provided the list of the 5 products and EPA registration numbers and referred her name to Dr. Berman for follow up.

Narrative

Odenthal spoke with **Lisa Arkin** of Beyond Toxics, acting as a spokesperson for the residents, and provided an update on the case status. It was verbally reported to Arkin the list of products that were under review by ODA in relation to the application on October 16th. These products are glyphosate, triclopyr, imazapyr, metsulfuron-methyl and 2,4-D.

December 16, 2013: Odenthal sent Hill an e-mail with updated case information.

December 18, 2013: PARC provided OHA the EPA registration numbers for the five products that were under review by ODA.

December 19, 2013: Odenthal and I met with Steve, Connie and Cody Owen of Pacific Air Research at their shop in Central Point. Together, the 5 of us discussed the events of the week of October 14th leading up to and after the spray event on the 16th. Cody and Steve explained that they arrived at the airport in Gold Beach on Monday night the 14th of October. The helicopter remained loaded on a trailer at the airport on the 15th while Cody, Steve, Paul Khokhar and Craig Richards went to survey the units to see if they could spray it that day. The weather did not cooperate. The mix truck was left behind a locked gate at the unit (Squaw 2013). Steve did not see any other helicopters at the airport in the area the days leading up to or during the day he sprayed. Cody did not observe any other helicopters in the area. Cody did mention that he saw a helicopter in the Powers, OR area a few days later (sometime after the 16th of October).

Cody Owen and Craig Richards were on the ground at the landing at the Squaw unit on the morning of the 16th. Both Squaw units and a piece of property for Kaufman were mixed and loaded off of that landing at the Squaw 2013 unit. Richards monitored batch mixes for each load and kept track of load times and weather conditions. Cody said in these situations he does not keep the batch sheets for himself or his own records and that he throws away any notes after the application is complete. He stated that Richards makes notes on times and weather observations during these applications and forwards the information to Connie Owen for PAR records.

Steve Owen said he transported Richards to a site on the Kaufman property where Richard's observed that application but for the other units Richards was at the mixing site.

The mix truck was moved to the Flynn 08 unit later in the day on the 16th and the unit sprayed around 4 pm. Richards and Savona (ODF) were present for this application.

Steve Owen noted no leaks or maintenance issues with the helicopter at the time of the applications. It was equipped with D7 straight nozzles mounted at a 45 degree angle. The nozzles are no-drip nozzle bodies and are operated at 18 psi. Each boom is equipped with a pressure gauge that is mounted so it is visible to the pilot while in flight.

Narrative

The initial application record sent to us by Connie on the 28th of October stated that glyphosate was sprayed. Cell service in the Gold Beach area is not good and it was difficult at best for Connie to make contact with Steve or Craig to get information about what was being sprayed on the units. Connie also stated she was dealing with personal family issues at the time. The usual way Connie fills out records is from information she gets from Cody and/or Steve when they return home from their jobs. They are sometimes gone for weeks at a time. In this particular case, Richards was providing the information to Connie and she stated it did not get to her by the 28th of October. Connie showed us the sheets Richards provided her with that included the batch information and the times of each load mixed and sprayed by Owen and Connie filled out the amended records using this information.

PAR contracted with Pro Reforestation Inc. (Richards) to do the job. Owen stated taking pesticide product inventory with him that he had on hand to start the job. He later had product shipped over from Helena in Medford, OR, ordered by Craig Richards, to complete the job. Connie provided us with copies of those invoices of extra product ordered by Richards.

December 26, 2013: Lisa Arkin requested from Department of Environmental Quality (DEQ) that drinking water testing be conducted.

December 27-29, 2013: Odenthal had several follow up e-mails with Gary Hill. One of those e-mails indicated that several residents were saying they had seen a second helicopter working in the area on the 16th. Odenthal asked Hill to ask anyone reporting that to call or e-mail him.

December 30, 2013: Odenthal had conversations John Burns and **Sandy DeHart Smith**, resident of Gold Beach, in reference to what may have been a second darker colored helicopter sighted in the area on October 16th. No spray equipment was noted on this helicopter.

I called **Applebee Aviation** in Banks, OR to see if they had been making any applications down in the Gold Beach area. I explained briefly the current investigation that was happening and that we were trying to identify, if any, a second helicopter that may or may not have been seen on the day of the application in October. **Mike Applebee** stated that the only company he flies for in the South Coast area is South Coast Lumber, but all of their work is done in the spring.

I spoke with **Dan Crumley** of Curry County Roads Department to talk about any roadside spray applications that may have taken place in the Cedar Valley area this fall. He said they made applications in September and he would get me those records and any other information that ODA might need in the future if requested.

December 31, 2013: I received roadside application records and maps from Crumley, Curry County Roads Department. Their records included GPS track maps from three roads in the area of concern: Cedar Valley Rd, Ponderosa Drive and McKinnon Dr. These records indicated that the following products were applied to the right of way on September 14, 2013:

Narrative

Garlon 3A at 64 ounces per acre - active ingredient Triclopyr

Milestone at 7 ounces per acre - active ingredient Aminopyralid

MSO at 16 ounces per acre - methylated seed oil

Escort XP at 1 ounce per acre - active ingredient metsulfuron methyl

January 7, 2014: I spoke with **Rick Krohn** at Western Helicopter to see if they had made any applications in the Gold Beach area in October, specifically the 16th. Their helicopters are blue and white. They do work in Coos County for the Department of Forestry and Menasha and Moore Mill. They did make fall applications in September, but those applications were made in the Sixes, OR and Bandon, OR areas. All Menasha and ODF applications were made in Coos County only and from October 23rd through October 29th of 2013. They were not applying in the area during the week of October 16, 2013.

January 8, 2014: Sherry Fletcher, resident of Cedar Valley, contacted ODA Salem requesting a case number because she believed that she was affected by the application.

January 9, 2014: An e-mail was sent from Mike Odenthal to Curry County Commissioner Itzen with updates of the ongoing investigation.

January 13, 2014: ODA requested the laboratory to perform additional QA/QC reviews of the sample data. This was requested as an additional step to assure the analytical data package and results are confirmed when results are close to the Minimum Detection Limit (MDL).

January 14, 2014: I contacted Dan Crumley, Curry County Public Works, to ask about their spray rig and type of equipment used for the applications and if they had ever used 2,4-D. He replied in an e-mail the name of the applicator and that no 2,4-D had been used since 2001. He stated that the applicator, **Gary Wolford**, only notes on an application record if it was raining or windy and in these instances he does not make an application. There were no notations on the record of it being windy and it was not raining on the day of the application. The spray rig is a Norstar unit that is computer controlled from the cab. It is a closed chemical injection system on the truck. They try to go no more than 25 feet from the center line of the road when making an application.

January 15, 2014: PARC Board meeting where an update of the Curry County incident is discussed. Lisa Arkin and John and Barbara Burns from Cedar Valley were present for the meeting.

January 23, 2014: I met with Richards in Gold Beach to take a vegetation sample from Kaufman's unit. This sample was to confirm what was applied to the unit on October 16, 2013.

Narrative

Sample Plan: After surveying the unit with Richards, we evaluated vegetation that had been affected by the application. I took a composite sample of myrtle, scotch broom and pin oak that exhibited herbicide symptoms. (Locally so-called pin oak, presumably this was actually *Lithocarpus densiflorus*, tanoak, which is native to the area. True pin oak, *Quercus palustris* is native to the North American Midwest. Babbitt, March 18, 2014) The sample was collected using new, clean nitrile gloves rinsed with isopropyl alcohol and vegetation was stripped from branches and stems of several plants approximately 50-80 feet inside the boundary of the unit. The vegetation was placed in a paper bag, then in a plastic bag, sealed and placed on ice and shipped to the ODA lab in Portland.

After taking the sample, Richards and I sat down to discuss the events of the day of October 16th. Craig stated he met with Owen and Khokhar on the 15th, but the weather did not cooperate for the application to be made that day. He then met with Owen the morning of the 16th at the Squaw unit to observe the application. Craig said that he was on the landing with the batch truck and with Cody Owen during all of the loading and mixing for the Squaw units and the Flynn unit. Richards kept track of the times of each batch mixed, start and finish, temperature, humidity and wind conditions at the time of application. Richards stated that he did not make changes to the original plan laid out in the contract he made with Pacific Air Research to complete the job. Richards had Owen drop him off at Kaufman's property to observe the application that took place on the Kaufman unit. Craig said that some product was brought with Owen, but he called Helena Chemical Co. in Medford, OR to order the additional product that was needed to be brought in to complete the job. ODA was unable to substantiate which specific products were brought initially by Owen and ordered later by Richards.

I asked Richards if he saw any leaking or malfunction of the spray equipment on Owen's helicopter. He said he did not and thought the system worked great.

Richards had not gotten any records requests and didn't get complaints from citizens of Gold Beach regarding applications until about October 23rd. He said these complaints were for a unit down in the Grizzly Mt. area that they did not spray due to the high number of complaints from residents about the sprays the week prior. So, no applications, by air or ground, were made in the Grizzly Mt. area after the 16th of October. Richards stated that after all the complaints from residents that he did not intend to make aerial applications south of Elk River.

Richards stated having a few heated conversations with the Owens after several complaints were made around early December. I questioned several times the differences between what Richards and Barnes had provided ODA versus the record that Pacific Air Research had originally provided ODA on October 28th. I explained to Richards that ODA had received an amended record on December 11th that was more consistent with what Richards stated being prescribed for the units. Richards stated that he kept paper files of when he supplied batch mix information to PAR and Rick Barnes. He said he would fax that information to me tomorrow.

Narrative

January 24, 2014: I received a fax from Richards of his spray notes from the day of the application as well as the cover sheets he used to send this information to PAR and to Barnes. The cover sheets indicated that Richards had sent PAR the application information needed as early as October 25, 2013.

January 27-28, 2014: I traveled to Salem, OR to meet with **Chad Schulze** of EPA Region 10 Seattle, Mitchell and Odenthal to brief EPA Region 10 on this incident and discuss next steps.

Around Mid February: Schulze of EPA Region 10 reported to ODA that he made contact with EPA Criminal and investigated to see if any other helicopters could be identified as flying in the Cedar Valley or Gold Beach area on the 16th of October. No flights by any other helicopters were logged in the area for that time period.

February 12, 2014: I traveled to Curry County to complete four Market Place Inspections (MPIs). MPIs are routine inspections conducted by the Department of Agriculture to determine compliance with pesticide product registration. In this case, routine inspections were conducted with the intent to identify herbicides that contain the active ingredients that were applied by PAR and Curry County that are also readily available to the general public. Products available for purchase by the general public included but were not limited to the active ingredients glyphosate, 2,4-D, triclopyr, imazapyr and dichlobenil.

March 18, 2014: Mike Odenthal and I met with Chad Schulze, EPA Region 10, Rick Barnes, Barnes and Associates, Ted Fitzgerald, lawyer for Crook Timberlands, LLC and Craig Richards, Pro Forestry Consulting, in Gold Beach, OR. The purpose to meet was to show Schulze the application sites (Flynn 08 and Squaw 2013 and Squaw 08) and their proximity to the residents of Cedar Valley and Grizzly Mountain near Gold Beach. During this tour of the units, it was noted the level of accuracy, through visual observation, the application of products to each unit. There was no vegetation (visually) outside the perimeters or in the buffered areas showing symptoms of herbicide activity. It also gave ODA, EPA, Crook Timberlands, Barnes and Richards to discuss the process of the investigation and the concerns of the residents. Schulze met with citizens of Cedar Valley that afternoon.

March 28, 2014: I contacted Craig Richards to help clarify further a product in question under review by ODA that was applied to the Squaw 2013 unit. The amended application record provided to ODA by Pacific Air Research stated Oust XP was used. Additionally, the contract between Barnes and Associates and PAR showed that Oust (XP or Extra not specified) was to be applied. Forestry notifications indicated that metsulfuron methyl was notified for. Metsulfuron methyl is not the active ingredient in Oust XP. Sulfometuron methyl is the active ingredient in Oust XP. Invoices provided to ODA from Pacific Air Research showed additional products ordered by Richards to include Spyder Extra (equivalent to Oust Extra), and sulfomet XP (equivalent to Oust XP). Richards stated that Oust Extra, or its generic form, was the product he had wanted used on the Squaw 2013 unit. Richards stated that he and Barnes have discussed being more thorough in their prescriptions for contracts in the future.

Narrative

April 1, 2014: I contacted Pacific Air Research and spoke with Connie Owen. I requested that she have Steve Owen contact me regarding whether or not Oust XP, Oust Extra, or Spyder Extra or Sulfomet XP was applied by him to the Squaw 2013 unit and that it was important to know the specific product used. She stated that she would have Steve contact me as soon as she could.

April 2, 2014: I received a fax from Connie Owen at Pacific Air Research stating that Oust was the product used. It still didn't specify whether or not it was Oust XP or Oust Extra so I called her and she looked back in records and stated that it was in fact Oust XP. They had the product on hand in inventory that they took to Gold Beach with them for the Squaw 2013 unit.

Sample Results:

Sample ID	Location	A.I.	A.I. Detected ppm
140147-1B	Resident	2,4-D	<0.010
	Burns	glyphosate	<0.010
		metsulfuron-methyl	<0.010
		triclopyr	<0.010
		imazapyr	<0.010
		sulfometuron-methyl	<0.010
140147-2B	Resident	2,4-D	0.010
	Burns	glyphosate	<0.010
		metsulfuron-methyl	<0.010
		triclopyr	0.011
		imazapyr	<0.010
		sulfometuron-methyl	<0.010
140147-3B	Resident	2,4-D	0.016
	Welse	glyphosate	<0.010
		metsulfuron-methyl	<0.010
		triclopyr	<0.010
		imazapyr	<0.010
		sulfometuron-methyl	<0.010
140147-4B	Resident	2,4-D	<0.010
	Rickard	glyphosate	<0.010
		metsulfuron-methyl	<0.010
		triclopyr	<0.010
		imazapyr	<0.010
		sulfometuron-methyl	<0.010

Narrative			
140147-5B	Resident Rickard	2,4-D	<0.010
		glyphosate	<0.010
	metsulfuron-methyl	<0.010	
	triclopyr	<0.010	
	imazapyr	<0.010	
	sulfometuron-methyl	<0.010	
140147-6B	Resident Rickard	2,4-D	<0.010
		glyphosate	<0.010
	metsulfuron-methyl	<0.010	
	triclopyr	<0.010	
	imazapyr	<0.010	
	sulfometuron-methyl	<0.010	
140147-7B	Resident Fletcher	2,4-D	<0.010
		glyphosate	<0.010
	metsulfuron-methyl	<0.010	
	triclopyr	<0.010	
	imazapyr	<0.010	
	sulfometuron-methyl	<0.010	
140147-8	Trmt Site Flynn 08	2,4-D	26
		glyphosate	0.12
	T35SR14W- Sec 29-32	metsulfuron-methyl	<0.010
	triclopyr	51	
	imazapyr	<0.010	
	sulfometuron-methyl	<0.010	
140147-9	Trmt Site Squaw 2013	2,4-D	0.11
		glyphosate	16
	T35SR14W- Sec 28-29	metsulfuron-methyl	<0.010
	triclopyr	34	
	imazapyr	0.830	
	sulfometuron-methyl	4.8	
140147-10	Trmt Site Squaw 08	2,4-D	28
		glyphosate	0.81
	T37SR14W- Sec 8 & 17	metsulfuron-methyl	<0.010
	triclopyr	46	

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		Narrative	
		imazapyr	0.130
		sulfometuron-methyl	0.38
140147-11	Trmt Site	2,4-D	6.4
	Kaufman	glyphosate	<0.010
	T36SR14W-	metsulfuron-methyl	<0.010
	Sec 3	triclopyr	3.6
		imazapyr	<0.010
		sulfometuron-methyl	<0.010

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Minimum detection limit was 0.010 ppm

License Review: Steve Owen of PAR, was appropriately licensed at the time of the application.

Label Review:

Dupont Oust XP Herbicide, EPA Reg # 352-601, contains the active ingredient sulfometuron methyl and is labeled for use in forest site preparation and in the release of certain conifers and hardwoods. Oust XP can be tank mixed with other herbicides registered for use in forestry and non-crop sites. Oust XP may be applied by ground equipment or by helicopter or as otherwise directed by Supplemental or Special Local Need labeling.

The application rate for conifer site preparation in the "West – Apply 2 to 4 ounces per acre for coastal redwood, Douglas fir, grand fir, hemlock, lodge-pole pine, ponderosa pine, western larch, western white pine and white fir." For conifer release after transplanting "West – Apply 2 to 4 ounces per acre for coastal redwood, Douglas fir, grand fir, hemlock, lodgepole pine, ponderosa pine, western larch, western white pine and white fir."

Nufarm Weedone LV6 EC Broadleaf Herbicide, EPA Reg # 71368-11, contains the active ingredient 2,4-D ester and is labeled for use in "Forest Management Conifer Release and Site Preparation. Rates for conifer release were between 2/3 and 2 quarts in 9-1/2 to 15 gallons of water per acre. The label recommends 3 quarts of fuel oil added to 2 quarts of the product for the control of tan oak, madrone, ceanothus and etc. For site preparation the label states apply 1-2/5 to 2-3/5 quarts in 9 to 15 gallons of water plus 2 quarts of fuel oil per acre.

Narrative

Dow AgroSciences Element 4, EPA Reg # 62719-40, contains the active ingredient triclopyr. It is labeled for the control of woody plants and annual and perennial broadleaf weeds in non-crop industrial manufacturing and storage sites, rights-of-way such as electrical power lines, communication lines, pipelines, roadsides, railroads, forests and in the establishment and maintenance of wildlife openings. The label states "Forest Management Applications - For broadcast applications, apply 1 to 6 quarts of Element 4 per acre in a total spray volume of 5 to 25 gallons per acre by air or 10 to 100 gallons per acre by ground." The label further states "Broadcast Applications for Conifer Release in the Pacific Northwest and California - Dormant Conifers Before Bud Swell: To control or suppress deciduous hardwoods such as vine maple, bigleaf maple, scotch broom or willow before leaf-out or evergreen hardwoods such as madrone, chinquapin, and Ceanothus spp, use Element 4 at 1 to 2 quarts per acres." "Conifer plantations (excluding Pines) after conifers harden off in late summer and while hardwoods are still actively growing: Use Element 4 at rates of 1 to 1.5 quarts per acre alone or with 2,4-D low volatile ester to provide no more than 3 lbs ae per acre from both products."

BASF Arsenal herbicide applicators Concentrate, EPA Reg #241-299, contains the active ingredient imazapyr. It is for the control of undesirable vegetation growing within specified aquatic sited, forestry sited, pasture/rangeland, and nonagricultural lands; and for the establishment and maintenance of wildlife openings, release of unimproved Bermuda grass and Bahia grass, bare ground weed control, and for use under certain paved surfaces. Under the "Forestry Use" section the label gives rates for "Site Preparation Treatment" between 12 to 40 fluid ounces per acre depending on the species of conifer crop. The label also gives rates for broadcast or directed spray "Conifer Release Treatment" between 6 to 20 fluid ounces per acre depending on the species.

Nufarm Polaris AC, EPA Reg # 228-570, contains the active ingredient imazapyr. It is labeled for the control of undesirable vegetation in forestry sites, aquatic sites, grass pasture, rangeland, fence rows, for establishment and maintenance of wildlife openings, grass pastures and rangeland. The site preparation treatment section of the label gives rates from 12 - 40 ounces per acre depending on conifer crop species. The conifer release treatment section gives rates of 6-20 ounces per acre.

Dow AgroSciences Accord XRT II, EPA Reg # 62719-556, contains the active ingredient glyphosate. It is labeled for control of annual and perennial weeds and woody plants in non-crop areas and industrial sites, natural and production forests for site preparation, mid-rotation release treatments, and timber stand improvement activities among others. The Forestry Site Preparation section refers to the weed chart for rates of 1 to 7.5 pints per acre. It does precaution the applicator to not apply this product as an over the top broadcast spray for forestry conifer or hardwood release unless otherwise specified on this label.

The amended record provided by PAR on December 11, 2013 states PAR made a site preparation spray on the Squaw V 2013 unit using:

1 gallon/acre Accord XRT II = 8 pints/acre

0.25 pounds/acre Oust XP = 4 ounces/acr

Narrative

0.125 gallons/ acre Polaris AC = 16 ounces/acre

0.5 gal/acre Element 4 = 2 quarts/acre

0.0625 gal/acre Induce = 5 pints/acre

and a forest release spray on the Squaw 08 and Flynn units using:

0.3125 gallons/acre Accord XRT II = 2.5 pints/acre

0.25 gallons/acre Weedone LV6= 1 quart/acre

0.375 gallons/acre Forest Crop Oil = 3 pints/acre

and a record provided by PAR on November 27, 2013 states PAR made a forest release spray on the Kaufman unit using:

1.25 quarts/acre Element 4

1 quart/acre Weedone LV6

1.5 quarts/acre forest Crop Oil

All application rates appeared within labeled rate except the Accord XRT II rate on the Squaw V 2013 unit. That rate appears to be 0.5 pints/acre above the maximum rate allowed.

Equipment Review: PAR used a Bell OH-58A helicopter, N903SF, with external tank and spray booms for the applications. The spray boom was 40 feet wide with TeeJet no drip with D7 straight nozzles aligned at 45 degrees from air stream.

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Attachments

<u>Attachment Name</u>	<u>Type</u>
1a.Amended Application Record for Crook Timberlands	Records
1b.Application Record for Kaufman	Records
1c.Curry County Road Dept. Application Record	Records
1d.Application Record for Crook Timberlands	Records
1e.Application Record Pro Forestry Contracting	Records
2a.Sample Results from Crook Units Sprayed	Misc.
2b.Sample Results from Kaufman Unit	Misc.
2c.Sample Results from Resident's Properties	Misc.
2d.Sample Results with sulfometuron-methyl	Misc.
3a.Case Notes 10/14/13	Case notes
3b.Case notes 11/13/13	Case notes
3c.Case notes Crumley 1/14/14	Case notes
3d.Case Notes Haavisto/Odenthal/PacificAir 12/19/13	Case notes
3e.Case notes with Western Helicopter	Case notes
3f.Field Notes 01/23/2014	Case notes
3g.Field Notes from 10/23/13	Case notes
3h.Khokhar Field Notes 10/23/13	Case notes
3i.Odenthal case notes through Nov 15, 2013	Case notes
3j.Phone Correspondence notes with Barnes 12/3/2013	Case notes
3k.S Jones Case Notes	Case notes
4a.Area & Sample Maps	Maps
4b.Pacific Air Research GPS Maps	Maps
5a.Email Correspondence Barnes 12/6/2013	Correspondence
5b.Email Correspondence Crumley 1/14/14	Correspondence
5c.Email Correspondence Savona 10/21/13	Correspondence
5d.Email from Sweeney 10/23/2013	Correspondence
5e.Odenthal Email Correspondence	Correspondence
5f.Pacific Air Research fax to ODA 10/28	Correspondence
5g.Pacific Air Research Fax to ODA 4/2/14	Correspondence
6a.Haavisto Photos & Photo Log	Photos
6b.Odenthal Photos & Photo Log	Photos
7a.Accord XRT II Label-ODA	Label
7b.Element 4 Label-ODA	Label
7c.Oust XP Label-ODA	Label
7d.Polaris AC Label-ODA	Label
7e.Roundup Supplemental Label - from PAR	Label
7f.Weedone LV6 Label	Label
7g.Spyder Extra Label-ODA	Label
8a.Oregon Department of Forestry Notifications	Misc.
8b. Contract Spray List from Barnes	Misc.
8c. Craig Richard's Spray Notes Crook Timberlands	Misc.
8d. Craig Richard's Spray Notes Kaufman	Misc.
8e. James Welsh Written Statement	Misc.
8f. Pacific Air Invoices for Products	Misc.
8f.Business registry, Pacific Air Research, Inc.	Misc.

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Enforcement Summary

<u>Name</u>	<u>License Type</u>	<u>Prohibition Violated</u>	<u>Number of Actions</u>	<u>Action</u>	<u>Notice Issued</u>	<u>Notice Served</u>	<u>Orig CP Amount \$</u>	<u>Hearing Requested</u>	<u>Informal Held</u>	<u>Final Order Issued</u>	<u>Actual CP Amount \$</u>
Pacific Air Research, Inc.	CPO	6	1								
Pacific Air Research, Inc.	CPO	2	2								
Owen, Steven S.	CPA	2	2								
Owen, Steven S.											
TOTAL Orig CP Amount \$							TOTAL Actual CP Amount \$				

