United States Department of the Interior

OFFICE OF THE SOLICITOR
Washington, D.C. 20240

IN REPLY REFER TO:

JUL 13 2001

Honorable Elaine Kaplan
Special Counsel
U.S. Office of the Special Counsel
1730 M Street, N.W.
Washington, D.C. 20036-4505

Re: OSC File No. DI-00-0378

Dear Ms. Kaplan:

By letter dated December 8, 2000, to then Secretary of the Interior Bruce Babbitt, you requested the Department of the Interior to investigate and report to you regarding allegations made by Richard Harlow, a former employee of the Bureau of Land Management (BLM), that the BLM had used "Agent Orange" in its pesticide programs in the late 1960s and early 1970s. As a result of agreements between our respective staffs, the due date for the report (Report) was extended to July 13, 2001. The Secretary has asked me to respond on behalf of the Department. As the Acting Deputy Solicitor of the Department, I have been delegated the authority of the Secretary to respond to your letter.

Because the information you requested concerned the activities of the BLM, we asked the BLM to conduct the investigation and prepare the Report. The BLM has done so, and I am transmitting the Report by this letter.

The BLM has produced a thorough, comprehensive, and careful Report. As the Report indicates, the BLM conducted an extensive search for documents in its state and field offices regarding its use of pesticides during the years 1965-1975, which includes the time frame covered by the allegations. BLM reviewed over 6,000 pages recording over 690 pesticide projects. It interviewed the complainant, Mr. Harlow, and a transcript of the interview is an attachment to the Report. Because the Massacre Project is the project on which Mr. Harlow claims to have worked, the BLM paid particular attention in preparing the Report to that project, which took place in northern Nevada in 1968. Further, the BLM retained an independent toxicologist to review the pesticides that the documents show the BLM was using and to determine whether these pesticides constituted Agent Orange. The Report concludes with ample justification that the "BLM did not use Agent Orange." Report, p. 1.

We trust this Report, together with the extensive exhibits, will answer your inquiry. Please let us know if you would like any additional information.

Sincerely,

Timothy S. Elliott
Acting Deputy Solicitor

Enclosure

Report to Office of Special Counsel on BLM's use of pesticides from 1965 to 1975
OSC File No. DI-00-0738

Bureau of Land Management
July 13, 2001

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Washington, D.C. 20240
http://www.blm.gov

In Reply Refer To:
9011/9015 (220) P

JUL 13 2001

MEMORANDUM

TO: Timothy S. Elliott, Acting Deputy Solicitor

FROM: Nina Hatfield, Acting Director, Bureau of Land Management

SUBJECT: OSC File No. DI-00-0738

This constitutes the Bureau of Land Management's (BLM) response to a letter from the Office of Special Counsel (OSC) dated December 8, 2000, (December 8, 2000 letter) to then-Secretary of the Interior, Bruce Babbitt. OSC requested our report within 60 days under the provisions of 5 U.S.C. §1213, in that OSC believed information submitted to it by Mr. Richard Harlow, a former employee of the BLM, showed, "a substantial likelihood of abuse of authority and a substantial and specific danger to public health and safety by officials at the Bureau of Land Management (BLM)." In accordance with agreements between the respective staffs of the Department and the OSC, the Department was given until July 13, 2001, to submit its report. In what follows, we will address in turn each of the report requirements set forth in 5 U.S.C. §1213(d). Based on our investigation, we have concluded that BLM did not use Agent Orange.

1. Information which led to the Initiation of the Investigation

The information which led to our investigation is set forth in the OSC's December 8, 2000 letter to the Secretary. That letter recites that OSC received information from Mr. Richard Harlow, a former BLM employee. Mr. Harlow has authorized the use of his name. According to Mr. Harlow's Official Personnel File, his first federal job was with the Forest Service in Olympia, Washington as a Forestry Aid, GG-462-3 effective June 24, 1964. His first appointment with BLM was in the Susanville District Office (California) as a Range Conservationist, GS-454–5 effective June 16, 1968. Mr. Harlow retired from the agency on January 2, 2000. At that time, he held the position as Training Systems Coordinator, GS 1701-12 for the Division of Information at BLM's National Training Center in Phoenix, Arizona.

The subject matter of the investigation is Mr. Harlow's allegation that the BLM used "Agent Orange" in certain vegetation treatment projects in 1968, and that he and other employees were exposed to Agent Orange.

As stated in the December 8, 2000 letter:

> Mr. Harlow alleged that DOI officials abused their authority by failing to acknowledge that the agency used the herbicide Agent Orange in its defoliation projects and failing to determine whether or not DOI employees exposed to Agent Orange were entitled to receive medical or other benefits as a result of their service-connected exposure. In addition, Mr. Harlow alleged that a substantial and specific danger to public health and safety exists because DOI has not notified employees who worked on defoliation projects that they were exposed to Agent Orange during the course of their employment. Thus, those DOI employees are unaware of the possible danger to their health from exposure to Agent Orange....
>
> Mr. Harlow began his career with the BLM in June 1968 as a Range Conservationist on the Massacre/Cowhead Spray Project (Cowhead Project) in northern Nevada. As part of the Cowhead Project, the BLM was using herbicides, specifically Agent Orange, to eradicate sagebrush in that area. In order to direct the actual spraying of Agent Orange, BLM employees marked the terrain by standing three abreast at 21-foot intervals thereby serving as ground targets for the airplanes that flew over and sprayed the area. In the course of spraying the targeted terrain, BLM employees were also sprayed with Agent Orange.
>
> Mr. Harlow alleges that he was exposed to Agent Orange on virtually a daily basis for approximately six months while working on the Cowhead project. He and other employees worked an average of 8-10 hours/day, 5-6 days/week wearing only regular field clothes, i.e., jeans and T-shirts. No protective gear was provided by the BLM.

The December 8, 2000 letter includes, by way of documentation from Mr. Harlow, two pages which purportedly relate to telephone conversations dated May 29, 1968, a date predating Mr. Harlow's employment.

The December 8, 2000 letter also indicates that Mr. Harlow has filed several worker's compensation claims with the Office of Worker's Compensation, Department of Labor. His claims have been denied. Following receipt of the December 8, 2000 letter, BLM was asked to review and investigate Mr. Harlow's allegations, and prepare the report to the Office of Special Counsel.

2. Description of the Conduct of the Investigation and Conclusion.

a. The Conduct of the Investigation

The military's development and use of the product known as Agent Orange has resulted in a great deal of litigation, Congressional action, and study. In Hercules, Inc. v. United States, 516 U.S. 417 (1996) (holding that the United States was not required to indemnify the manufacturers of Agent Orange for costs incurred in defending litigation), the Court offered the following short background of the use of Agent Orange:

> When the United States had armed forces stationed in Southeast Asia in the 1960's, it asked several chemical manufacturers ... to manufacture and sell it a specific phenoxy herbicide, code-named Agent Orange. The Department of Defense wanted to spray the defoliant in high concentrations on tree and plant life in order to both eliminate the enemy's hiding places and destroy its food supplies. From 1964 to 1968, the Government, pursuant to the Defense Production Act of 1950 ...(citation omitted), entered into a series of fixed-price production contracts with petitioners. The military prescribed the formula and detailed specifications for manufacture. The contracts also instructed the suppliers to mark the drums containing the herbicide with a 3-inch orange band with "[n]o further identification as to conten[t]". (516 U.S. at 419-20)

Agent Orange was the name given to a pesticide product[1/] that contained a 1:1 mixture of the n-butyl esters of the herbicides[2/] 2,4-D [3/]and 2,4,5-T.[4/] These herbicides are sometimes referred to as phenoxy or chlorophenoxy compounds. Agent Orange was manufactured for and, according to the information we found, was only made available for military use by Dow Chemical Company, Monsanto, Diamond Shamrock Corporation, Hercules Inc., Uniroyal Inc.,T-H Agricultural & Nutrition Company, and Thompson Chemicals Corporation . This product was

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[1/] Throughout the report, the term "pesticide," which is a broad term that includes herbicides, insecticides, fungicides, and rodenticides, means any chemical or other product used to kill, repel, or control weeds, insects, fungi, or any other form of animal or plant life that is a "pest" within the meaning of the Federal Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C. §§136 -136y."

[2/] The term "herbicide" means a type of pesticide specifically developed and used to control individual plants or vegetation.

[3/] 2,4-D is an abbreviation for 2,4-dichlorophenoxy acetic acid.

[4/] 2,4,5-T is an abbreviation for 2,4,5-trichlorophenoxy acetic acid. An impurity formed as a byproduct of the chemical reactions used in the production of 2,4,5-T was 2,3,4,8-tetrachlorodibenzo-p-dioxin (TCDD).

employed during the Viet Nam conflict from April 1965 to April 1970. The name Agent Orange derived from the color of the band around the 55-gallon drum that contained the product. Other herbicide mixtures were designated agents purple, white, blue, etc. The herbicide components of Agent Orange, 2,4-D and 2,4,5-T were commonly used domestically during the 1960s and 1970s. However, as will be discussed below, the manufacturing process used to combine these two compounds into Agent Orange resulted in a product that was different from that which would result from an end user of 2,4-D and 2,4,5-T combining them.

A major focus of our investigation centered upon understanding the nature of Agent Orange and determining whether this product was used by the BLM. As part of the investigation, BLM contracted with the Dynamac Corporation for a review of the chemicals shown to have been used by the BLM to determine whether these chemicals constituted Agent Orange and for a definition of Agent Orange in a report by Dynamac titled *Summary of Toxicity Information on Phenoxy Herbicides and TCDD with Respect to Production of Prostate Cancer* (Dynamac Report) (Attachment 1). The contract was performed by Dr. Ann Foster, a toxicologist. Dr. Foster's qualifications are summarized in the preparer's section at the end of this report. Dr. Foster assisted us in understanding the composition of Agent Orange. She also reviewed the chemicals that the evidence showed were used by the BLM, as discussed in the section 3 of this report, and concluded that there was no evidence that the BLM used Agent Orange.

The Dynamac Report found that the concentrations of TCDD, a dioxin, in Agent Orange stocks that were returned to the US after the conflict or those that had not been shipped ranged from 0.05 to 50 parts per million (ppm). According to *Veterans and Agent Orange: Update, 1998* prepared by the Institute of Medicine (IOM) (National Academy Press), TCDD contamination of Agent Orange was as much as 1000 times higher than that of 2,4,5-T available domestically, owing to differences in the manufacturing processes. The scientific evidence for toxicity of TCDD in Agent Orange and the lesser toxic effects of 2,4-D and 2,4,5-T is summarized in the Dynamac Report (Attachment 1). Detailed discussions of the toxicity of these compounds can be found in *Veterans and Agent Orange: Update, 1998* (National Academy Press) and EPA's September 2, 2000 draft report on *Exposure and Human Health Reassessment of 2,3,7,8-Terrachlorodibenzo-p-dioxin and Related Compounds* (available on Environmental Protection Agency (EPA) Web site: www.epa.gov). Dr. Foster performed a limited search of the scientific literature on the effects of Agent Orange and other pesticides on human beings and laboratory animals. Her findings are in the Dynamac Report (Attachment 1) and in Summary of Epidemiological Findings Discussed in *Veterans and Agent Orange* (1994, 1996, 1998, Institute of Medicine (IOM), National Academy of Sciences) (Attachment 2). In summary, Dr. Foster found that the primary human health concerns with respect to Agent Orange relate not to the 2,4-D or 2,4,5-T herbicides, but to the toxicity of TCDD.

The Dynamac Report examines detailed assessments by the IOM and EPA and concludes, at Attachment 1, page 3:

> [I]t appears that an association of prostate cancer with exposure to

> TCDD has not been definitively established and therefore is not considered a major health effect of concern resulting from exposure to TCDD or phenoxy herbicides. In numerous studies, multiple strains of several species of laboratory animals exhibited no increase in prostate cancer following exposure to TCDD, 2,4,5-T, or 2,4-D at levels approximating the maximum tolerated dose. No significant increase in prostate cancer risk was evident in exposed cohorts in high-quality, large cohort epidemiology studies chosen by three government agencies for TCDD and phenoxy herbicide health assessments. Other studies on agricultural workers showed a weakly elevated relative risk of prostate cancer that increased slightly with confounding factors related to length and magnitude of exposure and likelihood of using highly contaminated pesticide products.

The Dynamac Report (Attachment 1, page 1) also reiterates the IOM conclusion that Agent Orange was a product manufactured only for military use and was formulated differently from herbicides available for domestic use in the United States.

As the next section will indicate, BLM used the herbicide 2,4-D and, to a lesser extent, 2,4,5-T and Silvex (2,4,5-TP).[5/] Any of these herbicides used by the BLM or its contractors would have been required to meet Federal specifications for O-H-210a, Type II, Class 2 and be of recent manufacture. Only low volatile ester forms of the herbicides would have been permitted. Bid specifications for BLM projects listed the approved esters.

In addition to clarifying the precise definition to be given to "Agent Orange," BLM decided to conduct a thorough document review to ascertain whether it had, in fact, used Agent Orange in any spray project during the time period 1965-1975. This time frame was chosen to give a good representation of the types of projects involving BLM's use of all pesticides before, during, and after the time period during which Mr. Harlow alleged he had been exposed to Agent Orange. The investigation included an analysis of all pesticide use.

On May 15, 2001, Ms. Gina Ramos, BLM Senior Weeds Specialist, conducted a conference call with the BLM's State Weed Coordinators on a draft Instruction Memorandum (IM), discussed below, which would outline the process for the records search. They were also given information on the background and purpose of the investigation and the requirements for the report.

On May 21, 2001, the BLM's Washington Office issued the IM, WO-No.2001-149 (Attachment

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[5/] 2,4,5-TP is an abbreviation for 2,4,5-trichlorophenoxy propionic acid.

3), instructing all BLM state and field offices[6/] to conduct a search for documentation on all their pesticide use from 1965 to 1975. Files that the offices were to review included range improvement files, job description records, allotment case files, grazing case files (open and closed), watershed project files, fuels treatment project files, recreational facilities files, forest pest control files, planning documents, and any other possible project file likely to contain relevant files from that time period.

The IM further instructed the BLM state and field offices to make photocopies of each responsive document or project file. The BLM Washington Office required the field offices to certify that they had completed their search by submitting a memorandum together with their photocopies to their BLM state director. The memorandum was to describe the records search conducted by the field office and to identify the records that were found (or explain why no records were found). The field offices were further instructed to document the number of hours they devoted to the search and the number of pages they photocopied and submitted to the state director. The BLM state directors further certified field office findings with a memorandum that explained the results of the search in their states, providing the total number of photocopied pages and the total number of hours devoted to the search. The state directors' cover memoranda along with the memoranda from their respective field offices are found in Attachment 4. Documentation was forwarded to the Washington Office for review. The documents were collated and reviewed by the Washington Office.

Working with BLM staff, Dr. Foster reviewed the documents indicating the chemicals that BLM had been using to determine whether these chemicals constituted Agent Orange. The results of this review are set forth in section 3 of this report.[7/]

BLM also searched for records in the docket file of the Department of the Interior using the term "Agent Orange." The docket has records of files covering the period 1972 to the present. The search produced a single reference dating from 1980: a file titled "Agent Orange Task Force." This file was retrieved from the Federal Records Center and is Attachment 5 to this report.

The file indicates that the Department convened an Agent Orange Task Force in 1980 at the behest of the U.S. Department of Justice in connection with Agent Orange litigation to which the Government was a party. The various agencies of the Department, including the BLM, were

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[6/] Prior to 1995, BLM offices were organized in a hierarchy as state, district and resource area offices. After this time, most district and resource area offices became field offices. Therefore, some information submitted, having been prepared over 25 years ago, refers to district and resource area offices.

[7/] In connection with the inquiry for the Office of Special Counsel, a BLM Special Investigator also interviewed BLM employees and the contractor associated with the Massacre project.

asked to produce documents regarding Agent Orange. We have no record of what the BLM may have produced in 1980.

BLM asked the Torts Branch of the Civil Division of the Justice Department, which had represented the United States in the Agent Orange litigation, whether the Department of the Interior's 1980 document production was still available. We were advised by the Justice Department that it no longer maintained the files submitted in response to the 1980 document request.

In addition to the records search and review, the Office of the Solicitor and the BLM conducted a telephone interview with Mr. Richard Harlow on May 23, 2001. Mr. Harlow agreed to the interview and to its transcription by a court reporter. The transcript of the interview is Attachment 6. During the interview, Mr. Harlow was asked a series of questions that he had been provided before the interview. The purpose of the interview was to learn any additional information that Mr. Harlow possessed that would assist in the investigation and to clarify certain items that Mr. Harlow had submitted. Following the interview, Mr. Harlow, at our request, submitted additional information. The additional information he submitted is Attachment 7.

b. The Conclusion Reached in the Investigation.

The results of our investigation, as set forth in the following section, lead us to the conclusion that the BLM did not use Agent Orange. The evidence is summarized in section 3.a.

3. Evidence Obtained from the Investigation.

a. Summary of the Evidence.

As discussed above, Agent Orange was a specific product with a unique formulation, which was restricted to military use. The two herbicide active ingredients that were components of Agent Orange, 2,4-D and 2,4,5-T, also were available in numerous products used domestically for agricultural purposes. However, as discussed above on page 4, the level of TCDD created during the manufacture of Agent Orange was much higher than the TCDD created in the manufacture of 2,4,5-T intended for domestic use.

The BLM has conducted an exhaustive search of all state and field office records in order to compile as complete a history as possible of pesticide use conducted by the BLM between 1965 and 1975. Over 6,000 pages, recording over 690 pesticide spray projects, have been reviewed and analyzed. That evidence shows that the BLM did not use Agent Orange. Furthermore, the Defense Logistics Agency, an arm of the Department of Defense, has confirmed that no Agent Orange was sold, transferred, or given to the BLM.

The documents show that between 1965 and 1975, 2,4-D was by far the most widely used herbicide in BLM vegetation management programs. Of 690 pesticide projects, 361 (more than

50 percent) involved 2,4-D alone. This pesticide is on BLM's approved list of herbicides set forth in section 5 of this Report and is still in use today. Atrazine (not a chlorophenoxy compound) accounted for 38 percent of the reported projects; all but a few of these were limited to one district in Oregon. Mixtures of 2,4-D and 2,4,5-T were used in only 7 recorded projects between 1965 and 1975 (less than 1 percent of the total), and the proportion of 2,4-D to 2,4,5-T typically was 2:1. In a small number of instances, 2,4,5-T alone was applied. Atrazine is still on the BLM's list of approved herbicides. See page 23.

During the time period we have investigated (1965-1975), BLM employees may have been sprayed or otherwise exposed to pesticides, including 2,4-D and 2,4,5-T. As discussed below, however, BLM employees were not exposed to Agent Orange.

The scientific evidence regarding the toxicity of the pesticides the BLM utilized is summarized in the *Veterans and Agent Orange: Update,* 1982, and in EPA's September 2, 2000 draft report on *Exposure and Human Health Reassessment of 2,3,7,8-Terrachlorodibenzo-p-dioxin and Related Compounds* (available on EPA Web site). The scientific evidence is also discussed in the Dynamac Report and the Summary of Epidemiological Findings Discussed in *Veterans and Agent Orange* (1994, 1996, 1998, Institute of Medicine, National Academy of Sciences), attachments 1 and 2 respectively, to this report.

Some of the pesticides which BLM used during the time frame we examined are no longer used due to concerns about their safety. The 2,4,5-T pesticide is no longer approved for use and was taken off the market in1983. Silvex is no longer manufactured. As discussed in section 5 of the Report, the BLM has changed its use of pesticides over the years to meet advances in technology and scientific knowledge.

We cannot in this report offer a full analysis of the many studies that have been performed regarding the possible toxicity of pesticides. As indicated in Attachment 2, health effects have been put into four categories for purposes of establishing an association with various illnesses: "Health Outcomes with Sufficient Evidence of an Association; Health Outcomes with Limited/Suggestive Evidence of an Association; Health Outcomes with Limited/Suggestive Evidence of No Association; and Health Outcomes with Inadequate/insufficient evidence of an Association" The studies indicate "limited or suggestive evidence" associating the use of pesticides with prostate cancer. They find "inadequate or insufficient evidence" for associating exposure with leukemia.

b. Specific Evidence from BLM State and Field Offices

Records from the BLM state and field offices show no reference whatever to the product Agent Orange. The herbicide 2,4-D was the most commonly used herbicide in BLM vegetation management projects from 1965 to 1975. The records showing the use of this herbicide indicate that a given allotment would ordinarily receive one spray treatment per year. Applications in consecutive years were uncommon. In the few instances when 2,4,5-T was sprayed, it was

usually combined with 2,4-D, and 2,4-D was the predominant component in a 2:1 or 3:1 mixture proportion. However, in several instances 2,4,5-T alone was applied. The BLM also used a herbicide called Silvex. The active ingredient in Silvex is 2,4,5-trichlorophenoxy propionic acid (2,4,5-TP), a different chemical from 2,4,5-T. The reader is cautioned to avoid confusing 2,4,5-T with the herbicide Silvex. The trade names of all products containing these chlorophenoxy herbicides are summarized in Attachment 8 (International Agency for Research on Cancer (IARC) Monographs, 1987, Supplement 7). In the voluminous documentation we reviewed, there is no indication that BLM's pesticide use differed from the use of pesticides by agencies, businesses, farms, and homes throughout the United States and no indication that the BLM engaged in any illegal use of pesticides.

The BLM Field Offices provided a total of 6,031 pages for review. BLM personnel spent 1,025 man-hours to search for all the records on pesticide use and make photocopies for this report.

Once the Washington Office received the documentation from the BLM State Offices, each individual state file was reviewed and evaluated for the type of pesticide used, the manner in which it was applied, contract specification and bid contracts, and any specifications. In addition, IMs and other policy memoranda that were sent from the BLM Washington Office and state departments of agriculture were also reviewed. Each state's submission is summarized by the year pesticide projects occurred, the type of pesticide used, the rate per acre, type of application, and whether BLM applied the pesticides or if it was done under a contract.

BLM Pesticide Use Summaries by State - 1965 to 1975

The BLM search of state and district offices records focused on all pesticides, in general, and herbicides in particular. In-depth scrutiny was placed on the chlorophenoxy herbicides, in particular 2,4-D, 2,4,5-T and Silvex. BLM focused on this category of pesticides for two reasons. First, BLM used this category of pesticides with some frequency from 1965 to 1975. Second, 2,4-D and 2,4,5-T are found in Agent Orange.

Alaska. No herbicide use was reported between 1965 and 1975. Pentachlorophenol was used for wood treatment of boardwalks and above ground posts.

Total Alaska: 4 pages, 60 hours search

Arizona.
5 projects

Strip District. Five aerial spray projects for sagebrush control were reported between 1965 and 1969; all were conducted by contractors. In all five, 2,4-D was applied at 2 lb. ae/A (acid equivalent/acre).

Total Arizona: 23 pages, 30 hours search

California
44 projects

The Surprise Field Office includes part of the former Susanville District. Extensive records are available for the Massacre Brush Spray Project conducted in May 1968. There is no record of 2,4,5-T use in that project other than the telephone confirmation report. Aerial application of 2,4-D at 2 lb. ae/A was made to 6,380 acres. The Project Completion Report certifies that this spray project was started on May 27, 1968, and was completed 4 days later on May 31, 1968. An in-depth analysis of the Massacre Brush Spray Project is presented beginning on p. 18 of this report. Records exist for two previous 2,4-D spray projects conducted in the Massacre Lake area in 1966 and 1967. In 1969, two additional 2,4-D spray projects were conducted in what is now the Surprise area during the period under investigation: a Larkspur-Brush Spray project in 1970 and an Antelope brush project in 1971.

The Surprise Field office records include bid specifications for two projects that Mr. Harlow may have worked on during 1969, the year following the "Cowhead/Massacre" spraying. The Antelope Flat Revegetation Maintenance project (Washoe County, Nevada) was documented by a bid specification, listing 2,4-D low volatile ester as the herbicide to be applied at 3 lb. ae/A. Other documentation indicated that two such 2,4-D projects were planned for 1969.

A job titled "Aerial Spraying of Herbicide by Helicopter," (Invitation No. 2636) specifies spraying a region near Walker Ridge in Lake County, California,, to begin on approximately May 15, 1969. These specifications list 2,4-D and 2,4,5-T to be applied at 2 and 1 lb. ae/A. respectively, and specify only low-volatile esters[8/].

Barstow District. Between 1966 and 1974, picloram (not a chlorophenoxy compound) was sprayed using ground equipment for eradication of noxious weeds.

Bishop District. Seven 2,4-D aerial spray projects were conducted under contract to BLM from 1965-1975; application rates were 2-3 lb. ae/A.

Eagle Lake (includes part of the former Susanville District). Bait, poisoned with an unspecified chemical, was used for rodent control between 1965 and 1967; endrin was reported as the pesticide used on rodent bait in 1971. Sevin (carbaryl) was used for grasshopper control in 1966 and 1969, and malathion was applied for this purpose in 1968.

Folsom Field Office. Six aerial herbicide spray contracts were carried out during 1965-1974.

[8/]Unlike Agent Orange, which contains a 1:1 mixture of 2,4-D and 2,4,5-T, this mixture contains a 2:1 mixture of 2,4-D and 2,4,5-T. In any event, even a 1:1 combination of these domestically available herbicides would not have constituted Agent Orange.

Three of these projects used a mixture of 2,4-D and 2,4,5-T at 2:1 proportions[9/]; the actual application rates were not specified. Two projects used 2,4-D at 2-3 lb. ae/A. One additional project used atrazine to control annual grasses in conjunction with a pine tree planting project.

Ukiah District. Twenty herbicide spray projects were conducted between 1965 and 1974. Three of these applied a mixture of 2 lb. of 2,4-D to 1 lb. of 2,4,5-T at 3 lb. ae/A. One project sprayed an unspecified mixture of 2,4-D and 2,4,5-TP (Silvex) at "4 lb. of chemical" in 1973. In the other 16 projects, 2,4-D only was sprayed at 2-4 lb. ae/A[10/].

Total California: 713 pages, 163 hours search

Colorado.
18 projects

Canon City District. Three aerial spray projects were conducted between 1965 and 1969 under contract involving application of 2,4-D at 4 lb. ae/A for sagebrush control.

Craig District. In five aerial spray projects contracted by BLM between 1965 and 1968, 2,4-D was applied at 2 lb. ae/A for sagebrush control.

Denver District. Two projects in 1965 reported aerial application of 2,4-D at 2 lb. ae/A for sagebrush control.

Grand Junction District. Three herbicide spray projects were reported during 1965-1968. In two projects, 2,4-D was applied aerially by contractor at 2 lb. ae/A. The other project involved application of Silvex (2,4,5-TP) in an 8 lb/100 gallon dilution as a spot treatment using ground equipment.

Montrose District. In five aerial spray projects contracted by BLM between 1965 and 1969, 2,4-D was applied at 2 lb. ae/A for sagebrush control.

Total Colorado: 157 pages; 114 hours search

Idaho.
81 projects

[9/]See footnote 8.

[10/] None of these projects used Agent Orange. The first three projects involved a 2:1 mixture of 2,4-D and 2,4,5-T. See footnote 8. The fourth project involved an unspecified mixture of 2,4-D and 2,4,5-TP (Silvex). Agent Orange does not contain Silvex. The other sixteen projects involved only 2,4-D.

Shoshone District. In the period between 1965 and 1975, 33 projects were completed that included 2,4-D application. Of these projects, 25 were aerial applications of 2,4-D at 2 lb. ae/A, conducted by contractors for sagebrush control, and 5 were ground applications made by county personnel for noxious weed control. One program involving ethylene dibromide[11/] ground application was documented, although the pest was not specified.

Pocatello District. Five projects were conducted between 1965 and 1971 in the Pocatello District in which 2,4-D was applied aerially by contractors for sagebrush control. The application rates were 2 lb. ae/A in three projects, 4 lb. ae/A in one instance, and in one event the rate could not be determined.

Coeur d'Alene District. In 1966, one project was conducted, in which BLM contracted for two aerial applications of 2,4,5-T, each at 3 lb. ae/A. The contract specified that the contractor would supply the pesticide. The target weeds were not specified. The use of cacodylic acid (an arsenic compound, not a chlorophenoxy compound) was reported during 1965-1966 in stem injection applications for a tree thinning project.

Boise District. During 1965-1970, 22 projects were contracted for aerial application of 2,4-D for sagebrush control; the application rate in each case was 2 lb. ae/A.

Idaho Falls District. Thirteen 2,4-D spray projects were contracted during 1971-1972 for aerial application of 2,4-D at 2 lb. ae/A. One additional project reflected application of 2,4-D at 3 lb. ae/A. These contracts were for sagebrush control.

Salmon District. Four aerial applications of 2,4-D, each at 2 lb. ae/A, were contracted between 1965 and 1967 for sagebrush control.

Unspecified districts. In 1973, Utah Power applied to use a combination of herbicides of atrazine, simazine (not chlorophenoxy compounds), and Silvex on the ground around power poles. A per-acre use rate was not specified.

The Range Improvement Project Summary (RIPS) backup dated September 30, 2000, lists one project, No. 325017, the Shodde Spray -SDG Project, in which 2,4,5-T was applied to 1,000 acres in 1965. This instance appears to be distinct from the 2,3,5-T application listed above in Coeur d'Alene in 1966.

The BLM records indicate that in 1973 Idaho suffered an infestation of grasshoppers, and malathion and diazinon were mentioned as possible treatments. However, there are no Job

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[11/]Ethylene dibromide, also known as EDB or 1,2-dibromethane, was used extensively as an agricultural fumigant until 1983, when the U.S. Environmental Protection Agency suspended its use for that purpose.

Description Records (JDRs) documenting the use of these insecticides by BLM. The RIPS backup lists five projects involving use of ethylene dibromide in 1971 for which no JDRs are available.

Total Idaho: 2,800 pages, 120 hours search

Montana
38 projects

Lewistown District. In two projects in 1968 and 1971, 2,4-D was applied aerially at 2 lb. ae/A for sagebrush control. Contractors carried out these spray projects. In 1962, 3 years earlier than the period covered by this report, a 3:1 mixture of 2,4-D and 2,4,5-T[12/] was approved for aerial spray at a total rate of 2 lb. ae/A for cactus control in the Lewistown District.

Miles City District. In 1968, picloram was applied for leafy spurge control at 4 lb. ae/A. Previously, monuron (Urox 22) was applied as a soil sterilant at 200 lb./A. In 1975, dicamba was applied at 4 lb. ae/A and 2,4-D was applied in a separate event at 2 lb. ae/A.

Dillon District. During the period between 1965 and 1971, 27 2,4-D aerial spray projects carried out under BLM contracts for sagebrush control were completed. Rates for each of these applications were 2 lb. ae/A. Records for an additional 13 similar projects conducted between 1958 and 1964 were also available.

Malta District. Three contract spray projects for 2,4-D to control sagebrush were completed in 1964. The application rates in lb. ae/A for the projects were not specified in the documentation. Four annual phases of a project in the Malta District were recorded from 1965 through 1968. Each year 2,4-D was sprayed aerially at 2 lb. ae/A for sagebrush control. A contractor carried out the spraying.

Total Montana: 223 pages, 54 hours search

Nevada
22 projects

Battle Mountain District. In 1965-1967, three projects used 2,4-D applied as an aerial spray, conducted under contract, at rates of 2 lb. ae/A.

Carson City District. In 1967, 2,4-D was aerially applied at 2-3 lb. ae/A during five projects.

[12/] Unlike Agent Orange, which contains a 1:1 mixture of 2,4-D and 2,4,5-T, this mixture contained a 3:1 mixture of 2,4-D and 2,4,5-T. Also, see footnote 8.

Elko District. In 1971, one project (IM 605284) used 2,4,5-T for aerial spray application at 2.5 lb. ae/A. A RIPS list dated September 2000 lists nine projects as having used 2,4,5-T between 1967 and 1970; however, records located for these projects indicate that 2,4-D was the sole herbicide used. During 1970 to 1971, 2,4-D was applied aerially at 2-3 lb. ae/A in seven projects. Three additional projects used atrazine for annual grass control at 1 lb. ae/A between 1970 and 1972.

Ely District. In 1965, 2,4-D was applied aerially at 3 lb. ae/A in two projects.

Winnemucca District. Two aerial spray projects used 2,4-D at 2 lb. ae/A in 1969 and 1970.

Total Nevada: 871 pages, 69 hours search

New Mexico
33 projects

Albuquerque District. Two 2,4-D aerial spray projects were conducted under BLM contracts in 1970 and 1971. Applications of 2,4-D at 2 lb. ae/A were used for sagebrush control.

Las Cruces District. Two aerial spray projects were conducted under BLM contracts in 1973 using 2,4,5-TP (Silvex) for mesquite control. In 1964, an experimental program was initiated to study the efficacy of nine herbicides and combinations on creosote bush control. Two of the 22 12-acre experimental plots were treated with "brush-o-cide," a combination of 2,4-D and 2,4,5-T in unspecified proportions. These projects used products labeled for rangeland use. Four of the plots were sprayed with 2,4,5-T alone at unspecified rates. Other herbicides used included dicamba, 2,4-D, 2,4-DP (a propionic acid of 2,4-D), 2,4,5-TP, and picloram.

Carlsbad District. Specifications for four 2,4-D spray projects during 1968-1973 listed 2,4-D to be applied aerially at 2 lb. ae/A. Three additional projects were noted: (1) 2,4,5-T aerially applied at 0.5 lb. ae/A in 1969; (2) 2,4,5-TP (Silvex) at 0.75 lb. ae/A in 1973; and (3) a mixture of Silvex and dicamba containing each ingredient at 0.25 lb. ae/A applied in 1971.

Total New Mexico: 103 pages, 60 hours search

Oregon (Includes Washington State)
396 projects (276 atrazine projects, 120 other pesticides)

Burns District. Twenty-two projects were reported using 2,4-D as an aerial spray conducted under contract. Application rates were 2 lb. ae/A.

Eugene District. Between 1968 and 1975, atrazine was applied in 151 projects either alone or in combination with 2,4-D. Silvex (2,4,5-TP) was applied in 31 projects, and 2,4-D alone was used in 24 projects.

Lakeview District. During 1965-1975, 2,4-D was applied as an aerial spray at 2-3 lb. ae/A in 19 projects conducted under contract.

Medford District. One project reported spraying 2,4,5-T at an unspecified rate in 1966. A mixture of the herbicide simazine with 2,4-D was recorded during a project in 1972. Five contracts from 1966-1969 specified the application of atrazine at 4 lb. ae/A. The herbicide dalapon was applied in a project in 1966 and in a project in 1971 at 4 lb. ae/A. The insecticide endrin was applied at 1 lb. ae/A in two projects during 1965. In 1970 the use of strychnine-treated oats for gopher control was reported in three locations.

Prineville District. Eleven projects conducted during 1966-1975 involved the application of 2,4-D at rates up to 4 lb. ae/A.

Roseburg District. Herbicide spray projects included 102 with atrazine, 17 with atrazine plus dalapon and/or 2,4-D, five with Silvex (2,4,5–TP), and 2 with 2,4-D alone.

Salem District. In 1973, two projects reported application of a combination of Silvex and 2,4-D, each at 0.5 lb. ae/A, and one project reported atrazine applied at 2 lb. ae/A. In 1975, 2,4-D was applied in three projects at up to 4 lb. ae/A and at 2 lb. ae/A in a mixture with Silvex at 2 lb. ae/A. In one 1975 project, atrazine was applied at 4 lb. ae/A.

Spokane District. This would include those public lands in the State of Washington. Malathion was used for grasshopper control in 1973 at a rate of .455 lb. ae/A.

Vale District. During 1965-1975, 2,4-D was applied as an aerial spray at 2-4 lb. ae/A in 24 projects completed under contract.

Total Oregon/Washington: 445 pages, 184 hours search

Utah
14 projects

Vernal District. Eight 2,4-D aerial spray projects were carried out during 1965-1975 (seven of these under contract). Applications of 2,4-D at 2 lb. ae/A were used for sagebrush control.

Salt Lake District. Two aerial spray projects were conducted under BLM contracts during 1967. These applications of 2,4-D at 2 lb. ae/A were used for sagebrush control.

Kanab District. Two aerial spray projects were conducted under BLM contracts during 1968-1969. These applications of 2,4-D at 2 lb. ae/A were used for sagebrush control.

Monticello District. In 1965, a program for rodent control utilized poison grain. The pesticide active ingredient and rate used could not be located.

Moab District. One 2,4-D aerial spray project was carried out under contract for sagebrush control in 1966. The application rate was 2 lb. ae/A.

Total Utah: 293 pages, 93.5 hours search

Wyoming
41 projects

Casper District. Records for 1975 refer to the use of sodium cyanide for coyote control. The amount of chemical was not specified.

Lander District. Eight sagebrush control projects conducted under contract between 1965 and 1970 involved aerial spraying of 2,4-D at 2 lb. ae/A.

Rock Springs District. Three sagebrush control projects conducted under contract between 1966 and 1968 involved aerial spraying of 2,4-D at 2 lb. ae/A.

Kemmerer District. Seven sagebrush control projects conducted under contract between 1969 and 1973 involved aerial spraying of 2,4-D at 2 lb. ae/A.

Cody District. Seven sagebrush control projects conducted under contract between 1968 and 1972 involved aerial spraying of 2,4-D at 2 lb. ae/A.

Rawlins District. Three sagebrush control projects conducted under contract between 1967 and 1970 involved aerial spraying of 2,4-D at 2 lb. ae/A.

Worland District. Records include plans for 12 projects for aerial spraying of 2,4-D at 2 lb. ae/A for sagebrush control in 1973. Job completion records were unavailable.

Total Wyoming: 399 pages; 78 hours search

Massacre Project:

We reviewed the Massacre project specifically and closely because Mr. Harlow refers to the "Cowhead-Massacre" Project as the project on which he alleges he was exposed to Agent Orange during his work beginning June 16, 1968. The project location is in Washoe County, Nevada, but was administered out of the then district office in Susanville, California. The project file found referred only to the Massacre Project. Cowhead-Massacre was the name of the planning unit in the Susanville District (personal communication, Alan Uchida, June 13, 2001).

Invitation for Bid #2300, dated July 1967, identifies a series of projects that BLM was conducting that year. Item No. 9 identified Susanville District, California (now Surprise Field Office) Massacre Lake as just one project (Attachment 9). This Invitation for Bid covers the

project on which Mr. Harlow claims he was sprayed with Agent Orange.

The Invitation for Bid includes the following provisions:

> 1. General Requirements
> It is required that the areas designated on attached work location map(s) and as identified on the bid schedule be aerially sprayed with 2,4-D herbicide (and/or 2,4,5-T) solution to control sagebrush, rabbit brush, weeds and other undesirable vegetation. All work shall be performed in the best approved commercial practices by competent pilots and ground crews experience in this type of service, and in accordance with these specifications, the General Provision, additional General Provision and such other terms and conditions as are included in the bid package.
>
> * * *
>
> d. Herbicide - Unless the Government specifically elects elsewhere in the bid invitation (Bid Schedule A only) to furnish the herbicide, the contractor shall furnish only a low volatile herbicide (s) which must be in sealed containers provided by the manufacturer or in a sealed tanker with a certificate from the manufacturer that the tanker was in fact loaded and sealed by such manufacturer at his plant. Sealed containers shall bear labels showing type of herbicide, formulation, date of manufacture, lot number and a certificate that 2,4-D met Federal Specification O-H-200a, Type III, Class 2. Any 2,4,5-T herbicide required shall meet Federal specifications O-H-210a, Type II, Class 2. All herbicides furnished must be of recent manufacture and properly stored to prevent distressing. Following are several of the low volatile ester herbicides which will meet aforementioned requirements:
>
> Iso-Octyl Ester
> Propylene Glycol Butyl Ether Ester
> Butoxyethroxypropoanol Ester
> Butoxyethanol Ester
> Butoxyethroxpropyl Ester
> Tetrahydrolfurfuryl Ester

Any combination of 2,4-D and 2,4,5-T, obtained and used according to the bid specifications for the Massacre Lake project and complying with BLM policy regarding herbicides, would not be Agent Orange or chemically equivalent to Agent Orange. (See Dynamac Report, Attachment 1, page 1)

Although 2,4,5-T was authorized for possible use under the bid invitation (Attachment 9), the section on the rate of application per acre lists 2,4-D as the only chemical to be used. Page 2(d)

of the bid invitation (Attachment 9) lists specific information on the Federal requirements for use of the 2,4-D: "Sealed containers shall bear labels showing type of herbicides, formulation, date of manufacture, lot number and a certificate."

For the Massacre project, the BLM exercised its option under the bid specification to furnish the herbicide. The BLM also furnished the wetting agent and the flag men. (Mr. Harlow said he was a flag man.) The contractor was to furnish necessary aircraft, mixing equipment, water, diesel oil (except Susanville District), related supplies, and labor to perform all work incidental to aerial application of herbicide on public lands. As indicated in the bid invitation in the rate of application section, BLM furnished the 2,4-D at 2 pounds and 2 ½ gallons' diesel oil. The start date indicated was May 20, 1968. The contract was awarded to the low bidder, Aero Range Service, Lakeview, Oregon.

Several other items were found in the Massacre project file corroborating that only 2,4-D was used. *Specification Details Form 7310-4 (*April 1966) (Attachment 10) identified the location of the Massacre project in Washoe County, Nevada, approximately 25 miles east of Cedarville, California. The approximate acreage for the project was listed as 6,316 acres. The approximate start time of the project was "May 20, 1968." The form also indicates that the actual start date was May 27, 1968.

The following information is excerpted from the form:

> **The spray formula to be used** shall be 2,4-D Ester Low volatile Acid equivalent 4 pounds per gallon. The oil carrier should be light enough to be miscible with the herbicide. Number 2 diesel oil meets this requirement.
>
> **Rate of application**: ½ gallon of 2,4-D (2 lbs) and 2 ½ gallons of oils, for a total of 3 gallons per acre.
>
> **The minimum aircraft requirement:** Fixed-wing or helicopter; aircraft capable to applying spray at speeds of 100 MPH or less.

Flight paths were to be flagged by the Government. Mr. Harlow stated that as a flag man, BLM employees stood abreast at 21-feet intervals, thereby serving as ground targets for the airplanes that flew over and sprayed the area. At that time, no technology existed to assist the pilot in determining the time to spray. Flag men stood at different locations and "waved their flags" to let the pilot know when he was to begin spraying.

The bid specification and the Specification Details Form indicate that the Massacre project commenced on May 27, 1968. A Project Completion Report signed by Duane Ferdinand, Range Conservationist (Attachment 11) indicated that the "Massacre Brush Spray consisted of the aerial application of 2-4-D herbicide on 6380 acres of predominately Sagebrush land. The chemical, Propylene Glycol Butyl Ether Ester - a low volatile 2,4-D ester herbicide, was applied at the rate

of 2 pounds (½ gallon) per acre mixed with 2 ½ gallons of #2 diesel oil for a total solution of 3 gallons per acre." An Inspector Form (Attachment 12) signed by Mr. Ferdinand on June 3, 1968, indicated the amount of 2,4-D available equaled 3,190 gallons. The amount of Diesel needed to properly mix with the 2,4-D equaled 15,950 gallons, for a total mix of 19,140 gallons. Thus, only 2,4-D was used on the project as documented on the Project Completion Report (Attachment 11).

Mr. Harlow submitted to OSC a report of a telephone conversation on May 29, 1968, apparently signed by Arnold E. Bullock, Acting District Manager of the Susanville District Office (Attachment 13), purporting to extend and modify contract #14-11-0001-4112 dated April 19, 1968. There is a copy of this document in BLM's files. The report of the telephone conversation includes the following statement under the heading "Explanatory Remarks."

> Notified Mr. Plato that the contract has been extended with carry-over funds, this date, as we previously discussed. Also noted that spray formulation and mixture to include equal parts of 2,4-D amine [a salt of 2,4-D] and 2,4,5-TP silvex, but that weights of herbicide will not change.

Silvex is 2,4,5-TP, a propionic acid, whereas 2,4,5-T is an acetic acid; the two are not the same chemicals. As the herbicide 2,4,5-TP is not a component of Agent Orange, combining 2,4,5-TP with 2,4-D cannot result in Agent Orange.

The May 29, 1968, Confirmation Report of Telephone Conversation (Form 1541-3) (Attachment 13) submitted to the OSC by Mr. Harlow, is inconsistent with Mr. Ferdinand's project completion report dated May 31, 1968, as discussed above. After noting this inconsistency, we contacted the Surprise Field Office, California, which maintains the records on the Massacre project. That office confirmed that the files showed a starting date for the project of May 27, 1968, and a project completion date of May 31, 1968. The files do not establish that the contract was ever extended and they do not show or document work done during any extension that may have occurred other than the purported telephone confirmation record. The BLM also contacted Mr. Bullock, who is retired from the BLM. Mr. Bullock was shown the May 29, 1968 Confirmation Report of Telephone Conversation (Form 1541-3)(Attachment 13). He stated that he did not write the document and that it was not in his handwriting. He further stated that he never was the acting District Manager in the Susanville District Office and had never given instructions regarding spraying projects or contract extensions. Thus, there is a significant question regarding the authenticity of the report of telephone conversation.

Regardless of whether the Massacre project was extended, the important point to note is that Agent Orange was not used in the project. The report of conversation states to use "2,4-D amine and 2,4,5-TP silvex." As discussed above, Silvex was not 2,4,5-T. Thus, even if the report of conversation is authentic, no combination of 2,4-D and Silvex could have resulted in the use of Agent Orange.

Further, the note attributed to Mr. Bullock indicates that the project was extended to August 31, 1968. There are no records to indicate the number of days that Mr. Harlow spent on the spray project. But if he began working on June 16, 1968, and if the project concluded on August 31, 1968, his work on the project was limited to 2 ½ months at most.

In the telephone interview with Mr. Harlow on May 23, 2001 (Attachment 6), he stated that he "personally picked up one two and a half ton truckload of orange extracted fifty-five gallon drums at Herlong Army weapons depot, just out of Susanville" (page 16, lines 24, 25 & page 17, lines 1 & 2). Mr. Harlow further stated, " that they were striped, the T drums, the 2,4,5-T drums were striped with an orange strip." (Page 13, lines 19-21 telephone interview).

Mr. Harlow's statement is unclear as to what he purportedly picked up: Agent Orange or 2,4,5-T? We thus believe Mr. Harlow is mistaken in his belief that the BLM received Agent Orange or otherwise used Agent Orange. Aside from Mr. Harlow's interview, there is nothing in the file that substantiates the claim that BLM received surplus herbicides from the military for this project or that it received any drums from the military with an orange band.

BLM contacted the Sierra Army Depot in Herlong, California, and asked if there was any knowledge or any records to indicate that Agent Orange was sold or given to the BLM during that time period. No specific information was available. Therefore, on June 25, 2001, Gina Ramos, Senior Weed Specialist, BLM, spoke with Cliff Meyers, Pesticide Manager for the Defense Logistics Agency. The Defense Logistics Agency provides logistics services directly associated with furnishing material commodities and items of supply. Ms. Ramos followed up with an e-mail requesting information on the availability and disbursement of Agent Orange during the 1968 time frame. Mr. Meyers was asked if Agent Orange was ever available to the agencies of the federal government as surplus materials, specifically in the late 1960's. Mr. Meyers stated, "No, Agent Orange herbicide was for controlled military use only, not for resale. The herbicide was forbidden to be used within the USA." When asked if DOD ever sold or transferred any excess Agent Orange, the answer was no. Mr. Meyers was asked if any records are available from the Sierra Army Depot in Herlong, California, where Mr. Harlow claims to have picked up Agent Orange. BLM was told that "there were none, the herbicide was for military use only."

According to Mr. Meyers, any surplus Agent Orange that was returned to the United States after the Vietnam war was stored on Johnston Island and not brought back to the United States mainland. These inventories and remaining Agent Orange assets held by the Navy in Mississippi were incinerated and destroyed on the Dutch-owned ship the Vulcanus during the summer of 1977. See e-mail message from Defense Logistics Agency (Attachment 14) and U.S. Environmental Protection Agency, At-Sea Incineration of Herbicide Orange Onboard the M/T Vulcanus, Environmental Protection Agency (EPA-600/2-78-086, April 1978) (Attachment 15).

Furthermore, there was a shortage of all pesticides available for domestic use in 1968, including pesticides with 2,4-D and pesticides with 2,4,5-T, due to the war in Vietnam. In fact, it is

unlikely that 2,4,5-T would have been available for this project since it was in short supply domestically as evidenced in two contemporaneous BLM memoranda. The first memorandum, IM No. 66-485 (Attachment 16) from the BLM Assistant Director, Resource Management, identified Reporting Procedures for the 1967 Pesticide Programs. The memorandum stated that "a shortage of 2,4,5-T is expected due to military needs. If you do not have enough on hand to meet your needs, you should consider using other herbicides or putting the work off until 2,4,5,-T is available. Substitute herbicides include fenuron and silvex for mesquite, silvex for shinnery oak and picloram for rabbit brush." The reference to Silvex is consistent with the telephone confirmation record dated May 29, 1968.

The second memorandum, IM No. 67-453 (Attachment 17) dated October 31, 1967, on the Outlook for Herbicide Availability, said that the "present outlook for herbicides, 2,4-D would be limited and that no 2,4,5-T would be available." Field offices were told to consider some alternate projects if 2,4-D was not available.

In the telephone conversation with Mr. Harlow, he indicated other projects that he had worked on while employed in the Susanville District. Mr. Harlow said that Cow Head-Massacre was one of the projects (Page 12 and 13 of Attachment 6), "another area was the Coleman Valley, it was out of Coleman, another area was the Home Camp area, the antelope area." The Antelope Flat Revegetation Maintenance project identified in Form 7310-4 Specification Details identified an approximate starting date of June 15, 1969. The herbicide identified is 2,4-D 3 lb ae/A. Attachment 18. This project was one year after the Massacre project.

An incomplete file for Bid Invitation No. 2636 identified a series of projects in the Ukiah District and Susanville Districts. Form 7410-10 Aerial Application of Herbicide Detailed Specification identifies an unnamed job as "Aerial Spraying of Herbicide by Helicopter." This project identifies the spraying of 850 acres with an approximate starting date of May 15, 1969. The bid specification states "The chemical that will be applied at the rate of 2 lbs. 2,4-D, 1 lb. 2,4,5-T acid equivalent, ½ gallon No. 2 diesel oil, and the remainder water, for a total application rate of 5 gallons per acre. Herbicide shall be only low volatile esters which include iso-octyl, butoxyethol, propylene, glycol, butyl, ether, etc. with a molecular weight between 320 and 340, and a minimum of 6 to 8 carbon atoms in the alcohol chain." Although this project identifies the use of 2,4-D and 2,4,5-T, this combination is a 2:1 combination mixed with diesel and water. In contrast, Agent Orange is a 1:1 combination of 2,4-D and 2,4,5-T, and as we have indicated before in footnote 8, even a 1:1 combination would not have constituted Agent Orange. There is no Project Completion Form or any other information about these projects, but they do take place in the same time period that Mr. Harlow was employed in Susanville.

As a flagman, Mr. Harlow may likely have been sprayed with pesticides that were used for range projects. However, the evidence does not support a conclusion that BLM used Agent Orange at any time on the Massacre project or any other project. Further, the evidence does not support a conclusion that Mr. Harlow was exposed to Agent Orange. Finally, the Department of Labor, Office of Worker's Compensation, has denied Mr. Harlow's claims for compensation for illness

allegedly resulting from BLM's alleged use of Agent Orange.

BLM Policy and Instruction

During the period 1965-1975, BLM policy and instructions regarding pesticides consisted of IMs and reporting procedures. A Manual for Fish and Wildlife Management Programs, Manual 7311.2 Chemical Vegetation Control Handbook dated August 9, 1966 (Attachment 19), included guidance for vegetation control operations, including chemical control. The manual was superseded by a manual and/or page release in July of 1976.

During this period, there was no requirement for approved Pesticide Use Proposals or certification as a Pesticide Applicator. However, during this period, a review of pesticide use was conducted by the Federal Committee on Pest Control (FCPC). The FCPC was established by the Secretaries of Agriculture, Interior, Defense, and Health, Education, and Welfare. The function of the FCPC was to review all Federal Government use of pesticides and to ensure that effective, economical, and safe procedures were followed. The FCPC provided that the committee "may request any Federal agency to submit for review a detailed description of its proposed and current pest control programs. Each year, new projects required filling out an "FCPC Summary Report on New or Substantially Changed Projects or Programs using Pesticides " (Attachment 20). An IM (WO No. 67-500) (Attachment 21) established a "Reporting Procedure for 1968 Pesticide Programs." Instruction for Submitting Pest Control Programs for 1968 was submitted for review by the FCPC that year. An FCPC form should have been submitted for the Massacre project. BLM was unable to locate a form in the files. In addition, the State of Nevada (the Massacre project was located in Nevada) also had requirements for Airplane Pest Control Licenses that would have been required prior to the issuance of the contract to spray (Attachment 22). We have not found any records concerning such a license.

Approximately one year after the completion of the Massacre project, IM No. 69-355 (23), dated November 18,1969, halted the use of the herbicide 2,4,5-T in populated areas or where residues from use could otherwise reach human beings. In 1970, IM No. 70-114 established the Guidelines for Planning and Implementing Bureau of Land Management Programs. The criteria for pest control programs were identified; the BLM guidelines closely followed the FCPC guidelines. An attachment to IM No. 70-114 identified pesticides requiring advance Departmental approval, and another list on *pesticides not recommended for use* by the Interior Agencies listed 2,4,5-T (Attachment 24).

4. Listing of any violation of law, rule, or regulation

There is no indication that the BLM violated any law, rule or regulation in its use of pesticides during the period 1965-1975. The BLM used a variety of pesticides during the period from 1965 to 1975. The pesticides BLM used in this period were legal for use in the United States, were in widespread use, and were readily available in the United States between 1965-1975. Many

people in the United States, in Federal or local governments, on the job, on the farm, or at the home would have been exposed, and no formal training in the use of pesticides was available. Based on documentation that was submitted from every BLM field office, there is no evidence to indicate that the BLM used Agent Orange anywhere. The information BLM received from the military indicates that no Agent Orange was ever sold or otherwise transferred to the BLM.

5. Description of any action taken or planned as a result of this investigation

The Federal Land Policy and Management Act of 1976, 43 U.S.C. 1700 et seq., requires the BLM to manage public lands and their resources, and establishes policy for such management. The Taylor Grazing Act of 1934, 43 U.S.C. 315, requires the BLM to ensure the protection, administration, regulation, and improvement of public lands used for domestic livestock grazing. The Public Rangelands Improvement Act of 1978, 43 U.S.C. 1901, requires BLM to manage, maintain, and improve the public lands suitable for livestock grazing so that they become as productive as feasible. Two Federal laws direct weed control on Federal lands: the Federal Noxious Weed Act of 1974, as amended by Sec. 15, Management of Undesirable Plants on Federal Lands, 1990 (7 U.S.C. 2801-2813) and the Carlson-Foley Act of 1968 (P.L. 90-583). BLM also recognizes and follows the guidance provided by the EPA regarding chemical treatment involving herbicide application controls.

Since the late 1960's, BLM has developed more specific policy and guidance in the use of pesticides on public lands. In 1986, BLM developed a pesticide training course that incorporates pesticide use and safety. In 1991, BLM published its Environmental Impact Statement on Vegetation Treatment of BLM Lands in Thirteen Western States (EIS). The EIS identifies vegetation treatment using integrated pest management methods, which include chemical applications. From this EIS, BLM's Record of Decision states that only certain herbicides that are approved for use on specific lists are approved for use on public lands. Those herbicides are: Atrazine, Bromacil, Bromacil + Diuron, Chlorsulfuron, Clopyralid, 2,4-D, Dicamba, Dicamba + 2,4-D, Diuron, Glyphosate, Glyphosate + 2,4-D, Hexazinone, Imazapyr, Mefluidide, Metsulfuron Methyl, Picloram, Picloram + 2,4-D, Simazine, Sulfometuron Methyl, Tebuthiuron and Triclopyr. The herbicide 2,4,5-T was taken off the market in 1983.

The BLM began conducting Hazardous Material Surveys and auditing its facilities in 1993 (Attachment 25). A number of hazardous materials, mostly paint, fuel, and occasionally excess usable pesticides, have been found in that time period. In none of these audits has Agent Orange been found at a BLM facility.

Policy memoranda, manuals, and handbooks that have been developed since 1968 include:

BLM Manual 9011 and Handbook H-9000-1 - Provides policy for conducting chemical pest control program under an integrated pest management approach;

Departmental Manual Chapter 517 - Prescribes policy for the use of pesticides on the lands

and waters under its jurisdiction, and for compliance with the Federal Insecticide, Fungicide, and Rodenticide Act, as amended; and

Instruction Bulletin 91-271 - Development of Environmental Analysis (EA) for Site Specific Vegetation Treatment Projects.

Since 1986, BLM requires all bureau employees in charge of projects involving the use of pesticides to attend the Integrated Pest Management and Certified Application Training Course (now known as BLM course #9000-1). This course is a requirement for any BLM employee who will be applying pesticides on public lands. Additional certification is also required under the laws of the various states. Additional training is also available for weed management, which discusses the use of pesticides in an integrated weed management program.

Technology, such as Global Positioning Systems (GPS), is available today and is used to track the path of aircraft using GPS coordinates so the aircraft is able to stay on line to spray. There may be instances where flag men are still used. However, appropriate precautions are taken to ensure that the individual is not sprayed, and personal protective equipment is used.

Preparers:

Gina Ramos. Senior Weed Specialist; Bureau of Land Management. MBA., B.S. Range Science. Twenty years BLM experience as a Rangeland Management Specialist; other experience and expertise in socioeconomics and ecosystem management. Ms. Ramos is licensed in pesticide application.

F. Ann Foster. Senior Scientist/Toxicologist, Dynamac Corporation. Ph.D., M.S. Botany, BA., Biology. Fifteen years experience critically evaluating chemistry, toxicology, and environmental studies on pesticides submitted in compliance with Environmental Protection Agency regulations. Research experience in weed science and forage grass physiology.

Contributors:
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Attachments:

1 The Dynamac Report: *Summary of Toxicity Information on Phenoxy Herbicides and TCDD with Respect to Production of Prostate Cancer*
2 Summary of Epidemiological Findings Discussed in *Veterans and Agent Orange* (1994, 1996, 1998, Institute of Medicine, National Academy of Sciences)
3 Instruction Memorandum WO-2001-149
4 BLM State Director Validation Memos and BLM Field Office Validation Memos
5 Agent Orange Task Force File
6 Harlow interview transcript
7 Harlow's information
8 IARC Monographs, 1987, Supplement 7
9 Invitation for Bid #2300 (includes Massacre Project)
10 Specification Details Form 7310-4 (April 1966) - Massacre Project
11 Project Completion Form - Massacre Project
12 Project Inspection Log
13 Telephone Conversation Records - Bullock
14 E-mail message from Defense Logistics Agency
15 U.S. Environmental Protection Agency, At-Sea Incineration of Herbicide Orange Onboard the M/T Vulcanus (EPA-600/2-78-086, April 1978).
16 Instruction Memorandum 66-485
17 Instruction Memorandum 67-453
18 Form 7310-4 Antelope Revegetation Project
19 Manual - Fish and Wildlife Program 7311.2
20 FCPC Form - Summary Report on New or Substantially Changed Projects or Programs using Pesticides "
21 Instruction Memorandum 67-500
22 Airplane Pest Control Licenses
23 Instruction Memorandum 69-355
24 Instruction Memorandum 70-114
25 Hazardous Materials - Cache Audits

1

Attachment 1

DYNAMAC CORPORATION

Summary of Toxicity Information on Phenoxy Herbicides and TCDD with Respect to Production of Prostate Cancer

Introduction: This report is intended to be a brief overview of the results of studies on the toxicity of the components of Agent Orange related to cancer in general and prostate cancer specifically. According to the literature, the most toxic component of Agent Orange relative to production of carcinogenic effects was 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD), an accidental contaminant formed during the manufacture of the component herbicide 2,4,5-trichlorophenoxyacetic acid (2,4,5-T). TCDD is therefore the primary focus of the information gathered for this report. The information herein is obtained from three recent reports that evaluate toxicity and epidemiology data for purposes of public health assessment: 1) the *Veterans and Agent Orange: Update, 1998* (VAO), by the Institute of Medicine (IOM), chartered by the National Academy of Sciences; 2) the January 2001 addendum to the *Ninth Report on Carcinogens*, by the National Toxicology Program (NTP), NIEHS, NIH; and 3) the September, 2000 draft report of *Exposure and Human Health Reassessment of 2,3,7,8-Tetrachlorodibenzo-p-dioxin and Related Compounds*, National Center for Environmental Assessment, U.S. EPA. Overall, these three independent reports appear to agree as to the major toxicology and epidemiology studies that are most pertinent to assessing public health risk of the components of Agent Orange. Our intent is to provide a synthesis of the conclusions provided by the authors relating to the perspective of prostate cancer risk; we do not re-evaluate the individual studies, although individual citations are provided in the text herein for the convenience of the reader.

Draft

Formulation and Use: According to the VAO Update, Agent Orange was used by the U.S. Air Force in a jungle defoliation program during the Viet Nam conflict. Agent Orange was a 1:1 mixture of the herbicides 2,4,5-T and 2,4-dichlorophenoxyacetic acid (2,4-D) formulated differently from the herbicide products available for commercial application in the U.S., developed specifically for and only commercially available for military use. In Viet Nam, Agent Orange was diluted 1:10-20 with JP4 diesel fuel or kerosene and sprayed from fixed wing aircraft. This dilution has been estimated as being 20-40 times more concentrated than that recommended for these herbicides in domestic agricultural use. The aerial spraying of Agent Orange in Viet Nam began in January, 1965 and was suspended in April, 1970. The Agent Orange shipments to Viet Nam were not analyzed for TCDD content. TCDD in stocks that were returned to the U.S. after the conflict, or those that had not been shipped ranged from 0.05-50 ppm, averaging 2-3 ppm. Manufacturing standards imposed for 2,4,5-T sold domestically in 1974 required that TCDD contamination be less than 0.05 ppm. The NTP report cited Agency for toxic Substances and Disease Registry (ATSDR, 1998) reports figures of up to 30 ppm of TCDD in commercial 2,4,5-T products prior to 1965, with subsequent reduction to <0.05 ppm. In 1983, when U.S. registrations of 2,4,5-T were cancelled, the TCDD level was <0.02 ppm.

Carcinogenic Effects: Conclusions of the studies reviewed indicate that there is limited evidence for carcinogenic potential of 2,4,5-T and 2,4-D. Both exhibit low toxicities to laboratory animals,

and require large doses to elicit effects. In a 2-year carcinogenicity study on rats (Charles, et al., 1996) no oncogenicity was observed in animals treated up to the maximum tolerated dose. A retrospective case-control study conducted with dogs showed that diagnoses of malignant lymphoma were correlated with the owners' reported 2,4-D use in yard work; however, the effects of other pesticides to which the animals were exposed could not be ruled out. Most of the toxicology and carcinogenicity findings related to Agent Orange have been attributed in the toxicologic literature to TCDD. The National Toxicology Program has recently (January, 2001) listed TCDD as a known human carcinogen, based on human epidemiological studies and mechanistic information. Numerous laboratory tests and epidemiological studies assessing the relationship of cancer development to TCDD exposure have been conducted and others are still ongoing. In addition, research has been conducted to identify and characterize the intracellular TCDD receptor, the aryl or aromatic hydrocarbon (Ah) receptor, in mammalian systems. The consensus is that the receptor and biochemical responses to TCDD are similar in humans and animals. TCDD is readily absorbed and eliminated with a half-life of 10-30 days in rodents, whereas humans accumulate TCDD in adipose tissue and liver, with an average half-life of 7 years. In numerous studies, cited by the three reports listed above, TCDD has been shown to cause malignant neoplasms in rats, mice, and hamsters of both sexes, from dietary, dermal, and intra peritoneal exposure routes. Multiple organs and tissues are affected by TCDD. The affected organs/systems are hepatobiliary, thyroid, lymphatic, respiratory, adrenal cortex, hard palate, lungs, and skin. In addition, TCDD was demonstrated to be a potent tumor promoter in two-stage models for liver (Pitot, et al, 1980; Graham, et al, 1988; Lucier, et al, 1991) and skin (Poland, et al, 1982). The animal bioassays most used for TCDD carcinogenicity assessment include work with Sprague-Dawley rats (Kochiba, et al., 1978; Squire, 1980; Goodman and Sauer, 1982), Osborne-Mendel rats (NTP, 1982), B6C3F1 mice (NTP, 1982), B6C3 and B6C mice (Della Porta, et al., 1987), Golden Syrian Hamsters (Rao, et al., 1988). None of the available animal studies showed an increase in prostate neoplasms in response to TCDD exposure.

Epidemiological studies on human populations are necessary to confirm the cause and effect relationship suggested by the evidence from animal studies. Numerous studies and follow ups have been conducted on data from human exposure acquired from occupational activities or from industrial accidents. In the EPA Assessment report the authors caution that the absence of accurate, quantitative exposure information is a weakness in epidemiological studies, and differences in study design need to be carefully evaluated in seeking correlations among the available studies. Given these limitations, the IOM, NTP, and EPA appear to have independently chosen essentially the same group of high quality epidemiological studies to use in assessing phenoxy herbicide and TCDD carcinogenicity. Studies of four large high-exposure industrial cohorts in the U.S. (Fingerhut, et al., 1991), Germany (Manz, et al. 1991, Becher, 1996), and the Netherlands (Bueno de Mesquita, 1993) exposed to phenoxy herbicides and TCDD, and of a population exposed to TCDD following a 1976 industrial explosion in Italy (Bertazzi, et al., 1997) supported a conclusion of risk for soft tissue sarcomas, Hodgkin's disease, non-Hodgkin's

lymphoma, and overall cancer risk. In these studies, any increased incidence of prostate cancer *per se*, a topic addressed in the IOM report only, was small and not statistically significant, and the association is considered weak by the authors. The IOM report also cited several studies, not included in the NTP and EPA health assessments, that showed elevated risk of prostate cancer in agricultural and forestry workers. Alavanga, et al. (1988 and 1898) showed, in a USDA study, an increased occurrence of prostate cancer for forest conservationists, but not for soil conservationists or extension agents (OR = 1.6, 1.0, and 1.0, respectively, in a case-control study). The OR increased for forest workers to 2.1 and for soil workers to 2.9 for those who had worked for 15 years and had stopped work before 1960. Another case-control study, Burmeister, et al. (1993) found a significant association of prostate cancer with farming in general (RR = 1.20) among white male Iowans, with increased relative risk for those born before 1890 (RR = 1.5) and those over 65 years old (RR = 1.3). In a study of Canadian farmers (Morrison, et al., 1993), there was an increased risk of prostate cancer from herbicide spraying (RR = 1.2) for those who had sprayed at least 250 acres. For farmers most likely to use phenoxy herbicides, the RR rose to1.3, and for a combined group restricted to phenoxy herbicide users who had no assisting personnel and were between 45 and 69 years old, the RR was 2.2.

In the VAO Update, the IOM concluded that there is sufficient evidence of a positive association between health outcomes and herbicide use for soft-tissue sarcoma, non-Hodgkins lymphoma, Hodgkin's disease, and chloracne (a skin disease). They concluded that there is limited/suggestive evidence of an association between herbicide exposure and prostate cancer. The association is considered limited because chance, bias, and confounding could not be ruled out with confidence, and because, although at least one high quality study shows a positive association, the results of other studies are inconsistent.

Draft

Summary: Based upon the conclusions of the authors of the above mentioned studies, it appears that an association of prostate cancer with exposure to TCDD has not been definitively established and therefore is not considered a major health effect of concern resulting from exposure to TCDD or phenoxy herbicides. In numerous studies, multiple strains of several species of laboratory animals exhibited no increase in prostate cancer following exposure to TCDD, 2,4,5-T, or 2,4-D at levels approximating the maximum tolerated dose. No significant increase in prostate cancer risk was evident in exposed cohorts in high-quality, large cohort epidemiology studies chosen by three government agencies for TCDD and phenoxy herbicide health assessments. Other studies on agricultural workers showed a weakly elevated relative risk of prostate cancer that increased slightly with confounding factors related to length and magnitude of exposure and likelihood of using highly contaminated pesticide products.

Bibliography: The following citations include individual studies that were discussed in the VAO

1998 Update, the NTP addendum of January, 2000, and the EPA draft assessment for TCDD, and that are highlighted in the Dynamac overview. Dynamac did not conduct an independent review of these publications.

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Burmeister LF; Everett GD; Van Lier, SF; Isacson, P. (1983) Selected cancer mortality and farm practices in Iowa. American Journal of Epidemiology 118:72-77.

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Hayes, HM; Taron, Re; Cantor, KP; Jessen, CR; McCurnin, DM; Richardson, RC. (1991) Case-control study of canine malignant lymphoma: positive association with dog owner's use of 2,4-dichlorophenoxyacetic acid herbicides. Journal of the National Cancer Institute 83(17):1226-1231.

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Manz, A; Berger, J; Dwyer, JH; et al. (1991) Cancer mortality among workers in chemical plant contaminated with dioxin. Lancet 338:959-964.

Morrison H; Savits, F; Semenciw, RM; Hulka B; Mao Y; Morison, D; Wigle, D; (1993) Farming and prostate cancer mortality. American Journal of Epidemiology 137:270-280.

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Draft

DYNAMAC
CORPORATION

Squire, RA. (1980) Pathologic evaluations of selected tissues from the Dow Chemical TCDD and 2,4,5-T rat studies. Submitted to Carcinogen Assessment Group, U.S. Environmental Protection Agency on August 15 under contract no. 68-01-5092.

Draft

2

Summary of Epidemiological Findings Discussed in *Veterans and Agent Orange* (1994, 1996, 1998, Institute of Medicine, National Academy of Sciences) by Ann Foster, Dynamac Corporation

The original *Veterans and Agent Orange* report (1994) and 1996 and 1998 Updates reviewed numerous epidemiological studies on groups exposed to chlorophenoxy- herbicides and TCDD. A total of over 200 studies were evaluated reflecting occupational exposures, 135 studies of agricultural and manufacturing workers, 37 studies of environmental incidents, including exposures of civilians following industrial accidents, and 63 studies of veterans exposed during service in Viet Nam.

The report formulated conclusions regarding the association of herbicide exposure with specific health problems. "Herbicides" in the VAO report refers to 2,4-D, 2,4,5-T and its dioxin contaminant, cacodylic acid (an arsenic compound), and picloram, the herbicides used in Viet Nam. Although not used in Viet Nam, Silvex (2,4,5-TP) also falls into this chemical category. In most cases it was not possible to isolate exposure to a particular compound. The health effects studied were put into four categories:

Health Outcomes with Sufficient Evidence of an Association

- Soft tissue sarcoma (STS). The data did not permit determination of whether STS was associated with TCDD, herbicides, or both
- Non-Hodgkins lymphoma. The available data suggest that the phenoxy herbicides, including 2,4-D, rather than TCDD may be associated with N-HL.
- Hodgkins disease. The most compelling data are from exposure to chlorophenols and phenoxy acids.
- Chloroacne. This condition appears to result from the dioxin contaminant TCDD.

Health Outcomes with Limited/Suggestive Evidence of an Association

- Respiratory cancers, prostate cancer, multiple myeloma, Spina bifida in children of veterans, transient peripheral neuropathy, and Porphyra cutanea tarda (a skin disease). For the cancers, the evidence is considered limited because the affected individuals had, by virtue of their occupations, been exposed to a variety of carcinogenic compounds in addition to phenoxy-herbicides and TCDD.

Health Outcomes with Limited/Suggestive Evidence of <u>No</u> Association

- Colon, rectal, stomach, and pancreatic cancers, brain tumors.

Health Outcomes with Inadequate/insufficient Evidence of an Association

- Skin, hepatobiliary, bone, nasopharyngeal, breast, cervical, uterine, ovarian, urinary bladder, renal, and testicular cancers and leukemia. Additional health outcomes listed in 1998 Update:

birth defects, spontaneous abortion, infant death and stillbirth, low birth weight, abnormal sperm parameters, motor dysfunction, chronic peripheral nervous system disorders, diabetes, ulcers, immune system disorders, circulatory disorders, respiratory disorders.

Conclusions on prostate cancer. The 1998 Update highlighted 42 of the epidemiological studies in which prostate cancer was considered. A slight increase in prostate cancer was noted in four large studies of industrial workers in the U.S., Germany, and the Netherlands and a study of environmental exposure following an industrial explosion in Sevesco, Italy. Study of forestry workers by USDA, farmers in Iowa, and farmers in Canada showed slightly elevated risk among herbicide users, with some increase in risk associated with age, acres sprayed, specific use of phenoxy herbicides identified, and whether or not the farmer had assisting personnel. The VAO reports concluded that these results provided "limited or suggestive evidence" of an association of herbicide use with prostate cancer, because those affected were exposed to a variety of potentially carcinogenic agents that could not be ruled out.

Conclusions on leukemia. The VAO 1998 Update highlighted 28 epidemiological studies that addressed leukemia as a health outcome from herbicide/TCDD exposure. In seven studies, there were slight increases in relative risk for leukemia (relative risk ≥ 1.8). Given the small number of leukemia cases observed, low relative risk, and presence of confounding exposures, the report concluded that there was "inadequate or insufficient evidence" for associating exposure with leukemia. Furthermore the report stated that there was no demonstrated dose-response for any subtype of leukemia and that the studies could not differentiate between exposure to herbicides versus TCDD.

3

Attachment

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240
http://www.blm.gov

May 21, 2001

In Reply Refer To:
9015 (220) P

EMS TRANSMISSION 05/22/2001
Instruction Memorandum No. 2001- 149
Expires: 09/30/2002

To: AFOs, SDs, Center Directors (except Training Center) and OF&A

From: Assistant Director, Renewable Resources & Planning

Subject: Pesticide Review - Document Collection DD: 06/05/2001

Program Area: Resource Projects, Land Treatments, Forest Pests, Insect and Rodent Control, Rangeland Improvements, Fuels Treatments, and Recreation Facilities in multiple sub-activities.

Purpose: An investigation into BLM's use of pesticides, including herbicides, fungicides, and rodenticides during the late 1960's through the early 1970's is being conducted by the Office of Special Counsel (OSC). The OSC has requested that by June 30, 2001, BLM provide an analysis of its use of pesticides during that time period. The BLM will be required to research and provide all copies of the documentation as part of this report.

Policy/Action: The BLM will be looking at all pesticide use from January 1, 1965 through December 31, 1975. Field and State Offices should review range improvement files, Job Description Records (JDR's), allotment files, grazing case files, watershed project files, fuels treatment projects, recreation facilities, forest pest control, planning documents, and other possible project files that were completed during that time period. Copies of the information that we are seeking include, the types of projects in which pesticides were used, a description of the project, the type of pesticide(s) that was used (name of pesticide, copy of pesticide labels, tank mixtures, etc.), how the pesticide(s) was used (BLM application or contract application), and field, district and/or State policies and procedures for pesticide use in place during the 10-year period. In addition, we are seeking copies of purchasing information on pesticides and service contracts with aircraft companies that applied pesticide treatments. This would include any contracts that were not sent to the National Archives.

Each field office will be required to validate their field office's findings. This would include a cover memorandum to the State office describing the process the field office used to search their files, their findings or lack thereof, and any other pertinent information to show that BLM has made a good faith effort in our search for all the information that has been requested (Attachment 1). We are then requesting that the State Director further validate the State's findings with a similar memo (Attachment 2). These memoranda will transmit all documentation gathered in response to this Instruction Memorandum.

Timeframe: The search for these records should be considered a high priority. Copies of the documentation should be submitted to the WO 220 by COB June 5, 2001.

Budget Impact: The short time frame will result in an additional workload to employees' schedules during the period of the records search. Some overtime or compensatory time may need to be authorized by the appropriate supervisor.

Background: Pesticides were commonly used for a number of range improvement treatments such as sagebrush eradication during that time frame. Pesticides may have also been used for other projects during that time period (e.g., fire fuels treatments, watershed projects, wildlife projects, weed treatments, grasshopper control, Mormon cricket control, forest pest control, ROW use, etc.). The OSC requested that the BLM provide an analysis of its use of pesticides (herbicides, insecticides, fungicides, and rodenticides) during the late 1960's through the early 1970's. The analysis will include reviewing all the documentation collected from each BLM office and then submitting a final report of the BLM's findings to OSC by COB June 30, 2001.

Manual/Handbook Sections Affected: None

Coordination: Meeting with the Office of the Solicitor, OSC, BLM Acting Director, and the BLM Specialists on May 11, 2001. Coordination of records searches with National Weeds Team on May 15, 2001.

If you have any questions concerning the search for records, please contact Gina Ramos, Senior Weeds Specialist at 202-452-5084.

Signed by:
Elena C. Daly
Acting Assistant Director

Authenticated by:
Barbara J. Brown
Policy & Records Group, WO-560

2 Attachments
1 - Example Field Office Memo (1 p)
2 - Example State Director Memo (1 p)

EXAMPLE

To: State Director

From: Field Office Manager

Subject: Pesticide Records Search Findings

As directed by IM 2001- , the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

(insert procedure Field Office undertook to research files, types of records reviewed, etc.)

The following types of records were researched: (If no records exist, please state why)

The following amount of time was dedicated to this search:

Attached are the pages of copies of the requested information.

Field Office Manager

Date

To: Director

From: State Director

Subject: Pesticide Records Search Findings

As directed by IM 2001- , a good faith search of documents within the possession or control of this State's field offices was completed.

The following amount of time was dedicated to this search:

Attached are the pages of copies of the requested information.

State Director

Date

Attachment 2

4

Attachment

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
ALASKA STATE OFFICE
222 W. 7th Avenue, #13
ANCHORAGE, ALASKA 99513-7599

9015 (931)

JUN 7 2001

To: Director, WO-220

From: State Director, Alaska

Subject: Pesticide Records Search Findings

As directed by Instruction Memorandum No. 2001-149, a good faith search of documents within the possession or control of the State's field offices was completed.

There were 60 man hours dedicated to this search. Historically, no pesticide or herbicide land applications have been documented or have occurred through planning documents within Alaska. No watershed projects, fuels treatments projects, forest pest control projects, or rangeland improvement projects would have occurred during the 1965 to 1975 time period. Few, if any records remain from that period. No Job Description Records (JDR's), allotment files, grazing case files, recreation facilities, planning documents, or other possible project files from that time period were found. The following types of records were researched: Facilities maintenance records; Engineering records , hazardous materials program records, range allotment ALIS files.

Findings from the Northern Field Office include:

1. Evidence of limited (4 55-gallon drums) above-ground post treatments with the chemical pentachlorophenol at the Tanacross Administrative site, circa 1975, was found during a site investigation in 1993. No documentation from the time of use exists.

2. Employees also remember use of pentachlorophenol on the historic buildings at the Ft. Egbert National Historic Landmark site in the early to late 1970's. Quantities and time frames of use are unknown. No documentation exists.

3. Another employee reported working as a contractor for BLM in the early 1970's applying pentachlorophenol to the board-walked sections of the Pinnell Mountain Trail. Quantities and time frames of use are unknown. No documentation from the time of use exists.

4. The range conservation program in the time period 1965 to 1975 included reindeer and buffalo. Neither program used pesticides in Alaska. By 1977, the buffalo range program was relinquished to the State of Alaska as the lands encompassing the range areas were conveyed to the state.

The following procedures were undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

All 35 Northern Alaska Field Office program leads and employees with more than 15 years work experience in Northern Alaska were contacted via e-mail and requested to conduct a records search and to recall by memory any possible pesticide, fungicide, or rodenticide chemical use. Eight program leaders employed at the Glennallen Field Office were asked to research records and report findings regarding the use of pesticides. Their research did not uncover written documents to support or indicate the use of pesticides by the BLM at this Field Office or lands we manage during the times specified in IM 2001-149. Engineering staff, Maintenance and Hazmat staff were consulted at Campbell Tract and the review was conducted by the environmental program manager at Anchorage Field Office.

If you have any further questions, please contact Mr. Wayne Svejnoha at (907) 271-3807.

Sincerely,

Francis R. Cherry, Jr.
for Director

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
ARIZONA STATE OFFICE

In Reply Refer To:
9015 (932)

Memorandum

To: Director (220), Room 314 LS

From: State Director

Subject: Pesticide Review - Document Collection

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of the Arizona Strip Field Office was completed.

A JDR report for vegetation treatment or chemical use from 01-01-1965 to 12-31-1975 was run and all projects that showed up were checked to see if they fit the requested information requirements. Copies were made of those materials that fit the criteria. A 1970 version of the JDR discussed approximately eight chemical types or mixtures. An attempt to find the 1265 JDR manual was unsuccessful so we were unable to determine what the percentages of chemicals in the mixtures were.

Phone calls were made to Denver to try to locate the manual and to also get a RIP's printout for the State of Arizona for chemical use during the above time frame. This list was then checked against the data already found and where new projects were located they were added to the information base.

A search of historical records sent to Denver were reviewed and any projects which could possibly fit the criteria were noted and requested. We found that because of the time which had elapsed, the records had been destroyed as well as were the contracts which covered the same time frame (i.e., contracts are only kept for a maximum of six years and three months). Rights of Way granted to the BLM were also checked to see if any may have had chemical use associated with them during the subject time frame.

The following types of records were researched: JDR's, RIP's, projects folders and Rights of Way and those that fit the requested criteria were copied and are attached.

The following amount of time was dedicated to this search: 30 hours.

Attached are the 32 pages of copies of the requested information.

Denise P. Meridith

Attachment

cc: AZ010 (LD Walker)

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
ARIZONA STATE OFFICE

In Reply Refer To:
9015 (932)

Memorandum

To: Director (220), Room 314 LS

From: State Director

Subject: Pesticide Review - Document Collection

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of the Phoenix Field Office was completed.

A couple of queries were completed for all range improvement projects completed between 1965 and 1975, using Table Talk in the Rangeland Improvement Project System (RIPS). The first query sorted all range improvements by chemical type (RIPS code ID_CHEM_TYPE). No pesticides were reported in RIPS during this time period. The second query sorted all range improvements by improvement code (RIPS code IY_IM_CODE). Consultation occurred with wildlife, recreation, lands/realty, and fire personnel to determine if there were any project files outside of the range program. No other files were reported.

The following types of records were researched:

A total of 185 range improvement projects, completed between 1965-1975, were entered into RIPS. Of these projects, 101 were water developments (RIPS code WD), 59 were fences (RIPS code FE), 23 were miscellaneous facilities (RIPS code MF), and 2 were vegetation manipulations (RIPS code VM). Each of the 23 miscellaneous facilities and two vegetation manipulations files were examined to determine if pesticides were used on the project. No pesticide use was reported. None of these projects appear to be appropriate for pesticide use. The majority of miscellaneous facility projects were cattle guards. There were two miscellaneous facility project files that were not found. The two vegetation manipulations were re-seeding projects. The first was a seeding between spreader dikes to control erosion and provide livestock forage. The second project was contour furrowing and re-seeding to control erosion.

The following amount of time was dedicated to this search: 6 hours

Lorna M. Neal

Denise P. Meridith

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
ARIZONA STATE OFFICE

In Reply Refer To:
9015 (932)

Memorandum

To: Director (220), Room 314 LS

From: State Director

Subject: Pesticide Review - Document Collection

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of the Safford Field Office was completed.

A physical search of central files, NEPA files and project files was completed by Bill Brandau. Two records were found, copies attached of all data in these two records.

The following types of records were researched:

Project files were reviewed, project files 51328 and 51329, copies attached.

The following amount of time was dedicated to this search:

Approximately six hours of time.

Denise P. Meridith

Attachments:
1 - Project File 051328 (5 pp.)
2 - Project File 051329 (5 pp.)

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
ARIZONA STATE OFFICE

In Reply Refer To:
9015 (932)

Memorandum

To: Director (220), Room 314 LS

From: State Director

Subject: Pesticide Review - Document Collection

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of the Yuma Field Office was completed.

All project records for the period of January 1, 1965 through December 31, 1975, were reviewed by the Field Office Rangeland Management Specialist to determine if any of the projects initiated during this time frame proposed the use of pesticides.

All range improvement project files, rights-of-way grants, recreation project files, and the Yuma District Resource Management Plan were searched. The Yuma Field Office was not officially recognized as a BLM District until August 31, 1972; therefore, there were few project files available for review prior to that date.

The Rangeland Management Specialist spent three hours researching all available files for the applicable period of time.

There were no projects found where pesticide use was proposed or documented as being used on public lands during the period of January 1, 1965, through December 31, 1975.

Lana M. Meal

Denise P. Meridith

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Kingman Field Office
2475 Beverly Avenue
Kingman, Arizona 86401

In Reply Refer To: 9220 (030)

May 31, 2001

Memorandum

To: State Director (AZ932)

From: Acting Field Manager, Kingman

Subject: Pesticide Records Search Findings

As directed by IM-2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

Field Office range, fire, biology, recreation, and planning staff members searched their files, the field office library, and range project and allotment files. We also contacted a retired range management specialist who worked in this office during the early 1970's, and the Mohave County Cooperative Extension Office.

The following types of records were researched:

Range Improvement Project System (RIPS)
Job Documentation Record (JDR) files
National Environmental Policy Act (NEPA) log and files
Recreation project files
Kingman Field Office library
Staff specialist files

Approximately six hours were dedicated to this search.

No record of projects that occurred between January 1, 1965 and December 31, 1975 were located.

Brad Blomquist

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
SURPRISE RESOURCE AREA
P.O. Box 460
Cedarville, California 96104
Surprise FO CA Email@ca.blm.gov

In Reply Refer To:
9015 (CA-370) P

MEMORANDUM June 5, 2001

To: Mike Pool, California State Director

From: Susie Stokke, Surprise Field Office Manager

Subject: Pesticide Records Search Findings

As directed by IM 2001- 149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

Alan Uchida, Surprise Noxious Weed Coordinator/Watershed Specialist conducted the search for the office. The RIPS data base was used to search for existing projects with improvement codes VM, LT, WC, TI and HR, that search resulted in 43 projects. The search was then narrowed down to projects completed in FY 1964 - 1976 using the same improvement codes, which resulted in 11 projects found. Each of the 11 records were reviewed for any pesticide use from January 1, 1965 through December 31, 1975. Of the 11 projects, 4 were found to contain pesticide use and copies of the project files pertaining to pesticide use were made. After the initial search of the above project files all **project files, closed case files, active case files and allotment files** were checked for pesticide use during the above time period, no additional data on pesticide use was found. Prior to 1965, 4 pesticide projects were completed and 5 pesticide projects were completed after 1975 copies were not made since they were not in the specified time frame.

The following types of records were researched:

1. **All project files.**
2. **All closed case files.**
3. **All active case files.**
4. **All allotment files.**

The following amount of time was dedicated to this search: **One person 40 hours.**

Attached are the **280** pages of copies of the requested information.

Massacre Brush Spray, Project #12078, June 1968, 120 pages copied.
Larkspur Brush Spray, Project #121107, May 1970, 57 pages copied.
Antelope Brush Spray, Project #120029, May 1971, 93 pages copied.
Wall Canyon Seeding Spray Project #120575, June 1971, 10 pages copied.

If you have any questions, please feel free to contact Alan M. Uchida of my staff at (530) 279-6101.

Field Office Manager: Penne Carmosino acting

Date: 6-5-01

Attachment

cc:

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Palm Springs-South Coast Field Office
690 West Garnet Avenue
P.O. Box 581260
North Palm Springs, CA 92258-1260

Visit us on the Internet at
www.ca.blm.gov/palmsprings

IN REPLY REFER TO:
6711
CA660.32

JUN 07 2001

Memorandum

To: State Director

From: Palm Springs - South Coast Field Office

Subject: Pesticide Records Search Findings

As directed by WO IM 2001-149, the following actions were taken. Response to this request and a good faith search of documents within the possession or control of this field office was completed:

1) All pesticide records were reviewed.
2) The Wilderness and Range Specialist was interviewed to determine if pesticide use records were available for that time period.
3) Several employees who have worked here for the past several years were asked if they had any knowledge of pesticide records covering that time period.

The amount of time was dedicated to this search - - 3 hours involving three employees was dedicated to this research.

No documentation or applications of any pesticides from January 1, 1965 to December 3, 1975 were found.

John R Kenna

James G. Kenna
Field Office Manager

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Ridgecrest Field Office
300 South Richmond Road
Ridgecrest, CA 93555-4436

In reply Refer To:
9015
(CA650.31)P

To: State Director, California

From: Field Office Manager, Ridgecrest

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

The Ridgecrest F.O. staff reviewed planning documents, JDR (RIPS) , project files and grazing case files and questioned staff.

No records were found to indicate any pesticides were used here during the 1965 to 1975 time period as requested. The area managed by the office didn't lend itself to the types of projects that were being done with pesticides at that time either. (i.e. type conversions, brush control, spray releases, or weed treatments.)

One day was dedicated to this search:

MEMO

BUREAU OF LAND MANAGEMENT
REDDING FIELD OFFICE
355 HEMSTED DRIVE
REDDING, CA 96002-0910
(530)224-2100

MAY 31 2001

TO: State Director
FROM: Redding Field Office Manager
SUBJECT: Pesticide Records Search Findings

As directed by IM 2001-149 , the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

The old Job Documentation Reports (JDR) and the Resource Improvement Projects System (RIPS) reports were searched and any dealing with seeding or planting were scrutinized closely.

The Grazing Lease case files and Allotment Management Plans were searched, especially those with large acres and those in the "I" & "M" categories.

Four employees who have worked within this Field Office area for 23 to 24 years and have worked in various resources (forestry, range, botany, maintenance and engineering) were interviewed. Also our Wildlife Biologist was questioned about this matter.

Forestry files, including sales and timber stand improvement, were checked.

Environmental Assessments and Environmental Impact Reports were checked. All reports before 1990 had been purged from this office several years ago.

The following amount of time was dedicated to this search:

A total of 6 hrs was dedicated to the above searches and inquires.

Results:

The only indication of pesticide use during the periods so requested is one verbal account. It deals with the use of strychnine blocks for the control of porcupines in young conifer plantations in Siskiyou County. The person giving this information wasn't sure if BLM actually placed these blocks or if it was through a Government Trapper who operated in this area. It was also stated that these blocked were stored at this office for a period of time.

documentation on the above or any other project, was found to indicate other pesticide use occurred during ese periods.

Redding Field Office Manager

5/30/01
Date

05/22/01 16:05 FAX 7602564861 ☑01

7/22/75	101/200	4 plts 7212	[illegible]
7/28/76		no plants	Stirling Paradise
7/77		" "	Progress & State
78	101/1	60 7212	Jud & Crew
78	101/1	no live plants	Jud
6/79	"	0	Dee Clark [illegible] [illegible] [illegible]
Oct 2 79	"	0	Jud [illegible]
Oct 7, 80	"	0	Jud Dee
27/8/81		0	Dilon Dee & Jud –
		ERADICATED 81	no find –
Checked 83		0	[illegible] & Jud
84		0	[illegible] & Jud

ATTn
Anthony Chevez

From
Pete Lounsbury

NOXIOUS WEED TREATMENT RECORD:

WEED Camelthbrne COUNTY I.D. NO. ND-CT-1

LOCATION Afton Canyon

N

Tract Section Township Range B & M Occurrence

PROPERTY OWNER U.S Bureau of Land Management

OWNER'S ADDRESS Southern Pacific Land Co. ~~Union Pacific Railroad~~

DATE FOUND

RECOMMENDED TREATMENT Tordon

DATE	(1.) ACREAGE NET/GROSS	(2.) NO. OF PLANTS	HERBICIDE	METHOD OF APPLICATION	DOSAGE: LBS/100, ETC.	TOTAL MIXTURE USED	MAN HOURS DISTRICT Insp.	DISTRICT Treat.	OTHER HELP Insp.	OTHER HELP Treat.	EQUIPT HOURS	REMARKS: Weather, Soil type, Operator, Etc.
1966	0.01/200	396	tordon	spray	1 gal	33 gal		20		10		
1967	0.01/200	400	tordon	spray	1 gal	45 gal		79		47		
1968	0.08/200	271	tordon	spray	1 gal	13 gal		80		51		
8/69	—	2	"	PAINTED	1 gal	1 gal		5				100 mile
7/70		50	"	HAND		5 gal	9					
1-71	.01/200	13	22K	"		1 GAL						
2-72	.01-/200	6	T-22K	HAND	1 oz	1/2				20		Kreps - Davis Reeves - Schneider
2-72	.01/200	0		none	None							
7/73		0										Kreps Tod Davis Don
7/73		0		"	"							Kreps Schneider Davis Tod, Ed
7-74	.01/200	0		"	"							Jack Hawley Last Date

(1.) One (1) road mile equals one (1) acre. Record a net area of less than 435 square feet as .01-.
(2.) List number of plants when net area is recorded as .01-.

05/22/01 16:05 FAX 7602564861

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
El Centro Field Office
1661 S. Fourth Street
El Centro, CA 92243

IN REPLY REFER TO:
~~9015~~
(CA.670.29)

MEMORANDUM

To: California State Director

From: El Centro Field Office Manager

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

The following types of records were researched: rangeland improvement files, land treatments, and fuels treatments.

The El Centro Field Office came into being in the mid-1970s; management of the resource area was out of the District Office in Riverside prior to that time. Records dating between January 1, 1965 and December 31, 1975 may exist but are not stored in this location.

The following amount of time was dedicated to this search: one hour.

Greg Thomsen (acting)
Greg Thomsen, Field Office Manager

6-4-01
Date

June 5, 2001 CA-330
4000

To: State Director, California

From: Arcata Field Office Manager

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

1) Interviewed all employees with any corporate knowledge dating back to the time period of 1965-1975.
2) Searched contract files, permanent retention central files and old "study" files for pesticide treatment documents or references.
3) Coordinated with adjacent Field Office which at one time was part of the District Office (1964 to 1996) for files or documents that pertained to the Arcata Field Office.

The following types of records were researched:

1) Grazing Allotment files, Job Documentation Reports (JDR), Range Improvement Project (RIPS) Data Base, Timber Sale, Forest Development Contract Files, Rehabilitation/Range Improvement Files.

The following amount of time was dedicated to this search: Approximately 2 hours of research time. The only document found pertaining to pesticide treatment within the specified time period was a fire rehabilitation seeding/spraying project done in 1967 in the Horse Pasture Ridge Area in the central part of the resource area. and was found in the Ukiah Field Office records. All forestry related pesticide use documentation found covered the period from 1977 to 1982.

Attached are10 pages of the requested information that was sent to WO.

Lynda J. Roush
Lynda Roush
Arcata Field Office Manager

Attachment 1

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Bakersfield Field Office
3801 Pegasus Drive
Bakersfield, California 93308-6837
www.ca.blm.gov/bakersfield

To: State Director 9010(P)

From: Acting Field Office Manager June 5, 2001

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

> Staff reviewed the RIPS database for any range and wildlife projects that involved vegetation treatments between January 1, 1965 and December 31, 1975. The individual project files were then reviewed to determine if herbicides were used. During this time period there were three projects that involved the use of 2, 4-D and 2, 4, 5-T. In addition staff searched our office's central files. There were no files dating back further than the mid- 1980s.
>
> Information contained in the project files is very limited. For the Breckenridge Allotment Boundary Fence the only reference to herbicide use is on a Purchase Order. The Project Completion Report for the Kennedy Meadows Deer Range Improvement states that two acres of encroaching pinon pine were inoculated with full strength 2,4-D. Information for the Brush Conversion and Manipulation project at North Fork Kaweah (also known as Progress Gulch) is more complete with a Plan For Habitat Improvement which states that herbicides will be used. Also included were two reports on Planned Chemical Pest Control for the years 1966 and 1968, a Habitat Improvement Evaluation Record, and a Project Inspection Report.

The following amount of time was dedicated to this search: 8 hours.

Attached are copies of the above referenced documents which is a total of eleven (11) pages.

Stephen Larson

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
California State Office
2800 Cottage Way, Suite W1834
Sacramento, California 95825
www.ca.blm.gov

In Reply Refer To:
4000(P)
CA930

JUN 0 8 2001

Memorandum

To: Nina Hatfield, Acting Director (WO-100)

From: State Director

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, a good faith search of documents within the possession or control of this State's field offices was completed.

The following amount of time was dedicated to this search: 163 hours

Attached are the 704 pages of copies of the requested information.

Field Office	Time	Pages
Alturas	4 hours	2
Arcata	2 hours	10
Bakersfield	8 hours	11
Barstow	2 hours	2
Bishop	6 hours	83** as per discussion with FO
Eagle Lake	22 hours	116
El Centro	1 hour	0
Folsom	15 hours	132
Hollister	32 hours	0
Needles	6 hours	0
Palm Springs	3 hours	0

Field Office	Time	Pages
Redding	6 hours	0
Ridgecrest	8 hours	0
Surprise	40 hours	280
Ukaih	8 hours	68
Totals	**163 hours**	**704**

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Alturas Field Office
708 West 12th Street
Alturas, California 96101-3102

In reply refer to:
9015 (CA-320)

May 30, 2001

To: Deputy State Director (CA-930)

From: Field Manager, Alturas

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

Range Management Specialists completed a search of allotment files where chemical treatment projects were known to have occurred. In addition, project files were reviewed and the RIPS was accessed.

This review produced information on only one pesticide use project undertaken in the Alturas Field Office during the time period in question. This was the D.C. Gridley Brush Spray completed in 1967.

The following amount of time was dedicated to this search: 4 hours

Attached are the 2 pages of copies of the requested information.

Timothy J Burke
Field Office Manager

Date: 5/30/01

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Folsom Field Office
63 Natoma Street
Folsom, California 95630
www.ca.blm.gov/folsom

Memorandum:

To: California State Director

JUN - 4 2001

From: Folsom Field Office Manager

Subject: Pesticide Records Search Findings, IM2001-49

As directed by IM 2110-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

The environmental specialist reviewed older planning documents, Environmental Analysis records and files.

The wildlife biologist ran a RIPs report on the computer from FY 1964 through FY 1976. The Job Description Record files for these projects were reviewed to determine use of herbicides and pesticides. Copies of the pertinent information were made.

The forester reviewed available data concerning forest pest management actions.

The R.O.W. specialist was consulted and determined that the information on pesticide and herbicide use is not available.

The following types of records were researched:

older planning documents, Environmental Analysis records and files, forest pest management records, and Job Description Records.

The following amount of time was dedicated to this search:

Approximately 15 hours.

Attached are the 132 pages of copies of the requested information. In summary, there was information on six range improvement seeding projects, six forestry plantation projects, and one project where the information was insufficient to determine its purpose. Many of the projects used 2, 4-D. Atrazine and other herbicides were also used.

Field Office Manager Timothy Carroll Acting FM Date 6/4/01

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
EAGLE LAKE FIELD OFFICE

June 4, 2001

In Reply Refer to:
9015 (220) P

Memorandum

To: State Director

From: Linda Hansen
Field Manager

Subject: Pesticide Records Search Findings

As directed by IM 2001-149 , the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed: Files located at this location including Range, Forestry, Noxious Weeds, Contracting and Fire were searched for any documents stating pesticide applications for the years 1965 thru 1975.

Designated personnel from each discipline did a physical search or stated that these files no longer remain at this site.

The following types of records were researched and records that included mention of any pesticides are:

RIPS	2 records - included
Contract/Purchase Order Agreements	No records for 1965-1975
Forest Management Atlas	No pesticide use records for 1965-1975
Forest Rehabilitation Record Cards	2 records - included
Regeneration Stocking Survey	1 record - included
Memorandum	1 record - included
Fire	No pesticide use
Noxious weeds	No records for 1965-1975

The following amount of time was dedicated to this search:

Range	4 hours
Forestry	8 hours
Fire	1 hour
Contracting	1 hour
Noxious weeds	8 hours

The following list of retired BLM employees may help in further research:

Arnold Bullock	Oroville, CA
George Farris	Susanville, CA
Fred Alway	Susanville, CA
Ed Katlas	Ukiah, CA
Bob Moody	Shingle Springs, CA

Attached are the pages of copies of the requested information. If you have any questions please contact Carolyn Gibbs at (530) 252-5325.

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Bishop Field Office
785 North Main Street, Suite E
Bishop, California 93514-2471
Phone (760)872-4881 Fax (760)872-2894
http://www.ca.blm.gov/bishop/

6711
CA170.0

MAY 3 1 2001

To: State Director (CA-930)

From: Bishop Field Manager

Subject: Pesticides Records Search Findings

As directed by WO IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this office was completed:

The procedure involved searching the list of project names and numbers, listed in the Rangeland Improvement Projects System (RIPS) database, for key words (ie. brush control, spray, seeding, etc.) within the project name. The appropriate project files were then removed from the filing cabinets, thoroughly scrutinized for the types of information requested in the IM, and subsequently photocopied as a separate batch for each project.

The following types of records were researched: range improvement project files and wildlife improvement project files. A total of 7 project files were determined to be within the time frame specified in the request (1/1/65 through12/31/75).

The following amount of time was dedicated to this search: 6 hours

Attached are ~~103~~ 83* pages of copies of the requested information.

* See attached

Steve Addington
Bishop Field Manager

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Ukiah Field Office
2550 North State Street
Ukiah, California 95482

In Reply Refer To:
9015 (P)
(CA-340)

JUN - 5 2001

To: State Director CA-930.8
From: Field Office Manager, Ukiah
Subject: Pesticide Records Search Findings

As directed by IM 2001- 149 , the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

1) Two former employees (Dan Averill and Lowell Stone) were contacted about the subject.

2) All JDR's (Job Documentation Reports) were analyzed for pesticide use for the specified period.

The following types of records were researched: (If no records exist, please state why)

All JDR's (Job Documentation Reports) were analyzed for pesticide use for the specified period. See attached table. Abandoned JDR's which no longer are in the RIP's data base were also analyzed.

The following amount of time was dedicated to this search:

Eight hours applied to the search and coping.

Attached are the pages of copies of the requested information.

for Rich Burns
Ukiah Field Office Manager

Ukiah Field Office (CA340): JDR/RIP's Pesticide Table (2 Pages)

JDR/RIP #	Type Project & Name	FY	BLM or Contract	Pesticide	Ac.	Pur-chase Info	Air Craft Co.
140047	Scott Cr. Reseed	67	BLM & Cont.	2,4-D	200	None	Raye Helo.
140072	Crack Can Fire Rehab	65	Cont.	**2,4-D 2,4,5-T**	160	None	Ever-green Helo
140089	Jericho Emerg. Rehab.	66	Cont.	2,4-D	100	None	Cali-copter
140092	Highland Sp Wildfire Rehab	66	Cont.	2,4-D	330	None	Cali-copter
140093	Buck Mtn. Fire Rehab	66	Cont.	2,4-D	200	None	Cali-copter
140094	Morrison Rdge Fire Rehab	66	Cont.	2,4-D	225	None	Cali-copter
140102	Hopland Grade Rehab.	68	BLM & Cont.	2,4-D	375	None	Raye Helo
140105	39th St Seeding	68	BLM & Cont.	**2,4-D 2,4,5-T**	780	None	Raye Helo.
14107	Jericho Fire	66	BLM & Cont.	2,4-D	1300	Chipman Chem Co.	Condor Helo
140111	Little Blue Ridge Fire	67	BLM & Cont.	2,4-D	600	Chipman Chem Co.	Western Helo
140115	Sulphur Disk	68	Cont.	2,4-D	100	None	UNK
140116	Sheldon Reseeding	68	BLM & Cont	2,4-D	100	None	Raye Helo
140151 See File 144056	Benmore fire Rehab	68	BLM & Cont	2,4-D	80	Chipman Chem Co.	Raye Helo
143513	Pacific Ridge Reseed	68	BLM & Cont	2,4-D	230	None	Pacific Helo
143519	8-mile reseed	69	BLM & Cont	2,4-D?	150	None	Western Helo
143524	Walker Ridge fire Rehab	69	BLM & Cont	2,4-D	40	None	Western Helo
143525	Portuguese Fire Rehab	68	BLM & Cont	**2,4-D 2,4,5-T**	200	None	Ever-green Helo

20 projects
- 3. wy 2:1 mix
1 unspec. mix. of D+TP
16 [illegible]

144017	No. Scotts Creek Seed	71	BLM & CDFG	UNK	130	None	UNK
144018	No. fork Mill Cr. Seed	71	BLM & CDF	2,4-D	25	None	UNK
144031	8-Mi Emerg. Rehab	71	BLM & Cont.	2,4-D	35	None	UNK
144056 See File 140151	Paradise Seeding	73	BLM	~~2,4-D~~ ~~2,4,5-T~~	350	None	UNK

Should be
2,4,5-TP (Silvex)

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
SURPRISE RESOURCE AREA
P.O. Box 460
Cedarville, California 96104
Surprise FO CA Email@ca.blm.gov

In Reply Refer To:
9015 (CA-370) P

MEMORANDUM June 5, 2001

To: Mike Pool, California State Director

From: Susie Stokke, Surprise Field Office Manager

Subject: Pesticide Records Search Findings

As directed by IM 2001- 149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

Alan Uchida, Surprise Noxious Weed Coordinator/Watershed Specialist conducted the search for the office. The RIPS data base was used to search for existing projects with improvement codes VM, LT, WC, TI and HR, that search resulted in 43 projects. The search was then narrowed down to projects completed in FY 1964 - 1976 using the same improvement codes, which resulted in 11 projects found. Each of the 11 records were reviewed for any pesticide use from January 1, 1965 through December 31, 1975. Of the 11 projects, 4 were found to contain pesticide use and copies of the project files pertaining to pesticide use were made. After the initial search of the above project files all **project files, closed case files, active case files and allotment files** were checked for pesticide use during the above time period, no additional data on pesticide use was found. Prior to 1965, 4 pesticide projects were completed and 5 pesticide projects were completed after 1975 copies were not made since they were not in the specified time frame.

The following types of records were researched:

1. **All project files.**
2. **All closed case files.**
3. **All active case files.**
4. **All allotment files.**

The following amount of time was dedicated to this search: **One person 40 hours.**

Attached are the **280** pages of copies of the requested information.

Massacre Brush Spray, Project #12078, June 1968, 120 pages copied.
Larkspur Brush Spray, Project #121107, May 1970, 57 pages copied.
Antelope Brush Spray, Project #120029, May 1971, 93 pages copied.
Wall Canyon Seeding Spray Project #120575, June 1971, 10 pages copied.

If you have any questions, please feel free to contact Alan M. Uchida of my staff at (530) 279-6101.

Field Office Manager: Penne Carmocino acting

Date: 6-5-01

Attachment

cc:

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Ridgecrest Field Office
300 South Richmond Road
Ridgecrest, CA 93555-4436

In reply Refer To:
9015
(CA650.31)P

To: State Director, California

From: Field Office Manager, Ridgecrest

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

The Ridgecrest F.O. staff reviewed planning documents, JDR (RIPS) , project files and grazing case files and questioned staff.

No records were found to indicate any pesticides were used here during the 1965 to 1975 time period as requested. The area managed by the office didn't lend itself to the types of projects that were being done with pesticides at that time either. (i.e. type conversions, brush control, spray releases, or weed treatments.)

One day was dedicated to this search:

MEMO

BUREAU OF LAND MANAGEMENT
REDDING FIELD OFFICE
355 HEMSTED DRIVE
REDDING, CA 96002-0910
(530)224-2100

MAY 31 2001

TO: State Director
FROM: Redding Field Office Manager
SUBJECT: Pesticide Records Search Findings

As directed by IM 2001-149 , the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

The old Job Documentation Reports (JDR) and the Resource Improvement Projects System (RIPS) reports were searched and any dealing with seeding or planting were scrutinized closely.

The Grazing Lease case files and Allotment Management Plans were searched, especially those with large acres and those in the "I" & "M" categories.

Four employees who have worked within this Field Office area for 23 to 24 years and have worked in various resources (forestry, range, botany, maintenance and engineering) were interviewed. Also our Wildlife Biologist was questioned about this matter.

Forestry files, including sales and timber stand improvement, were checked.

Environmental Assessments and Environmental Impact Reports were checked. All reports before 1990 had been purged from this office several years ago.

The following amount of time was dedicated to this search:

A total of 6 hrs was dedicated to the above searches and inquires.

Results:

The only indication of pesticide use during the periods so requested is one verbal account. It deals with the use of strychnine blocks for the control of porcupines in young conifer plantations in Siskiyou County. The person giving this information wasn't sure if BLM actually placed these blocks or if it was through a Government Trapper who operated in this area. It was also stated that these blocked were stored at this office for a period of time.

documentation on the above or any other project, was found to indicate other pesticide use occurred during se periods.

Redding Field Office Manager

5/30/01
Date

United States Department of the Interior
BUREAU OF LAND MANAGEMENT

BARSTOW FIELD OFFICE
2601 BARSTOW ROAD
BARSTOW, CA 92311
(760) 252-6000
www.ca.blm.gov/barstow

MAY 30 2001

To		Initial	Date
	SD		
	ASD		
	EA		
	ECO		
	LE		
	MIN		
	SS		
Return To			
Library			

IN REPLY REFER TO:
9015(P)
CA-680.36

MEMORANDUM

To: State Director, California

From: Gail O'Neill, Acting Field Manager

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

Weed control was performed along the Mojave River at Afton Canyon during the time frame cited in the IM. This was the largest and only application of pesticides on public lands administered by the Barstow Field Office to any ones recollection. A records search of all records and files associated with Afton Canyon was completed on May 22, 2001, which took approximately two hours. On that day staff made contact with San Bernardino Agriculture Commissioner's Office to inquire about any pesticide use information they may have concerning weed control at Afton Canyon, or any other applications made on public lands during that time frame. That office did have pesticide use information about applications at Afton Canyon which was forwarded to us. Attached are two pages of copies of the requested information.

If you have any further question regarding this matter, please contact Anthony Chavez of my staff at (760) 252-6036.

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Palm Springs-South Coast Field Office
690 West Garnet Avenue
P.O. Box 581260
North Palm Springs, CA 92258-1260

Visit us on the Internet at
www.ca.blm.gov/palmsprings

IN REPLY REFER TO:
6711
CA660.32

JUN 07 2001

Memorandum

To: State Director

From: Palm Springs - South Coast Field Office

Subject: Pesticide Records Search Findings

As directed by WO IM 2001-149, the following actions were taken. Response to this request and a good faith search of documents within the possession or control of this field office was completed:

1) All pesticide records were reviewed.
2) The Wilderness and Range Specialist was interviewed to determine if pesticide use records were available for that time period.
3) Several employees who have worked here for the past several years were asked if they had any knowledge of pesticide records covering that time period.

The amount of time was dedicated to this search - - 3 hours involving three employees was dedicated to this research.

No documentation or applications of any pesticides from January 1, 1965 to December 3, 1975 were found.

James G. Kenna
Field Office Manager

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
2850 YOUNGFIELD STREET
LAKEWOOD, COLORADO 80215

JUN 7 2001

In Reply Refer To
CO-932
1703

Memorandum

To: Director (200) 204 L Street

From: Deputy State Director, Colorado

Subject: Pesticide Records Search Findings

As directed by Washington Office IM 2001-149 a good faith search of documents within the possession or control of the Colorado Field Offices has been completed.

Ten reporting Colorado Field Offices (Little Snake, Craig, Grand Junction, Kremmling, Uncompahgre , San Juan, Royal Gorge, Glenwood Springs, La Jara, and Gunnison) dedicated approximately 114 hours to this search.

Attached are 157 pages of requested information from the ten Field Offices that responded to the Washington Office request. All reporting Field Offices met the established reporting criteria as specified in Washington Office IM 2001-149, and a good faith effort has been reported by each Field Office and verified by the State Office.

Any questions or concerns regarding this submittal should be addressed to Carlton Lance, Colorado State Office (CO-932) or you may call him at (303) 239-3715.

Attachments

Dolores Ranger Station
P.O. BOX 210
DOLORES, CO 81323
(970) 882-6800
FAX (970) 882-6841

USDI Bureau of Land Management
San Juan Field Office

USDA Forest Service
San Juan National Forest

To: State Director Ann Morgan

From: Mike Znerold
District Ranger/Field Office Manager CO-170

Subject: Pesticide Records Search Findings

As directed by IM 2001-149 , the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

An interdisciplinary approach was taken towards researching and obtaining the required information. Several specialists and administrators throughout the San Juan Field office were contacted. Based on the leads, or lack there of, provided by these professionals, a research effort was conducted by the San Juan Field Office Weed Coordinator, Natural Resource Specialist Mary Lendman. The following are the persons queried for the information as directed by IM2001-149.

1.	Kent Hoffman	Associate Field Office Manager
2.	Gary Thrash	Multi-Resource Staff Supervisor
3.	Andrew Stump	Range Tech
4.	Clyde Johnson	Realty Specialist
5.	Deesta Lewis	Administrative Services Clerk
6.	Mark Tucker	Forest Service Range Management Specialist

The following types of records were researched:

1. A search of the historical records recorded in the RIPS database for the state of Colorado covering the period from 1965- 1975.

2. A search of the Bureau of Land Management Allotment folders housed in the Dolores Field Office.

3. A search of oil and gas files prior to 1975 housed in the San Juan Field Office.

The following amount of time was dedicated to this search:

A. The amount of time spent searching the RIPS database is unknown.

B. Approximately four hours were spent searching the allotment folders housed in the Dolores Field Office.

C. Time spent on researching the oil and gas files were three people for one hour each.

D. Time dedicated to correspondence and queries pertaining to leads, locations of historical documents, and former employees amounted to approximately one week or forty hours.

Attached are the pages of copies of the requested information.

District Ranger/ Field Office Manager Mike Znerold

Mike Znerold

Date June 5, 2001 6/5/01

United States Department of the Interior

Bureau of Land Management
Uncompahgre Field Office
2505 South Townsend
Montrose, Colorado 81401
(970) 240-5300

DOI-BLM
CO STATE OFFICE
2001 MAY 31 AM 10: 03

In Reply
Refer to:
CO-150 (9011)

May 30, 2001

To: State Director (CO-932)

From: Uncompahgre Field Office Manager

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

This records search consisted of a manual search and examination of records in the Uncompahgre Field Office. Project files were examined to determine if any possible pesticide/herbicide treatments were completed by BLM during the period of interest Jan. 1, 1965 through Dec. 31, 1975.

The following types of records were searched:

UFO staff searched project files, JDR files, central files and ran a query of the Range Improvement Project System (RIPS) to identify any possible pesticide/herbicide treatments completed during the period in question. This records search was facilitated by an earlier examination of vegetation project files. In 1988, Bob Welch of our staff completed a detailed analysis of vegetation projects completed to that time. In this analysis Bob was most interested in determining project success and longevity from different methods of treatment. As a by product of this study, we have a project file index which indicates project name, type of treatment and acreage. This index expedited the current records search significantly and served as a double check against official project files.

As a result of this search, we found no record of any pesticides/herbicide treatment or project being completed on public land by BLM. There is no record of the use of chemicals either independently or in combination with another treatment method during the period of interest Jan. 1, 1965 through Dec. 31, 1975.

We did find records on 5 projects completed by BLM in 1951, 1961 and 1963 which are outside the date of this request and did involve the use of chemicals. If needed we can provide copies of the available information pertinent to these older projects.

The following amount of time was dedicated to the search required in IM 2001-149:
Belt 1 hour; Welch - 8 hours; Burch - 2 hours; Kauffman 4 hours. For a total of 15 hours. If you have questions or need additional information please contact, Dave Kauffman at 970-240-5340.

Allan J. Belt

Dave Kauffman

for - Field Office Manager

MEMORANDUM

To: State Director, Colorado

From: Field Manager, Gunnison

Subject: Pesticide Records Search Findings

As directed by IM 2001- , the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of the Gunnison Field Office was completed:

Existing, active Job Documentation Records (JDRs) for all of the Gunnison Field Office resource programs were reviewed to determine if and when any type of pesticide use projects were completed. This included searching our existing files as well as a search completed in RIPs. We then completed a search of all of our abandoned JDR files to see if there were any projects that could be included within this information request. In addition a search was also completed of our active and inactive permittee case files to see if there was any documentation of any pesticide use projects within them.

The following types of records were researched:

1. Active and abandoned JDR files for all resource programs.

2. Active and inactive permittee grazing case files.

3. Allotment files on those allotments that had pesticide use projects completed.

The following amount of time was dedicated to this search:16 hours.

Attached are copies of projects completed during the time frame requested and a short description as requested in the IM.

Gunnison Field Office Manager

Date 5/31/01

2001 JUN -7 AM 11:14
CO STATE OFFICE
DOI-BLM

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LITTLE SNAKE FIELD OFFICE
455 EMERSON STREET
CRAIG, COLORADO 81625-1129
http://www.co.blm.gov/lsra/lsraindex.htm

10

In Reply Refer To:
9015 (170)

June 04, 2001

MEMORANDUM

To: State Director, CO-932

From: Little Snake Field Manager, John E. Husband

Subject: Pesticide Records Search Findings

The following procedure was undertaken in response to IM 2001-149, and a good faith search of documents within the possession or control of this field office was completed.

Members of the Renewable Resources staff were interviewed for information related to spraying projects and questioned as to where older records may be stored. Two retired Bureau of Land Management Little Snake Resource Area Managers were contacted about any information that may be missed here at the office. As a result of these conversations the following documents were searched/reviewed: Abandoned and current range improvement project files, allotment files, warehouse facilities, and a query was entered into the GABS program for all range improvement projects of vegetation management, land treatments, and other categories that may be related to pesticide/herbicide application. Rangeland Improvement Project files were searched for the years in question, and then were inspected individually for chemical use.

Approximately ten (10) hours were devoted to this request.

Ten pages of copies of the requested information are attached.

Attachment

DOI-BLM
CO STATE OFFICE
2001 JUN -5 AM 10: 12

The following amount of time was dedicated to this search: 4 hours

Attached are 40 pages of copies of the requested information.

Field Office Manager

Date: 5/25/01

Attachment 1

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
ROYAL GORGE FIELD OFFICE
3170 EAST MAIN STREET
CAÑON CITY, COLORADO 81212

In Reply
Refer To:
9015
(CO-200)

June 5, 2001

To: State Director

From: Roy Masinton, Field Office Manager

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed: Tom Grette, Rangeland Management Specialist and Weed Coordinator, contacted recreation and forestry staff to conduct a search of those types of projects. Tom Grette conducted a search of range projects.

The following types of records were researched: Grazing Case Files, Allotment Files, AMP Files, RIPS, JDR Files, Forestry ASPN data base, and the recreation construction contracts. There were no chemical projects in the period from 1965 to 1975.

The following amount of time was dedicated to this search: 5 hours

There are no copies attached of the requested information as there are no findings.

/s/ Roy L. Masinton

Roy Masinton
Field Office Manager

COPY

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Glenwood Springs Resource Area
50629 Highway 6 and 24
P.O. Box 1009
Glenwood Springs, Colorado 81602

IN REPLY REFER TO:

9010
CO-14000

To: Ann Morgan, State Director

From: Anne Huebner, Field Office Manager

Date: June 1, 2001

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

We involved 6 employees and searched for records in central files, work areas and some boxed files in our storage area.

The following types of records were researched: (If no records exist, please state why)
203 RIPS/JDR files, existing lands case files, central files in forestry, wildlife, and pest management, four active oil and gas well files (authorized 1962) and four closed oil and gas well files (plugged and abandoned) were searched. These files didn't have any references to herbicide/pesticide treatments between 1965 and 1975.

The reason we found no records is two-fold. One, this field office had no pesticide projects that were recorded, or two, the records were disposed of in accordance with BLM manual section 1270 and 1272. Archival records indicate there were no 9010 (Integrated Pest Management) files sent to the Federal Records Center during this period. Further, Hand book 9011-1 requires the project records be maintained for 3 years and recent direction has been that pesticide application records be retained for only 10 years. This request was for information that is 26 years old.

The following amount of time was dedicated to this search:
Six individuals spent a total of 8.5 hours.

for Acting

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
ROYAL GORGE FIELD OFFICE
3170 EAST MAIN STREET
CAÑON CITY, COLORADO 81212

RECEIVED
JUN - 6 2001
CSO MAIL ROOM

In Reply
Refer To:
9015
(CO-200)

June 5, 2001

To: State Director

From: Roy Masinton, Field Office Manager

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed: Tom Grette, Rangeland Management Specialist and Weed Coordinator, contacted recreation and forestry staff to conduct a search of those types of projects. Tom Grette conducted a search of range projects.

The following types of records were researched: Grazing Case Files, Allotment Files, AMP Files, RIPS, JDR Files, Forestry ASPN data base, and the recreation construction contracts. There were no chemical projects in the period from 1965 to 1975.

The following amount of time was dedicated to this search: 5 hours

There are no copies attached of the requested information as there are no findings.

Roy T Masinton

Roy Masinton
Field Office Manager

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
ROYAL GORGE FIELD OFFICE
3170 EAST MAIN STREET
CAÑON CITY, COLORADO 81212

In Reply
Refer To:
9015
(CO-200)

June 5, 2001

To: State Director

From: Roy Masinton, Field Office Manager

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed: Tom Grette, Rangeland Management Specialist and Weed Coordinator, contacted recreation and forestry staff to conduct a search of those types of projects. Tom Grette conducted a search of range projects.

The following types of records were researched: Grazing Case Files, Allotment Files, AMP Files, RIPS, JDR Files, Forestry ASPN data base, and the recreation construction contracts. There were no chemical projects in the period from 1965 to 1975.

The following amount of time was dedicated to this search: 5 hours

There are no copies attached of the requested information as there are no findings.

/s/ Roy L. Masinton

Roy Masinton
Field Office Manager

United States Department of the Interior

Bureau of Land Management
Uncompahgre Field Office
2505 South Townsend
Montrose, Colorado 81401
(970) 240-5300

In Reply
Refer to:
CO-150 (9011)

May 30, 2001

To: State Director (CO-932)

From: Uncompahgre Field Office Manager

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

This records search consisted of a manual search and examination of records in the Uncompahgre Field Office. Project files were examined to determine if any possible pesticide/herbicide treatments were completed by BLM during the period of interest Jan. 1, 1965 through Dec. 31, 1975.

The following types of records were searched:

UFO staff searched project files, JDR files, central files and ran a query of the Range Improvement Project System (RIPS) to identify any possible pesticide/herbicide treatments completed during the period in question. This records search was facilitated by an earlier examination of vegetation project files. In 1988, Bob Welch of our staff completed a detailed analysis of vegetation projects completed to that time. In this analysis Bob was most interested in determining project success and longevity from different methods of treatment. As a by product of this study, we have a project file index which indicates project name, type of treatment and acreage. This index expedited the current records search significantly and served as a double check against official project files.

As a result of this search, we found no record of any pesticides/herbicide treatment or project being completed on public land by BLM. There is no record of the use of chemicals either independently or in combination with another treatment method during the period of interest Jan. 1, 1965 through Dec. 31, 1975.

We did find records on 5 projects completed by BLM in 1951, 1961 and 1963 which are outside the date of this request and did involve the use of chemicals. If needed we can provide copies of the available information pertinent to these older projects.

The following amount of time was dedicated to the search required in IM 2001-149:
Belt 1 hour; Welch - 8 hours; Burch - 2 hours; Kauffman 4 hours. For a total of 15 hours. If you have questions or need additional information please contact, Dave Kauffman at 970-240-5340.

Allan J. Belt

Dave Kauffman

for - Field Office Manager

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

IMPROVEMENT DOCUMENTATION REPORT - MASTER

DATE: 05/29/01

STATE: CO OFFICE: 130 IMPROVE NBR: 271045

IMPROVEMENT INFORMATION

IMPROVEMENT NAME: COW MTN SAGE SPRAYIN IMPROVEMENT CODE: VM

COMPLETED YEAR: 1968 CONSTRUCTION AGREEMENT: 2 TYPE OF PLAN: 9
CONSTRUCTION CODE: N
PRINCIPAL MGMT OBJ: 12

U N I T S C O M P L E T E D

TYPE OF HABITAT: 1 PRIMARY: 1,187.0 SECONDARY:

GEO STATE: CO GEO COUNTY: 045 TOWNSHIP: 0070S RANGE: 1000W

MERIDIAN: 06 SECTION: 024 SUBDIVISION: NENE

LATITUDE -- DEGREE: MINUTE: SECONDS:

ONGITUDE -- DEGREE: MINUTE: SECONDS:

PROJECT1: 6751 PROJECT2:

IMPROVEMENT DETAILS

FENCE TYPE: 0 MISC FAC TYPE: PLANT CTRL: CH

CHEMICAL: DA SEEDING METHOD: 0 SPECIES BENIFIT: T/E:

PLANT SPECIES-1: ARTR1 ANIMAL SPECIES-1:

PLANT SPECIES-2: ANIMAL SPECIES-2:

WATER DEVELOP: 00 WATER STORAGE:

WATER TILLAGE: 0 WATER NUMBER: 000000

UNDEFINED-1: MIDRFK UNDEFINED-2:

REMARKS:

IMPROVEMENT MANAGEMENT UNITS

ALLOT LINE NBR	ALLOTMENT	WATER MGNT	WILDLIFE CODE	WH MGNT AREA
1	6751		0 00	

IMPROVEMENT SUBACTIVITY

SUBACTIVITY	CONTRACT COST	MATERIAL COST	EQUIPMENT COST	LABOR COST	WORK MONTHS
4341	$5,919				.1

IMPROVEMENT COOPERATOR

COOPERATOR LINE#	TYPE	COOPERATOR NAME	DEPOSITED	UNDEPOSITED MATERIAL	UNDEPOSITED EQUIP/LABOR
FISCAL YEAR 1968					
1	3	DEGNAM DR			$1,09€

TOTAL BLM COST	TOTAL COST
$5,919	7,015.00

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Idaho State Office
1387 South Vinnell Way
Boise, Idaho 83709-1657

In Reply Refer To:

9015 (954) JUN 04 2001

OVERNIGHT MAIL-EXPEDITE

To: GM (WO-220), Room 314LS
Attn: Gina Ramos

From: State Director, Idaho

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, a good faith search of documents within the possession or control of this State's field offices was completed.

The following amount of time was dedicated to this search: 113 hours.

Attached are the 2,800 pages of copies of the requested information.

Michael A. Ferguson
for Martha G. Hahn

Attachments

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Burley Field Office
15 East 200 South
Burley, Idaho 83318-9501

In Reply Refer To:
9015 (077)

Memorandum

To: State Director (ID- 910)

From: Burley Field Office (ID- 077)

Subject: Response to Pesticide Review - Documentation Collection (I.M. No. 2001 -149)

As directed by IM 2001 - 149, the following procedure was taken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

Each program was asked to review their records or memories of their program for the 1965 - 1975 time-frame to determine if pesticides were applied to the public lands during that time period. Most programs have no records in their possession for that time period.

Records searched were of the following types. Accession lists were searched but did not contain any records pertinent to this request, central file records generally are not kept for more than the last 6 years. Cooperative agreements with counties for herbicide application did not begin until 1976. No pesticide applications were found in files or records from the recreation, wildlife, or watershed/riparian programs. Range improvement files were found to contain 5 pesticide application projects during the requested time frame. Copies of these files are attached. Rights-of-way agreements have provisions for application of herbicides as needed to control weeds, we have no records as to whether herbicides were actually applied by the applicants. Procurement records have been transferred to the District Office in Idaho Falls, and will be reviewed at that office.

A total of 12.75 hours were used to search records and compile the data and response.

Attached are 87 pages of the requested information.

Field Office Manager

John D. Hughbanks, Acting

June 1, 2001

To: State Records Administrator (ID955)

From: Field office manager (ID087)

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

- Search of Range Improvement Project database for projects utilizing chemical applications during the requested time period.

- Interview of individuals employed in the office during the time period. Employees were asked if they recalled the implementation of projects where pesticides were used.

- Physical search of project files and atlas' from the forestry and range programs.

The Cottonwood Field office was opened in 1974. Records indicate no pesticides were used in the field office until 1976 which is outside the timeframe of search.

Approximately four hours were dedicated to this search and documentation of findings.

Field Manager, Cottonwood

June 1, 2001

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Shoshone Field Office
400 West F Street PO Box 2-B
Shoshone, Idaho 83352-1522

In Reply Refer To:
9015 P

June 01, 2001

Memorandum

To: Martha Hahn, State Director (ID-955)

From: Bill Baker, Shoshone Field Manager

Subject: Pesticide Records Search Findings

As directed by IM 2001- 149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

All computer records in the Shoshone Field Office's Range Improvement Program System were sorted by both the improvement code and chemical fields to produce a listing of potential pesticide projects contained in the range improvement files. This listing was expanded by going through the historic project list for any additional projects which may have used pesticides. This listing was further corroborated by comparing it with the results of a search of the RIPS system conducted and provided by the national office. Each file on the composite list was pulled and individually reviewed for the requested information. A total of 30 projects were found to contain some pertinent information. Photocopies were made of this information. Field Office forestry files were reviewed but failed to reveal any pesticide treatment information. A review of National Archives accession listings found listing 049-74-1602 box 55929 contains grazing advisory board minutes which likely made reference to some desired spray projects for sagebrush control. National Archives accession listing 049-76A-2153 box 37398 contains documents filed in central files relating to forest, range, wildlife and pest control practices which may contain pertinent information. It appears that some potential pesticide treatment records, spray project contracts, BLM/County cooperative agreements and timber sale and reforestation records which were stored in the National Archives have been destroyed.

The following employees and the time they spent conducting the records search are as follows:

Gary Wright, Wildlife Biologist	49 hrs.
Marilyn Padgett, Range Clerk	2 hrs.
Tara Hagen, Contact Representative	2 hrs.

The time spent searching, reviewing, copying and organizing the information totaled 53 hours in this field office. A total of 922 pages of copy were produced. Copies of the pertinent information is organized by range improvement project number in the attached six-way folders.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Upper Snake River District
Idaho Falls Office
1405 Hollipark Drive
Idaho Falls, Idaho 83401

May 31, 2001

In Reply Refer to:
9015 (ID-070)

RECEIVED
BLM ISO MR
JUN 0 1 2001
9:00 A.M.

To: State Director (SD-955)

From: USRD, District Manager

Subject: Pesticide Review - Document Collection

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this District was completed:

1. Each field office was instructed to search their records following the sources of records as outlined in IM No. 2001-149. Each office was instructed to record the amount of time dedicated/spent to this record search and the number of pages copied.

2. Each field office was requested to respond by overnight mail directly to Linda Matthews, (ID-955) by cob 06/01/01 with a cc to Bernadette Underwood, ID-070.

The Upper Snake River District (USRD) records located at Idaho Falls were also searched. The following types of USRD records were researched: grasshopper/Mormon cricket control, noxious weed control, brush control, project files, and all other files that might possibly contain records pertaining to the possible use of pesticides from January 1, 1965 thru December 31,1975. Copies of the records were made and are attached.

The following amount of time was dedicated to this search:

LeRoy Cook, 7 hours, and Bernadette Underwood, 6 hours.

Attached are 491 pages of the requested information and a list of those records.

Gary L Blair

Acting District Manager, USRD

Date :_____

Attachments

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Upper Columbia - Salmon Clearwater District
Coeur d'Alene Field Office
1808 North Third Street
Coeur d'Alene, Idaho 83814-3407
http://www.id.blm.gov

RECEIVED
BLM ISO MR
MAY 3 1 2001
9:00 A.M

In Reply Refer To:
9015 (081)

MAY 30 2001

To: State Director (950)

From: Field Manager

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

Chemical application projects recorded in RIPS which were provided to us from the State Office were reviewed. The Reforestation Records Atlas found in the Coeur d'Alene Field Office was reviewed. Personal interviews were also conducted with foresters working in this office at the time or hired shortly thereafter.

The following types of records were researched:

Through personal communication with foresters, some tree thinning occurred in 1965-66 utilizing a hypo-hatchet. No project files were found on this work. Through personal communication with Wilbur-Ellis Co. (herbicide supply company) in Spokane, they claim the chemical used in these hatchets was most likely cacodylic acid under the trade name Silvisar 510.

In addition, a project folder for aerial spraying of brush on BLM land in 1966 was also located. **2,4,5-T** was used on this project. Information from this project folder is being sent by way of overnight mail.

No other records have been located at this time.

The following amount of time was dedicated to this search:

Approximately 8 hours.

If you have any questions, please contact Bill Cook in this office at 208-769-5042.

Eric R Thomson

Eric R. Thomson

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Pocatello Field Office
1111 North 8th Ave.
Pocatello, Idaho 83201-5789

In Reply Refer To:
9015

May 30, 2001

RECEIVED
BLM ISO MR
MAY 3 1 2001
9:00 A.M.

Memorandum

To: State Director

From: Field Office Manager, Pocatello

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed. The Malad Field Station, which is now part of this field office, did not exist between 1965 and 1975. At that time, the public land in Malad was managed by the old Burley District, so any spray projects in that area would be reported by the Burley Field Office.

All range project files contained in Central Files were reviewed to identify those which fit the criteria set forth in the above IM. A RIPS print out was also reviewed to corroborate the findings of the files search. This search required approximately 2 hours.

The following 5 project files were located and copied:

North Canyon Spray (1965)
Inkom Brush Control (1971)
Cochran Brush Spray (1968)
Crane Spray (1966)
Pegram Spray (1971)

Attached are the 16 pages of copies of the requested information.

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Upper Columbia - Salmon Clearwater District
Salmon Field Office
50 Highway 93 South
Salmon, Idaho 83467
http://www.id.blm.gov

RECEIVED
BLM ISO MR
JUN 04 2001
9:00 A.M.

In Reply Refer To:
9015 (085)

June 1, 2001

Memorandum

To: State Director

From: Field Manager

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed.

A search of the old range improvement files was completed that showed treatments under the general heading of Miscellaneous or Spraying. These files were evaluated for pertinent information and copies of data are included with this memo. As a cross reference, the project atlas was checked, page by page, to insure that the best possible listing of potential projects was made. A further examination of the old unit file and individual allotment files was also completed without discovering any additional information.

The following types of records were researched: The Job Documentation Report (JDR) files, the Range Improvement Project (RIP) Files and the Field Office atlas of range improvements, unit files from the early 1960's, recreation site files, forestry management files, and wildlife management files.

There is no documentation of pesticide use in the recreation site files, the wildlife management files or the forestry management files during the designated time period.

Initial search of the project file and the atlas, and copying totaled about three (3) hours,

Attached are 23 pages of copies of the requested information.

Bruce W. Easton acting

David Krosting

Attachments

RECEIVED
BLM ISO MR
JUN 0 4 2001
9:00 A.M.

To: State Director

From: Eddie Guerrero

Subject: Pesticide Records Search Findings

As directed by IM 2001- , the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

Looked through pesticide treatment files.

The following types of records were researched: (If no records exist, please state why)

Pesticide treatment files.

The following amount of time was dedicated to this search:

Eight hours.

Attached are the 139 pages of copies of the requested information.

Field Office Manager

E. Guerrero

Date

6-1-01

Attachment 1

IN REPLY TO:

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Montana State Office
5001 Southgate Drive, P.O. Box 36800
Billings, Montana 59107-6800
http://www.mt.blm.gov/

9015 (923)

June 7, 2001

Memorandum

To: Director (220), LS, Rm. 314
Attention: Gina Ramos (220), LS, Rm. 314

From: State Director

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, a good faith search of documents within the possession or control of this State's field offices was completed.

The following amount of time was dedicated to this search: 54 hours.

Attached are the 223 pages of copies of the requested information.

If you have any questions, please contact Bill Volk of my staff at (406) 896-5029.

T. O Lonnie

Thomas P. Lonnie
Acting

1 Attachment
Responses to WO IM 2001-149 (244 pp)

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Missoula Field Office
3255 Fort Missoula Road
Missoula, Montana 59804

IN REPLY TO:
3015 (220) P

Memorandum

To: State Director, Montana

From: Field Manager, Missoula Field Office

Subject:: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

The Field Office specialists reviewed all known records and contacted known former employees, via e-mail and phone, to confirm use or non-use of pesticides during the period requested (January 1, 1965 through December 31, 1975).

The following types of records were researched: plantation records, range improvement files, wildlife project files, recreation facility records, and general project files.

The following amount of time was dedicated to this search: approximately 6 hours.

No record was found of pesticide use during the period of January 1, 1965 through December 31, 1975.

Nancy T. Anderson
Field Manager

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Butte Field Office
106 North Parkmont
Butte, Montana 59701
Telephone: 406-533-7600
http://www.mt.blm.gov/bdo/

'01 JUN 5 AM 8 28

IN REPLY TO:

9015 (070)

JUN 04 2001

Memorandum

To: State Director (MT-910)

From: Field Manager (MT-070)

Subject: Pesticide Records Search Findings, response to IM No. 2001-149

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search for documents within the possession or control of this field office was completed. Due to the fact that the Butte Field Office was not formed until August 15, 1976, any records of such use would have been kept at the various offices that had public land that was included in the Butte Field Office when it was formed. These offices were located in Dillon, Lewistown and Missoula.

An effort was made to contact personnel who had worked in the Butte Field Office range program during the time frame in question. Two individuals were contacted. Neither person could remember any projects in range that they had been involved with that met the criteria requested.

Approximately 4 hours was dedicated to this search and to contacting and communicating with other personnel who might be of help in meeting this deadline.

Richard M. Hotaling

IN REPLY TO:

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Glasgow Field Station
RR 1-4775
Glasgow, Montana 59230
http://www.mt.blm.gov/mafo/

9015 (092)

June 7, 2001

Memorandum

To: State Director

From: Assistant Field Office Manager

Subject: Pesticide Records Search Findings

As direct by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession and control of this office was completed:

All job documentation report files were researched.

The following types of records were searched:

No information from the period 1965-1975 was found.

The following amount of time was dedicated to this search:

6 hours of search time.

John G. Fahlgren

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
North Dakota Field Office
2933 Third Avenue West
Dickinson, North Dakota 58601-2619
701-227-7700

IN REPLY TO:

9015
DWR

June 6, 2001

To: State Director (MT-923)

From: Field Manager (MT-030)

Subject: Pesticide Review - Document Collection
Instruction Memorandum No. 2001 - 149

A search at our office turned up no record of the use of pesticides on BLM public lands in North Dakota from January 1, 1965 through December 31, 1975. Resource and land based activities during that time period would have been conducted primarily out of the Miles City office.

A project office answering to the Miles City District existed from August, 1965 to September, 1968 first in Bowman and then in Dickinson. From October, 1968 to December, 1973 no one was stationed in North Dakota. All work was conducted by the Prairie Resource Area staff out of Miles City. In January, 1974 a project office was again opened in Dickinson. Its sole purpose was to conduct land use planning in response to the nation's energy crisis at that time. The resource work was still handled out of Miles City until the Dickinson District Office was established in 1977.

Douglas J. Burger
Field Manager

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
South Dakota Field Office
310 Roundup Street
Belle Fourche, South Dakota 57717-1698

IN REPLY TO:

To: Montana State Director

From: South Dakota Field Office Manager

Subject: Pesticide Records Search Findings

As directed by IM 2001-WO-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

The South Dakota Field Office checked a RIPS query and manually looked through the hard copy range improvement files. There was nothing that indicated pesticide use in 1965 through 1975. Some of the records from that time period may be in the Miles City Office, as Miles City was the District Office overseeing South Dakota at that time in history.

People who have worked in this office for 20+ years were asked if they knew of any projects that had taken place during that time. There may have been some grasshopper spraying, but no documents to validate that speculation were found.

The following amount of time was dedicated to this search: 4 hours

/s/Patrick J. Gubbins
Patrick J. Gubbins
Field Office Manager

Date: June 6, 2001

IN REPLY TO:

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Billings Field Office
5001 Southgate Drive, P.O. Box 36800
Billings, Montana 59107-6800
http://www.mt.blm.gov/bifo/

June 5, 2001

Memorandum

To: State Director

From: Field Office Manager

Subject: Pesticide Records Search Findings

As direct by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession and control of this office was completed:

All job documentation report files were researched.

The following types of records were searched:

No information from the period 1965-1975 was found. One file from an earlier date is attached that may be of interest.

The following amount of time was dedicated to this search:

Two hours of search time.

Attached are the 2 pages of copies of the requested information.

David Jaynes
for Sandra S. Brooks

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Havre Field Station
1704 Second Street West, P.O. Box 911
Havre, Montana 59501-0911
http://www.mt.blm.gov/ldo

IN REPLY TO:

01 JUN 5 AM 8 21

May 31, 2001

Memorandum

To: State Director (923)

From: Asst. Field Office Manager, Havre Field Station

Subject: Pesticide Records Search Findings

As directed by IM2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession of control of this field station was completed:

The following types of records were researched:

-contracts and/or purchase orders
-Range Improvement Project Files
-Grazing/case files

A total of approximately 10 hours was taken to research these records.

The search resulted in finding one project that was initiated in 1965 and ended in 1968. This project involved spraying sagebrush with 2,4-D low volatile ester to help grasses establish. The attached pages are the documented records of this project.

Owen Billingsley

4 attachments

Bullwacker Sage Brush Spraying Project File Phase 1 #444131
Phase 2 #444175
Phase 3 #444215
Phase 4 #444231

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Lewistown Field Office
Airport Road, P.O. Box 1160
Lewistown, Montana 59457-1160
http://www.mt.blm.gov/ldo/

IN REPLY TO:

9015

June 6, 2001

Memorandum

To: State Director, Montana (910)

From: Field Manager, Lewistown

Subject: Pesticide Records Search Findings

As Directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

- Manual search of old project files, program files and general correspondence was conducted for the years 1965 through 1975. A total of three files where pesticide use was conducted were discovered and are forwarded with this letter.

The following specific records were researched: Judith Resource Area Project files, Judith Resource Area program files for range management and range improvements, Lewistown District general correspondence - range management and engineering, Lewistown District Project Files.

A total of 8 hours staff time was dedicated to this search.

David L. Mari

David L. Mari

Attachments

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Dillon Field Office
1005 Selway Drive
Dillon, Montana 59725
http://www.mt.blm.gov/dfo/

IN REPLY TO:

9015

May 31, 2001

To: State Director

From: Field Office Manager

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession and control of this office was completed:

All files were searched for contracts for pesticide application. No contracts were found. One solicitation for bids was found and a copy is included.

The following types of records were searched:

The RIPS program was used to generate a list of land treatment projects. These files were reviewed for pesticide projects and appropriate information has been included. One project file is in RIPS, but we were not able to locate the file to confirm the information.

The following amount of time was dedicated to this search:

Six hours of search and copy time.

Attached are the 66 pages of copies of the requested information.

Richard Maggio

Rich Maggio
Acting Field Manager

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Malta Field Office
501 South 2nd Street East, HC 65, Box 5000
Malta, Montana 59538-0047
http://www.mt.blm.gov/mafo/

IN REPLY TO:

'01 JUN 1 AM 8 23

4100 480(2)

May 31, 2001

Memorandum

To: State Director

From: Field Office Manager

Subject: Pesticide Records Search Findings

As directed by IM2001-149, the following procedure was undertaken in response to this request and a good faith search fo documents within the possession or control of this field office was completed:

The Malta Field Office has the distinction of having an employee who directly worked as a Civil Engineer Technician since 1964. He does not recall any treatments other than what we have found below.

The following types of records were researched

A search of contracts, and or purchase orders was conducted.

A search of Grazing files/case files was conducted.

A search of Job Documentation Records was initiated and followed up on.

The following amount of time was dedicated to this search.

A total of approximately 10 hours of searching records, case files, etc. was undertaken.

Attached are the 30 pages of copies of the requested information.

Forrest Reed

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Miles City Field Office
111 Garryowen Road
Miles City, Montana 59301-0940
http://www.mt.blm.gov/mcfo/

IN REPLY TO:

To: State Director

From: Assistant Field Manager-Resources

Subject: Pesticide Records Search Findings

As directed in IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed.

A review of the range improvement files, allotment files and grazing case files was conducted of projects that were completed during January 1,1965 through December 31, 1975. Information was gathered through a computer search and actually viewing individual files. Staff members with responsibility of these types of projects were contacted to assure complete information was obtained.

The amount of time dedicated to this search was approximately four hours.

Attached are the pages of copies of the requested information.

Todd Christensen
Assistant Field Manager-Resources

June 5, 2001

Donna K Bradley
06/07/01 10:31 AM

To: William Völk/MTSO/MT/BLM/DOI@BLM
cc:
Subject: FEDX #

Bill, Here's the tracking #. Barb's date was 6/5, priority overnight-- 826171705270. With all these #'s, I thought e-mail might be more accurate!
Have a good day. Let me know if there's anymore you need. Is there a chance this date range would be expanded? If so, I'd better start gathering info now. These programs really took off in the 80's and 90's.
donna

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Miles City Field Office
111 Garryowen Road
Miles City, Montana 59301-0940
http://www.mt.blm.gov/mcfo/

IN REPLY TO:

To: State Director

From: Assistant Field Manager-Resources

Subject: Pesticide Records Search Findings

As directed in IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed.

A review of the range improvement files, allotment files and grazing case files was conducted of projects that were completed during January 1,1965 through December 31, 1975. Information was gathered through a computer search and actually viewing individual files. Staff members with responsibility of these types of projects were contacted to assure complete information was obtained.

The amount of time dedicated to this search was approximately four hours.

Attached are the pages of copies of the requested information.

Todd Christensen
Assistant Field Manager-Resources

June 5, 2001

Donna K Bradley
06/05/01 12:05 PM

To: William Volk/MTSO/MT/BLM/DOI@BLM
cc: (bcc: Donna K Bradley/MTSO/MT/BLM/DOI)
Subject: Pesticide review

Bill, We had three projects listed on the info you sent down. **Keystone Reseeding, #6727**, didn't have any record of chemical use on that project.
#7654, Ullrich Weed Control indicates that we purchased Monuron Trichloracetate (Urox 22), 200 lbs/acre was used. Leafy Spurge plants remained so Tordon 22K was sprayed at concentration of 2 gal/acre.
Rugg Spurge Spraying #6622, used Dicamba Amine at a rate of 4-6 lbs per acre. 2,4-D was also used at a concentration of 2 lb/acre.

The other projects I checked didn't meet the time frame. Can't wait until next year if they want 1975 to present!

I'll send the copies to WO. Let me know if you'd like more info. Thanks. Donna

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Nevada State Office
P.O. Box 12000
Reno, Nevada 89520-0006

IN REPLY REFER TO:
9015 (NV-930)

JUN 04 2001

Memorandum

To: Director (220), Room 204, LS

From: State Director, Nevada

Subject: Response to Instruction Memorandum 2001- 149, Pesticide Records Search Findings

As directed by IM 2001-149, a good faith search of documents within the possession or control of this State's field offices was completed.

The following amount of time was dedicated to this search: 69 hours

Attached are copies of the 871 pages of the requested information.

If you have any questions, please contact Duane Wilson, Pesticide Use Coordinator, at (775) 861-6587.

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Ely Field Office
HC 33 Box 33500 (702 No. Industrial Way)
Ely, NV 89301-9408
http://www.nv/blm.gov/Ely

In reply refer to:
9015 (NV-040)

Memorandum

To: State Director

From: Field Manager, Ely Field Office

Subject: Field Office Validation regarding Instruction Memorandum No. 2001-149

The Ely Field Office has completed its review of internal district source materials concerning the above referenced instruction memorandum. Our search consisted of a review of the RIPS project list, and interviews with several employees which are currently employed in Ely who were present during the period or who came to Ely immediately after the 1965 to 1975 period. The search also involved the manual review of all project folders on file in the Caliente Field Station which were identified as either sprayings, seedings, or fences (to account for any experimental plots).

320 acres 1965

A total of one project was identified which utilized 2,4-D to control sagebrush. The project was located in Lincoln County in an area originally under the management of the Las Vegas District. The project involved approximately 1,900 acres (see attached documentation)

Dave Kallen

1 Enclosure

1. Sheep Flat Seeding Spray documentation (46 pp.)

United States Department of the Interior

Bureau of Land Management
Battle Mountain Field Office
50 Bastian Road
Battle Mountain, Nevada 89820
(775)635-4000 Fax (775)635-4034

In Reply Refer to:
9015
NV060

JUN 01 2001

MEMORANDUM

To: State Director NV 930

From: Field Manager, Battle Mountain

Subject: Pesticide Records Search Findings

As directed by IM 2001-149 the following procedure was undertaken in response to the request for records pertaining to the use of pesticides within the control of the Battle Mountain Field Office.

A thorough search of all project files contained within the Battle Mountain Field Office was conducted including herbicides, fungicides and rodenticides from the early 1960s through 1976.

All project files on land treatments and reseedings were reviewed for the use of the above products.

The amount of time required to complete the search was approximately 2 hours.

Attached are the 105 pages of copies of the requested information.

Gerald M. Smith
Field manager

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Las Vegas Field Office
4765 Vegas Drive
Las Vegas, Nevada 89108

In Reply Refer To:
9015 (NV050) P

Las Vegas

Memorandum

MAY 3 0 2001

To: State Director, Nevada

From: Field Office Manager, Las Vegas

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

A search was completed of historical records in storage including all files for range improvement, vegetation treatment, and herbicide application projects. There were no records of pesticide use found. Both Richard Livreri and Chester Davis, present BLM employees, served during a portion of the time frame associated with this inquiry. Neither of these individuals have any recollection of any pesticide usage in the geographical area(s) administered by this office. A total of 3 hours were dedicated to this search.

Mark T. Morse

To: State Director

From: Elko Field Office Manager

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

A thorough search of the Rangeland Improvement Project System (RIPS) was conducted to identify all projects conducted in the field within the administrative boundaries of the Elko Field Office involved with chemicals during the period in question.

The following types of records were researched: All projects that involved the use of chemicals.

All the Elko Field Office projects involving the use of chemicals were researched. There were a total of 12 projects that involved the use of 2,4-D and 2,4,5-T

The following amount of time was dedicated to this search: A total of 6 hours were required to identify the projects, collect the project files and have all documentation duplicated.

Attached are the 605 pages of copies of the requested information.

Helen Hankins

Field Office Manager

May 29, 2001

Date

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Carson City Field Office
5665 Morgan Mill Rd.
Carson City, NV 89701
(775) 885-6000

In Reply Refer To:
9015 (N034)

Memorandum

To: State Director, Nevada

From: Field Office Manager, Carson City FO

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession and control of this field office was completed:

1) The project files were searched and any project that suggested the use of pesticides within the time frame parameters outlined in IM 2001-149 were pulled and reviewed.
2) The JDR system was queried in order to double check the manual file search, and also to possibly find any projects not found in that search.
3) Rangeland Management Specialists were asked to report any known pesticide use existing in the allotment files (within the IM timeframe) to the search coordinator.
4) The lead Wildlife Biologist, as well as the Support Services Staff were also asked to report any known pesticide use during the IM timeframe.
5) The pertinent records were copied and are included with this response.

The following types of records were searched: Project files, JDR records, and Grazing files. It was determined that no old service contracts with aircraft companies, or pesticide purchasing records presently exist in the Field Office files outside of those included in the project files.

The following amount of time was dedicated to this search: 18 hours.

Attached are the 45 pages of copies of the requested information.

Elaine Bright, acting

[redacted]

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Carson City Field Office
5665 Morgan Mill Rd.
Carson City, NV 89701
(775) 885-6000

DS 5/21

In Reply Refer To:
9015 (NV034)

Memorandum

To: State Director, Nevada

From: Field Office Manager, Carson City FO

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession and control of this field office was completed:

1) The project files were searched and any project that suggested the use of pesticides within the time frame parameters outlined in IM 2001-149 were pulled and reviewed.
) The JDR system was queried in order to double check the manual file search, and also to possibly find any projects not found in that search.
3) Rangeland Management Specialists were asked to report any known pesticide use existing in the allotment files (within the IM timeframe) to the search coordinator.
4) The lead Wildlife Biologist, as well as the Support Services Staff were also asked to report any known pesticide use during the IM timeframe.
5) The pertinent records were copied and are included with this response.

The following types of records were searched: Project files, JDR records, and Grazing files. It was determined that no old service contracts with aircraft companies, or pesticide purchasing records presently exist in the Field Office files outside of those included in the project files.

The following amount of time was dedicated to this search: 18 hours.

Attached are the 45 pages of copies of the requested information.

United States Department of the Interior

Bureau of Land Management
New Mexico State Office
1474 Rodeo Road
P.O. Box 27115
Santa Fe, New Mexico 87502-0115

IN REPLY REFER TO:
9015 (93000) P

June 8, 2001

Memorandum

To: Assistant Director, Renewable Resources & Planning (WO220)

From: Deputy State Director, Planning Use & Protection

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, a good faith search of documents within the possession or control of New Mexico's field offices was completed.

1. The Range Improvement Project System (RIPS) was queried to find all projects which fell within the Fiscal Years 1965 to1976, so as to include January 1, 1965 to December 31, 1975.

2. All projects that were coded to Vegetation Management or Weed Control were then targeted for review.

3. All projects that may have been coded with "CH" were searched for within the specified time frame.

4. The Range Improvement Project Files were pulled: the contents of those files are attached. (In many cases the chemical or tank mix that was applied was not listed.) The planning documents for the time frame and shortly thereafter were reviewed. Grazing allotments were indicated as having chemical treatments prior to FY 1980 are included in the search. Other allotments that had a chemical treatment, the project files were sent to the Denver Archives.

5. The Taos, Socorro, Tulsa, and the Farmington Field Offices found no documentation of the requested information because no projects using pesticides during the specified time period were completed.

Sixty hours of time was dedicated to this search.

Attached are the 103 pages of copies of the requested information.

Gary Johnson

ACTING

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Roswell Field Office
2909 West Second Street
Roswell, New Mexico 88201

IN REPLY REFER TO:
9015(220)

MAY 23 2001

To: State Director

From: Field Office Manager, RFO

Subject: Pesticide Records Search Findings

As directed by IM 2001-**, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

1. The Range Improvement Project System (RIPS) was queried to find all projects which fell within the Fiscal Years 1965 to 1976, so as to include January 1, 1965 to December 31, 1975

2. All projects that were coded to Vegetation Management or Weed Control were then targeted for review.

3. All projects that may have been coded with "CH" were searched for within the specified time frame.

4. The Range Improvement Project Files were pulled: the contents of those two (2) files is attached. (The chemical or tank mix that was applied was not listed in the files.) Both projects were completed on the same allotment.

5. The planning documents for the time frame and shortly thereafter were reviewed. Four grazing allotments were indicated as having chemical treatments prior to FY 1980, however information is only available for one during the specified time frame. If the other three allotments had a chemical treatment, the project files have been sent to Denver Archives.

6. The current Range Improvement Project Master Map was reviewed for projects indicating chemical control. No additional projects were indicated.

7. The original JDR number record books were reviewed for projects that indicated a chemical application or vegetation treatment: six additional project names were noted, however these projects were "abandoned" and the project files were evidently sent to Denver Archives, and the project numbers were not in the current RIPS data. No additional information was available on these projects.

8. The Operations Division had copies of the 1968 and 1969 Brush control projects for both the Roswell Field Office and the Carlsbad Field Office. Copies of the requested materials for the projects in the RFO are attached.

Eight hours of time were dedicated to this search.

Attached are the 34 pages of copies of the requested information.

T R Kreager

Field Office Manager, Roswell

May 23, 2001

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Las Cruces Field Office
1800 Marquess
Las Cruces, New Mexico 88005
www.nm.blm.gov

IN REPLY REFER TO:
9011 (03000)

JUN 0 5 2001

To: State Director, (93000)

From: Field Manager, (03000)

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

We queried our Range Improvement Project System (RIPS) Database for all projects in the Las Cruces Field Office with an Improvement Code (Field 6) equal to LT (Land Treatment), VM (Vegetation Manipulation, or WC (Weed Control) and restricted the year of completion to 1976 or earlier. Our results of the query included 25 projects. We then discarded projects such as erosion control, mechanical brush control, thinning, and planting (non-herbicide projects). Of the original 25 projects, 6 were determined to be herbicide treatments. Of those 6, 2 files were missing and we are forwarding all the information in the project files for the remaining 4 projects. We searched grazing case files for information on the missing project files but were unable to find any additional information.

The RIPS projects files and Grazing Case files were searched as part of this effort. The following amount of time was dedicated to this search:

Richard LaCasse	6 hours
Julie Aguirre	2 hours
Suzanne Kolikant	1 hour
Total	9 hours

Attached are the 55 pages of copies of the requested information.

Attachment 1

mg

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Taos Field Office
226 Cruz Alta Road
Taos, New Mexico 87571
www.nm.blm.gov

RECEIVED
BLM MAILROOM
01 MAY 29 AM 11:21
SANTA FE, NEW MEXICO

IN REPLY REFER TO:
9011 (NM020)

To: State Director

From: Field Office Manager

Subject: Pesticide Records Search Findings

As directed by IM 2001- 149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

The Taos Field Office reviewed its records contained in the RIPS list of Range Improvement Projects which contain Job Description Records for range, wildlife and watershed projects; NARSC (Denver, CO) provided RIPS list of projects for the Taos Field Office; and the Taos Field Office Allotment Project Lists contained in operator casefiles and grazing management unit files.

No documents of the requested information were found in the above records. No documents exist because Taos Field Office did not authorize or cooperate in pesticide use projects during the period of Jan. 1, 1965 to Dec. 31, 1975.

The following amount of time was dedicated to this search: 5 hours.

Ron Huntsinger
Field Office Manager

5/24/2001
Date

Mark Blakeslee

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Socorro Field Office
198 Neel Avenue NW
Socorro, New Mexico 87801
www.gov.blm

IN REPLY REFER TO:
9015 (050)

RECEIVED
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01 JUN -5 PM 2:01
SANTA FE, NEW MEXICO

June 5, 2001

Memorandum

To: State Director (NM 930)

From: Field Manager (NM 050)

Subject: Pesticide Records Search Findings

As directed by IM-2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

-A computer search was conducted on all project files that indicated the use of pesticides. The result was that no projects were found using pesticides during the period of January 1, 1965 through December 31, 1975.

-A search of the original handwritten ledger of projects dating back to the 1930's also resulted in no records of pesticide use.

-A thorough search of all the range case files was conducted in the Socorro Office in the early 1980's. All projects found in the case files were recorded on a ledger and then entered into a local computer program. Both the computer program and the handwritten ledger were looked at and the result was no record of pesticide use during the requested time frame.

A total of 5 hours of research was dedicated to this project.

Mark A Lane
Acting Field Manager

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Las Cruces Field Office
1800 Marquess
Las Cruces, New Mexico 88005
www.nm.blm.gov

IN REPLY REFER TO:
9011 (03000)

JUN 0 5 2001

To: State Director, (93000)

From: Field Manager, (03000)

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

We queried our Range Improvement Project System (RIPS) Database for all projects in the Las Cruces Field Office with an Improvement Code (Field 6) equal to LT (Land Treatment), VM (Vegetation Manipulation, or WC (Weed Control) and restricted the year of completion to 1976 or earlier. Our results of the query included 25 projects. We then discarded projects such as erosion control, mechanical brush control, thinning, and planting (non-herbicide projects). Of the original 25 projects, 6 were determined to be herbicide treatments. Of those 6, 2 files were missing and we are forwarding all the information in the project files for the remaining 4 projects. We searched grazing case files for information on the missing project files but were unable to find any additional information.

The RIPS projects files and Grazing Case files were searched as part of this effort. The following amount of time was dedicated to this search:

Richard LaCasse	6 hours
Julie Aguirre	2 hours
Suzanne Kolikant	1 hour
Total	9 hours

Attached are the 55 pages of copies of the requested information.

Jim C. McCauley

Attachment 1

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Albuquerque Field Office
435 Montaño Rd. N.E.
Albuquerque, New Mexico 87107- 4935
www.nm.blm.gov

IN REPLY REFER TO:
9105 (010)

JUN 4 2001

Memorandum

To: State Director (930)

From: Field Office Manager (010)

Subject: Pesticide Records Search Findings

As directed by WO IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this Field Office was completed:

Reviewed the RIPS files on computer to search for pesticide use, physically looked at old JDR Project listing, and pulled all project folders which indicated there could have been use of pesticide. Located 3 projects where the use of pesticides was documented during the time period requested. Most of the Sagebrush/PJ Control done within the Albuquerque Field Office area during this time was mechanical.

Project summaries for documented pesticide use:

Project #601179 - San Luis Experimental Watershed Cactus Spraying. Treated 471 acres for Cactus control in June 1962. Total amount of herbicides used were 149 gallons of R-H Propi-RHAP LV 4 DP and 5 gallons of Low Volatile Ester 2,4-D.

Project #604054 - Chuilla Sage Spraying. Treated 554 acres of sagebrush in June 1970 with Low Volatile Ester 2,4-D in accordance with Fed Spec O-H-200a, Type III, Class 2, mixed with water at rate of 1/3 gallon of Low Volatile Ester 2,4-D with wetting agent to 4 2/3's gallons of water. Total of 5 gallons of solution applied per acre.

Project #605289 - Shroyer Sage Spraying. Aerially sprayed 700 acres of sagebrush with low volatile 2,4-D ester. Completed in June 1971 by Contract No. 30-010-71-58. Project was approved by the WO on March 30, 1971.

The following amount of time was dedicated to this search: Albuquerque Field Office personnel spent approximately 24 hours on this project.

Attached are copies of the requested information.

Thomas E. Gow
Acting

Attachments

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Carlsbad Field Office
620 E. Greene St.
Carlsbad, New Mexico 88221-1778
Tel. (505) 234-5972
Fax (505) 885-9264

IN REPLY REFER TO:
080- 9015(220)P

Memorandum:

To: NM State Director

From: Carlsbad Field Office Manager

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

The Carlsbad Field Office researched all old brush control project files. There were 6 project files found within the 1965 - 1975 time frame. Approximately 8 hours were needed to research these files.

Attached are the 14 pages and 3 aerial spraying guide books in response to this requested information.

Mary J. Farwell
for Field Office Manager

6/6/01
Date

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Oregon State Office
P.O. Box 2965
Portland, Oregon 97208

In Reply Refer to:
9015 (OR-931)

JUN 6 2001

Memorandum

To: Director (WO-220)(Room 314LS)

From: Deputy State Director for Resource Planning, Use and Protection

Subject: Pesticide Records Search Findings

As directed by Instruction Memorandum No. 2001-149, a good faith search of documents within the possession of the District Offices of this state was completed.

Attached are 437 pages of copies of the requested information. Some of these pages reflect data retrieved from electronic files as no hard copy files were found. The time dedicated to this search amounted to 184 hours.

Please contact Bob Bolton at 541-947-6114 if you have any questions.

Harold J. Belisle

Harold J. Belisle
(Acting)

Attachments (as stated, sent under separate cover)

cc: Larry Larsen (OR-931)

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Burns District Office
HC 74-12533 Hwy 20 West
Hines, Oregon 97738

In Reply Refer To:
9015(025)

MAY 31 2001

MEMORANDUM

TO: State Director

FROM: District Manager, Burns

SUBJECT: Pesticide Records Search Findings

As directed by Instruction Memorandum (IM) 2001-149, the following procedure was undertaken on the Burns District in response to this request and a good faith search of documents within the possession or control of both our field offices was completed:

The District Weed Coordinator examined Job Description Records, Requisition Records, and Seeding Project files. The county herbicide spray records were searched by the Harney County Weed Supervisor. The NEPA Coordinator went through the District Environmental Assessment (EA) records. In addition, the Fire Management Officer, Timber Program Lead, and Recreation Program Leads examined their respective files. The Contracting Officer was contacted regarding contracts from the 1965-75 time period.

The following types of records were researched:

Job Description Records (JDRs) (incorporating Seeding Projects) yielded 22 projects wherein pesticides were used. Some of them include references to the contracts and contractors that applied the herbicides.

Requisition Records did not go back to 1965-75.

County Records yielded 16 pages of spray logs dating from 1965-1973.

EA Records yielded reference to seven EAs dealing with pesticide use during the 1965-75 time period. According to our records, those EAs have been archived and their respective reference numbers and descriptions are included in this packet.

No Pesticide Application Contracts remain on District from that time period. The statute of limitations on retaining contracts is 6 years and those 1965-75 contracts were probably destroyed.

No Grasshopper or Mormon Cricket Control Records were found on District prior to 1985. Possibly those earlier records would be in the Archives of the predecessor to APHIS as they orchestrated the spray contracts.

No Pesticide Application Records were found for Fuels Management Projects, Recreation Facility Maintenance, or Forest Pest Control for the 1965-75 time period. Very little pesticide use occurred on the Burns District during that period for other than specific brush control projects or noxious weed control.

The following amount of time was dedicated to this search:

Weed Coordinator -		5.0 hrs
County Supervisor -		2.0 hrs
Nepa Coordinator, Fire Management Officer,		
Recreation Leads, Timber Program Lead,		
Contracting Officer - 30 min ea =		2.5 hrs
	TOTAL	9.5 hrs

Attached are the 108 pages of copies of the requested information.

Attachments (as stated)

UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Roseburg District
777 N.W. Garden Valley Blvd.
Roseburg, Oregon 97470

In Reply Refer To:

9015 (220) P

Memorandum

To: State Director, 930

From: District Manager, Roseburg

Subject: Pesticide Records Search Findings - Response to IM 2001-149

As directed by IM No. 2001-149, the following procedure was undertaken in response to this request, and a good faith search of documents within the possession and control of this office was completed:

1. The district silvicultural records documenting treatments to forest stands were checked for pesticide treatments. Currently employed BLM employees with pesticide use knowledge during the time period of interest were also questioned.

The district records search indicated a number of units treated with a several different herbicides, used either singly, or in combination. Herbicides used for silvicultural purposes during the period from 1965 to 1975 were atrazine, dalapon, 2,4-D, MSMA and Silvex. Atrazine was applied at a rate of 4 lbs. active ingredient (AI) per acre in a water carrier, either singly, or in a tank mix with dalapon, and/or 2,4-D. Dalapon was applied in a tank mix with atrazine and/or 2,4-D at a rate of 4 lbs. AI per acre in water. Silvex was applied at a rate of 2 lbs. AI per acre in an oil-in-water carrier. 2,4-D was applied at a rate of 2 lbs. AI in an oil-in-water carrier when applied singly. In tank mix applications with atrazine and/or atrazine plus dalapon, 2,4-D was applied at a rate of 2 lbs. AI per acre in a water carrier. MSMA was applied to individual tree stems. The concentration and carrier are unknown. A detailed list of treatment areas and relevant detail is attached as Appendix A.

Herbicides were used for control of grass, forbs, shrub, and tree species competing with desirable tree species. They were generally applied by helicopter under a service contract. BLM personnel administered the contract, monitoring mixing, loading, application and reconnaissance of treatment areas. On rare occasions, BLM force account crews applied atrazine with backpack spray equipment. No contract files from that period are known to exist in the district office.

2. The district road maintenance chief was questioned as to the existence of pesticide records related to road right-of-way maintenance during the period of 1965-1975. To his knowledge none are extant. He recollects that as of 1975, his first year in road maintenance, that the herbicides diuron and dicamba in water carriers were used for road right-of-way maintenance. Application was made by truck-mounted equipment.

3. The district records administrator conducted a search of the Federal Records Center for herbicide related documents specific to the Roseburg District Office. Appendix B documents the finding of that search. A cursory review of the list does not indicate any relevant documents from the period of interest.
Approximately 24 hours were dedicated to the records search and response to the IM by the district and field office. Further documentation will be submitted if requested.

Please direct any questions on this matter to Craig Kintop at 541-464-3237.

2 - attachments: as described above

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT OFFICE
3040 BIDDLE ROAD
MEDFORD, OREGON 97504

rch 5/31/01
N. A 5/31/01
5/31/01

IN REPLY REFER TO:
1632(112)
M3819(NA:cs)

Memorandum JUN 1 2001

To: Bob Bolton, State Weed Coordinator, OR013

From: District Manager, Medford

JUN - 4 2001
LAKEVIEW, B.L.M.

Subject: Pesticide Records Search Findings

In response to IM No. 2001-149, a search was undertaken and a good faith effort was made to locate documents within the possession or control of this District office.

The search procedure included an electronic inspection of the Micro-Storm database for all chemical treatments completed during the period from 1965 to 1975. This was followed by manual search for all the pesticides records (see attached). The records researched included: Forest Rehabilitation Record Cards, Plantation Treatment Summary and Evaluation Forms and Reforestation Project Records.

The following amount of time was dedicated to this search: 32 hours.

Attached are copies of 30 records of the requested information.

Acting DM

Attachments (as stated)

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Lakeview District Office
HC10 Box 337 - 1300 South G Street
Lakeview, Oregon 97630
email address: or010mb@or.blm.gov

IN REPLY REFER TO:

9015

June 5, 2001

Memorandum

To: State Director, (OR 930)

From: District Manager, Lakeview

Subject: Pesticide Records Search Findings - Response to IM 2001-149

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed.

The Lakeview District undertook a pesticide record search in range improvement project files, planting folders, contract files, the Forestry Management Atlas, photo albums of management activities, fuels treatment records, right-of-way treatment records, and herbicide application records. An electronic file of projects in RIPS was also consulted.

Eighteen (18) range improvement projects and an associated 142 documented pages involving pesticides were found, copied and are submitted as part of this report.

The following amount of time was dedicated to this search: 15 hours.

Attached are the142 pages of copies of the requested information.

Please direct any questions on this matter to Bob Bolton at 541-947-6114.

Steven A Ellis

Enclosures

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Vale District Office
100 Oregon Street
Vale, Oregon 97918

IN REPLY REFER TO:
9015

Memorandum

MAY 31 2001

To: State Director (OR-910)

From: Vale District Manager (OR-030)

Subject: Pesticide Records Search Findings

As directed in IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed.

To accomplish this district staff met to "brainstorm" what records of this type might be available and where they could be found. Assignments were given to the appropriate staff to begin the search. Twenty-four projects were found in the RIPS (Range Improvement Project System). Some of the JDR (Job Documentation Reports) files still have the original JDR forms which substantiated the RIPS information (copies of this info are also attached). No other information was found in any of the existing planning or procurement documents located within the district.

The twenty four projects were:

- all designed for sagebrush control
- treated with some form of 2,4-D
- all treated with an aircraft of some type (it is unknown whether they were helicopter or fixed wing)
- application policies and procedures that were in place at the time are unknown/not available

The amount of time dedicated to this search: 16 hours
Attached are the 65 pages of copies of the requested information.

Gayla M Ernst
5/31/01

Attachment (as stated)

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Prineville District Office
P.O. Box 550 (3050 N.E. 3rd Street)
Prineville, Oregon 97754

IN REPLY REFER TO:

FACSIMILE

TO: Gina Ramos

OFFICE & CODE: W.O.

TELEPHONE:

NUMBER OF PAGES TO FOLLOW: 18

FACSIMILE NO.: 202-653-5279

FROM: Bill Pieratt

OFFICE & CODE: Louisville OR

TELEPHONE NO.: 541-446-6720

FACSIMILE:

DATE: 6-6-01

DISPOSITION OF ORIGINAL: RETURN ____ MAIL ____ TOSS ____

REMARKS:

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Salem District Office
1717 Fabry Road SE
Salem, OR 97306

9015 (081)

MEMORANDUM

June 5, 2001

TO: Assistant Director, Renewable Resources & Planning
Attn: Gina Ramos, Senior Weeds Specialist

FROM: District Manager

SUBJECT: Pesticide Review - Document Collection

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed.

The Salem District undertook to research files which included looking at our Micro*storms, database, timber sale files, miscellaneous reforestation records, reforestation atlas records and employee knowledge about pesticide application occurring during the requested time period.

The following amount of time was dedicated to this search: 42 hours

Attached is a 7 page summary report that was compiled by Salem District specialists related to pesticide use on the Salem District during the late 1960's and early 1970's.

Signed by: Denis Williamson
District Manager

Authenticated by: Mary Shires
Mail & File Clerk

1 Attachment
1 - Summary Report (7 pp)

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Eugene District Office
P.O. Box 10226
Eugene, Oregon 97440-2226

IN REPLY REFER TO:
9015

MEMORANDUM

To: Bob Bolton, State Noxious Weed Coordinator (013)

From: District Manager, Eugene (090)

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

Performed by: Ted Sexton, with assistance from Resource Area Silviculture staff personnel.

Search time: Five days.

At the present time only a few employees are still at the Eugene District Office that were here during the time that is being researched. There is little of the hard-copy data still in existence at this office.

The procedures we followed to determine if records exist include:

1. Query each Resource Area for information regarding the status of existing data files from any pesticide projects between the January 1, 1965 and December 31, 1975 dates.

2. Contact the District records person regarding the possible archiving of files created during that period.

3. Physically inspect file cabinets and storage areas for any files that may have been stored by predecessors.

4. Query MICRO*STORMS (District and State Record System) for any records that have information regarding any pesticide treatment during the time period being searched.

Our findings were minimal. No field files were found that were associated with pesticide application during the period.

Prior to 1975, records were stored on cards by handwritten notes and data entries covering all of the treatments afforded any operations area. During or approximately around 1975, a computer system was created to handle all reforestation record data. The major problem with the system was that it would only handle one line of data per record. As a result, only the last treatment or land management activity was entered into the "new" computer system. Several years later the system was revised to the current system, allowing multiple field entries.

Those records have been printed showing the data entries still depicting some form of pesticide treatment and are included with the request. Each reference has been highlighted to indicate the line of data. In addition to the MICRO*STORMS records, a single notebook with some summaries of herbicide treatments has been located in the South Valley Resource Area. It is not known how complete the summaries are since the District has been reorganized a few times since they were prepared. Copies are also included.

It has not been a practice to archive field files to permanent storage. During the time being searched, our service contracts were being processed out of the Denver Office and out of the Portland Office. Contract files would have included all correspondence and project information and contacting those office may yield more pertinent information regarding this subject.

Julia Dougan

Attachments

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
SPOKANE DISTRICT OFFICE

In Reply Refer To:
9015 (130) P

May 29, 2001

To: State Director (OR 910)

Through: Bob Bolton, Lakeview (OR-010)

From: District Manager, Spokane (OR-130)

Subject: Pesticide Records Search Findings, WO-IM-2001-149 Response

As directed by WO-IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this district office was completed:

Many old files at the Spokane District Office have been destroyed, lost or archived. However, an extensive search of the district office central files was conducted. All planning documents and central files were researched, and did not reveal pesticide use between January 1, 1965 and December 31, 1975. District employees who may have knowledge of past pesticide use were interviewed. No employee was aware of pesticide use on BLM lands during the time period of concern. Central files at the Spokane, Washington, USDA/Aphis office were also researched. Records indicated that USDA/Aphis implemented a grasshopper control project in 1973, where one million acres within eastern Washington were aerially treated with the insecticide Malathion (91% to 95% ULV), at a rate of 8.0 ounces (0.455 to 0.475) pounds active ingredient per acre. BLM lands along with other federal, state and private ownerships in eastern Washington received grasshopper control treatments. In 1973, BLM acres within eastern Washington were considerably less than today. The following is a contact person who supervised the grasshopper control project within Washington and Oregon, and may be able to provide more detailed information.

Mr. Dick Jackson
Plant Division, Oregon Department of Agriculture
P.O. Box 723
Hermiston, Oregon 97838
(541) 567-2249

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Utah State Office
P.O. Box 45155
Salt Lake City, UT 84145-0155

IN REPLY REFER TO:
9015
(UT-933)

Memorandum

JUN 8 2001

To: Director, WO-220, 1000 LS

From: State Director

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, a good faith search of documents in the possession or control of Utah's eleven field offices and the Utah State Office was completed.

In general, all contract files are destroyed 3 years after the project has been completed, therefore, no files exist covering the 1965 to 1975 time period. Pesticide Use Records are only keep in the files 10 years before they are destroyed.

Following is a summary of the types of files that were searched and copies made when the use of pesticides was found as part of the record.

Contract files – inactive project files are destroyed after 3 years
Pesticide Use Record files – files are destroyed after 10 years
Case files for Right of Way grants
Mineral lease development files
Recreation Facility records
Project Records (RIPS, JDR's)
Cooperative Agreements for range improvement projects
Section - 4 permit files for range projects
Allotment files
Livestock grazing case files

The following total amount of time was dedicated to this search: 93.5 hours.

Attached are 293 pages of the requested information found in the search.

Robert A. Bennett

ACTING

Attachments
Requested Information (293pps)

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Vernal Field Office
170 South 500 East
Vernal, Utah 84078-2799
http://www.blm.gov/utah/vernal

STATE DIRECTOR'S OFFICE

RT	OFFICE	ACTION	INITIAL	DATE
	SD			
	ASD			
	SA			
	LE			
	EA			
	EEO			
	NAT RES			
	OPER			
	BUS ENA			

Phone: (435) 781-4400
Fax: (435) 781-4410

IN REPLY REFER TO:
9015 (220) PEMS
TRANSMISSION

May 29, 2001

Memorandum:

To: State Director, Bureau of Land Management, 324 South State Street, 84111, Salt Lake City, Utah

From: Field Office Manager, Bureau of Land Management, 170 South 500 East, Vernal, Utah 84078

Subject: Pesticide Records Search Findings

As directed by IM 2001- 149 the Vernal Field Office conducted a search of office records for BLM's use of pesticides, including herbicides, fungicides, and rodenticides, during the time period from January 1, 1965 through December 31,1975. A good faith search of documents within the possession or control of this field office was completed using the following procedure.

✓ The IM 2001- 149 request was reviewed at the May 21, 2001 Leadership meeting.

✓ Each Department Head of Business Practice, .Minerals, Operations, and Resources, were assigned the task of document review for the requested information.

✓ Robert Specht was assigned task of consolidating the data for verification by the Office Manager.

✓ Copies of the IM 2001-149 letter were electronically sent to each Department head on May 21, 2001 with a due date by close of business Friday, May 25 for review of files, copying of files with information on pesticide use, and delivery of records searched and documents to Robert Specht.

✓ Each Department head assigned employees the task to search files that would have potential to contain information requested. Copies of the IM 2001- 149 letter were given to employees assigned the task.

✓ Individual files were searched for specific information on chemical uses on the Vernal District

by each Department.

✓ Results of each Department search were given to Robert Specht to compile into a single report. Report was completed on May 29, 2001

Table 1 Summarizes the types of files searched in the Vernal Field Office for the use of pesticides and the findings during the January 1, 1965 to December 31, 1975 time period. Table 2 summarizes the files in which data on chemical use was found.

Table 1 Vernal Field Office

RECORDS SEARCHED	FINDINGS	COMMENTS
BUSINESS PRACTICE		
Administrative Records: Agreements, contracts, general files and procurement files were searched for references to pesticides used on the District.	No Pesticide Use Records exist for the Period 1965-1975	Contracts are held for 3 years and then archived for 6 years and then destroyed.
MINERALS		
Oil and Gas Well File Records	900 Wells exist for this time period. Sample of every 20th well found no mention of pesticide use.	Pesticide use was not utilized in well development. Any spraying would have been done under Pesticide Use Proposals or as mitigation in the EA's, and no records exist for these activities or followup on EA's.
OPERATIONS		
Lands : Case files for 58 Right of Way Grants.	66% of the grants did not have any stipulations addressing pesticide use. 34% have stipulations for holder to contact BLM prior to initiation of use. No records exist for holders informing BLM or of use of pesticides as stipulated in the ROW's.	No inspection or compliance records on stipulations for pesticide use was documented.
Facilities - Warehouse records and storage facility records.	No facility records exist for the time period of 1965-1975.	Records destroyed as per BLM records management policies.

RECORDS SEARCHED	FINDINGS	COMMENTS
RESOURCES		
Wildlife Record Files - Projects, agreements, prairie dog management, and Studies	No Pesticide Use Records exist for the Period 1965-1975.	Prairie dog management only area where pesticides could have been used but no records exist.
Fisheries Record files.	No Pesticide Use Records exist for the Period 1965-1975.	Unknown if pesticide used by BLM or Utah Wildlife Resources for fish management.
Pesticide Use Report Files for Noxious Weed Program	No Pesticide Use Records exist for the Period 1965-1975	Earliest Records are 1988.
Range Allotment Folders	No chemical records were filed in the Range Allotment Files	Folders contain utilization, trend and condition data.
Pesticide Use Proposal (PUP)files for weed control - commercial	No PUP records exist for the period of 1965-1975	PUP files are destroyed after 10 years.
Recreation Facility Records	No pesticide records exist for recreation facilities or activities for the period of 1965-1975.	Rodent control in buildings not documented.
Project File Records	Eight records for the use of pesticides were found in the project files. All the projects were for vegetation control.	.Projects are summarized in Table 2.

Time spent for searching and copying records:
Business Practices - 1 hour
Minerals - 12 hours
Operations - 3 hours
Resources - 18 hours

Eight records of pesticide use were found in the Vernal Field Office records search. Table 2 summarizes the information in the eight files. Copies of record information about pesticide use are attached.

Table 2 - Vernal Field Office - Pesticide Records

ID #	PROJECT Date /Number	DESCRIPTION	CHEMICAL	APPLICATION RATE	APPLICATION TYP
VFO 1	1975 / 874113 Boulevard Ridge Spraying	Sagebrush spray for watershed study.. 14 acres.	2,4-D	No records in files for rates or chemical labels	BLM - rental of equipment for ground spraying
VFO 2	1970 / 874008 Little Mountain Deep Creek Aerial Spraying	Sagebrush spray for Big Game habitat and grazing improvement for elk and livestock 1200 acres	2,4-D 616 acid equivalent low volatile ester. Type III,class2	Planned at 1/3 gal /acre	Contracted - Aerial spray. No record of name of applicator contracted.
VFO 3	1969 /873522 (in 870337 file) Donkey Flat Spray	Sagebrush spraying for livestock forage improvement. 375 acres	2,4-D	5 gallons 2,4-D(2 lb acid equivalent) /acre	Contracted - Carl Oldacker - Ground spray unit.
VFO 4	1969 / 873518 Diamond Mountain Aerial Spray	Sagebrush spraying - 5456 acres	2,4-D	Bid for Application Rate @ ½ gal / acre	Contracted - Kem-Air in Worland, WY - Aerial application.
VFO 5	1969 / 873514 Tom Patterson Brush Control	Sagebrush spraying 3000 acres. 1972 report said acres resprayed in following year but no acres given and no other reports on spraying.	2,4-D	Bid Mix of 1/3 gal 2,4-D(2 lb active) with 2 2/3 gal diesel/acre. No record of final application.	Contracted - Aerial application. No record of who received contract in file.
VFO 6	1968 / 870228 (in 870229 file) Red Wash spraying.	Sagebrush spraying as maintenance of 1965 plowing project. 320 acres.	2,4-D	.3 gal acid equivalent /acre with 4.7 gal water.	Contracted - aerial. No records of contract in file.
VFO 7	1966 / 870252 (in 870219 file) Stuntz Draw Aerial Spraying	Sagebrush spraying. 1600 acres Utah BLM, 1160 acres Colorado BLM, 290 acres Utah State lands.	2,4-D	1/3 gallon of 6# low volatile ester/acre with 4 2/3 gallons water	Contracted - Aerial with Reeder Flying Services, Twin Falls Idaho. No contract in file.

ID #	PROJECT Date /Number	DESCRIPTION	CHEMICAL	APPLICATION RATE	APPLICATION TYP
VFO 8	1965 / 870219 Blue Mountain Aerial Spraying	Sagebrush spraying. 3850 acres BLM, 350 acres private land, and 210 acres of State land	2,4-D	6 lbs acid equivalent low volatile ester/acre. Mix 1/3 gal 2,4-D to 4 2/3 water/ acre	Contracted - Kem-Air in Worland, WY Aerial application. No contract in file.

David E. Howell

DAVID E. HOWELL
Field Office Manager

8 Attachments
Project files.

BUREAU OF LAND MANAGEMENT
MOAB FIELD OFFICE
SPEED MEMO

DESK: (435) 259-2112
FAX: (435) 259-2106

TO: Maggie Wyatt

FROM: Raymon Carling, Natural Resource Specialist

DATE: Wednesday, May 23, 2001

SUBJECT: Herbicides Used Been 1965 and 1975 for Range Projects

Maggie, I only found 1 project in the open files where herbicides were used for a range improvement project between 1965 and 1975. This project consisted of an aerial application of 2,4-D (2 pounds low volatile ester of 2,4-D mixed with 2.5 gallons of diesel oil per acre) over approximately 1,000 in June of 1966. The project area was about two miles west of the town of LaSal and immediately north of state highway 46. It was on BLM administered lands, but the project was completely funded and done by the livestock permittee, Redd Ranches. Also, the project was authorized by a Cooperative Agreement. The purpose of the spraying was to kill sagebrush in an area that had previously been plowed and seeded. It was done in conjunction with permittees adjacent private land.

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Monticello Field Office
P. O. Box 7
Monticello, Utah 84535

UTAH STATE OFFICE
STATE DIRECTOR'S OFFICE

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	OPER			
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9015
(UT-090)

MAY 24 2001

MEMORANDUM

To: State Director, UT-910

From: Field Office Manager

Subject: Pesticide Records Search Findings

As directed by IM-2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed.

Paul Curtis, Range Management Specialist, searched all range improvement files. Verbal discussions within the office could not recall any treatments done within this time period. Noxious weeds were not treated until 1984.

One hour of time was spent searching and copying range improvement files. Attached are 7 pages of requested information.

Kent E. Walter

Attachments
As Stated

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Moab Field Office
82 East Dogwood
Moab, Utah 84532

UTAH STATE OFFICE
STATE DIRECTOR'S OFFICE

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9015
(UT-060)

MAY 30

Memorandum

To: State Director, (UT-910)

From: Field Manager, (UT-060)

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedures were undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

- All open range project files were examined for reference to chemical treatments for projects dating from 1965-75.
- All closed range project files were examined for reference to chemical treatments for projects dating from 1965-75.
- All closed range operator files were examined for any reference to chemical treatments dating from 1965-75.
- All lands Right of Way files granted during the period 1965-75 were examined for any reference to chemical treatments.
- Ten (10) randomly selected oil and gas lease files with activity from 1965-75 were examined for reference to chemical treatments. Since there was absolutely no mention of weed or rodent control in any of these files, the file search was discontinued.
- The range project files included the JDR's and watershed projects from this time period. There were no separate fuels treatment projects, recreation facilities, forest pest control or planning documents from this time period available to review.
- There were no hazardous materials files predating 1982 to examine.

We estimate a total of 20 hours were spent in researching our files for these documents. Attached are copies of the documentation found. If you have any questions regarding our submission, please contact Maggie Wyatt at (435) 259-2174.

- Maggie Wyatt

Attachments:
As Stated Above

To: State Director

From: Manager, Kanab Field Office

Subject: Pesticide Records Search Findings

As directed by IM 2001- 149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

Searched Rangeland Improvement Project System (RIPS) for projects that might involve the use of pesticides and reviewed appropriate project files. Also searched lands case file records for lands actions that might involve pesticides. Also searched cooperative agreement files.

The following types of records were researched: (If no records exist, please state why)

One range improvement project record was found that involved the use of herbicides. Pertinent pages were copied from the project file and attached. No other records were found that involved the use of pesticides for the time period specified.

The following amount of time was dedicated to this search: 4 Hours

Attached are 24 pages of copies of the requested information.

Acting Field Manager

29 May 2001
Date

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

ST. GEORGE FIELD OFFICE
345 E. Riverside Drive
St. George, Utah 84790

Phone (435)688-3200 Fax (435)688-3252

MEMORANDUM
9015
UT-045

June 4, 2001

To: State Director

From: St. George Field Office Manager

Subject: Pesticide Search Findings

As directed by Im 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

Range improvement, ROW, and Lands files from the years 1965 through 1975 were checked for pesticide use. Also, one retired BLM employee was interviewed for information concerning any pesticide use.

There was no information found indicating that pesticides had been used on public lands within this Field Office during that time period.

Approximately 3 hours time was spent completing this search.

James D. Crisp

Post-it® Fax Note 7671	Date 6/6/01 # of pages ▶ 1
To LARRY MAXFIELD	From JIM CRISP
Co./Dept. BLM UT-933	Co. SGFO
Phone #	Phone #
Fax #	Fax #

UTAH STATE OFFICE
STATE DIRECTOR'S OFFICE

RT	OFFICE	ACTION	INITIAL	DATE
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To: State Director

From: Manager, Grand Staircase-Escalante National Monument

Subject: Pesticide Records Search Findings

As directed by IM 2001- 149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

Searched Rangeland Improvement Project System (RIPS) for projects that might involve the use of pesticides and reviewed appropriate project files. Also searched lands case file records for lands actions that might involve pesticides. Also searched cooperative agreement files.

The following types of records were researched: (If no records exist, please state why)

One range improvement project record was found that involved the use of herbicides. Pertinent pages were copied from the project file and attached. No other records were found that involved the use of pesticides for the time period specified.

The following amount of time was dedicated to this search: 2 Hours

Attached are 3 pages of copies of the requested information.

Kate Cannon
Monument Manager

5/24/01
Date

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Wyoming State Office
P.O. Box 1828
Cheyenne, Wyoming 82003-1828

In Reply Refer To:

9015 (930)

JUN 04 2001

Memorandum

To: Director (220), Room 314, LS

From: State Director, Wyoming

Subject: Pesticide Records Search Findings

As directed by Instruction Memorandum No. 2001-149, a good faith search of documents within the possession or control of this State's Field Offices was completed.

Attached with this memorandum are data collected from three Field Offices. The other Field Offices will submit their data separately. The Newcastle Field Office was not in existence before 1975.

Of the 147 pages of information attached with this memorandum, 20 hours were dedicated to data collection.

If there are any further questions, please contact Ken Henke at 307-775-6041.

ACTING

Attachments

In Reply Refer To:

9015 (930)

[redacted]

JUN 0 4 2001

Memorandum

To: Director (220), Room 314, LS

From: State Director, Wyoming

Subject: Pesticide Records Search Findings

As directed by Instruction Memorandum No. 2001-149, a good faith search of documents within the possession or control of this State's Field Offices was completed.

Attached with this memorandum are data collected from three Field Offices. The other Field Offices will submit their data separately. The Newcastle Field Office was not in existence before 1975.

Of the 147 pages of information attached with this memorandum, 20 hours were dedicated to data collection.

If there are any further questions, please contact Ken Henke at 307-775-6041.

DONALD A. SIMPSON

ACTING

Attachments

KHENKE:clh:06/04/2001 PEST147.KHH

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Cody Field Office
P.O. Box 518
Cody, Wyoming 82414-0518

9015 (220)

To: State Director

From: Cody Field Office Manager

Subject: Pesticide Records Search Findings

As directed by IM 2001- , the following procedures were undertaken in response to this request and a good faith search of files and records within the possession or control of this office was completed to gather the requested information.

The Cody Field Office conducted a search of old project files and allotment files to determine if projects using pesticides had been conducted during the indicated periods. Based on knowledge of the range staff and our pesticide/weed coordinator, we knew that several sagebrush control projects had taken place in the past. A search of past project files and allotment files did allow us to find records of those projects that we were aware of and a few that we were unaware of. The requested information has been photocopied and 49 pages of information about pesticide use projects in the Cody Field Area has been gathered in reply to this memo.

The following amount of time was dedicated to this search: Range staff time 4.0 hrs - search of files, Admin clerk 1.0 hr - photocopying time, Pesticide/Weed coordinator 3.0 hrs - files search and preparation of memo and collation of information.

Attached are 49 pages of photocopied files and records of the requested information.

Michael J. Blymyer

Cody Field Manager

Date: May 29, 2001

Attachment

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Kemmerer Field Office
312 Highway 189 North
Kemmerer, Wyoming 83101-9710

9015 (090)

June 4, 2001

To: State Director

From: Field Manager

Subject: Pesticide Records Search Findings

As directed by Instruction Memorandum No. 2001-149, the following procedures were undertaken in response to this request, and a good-faith search of documents within the possession or control of this Field Office was completed:

The Kemmerer Field Office (KFO) checked with both the Lincoln and Uinta County Weed and Pest Districts to see if they had any files or if they kept any records during the time period outlined in Instruction Memorandum No. 2001-149. A search of their files showed no records were required to be filed at that time. The KFO then checked the Range Improvement Project System Files on the computer, and the project file folders for pesticide projects done during that time frame and located eight projects dealing with pesticide use during that time frame.

The following project files were researched and all available information has been enclosed for the treatments completed (as listed below):

Project Number - Project Name and Date of Project	**Pesticide Used**	**Project File Location**
944005 - Smiths Fork Spray - 1970	2,4-D	Original File sent to BLM - Cheyenne State Office - Jerry Federer - 5/15/79
944013 - Reed Company Sagebrush Control - 1968	2,4-D	Project Information Enclosed
944014 - Larsen Brush Control - 1969	2,4-D	Original File sent to BLM - Cheyenne State Office - Jerry Federer - 5/15/79
944040 - Bird Brush Control - 1969	2,4-D	Original File sent to BLM - Cheyenne State Office - Jerry Federer - 5/15/79

944041 - Reed Brush Control - 1969	2,4-D	Original File sent to BLM - Cheyenne State Office - Jerry Federer - 5/15/79
944077 - Coop Weed Control - 1971	2,4-D	Original File sent to BLM - Cheyenne State Office - Jerry Federer - 5/15/79
944136 - Weed Control - 1972	2,4-D	Original File sent to BLM - Cheyenne State Office - Jerry Federer - 5/15/79
944194 - Hot Spot Weed Control - 1973	2,4-D	Original File sent to BLM - Cheyenne State Office - Jerry Federer - 5/15/79

The following amount of time was dedicated to this search: 4 hours

Attached is the only information the Kemmerer Field Office has regarding these projects. It consists of 27 pages of copied data from the Range Improvement Computer Files and the information on file in the project folders.

Jeff Rawson
Field Manager

Enclosure:
Pesticide Information

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Worland Field Office
P.O. Box 119
Worland, Wyoming 82401-0119

9015

JUN 0 1 2001

Memorandum

To: State Director

From: Field Office Manager, Worland Field Office

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

1. A search of central files for the pesticide program and the noxious weed program was undertaken.

2. A search of existing project files that relate to vegetative management where spraying of sagebrush may have been done between 1965 and 1975 was undertaken.

The following types of records were researched:

1. Central Files - Pesticides and Noxious Weeds

2. Project Files - Vegetation Management Projects

The following amount of time was dedicated to this search:

Approximately ten hours of time was spent looking through the field office records for this search.

Attached are the 89 pages of copies of the requested information.

NG

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Rawlins Field Office
1300 North Third Street
Rawlins, Wyoming 82301-4376

9010

JUN - 1 2001

Memorandum

To: State Director (930)

From: Acting Field Manager, Rawlins

Subject: Pesticide Records Search Findings

As directed by your office, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed.

We queried the RIPS database and found ten possible projects that used pesticides. There were only five project files located in the office. Copies of the requested information are attached.

Five of the project files were no longer available.

Two hours were dedicated to this search.

Attachments

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Pinedale Resource Area
P.O. Box 768
Pinedale, Wyoming 82941-0768

9015(WY100)

To: State Director

From: Pinedale Field Office Manager

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

1. Interview with personnel with most years at this office; referred to below listed sources.

2. Research of **Range Improvement Project files**; no results.

3. Research of **Grazing allotment files**; no results.

4. Research of **Grazing Advisory Board meeting** minutes; results enclosed.

The following types of records were researched: Same as listed above.

The following amount of time was dedicated to this search: **Two (2) days.**

Attached are copies of pages from Grazing Advisory Board meeting minutes that list spray project requests for various grazing allotments. This is the only pesticide information for the specified time period located within the records residing in the Pinedale FO. In the mid-1980's all of the Range Improvement project files for pesticide application projects for this office were sent to WO and never returned. An attempt to locate these files was made about 5 years ago with no results. 2,4-D was the common herbicide used for spraying sagebrush in this area during the mid-1960's.

Field Office Manager

June 4, 2001

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Rock Springs Field Office
280 Highway 191 North
Rock Springs, Wyoming 82901-3447

4100 (040)
9015

June 5, 2001

To: State Director

From: Acting Field Manager

Subject: Pesticide Records Search Findings

As directed by IM 2001-149, the following procedure was undertaken in response to this request and a good faith search of documents within the possession or control of this field office was completed:

1. Researched Range Improvements Files (RIP's) in GABs which includes Job Description Records (JDR's).

2. Scanned files not in RIP's looking for pesticide records.

3. Interviewed the rangeland management specialist/wildlife biologist who was here during that time span.

The following types of records were researched:

Range Improvement Files and copies were made.

The following amount of time was dedicated to this search:

Approximately four hours.

Attached are the 28 pages of copies of the requested information.

Ted Murphy

Attachments

United States Department of the Interior

9015
FCW&P

BUREAU OF LAND MANAGEMENT
Lander Field Office
P.O. Box 589 (1335 Main Street)
Lander, Wyoming 82520-0589
June 4, 2001

Memorandum

To: State Director Wyoming (930)
Attn: Ken Henke

From: Field Office Manager

Subject: Pesticide Records Search Findings.

As directed by IM 2001-149 the following procedure was undertaken in response to this request and a good faith search of documents within the possession, or control, of this Field Office was completed. The Lander Field Office central files were examined, and staff personnel asked about those items of concern in IM 2001-149 (i.e., grasshopper control projects, weed (i..e., leafy spurge) control, Range program vegetation projects involving pesticide use, Recreation program pesticide use, and Forestry program pesticide use of herbicides and insecticides).

There is no record present in our central files that indicates that noxious weeds were treated on BLM public lands during the time period specified in the IM (i.e., 1965 through 1975). Our earliest records contain two Environmental Analysis Reports (EAR's), both prepared by the State of Wyoming Department of Agriculture, Weed and Pest Coordinator George Hittle: 1) 1975. EAR for the North and Middle Forks of the Popo Agie Watersheds and 2) 1980. EAR for the North Platte River Area, which contains Horse Creek administered by the Lander BLM unit.

BLM wrote a Supplement in 1979 to the North Platte River Area EAR. The original EAR for the two Popo Agie watersheds did not include BLM as a signatory partner. There is no indication in the weed control program files (9015) that any weeds were treated with herbicides on BLM administered public lands until sometime in the late 70's. And this can only be inferred from an internal memo comment between a purchasing agent at the Rawlins District and the Lander Area Manager: "...revision of our [BLM] contract with him [George Hittle]."

The Lander Resource Area did not hire temporary personnel, or use permanent personnel, to spray herbicides at anytime. All noxious weed treatment has been done by contracting with Fremont County and Natrona County Weed & Pest Districts.

The 9015 Grasshopper Control files also contain no information from the time period given in IM 2001 -149.

There are some Watershed Management files (file code 7000) that detail eight sagebrush control projects in the then Lander District:

7000-1761 (1965 A.D.) – Rusco Sage Spray

7000-2331 (1967 A.D.) – Commissary Hill Spray

7000-2332 (1967 A.D.) – Davison Sage Spray

7000-2365 (1968 A.D.) – Milton Pasture Spray

7000-2366 (1968 A.D.) – Lee Pasture Spray

Also, attached is a news release from May 15, 1970 A.D. that describes three sagebrush control projects (7000-2438 Devils Canyon Spray, 7000-2439 Red Canyon Spray, 7000-2471 Commissary Hill Spray). Job Documentation Reports (JDR's) for each project are attached.

Files in the 5800 and 5820 Forestry program codes have not been found. Ethylene dibromide (EDB) was used to kill pine beetles; EDB became a HazMat program issue back in the mid to late 80's and stored EDB was rounded up at the old Lander RA headquarters, as per an IM, and shipped-off to a hazardous waste facility somewhere in Idaho.

About 14 hours of personnel time was spent gathering this information.

Attached are 42 pages of copies of the requested information.

If you have any questions please call Greg Bautz, LFO Soil Scientist, at (307) 332-8437.

Attachements

5

Attachment

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

OFFICIAL FILE COPY

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JUN 09 1980

RCD

Agent Orange Document Project
1900 Half Street, SW.
7355
Washington, D.C. 20324

Enclosed are copies of the only items that are available in the files of the Office of Territorial and International Affairs on Agent Orange.

(1) A telegram dated June 6, 1977, from the Director, Office of Territorial Affairs, Department of the Interior, to the High Commissioner of the Trust Territory of the Pacific Islands relaying to him information on the incineration of Herbicide Orange Chemical near Johnston Island in July 1977.

This information was passed informally to the Office of Territorial Affairs by the U.S. Department of State for public information release in the Marshall Islands and other parts of the Trust Territory of the Pacific Islands.

(2) An Inter-Office memorandum dated July 26, 1979, from the Director, Office of Territorial Affairs to Associate Solicitor, Division of General Law, DOI, stating that the only file material available on Agent Orange was the June 6, 1977, cable sent to the High Commissioner of the Trust Territory of the Pacific Islands.

(3) Mr. John E. deYoung, telephone number 343-6816, can be contacted should any problem or question arise concerning these two items.

Sgd. Wallace O. Green

Enclosures - 2 cys of each enclosure

cc: Secy file, Secy read(2), TIA file, TIA hold copy, Robert Walter SOL [illegible]

JEdeYoung:dy 6/5/80 COPY FOR THE SECRETARY'S OFFICE

United States Department of the Interior

OFFICE OF THE SOLICITOR

MAY 28 1980

1980 MAY 30 AM 10 25

IN REPLY REFER TO:

MEMORANDUM

TO: Agent Orange Coordinators:

Trish Bangert, Division of Conservation and Wildlife

David Jones, Division of Indian Affairs

Paul Smyth, Division of Energy & Resources

FROM: Attorney, Administrative Law and General Legal Services

SUBJECT: Agent Orange Litigation

At a meeting with Department of Justice Attorneys on May 23, 1980, the following transpired:

(a) the attached instructions for transferring the docume to the depository were distributed;

(b) Justice advised that we can begin transferring documents immediately. Please advise your respective clients and ask them to begin sending documents as soon as possible. The address of the depository is on the attached instructions;

(c) The Department of Interior's clerk is Amy Zibruio and she may be reached at 343-6446. She should be notified when we transfer documents so that she can process them at the depository;

(d) We should limit ourselves to 40-50 documents per batch;

(e) Silver is not covered by the discovery request;

(f) Could each of you ascertain whether your clients have micrograph process equipment? Justice is seeking to enter into some cost-reimburseable agreements for these services;

(g) A copy of the Confidentiality Order is attached. If there are any privileged documents please ascertain whether it would be sufficient to proceed under the Confidentiality Order.

Your cooperation is appreciated. Please advise if you have any questions.

/s/

Robert E. Walter

Attachments

cc: Docket, Chron (E-1), Subject, R. Walter, C. Marts, B. Blanchard, J. LaYoung
R. Walter:das:5/27/80

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

TT - NATURAL RESOURCES 7 CHEMICALS
July 26, 1979

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Memorandum

To: Associate Solicitor, Division of General Law

From: Director, Office of Territorial Affairs

Subject: Agent Orange Litigation

For some reason your memorandum of July 19, 1979, on this matter did not reach our Office until late on July 24 and was not seen by staff members here until July 25, 1979, a day after your July 24 deadline.

Mr. deYoung of my staff, however, contacted Bob Walters of your staff early this morning on this matter and discussed with him the little we know of "Herbicide Orange".

1. Johnston Island and Air Micronesia refueling

This Office appears to have been involved, as far as we know, in two instances, and then only peripherally.

At some point in time, presumably in the late 1960's or early 1970's, the Air Force stored a considerable quantity of the liquid defoliant "Herbicide Orange" on Johnston Island. The Department of the Interior does not administer Johnston Island but at that time the Air Micronesia flights from Honolulu en route to the Trust Territory regularly made fueling stops at Johnston Island.

Apparently in late 1970, the Surgeon General of the United States recommended that the Department of Defense close Johnston Island to commercial air traffic because of anticipated risk stemming from the storage of "chemical munitions". At least one letter was written to the Surgeon General, then Dr. Jesse L. Steinfield, signed by the Under Secretary on January 20, 1971, asking that commercial traffic through Johnston Island be continued. This request eventually was approved. We do not have any files on this matter since the matter appears to have been handled through the former Office of the Assistant Secretary for Land Management. The pertinent correspondence should be in the Secretary's files. I estimate that there may be three to five pieces of correspondence on this aspect, if that many.

COPY FOR THE SECRETARY'S OFFICE

2. Information passed to the Trust Territory of the Pacific Islands on the 1977 incineration of "Herbicide Orange"

In the spring of 1977, the USAF received approval and a research ocean dumping permit from the EPA to incinerate approximately 2.3 million gallons of "Herbicide Orange" in the Pacific Ocean in the summer of 1977. About 1.5 million gallons were at Johnston Island.

There had been public hearings on the proposal in 1975 and press stories had been released. The Trust Territory of the Pacific Islands had submitted a report to the Public Hearings held in Honolulu in April 1975, expressing concern that the burning of "Herbicide Orange" in the Pacific might expose the TTPI islands to dangerous health hazards. The permit did not come until two years later.

On June 6, 1977, the Office of Territorial Affairs forwarded information by cable to the High Commissioner of the Trust Territory on the scheduled incineration which was then slated to be done near Johnston Island in July of 1977. This information was provided by the Bureau of Oceans and International Environmental and Scientific Affairs, Department of State.

The only file material we have of the "incineration project" is a copy of the June 6, 1977, dispatch sent to the High Commissioner, plus copies of two explanatory memoranda provided informally to us by the Department of State.

RUTH G. VAN CLEVE

Mrs. Ruth G. Van Cleve

cc: TA file
TA hold copy

JEdeYoung:dy 7-26-79

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

UNCLASSIFIED TT - NATURAL RESOURCES 1-4 AIR POLUTION

INT/DOTA:JBERG:DY
6-6-77:343-6771
INT/DOTA:RVANCLEVE

OES STATE PATSY T. MINK

JUN 06 1977

PRIORITY

ER
RVC
JB

N/A

OGEN. TT

INCINERATION OF HERBICIDE ORANGE

DOTA NO. 279-TT

FOR ACTING HICOM. 1.) FOLLOWING IS INFORMATION REGARDING THE SCHEDULED INCINERATION OF HERBICIDE ORANGE CHEMICAL NEAR JOHNSTON ISLAND IN JULY. PLEASE PASS THIS INFORMATION TO DISTRICT ADMINISTRATION IN THE MARSHALLS AND OTHER TTPI POSTS AS APPROPRIATE FOR RELEASE.

2.) US ENVIRONMENTAL PROTECTION AGENCY ON APRIL 25 GRANTED A RESEARCH PERMIT TO THE UNITED STATES AIR FORCE FOR A TEST BURN OF A CHEMICAL DEFOLIANT KNOWN AS HERBICIDE ORANGE ABOARD A SPECIALLY EQUIPPED INCINERATOR SHIP, THE MV VULCANUS. THE FIRST BURN WILL TAKE PLACE ON OR ABOUT JULY 17 AT A SITE 15 DEGREES 45 MINUTES TO 17 DEGREES 45 MINUTES NORTH LATITUDE AND 171 DEGREES 30 MINUTES TO 172 DEGREES 30 MINUTES WEST LONGITUDE. THIS IS APPROXIMATELY 120 MILES WEST OF JOHNSTON ISLAND AND MORE THAN 1000 MILES NORTH OF THE CLOSEST ISLAND IN THE MARSHALL ISLANDS DISTRI CT OF THE TRUST TERRITORY.

3.) ONLY IF THE DESTRUCTION IS AT LEAST 99.9 PER CENT EFFECTIVE WILL EPA ISSUE SPECIAL PERMITS FOR THE INCINERATION OF THE REMAINDER OF THE 2.3 MILLION GALLON STOCK OF HERBICIDE ORANGE. THE ENTIRE INCINERATION, WHICH WILL CONSIST OF THREE BURNS, WILL BE COMPLETED BY 17 SEPTEMBER.

4.) THERE WILL BE NO DANGER TO ANY PERSONS LIVING DOWNWIND OF THE BURN SITE. THE NEAREST DOWNWIND ISLANDS ARE MORE THAN 1000 MILES AWAY FROM THE BURN SITE. TECHNICAL ANALYSES SHOW THAT AT THE REQUIRED 99.9 PER CENT DESTRUCTION LEVEL THERE WILL BE LESS THAN ONE TENTH TO THE MINUS TWELFTH GRAM OF TOXIC MATERIAL PER CUBIC METER OF AIR NINETY MILES FROM THE SHIP. THERE IS NO NEED FOR ANY CONCERN FOR ANY ISLANDS IN THE TTPI.

5.) THE SITE IN QUESTION WAS CHOSEN BECAUSE IT OFFERS AN ENORMOUS AIR AND WATER MASS DISPERSION BASIN. AT THIS SITE, THERE IS NO HUMAN POPULATION FOR MORE THAN 1000 MILES DOWNWIND.

6.) TECHNICAL PERSONNEL WILL MONITOR ALL ACTIVITIES OF THE MV VULCANUS WHICH IS EQUIPPED WITH SPECIAL AUTOMATIC SENSORS FOR SAFETY PURPOSES. AT NO TIME, WILL ITS INCINERATION ACTIVITIES BE ALLOWED TO EXCEED VERY STRICT SAFETY REQUIREMENTS.

7.) HICOM WINKEL AND DISTRAD DEBRUM FULLY BRIEFED ON ACTIVITY BY OTA. PLS UNDERTAKE TO DISSEMINATE THIS INFORMATION SO THAT MARSHALLESE AND OTHERS FULLY UNDERSTAND THAT NO DANGER EXISTS TO THEM OR THEIR ISLANDS. DIRECTOR OF TERRITORIAL AFFAIRS SENDS.YY

MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

Memorandum

906

mep
16452

TO : District Commander **DATE:** 20 May 1977

FROM : Chief, Marine Environmental Protection Branch

SUBJECT: Ocean Incineration of Herbicide Orange

1. The USAF has recently received approval and a RESEARCH * ocean dumping permit from the EPA to incinerate approximately 2.3 million gallons of herbicide orange in the Pacific Ocean this summer. This is ocean incineration vice ocean dumping although an ocean dumping permit is issued because of the slight particular matter which results after the burn.

2. The project has been in a proposal stage for over 2 years, in fact I attended the public meetings on the subject in Honolulu in April 1975. At that time there was concern by the Marshallese (supported by Life of the Land) for what effects the project would have on the Marshall Islands----lack of knowledge of what will really occur. It was recommended that alternatives to the incineration be sought. This review took nearly 2 years but to no avail. Thus it was recently approved by EPA to go ahead.

3. The project consists of loading .8 million gallons of H.O. in Gulfport Mississippi in late May or early June in the M/V VULCANUS (foreign incineration vessel) and transporting to the incineration site between 15°-45N to 17°-45N and 171°-30W to 172°-30W. (Approx. 1000 mi W of Hawaii, 120 mi W of Johnston Island, 1000 mi NE of Marshall Islands). Ship will arrive at Johnston Island approx 8 July and burn the first load approx 12-24 July. Thence back to J.I. for two more round trips to load and incinerate the other 1.5 million gallons presently stored in J.I. 2nd and 3rd burns scheduled for approx 11 Aug and 3 Sep respectively.

4. I have been trying to obtain an A.F. OPORDER for this project and should have it soon. Think LORSTA J.I. will be asked to assist with communications but forsee no other dedicated CG involvement. EPA is ~~apparently~~ going to provide shipriders and thus CG surveillance should not be required (discussed this with LT VOYIK-G-WEP last week). I am trying to get up to speed on the entire operation and will brief you further as required.

M. W. MASTENBROOK

* RESEARCH PERMIT IS FOR 1ST LOAD ONLY. IF ALL IS OK, PERMIT WILL BE ISSUED FOR OTHER 2 LOADS.

Copy to:
o,m,dcs

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Barry

DEPARTMENT OF STATE

Washington, D.C. 20520

BUREAU OF OCEANS AND INTERNATIONAL
ENVIRONMENTAL AND SCIENTIFIC AFFAIRS

D	C
DD	
CO	W
OJ	
FILE	DSTY

MEMORANDUM

TO: OES - Mrs. Mink April 28, 1977

FROM: OES/ENP - Lindsey Grant

SUBJECT: Tentative Schedule for Destruction of Herbicide Orange

On April 25 EPA approved a research permit for the at-sea incineration of Air Force stocks of Herbicide Orange at the designated "burn" site some 120 miles west of Johnston Island in the Pacific (an area bounded by the following coordinates: 15° 45' to 17° 45' North Latitude, 171° 30' to 172° 30' West Longitude). The "burn" will be carefully monitored, and if the destruction efficiency meets the requirements established by EPA on previous tests (over 99.9 percent effective destruction), a special permit will ~~be issued~~ for the other two burns that will be required to destroy the entire 2.3 million gallon stock (of which 860,000 gallons are currently stored at Gulfport, Mississippi and 1.4 million gallons at Johnston Island).

The tentative schedule for the entire operation, starting with the loading of the Herbicide Orange stocks at Gulfport aboard the special incinerator ship, the M/V Vulcanus, is as follows:

May 10 - begin loading Herbicide Orange at Gulfport, Mississippi

May 28 - depart Gulfport

June 3 - arrive and depart the Panama Canal

June 25- arrive Johnston Island to pick up the monitoring crew

June 30- depart Johnston Island for the research burn

July 12- return to Johnston Island to load Herbicide Orange

July 28- depart Johnston Island for the second burn

Aug. 9 - return to Johnston Island to load Herbicide Or[illegible]e

Aug. 25- depart Johnston Island for the third burn

Sept. 6 - return to Johnston Island after the third burn

Sept. 9 - depart Johnston Island--mission concluded

Oct. 1-2 - arrive and depart Panama Canal on return voyage

cc: EA/ANP - Mr. Squire
ARA/RPP - Mrs. Oakley
ARA/PAN - Mr. Wagner

OES/ENP/EN:GLKinter:srs

Inter-Office memorandum dated July 26, 1979, from Director, Office of Territorial Affairs, to Associate Solicitor, Division of General Law, Department of the Interior, stating that the only file material the Office of Territorial Affairs possessed on Agent Orange was a June 6, 1977, cable sent to the High Commissioner of the Trust Territory of the Pacific Islands on the incineration of Herbicide Orange Chemical near Johnston Island in July 1977.

The June 6, 1977, cable was based on information provided informally to the Office of Territorial Affairs by the Department of State in June 1977.

June 6, 1977, telegram to High Commissioner of the Trust Territory of the Pacific Islands, Saipan, Mariana Islands, relating to scheduled incineration of Herbicide Orange Chemical near Johnston Island in July 1977.

INSTRUCTIONS FOR TRANSFER OF DOCUMENTS TO THE AGENT ORANGE DOCUMENT PROJECT

All documents that fall within the pending document production request filed in In re "Agent Orange" Product Liability Litigation, MDL #381, must be prepared by each agency as follows:

COPY

The Justice Department has requested duplicated copies of all documents. If your agency can spare the original copy of any document for an indefinite period of time (up to eight years), you may submit the original (which will be stamped with an identifying code) and one copy to the Document Project. If the original cannot be spared, send two copies. If your production of duplicates of all documents is not feasible for some reason, submit only the original or one copy.1/

BATCH

Each producing agency or department must organize its document collection into batches prior to mailing. Documents comprising a batch should be selected on the basis of document type, subject matter and privilege status. The following guidelines apply:

1. Documents comprising a batch must be of the same general type, e.g., research reports, letters or chronologic files. Do not combine types in a single batch.

   The batch title will appear on the finished Document Index as the sole reference to nature and content of documents. Thus, the title should be as specific and informative as possible. E.g.:

   (a) Memoranda from _____ Division, _____ Section relating to toxic waste disposal (privileged);

   (b) Video cassettes from Air Force Logistics Command relating to vegetation control in Vietnam. (qualified privilege);

   (c) Form 440 from Department of Agriculture Forrestry Service relating to Herbicides control.

1/ The Justice Department will attempt to litigate this case without duplicate copies. However, it may call for duplicates at a later date.

Once you decide on a format for describing a given type of document, use the same format to describe similar documents in subsequent batches. Consistency is extremely important to the success of this effort.

2. Within a given very large document category, batches should be assembled according to subject matter, if possible.

3. Documents subject to any kind privilege or protection of law, e.g., classified documents or Government privilege documents, must be batched separately. The choice of conditions under which privileged documents will be produced are three:

(a) totally privileged, no production to any party (these documents will be delivered to the Court for an in camera review of the privilege claim);

(b) partially or totally privileged but can be produced under a Protective Order (these documents will be produced not at the general document depository, but at a special depository run by a government agency);

(c) partially privileged but can be produced in redacted form (These documents will be produced in a redacted form at the general document depository; no party will have access to the redacted portions, but one complete, unredacted copy of the document must be produced to the Document Project because that complete copy will also be produced to the court for in camera review of the privilege claim.). Submit duplicate copies of the redacted document.

Do not include privileged and unprivileged documents in the same batch. Do not include documents with different levels of privilege in the same batch.

4. Batches should normally be packaged separately, one batch to one mailing container (box or envelope). If any batch exceeds the size of a convenient mailing container, the batch may be sent in as many mailing containers as necessary, each of which will have an identical cover sheet (see below). Conversely, several small batches may fit conveniently in a single mailing container, but each batch must be labeled with a cover sheet, and each must be separate and distinct from others in the same container.

5. If your agency has a small number of documents which cannot be logically classified according to document type, they may be included in a single batch with the document type "miscellaneous." But avoid this result when possible. Document type is a critical element in the index of the document collection and "miscellaneous" conveys no identifying information..

6. Include both copies of each document in the same batch.

IDENTIFY BY COVER SHEET

Each batch must be identified by means of a comprehensive and clear transmittal letter or memoranda (called the Cover Sheet) which is packaged with and attached to each batch. It is not attached to each mailing container, since more than one batch may be sent within a single container. The Cover Sheet must contain the following information:

1. Date of mailing from agency;

2. Name of originating agency and every smaller applicable organizational designation, e.g., Division, Department, Branch, Office, etc. [Use whole titles, not acronyms.];

3. Batch Title--this is the most important element of the Cover Sheet;

4. Whether single copies or duplicate copies are enclosed in the Batch;

5. Whether the batch is subject to any kind of privilege or protection under law;

6. Name and phone number of person who can be contacted should any problem or question arise regarding the batch.

MAIL

Send each batch securely wrapped, addressed and labeled to the Government's depository for processing:

Agent Orange Document Project
1900 Half Street, S.W.
~~8th Floor~~ 7355
Washington, D.C. 20324

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF NEW YORK

- x

IN RE "AGENT ORANGE" PRODUCT LIABILITY LITIGATION : MDL #381 (GCP)

- x

ALL CASES

ORDER TO PROTECT THE CONFIDENTIALITY OF CERTAIN GOVERNMENT DOCUMENTS

The United States of America, having requested an order pursuant to Rule 26(c) of the Federal Rules of Civil Procedure to protect the confidentiality during discovery and trial preparation of certain documents produced pursuant thereto by the United States or any of its agencies or departments; and

WHEREAS, the United States of America has demonstrated a need to maintain substantial confidentiality of these documents and the information contained in them especially as respects persons not named as parties in this litigation; and

WHEREAS, this Court has weighed the public interest and the need for disclosure against the injury to the persons who are the subjects of the information contained in these documents, to the physician-patient relationship, and to the treatment services, and has determined that the former outweigh the latter, and

WHEREAS, all parties to this litigation have agreed upon the terms of the order as set forth herein and have agreed to abide by the terms of this order in all respects, and

WHEREAS, a separate order or orders will protect the confidentiality of such documents at the trial or trials of the actions which comprise this litigation, and

WHEREAS, the parties by this Order concede nothing with respect to the use or non-use of such documents at the trial or trials of the actions which comprise this litigation,

IT IS HEREBY ORDERED that all those documents the Government identifies, either individually or by category, on the attached Schedule A (which will be periodically amended by agreement of all parties or by the Court, on Motion made on notice to all parties), as documents protected by this Confidentiality Order are and shall be confidential according to all applicable statutes and regulations and according to all the terms of this order as follows and in no other way:

1. These documents, and the information contained in them, will be used exclusively for the purpose of discovery and trial preparation in this litigation as contemplated by the Federal Rules of Civil Procedure, and will be kept confidential and will not be exhibited or described to, or discussed with anyone not Designated (as described in paragraph 3, infra) or Qualified (as described in paragraph 4, infra). No use will be made of these documents or the information contained in them for any purpose other than such discovery and trial preparation in this litigation, e.g., for the solicitation of persons identified in or by these documents.

2. These documents may be copied only to the extent necessary--and no further--to permit their use in accordance with the terms of this Order. Any Designated person who copies an original of any of these documents at the Depository where they will be retained will be identified to the Government by name and party affiliation, and will henceforth be held responsible and accountable for that copy of the document and all copies made of that copy for any purpose.

3. A Designated Person is one who, in advance of seeing any of these documents, (i) is designated by counsel of record for any party to this litigation in writing to the counsel of record for the United States, and (ii) signs a formal consent to be bound by all the terms of this Order. Copies of the consent will accompany the designation and be filed with the Court.

(a) Plaintiffs' Designees may include a reasonable number of: each plaintiff's counsel of record, their paralegals and/or their professional consultants or expert witnesses, and no others.

(b) Defendants' Designees may include a reasonable number of: each defendant's counsel of record, their paralegals, their professional consultants or expert witnesses, and their client's corporate representatives, and no others.

4. A Qualified Person is a witness to a deposition noticed by any party to this litigation, provided that:

(a) all persons in attendance at the deposition, except for the Court Reporter, are Designated or Qualified Persons;

(b) the witness is advised in writing or on the record of the deposition of this Order and the witness agrees in writing or on the record to be bound by all its terms;

(c) copies of these documents, though identified and numbered as exhibits to the deposition, will not be made a physical attachment to the transcript of the deposition; and

(d) every effort will be made at the deposition to so restrict questions and testimony about these documents that their confidentiality will be preserved on the record to the greatest extent possible.

5. No copy of these documents will be made a part of the Court record of this multidistrict litigation for any purpose whatsoever except under seal.

6. Upon the termination (by District Court order or verdict, or settlement) of all the actions consolidated in this multidistrict litigation, all designees of all parties will provide to the counsel of record for the United States either (i) all copies of these documents retained by them, or (ii) a statement to the effect that all such copies have been destroyed.

7. At any point in time prior to the termination of these actions that any party's counsel no longer need these documents for the purposes outlined herein, that party's designees will provide the counsel of record for the United States either (i) all copies of these documents retained by them, or (ii) a statement to the effect that all such copies have been destroyed.

8. No modification of this Order will be made, nor any additional use of these documents authorized, except on District Court Order upon written application to the Court and after an opportunity for all parties to be heard.

9. This Order shall be binding upon all persons, including parties, Designated Persons and Qualified Persons. It is enforceable by the contempt powers of the United States District Court in accordance with the terms of Title 38 Section 3301(f) [designating criminal penalties and fines up to $20,000 for disclosure of Veterans Administration servicemen records] and any other applicable or appropriate sanction imposed in the discretion of a District Judge of competent jurisdiction.

10. If any Designated or Qualified Person becomes the subject of any court's subpoena for the production of any of these documents or the information contained therein, that person will promptly notify the Government of the pending subpoena, and notify the issuing court of this Protective Order.

DATED: Westbury, Long Island
, 1980

ENTER:

/s/
UNITED STATES DISTRICT JUDGE

SCHEDULE A

1. All Veterans Administration medical files or Agent Orange Registry records of non-parties to this litigation that are produced by the Government in response to any party's Request for Production of Documents.

2. All Veterans Administration claims folders or rating decision of non-parties to this litigation that are produced by the Government in response to any party's Request for Production of Documents.

6

COPY OF TRANSCRIPT

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
DIVISION OF LAND & WATER
WASHINGTON, D. C. 20240
COMPLAINT OF DISCRIMINATION

IN RE: Richard Harlow
OSC File No: DI-00-0378

~~~~~~~~~~~~~~~~~~~~~~~~~

The Telephone Interview of **RICHARD HARLOW**, taken in the above matter in the offices of **DEPARTMENT OF THE INTERIOR**, 1849 C Street, Washington, D.C., on the 23rd day of May, 2001, beginning at 9:03 a.m.

A P P E A R A N C E S

ON BEHALF OF THE BUREAU OF LAND MANAGEMENT:

Veronica I. Larvie, Attorney At Law
Jean Sonneman

ON BEHALF OF RANGELAND, SOIL, WATER, AIR & RIPARIAN GROUP WO-220:

Christina Ramos, Senior Weeds Specialist

ON BEHALF OF DEPARTMENT OF INTERIOR, OFFICE OF THE SOLICITOR:

Robin Friedman, Attorney At Law
~~~~~~~~~~~~~~~~~~~~~~~~~

TELEPHONE INTERVIEW OF RICHARD HARLOW

IN RE: RICHARD HARLOW

OSC File No. DI-00-0378

May 23, 2001

EXAMINATION

BY MS. SONNEMAN:

Q. This interview will be informal, you are not under oath. You may opt not to answer any question we ask and any time if you want to go off the record, you may request that and we'll grant that. At your request, we have prepared some questions to give you some advanced notice of the topics which we believe would help us in our investigation. We may have some additional questions as we go along.

As we have agreed previously, a transcript of the interview will be prepared and all, all of us participants will have an opportunity to make corrections to that transcript. At this point, would you like to make a statement?

A. Yes, I just, I need to just lay some of my own ground rules so that we know where we're going with this thing. Let me make four

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OSC File No. DI-00-0378

May 23, 2001

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A. Yes, I just, I need to just lay some of my own ground rules so that we know where we're going with this thing. Let me make four

points real quickly, and I hope the reporter is taking the comments as well.

Q. Yes, she is.

MR. FRIEDMAN: We are on the record, everything Miss Sonneman said.

A. That's great, thanks, Robin. I will answer one question at a time and move on and answer the next question unless there is questions of you at the end of my answer. I expect no interruptions when I answer a question until I am done with a question. We have to remember there is four of you and one of me, so I don't need to be bombarded with a bunch of questions while I'm trying to answer the questions. So I would like to answer the question that you have given me and then I'll take additional questions on that question when I'm done.

No. 2, if we get into a situation where I feel this interview is interrogation, the interview stops, period. I will not continue. We must remember I am responding to these questions at your request and I do not expect to be on trial or intimidated during this interview. I have purposely not hired an

attorney for this situation, or gone public with the situation as yet, but will if this situation is not adequately resolved to my satisfaction this fiscal year. I'm tired of dealing with this thing, it's gone on and on and on. Okay. No. 3, all the information for the most part, I will give you today has more than likely been supplied before in the Warren Johnson certified letter of 12/20/1999. Warren Johnson at that time, I'm not sure where he's at today, but was in the Washington office of BLM. The Secretary of Interior Babbit, three, excuse me, five E-mails which I sent him and I have a proof of receipt in receiving each of those E-mails, the dates were August 3rd, 1999, August 26th, 1999 October 18th, 1999, December 21st, 1999, December 27th, 1999. EEO, Complaint LLM-99-059 now EEOC appeal number 01-A-02115. OWCP claim numbers prostrate cancer 85069-13-11735593, leukemia case No. 85069-13-1178504, and hernia case No. 86302-13-2008186. Appeal docket No. 2001-1234, excuse me, 1243, that was 1243, corrected.

And, lastly, I do not expect the interview to last more than about an hour.

Okay, that is just my general ground rules. Any questions?

Q. I have none. I'm hearing none from others in the room.

MR. FRIEDMAN: Would you kindly repeat for me your EEOC appeal number?

A. 01 A 02115.

MR. FRIEDMAN: Thank you.

Q. I'm not hearing from anyone else in the room, so, do you have any further statement, perhaps in response to the questions that we sent?

A. Oh, yes, I'm ready to go through those at any time.

Q. All right, how would you like to proceed, should I read the questions ...

A. Well, we can just, I can refer to the question, you have the questions, I have the questions.

Q. That's great.

A. I'll just refer to the questions, I don't want to take the time to read the question...

Q. ...that's great...

A. ... and your reporter can just copy

the questions off of the sheet you sent.

Okay. Number 1, previous jobs, and I'm just going to go A, B, C, D. A, you have for service summer of 1964 Fort Washington Forestry Aid, supervisor Mr. John Hughes. B. US Forest Service of '65 and 1966, Eureka, California. And Surveying Aid supervisor Mr. Jack Welch.

C, Hummel Sate College Summer of 1967 Arcadia, California Botanical Aid, supervisor Dr. Gary Donart, excuse me, Gary Donart.

D, began permanent BLM employment June 1968, Susanville, California, Range Conservationist, supervisor, Mr. Dwayne Ferdinand, F-E-R-D-I-N-A-N-D.

Additionally claimed contamination occurred while working out of the Susanville district. Also in Susanville from in about October of 1970 I changed supervisors to Mr. Myron Adams and then again, excuse me, in about the same time from October '70 through about June '71 I taught evening classes while working for BLM during the day at Boston Community College. September of '71 moved to Fulton, California as public affairs specialist

and outdoor recreation planner, supervisor with Mr. Hugh Regan.

September of 1974 moved to Bakersville, California as area manager, supervisor Mr. Lou Bolles. August '76 moved to Richcraft, California as area manager, supervisor Mr. Lou Bolles. January '79, moved to Washington, DC office as Wilderness specialist, supervisor, Mr. Jerry Stouffer.

August 1981 moved to Lake View, Oregon as Associate District manager, supervisor, Mr. Art Garrity. May 1988 moved to Phoenix, Arizona as training specialist, supervisor Mr. Jim Stone, later Mr. Dennis Oak and at retirement in 2000 Mr. Ron Tucker. Any questions?

Q. I think you've covered everything in question 1. Please move onto question 2?

A. Okay, on question 2 and 3, the answer to 2 and 3 is no. A preface though on question No. 2, have you ever changed jobs because of health problems. The answer to that question as I just said is no as it is No. 3, but a preface to No. 2 is I retired to get away from employee harassment in January of

2000 as well documented in my EEO complaint and Appeal, case numbers indicated in my opening remarks. Okay. Any questions on 2 or 3?

Q. On some of these shorter questions, I think we do have a follow-up on No. 3 ...

A. Yes, excuse me, No. 3 is yes, I am retired.

Q. Yes, you are retired at present?

A. Yes.

Q. Okay.

A. Sorry about that. I got my notes mixed up, but I did.

Q. That's all right. We can move onto question No. 4, it would help if you would summerize that, it's kind of long for the Reporter to, to follow what the topic is?

A. On No. 4?

Q. Yes.

A. Well, do you want me to just read it?

Q. Sure.

A. Question No. 4 is, in any of your jobs, do you believe you have been exposed to paints, ceramics, solvents, metals, asbestos, lead or glues? If yes, please specify each

job, which you believe resulted in such exposure and specify which substances to which you believe were exposed?

Okay, my answer to question 4 is, we cleaned out the warehouse and shop at Susanville in the winter of '68 and '69. And, I was assigned not only the task of assisting with the cleanout, but personally taking the materials to the Blacken County dump. Paints, used oil, solvents, part empty herbicide drums, building materials, scrap metals, metal filings from the shop, et cetera, were all involved as I remembered. With regards to the first part of the question, I broke it down into four parts, I said under A, I was possibly, we possibly threw out some glue and asbestos as old flooring insulation and roofing materials were included in the building materials, as I remember, it was an old building and we were continually remodeling it. I have a feeling that the metal filings could have been lead based, but I don't know. We did an awful lot of machine work, and stuff like that, for fence construction and other types of Range Projects out of the Susanville

district.

Paint was more than likely lead based in those days, but I don't know if it was latex or lead, all latex or all lead, you know, all the types of paint that include, contain lead. We did a lot of body work and that type of stuff also in the shop. Solvents were more than likely asbestos in my knowledge. Additionally, a lot of what was considered old file material and papers by the District Manager were taken to the dump at that time. So that's my answer to question No. 4.

Q. All right. Then we can move onto No. 5?

A. No. 5, yes. Again, I broke it down or you broke it down A, B, C, D, you know, so under A, 5A, preparation for herbicides spraying, loading transport, unloading, mixing defoliants with diesel, excuse me, start over again. Leading transport, unloading and mixing defoliants with diesel carrier at the spray site. Assisting, loading tanks with defoliants of aircraft, when so instructed.

Q. So you're responding to the question what aspect of the job required you to mix,

load, transport, store or apply best sides?

A. Yes, that is under section A.

Q. Yes.

A. Served as flagman under the spray operations...

Q. ...Served as flagman under what?...

A. ...Served as flagman under the spray operations.

Q. Thank you.

A. I have a copy of a movie, part of which I took for BLM, Public Affairs Efforts, of the spray operations in 1969. I don't have, if the movie is 16 millimeter or 35 millimeter, but you can view it if you wish, they have both types of projectors, here at Prescott at the Fort Sill Office.

Okay, as a flag person, we directed aircraft from the ground with flags and were constantly over sprayed with defoliants. Part B. I have recollection only, 55 gallon drums of diesel 245T, 245D as different mixes used for different spray projects depending on how heavy the material was to be defoliated. For example, diesel and more T unless D was used for sage, rabbit brush and juniper tree. A

lighter mix of P and D were used for medium and low sage. I remember the only 55 gallon drums that we all understood to be Agent Orange.

Q. Excuse me, Mr. Harlow, are you describing the Cow Head/Massacre project?

A. Well, I think there was several of them. Cow Head Massacre was one of the projects, let me see if I can find, I've got notes all over the place here, so you're going to have to bear with me for a second, the Massacre Lake was another spray project.

MR. FRIEDMAN: Where was the Massacre Lake if I heard the name right?

A. It is all in the same area northwest quadrant of Nevada, above Reno, in the Cedarville area, in California, that line goes right through there so some of it slopes into California, the majority is in Nevada.

MR. FRIEDMAN: Okay. Thanks.

A. Another area was the Coleman Valley, it was out of Coleman, we called it, another area was the Home Camp area, the antelope area. Those are all areas that I remember working in, some of them were a lot, the names, I

mean, I just don't remember some of the stuff to tell you the truth of the matter. I spent five years in Susanville and some of that stuff sticks in my mind, some of that doesn't, I worked over the whole district. But in my early first year there, I was spending a good part of the time right up there in the Cedarville area.

Q. Mr. Harlow, could you describe the drums in which the substances were located or the drums that contained the substances?

A. Well, 55 gallon steel drums with a cap on the top, a screw cap on the top, diesel came in it and all the different defoliants. And, we mixed them on the site in vats, dumped them into vats, off the trucks and then it was pumped out on the vat and on to the plane. The drums were normal 55 gallon drums, they've got a couple seams in them, they were striped, the T drums, the 245T drums were striped with an orange stripe. And I'll go into a little bit more about the drums in a few minutes under another question.

Q. Was there a contractor or more than one contractor involved?

A. Yeah, I go into that, you ask that question elsewhere...

Q. ...All right...

A. ... and I'll get into that question.

Q. I'm looking around to see if there is any additional follow ups. Okay. I think we are all ready to go on.

A. Okay.

Q. 5C was a licensed pesticide applicator involved, that's the question?

A. I don't know if he was licensed. However, while working in Lake View, at a much later date, I met again one of the applicators at my church, a Mr. Plato.

Q. Could you spell that please?

A. P-L-A-T-O.

Q. How, how much later was that?

A. Well, as I mentioned earlier I was in Lake View from 1981 to 1988 and he was one of the, he flew fixed wing, as I remember, when I worked in other projects that were helicopter projects, but as I remember Mr. Plato, he flew fixed wings, and, I have pictures hanging on his wall right here of the spray operations and probably Mr. Plato, but I never asked him.

I'm ready to go onto D, if you're ready?

Q. I have one follow up, do you remember anyone else you worked with on any of these projects?

A. You mean with BLM?

Q. With BLM, yes.

A. Yeah, my, I'll go into those names in a few minutes, under another question.

Q. All right.

A. Okay, 5D, we were told what to do and when I asked, I was at the time I only was in my early 20's, 23, 24 years old, if the stuff would hurt us, Mr. Wragg, the district manager, the eyes and ears on the site, said, it was tested on cows and did not show up in their milk, so it's safe. That's a quote. He proceeded to drink a glass of the diesel D and T mix, in front of us, in front of the whole crew one night, to show us it was not the culprit causing us to be vomiting, having headaches and losing weight.

Later on, about 1992, I was informed that Mr. Wragg died in 1996 of a heart attack brought on by complications from chemotherapy necessary after the prostrate removal for

cancer.

Q. Could you spell this fellow's name please?

A. W-R-A-G-G, he worked out of the Susanville district.

Q. Thank you. I think we are, did you receive any other instructions?

A. No, we just did what we were told, I mean I'm not sure what kind of instructions you are asking.

Q. Okay. So I guess we can move onto the subject of protective equipment or clothing?

A. Sure. 5E, no protective equipment was utilized or supplied. As a matter of fact, we took our often defoliated soaked clothes home on the weekend, for our wives to wash. Ready to go onto F?

Q. Okay.

A. The materials, the defoliant materials and diesel, the 55 gallon drums, et cetera, were stored at the shop and warehouse in Susanville and the fire station in Cedarville. I personally picked up one two and a half ton truckload of orange extracted five gallon drums

at Herlon Army weapons depo, just out of Susanville, between Susanville and Reno, in that country. Others told me that a lot of similar supply, surplus material was picked up at the military bases in Sacramento, Oakland and Marysville, California.

I'm looking back and I'm trying to paint the picture for you, you must realize, I was told when I was hired that No. 1, I was the only full time employee hired in 1968, bureau wide, BLM wide. No. 2, I was hired because of my photographic skills and knowledge of outdoor recreation. And Number 3, BLM was hurting budget wise due to all the dollars going to Vietnam, BLM therefore used a lot of military surplus including vehicles, radios, defoliants, tools, et cetera, et cetera, we got equipment to do the job, we had to do from any source we could, and there was a lot of surplus material. I can remember all kinds of material that was marked, it came in, in military color, you know, drums, vehicles, et cetera, et cetera. In any of the, in fact I don't remember any, any 55 gallon drums that were orange striped that were not military

green or Navy gray, Army green, Navy gray, I mean, I remember the ones that came out of Herlon to be Army green with an orange stripe on them. I'm ready for Number 6, whenever you are.

Q. All right.

A. Number 6 ... since diagnosis of prostrate cancer and leukemia, I've done extensive web searches for information, I have searched over 1,000 web pages and have a list of 10 to 12 that I regularly visit, which is available to you at your request.

Q. I think that would help us in preparing our report, yes, we would like to receive any of that information.

A. I'm offer them because it would be a good place for somebody that doesn't know a lot about Agent Orange to read and find out what was being said for the National Science Foundation, what's being said by the Air Force, what's being said by the other military agencies about the effects of Agent Orange.

MR. FRIEDMAN: I think we would be interested in seeing the list of the web sites that you read, for information if you

would ...

A. ...sure...

Q. Okay, but, you haven't participated in any previous BLM review of pesticide use; is that correct?

A. No, not that I remember.

Q. Okay.

A. Okay, No. 7, yes. As my CA1 says, under Aid, during a regular checkup at my doctor's office on July 3rd, 1998, my blood work up showed an elevated PSA, one of the digital physical exams showed irregularities, my doctor referred me to a urologist due to the elevated PSA, and a PSA stands for Positive Specific Anogine as I remember. The urologist found the irregularities, did a, about, biopsies, bone scans and then prostrate removal.

Under B, 7B, prostrate cancer case, I gave you the case earlier, under OWCP case and it was filed on 9/23/98 according to go OWCP.

Leukemia, and I gave you the case number earlier, it was filed on 7/3/98 according to OWCP. I think I filed that about the same time I did the prostrate cancer, but

I don't, I mean, they're filed, the date is 7/3, so I can't dispute that. During the case I got the file number earlier, OWCP was filed 2000 according to OWCP.

Q. If you have copies of any of the decisions, we would appreciate receiving them, but you've been in communication with Veronica Larvie on that subject as well I believe?

A. And I'll be happy to supply any of this information, send me an envelope with postage on it and I'll send it back to you.

Q. All right, we would like that tomorrow if possible.

MS. LARVIE: Mr. Harlow, we sent you a release letter, the release letter we discussed, this is Veronica speaking, and that should arrive at the Federal Express address you provided me today?

A. Okay. I'll supply is information in that envelope when it gets here.

MS. LARVIE: Great, thanks.

A. And it will include, do you want the decisions on these, on these cases; right?

MS. LARVIE: Yes, please.

CONTINUATION OF EXAMINATION

BY MS. SONNEMAN:

Q. I think we're ready for No. 8.

A. I realize there has been no decision on the leukemia and there has been no decision on the hernia yet.

Q. So that's 7C?

A. What's that?

Q. So that's your response to 7C? That's fine.

A. No, that's B, I'm still working on 7B.

Q. On what day did you file?

A. Yes, I'm going to clarify for you the stuff I'm going to send to you on the, you know, tomorrow in the FedEx package that you sent, it will be the release letter and the information on the web pages and then, also be the decisions that I have on the prostrate cancer, leukemia and hernia. But I wanted to clarify that not all those decisions are final.

Q. I understand.

A. Okay, that's all I'm trying to do, I'm sorry.

Q. That's fine.

A. Okay. Now, under 7C, I feel you can

request the formal files through OWCP through the letter I'm going to sign tomorrow, I mean, I'll send you what I have, but as I mentioned to one of you on the phone a couple weeks ago, I live quite a ways out of Prescott and I have to go to town to make those copies, I mean, I don't have a copy machine sitting here like you guys do.

Q. Well, I feel that we can obtain the decisions by way of the release, I think that's fine.

A. Well then, what do you want me to send you back, other than the web pages then?

Q. I think what you outlined just now is responsive to what we need.

A. Under C that you can request through OWCP?

Q. Yes, that is responsive to 7C.

A. Okay, so I won't send you those decisions.

Q. No, that's not necessary.

A. Okay, great. Okay, number 8.

MR. FRIEDMAN: Mr. Harlow, may I just ask you something, you're going to be getting the release letter you prepared, I hope

it will come in the mail today at the address you gave me. When you read the letter, you will see that it refers to a specific docket number and that docket number is your claim as I understand it for the prostrate cancer. I was unaware when I did do the release form that you had a separate case involving leukemia. Would you be good enough when you get that letter, you can do one of two things, you can add in the words all my files or you can add in the docket number for your leukemia case, just pen it in when you send it to the Labor Department. Because what I drafted now, it only asks specifically for your prostate cancer claim?

A. I understand, Robin, and I will think to do that, I am making a note to do that right now.

MR. FRIEDMAN: Thanks much.

Q. Okay, I think we're ready for No. 8 now.

A. I'll make a note. Okay. Number 8, no, not to date.

Q. You have not filed, you have not sought any other form of work related

compensation ...

A. Other than the three that has been filed. But in my opening comments I addressed this and I will say that I have spoken with several attorneys and I have not as yet hired one.

Q. I understand.

A. I will probably hire the one, if I have to, if I have to go to hiring somebody, I know whom I'm going to hire, that's what I'm trying to say. He was successful with Agent Orange case, known as the DiPetrillo versus, let me spell that, D-I, capital D-I, capital P-E-T-R-I-L-L-O, versus Narragansett, or excuse me, Narragansett Electric Company/ Dow Chemical, in 1996. In that case Narragansett, is spelled N-A-R-R-A-G-A-N-S-E-T-T. Though I have talked to several people, I'm not going to kid you, then, there is nothing closed there, I've talked to lots of lawyers and I have several that I could go with, but this one sounds like the one that I would go with, if I had to.

Q. Okay, are we ready to move on?

A. Yes.

Q. Are you receiving Social Security

Disability benefits?

A. The answer to the ... the answers to the questions 9, 10 and 11 are all no.

Q. Okay, that's quick. So no to Social Security Disability, no to pesticides used in your home or garden or on a pet, and no to, no household member has a hobby or job involving exposure to paint, ceramics, solvents, et cetera?

A. Correct.

Q. So No. 12?

A. Okay, when I was unwillingly transferred from the Washington office to Lake View, Oregon in 1991, during President Regan's first cutbacks, I protested, but was transferred anyway, due to the uranium and arsenic programs in the area, due to the uranium mining in the 1950s, '60s, early '70s.

Q. And to which location were you transferred?

A. Lake View, Oregon.

Q. ...All right...

A. ...in as much as the Agent Orange spraying in the late 1960's lead to the leukemia, I have today, I believe and should

be verified by the BLM Air Force study going on in Texas, it's due to be released in 2002 on the accumulative effects of Agent Orange and other exposures.

Q. Do you have any, will there be some information on that web site data that you will be sending us on that study?

A. Yes.

Q. Okay, good.

MR. FRIEDMAN: Can I ask ...

A. I'm ready for 13 if you guys are.

MR. FRIEDMAN: I have a follow-up question, please. Reading the request that the Interior Department got from the Office of Special Counsel, it talked, and based on what you told OSC, it talks about your claim that you're suffering from prostate cancer due to exposure to Agent Orange, I understand that you, from talking you, now, about your leukemia and you just mentioned that you believe your leukemia is due in part to the Agent Orange exposure and in part to the fact that you later moved and you're living near some uranian facility. Correct me if I'm wrong, but just so the Department and you are clear as to what

we're looking at, the OSC did not refer to us any claim involving a uranium facility that happened some years after your work and exposure to Agent Orange, you agree with me on that, do you not?

A. No, Robin, I don't, I don't know what I supplied to the Office of Special Counsel, I would have to look through my file on their stuff and I haven't done that for you today.

Q. Yes, I think we're ready to move on from that.

A. What I'm saying is, as I just said, I think it is probably a result of both situations.

Q. Sure. Of course this isn't an interrogation as you pointed out ...

A. I'm not taking it as an interrogation...

Q. ...oh, good,...

A. ...I understand, I don't know how to, I would have to do some more research for you to look at my OSC, Office of Special Counsel information that I submitted then to answer that question fully.

Q. I think we're ready for No. 13.

A. Okay. I tried to leave Lake View several times due to the problems identified in question No. 12 above and finally transferred in 1989.

Q. All right. Are we ready for 14?

A. The answer to 14 and 15 are both no's.

Q. You never used tobacco. And how about 15?

A. No.

Q. Alright, if, if you'll indulge me a little bit here, I'd like to go back to your experience with pesticide spraying, the Cow Head Massacre and so on, could you describe the daily interaction that you had with your co-workers and your supervisors?

A. Well, they were on the site, at my CA1 points out, I named the individuals that were on the different sites, we worked as a team, we were out for five days doing spraying and then we go home on the weekends, like I say, we took our clothes home to be washed, we weren't provided any materials, any clothing or anything, so we washed our own clothes, and what not. The interaction with the other employees, we worked together to help mix the

materials, unload the materials, help load the planes, either fix wing or helicopters. About the only time we weren't together doing something as a group was when we did the actual flagging.

I need to explain a little bit, I explained how the flagging was done to the appeal to the prostrate cancer, the OWCP appeal, my prostrate cancer, because I had a hearing on that, with a hearing examiner and we went into great depth because he didn't understand how the spraying was done, I explained how all that process was done.

Q. Will those materials be in your FedEx package?

A. No, that's what, you'll get the, when you request the file, WCP file ...

Q. Okay?

A. ... from OWCP, you will get, in that file, you will have the appeals file also. All located in San Francisco.

Q. The items you're releasing. Could you give us a little more information about the planning meetings held, were there any planning meetings held in the office before or during

commencement of the spraying processes?

A. Well, I can tell you this, the first day I started work in Susanville, I was told, tomorrow I would be going out to the spray operations. I started on a Monday and on a Tuesday we started, I was out with the rest of the crew spraying. And that went on for most of the summer. I mean, yes, we had some time on Friday afternoons late or early Monday mornings, before we left for the field. Usually it was taking care of time sheets and doing per diem vouchers and that kind of stuff. I don't remember any specific meetings, you know, other than group meetings that we're going to spray this area today or we're going to try to get this part of the area done this week. I don't know of any.

Q. Were there any meetings held in the field?

A. Oh, yes, I mean, you know, little group meetings like, looks like it is too windy today, we're going to call off the operation, or, you know, watch out there is lots of snakes out today. You know, it looks like a windless day, we're going to spray late

into the evening, we usually started at sun up and worked as long as the wind were low enough to spray. You know, if you get a heavier wind it carries materials off, and you don't want that, you want to spray the areas you designate to spray.

A lot of this was bridge jobs, jobs that had been sprayed in the '60's, earlier in the 60's and the rabbit brush came back in, the juniper was not retarded or killed. So we came back in and we've re sprayed areas. So a lot of these jobs we didn't want to spray to drift. That's the point we didn't want to spray the drift in other areas. But we did, we did new sprayers, sprayed new areas that had never been sprayed before and we did a lot of respray areas.

I don't understand what you mean by meetings, I mean, we're a small field crew, we, you know, I think I list seven or eight people total, that was involved in it, I mean, you had a group discussion basically, you got in a circle and ...

Q. You're answering my question very well. Do you recall if a contractor was ever

involved in either the field meetings or in the office meetings?

A. Never saw the contractor in, or any of the contractors in Susanville, I only saw the contractor at the site, at the sites. He was usually, he, usually two different contractors, I mean, you know, the contractor is maybe just. They were usually waiting at the site or we waited a little while for them to get there. In the one particular instance, the gentleman, Mr. Glenn Plato, he flew down just from Lake View, that was only maybe 40, 50 miles from the good part of the spray areas, maybe 60 miles, somewhere in that area, Lake View and Susanville were adjoining districts. One's in California, one's in Oregon. One's in California Nevada, Susanville in California for that.

Q. Mr. Harlow, do you know the addresses and phone numbers of, you know, names, addresses, phone numbers of anyone who worked with you on these spraying projects?

A. The names are mentioned in the CA1, which is the document you used to file a claim 40WCP review and compensation. I've lost

contact with most of these people, most, again, you need to realize that I was the only person hired in 1968, a good part of these people were older than I am, and a good part of these people I have no, I never had any contact again with one name I specifically mentioned, Mr. Pete Cooprek, quit the Bureau, went back to Delaware or somewhere back there, to work with his dad, the summer after we did all the spray work. Dwayne Ferdinand, the supervisor, moved to Alaska and worked on Alaska pipeline and then went to Montana or Wyoming, as far as I know. Mr. Wragg, like I said, he was a Susanville person, I don't know if he was born there or not, but he was raised there and spent most of his life in Susanville. I just have lost contact with all those people, I don't know. They're not any of the people that I, I sent out a memo to all Federal Employees, excuse me, all the employees back in October of '99, which lead to the EEO Complaint and so on and so forth, which you read about in that case. But, at any rate, in response to that mass mailing of information, on what prostrate, what, what the

defoliants had done to me and the research I had done on the web with regards to the fact that the military is, came out and said usually 34, 40 years after, 30 to 40 years after exposure to the defoliants, Agent Orange in particular, prostrate cancer can show up, that is the reason why President Clinton in '96 signed the Executive Order to include veterans, veterans compensation for Agent Orange contaminant and I'll cover some of this in my closing remarks.

MR. FRIEDMAN: Mr. Harlow, would you be kind enough to tell me the name of the Interior Department Lawyer who is representing BLM in your EEO case; do you know that name?

A. I could find it for you, I don't have it right here in front of me, Robin, it's, again, it's in another file.

MR. FRIEDMAN: Okay, ...

A. I can include that in your, in the FedEx I get today, I'll make a note.

MR. FRIEDMAN: It's not Sherry Mauni, is it, does that name ring a bell with you?

A. No, this was back in January?

MR. FRIEDMAN: If you have it, let me know.

A. I have a piece of paper that has his name, I just can't remember right now. So you want the name?

MR. FRIEDMAN: Yes, just the DOI lawyer, I can probably find that, but, if you have it in hand.

A. I can send that back with the other stuff, name of the DOI attorney.

CONTINUATION OF EXAMINATION

BY MS. SONNEMAN:

Q. Mr. Harlow, were you aware of any monitoring or involvement by the state government or county or local government, in connection with the spraying projects?

A. Not really, I was a brand new employee, pretty green, I didn't have any involvement with any of those folks. We worked with SCS, Soil Conservation Service in Cedarville quite a bit, because some of the projects went against private land and SCS had hired the contractor to do, you know, spray work on the private lands, as well. So we

were, we coordinated a lot with SCS. The individual's name at the time at the SCS manager in Cedarville was Jim Linebaugh.

Q. Could you spell that, please?

A. Yes, I can, let me find it here, L-I-N-E-B-A-U-G-H.

Q. Do you know his whereabouts?

A. I saw him a few years back in Carsons City, he retired with Soil Conservation Service, in the late '60s, early '70s about the time we were working, I would say he's in his late 70's now, mid 70's, the last time I saw him he was in his mid 70's anyway, if he's still alive.

With regards to other agency involvement, Forest Service has an office in Cedarville, in fact I believe it's an office with BLM and Forest Service and SCS now, it has been combined in this one office, but some people I remember in Susanville, some people I've talked to in Susanville that are familiar with that area, are Joe McFarland, I think he's retired now, he's a geologist in Cedarville, he's been there for years and years, he wasn't there when I worked there,

but they said the Cedarville offices was the fire station when I was there, they setup in Cedarville Area Office, I think it was the early '80s and Joe went from Cedarville to Susanville at that time.

Tom Hill is the more recent Soil Conservation Service manager in Cedarville, and I think he's probably still around. Dr. Chris Corson, he retired from BLM, I don't know where he's at, his wife, he was an archeologist that worked at Cedarville area for years, his wife, his ex-wife, Dr. Chris Corson's ex-wife, a lady by the name of Karen Corson, worked for me in Lake View as my budget analyst, and I think she's still in Lake View and somebody could contact her and find out where her husband is at, or her ex-husband.

Q. Is that Corson a C or a K?

A. C-O-R-S-O-N as I remember. There were a couple of people that I knew that worked in the Cedarville who retired there, Jim Walker and his wife Carol Walker worked there at the Forest Service Office there at Cedarville, many of these people supplied me information while I

was gathering my information for this file, that I have on, on where the work was done and everything. There was a George Ferris in Susanville, he retired a long time ago, since then he's been county recorder and a lot of stuff in Lassen County, I talked to him maybe a year and a half, two years ago, maybe three years ago, just two and a half years ago I guess. He was dieing at the time of prostrate cancer, he's probably now deceased, he was involved in a lot of the earlier spray projects, in the district. He was also involved in some of the projects in Lake View and in Verns and Vale.

Again, to answer your specific question, I was too young to understand what was going on with the county, I just know I worked for Soil Conservation Service out of Cedarville and I just remember the individual by the name of Jim Bibol.

MR. FRIEDMAN: Would you mind, for the record, I realize you were a young man at the time, could you tell us how old you are now?

A. I'm 56.

MR. FRIEDMAN: Thanks.

CONTINUATION OF EXAMINATION

BY MS. SONNEMAN:

Q. I have one last question, how did you find the documents you provided to the Office of Special Counsel, especially the telephone records?

A. That was supplied through individuals in Cedarville.

Q. Do you recall which individuals in Cedarville provided that?

A. No, they asked to say anonymous, they don't feel like they should be providing information, you know, they don't want their names released.

Q. I'm looking around the room to see if anyone else has questions. I don't have anything further, if you want to make a closing statement. One more question, I guess.

MS. RAMOS: Dick, this is Gina, I just have one question I'm trying to clarify a little bit more.

EXAMINATION

BY MS. RAMOS:

Q. When you were dealing with the

contractors, was BLM supplying the chemicals?
A. Yes.
Q. And mixing them on site?
A. Yes.
Q. Now, the contractors job was then to, what?
A. Applicate.
Q. They were only hired as applicators then?
A. Correct. Like I say, we got the materials when we could get it and I personally picked some up in Herlon.
MS. SONNEMAN: Anyone else have anything further. I think we're ready for your closing statement.
A. Okay, it's three, excuse me, three points. Number 1, if you're investigation finds what I think it should find, I will consider dropping a good majority of the EEO complaint, because I need you to understand that the EEO complaint process was used as another avenue to get this contamination issue resolved. I am saying I'll drop portions of that EEO complaint, some of it came about afterwards and should not be dropped, but.

Number 2, every avenue I have taken on this journey to set the record straight, about the Agent Orange, used by BLM, is predicated on the fact that BLM never warned contaminated individuals even after President Clinton issued the Executive Order in 1966 covering exposed veterans. BLM has privately funded, BLM has a privately funded foundation, which has a list of all BLM retirees, many of who were contaminated and how many, and they have various cancer and not even know it.

MS. SONNEMAN: Excuse me, what is the name of that foundation?

A. Public Lands Foundation...

Q. Public Lands Foundation?...

A. Public Lands Foundation. George Lee, a former district manager and, in Lake View, Oregon, and former Chief to Resources in the Washington office is the president of that foundation or, I'm not sure if he is or what he is, but, anyway, Gina should know who the.

MS. RAMOS: Yeah, we have George's phone number also.

A. Yeah, and I've got his E-mail address, I've been in contact with him, several times,

but, anyway, it would be very easy for BLM for the Public Lands Foundation to alert all retirees and get them to have checkups. I mean, that was the primary reason why I got involved in this whole thing, I found out that people were never told that after President Clinton signed the Executive Order, people were never told that, hey, if you were contaminated back in the '60s and '70s with this stuff, you should be getting an exam. And as far as I'm concerned, the Bureau should have paid for it, but anyway, that's one of the real things that sticks under my finger nail on this thing. We can take care of veterans, but darn it, when it comes to federal employees, who are also veterans, federal employees like civilians are federal employees, we are all cut from the same cloth, we work for the federal government, you cover one batch you darn well better cover the other batch. End of point. I could go on and on about that one, but I'm not going to do it to you.

Number 3. I will restate my emphasis on one of my comments in the opening remarks. Either this thing is going to be solved by the

end of the fiscal year or I will be forced to take the steps that I warned. I'm dieing, folks, I'm not going to be around here for a long time, and I'm going to solve this thing before I die.

MS. LARVIE: Mr. Harlow, Veronica Larvie.

A. Yes.

MS. LARVIE: Could you sort of elaborate on the record in as much detail as you're comfortable with what would solve, what is your desired outcome from this process, besides point 2 and 1?

A. What?

MS. LARVIE: Besides points 1 and 2 that you made above, the notification and all of that.

A. In the E-mails to Secretary Babbit, I layout specifically what I want as compensation for this. In the EEO complaint I layout specifically what I want as far as compensation. I'm not asking for a lot, I'm asking to pay my bills on this damn thing, I mean they're eating me up, folks.

MS. LARVIE: Could you give us

some details about that, just go ahead, I know this is duplication, but let's just all get it, right down here in one place exactly, what you told Secretary Babbit and exactly what your bills are amounting to and what you feel like is your personal liability is?

A. There's five E-mails, read them, I mean, I can't remember all that stuff, it goes back to 1999, two years ago.

MR. FRIEDMAN: Mr. Harlow, are these E-mails still on your computer in such a way that could you perhaps reforward them or otherwise send them to us, it would be, if you could simply forward them it would save making a copy of them and it would save us a lot of difficulty in trying to retrieve them from Babbit's whole files, if you still have them on your computer?

A. No, they were done on the government computer, I worked for the government at the time.

MR. FRIEDMAN: I see.

A. Now, one of the things I specified in the, in the Office of Special Counsel request was, that my computer not be turned off and

not, everything deleted on it, I, when I retired.

I assumed that that happened, I don't know. I am hoping that, I mean, I sent out a memo after, excuse me, an E-mail to all BLM employees, Gina probably received it, probably heard the rah over it, at any rate, heard about the rah over it, but anyway, I got a lot of responses from that, there was about, at that time, there was about 10 - 11,000 BLM employees and I got a lot of response to that E-mail.

At any rate, I retired about three months later because, the Bureau basically threw me out the window. But the point is that I was receiving responses from a lot of people with regards to my E-mail, that laid out specifically the danger to people who were exposed with contaminants back in the '60s, and '70s, what it could be doing to their body.

Q. That was the E-mail of October 18th, 1999?

A. No, that is what the one to Secretary Babbit, this one was the E-mail to all employees was, I can't put my hands on it

right now, but it should have been, I believe it was October 28th that I sent the E-mail out, and there is a copy of that in the EEO Complaint, it's very well detailed in the EEO Complaint.

MR. FRIEDMAN: Right, I was going to ask you that, so thank you for that info.

A. At any rate, my primary point there was I asked Office of the Special Cousel to not have them turn off my computer so I could have that information in the future, if it was needed, I have a feeling it has probably been all erased. But additionally, I have the E-mails that I sent to Babbit and I have his confirmation of receipt, that's how I know he got them and I know they're somewhere there in Washington, DC. I can supply copies of those, but guys I need, I mean, I've got to go to town to make those darn copies.

MS. SONNEMAN: That would be very helpful to us though if you could supply copies, if not immediately, then at your convenience. Would you be able to ...

A. I think I've discussed with you before

the fact that it's not an easy task for me to go make copies somewhere and ... I could supply you with a large box of copies of stuff that has been submitted on all this stuff, I'm not going to do that for nothing. It isn't in the cards. It takes me time, it takes me time to go to town, it takes me time to gather it all up. I'll tell you, I spend at least two or three days at my doctors, excuse, two or three days a month at my doctor now. Anymore I'm going to spend more and more time as more and more chemotherapy is done.

MS. RAMOS: Dick, this is Gina, when you said that you requested that your computer, that your computer, that your computer was to be left alone when you left the training center ...

A. Not left alone, but the information on it saved.

MS. RAMOS: The information was to remain there, okay. Have you been in contact with anyone after you left with the training center to ensure that nothing has happened to that?

A. Yes, I have been in contact with the

computer specialist and he said it was all erased.

MS. RAMOS: It was all erased. Was that, I can't even remember his name.

MS. SONNEMAN: Do you recall the name of the computer specialist? Never mind.

MS. RAMOS: Never mind, that was, I was just wondering if we could somehow get that information, but that's fine.

A. Gina, you know the people in the training center I would think are pretty much the same people, I know that Diane Simpson is retired, I don't know if she was involved in it, I think she retired before I did, but I'm not positive, somewhere in that same time period. Brent Yatas was there I believe, he was looking for other jobs at the time I retired.

MS. SONNEMAN: Excuse me Mr. Harlow, I don't think the Reporter got that last name?

A. Brent Yatas was there, John Lighting was there, my boss Ron Tucker was over, oversaw that division, he, I'm sure he's the

one that ordered the removal of the material and he's probably the one to ask. I don't know, I mean I don't know who did the actual task, I, you know, I watched a lot of this material on Agent Orange and 245T and 245D go to the dump, in fact I took it to the dump in Susanville, because I was told to, and I didn't want that to happen again. But I think it's happened again.

MR. FRIEDMAN: When did you take Agent Orange material to the dump in Susanville?

A. I just talked about that under one of the questions you asked me.

MR. FRIEDMAN: Okay.

A. It's in the transcript. We cleaned out the warehouse, remember I was talking about cleaning out the warehouse in the winter of '68, '69.

MS. SONNEMAN: Yes. I don't believe anyone else on this end has anything further. Are you, are you finished, Mr. Harlow?

A. I'm done except I'm still in a quandary about what you want me to do about

things you want me to supply you, as far as paperwork and copies and stuff, I'm in a quandary about what you want me to do about that. I have, I have some things listed, which it's no big deal to supply some things we talked about before.

MS. LARVIE: Mr. Harlow, Veronica Larvie, I think the one thing I think would really help solidify what you would consider a resolution, is the letters you sent to Secretary Babbit or the E-mails. Those are going to be very difficult for us to find, it is going to take archival research, if you could make a copy of those five pieces of paper and send us an invoice I'm sure we can reimburse you for the copy costs?

A. It is not just five pieces of paper, some of the E-mails are four or five pages long.

MS. LARVIE: Okay, whatever length.

A. Okay now, do you want, what about Warren Johnson, is he still around back there Gina?

MS. RAMOS: Yes, he is, I'm

trying to find some of that information also so that you don't have to duplicate that.

A. Okay, I know that, Gina, I know that Warren has an office in Boise, I think, or Denver and I know that I've dealt with that office, I never talked to Warren, but I talked to, I don't remember the name now, but I talked to somebody in, I think it was the Denver office and she had that stuff that I had sent to Warren. I'll tell you what, I'll send you the Warren Johnson memo and I'll send you the E-mails to Babbit and my confirmation of receipt for Babbit.

MS. LARVIE: Alright, that would be very helpful, those alone would send this investigation along nicely where as if we had to look for them we would be doing that for a while.

A. You see, I don't think you're going to have to look for them, a lot of this you would find in EEO case file, it is about seven or eight inches thick. So it's there, but I can supply it, that's no big deal.

MS. RAMOS: Dick, we're getting a copy of the EEO file, and the only, I only

know of one E-mail that you sent to Babbit and that's the only copy that we have, so ...

A. What date is that?

MR. RAMOS: This is dated 8/3/99, so I wasn't aware of any others that you had sent?

A. Oh, yeah, there are four after that, that is probably the first one.

MS. RAMOS: This was the first one, okay.

MS. LARVIE: Since those E-mails are not in a tidy package anywhere, if we could just get a copy of those, that would be very helpful. Other than that, I think you're going to supply us for the URLs for the sites you visited regularly that discuss your condition. I guess we invite you to send anything else that you think would be helpful or any additional amendments or responses to the questions we asked you today. You should, you know, if something occurs to you later, feel free to amend this record and we'll make sure that it gets included.

A. I doubt that, you know, is this Gina or Veronica?

MS. LARVIE: That was Veronica, I'm sorry, I didn't identify myself.

A. That's all right. Veronica, I agonized over this thing after I got the E-mail from Gina yesterday, I spent, I mean, that E-mail was on my machine at 6:00 in the morning when I got up, so I worked on this thing all day yesterday. I doubt that there is much more information I'm going to be able to come up with on these questions.

MS. LARVIE: Okay, Veronica again, we appreciate the hard work you put into this.

MS. SONNEMAN: Absolutely.

A. Okay, well, with the FedEx, with the release form I will try to make these copies, to get it all back to you, whenever that FedEx comes in, I'll get it out this week.

MR. FRIEDMAN: We all appreciate that.

A. Anything to get something resolved on this thing, that's all I'm after guys. I've lived with it long enough.

MS. LARVIE: Mr. Harlow, we're discussing with the Court Reporter how long it

will take to get the transcript. It may be a week to ten days, we will send you a copy and you can read it, make any corrections or edits that you feel more accurately feel more accurately reflect the nature of your answer, your response, then send it back to us and we'll finalize it and you'll get a final copy along with the OSC report.

A. That's great.

MS. SONNEMAN: I believe we are finished. Thank you again, Mr. Harlow, we really appreciate your assistance.

A. Okay. Glad to supply it for you.

Q. Okay.

A. Bye bye now.

(WHEREUPON, the Telephone Interview of RICHARD HARLOW was concluded at 10:21 a.m.)

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CAPTION

The Telephone Interview of RICHARD HARLOW, in the matter, on the date, and at the time and place set out on the title page hereof.

It was requested that the Interview be taken by the reporter and that same be reduced to typewritten form.

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SIGNATURE OF WITNESS

I have read the foregoing transcript of the Interview taken on the _____ day of _____, 2001, and it is a true and correct record of my testimony given at that time and place except as to any corrections I have listed below. I understand that the information I have given is not to be considered confidential and that it may be shown to the interested parties.

_____

RICHARD HARLOW

INTERVIEW ERRATA SHEET

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WITNESS: RICHARD HARLOW

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INTERVIEW DATE: May 23, 2001

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I have read the entire transcript of my Interview. I request that the following changes be entered upon the record for the reasons indicated. I have signed my name to the Errata Sheet and Signature Page to be attached to the original transcript.

Line 20, Page 4 there is no 3 after the 559.

Line 3,Page 6, delete the words you have and replace with U.S.F.S.

Line 4, Page 6, delete words for service, change Fort to Forks.

Line 6, Page 6, place the word summer between of and 65.

Line 7, Page 6, delete the word and.

Line 9, Page 6, C. not C

Line 10, Page 6, Arcata not Arcadia.

Line 12, Page 6, D. not D

Line 23, Page 6, add Lassen, delete Boston.

Line 25, Page 6, Folsom not Fulton.

Line 1, Page 7, delete with.

Line 2, Page 7, Riecken not Regan.

Line 3, Page 7, Bakersfield not Bakersville.

Line 5, Page 7, Boles not Bolles. Ridgecrest not Richcraft.

Line 7, Page 7, Boles not Bolles. Ridgecrest not Richcraft.

Line 7, Page 7, Terry Souffer, not Jerry Stouffer. Additional comment: after Souffer

place this statement: Office of Cooperative Relations, BLM, Wash, DC, Dr. Tony Stead.

Line 10, Page 7, Lakeview not Lake View (same all the way through document, as it is incorrect in several places.)

Line 12, Page 7, Gariety not Garrity.

Line 14, Page 7, Oakes not Oak.

Line 25, Page 7, employer not employee.

Line 1, Page 8, should read: 200 as "is" well.

Line 6, Page 8, '68/'69 not '68 and '69.

Line 9, Page 9, Lassen not Blacken.

Line 13, page 9, remember not remembered.

Line 8, page 10, acid not asbestos.

Line 20, Page 10, loading, transport

Line 12, Page 11, 1968/1969.

Line 13, Page 11, delete word "have" insert word "remember" in its place.

Line 16, page 11, Forest Service, not Fort Sill.

Line 24, Page 11, the word should be "less" not unless. Line 25 same page insert word "big" before word "sage".

Line 1, Page 12, T and D, Not P. Add word "heavier" before letter "D. Addition: Barrel Springs Road was another project name I can remember.

Line 20, Page 14, add word "pilots" after the word "the".

Line 21, Page 14, on not in.

Line 24, Page 14, first word = this not his. Addition: after the word here add "in front

of me" of...

Lines 11-14, all messed up, page 15, sentence should read like this starting with first word line 11 and ending with the last word line 14: when I asked, like the naive kid I was (as I was only in my early 20's, 23, 24 years old) if this stuff would hirt(as is spelled on e-mail transmission) us, Mr. Wragg, the district managers eyes and ears on the site said, it was...

Line 23, page 15, 1976 not 1996.

Line 25, page 15, prostate not prostrate (and in several other places throughout the document)

Line 25, page 16, orange "stripped" not extracted.

Line 1, page 17, Herlong not Herlon (and in several other places throughout the document)

Line 17, page 17, add "if before we got.

Line 18, page 17, add word "make" between words "to" and "do".

Line 16, page 18, offering not offer.

Line 19, page 18, addition: National Academy of Science.

Line 8, page 19, CA-1.

Line 9, page 19, under "A", not Aid.

Line 11, page 19, delete "one of", replace with a period, then add: While the digital...

Line 21, page 19, delete word "go".

Line 1, page 20, add in their files; removed they're filed.

Line 2, page 20, add word Hernia befor(as it is spelled on e-mail transmission) word case.

Line 3, page 20, I gave, not got.

Line 4, page 20, add 7/18/00, delete 2000.

Line 19, page 20, add word the, delete word is.

Line 16, page 23, delete word think.

Line 17, page 23, delete word to.

Line 1, page 26, add Brooks delete BLM.

Line 4, page 26, remove other exposures, add cummulative (as spelled on e-mail transmission) effects.

Line 22, page 28, after clothing add "gloves, masks, safety glasses" or...

Line 17, page 29, add "O" to WCP.

Line 17, page 30, after word any, remove the period; add "planning meetings other than those just mentioned".

Line 7, page 31, delete word bridge,; add word re-spray.

Line 11, page 31, delete "'ve"; new wording should be "and we re-sprayed areas".

Line 10, page 32, delete "the one particular", should read several instance("s").

Line 13, page 32, delete word "the", add "a".

Line 18, page 32, add word Nevada, delete "for that".

Line 25, page 32, delete number "4" before OWCP.

Line 7, page 33; correct spelling is Cuprek.

Line 23, page 33, word you should be you'll.

Line 25, page 33, delete words "what prostrate, what" add words prostate cancer.

Line 4, page 34, delete numbers and words 34,

40 years after.

Line 8, page 36, delete "s" from Carsons, should be Carson.

Line 13, page 36, delete word "if" add a period.

Line 14, page 36, addition: I am not sure he is still alive today.

Line 1, page 37, delete "they said", add "you see".

Line 4 & 5, page 37, Susanville to Cedarville, not vise versa.

Line 2, page 38, delete one "on" word.

Line 14, page 38, add word Burns, delete word Verns.

Line 18, page 38, add word with, delete word for.

Line 20, page 38, add name Linebaugh, delete word Bibol.

Line 12, page 39, change word say to word stay. Addition: the same telephone confirmations were included in the file my supervisor received from Susanville, in 12/98 or 1/99, and passed on to OWCP.

Line 11, page 40, change word when to where.

Line 23, page 40, add word probably before word drop.

Line 25, page 40, change word "but" to "through", and delete coma (as spelled on e-mal transmission)

Line 6, page 41, change 1966 to 1996.

Line 7, page 41, delete words "BM has privately funded".

Line 10 & 11, page 41, delete words "how" and "and they", add word "may": should read --

contaminated and may have various cancer(s)...

Line 21, page 41, add words "he is", delete "the".

Line 16, page 42, delete first word "veterans", change word civilian to veterans.

Line 24 page 44, after word request, add "and my Union Grievance and letter to Mr. Warren Johnson".

Line 2, page 15, add was forced intomretirement. (as spelled on e-mail transmission). Delete retired.

Line 15, page 45, after window add "and assigned me a $4 mil dollar project to be completed within 2 months, called 'Trivole' that another person had been working on for about a year, and could not complete, so he gave it to me, Mr. Tucker did that is, 'COLD'; e.i. without any or much explanation; when it was the end of the leave year and Ms. Loiuse (as spelled on the e-mail transmission) Perosky

was leaving for three and a half weeks of annual leave"!

Line 17 & 23, page 48, name is Gaddis, not Yatus.

Line 23, page 48, name is Whiting, not Lighting.

Line 24, page 48, replace word "over" with word "there".

Line 13, page 51, the name of the person referred to in this paragraph is Ms. Linda Sedbrooks (Gina Ramos should have a directory with her office location in it).

Finally Line 5, page 53, first word should be Ms. Sonneman, delete Gina.

7

Attachment

5/25/01

Mr. Robin Friedman, Senior Attorney
of the Solicitor, Div. of General Law
531
U.S. Dept of the Interior
1849 "C" Street, NW
Washington, D.C. 20240

Dear Mr. Friedman:

A). The enclosed twenty seven articles and information is the information I agreed to supply in our telephone interview on 5/23/01; regarding the Office of Special Counsels (OSC) request for an investigation dealing with OSC file # DI-00-0378.

1. URL reference Air Force Agent Orange Study, 4/26/00
2. NY Times article of 12/1/99 " Defoliant Victums to be Compensated
3. "Fatal flaws" article, San Diego Union-Tribune, 11/1/98
4. "Chronology of events", Eugene Register Guard, 3/2/84
5. U.S. Signs Treaty to Ban 12 Toxic Chemicals, NY Times 5/24/01
6. Article: study links Vietnamese, High Dioxin, NY Times, 5/15/01
7. Study confirms link between diabetes and war herbicide, AP, 3/30/00
8. Search Results for "Agent Orange", Netscape, 8/26/99
9. Man awarded $34.1 M in Cancer Suit, AP, 5/20/00
10. Vets Who Served in Korea File Suit Over Exposure to Defoliants, Law News Network, 12/7/99
11. Survey: 60% of men report impotence, bladder problems after prostate surgery, AP, 1/19/00
12. Arsenal, 10/18/00
13. U.S. to start testing some Korea vets for Agent Orange exposure, AP, 11/6/00
Agent Orange, Leukemia Link Studied, AP, 4/19/01
tified letter to Mr. Warren Johnson, W.O., BLM, 12/21/99
/99 e-mail to Sec. of the Int. Babbitt, which Ms. Jeana Ramos said you have in our 5/23/01 interview
3/26/99 " " " " " " " , with confirmation of receipt
18. 10/18/99 " " " " " " " " " " "
19. 12/21/99 " " " " " " " " " " "
20. 12/27/99 " " " " " " " " " " "
21. URL's on Agent Orange
22. Office of Special Counsels e-mail of 12/6/99
23. 1.2 million Award in Agent Orange Suit, NY Times, 5/27/96
24. EPA Cites Cancer Risks From Dioxin, NY Times, 5/17/00
25. EPA Agrees Dioxin Poses Cancer Risk, AP, 5/16/01
26. Letters: The Aftermath of Cancer, NY Times, 5/22/01
27. U.S. to compensate workers with nuclear-arms ills, NY Times, 5/15/99

B). During the 5/23/01 interview I expressed concern, as I had before, that searching my numerous files for this information is not free to DOI; as I am no longer an employee and on BLM's salary; I am retired.

In the spirit of cooperation, as compensation for all my efforts to search my files, making copies, postal fees, drafting this letter, etc., etc. you may choose between the following to alternative to compensate me:
1. Have a check issuedto me for $567.41.
2.Provide me by 7/6/01 with copies of the following three documents in exchange for my work, all of which are available to me through the Freedom of Information Act, as you are well aware.
a. The complete 1700 page, most recent edition, Air Force Agent Orange Study in hard copy, refered to as enclosure #1, URL reference Air Force....
b. Each states official response, with attachments, to a BLM W.O. Instruction Memo. issued to the states last week, regarding Pesticide Use on BLM, as addressed in the Washington office call to State Directors at 9:00 a.m. on 1.
opy of the Dept. of Interiors official submission to the Office of Special Counsel, with attachments, due at the on 7/2/01.

Sincerely,
Richard L. Harlow

Richard L. Harlow
P.O. Box 1300
Prescott, AZ 86302-1300
rharlow1@mindspring.com
520-541-9766, area code 928 starting 6/23/01

Subject: **RE: Air Force Agent Orange Study**
Date: Wed, 26 Apr 2000 15:51:29 -0500
From: Burnham Bruce R LtCol AFRL/HEDB <Bruce.Burnham@he.brooks.af.mil>
To: "'charlow@primenet.com'" <charlow@primenet.com>

Mr. Harlow, Thank you for your interest in our study. Unfortunately, we do not have the administrative support to provide hard copies of the 1700 page cycle 5 report. Therefore we have made the entire report available on the web at http://www.brooks.af.mil/AFRL/HED/hedb/afhs/97report.shtml

In addition, a CR-ROM of the report will be available from the Government Printing Office in June of 2000.
LC Burnham

-----Original Message-----
From: Colleen Harlow [mailto:charlow@primenet.com]
Sent: Wednesday, April 26, 2000 3:53 PM
To: Bruce.Burnham@afhs.brooks.af.mil
Subject: Air Force Agent Orange Study

4/26/00

Please send me a copy of the complete 1700+ page Air Force Agent Orange study just released. Thank you, Dick Harlow, PO Box 1300, Prescott, AZ 86302-1300.

December 1, 1999

Defoliant Victims To Be Compensated

Filed at 6:30 a.m. EDT

By The Associated Press

SEOUL, South Korea (AP) -- South Korea will compensate military and civilian victims of a U.S.-manufactured toxic defoliant that was sprayed along the border with communist North Korea in the late 1960s, officials said today.

The government drew up the policy in the wake of recent reports that South Korean soldiers -- unaware of the possible health dangers -- sprayed the defoliant Agent Orange in their country in 1968-69 at the suggestion of the U.S. Army.

It became widely recognized after the defoliant was used in the Vietnam War that Agent Orange contains dioxin, a substance that scientists say causes cancer, deformities and birth defects.

Seoul will conduct a field investigation to determine the number of victims and provide them with medical care, help in finding jobs, and other subsidies, said officials at the Defense Ministry.

South Korea is providing similar help to thousands of its veterans exposed to the herbicide while fighting alongside U.S. troops in Vietnam.

About 320,000 South Koreans fought in the Vietnam War -- the largest foreign contingent after the Americans. Veterans' groups estimate that 32,000 were exposed to Agent Orange.

Last month, Washington and Seoul acknowledged that the toxic defoliant also was used along the border between South and North Korea in 1968-69 to clear undergrowth.

South Korean veterans are suing for $4.3 billion from two Agent Orange manufacturers -- Dow Chemical and Monsanto -- which have business operations in South Korea, and another $1 billion from the U.S. government.

In an out-of-court settlement in 1984, Agent Orange manufacturers paid Australian, Canadian and New Zealander veterans of the Vietnam War.

The United States has provided medical care for U.S. veterans exposed to the herbicide when U.S. forces sprayed it in the Vietnam War. But Secretary of Defense William Cohen said last week that the Defense Department doesn't ``recognize any legal liability'' beyond that because it has taken the position there's no conclusive link between Agent Orange and health problems.

Related Information From Hoover's Inc.
Dow Chemical Co

The Unmaking of Elvis Presley, 1960-1977
With News and Reviews from the Archives of
The New York Times

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Fatal flaws; How the military misled Vietnam veterans and their families about the health risks of Agent Orange

By Clark Brooks, staff writer
Copyright 1998 San Diego Union-Tribune
November 1, 1998

The U.S. military's $200 million study of the health effects of Agent Orange on Vietnam War veterans is so flawed that it might be useless, a six- month investigation by The San Diego Union-Tribune has found.

The study has been a key factor in denying compensation to Vietnam veterans suffering from illnesses they blame on Agent Orange, a powerful herbicide used to destroy enemy crops and jungle hiding places.

Interviews with military scientists, transcripts of meetings, and government reports and internal memos reveal that these are among the flaws in the Air Force study, which began in 1979 and concludes in 2006:

** Two study reports that revealed serious birth defects among children of veterans exposed to Agent Orange were withheld for years, leaving a generation of men and women who served in Vietnam to start families without knowing the potential risks.

** A report expressing concerns about cancer and birth defects was altered, with the result that the risks appeared less serious.

** The government ignored a National Academy of Sciences recommendation that the study be done by scientists outside the military.

** High-ranking Air Force officers interfered with the study's data analysis, undermining its scientific integrity.

** The Air Force stonewalled a U.S. senator who wanted full disclosure of the data.

Richard Albanese, one of four scientists who designed the study and later was taken off the project, says it was manipulated to downplay the health problems of Vietnam veterans.

"This is a medical crime, basically," Albanese said. "Certainly, this is against all medical ethics."

Albanese, a civilian doctor, still works at Brooks Air Force Base in San Antonio, where the study's scientists are headquartered.

When the Union-Tribune contacted him, Albanese weighed the consequences for several days and then agreed to a series of interviews in the hope that veterans will be treated better in the future.

He said the study is tainted because a government agency, in this case the Air Force, was allowed to investigate itself.

Joel Michalek, the study's head scientist, acknowledged that the Air Force and the

Joel Michalek, the study's head scientist, acknowledged that the Air Force and the government tried to interfere, but he said this had no impact on the study. He said he received two memos through the chain of command that tried to influence the study, but threw them away.

The study is named for Operation Ranch Hand, a series of Air Force missions that sprayed 18 million gallons of defoliants over 3.6 million acres of South Vietnam. The Ranch Hand study tracks the health of about 1,000 veterans who participated in the spraying missions, in comparison with an Air Force group that was not involved in the spraying. Both groups come to San Diego every few years for medical exams.

Agent Orange contained dioxin, now known to cause some cancers. The defoliant destroyed forests and darkened the waters of the Mekong Delta, where Patti Robinson's husband, Geoff, was a gunner's mate on a Navy patrol boat in 1968-69.

Robinson, who lives in Clairemont, said her husband described how the herbicide congealed and licked at river banks. But he told her the men bathed and swam in the water anyway; their superiors said it was safe.

When her husband died of cancer in 1981, Robinson turned to the Veterans Administration for help. Her claim citing Agent Orange as a factor in her husband's death also listed her son, Matthew, who was born in 1976 with a developmental disability.

But the government told Robinson that Agent Orange did not cause her husband's malignant melanoma, nor her son's communication disorder. Or any other health problem for that matter.

All claims were being denied. Agent Orange was innocent until proved guilty.

The government had made that clear in 1978, after the first 500 claims came in. Garth Dettinger, an Air Force deputy surgeon general, told Congress there was no evidence that Agent Orange had harmed anyone.

But concerns about the herbicide's health effects had been raised since the early '70s, and the public wanted proof. So Congress funded the Ranch Hand study. Dettinger helped make sure it was done by Air Force scientists.

Conflict of interest

Although Dettinger wanted the Air Force to evaluate its use of Agent Orange, some of its scientists thought that might present a conflict of interest. Col. George Lathrop, head scientist for the Ranch Hand study in its early years, told a military science board in 1979 that an Air Force study wouldn't be credible to people outside the government.

"We advised a certain general that, 'No, we should not do this.' And we were told to shut up and do it anyway," Lathrop said, according to a transcript of the meeting. "So we are saluting the flag pole and mushing on. We are doing the damn thing."

That general, Lathrop said in a recent interview, was Dettinger.

"Dettinger had the notion that if we didn't do this study that he would devise his own questionnaire and his own study and go out and get it done himself," Lathrop said. "It would have been scientifically disastrous."

Dettinger denied ordering Lathrop to do the Ranch Hand study and said he never threatened to conduct his own version.

"He's not being honest about that," Dettinger said. "I promised Congress we would do the study. My word is my bond, and so we went ahead and did it."

Albanese also worried that conflict of interest might affect the findings. But, at the time, he believed the danger could be offset by a rule written into the study design: Air Force management was not to interfere with the scientific analysis.

The scientists weren't the only ones with conflict-of-interest concerns. The National Academy of Sciences reviewed the study design in 1980 and recommended it be done by independent researchers. But a White House panel made up of representatives from the Pentagon and VA, among other federal agencies, said the Air Force would do it. The panel, called the Agent Orange Working Group, appointed an advisory committee to review Ranch Hand reports.

But the committee did more directing than advising during the first decade of the study, Albanese.

Ranch Hand reports went from the Air Force to the advisory committee, then to the Agent Orange Working Group and back to the Air Force. Sources and documents indicate the reports were changed during that process, sometimes dramatically.

Altered report

The Air Force scientists drafted two major Ranch Hand reports in 1984.

One of them was withheld. The other was published, but its findings were altered.

The report that was withheld dealt specifically with reproductive health issues, and stressed birth defects and infant deaths. It showed high rates of both among children of Ranch Hand veterans.

The report that was published examined the general health of Ranch Hand veterans. It presented data on birth defects, cancer and many other medical conditions. The Air Force announced that it showed little difference between the health of Ranch Hand and comparison veterans.

But that wasn't what the Ranch Hand scientists wrote. Their original version of the report contained a table showing that the Ranch Hand veterans were, by a ratio of 5-1, "less well" than the comparison group. That version also noted that Ranch Hand veterans reported significantly more birth defects among their children than did the other veterans.

After the White House panel's advisory committee reviewed the report, those details were downplayed or eliminated.

Lathrop complied with the committee's recommendations to omit the table, soften the birth defects language and drop a sentence that said Ranch Hand veterans might have been harmed by Agent Orange. Lathrop also deleted a sentence that said some of the findings were "of concern." He added a line that said the overall findings were "reassuring."

Lathrop didn't object to the changes, which he said were minor.

"Fundamentally, the advisory group felt that we were too liberal on the interpretation," he said.

Albanese, on the other hand, thought the changes distorted the report. He wrote a letter requesting that his views be published as a minority opinion, and kept a copy in his files.

requesting that his views be published as a minority opinion, and kept a copy in his files. Lathrop, who didn't respond to Albanese's letter, said he doesn't recall receiving it.

Albanese and Lathrop also disagreed about how the cancer data were prepared and presented in the 1984 health report.

Because the Ranch Hand group is too small for the scientists to draw conclusions about rare cancers, Albanese said, they decided to study the incidence of cancer as a whole. They found that the Ranch Hand veterans had twice as many cancers as the comparison group.

But that didn't make it into the report.

Instead, skin and internal cancers were separated. Presented that way, the Ranch Hand group had 135 percent more skin cancers than the comparison group, but only 20 percent more internal cancers.

The scientists reported the high skin cancer rate, but suggested it was caused by overexposure to the sun. They found "no significant group differences" in internal cancers. Within the small Ranch Hand group, Albanese said, the increase in internal cancers became a meaningless statistic.

Albanese was outraged.

"It happened that most cancers were in the skin, and the report said they were just in the skin," he said. "That's not a correct inference."

At the press conference that unveiled the 1984 health findings, Murphy Chesney, a deputy Air Force surgeon general at the time, announced that the health of the Ranch Hand and comparison veterans was about the same.

In response to a question during that press conference, Albanese voiced a mild disagreement. Noting the higher incidence of some diseases, he said, "I cannot account for such differences by chance; on the other hand, I cannot explain their cause."

He repeated to reporters a phrase that had been deleted from the report:

"A degree of concern is warranted."

Albanese was removed from the Ranch Hand study eight months later. The Air Force said he was needed on a different project.

Sensitive information

Albanese considered going public with his misgivings about the Ranch Hand study years ago, but decided against it. He didn't want to jeopardize his career as a government scientist.

Because of the study's flaws, Albanese said, Vietnam veterans have not received the compensation they deserve.

Lathrop said it was better not to release sensitive data from the Ranch Hand study prematurely, and nothing was more sensitive than information about birth defects.

"There was a great deal riding on the issue of birth defects," he said. " The VA had not decided on the issue of compensation and so forth."

After her husband died, Patti Robinson struggled to meet her son's special needs. She needed the government compensation, but more than that, she needed the truth.

needed the government compensation, but more than that, she needed the truth.

"The uncertainty has left big question marks," she said. "If it wasn't for that, you could put it behind you."

Robinson never remarried. She devoted her life to her son, Matthew, who is 21 now, the age his father was in Vietnam.

Matthew has the reading skills of a second-grader, and he has a hard time getting words out. But he can look at a photograph, identify a place he has been and offer directions to get there.

He calls his mother by her first name and often refers to himself in the third person. He will say, "Patti, Matthew is stupid," and his mother will fire back, "No, you're not."

Matthew keeps a picture of his father in his bedroom. Sometimes he shows it to visitors.

But pain registered on his face when he was asked what he remembers about the man who died so long ago.

He turned away.

"Matthew doesn't want to talk about that," he said.

In the private sector

To reduce the workload of its scientists, the Air Force hired a private company to conduct Ranch Hand general health studies published since 1984.

But the government has remained in charge.

And the firm that won the first contract featured a familiar face.

George Lathrop had retired from the Air Force and was working at the San Antonio office of Science Applications International Corp., a San Diego-based company that was founded on defense contracts.

Lathrop said he wanted to continue working on the Ranch Hand study. He figured that with him on its team, SAIC would get the contract.

It did.

Lathrop left SAIC in 1987. The company went on to win the contracts for 1987, 1992, 1997 and 2002. It uses Scripps Clinic in La Jolla to perform the medical tests.

Results are analyzed by SAIC, then sent to scientists at Brooks Air Force Base for approval. The SAIC contracts do not include compiling birth defects reports. The Air Force does that itself.

By 1987, Ranch Hand had emerged as the government's definitive Agent Orange study.

"It was the pivotal study," said Michalek, Ranch Hand's head scientist since 1991. "It still is."

The U.S. Centers for Disease Control and Prevention in Atlanta tried to do its own study by matching records of troop movements with Agent Orange spraying. But after five years and nearly $50 million, the CDC decided its review method wasn't reliable.

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After the CDC gave up in 1987, the government dismissed other studies that used similar exposure estimates. They were deemed unscientific.

That left the Ranch Hand study as the government's principal yardstick for Agent Orange damage.

Pattern of manipulation

South Dakota Sen. Tom Daschle, a Democrat, has kept an eye on the Ranch Hand study since the early 1980s. He was confident it would support his belief that Agent Orange harmed Vietnam veterans.

When that hadn't happened by 1984, when Daschle was a member of the House of Representatives, he decided to investigate. He assigned an aide, Laura Petrou, to help. They collected Air Force and other government correspondence and saw what they believed was a pattern of manipulation to minimize findings of health problems among Ranch Hand veterans.

When Daschle learned about the unpublished 1984 birth defects report, he asked for a copy. The Air Force refused to give him one.

Finally, in a letter to Daschle dated Aug. 25, 1987, the Air Force conceded that the cancer and birth defects information in the 1984 Ranch Hand health report -- the one Albanese said was distorted by advisory committee changes -- might be incorrect.

Daschle then met with Albanese, Michalek and a third Ranch Hand scientist, Col. William H. Wolfe. They told Daschle about another unpublished report, which included some of the cancer and birth defects information that was left out of the 1984 general health report.

Daschle fought to make the report public. The advisory committee argued that it was a rehash of old data.

The report was released in February 1988, but it didn't gain the attention Daschle had hoped.

The Air Force deemed the report "technically correct" but did not publicize it or list it among Ranch Hand publications.

One month after the report was released, Scripps Clinic issued a study update, a press release that said the Ranch Hand veterans were doing fine. It quoted Wolfe:

"This is the definitive study on Agent Orange in Vietnam veterans, and so far it shows that disease is not related to apparent exposure, that there is no increased incidence of major long-term health effects.

"These results are reassuring."

'Forbidden interpretation'

Patti Robinson was not reassured.

She had been attending meetings of San Diego veterans' groups and had read everything she could find on Agent Orange.

Robinson also corresponded with retired Navy Adm. Elmo Zumwalt, who had ordered the spraying of Agent Orange along the Mekong Delta to kill vegetation where enemy snipers

spraying of Agent Orange along the Mekong Delta to kill vegetation where enemy snipers hid. His son, Navy Lt. j.g. Elmo Zumwalt III, had commanded a patrol boat in the Mekong Delta, the same waters Geoff Robinson had navigated.

Former Lt. j.g. Zumwalt died of cancer in 1988. His son, Russell, was diagnosed with sensory integration dysfunction, the same communication disorder that plagues Patti Robinson's son, Matthew.

Robinson thought the Ranch Hand veterans and her husband were exposed to roughly equal amounts of Agent Orange. She believed the Ranch Hand study would be the one that would "prove how dangerous Agent Orange was."

"I placed a high priority on that study," Robinson said. "I was disappointed in the results."

The Air Force now regrets having described Ranch Hand findings as " reassuring," Michalek said.

"That's a forbidden interpretation," he said. "You can't reassure anyone of anything in (statistical studies). You can only establish hazard, not safety."

Daschle grew tired of fighting the Air Force on the Ranch Hand study. He tried to find other ways to help Vietnam veterans and their families.

"Our whole point was if the government was controlling all the science and analyses, veterans would never get compensated," Petrou said.

Daschle, along with then-Sen. Alan Cranston, D-Calif., and Rep. Lane Evans, D-Ill., pushed legislation to compensate Vietnam veterans suffering from soft- tissue sarcoma and non-Hodgkin's lymphoma. The bill also authorized the National Academy of Sciences to evaluate scientific and medical information about the health effects of Agent Orange.

Earlier attempts to pass similar legislation had failed. But toward the end of 1990, with U.S. troops in the Persian Gulf, Congress was eager to help veterans.

The Senate passed the bill Jan. 30, 1991, the day Camp Pendleton Marines led the first major ground battle of the Persian Gulf War.

During a ceremony to announce the legislation, President Bush proclaimed: " We are here today to ensure that our nation will ever remember those who defended her, the men and women who stood where duty required them to stand."

Undue influence?

Murphy Chesney, a retired lieutenant general, was an important player in both the Ranch Hand study and the Ranch Hand spraying missions.

In Vietnam, as the officer in charge of the health and safety of Air Force personnel, he could have recommended against spraying herbicides if he thought they might be dangerous. But he shared the then-prevailing opinion that Agent Orange, named for the color of the stripe around its 55-gallon storage containers, wouldn't hurt the troops.

After the war, he oversaw the Ranch Hand study from 1979 until he was promoted to Air Force surgeon general in 1985.

Chesney couldn't say whether his role in Operation Ranch Hand influenced his decisions in the Ranch Hand study.

"I hope it didn't," he said in an interview.

But Albanese, who worked on the study during the years Chesney was involved, believes it did. He recalled a dispute with a colleague, Wolfe, over data analysis. Chesney sided with Wolfe.

"Then," Albanese said, "Gen. Chesney pulled me aside and said, 'If I had to accept your analysis, I'm not sure I could live with myself.'

"I could see the water in his eyes.

"He said he had approved some of those spraying activities."

Chesney said no such conversation took place.

But Chesney did remember ordering the scientists to comply with advisory committee recommendations, although such influence by the Air Force is prohibited by the rules of the study design.

Looking back, Albanese said, it should have been obvious that the conflict of interest was too strong for the study to be objective.

"There's a faction that doesn't want to pay the price of treating the veterans," he said, "and a faction that doesn't want to have made them sick."

Birth defects acknowledged

In August 1992, the Air Force finally published a Ranch Hand birth defects report.

Michalek said the Air Force had withheld the 1984 birth defects report because the advisory committee said it was incomplete. Ranch Hand scientists had verified records of babies with birth defects, but had not yet checked the healthy ones.

In the draft of the report, the scientists wrote that it would take about a year to verify records of the healthy babies. But eight years passed before a report came out.

The 1992 report confirmed the high rate of birth defects and infant deaths among children fathered by Ranch Hand veterans. But the scientists wrote that because the birth defects did not increase consistently with dioxin exposure, Agent Orange wasn't to blame.

But that might be inaccurate, the National Academy of Sciences concluded in 1994. The academy criticized the Ranch Hand study and singled out the 1992 birth defects report as an example of its many flaws.

"It was confusing how the analysis of the birth defects was presented," said Kathleen Rodgers, one of 16 contributors to the National Academy of Sciences study, "Veterans and Agent Orange."

"I remember being incensed at the time that we couldn't get anything out of it," said Rodgers, an associate professor at the University of Southern California School of Medicine.

The Air Force scientists, examining a study group that was small to begin with, had omitted hundreds of subjects from the analysis, the academy said. That made it harder to connect birth defects to Agent Orange.

Or easier not to.

"Some aspect of the Ranch Hand experience seems to have increased the risk of fathering children with birth defects," the academy report said, "but the implications of this finding are unclear."

The Air Force, of course, knew that 10 years earlier but sat on the information.

"It's the worst thing I have ever seen from the point of view of medical reporting," Albanese said.

Releasing the data

In recent years, as the Agent Orange controversy has faded from the public's consciousness, the Ranch Hand advisory committee's role has diminished.

During its meeting last week in San Antonio -- the first such gathering since 1995 -- Michalek briefed the committee on the Union-Tribune's investigation of the study.

Michalek asked Albanese to detail his concerns about unpublished data and government interference. Afterward, Albanese suggested that the raw Ranch Hand data be made public, repeating an idea he has advocated for years. That way, he said, researchers outside the military might come up with new and useful analyses.

Advisory committee Chairman Robert W. Harrison recommended that everything should be released, except for information that would violate the confidentiality of the subjects. Michalek said he would comply.

Harrison, a professor of medicine at the University of Rochester, said that he and his colleagues on the panel should start looking more closely at how the study was conducted and its findings.

Expanded compensation

Last year, the Air Force announced its first link between Agent Orange and a serious illness.

The Ranch Hand veterans have a higher rate of diabetes.

Air Force scientists saw the diabetes increase in 1992 but waited five years to make it public. Michalek said they wanted to be sure.

The delay came as no surprise to Daschle and his aide, Petrou, who are still upset with the Air Force for withholding information about cancer and birth defects.

"Delay is clearly their major tactic," Petrou said. "The delay is justice denied. It's extremely disturbing.

"From a public health perspective and from a moral perspective in terms of how we treat veterans, there's no excuse good enough for this."

Daschle has given up on the Ranch Hand study. But he has worked around it with some success.

The National Academy of Sciences has continued its investigation, examining studies of Vietnam veterans and those of civilians exposed to dioxin in industrial accidents.

As the academy links additional diseases to dioxin, more Vietnam veterans get help.

The VA -- now the Department of Veterans Affairs -- has expanded its Agent Orange compensation list to 10 diseases, mostly cancers. Spina bifida, a serious spinal deformity, is the only birth defect on the list so far.

As of April, the VA had received 92,276 Agent Orange claims from veterans and their survivors. Claims approved for diseases on the compensation list totaled 5,908.

Patti Robinson remains a part of the larger group. The academy hasn't found enough evidence that Agent Orange caused malignant melanoma, the cancer that took her husband.

Which leaves Robinson where she was 15 years ago.

She still believes Agent Orange killed her husband and disabled her son.

But she can't be sure.

And that's what really hurts, she said.

"Look at all the years that have gone by, and there's still no clear-cut answer."

Agent Orange and Operation Ranch Hand

The herbicide...

Agent Orange was one of six defoliants sprayed in South Vietnam from 1962 to 1971 to damage enemy crops and to eliminate dense vegetation where enemy troops could hide.

The herbicides were stored in color-coded drums.

Agent Blue worked fastest and was the herbicide of choice for taking out rice crops.

Agent Purple, the first general defoliant, was replaced by Agent Orange in 1965.

Agent Orange was a 50-50 mixture of two herbicides the military first used together during the 1940s in experiments to defoliate tropical battlegrounds. It accounted for more than 11 million of the 18 million gallons of herbicide sprayed in Vietnam. It contained dioxin, now known to cause some cancers. Some of the other herbicides also were laced with dioxin.

... And the mission Operation Ranch Hand missions began in 1962 and ended in 1971.

Air Force pilots, in airplanes and helicopters, swooped down to 150 feet above the ground and sprayed 1,000 gallons for every three to four acres of vegetation. Eighty percent of the defoliant settled in the tops of trees. The rest hit a lower layer of jungle or reached the ground.

Operation Ranch Hand's aerial missions accounted for 86 percent of all herbicides sprayed in South Vietnam. The rest was distributed from other helicopters, trucks, boats and even backpacks.

In 1969, the National Institutes of Health reported that Agent Orange caused birth defects in mice.

Who is in the Ranch Hand study?

Ordered by Congress in 1979, the Ranch Hand study will conclude in 2006.

The 1,264 members of the Air Force who participated in Agent Orange spraying missions between 1962 and 1971 were deemed an ideal group to study. The Air Force is tracking the health of about 1,000 of these men.

The number of study participants is considered too small for drawing some scientific conclusions, but it was the largest specific group known to have been exposed to the herbicide in Vietnam.

They are being compared to a group of veterans selected from among 23,978 Air Force personnel who served in Southeast Asia but were not occupationally exposed to herbicides. The comparison group has been matched with Ranch Hand veterans by such variables as age, occupation and race.

VA eligibility

Veterans who have service-connected medical conditions are eligible for medical care at Department of Veterans Affairs hospitals. They also may receive government compensation ranging from $95 to $1,964 per month, depending on the level of disability. This can increase if the veteran has dependents.

Wounds suffered during combat and injuries from accidents while on active duty are examples of service-connected conditions.

Indigent veterans are eligible for medical care and compensation for injuries and medical conditions that are not service-connected. Such veterans may receive payments to bring their income up to $8,665 per year.

Prior to 1990, the only ailment the U.S. government connected to Agent Orange exposure was a skin disorder called chloracne. Additional illnesses have been added to the Agent Orange list by Congress and as a result of research by the National Academy of Sciences.

Chronology of Agent Orange

** 1960: Two of nearly 900 U.S. military advisers in Vietnam are killed in a raid at the Bien Hoa military base, the first American casualties of the Vietnam conflict.

** 1961: President Kennedy authorizes use of herbicides to destroy enemy crops and thin jungle battlegrounds.

** 1962: Operation Ranch Hand begins.

** 1965: First U.S. combat troops arrive in Vietnam.

** 1969: The Pentagon restricts Agent Orange use to unpopulated areas after the National Institutes of Health reports it could cause malformations and stillbirths in mice.

** 1970: Spraying of Agent Orange ends.

** 1971: Operation Ranch Hand ends, terminating spraying of all herbicides.

** 1973: Paris peace accords end U.S. military involvement in Vietnam.

** 1975: Vietnam War ends after Saigon falls to North Vietnamese troops.

President Ford signs an executive order promising that the United States will never again resort to the wholesale poisoning of terrain as in Operation Ranch Hand.

** 1977: U.S. Air Force incinerates 2.2 million gallons of Agent Orange at sea.

** 1978: About 500 Vietnam War veterans file claims for illnesses they attribute to Agent Orange exposure.

Garth Dettinger, deputy surgeon general of the Air Force, tells Congress there is no evidence Agent Orange has harmed

GRAPHIC: 1. Aerial assault: U.S. Air Force planes spray the defoliant Agent Orange over dense vegetation in South Vietnam in this 1966 file photo. 2. Remembrance: Matthew Robinson, whose father died of cancer in 1981, held flowers for his dad's grave as his mother, Patti, wrote a Father's Day greeting on a card. 3. Agent Orange and Operation Ranch Hand (A-22) 4. Who is in the Ranch Hand study? (A-22) 5. VA eligibility (A-22) 6. Chronology of Agent Orange (A-22) 7. Researcher had doubts: Dr. Richard Albanese was removed from the study after questioning findings. (A-22) 8. U.S. involvement in Vietnam, 1960-1975 (A-22) 9. South Dakota Sen. Tom Daschle (A-23) 10. Sad legacy: Matthew Robinson paused with his mother, Patti, before placing flowers on his father's grave. Patti Robinson believes her husband's death in 1981 was linked to wartime exposure to Agent Orange. (A-23) 11. Researcher defends results: Joel Michalek, Ranch Hand's head scientist, does not believe veterans were harmed by changes in the study. (A-23) 12. The list grows (A-23) 1. ASSOCIATED PRESS 2,10. NELVIN CEPEDA

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Chronology of events:

MAY 1976 — In Oregon, Citizens Against Toxic Sprays in a federal court suit sought an end to use of 2,4,5-T in the Siuslaw National Forest.

FEBRUARY 1977 — With the suit continuing, the anti-spray group reported traces of dioxin were found in the milk of nursing mothers in Five Rivers, a small community in the Siuslaw National Forest area. Dioxin is an extremely toxic chemical that is found in 2,4,5-T.

APRIL 1978 — The U.S. Environmental Protection Agency reported that dioxin and 2,4,5-T might be the cause of cancer and birth defects in humans. Forest Service officials were ordered to observe more stringent regulations on use of the herbicides. In late summer, under pressure from Oregon Gov. Bob Straub, the State Board of Forestry ordered no spraying of the herbicides 2,4,5-T and Silvex, both of which contain dioxin, within a 200-foot buffer strip near streams.

MARCH 1979 — The EPA suspended use of 2,4,5-T herbicides until its potential threat to human health could be reassessed. The agency cited the possible link between the sprays and miscarriages of pregnant women in the Five Rivers area. Chemical corporations sued to overturn the suspension but in April 1979, a federal judge in Washington, D.C., banned use of the herbicides until the hearings could be completed.

MARCH 1981 — The EPA hearings to make the suspension permanent were halted to allow attorneys for the agency and major chemical companies to attempt a negotiated settlement — but no agreement was reached.

APRIL 1981 - A Five Rivers resident, Paul Merrell, filed a lawsuit to prevent the Siuslaw National Forest and Bureau of Land Management from using the herbicides near his home.

MARCH 1983 — Two anti-herbicide groups, Save Our Ecosystems and Citizens for Alternatives to Toxic Sprays, filed a lawsuit in federal court contending that the BLM failed to prepare a "worst-case" analysis on the dangers of use of the herbicides as ordered earlier by U.S. District Judge Helen Frye. Hearings on the suit were held before U.S. District Judge Robert Belloni.

APRIL 1983 — Judge Belloni ordered a ban on spraying of the herbicides within 25 miles of the Siuslaw National Forest, an injuction directed against the Forest Service and BLM until a "worst-case" analysis was completed. The ban produced confusion among the federal agencies and they appealed.

MAY 1983 — Judge Belloni lifted the ban, citing reports that he said show that without the herbicides "the harm to reproduction of young trees in the forests would be great." However, the U.S. Ninth Circuit Court of Appeals put the ban back in place and then a few weeks later revised the ruling to allow some uses.

JUNE 1983 — A lawsuit to prohibit spraying on federal lands in Oregon and Washington was filed by the Northwest Coalition for Alternatives to Pesticides, Oregon Environmental Council and Portland Audubon Society. U.S. District Judge James Burns began hearing legal arguments in August.

OCTOBER 1983 - Dow Chemical Co., the major producer of 2,4,5-T, announced it would end its legal fight to continue marketing the chemical in the U.S., and the Environmental Protection Agency reported a ban on sales would become effective in November 1983.

JANUARY 1984 — The Ninth U.S. Court of Appeals upheld the injunction issued by Judge Belloni in April. The injunction had banned use of herbicides until an acceptable "worst-case" environmental impact statement was prepared.

THURSDAY — Judge Burns bans spraying of the herbicides on federal forest lands in Oregon and Washington.

* U.S. Government Printing Office: 1983-679-949/ 553 28

The New York Times
ON THE WEB

y 24, 2001

U.S. Signs Treaty to Ban 12 Toxic Chemicals

By THE ASSOCIATED PRESS

STOCKHOLM, Sweden, May 23 — Cameras flashed and everybody smiled as Christie Whitman, head of the Environmental Protection Agency, went on stage today to sign a global treaty that would ban 12 toxic chemicals. Mrs. Whitman faced a skeptical audience that questioned President Bush's commitment to environmental protection and included Europeans who continue to smart from his rejecting the Kyoto accord aimed at halting global warming.

"I know that there's a great deal of concern," Mrs. Whitman told reporters. "I think as we move forward they will see that in fact this president is very committed to these environmental goals and is someone who will be a leader in this area."

She joined 500 delegates from 127 countries for a two-day conference to adopt a pact on persistent organic pollutants, an accord concluded in December in South Africa after nearly two years of negotiations. The production and use of the chemicals, widely known as the "dirty dozen," would be banned under the accord, which was adopted on Tuesday by consensus. Among the substances are PCB's, [redacted] DDT and other pesticides shown to contribute to birth defects, cancer and other problems in humans and animals.

gates from 90 countries signed the accord. Others have a year to sign. It goes into effect after 50 h have ratified it.

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Study confirms link between diabetes and war herbicide

WASHINGTON (AP) — The Air Force has found the "strongest evidence to date" that exposure to [redacted] improving the chances that Vietnam veterans suffering from the disease will receive compensation.

The Air Force said Wednesday the connection so far is only statistical and is yet to be proved by biological study.

Air Force planes sprayed 11 million gallons of Agent Orange in Vietnam between 1962 and 1971 to destroy jungle cover for communist supply lines, expose enemy sanctuaries and bases and destroy crops needed to feed enemy troops. The operation was equated by some critics at the time to chemical warfare.

The National Academy of Sciences is reviewing the Air Force study's results and is to report to the Department of Veterans Affairs, which will decide whether to add diabetes to the list of diseases presumed linked to Agent Orange exposure. Vietnam veterans with such diseases, including prostate cancer, are eligible for compensation.

Veterans Affairs said a decision on whether diabetes will be "presumptively" linked to Agent Orange exposure will be made after a federal review of another study on dioxin and diabetes, due to be completed in May.

The Air Force study found a 47 percent increase in diabetes among veterans with the highest levels of dioxin in their bloodstream. Dioxin is the compound in Agent Orange linked to health effects in laboratory animals. The result is based on 1997 physical examinations of 1,000 Air Force veterans who were exposed to Agent Orange during the nine years that it was used as a defoliant and crop killer in Vietnam.

Joel Michalek, the lead investigator in the study, told a Pentagon news conference that because studies have not yet explained a biological relation between dioxin and diabetes, the Air Force cannot say conclusively that wartime exposure to Agent Orange is a cause of diabetes.

Still, he said, the latest results provide "the strongest evidence to date" that herbicide exposure is associated with diabetes. He said the Air Force knew as far back as 1991 of a statistical link between dioxin and diabetes and has since hardened its data based on additional physical exams of veterans.

In its report, the Air Force said it also found a 26 percent increase in heart disease.

The increase was 50 percent among enlisted airmen who served as ground crew for Operation Ranch Hand, the military code name for the spraying campaign.

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[redacted]

By THE ASSOCIATED PRESS

Filed at 7:38 p.m. ET

Thirty years after the U.S. military stopped spraying the defoliant Agent Orange, a new study by American researchers shows the level of dioxin in the bloodstreams of some Vietnamese remains alarmingly high.''

Public health researchers say residents of Bien Hoa City in south Vietnam show dioxin levels as much as 135 times higher than in

residents in Hanoi, Vietnam s capital hundreds of miles to the north where the defoliant was not sprayed.

Bien Hoa was a major U.S. air force base and important chemical de during the Vietnam War.

st disturbingly, they said, some of the affected residents did ot live in Bien Hoa during the war and others are children born many years after the war ended, indicating they were recently exposed to a persistent source of contamination.

Agent Orange exposure has been associated with cancer, birth defects and miscarriages, although a direct link to those health problems remains unproven.

The results are published in the Tuesday issue of the Journal of Occupational and Environmental Medicine.

Agent Orange has long been a knotty dilpmatic subject for both nations. These latest results appear during a particularly tense juncture as Congress delays ratifying a trade pact with Hanoi and amid revelations that former Sen. Bob Kerry conducted a raid in which 13 civilians were killed.

But scientists said today's politics should not overshadow the study's striking findings.

``We have a public health crisis for the people living in Bien Hoa City,'' said Arnold Schecter, the study's lead author and an environmental scientist at the University of Texas School of Public Health in Dallas.

``These are the highest levels we've seen since 1973 after Agent Orange spraying was stopped,'' said Schecter, who has worked in Vietnam since 1984. ``I have never seen children born after the spraying with levels so high.''

Other public health researchers who did not participate in the study said Agent Orange remains a tragic legacy of the war that cannot be ignored. They said the problem probably is confined to a handful of dioxin ``hotspots'' that could be surveyed and cleaned up with adequate funding.

``Although wishful thinkers might have assumed the problem would go away over time, that data indicate that for some populations the exposure continues,'' said Michael Gochfeld of the University of Medicine and Dentistry of New Jersey.

Between 1962 and 1971, U.S. military tanker planes and helicopters sprayed 20 million gallons of Agent Orange and other defoliants in Operation Ranch Hand to deny cover to insurgent Communist forces.

The defoliants were contaminated with TCDD, the most dangerous form of dioxin.

Soldiers on both sides, as well as local residents, were drenched by the sweet-smelling herbicide. Today, thousands of American servicemen and their families receive disability benefits for health problems related to Agent Orange.

Among Vietnam's 76 million people, more than 1 million are believed t disabled, including 150,000 children.

many places, the Vietnamese countryside has not rebounded from

the defoliant, but the environmental damage is not uniform.

Bien Hoa, located near Ho Chi Minh City (formerly Saigon) was one of the biggest Agent Orange stockpiles. In the late 1960s, more 7,500 gallons of the defoliant spilled there.

Schecter reports at least two sediment and soil samples from the area showed TCDD levels as high as 600,000 parts per trillion. In the United States, he said, government cleanups have been ordered for levels as low as 1,000 ppt.

Throughout Vietnam, more than 2,400 blood samples collected by the Red Cross showed the TCDD levels in humans typically runs about 2 ppt. In Bien Hoa, TCDD levels in 20 people sampled peaked at 271 ppt, and were higher than normal in each case, Schecter said.

Left unproven is how the dioxin worked its way into humans. Schecter suspects it accumulates in the fatty tissues of fish and water fowl, both of which are important local food sources. Vietnam has not allowed Schecter to analyze food samples.

Even without those laboratory results, Schecter and other epidemiologists say they recommend supplying residents near the Bien Hoa hotspot with clean food and water. Then, contaminated sediments and soils can be removed.

Scientists said the hotspot could serve as a test bed for public health programs and new cleanup technologies. It also could be useful in finding American servicemen and Vietnamese emigrants who were exposed during the war, they said.

http://www.nytimes.com/aponline/national/AP-Agent-Orange-Study.html?ex=990930523&ei=1&en=1758a6f

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- South Orange County - found in: Regional > US > California > Counties > Orange > Real Estate > Agents and Brokers

Reviewed Web Sites

1-8 of 8

Web sites reviewed and categorized by a team of editors.

- Aanders, Barry
  Prudential California Realty - agent with guide to Orange County with relocation information, dinner reservations, and info to build a home.
  http://www.411orangecounty.com/
  found in: Regional > US > California > Counties > Orange > Real Estate > Agents and Brokers > South Orange County

- DiBello, Rick
  The Summit Real Estate Group - Agent in South Orange County, including San Clemente, Dana Point, Capistrano Beach, and Monarch Beach.
  http://www.results-net.com
  found in: Regional > US > California > Counties > Orange > Real Estate > Agents and Brokers > South Orange County

- Mann, Stan
  Stan Mann is a real estate agent for Re/Max in south Orange County California.
  http://www.mstandifer.com
  found in: Regional > US > California > Counties > Orange > Real Estate > Agents and Brokers > South Orange County

- Prudential California Realty
  Real estate information, including current home and agent databases for San Diego County, Orange County, Los Angeles County, as well as the surrounding metropolitan areas.
  http://www.prudentialcal.com/
  found in: Business > Real Estate > Regional > United States > California > Southern California > Agencies and Brokerage Firms

- Agent Orange
  Agent Orange-California's Original Punk/Surf Power Trio!
  http://www.geocities.com/SunsetStrip/Palms/4640/
  found in: Arts > Music > Styles > Punk > Bands

- Friedman, Larry
  HomePro Realty - Top producing agent in North Orange County, serving Yorba Linda, Cowan Heights, Anaheim Hills, Orange, and Buena Park.
  http://www.larryfriedman.com
  found in: Regional > US > California > Counties > Orange > Real Estate > Agents and Brokers > North Orange County

- Clinton broadens Agent Orange benefits [CNN.com]
  http://www.cnn.com/US/9605/28/agent.orange/
  found in: News > Online > Archives > CNN.com > 1996 > May > US

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May 20, 2000

Man Awarded $34.1M in Cancer Suit

Filed at 9:07 p.m. EDT

By The Associated Press

EDWARDSVILLE, Ill. (AP) -- A jury awarded $34.1 million to a man who claimed he got cancer after working with asbestos at a Shell Oil refinery.

James ``Butch'' Hutcheson, 64, worked at a company that did roofing work at the Wood River refinery in Illinois in the late 1950s and 1960s. He said he developed lung cancer after working in mists of asbestos while removing insulation.

A jury on Friday awarded him $25 million in punitive damages and $9.1 million in compensatory damages for medical bills, pain and suffering, emotional distress and loss of a normal life.

Shell plans to appeal, a company spokeswoman said Saturday.

``Shell staunchly believes the verdict is not supported by the facts or law,'' company spokeswoman Kitty Borah said in a statement.

Hutcheson's attorneys argued that Shell knew as early as 1945 that asbestos causes cancer but did nothing to warn workers of the danger.

Borah said the judge's ruling during the two-week trial that Shell hid such evidence prevented the company from presenting other evidence that Hutcheson's disease was not related to the brief period he worked at the Wood River refinery.

law.com

Vets Who Served in Korea File Suit Over Exposure to Defoliants

Shannon P. Duffy
The Legal Intelligencer
December 7, 1999

law.com

Korean and American veterans who served in the late 1960s filed a class action suit in U.S. District Court in Philadelphia on Friday against the makers of three defoliants -- Agent Orange, Agent Blue and Monuron -- claiming the chemicals have had delayed toxic effects on the soldiers exposed to them.

Attorneys Stewart J. Eisenberg of Weinstein Goss Schleifer Eisenberg Winkler & Rothweiler and Michael Choi of Choi & Associates filed the suit against six defendants -- Dow Chemical Co., Occidental Electro-Chemical Corp., Hercules Inc., Monsanto Co., Uniroyal Inc. and Thompson Hayward Agriculture & Nutrition Inc.

The suit was filed by two individuals seeking to represent two related classes. Chang Ok-Lee is a citizen of Korea who seeks to represent a class of Koreans who served in that country's armed forces from 1967 to 1970 and who were unwittingly exposed to the defoliants during their service.

Thomas Wolfe of Dayton, Ohio, is seeking to represent a similar group of American veterans who served near the Korean demilitarized zone -- which separates North Korea from the Republic of South Korea.

During the three-year period, the suit says, thousands of gallons of Agent Orange and Agent Blue and thousands of pounds of Monuron were sprayed or applied in the DMZ.

LAW NEWS NETWORK HIGHLIGHTS

Protests Aside, WTO Presents Opportunity
December 1, 1999
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THE LAW BIZ

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December 1, 1999
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Internet Financial Chat Rooms Raise Concerns
December 1, 1999
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Troops were unwittingly exposed to the chemicals whose toxic effects can remain hidden for years, the suit says.

The plaintiffs' lawyers say the class of Korean veterans is likely to number more than 9,000 and that their common legal questions whether the statute of limitations has run on their claim or if they should be excused as a group under the discovery rule since they only recently learned of their exposure and possible injury.

The proposed class of American veterans numbers more than 1,000, the suit says, and their legal issues are similar, including whether they can prove that the manufacturers were aware of the toxic effects of the defoliants at the time of their use.

The case, *Ok-Lee v. Dow Chemical Co. et al.*, 99-cv-6127, has been assigned to U.S. District Judge Jan E. DuBois.

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Million in 'Landmark' Settlement
December 1, 1999
Boeing agreed to revamp policies and pay salary adjustments and back pay to female and minority employees, resolving claims of pay disparity.
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Ramseys Seek $25M in Suit Over Star Story on Son
November 30, 1999
JonBenet Ramsey's parents are filing a $25 million libel suit against *The Star* for stories stating their 12-year-old son killed his sister, says their attorney, L. Lin Wood Jr.
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Vitamin Deal Gets Approval
December 1, 1999
Big firms lose bid to challenge 'most favored nation' clause.
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the Supreme Court Report

Big Tobacco Going for Broke
November 29, 1999
Argument that the FDA would have to ban product puts focus on Congress' intent.
Visit the Supreme Court Report

Law Jobs click here

1-19-10

Survey: 60 % of men report impotence, bladder problems after prostate surgery

CHICAGO (AP) — One of the largest surveys of men who had their cancerous prostates removed found that nearly 60 percent were impotent and more than 8 percent lacked bladder control more than a year and a half later.

While such side effects of the surgery are well known, the figures could help patients make the difficult decision of whether to have their prostates removed.

"It's clearly a large effect on men's quality of life, and I think it's important they go into the surgery knowing that," said Janet Stanford, a researcher at the Fred Hutchinson Cancer Research Center in Seattle who led the study.

The study appears in Wednesday's Journal of the American Medical Association.

The researchers are still following the men who answered the survey and are trying to determine whether their impotence remained five years after surgery and whether Viagra worked for them.

Cancer of the prostate, a gland involved in semen production, is the second most common type of cancer found in American men, behind skin cancer. A total of 179,300 were diagnosed with the disease in 1999.

Treatments include what is known as a radical prostatectomy — the removal of the prostate — and radiation. Doctors also often recommend "watchful waiting," or leaving the cancer untreated, in elderly men who are more likely to die first from other ailments.

For the study, researchers surveyed 1,291 men beginning in 1994 who had undergone a radical prostatectomy within six months of being diagnosed with prostate cancer.

The study is considered to be one of the most comprehensive because participants were from six states and were black, Hispanic and white. The patients also ranged in age from 39 to 79.

Previous studies found a wide range of difficulties with incontinence and impotence a year or more after patients' prostates were removed — 4 percent to 40 percent reported problems holding their bladders and 29 percent to 75 percent reported trouble getting and maintaining erections.

In this study, researchers found that patients who had surgery that spared one or two bundles of nerves in the area were less likely to be impotent.

About 59 percent of those who had unilateral nerve-sparing procedures (in which one of two nerve bundles can be saved) and 56 percent of those who underwent bilteral nerve sparing (both nerve bundles remain) said they were impotent 18 months or more after the surgery.

Nearly 66 percent of those whose nerves were not spared said they could not keep or sustain an erection. Doctors say the nerves can regenerate, but that can take up to two years.

Surgeons at two major research institutions said they have had even better results.

Dr. William Catalona, who performs about eight radical prostatectomies a week at the Washington University School of Medicine in St. Louis, said he has found that 86 percent of men under 50 are able to regain sexual function after surgery in which the fewest number of nerves are damaged or disturbed. The percentage lessens with age all the way to 42 percent for those older than 70, he said.

"If the patients are young and have good erections before surgery — and if they are treated by a surgeon who specializes in this sort of surgery — then the results are excellent," said Catalona, the school's chief of urological surgery.

Dr. Charles Brendler, head of urological surgery at the University of Chicago Medical Center, said he has also found that younger men are more likely to retain sexual function. But he said even doctors who specialize in the surgery must learn new techniques to prevent post-surgery impotence.

"We're doing well getting rid of the cancer and with urinary control," he said. But, he added, where sexual function is concerned, "We're a long way from perfect."

Younger women smoking less, study indicates

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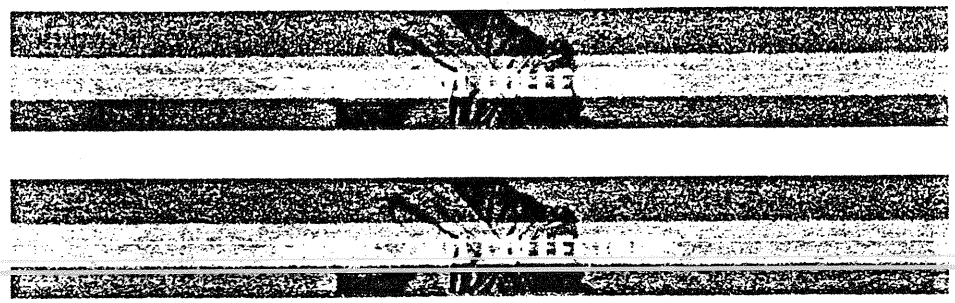


ARSENAL

Defoliation was meant to save lives by denying the enemy cover. But for some the 'cure' was worse than the problem.

By Tony Spletstoser

The primary use of herbicides in Vietnam was to kill vegetation and thereby deny cover to enemy forces. Heavily sprayed areas included inland forests near the Demilitarized Zone and along the South Vietnamese borders with Cambodia and Laos, and the mangrove forests in the Rung Sat Special Zone along the river approaches to Saigon and in the Mekong Delta's Ca Mau Peninsula.

The process was called defoliation, and it is nothing new. The American agriculture industry has long been using chemicals to make the leaves fall off cotton and soybean plants just before the mechanized picking machines go into the fields. The chemical 2,4-D and its variants had been applied to U.S. acreage by either crop duster-sprayer aircraft or ground spray machines for years. But since the early '60s, the law has required applicators, sprayer pilots and ground personnel to study and pass tests before being allowed to handle or apply defoliants. They wear special coverall flight suits, boots, face masks and gloves when handling the chemicals, and are warned that the defoliant is a poison.

Such precautions, however, were not taken in South Vietnam between 1965 and 1971. Defoliants were handled carelessly and applied carelessly, sprayed on both the enemy and noncombatants, and even our own men. To compound the problem, our armed forces were told that the chemicals were harmless to humans, despite early evidence to the contrary.

The 55-gallon drums of herbicide were identified by 4-inch-wide circular bands of orange paint. Agent Orange (named for the chemical containers' color banding) in theory was harmless to humans, and its persistence in the soil was limited to only a few weeks. It was maintained that very high dosages were necessary to produce any adverse effects on humans. However, some Americans voiced considerable concern over the potential danger from 2,3,7,8-tetrachlorodibenzo-paradioxin, commonly

up on the flight deck, the other crew members who had to handle the spray equipment had no way to avoid exposure to Agent Orange. No protective clothing or even special handling orders were issued. U.S. Army helicopters were also used to apply Agent Orange, and Captain Tom Nesbitt piloted one of those choppers. In December 1970, Nesbitt was assigned to the 114th Attack Helicopter Company at Vinh Long in the Mekong Delta. At first, Nesbitt flew conventional troop lift insertions; then one day he was selected for a different assignment, spraying defoliant. An Army team out of Saigon came in with the engineering and equipment to convert Bell UH-1H Huey helicopters into sprayers for the Agent Orange chemical.

By this time in 1971, the Ranch Hand operation had been pretty much shut down, but there still were plenty of 55-gallon drums of Agent Orange around. Nesbitt's mission was to spray a site in the U

U.S. to start testing some Korea vets for Agent Orange exposure

11-6-00

By PAULINE JELINEK
The Associated Press

WASHINGTON — Thirty years after the fact, the government is offering to examine troops who served in Korea for possible exposure to the defoliant Agent Orange.

In a little-publicized initiative, the Veterans Affairs Department expanded a program previously offered to Vietnam War veterans to include people who served in Korea in 1968-69.

The rule change follows by a year the Pentagon's disclosure that South Korean troops sprayed Agent Orange, which contained the toxic herbicide dioxin, during that time along the demilitarized zone between North and South Korea.

The decision to give vets free Agent Orange Registry exams, for diseases and medical conditions associated with exposure to the herbicide, is set out in a directive issued Sept. 5 and posted on the department's http://www.va.gov World Wide Web site.

Agent Orange and other similar herbicides were used during the Vietnam War to eliminate forest cover by defoliating broad sections of jungle mainly to facilitate pursuit of infiltrators and supplies moving into South Vietnam from the north. After it appeared probable that the defoliant caused numerous serious illnesses and birth defects, the VA set up the Agent Orange Registry in [illegible] after the war ended, for U.S. veterans with in-country Vietnam War military service. More than 300,000 veterans have participated so far.

"Now that we understand that it was sprayed there," said VA spokesman Jim Benson, "we can say, 'If you were in Korea, you may be exposed, and we would like you to come in.'"

The Defense Department has always known it was used along the Korean DMZ, but it wasn't until last December that the information was publicly known.

Following news reports quoting unclassified U.S. documents about the usage, the Pentagon and South Korea's government admitted that the chemical and two others were used in 1968-69 to kill dense foliage that North Korean infiltrators used for cover when heading south.

Around 50,000 South Korean soldiers did the spraying by hand.

"However, it is plausible that U.S. service members in the area near spraying operations may have been exposed," the directive said, adding that as many as 80,000 troops served in the country during the two years. A smaller number would have been near the DMZ.

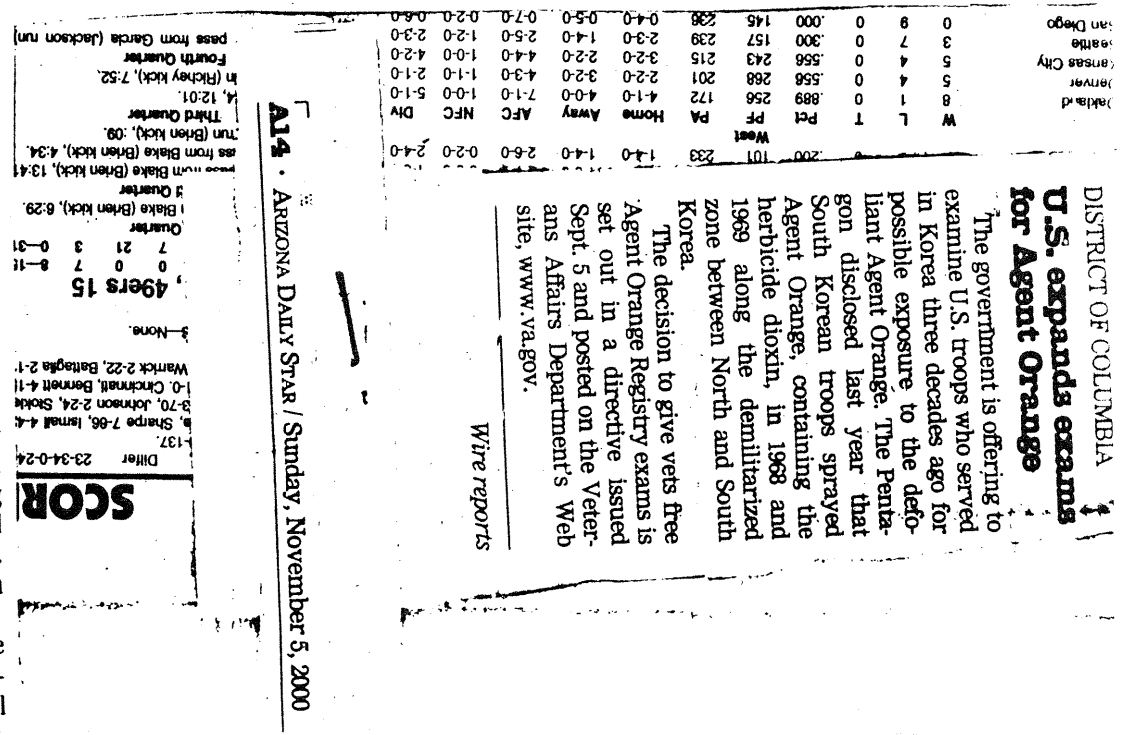
The new directive does not entitle veterans to compensation for diseases, offering mainly physical examinations and counseling. Specifically, it opens to Korean veterans registration on the registry computerized index of all examinations taken by Vietnam vets who worried they had illnesses caused by exposure to the chemical.

Like Vietnam vets in the registry, the Korea-based veterans will be tracked in Agent Orange research and get newsletters and other information that Vietnam vets get, Benson said.

A law, passed a decade ago, assumes exposure for any American who served in Vietnam during a certain period. The VA has compensated veterans who have some forms of cancer and a limited number of other diseases presumed, although not proven, to have been caused by the exposure.

After Korean vets register and are examined, the government would have to take further action to add their names to the list of people eligible for compensation, Benson said.

Under the law governing Agent Orange, Vietnam veterans need n[o] prove a direct causal relationship receive service-based compensati[on] for certain diseases. The diseas[es] currently on the list inclu[de] Hodgkin's disease, multiple myel[oma], respiratory cancers, soft-tiss[ue] sarcoma and prostate canc[er]. Veterans' children with spina bifi[da], a congenital birth defect of the spi[ne], are also eligible for benefits a[nd] health care.



DISTRICT OF COLUMBIA

U.S. expands exams for Agent Orange

The government is offering to examine U.S. troops who served in Korea three decades ago for possible exposure to the defoliant Agent Orange. The Pentagon disclosed last year that South Korean troops sprayed Agent Orange, containing the herbicide dioxin, in 1968 and 1969 along the demilitarized zone between North and South Korea.

The decision to give vets free Agent Orange Registry exams is set out in a directive issued Sept. 5 and posted on the Veterans Affairs Department's Web site, www.va.gov.

Wire reports

A14 · Arizona Daily Star / Sunday, November 5, 2000

April 19, 2001

Agent Orange, Leukemia Link Studied

By THE ASSOCIATED PRESS

Filed at 8:27 p.m. ET

WASHINGTON (AP) -- The children of veterans exposed to herbicides such as Agent Orange during the Vietnam War may have a greater chance of being afflicted with a certain type of leukemia, a study suggests.

The analysis released Thursday by the Institute of Medicine makes the first connection between the childhood disease and the pesticide. It stops short of saying the link is conclusive.

Anthony J. Principi, secretary of veterans affairs, called the report ``very serious.''

``I'm deeply concerned about the implications for the children of veterans exposed to Agent Orange,'' Principi said in a telephone interview.

He said President Bush has directed him to prepare legislation to provide assistance for children with the disease.

Senate Minority Leader Tom Daschle, D-S.D., said the finding ``should prompt Congress to extend veterans' benefits to Vietnam veterans' children suffering from this form of leukemia.''

``We should also lift the 30-year time limit for respiratory cancer claims since there is no scientific evidence to suggest that the risk vanishes with time,'' he said in a statement.

Rick Weidman, vice president of Vietnam Veterans of America, said his group is ``pleased that they recognized one additional birth defect in children born to Vietnam veterans.'' But, he added, it is also very sad news because most of these children have already died. The median life expectancy for children diagnosed with this type of leukemia is two years, he noted.

Dr. Linda Schwartz, head of the association's health care task force, said that last year Congress approved a broad program to assist female Vietnam veteran's children with birth defects. She called for a similar program for the children of male vets.

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"No firm evidence links exposure to the herbicides with most ch[illegible]ncers, but new research does suggest that some kind of connection exists between (acute myelog[illegible]leukemia) in children and their fathers' military service in Vietnam or Cambodia," said Irva Hertz-Picciotto, a professor of epidemiology at the University of North Carolina.

Acute myelogenous leukemia is a fast-spreading form of leukemia that originates in bone-marrow cells. It accounts for about eight percent of all childhood cancers, the report said.

AML is also known as acute myloid leukemia and acute nonlymphocytic leukemia.

Hertz-Picciotto was chair of the institute committee that prepared the new report: "Veterans and Agent Orange, Update 2000."

The report is the most recent in a series by the institute, a division of the National Academy of Sciences, looking at the effects of the herbicides used in Vietnam.

During Vietnam, thousands of veterans were exposed to Agent Orange, a defoliant used to clear areas of jungle so the Viet Cong could be seen and attacked from the air.

The new study also reaffirms earlier findings linking herbicide exposure with the development of soft tissue cancer, Hodgkin's disease, non-Hodgkin's lymphoma and chloracne in veterans.

The committee said it based its finding on two studies published last year.

While the studies lacked a direct measure of exposure to the herbicides, both were conducted with Vietnam veterans and an association was indicated with childhood AML, though not other forms of childhood leukemia.

One study, for example, looked at 50,000 Australian veterans of the Vietnam War. It found 13 cases of AML in their children, while in a normal population that size the number of cases expected would be between zero and six.

The strongest link was seen in children who developed the disease at the youngest ages, which suggests that the cause may stem from a parent, the report added.

In addition, a third study found that childhood development of AML was more likely in the offspring of men who use pesticides or herbicides in their work.

The committee listed the connection as suggestive rather than conclusive, saying that the evidence wasn't strong enough to be sure that chance or other factors didn't influence the results.

Previous studies evaluated by the institute have found suggestive but not conclusive evidence of a link between herbicide exposure and respiratory cancers, prostate cancer, type two diabetes, spina bifida in children and other conditions.

The National Academy of Sciences is an independent research organization chartered by Congress to provide advice to the government on scientific and medical topics.

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On the Net:

Institute of Medicine: http://national-academies.org

Department of Veterans Affairs: http://www.va.gov

Vietnam Veterans of America: http://www.vva.org

Richard Harlow
12/20/99 01:29 PM

To: Mr. Warren Johnson, AD, Human Resources Washington, DC
cc:

Subject: Formal Grievance

Dear Mr. Johnson:

Attached are the first and second level supervisor formal grievances and responses to those grievances by the supervisors involved.

For clarification, I will state again that I have no hard feelings towards anyone here at the National Training Center, regarding this matter.

For the record, I wish to formally respond to Ms. Marilyn H. Johnsons response of 12/17/99; to my grievance of 12/7/99.

You would think that after knowing someone for over ten years, she could at least spell your name right! There has not been an "e" on the end of my last name since before my distant relatives landed in Plymouth, Mass. in 1622.

In the second paragraph, Ms. Johnson: 1) refers to my actions in the 10/28/99 e-mail as not being employment related. I rebutt with the fact that contamination was by BLM, as BLM documents prove, and additionally must I remind her and you that the First Admendment to the Constitution allows even Federal Employees the right to express their views and relate their views to others; as Mr. Dean Zeller did. I believe because BLM has avoided the issue of Agent Orange contamination; and employees have died due to this contamination; my First Admendment rights are protected, especially and even more so when the Secretary of the Interior gave me his blessing in this matter. Ms Johnson is treading on my First Admendment Rights and I expect her to stop posthaste! 2) Ms. Johnson refers to contacting management here regarding my health and safety concerns. Evidently she does not confer with her subordient supervisors very well, or she would know that I discussed this matter at length with Mr. Dennis Oaks, my supervisor at the time, when I returned to work after surgery on 11/30/98. He indicated "while the matter was important at one time, especially just before and just after "'Agent Orange"' was banned from use in approximately 1972, as he understands the situation; it is no longer of that importance, especially now that we have Hazardous Materials Specialists in almost all offices". He went on to state that "you are going to retire anyway"; a statement I filed an age discrimination complaint regarding. (copy attached)

Paragraphs three, four and five indicates that Ms. Johnson is also having trouble reading and/or understanding the English language. In reference to paragraph three, I stated and will state again, that a policy needs to be reaffirmed. Nothing else was intended or implied. Regarding paragraph four, I requested a specific response from Mr. Tucker regarding his feelings for joke e-mails vs. health and safety issues. I have still not received a response and again expect a specific response to the question. Finally regarding paragraph five, my statements regarding Leukemia victims stands as written. I did not refer to employment here at the National Training Center. As I said and will say again so hopefully Ms. Johnson understands the written word this time: I can not retire and seek the employment that I have dreamed of for the last several years (the primary reason I requested a tranfer to the National Training Center over ten years ago, instead of a transfer elsewhere) in elementary education, for the risk of accelerated infection in that environment is far too great.

Ms. Johnson appears to not know the table of organization for the organization she is Director of. I refer to

the statement that Mr. John Whiting is my supervisor, which is not reflected in the latest organizational chart. As of this date, and since 12/15/98, Mr. Ronald Tucker has been my supervisor. He issued this reprimand; he conducted my PIPR close-out for FY 1999; he assigns my work; he approves completed work products, etc. I have little or no contact, except at Division Staff meetings with Mr. Whiting.

Mr. Johnson, being you head the BLM's "Quality of Life Task Force", at this time I wish to reaffirm my request for relief as stated word for word in my grievance submitted to date and add the additional conditions of the following:

a) I expect each condition as identified in my EEO complaint of 3/10/99 and my 10/18/99 loss and harm statement to be provided for. (copies attached)

b) As identied in my reprimand response I have a current EEO complaint involving two of the Division Chiefs here at the NTC. I now wish to include Mr. Ron Tucker in that EEO complaint (formerally excluded in writing, because of the reprisal I felt he would give if he were included; and is now evidenced by his verbal statements to me when he formally responded to my reprimand response on 12/1/99 and told me to re-justify my use of the 4-10 work schedule. I told him to put his request for re-justification in writing, and I would respond again as originally justified over two and one half years ago; that due to the health of my wife, and the aging of her parents, she is living with her parents with each taking care of the other; as provided for under the Family and Medical Leave Act of 1993. I also stated that I need the 4-10 work schedule for caring adequately for both families on the weekends). Additionally, I will retire due to the stress these strained relationships are causing on my mental health. The BLM took my physical health away from me over 30 years ago when they contaminated me with Agent Orange. Now they are taking my mental health away from me by providing the stressful working relationship this reprimand is causing. Additionally, you aparently want to take what financial well being I have left by forcing me to retire, when the re-employment options left to me because of the Agent Orange induced Prostate Cancer and resultant Leukemia leaves me with few if any re-employment alternatives. My feeling is you want me to retire, and have shut every door in my face to my trying to adequately resolve this issue with fair-ness to all involved. I have well documented the improper use of e-mail by others and can document other instances, but feel any documentation will just be brushed aside as almost every allegation I have rebutted has been brushed aside in my two reprimand responses. Finally, I have filed a "Whistleblower"complaint with the Office of Special Counsel (OSC). They can sort this thing out and re-instate me, with back pay, if their findings are in my favor. In the meantime I am submitting my application for vacancy announcement # BLM-TC-00-05(GS-13) with request for special selection priority under section 5 CFR 330.604(g). My experience for this position is based upon supervision of a Cadastrial Land Surveyor and her team in the Lakeview District for several of the eight years I was stationed there. If you cancell this vacancy announcement or fill it with another person, expect to justify your decision to the OSC.

c) I expect answers to my earlier requests in my reprimand responses. Additionally I expect compensation in the amount of $30,000.00 per year adjusted annually for cost of living increases; to make up for my inability to seek education employment opportunities in retirement from BLM. I expect this compensation to continue until the death of myself and my wife. Furthermore, I expect full compensation for hi-option coverage with health insurance of their choosing for my three children, due to their secondary exposure to Agent Orange, by my documented contamination. Finally, beings you are forcing me out by your actions, I expect full pay during any hearings or meetings during my BLM retirement (with an off-set, considering my retirement annunity) and overtime and a travel allowance for meetings held in Phoenix, or elsewhere, instead of Prescott, AZ.

d) I expect a written statement from each person involved in this reprimand and the EEO complaint; responding to how they will sleep at night, well knowing they are forcing out an individual who has given over 32 years of his life in addition to his health, and the health of his wife and children, to the proper natural resource mangement of the land. Lastly at this time, I request your personal statement Mr. Johnson including your expression regarding how my Quality of Life has been affected by the BLM's Agent Orange contamination of me and my family and his ridiculas reprimand.

Sincerely,
Richard L. Harlow(note: no "e")

P.O. Box 1300
Prescott, AZ 86302

Z 213 050 004

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

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Sent to BLM % Mr. Warren Johnson	
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PS Form **3800**, April 1995

UNITED STATES POSTAL SERVICE®

Article Detail

ıtion Date: 12/27/1999 08:38:35 Created By M. Cowan

Article Information

Article Numb: Z213050004
Observations:
Investigate: No
Weight:
Origin Zip:
Destnation Zip:
Activity: Delivered

Batch Information

Batch Type:
Batch#:
Batch Seq:
Batch Site:

Form Information

Form Type: 3883-A
Delivery/Dispatch Date: 12/27/1999
Delivery/Dispatch Site: WASHINGTON P&DC

Form ID: 148086.000340
Article Sequence: 31

3883 Information

Organization Name: INTERIOR STOP 43
Organization Address: 1849 C Street, NW
Washington, DC 20240

Bill Number: -0255019997

3854 Information

Receive Location Name:
Receive Location Rotary Lock / Seal Number:
Receive Location Date: 12-27-99
Destination Location Name: Vicent Harris
Destination Location Rotary Lock / Seal Number:
ansportation Type:
Destination Location Date:
Flight / Route:
Equipment Type:

3867 Information

Route Number:
Amount Due Sender:
Route Description:
Money Order Fee:

7

Run No.

REGISTERED MATTER DELIVERED BY OFFICIAL MAIL MESSENGER SERVICE

STOP No.	Lock and Rotary or Article No.	Department or Agency	Signature of Authorized Agent	Time
29)	$0254961906 ✓	GSA	[signature]	
	$0255019984 ✓			
260)	$0255019982 ✓	FDIC	S. [signature]	
	V758155731 ✓			
26)	V773698035 ✓	FBC	[signature]	
	V692373904 ✓			
43)	P975261741 ✓	Inc	[signature]	
	*$0255019997		(Vicent Harris sign for it)	
305)	V653319709 ✓	Hole	J. Osborne	

Delivered

9 articles to Official Mail Messenger.

9:35 Time:

Registry Clerk

[signature]

Postmark

WASHINGTON, DC 27 DEC 1999 USPO

Received

9 articles from Registry Section.

9:40 AM Time:

Messenger.

[signature]

PS Form 9115

Email copy

Richard Harlow
08/03/99 09:25 AM

To: Secretary of the Interior/DOI
cc:

Subject: Discrimination Complaint

Dear Mr. Secretary:

I filed the attached Form DI 1892 with your office back in mid-May, 1999. To date I have not heard a word, and am requesting a status report.

After a 32 year career with BLM, I'll continue to give you the benefit of the doubt, but only for so long. My patience is wearing thin, the unpaid bills are adding up, my credit is in jeopardy, and my family does not deserve to face all these things after I am gone and unable to care for them.

As I said on the attached Form DI-1892(a follow-up copy is being sent to you today via the U.S. Postal Service, in a blue envelope), I am agreeable to using the Alternative Dispute Resolution (ADR) process, but only "if it solves the problem, otherwise no".

In the event that this issue is not fully resolved by Oct. 1, 1999, my future steps will include(but not necessarily be limited to) the following:

1. I will hire an attorney and comply with item #4 — notification requirement (as required on the "Notice of Right to file a Discrimination Complaint" form). The Designation of Representative form will be filed within the 5 day requirement of hiring an attorney. This step will be undertaken to not deny me the Right of Due Process, if the issues are not resolved within the two year time limit (Statute of Limitations) for filing a Tort Claim aganist the Federal Government.

2. I will amend my previously submitted claim for restitution to include all expenses incurred by all individuals for conducting a bone-marrow transplant for me.

3. I will publically release information with the advise of my attorney at the time, on this atrocity.

Sincerely,
Richard L. Harlow
P.O.Box 1300
Prescott, AZ 86302
ph. wk.602-906-5545

Bruce_Babbitt@iosiscns1.ios.doi.gov on 08/26/99 08:52:40 AM

To: Richard Harlow/NTC/BLM/DOI
cc:
Subject: Re: Agent Orange contamination

Your Message has been received in Secretary Bruce Babbitt's Mailbox.

Dear Secretary Babbitt: 8/26/99

On Aug. 3,1999 I mailed you a blue envelope requesting a status report on a form DI-1892 filed with your office back in mid-May.

To make a very long story short, I was contaminated with Agent Orange(2,4-D and 2,4,5-T) while spraying sagebrush with BLM in the late 1960's. I underwent Prostate surgery for Cancer in Oct. 1998, and was told at the time I have late stage Leukemia.

I filed the form DI-1892 complaint of discrimination because the Veterans Administration began paying in 1996, under Public Law 102-4, for Veterans contaminated in Vietnam with Agent Orange; but OWCP (Dept. of Labor) will not pay for civilians contaminated with the same substances as were used in Vietnam!

I need your help badly. You helped us 4 years ago by moving Lynn Engdahl as BLM Training Center Manager here in Phoenix, who was worthless. Today I need about the same emphasis placed on resolving my claim.

After 32 years with BLM, I'll continue to give you the benefit of the doubt, but only for so long. I refuse to leave my family with BLM's bills, bad credit because I can not afford to pay those bills, and a reduced retirement annunity due to my early demise. I will do what is necessary legally to solve this atrocity, before I pass-on.

I will be out getting Chemotherpy treatments all next week, but will back be in, God willing, starting Sept. 7. I need your response on this subject by the end of the fiscal year. Otherwise, I will be left with no other course of action, then to turn it over to an attorney. If you wonder of my creditability, speak to D. Dean Bibles. I worked for him in the early 1970's, and my family and I have known him and his family well over the years.

Sincerely,
Richard(Dick) L. Harlow
P.O.Box 1300
Prescott, AZ 86302
wk. ph. 602-906-5545

Bruce_Babbitt@ios.doi.gov on 10/18/99 07:41:21 AM

To: Richard Harlow/NTC/BLM/DOI@BLM
cc:
Subject: Re: Agent Orange Contamination

Your Message has been received in Secretary Bruce Babbitt's Mailbox.

Dear Mr. Secretary: 10/18/99

Thank you for having Ms. Gloria Inniss, BLM's EEO Officier respond to me regarding complaint #LLM-99-059.

As I understand the letters from Ms. Inniss and Ms. Ceci Sturm, Arizona EEO Manager, I have until today to forward an explanation of personnel loss or harm as it relates to the allegations stated in the complaint.

First of all; a) My age at the time of age discrimination was 54, not 55 as stated in Ms. Strums letter of 9/30/99. b) The record as recorded by EEO Counselor Jack Whetstone on 4/1/99, clearly states my request to my supervisor at the time, on or about 11/12/98, of the recent budget passage, and any wording on "buyouts". That discussion was not retirement orientated, as the word retirement was not brought up, just the word "buyouts"; in the context that in my mental state at the time, with a very irritable cathetor in me, and my not knowing if I would be totally incontintent in the future, I was exploring the options the new budget might offer. As a 54 year old, a early out would have been required, as well.

Second, the personal loss and harm involves:

a) The remarks of last November have lead others to ask when I plan to retire, which as you know is a very personal decision. Even my current supervisor has asked me twice since I was reassigned to his division. Let me make it clear, I am not willing to file a complaint aganist him, but it shows the pattern that has been instilled around here by the comments of last November.

b) The remarks of last November have led to my non-consideration for vacancy announcement #BLM-TC-99-12, even though in over 16 years of management experience I have managed all these programs and staffs of up to 33 people; and I held a similiar position to the one advertised here at NTC until 5/12/96, when the position was realigned according to the Notification of Personnel Action approved on 4/29/96. The Personnel Manual clearly states that I should receive priority consideration if the position is re-created. Not only did I never get interviewed, but I was never notified officially of the selection decision. Why?--- because everyone here assumes I am going to retire due to my Agent Orange related Prostate Cancer and Leukemia, even though my consistant answer has always been, " I still have two children in college who are undertaking graduate level challenges, and I need to continue to work for several more years".

Mr. Secretary your staff continues to avoid the paramont issue here, which is the primary reason this complaint was filed in the first place. As I have stated in each letter I have written you, I need assistance with this contamination by BLM of me with 2,4-D and 2,4,5-T(Agent Orange). The BLM is the organization which contaminated me, and until you or BLM Acting Director Tom Fry decides to assist OWCP in settling this thing, we will continue to deal with it, until unfortunitely I stop asking for your support and throw it to the attorneys, who want it badly, for they feel a class action lawsuit is appropriate.

c) Personnally, all these incidents discussed here have led me to really begin to question my own abilities, but as previously stated, with 2 students in graduate school, I can not afford to retire, even though I am losing far too much of my enthusiam for this agency, when managers can make these type of statements without caring for their people and get away with it. Additionally, managers are giving me no support with regards to my OWCP appeal for claimed damages and medicial expenses due to contamination. The BLM State Safety Officier has never contacted me and failed to reply to OWCP when requested on both the original claim and appeal.

Third and lastly at this time, I am ammending my original complaint to include the following items that are necessary to make this complaint go away:
1) Because the US Air Force in Texas in their study on Agent Orange, due to be released formally in 2002, has recognized the cumulative impacts and effects of Agent Orange contamination, I expect the BLM to pay for the health insurance premiums for my wife who was also exposed by washing my Agent

Orange soaked clothes every weekend, and myself from the date of exposure, for the rest of our lives. 2) In the event that my health continues to deteriorate, I may be forced to retire, as everyone is anticipating anyway. If that happens, I want my e-mail account left active at the National Training Center, and each item received forwarded to my personnel e-mail address, until further notice. 3). I expect back pay at the GS-13 step 9 rate to the time vacancy announcement #BLM-TC-99-12 was issued.

Sincerely,

Richard L. Harlow
PO Box 1300
Prescott, AZ 86302
602-906-5545 wk.

Bruce_Babbitt@ios.doi.gov on 12/21/99 04:26:25 PM

To: Richard Harlow/NTC/BLM/DOI@BLM
cc:
Subject: Re: EEO complaint # LLM-99-059

Your Message has been received in Secretary Bruce Babbitt's Mailbox.

Subject: EEO Complaint #LLM-99-059

Dear Mr. Secretary:

It is with great regret that I must inform you that nine and a half months after I filed the EEO complaint #LLM-99-059 and agreed to a Alternative Dispute Resolution (ADR) process, I must withdraw my approval for this process. At the time that I filed the complaint I truely believed that all parties involved wanted to solve this situation and move on. While I realize that workloads are heavy, with the events of the last month, I have come to realize that I was the only one nine and a half months ago who really wanted to solve this thing and move on. I have been given a formal reprimand over this issue now, and because we have an active Union here at the National Training Center for the Bureau of Land Management, I decided its time to not only move on but to branch out and bring in the big guns. The issue of my documented Agent Orange contamination by the Bureau of Land Management is going to take on more than just the complexity of an EEO complaint now. I will have to exercise my rights not only through the Bargining Unit, but thru the Office of Special Counsel with a "Whistleblower" complaint; and my attorney in the near future. While this is not the approach I would have preferred, I have finally reached my limit on this thing. I have given this agency 32 years of quality service. In return I got a salary, some wonderful friends and experiences I will never forget, but also two forms of Cancer!! In other words I will give the ultimate price for the lasting gifts this agency has given me! I have underwent a Radical Prostectomy for the Prostate Cancer, and will start full Chemotherpy for the Leukemia early next year. The contents of the reprimand and my responses to my supervisors have brought me mental stress to the point that I will be forced to retire; even though my chosen profession in retirement over ten years ago was going to be elementary education, my Agent Orange induced Leukemia now precludes me from entering the classroom because of the risks of accelerated infection due to exposure from large groups of people, especially children. So now the BLM not only has taken what little is left of my life from me; but my mental health; and will take my financial well being by precluding my re-employment options in retirement.

All I can say to you and your wonderful staff who caused this reprimand is Merry Christmas and I hope you can sleep well at nite knowing that I and several others under your command in BLM, Fish and Wildlife and the BIA were also contaminated. Unfortunitely several of these employees and retirees for that matter, have Cancer and do not even know it! Had I chosen to sit still and not try and notify several employees of the Agent Orange/Cancer link, I probably would not have reached the point I am at today. Mr. Warren Johnson, the BLM's AD for Human Resources and incidently also BLM's "Quality of Life Task Force" lead will be getting my Union grievance early next week. I will bet you dolars to donuts right now that this grievance process will be delayed and delayed, just like the EEO process was delayed, until my energy is almost gone, from the Chemotherpy I will under go for BLM's use of Agent Orange. If you really care about your employees stop this thing before the Office of Special Counsel takes a real hold of it and publicizes it to the nation in an election year!

Sincerely,
Richard L. Harlow
P.O.Box 1300
Prescott, AZ 86302
wk. ph: 602-906-5545

Date: 12/21/99

Bruce_Babbitt@ios.doi.gov on 12/27/99 08:43:45 AM

To: Richard Harlow/NTC/BLM/DOI@BLM
cc:
Subject Re: EEO Complaint #LLM-99-059
:

Your Message has been received in Secretary Bruce Babbitt's Mailbox.

Dear Mr. Secretary:

As identified in my memo. to you on 12/21/99, with the same subject as above, I now wish to ammend the subject complaint with specific wording as found in the attached a-d statements (highlighted), as addressed to Mr. Warren Johnson, AD for Human Resources, BLM. A copy of this e-mail and the related attachments will be sent via the U.S. Mail today.

Sincerely,

Richard L. Harlow
P.O. Box 1300
Prescott, AZ 86302

Richard Harlow
11/09/99 02:25 PM

To:
cc:

Subject:

Agent Orange WEB pages of value, of thousands searched:

http://members.xoom.com/SOFTVision/ao_vets/

www.orbiter.com/

www.ramrod@orbiter.com

www.va.gov/pressrel/ao1297.html

www.va.gov/publ/direc/health/infolet/109701.htm

www.va.gov/oaa/Docs/ResidentResources/aod10.html

www.nas.edu

http://books.nap.edu/books/0309048877/html/564.html#564

www.vva.org/The Veteran/1999_05/locator.htm

www.cdd.sc.edu/aovce.htm

www.pva.org

www.junkscience.com/Nov 98/sdutao.htm

www.cnn.com/US/9605/28/agent Orange/

www.va.gov/regs/title38.htm

www

Richard Harlow
12/06/99 02:25 PM

To: Office of Special Counsel, Attn: Penney Moy
cc:

Subject: OSC File No. MA-00-0363

Dear Ms. Moy:

I have one other request of you in the event that I am forced to retire at the end of this calendar year:

I request that you put a hold on all new e-mails received in my computer at my desk here at the National Training Center, as of 12/29/99. As any information received as a result of my e-mail of 10/28/99 (attachment 1 in previously received Whistleblower Complaint) is vital to the health or safety of myself, other employees and retirees contaminated with Agent Orange, and will be subpoenaed once a lawsuit is entered.

Sincerely,
Richard L. Harlow

Richard L. Harlow
P.O.Box 1300
Prescott, AZ 86302-1300
wk. ph. 602-906-5545
wk. e-mail Richard_Harlow@tc.blm.gov
hm. e-mail charlow@primenet.com

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Add Addresses

From: "Colleen Harlow" <charlow@primenet.com> | Block address
To: [redacted]
Subject: NYT Archives Article.html
Date: Fri, 26 Jan 2001 09:34:49 -0700

May 27, 1996, Monday
National Desk

1.2 Million Award In Agent Orange Suit

AP

A man who said he contracted cancer from using Agent Orange to remove foliage from around power lines has been awarded $1.2 million by a jury.

After the verdict on Thursday, Phil Weinstein, a lawyer for the plaintiff, Terry DiPetrillo of Warwick, R.I., said, "This is the first time in history a jury has found that this chemical causes cancer." The herbicide's manufacturer, the Dow Chemical Company, said it would appeal.

The verdict could affect cases involving Vietnam veterans, who contend that the chemical used as a defoliant in Vietnam led to a variety of health problems. A lawsuit by the veterans ended in the 1980's after chemical companies established a $180 million fund to divide among veterans willing to settle.

Mr. DiPetrillo, 47, said he used Agent Orange daily during the summers from 1968 to 1972 when he cleared foliage from high-tension wires for the Narragansett Electric Company. After breaking his shoulder in October 1990, Mr. DiPetrillo was found to have a form of bone marrow cancer, which his doctor linked to Agent Orange.

Organizations mentioned in this article:

Related Terms:
DEFOLIANTS AND HERBICIDES; AGENT ORANGE (DEFOLIANT);
VIETNAM WAR;CANCER

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The New York Times ON THE WEB

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will the car of the future be electric?

May 17, 2000

EPA Cites Cancer Risks From Dioxin

Filed at 3:20 a.m. EDT

By The Associated Press

WASHINGTON (AP) -- The cancer risks from exposure to dioxins may be significantly greater than previously thought, at least for a small segment of the population, according to a draft report by the Environmental Protection Agency.

The report, described by EPA officials familiar with it, concludes that the cancer risk from dioxins among individuals who eat large amounts of fatty meats and dairy products may as high as 1 in 100, or 10 times as great as previously projected.

The health effects of dioxins, a group of toxic compounds produced through a number of chemical processes including combustion, have been the focus of research for more than 20 years. Despite the extensive literature, the health effects remain in some cases uncertain.

The EPA, which began reviewing the literature in 1991, is to make public its findings in a report to be released next month. The draft report has not yet been scientifically peer reviewed and EPA officials acknowledged in interviews it is likely to generate sharp debate.

According to agency officials, who discussed the report on condition of not being identified by name, said it concludes that at least one form of dioxin -- the most potent form known as TCDD -- should be classified as a definite human carcinogen. Other dioxin-like compounds were considered by the EPA reviewers as ``likely'' carcinogens.

The report also links exposure to dioxin to a variety of other health problems, including diabetes, developmental problems and irregularities in the immune system, they said. It also concludes that children's intake of dioxin is greater than those of adults because the chemical is often found in dairy products and even breast milk.

EPA officials emphasized, however, that the draft report's conclusions should not discourage people from eating a well balanced diet, including dairy products, certain meats and vegetables because their benefits outweigh any dangers posed from dioxin. And officials said the benefits of breast feeding also continue to outweigh the risks from dioxin.

Dioxin, a chlorine byproduct, can be dangerous even at very low levels because it is believed to be widespread in the food chain and can accumulate in the body over a lifetime. A product

of combustion as well as the pulp- and paper-making processes, it is released into the air and into water and finds its way onto pastures and into fish and animals and in turn into humans.

In recent years, the EPA has imposed tougher regulations on many dioxin emitters including municipal, medical and hazardous waste incinerators and the pulp and paper companies. As a result, dioxin emissions have been reduced by about 80 percent since the 1980s, according to the agency.

The EPA's findings are expected to be used by the agency as evidence for additional actions to curtail dioxin. ``The findings validate the policies that have been taken,'' said one agency official, speaking on condition of not being further identified.

According to the report, as described by these officials, the risks of getting cancer from dioxin may be zero or extremely slight for most of the population.

The report said its new projections were based on new evidence developed in recent years on cancer risk, officials said.

Although studied for more than 20 years with hundreds of articles in the scientific literature, the health effects of dioxin on humans remains somewhat uncertain. For example, dioxins have been found to cause birth defects in mice, but no such causation has been established in humans.

EPA officials acknowledged that its findings likely will prompt extensive debate. Industry groups as well as some scientists over the years have accused the EPA of exaggerating the dangers of dioxins.

The findings in the draft report were first reported in today's Washington Post, which said it had obtained a copy of the document.

Ask questions and tell other readers what you know about National News, International News and more in Abuzz, new from The New York Times.

it's gas, it's electric

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Agrees Dioxin Poses Cancer Risk

May 16,2001

WASHINGTON (AP) - A scientific advisory committee voted unanimously to send federal regulators a long-stalled report that concludes dioxin causes cancer in laboratory animals and possibly in people.

The conclusions - affecting everything from milk, beef and fish to medical products and the chemical and paper industries - puts another far-reaching environmental issue in the Bush administration's lap.

After more than a decade of study, the Environmental Protection Agency committee findings could provide the basis for federal regulators to impose limits on dioxin that would be costly to the chemical, beef and poultry industries that have opposed them.

The committee split over whether to change wording in their draft report a year ago that said dioxin should be classified as a known human carcinogen.

"It is important that EPA continue to try to limit emissions and human exposure to this class of chemicals in view of their very long biological and environmental persistence," the new version says.

Chlorinated dioxin is an air pollutant that comes from burning plastic and medical waste with chlorine. It settles in grass and feed, which is then eaten and becomes fat in livestock and poultry.

Dioxin also is a generic term for a group of compounds, some of which are more toxic than others.

The contaminant used in Agent Orange, a defoliant sprayed during the Vietnam War, includes the most toxic form of dioxin. Agent Orange exposure has been associated with cancer, birth defects and miscarriages, though a direct link to those health problems remains unproven.

William Glaze, a University of North Carolina professor who chairs the advisory panel, called the report "a huge step forward" toward possibly stricter controls. He said its key finding is that "diet is the principal root of exposure" for people who consume even small amounts of dioxin in dairy products and fatty foods.

"We think that the agency should take action to continue to try to limit emissions of dioxin in the environment. How the agency chooses to do that is up to them," Glaze said in an interview. "This committee felt that regulating emissions is desirable."

He said his panel planned to send the report to EPA Administrator Christie Whitman by June 1. Whitman repeatedly has declined to comment on the report and how her agency intends to use it.

At the 17-member panel's meeting Tuesday, industry representatives questioned the science behind the report's conclusions.

"Despite thousands of studies, great uncertainty remains in our understanding of the effects of dioxin and dioxin-like compounds," Marcie Francis, the science policy director of the Chlorine Chemistry Council, told Glaze's panel.

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Environmental groups were pleased the report is going forward. "The fact that this report has been in draft form for the last 10 years has been a stumbling block for community [illegible]ps and elected officials who have been working together to develop strong dioxin [illegible]itions," said Monica Rohde, the dioxin campaign coordinator for the Center for [illegible]ealth, Environment and Justice.

The latest EPA dioxin study is the result of a series of official assessments and reassessments.

In 1985, the agency first looked at the health risks of dioxin and found it to be potentially one of the chemicals posing the greatest cancer threats to humans. But protests from the chemical industry led to another reassessment in 1991, from which the current draft report evolved.

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The New York Times
ON THE WEB

y 22, 2001

Letters: The Aftermath of Cancer

To the Editor:

Exactly 53 weeks ago, a malignant tumor was removed from my colon ("A Doctor's Story of Hope, Humor and Deadly Cancer," May 15). Six months of chemotherapy and one month of radiation followed. Numerous tests, CT scans and monitoring seemed unceasing.

My cascading auburn hair dwindled to a few grayish strands. Last summer was spent with mouth sores, frequent emergency trips to the bathroom and a general readjustment of my previous active existence as a writer, college teacher and aficionado of life.

What an experience! So, how did I get through it? Much as Dr. Dan Shapiro managed his adventure — with humor and hope. After all, what else could this valiant Buddhist semi colon do? I developed a routine, which is worthy of stand-up comedy.

What started as my death sentence became, in many senses, my liberation. Now, at age 50, I have decided to finally make career changes, put into action what I previously only talked about, and to tell others that cancer is not necessarily a death sentence. It can be treated and cured.

As for the little things in life, I have always appreciated the caterpillars. Only more intensely now.

DEBORAH KANTER
Newark

•

To the Editor:

Referring to alternative medicine practitioners, "A Doctor's Story" quotes Dr. Dan Shapiro as saying that conventional physicians may eventually "help us separate the quacks from the helpful."

I agree about the need to eliminate alternative medicine quacks. Since alternative medicine treatments are built on models different from conventional medicine's, conventional physicians may not have the expertise to evaluate alternative treatments. That evaluation should be done by expert alternative practitioners or experts in both alternative and conventional practices. STUART SHAPIRO

New York

A World Beyond

To the Editor:

As a middle-aged suburban housewife in Texas I have no logical reason to peek at a Web-based scientific archive, but after seeing "The World of Science Becomes a Global Village" (May 1), I couldn't resist.

I believe the article indicated that tax dollars are involved, in which case the federal government has finally found a way to spend my money that pleases me.

My life may be in the dishwasher, but my dreams have always been in the eternal dance of the microcosm and macrocosm and the math that interprets their reality to us.

STARLETT AYLOR
Spring, Tex.

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U.S. to compensate workers with nuclear-arms ills

Acknowledges weapon making was responsible

By Matthew L. Wald
New York Times

WASHINGTON — The federal government is acknowledging for the first time that nuclear weapons production during the Cold War may have caused illnesses in thousands of workers, and the Clinton administration will announce today legislation that will compensate many of them for their medical care and lost wages.

Energy Secretary Bill Richardson detailed the legislation Wednesday in an interview, during which he depicted the workers as victims of the Cold War and the rush to produce nuclear weapons. He said that the safety standards, which have evolved since the 1940s, had been established in good faith, but had since been deemed too weak to have protected workers.

The workers suffered from cancers and lung diseases after exposure to beryllium, asbestos, mercury, uranium and other materials, under safety standards set by the Energy Department and its predecessor, the Atomic Energy Commission.

"I am reversing a policy of denial of compensation," Richardson said.

He noted that the workers who had operated the government factories were almost all employees of private contractors and thus were not eligible for the workers' compensation program that applies to federal employees. And they were usually unable to collect under state programs because those were designed for injuries, not occupational illnesses.

A handful of Energy Department workers at the plants have fallen ill and have collected workers' compensation, department officials said, but that compensation program is run by the Labor Department on a no-fault basis, requiring only a determination that the employee was exposed at work. The Energy Department has never acknowledged the cause of their illnesses.

The administration will send legislation to Congress within weeks proposing compensation for victims of beryllium disease, a clear-cut case because the weapons program is almost the only user of beryllium.

Energy Department officials have estimated that compensation for those exposed to beryllium, some of whom suffer from a chronic, incurable, obstructive lung disease, will be about $15 million a year at its peak in a few years, when all those eligible are expected to have applied. Officials estimate that 500 to 1,000 people have or will develop beryllium disease. Their compensation would depend on lost wages and the extent of disabilities.

An undetermined number of families would be eligible to collect benefits for deceased workers.

The government also will study how to compensate people exposed to asbestos and radioactive materials. Radiation poses a particular challenge, because it causes diseases such as leukemia and cancers that also have other causes, and the amount of radiation needed to cause a disease is in dispute.

Several people involved in the formation of the policy said the Energy Department had originally favored including people exposed to radiation and other threats, but that the White House had demanded further study. Clinton is expected to announce that the National Economic Council will lead an interagency study, to be completed by April, on whether other illnesses should be included.

Rep. Paul Kanjorski, D-Pa., has been seeking help for men who had worked for a company processing beryllium in his district, in the northeastern area of the state. He said that including exposure to other hazards might double the cost, to about $30 million a year.

Kanjorski said the action represented a major shift in Energy Department policy.

"It's unique in terms of the department's normal mode of operating; it wasn't a knee-jerk find ways to defend agains Kanjorski said.

The workers are mostly i their 50s or older who spent d in skilled blue-collar emplo from the World War II Ma Project to the present.

About 9,000 workers have screened, and at least 5,000 will be, according to depa officials, with hundreds sh job-related health problems.

Some work or worked a Ridge in Tennessee; the Nevad Site, near Las Vegas; the H nuclear reservation in Washi state; Rocky Flats, near Denve Idaho National Environmental neering Lab; near Idaho Sp Los Alamos National Lab in Mexico; and the Savannah Site near Aiken, S.C.

8

CHLOROPHENOXY HERBICIDES
(Group 2B)

Attachment

For definition of Groups, see Preamble Evaluation.

Supplement 7: (1987) (p.156)

2,4-D and esters
CAS No.: 94-75-7
Chem. Abstr. Name: (2,4-Dichlorophenoxy) acetic acid

2,4,5-T and esters
CAS No.: 93-76-5
Chem. Abstr. Name: (2,4,5-Trichlorophenoxy) acetic acid

MCPA
CAS No.: 94-76-4
Chem. Abstr. Name: (4-Chloro-2-methyl-phenoxy) acetic acid

2,4-DP
CAS No.: 120-36-5
Chem. Abstr. Name: 2-(2,4-Dichlorophenoxy) propanoic acid

Silvex
CAS No.: 93-72-1
Chem. Abstr. Name: 2-(2,4,5-Trichlorophenoxy) propanoic acid

MCPP
CAS No.: 93-65-2
Chem. Abstr. Name: 2-(4-Chloro-2-methylphenoxy) propanoic acid

A. Evidence for carcinogenicity to humans (*limited* for chlorophenoxy herbicides)

In a Danish cohort study of chemical workers exposed to chlorophenoxy herbicides [particularly (4-chloro-2-methylphenoxy) acetic acid (MCPA), 2-(4-chloro-2-methylphenoxy)propanoic acid (mecoprop), 2,4-dichlorophenoxyacetic acid (2,4-D) and 2-(2,4-dichlorophenoxy)propanoic acid (dichlorprop)], as well as other chemicals, no overall increase in cancer incidence rate was observed, but there were significantly increased risks for soft-tissue sarcoma and lung cancer cancer in some subcohorts, which were not necessarily those with the highest exposures to chlorophenoxy herbicide preparations [ref: 1].

A recently reported cohort of 5784 male employees in a UK company that manufactured, formulated and sprayed MCPA and other pesticides but only small amounts of 2,4,5-trichlorophenoxy acetic acid (2,4,5-T) had no general excess mortality from cancer. Three potentially exposed workers died from nasal carcinoma, however. One death due to soft-tissue sarcoma approximately equalled the expected rate. No excess of lymphoma was seen [ref: 2].

A Finnish cohort study of brush control workers with short follow-up time showed no increased cancer risk. A small Swedish cohort study of railroad workers who sprayed herbicides showed an increased risk of cancers at all sites combined for those exposed to chlorophenoxy herbicide preparations and other herbicides. An excess incidence of all cancers was also reported from a very small cohort of Swedish forestry foremen exposed to chlorophenoxy herbicide preparations and other herbicides. A study of long-term pesticide applicators in the German Democratic Republic, heavily exposed to a number of chemicals, including 2,4-D and MCPA, demonstrated an increased risk of bronchial carcinoma [ref: 1].

Two population-based case-control studies conducted in northern and southern Sweden, respectively,

showed a statistically significant association between exposure to chlorophenoxy herbicides, especially in forestry and agriculture, and the occurrence of soft-tissue sarcomas. An increased risk of soft-tissue sarcoma was described among highly exposed Italian rice weeders in a population-based case-control study. However, a case-control study from New Zealand did not demonstrate any increased risk of soft-tissue sarcoma in people exposed to chlorophenoxy herbicides [ref: 1]. Nor did a recently reported population-based case-control study of soft-tissue sarcoma and lymphoma in Kansas, USA, find any association between soft-tissue sarcoma and exposure to 2,4-D [ref: 3].

A statistically significant association between malignant lymphoma (Hodgkin's and non-Hodgkin's) and exposure to chlorophenoxy herbicides was found in a Swedish case-control study [ref: 1]. The population-based case-control study of soft-tissue sarcoma and Hodgkin's and non-Hodgkin's lymphoma in Kansas showed that use of 2,4-D was associated with non-Hodgkin's lymphoma, especially among farmers who had been exposed for more than 20 days per year, among whom there was an approximately six-fold excess, and among those who had mixed or applied the herbicides themselves. Hodgkin's lymphoma was not, however, found to be associated with herbicide exposure [ref: 3]. No significant or consistent association was seen in a case-control study of these tumours from New Zealand, and in a Danish cohort of chemical workers exposed to chlorophenoxy herbicides there was also no significantly increased risk of malignant lymphoma [ref: 1,4]. Farmers and forestry workers in Washington State, USA, with exposure to phenoxy herbicides had a significantly increased risk of non-Hodgkin's lymphoma. People of Scandinavian descent in the area had an increased risk of soft-tissue sarcoma in connection with phenoxy herbicide exposure, but no increased risk of non-Hodgkin's lymphoma [ref: 5].

Three Swedish case-control studies of colon, liver and nasal and nasopharyngeal cancer, which used the same study design and methods as in the studies on soft-tissue sarcoma and malignant lymphoma, did not demonstrate significantly increased risks, although a risk ratio of 2.1 was reached for nasal and nasopharyngeal cancer [ref: 1].

A record-linkage study using census data on occupation and cancer registry information in Sweden did not reveal any excess of soft-tissue sarcoma among agricultural and forestry workers [ref: 6,7]. However, on the basis of occupational titles, the elevated risks seen in Swedish case-control studies of soft-tissue sarcoma and lymphoma were reduced to 1.4 or less [ref: 8]. A UK study based on data from cancer registration showed a slightly but significantly increased risk of soft-tissue sarcoma among farmers, farm managers and market gardeners, but not in other subgroups in forestry and farming [ref: 9]. No association with soft-tissue sarcoma has been found with military service in Viet Nam, despite potential exposure to phenoxy herbicides [ref: 1,10], although there is a case report in this respect [ref: 1].

B. Evidence for carcinogenicity to animals (*inadequate* for 2,4-D and 2,4,5-T)

2,4-D and several of its esters were tested in rats and mice by oral administration and in mice by subcutaneous administration. All of these studies had limitations, due either to inadequate reporting or to the small number of animals used. Therefore, although increased incidences of tumours were observed in one study in which rats received 2,4-D orally and in another in which mice received its isooctyl ester by subcutaneous injection, no evaluation of the carcinogenicity of this compound could be made [ref: 11].

2,4,5-T was tested in mice by oral and subcutaneous administration. All of the studies had limitations due to the small numbers of animals used. Therefore, although an increased incidence of tumours at various sites was observed in one study in which 2,4,5-T (containing less than 0.05 mg/kg chlorinated dibenzodioxins) was given orally, no evaluation of the carcinogenicity of this compound could be made on the basis of the available data [ref: 12]. In rats fed diets containing three different concentrations of 2,4,5-T, the incidences of all tumour types were comparable to those in the control groups, with the exception that the incidence of interfollicular C-cell adenomas of the thyroid was increased significantly in female rats receiving the lowest dose. This increase was not considered to be related to treatment since it was not dose-related and the female control group had an unusually low incidence of thyroid adenomas [ref: 13].

A study of the incidence of small-intestinal adenocarcinoma in groups of sheep from different farms showed an association with use of phenoxy herbicides, as elicited by farmers' responses to a questionnaire. However, other herbicides were in use, and there was no documentation of exposures [ref: 14].

No adequate data were available on the carcinogenicity of MCPA [ref: 15].

C. Other relevant data

In single studies, lymphocytes of persons occupationally exposed to chlorophenoxy herbicides, including 2,4-D, did not show increased frequencies of sister chromatid exchanges or chromosomal aberrations. Other studies could not be assessed since workers were also exposed to other formulations. A single study of herbicide and pesticide sprayers exposed to 2,4,5-T, in which a small increase in the incidence of sister chromatid exchanges was reported, could not be assessed since workers were also exposed to other formulations. Persons occupationally exposed to MCPA did not have increased frequencies of sister chromatid exchanges (one study) or chromosomal aberrations in their lymphocytes [ref: 16].

2,4-D did not induce dominant lethal mutations, micronuclei or sister chromatid exchanges in rodents treated *in vivo*. Pure 2,4-D did not induce chromosomal aberrations in human lymphocytes *in vitro*, whereas a commercial formulation did. 2,4-D induced sister chromatid exchanges and unscheduled DNA synthesis in human cells *in vitro*. It did not induce sister chromatid exchanges but did induce mutation and inhibited intercellular communication in Chinese hamster cells *in vitro*, 2,4-D induced somatic mutation in *Drosophila*, but conflicting results were obtained for induction of sex-linked recessive lethal mutations; it did not induce aneuploidy. 2,4-D caused chromosomal aberrations and was mutagenic in plants. It induced mutation, gene conversion and mitotic recombination in yeast. It was not mutagenic to bacteria or bacteriophage. The *n*-butyl and iso-octyl esters of 2,4-D were also not mutagenic to bacteria [ref: 16].

2,4,5-T induced chromosomal aberrations in bone-marrow cells of Mongolian gerbils, but not in spermatogonia of Chinese hamsters, and aneuploidy in oocytes of rats treated *in vivo*. It did not induce micronuclei in mice or dominant lethal mutations in mice or rats *in vivo*. 2,4,5-T inhibited intercellular communication in Chinese hamster V79 cells *in vitro*. There was weak evidence for the induction of sex-linked recessive lethal mutations in *Drosophila*; it did not induce aneuploidy or somatic mutation. It induced chromosomal aberrations in plants. It was mutagenic to yeast, but neither 2,4,5-T nor the *n*-butyl-, iso-butyl or iso-octyl ester of 2,4,5-T was mutagenic to bacteria [ref: 16].

MCPA did not induce structural chromosomal aberrations or micronuclei in mice treated *in vivo*; weakly positive results were obtained for sister chromatid exchanges in cells of Chinese hamsters treated *in vivo* and *in vitro*. It was weakly active in inducing sex-linked recessive lethal mutations but did not induce aneuploidy in *Drosophila*. MCPA and its methyl ester were mutagenic to yeast but not to bacteria [ref: 16].

Overall evaluation

Chlorophenoxy herbicides are *possibly carcinogenic to humans (Group 2B)*.

For definition of the italicized terms, see Preamble Evaluation.

Also see previous evaluation: Vol. 41 (1986)

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Synonyms for 2,4-D and esters

- Abco W.K-67 2,4-D Weed Killer (butyl ester of 2,4-D)
- Abco W.K-DT 133 (isooctyl esters of 2,4-D and 2,4,5-T)
- Abco WKS-65 Brush Killer (isooctyl esters of 2,4-D, 2,4,5-T and silvex [2-(2,4,5-trichloro-phenoxy)propionic acid])
- Acetic acid, (2,4-dichlorophenoxy)-
- Acide dichloro-2,4 phenoxyacetique
- Acido(2,4-dicloro-fenossi)-acetico
- Acme Poison Ivy Killer (dimethylamine salt of 2,4-D + triethylamine salt of 2,4,5-T)
- Acme Vegetation Killer (2,4-D + prometone [2-methoxy-4,6-bis(isopropylamino)-s-triazine])

- Acme Weed-No-More Spotter (dimethylamine salt of 2,4-D + triethylamine salt of 2,4,5-T)
- Agent Orange (n-butyl esters of 2,4-D and 2,4,5-T)
- Agent Purple (n-butyl esters of 2,4-D and 2,4,5-T + isobutyl ester of 2,4,5-T)
- Agent White (triisopropanolamine salt of 2,4-D + triisopropanolamine)
- Agrotect (2,4-D, form unspecified)
- Agway 2,4-D and Silvex Lawn and Weed Killer (2-ethylhexyl ester of 2,4-D + butoxyethanol ester of silvex [2-(2,4,5-trichlorophenoxy)propionic acid])
- Agway Weed Killer "66" Improved (triethanolamine salt of 2,4-D)
- Allied Chemical Low Volatile 1-1/3-2/3 Brush Killer (2,4-D + 2,4,5-T + isooctyl esters of 2,4-D and 2,4,5-T
- Amchem 2,4-D 2,4,5-T Low Volatile Ester Brush Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Amchem 6DT. Low Volatile Ester Brush Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Amchem Amine 2,4-D Low Volatile Ester Weed Killer (isooctyl ester of 2,4-D)
- Amchem Emulsamine Brush Killer (alkyl C_{12} + C_{14} amine salts of 2,4-D and 2,4,5-T)
- Amchem Emulsamine E-3 (dodecylamine salts of 2,4-D + tetradecylamine salts of 2,4-D)
- Amchem Isooctyl-DT (isooctyl esters of 2,4-D and 2,4,5-T)
- Amchem Isooctyl-DT6 (isooctyl esters of 2,4-D and 2,4,5-T)
- Amchem Super D Weed one (diethanolamine salts of 2,4-D and dicamba [3,6-dichloro-2-methoxy-benzoic acid])
- Amchem Weed Killer 650 (isopropyl ester of 2,4-D)
- Amoco 2,4-D LV Ester (isooctyl ester of 2,4-D)
- Amoco 2,4-D Weed Killer No. 3-E-M (butyl and isopropyl esters of 2,4-D)
- Amoco 2,4-D Weed Killer No. 3E (butyl and isopropyl esters of 2,4-D)
- Amoco 2,4-D Weed Killer No. 5 (butyl and isopropyl esters of 2,4-D)
- Amoco 2,4-D Weed Killer No. 5-M (butyl ester of 2,4-D)
- Amoco 2,4-D Weed Killer No. 6B (butyl ester of 2,4-D)
- Amoco Brush Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Amoxone (triethanolamine salt of 2,4-D)
- Ansar 290D (triethanolamine salt of 2,4-D + triethanolamine methanearsonate)
- Antrol 2,4-D and 2,4,5-T Weed and Brush Killer (alkanolamine salts [of the ethanol and ispropanol series] of 2,4-D + triethylamine salts of 2,4,5-T)
- Antrol Jet Stream Weed Killer (alkanolamine salts [of the ethanol and isopropanol series] of 2,4-D + butoxypolypropoxypropyl esters of silvex [2-(2,4,5-trichlorophenoxy)propionic acid])
- Antrol Squeeze'N Weed (alkanolamine salts [of the ethanol and isopropanol series] of 2,4-D + butoxypolypropoxypropyl esters of silvex [2-(2,4,5-trichlorophenoxy)propionic acid])
- Antrol Wide Stream Chickweed and Clover Killer (alkanolamine salts [of the ethanol and isopropanol series] of 2,4-D + butoxypolypropoxypropyl esters of silvex [2-(2,4,5-trichlorophenoxy)propionic acid])
- Aptrex (monuron trichloroacetate [3-(p-chlorophenyl)-1,1-dimethylurea trichloracetate] + isooctyl ester of 2,4-D)
- Aqua-Kleen (butoxyethanol ester of 2,4-D)
- Asgrow Weed-Nix Lawn Food and Weed Killer with 2,4-D and silvex (dimethylamine 2,4-dichlorophenoxy-acetate + isooctyl ester of silvex [2-(2,4,5-trichlorophenoxy)propionic acid])
- Associated Sales 4-Pound 2,4-D Ester Weed Killer (butyl ester of 2,4-D)
- Atlacide with 2,4-D (sodium chlorate + 2,4-D)
- Balcom's G-K-20 (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Balcom's T-D Special Weed Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Barber's 2,4-D Ester Weed Killer (butyl ester of 2,4-D)
- Barber's Weed Killer (Amine Formulation) (dimethylamine salt of 2,4-D)
- Barber's Weed Killer (Ester Formulation) (isopropyl ester of 2,4-D)
- Barco Weed Killer (Ester Formulation) (butyl ester of 2,4-D)
- Best 4 Servis Brand Lawn Weed Killer (dimethylamine salt of 2,4-D)
- Blitz 64 (dimethylamine salts of 2,4-D)
- Bonide Crabgrass and Broadleaf Weed Killer (dodecylammonium and octylammonium methanearsonate + octylammonium salt of 2,4-D)
- Bonide Dioweed 40% Liquid (triethanolamine salt of 2,4-D)
- Bonide Dioweed Dust (triethanolamine salt of 2,4-D)

- Bonide Dioweed Liquid (triethanolamine salt of 2,4-D + 2,4-D)
- Bonus Type B (2,4-D + 2-[2-methyl-4-chlorophenoxy]propionic acid)
- Breck's Lawn Weed Killer (butoxyethoxypropanol esters of 2,4-D and 2,4,5-T)
- Bridgeport Spot Weed Killer (isopropyl ester of 2,4-D)
- Brulin's 2,4-D Liquid Weed Killer-20% (triethanolamine salt of 2,4-D)
- Brulin's Brush Killer (butyl esters of 2,4-D and 2,4,5-T)
- Brush Killer 155 (dimethylamine salts of trichlorobenzoic acids + triethanolamine salts of 2,4-D and 2,4-dichlorophenoxypropionic acid)
- Brush Killer 170 (butoxyethanol esters of 2,4-dichlorophenoxypropionic acid and 2,4-D)
- Brush Killer 171 (butoxyethanol esters of 2,4-dichlorophenoxypropionic acid and 2,4-D)
- Brush Killer 50-50 (butyl esters of 2,4-D and 2,4,5-T)
- Brush Killer X (isooctyl esters of 2,4-D and 2,4,5-T)
- Brush-O-Cide (isooctyl esters of 2,4-D + 2,4,5-T)
- Brush-Off No. 438 Conc. 2-2 LV Brush Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Brush-Rhap A-2D-2T (dimethylamine salt of 2,4-D + triethylamine salt of 2,4,5-T)
- Brush-Rhap Amine A-2D-2T (dimethylamine salt of 2,4-D + triethylamine salt of 2,4,5-T)
- Brush-Rhap B-1.33D - 0.67T (butyl esters of 2,4-D and 2,4,5-T)
- Brush-Rhap B-2-2 (2,4-D + 2,4,5-T)
- Brush-Rhap B-2D-2T (butyl esters of 2,4-D and 2,4,5-T)
- Brush-Rhap Injection Fluid Low Volatile 2D-2T (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Brush-Rhap Injection Fluid Low Volatile 3D-3T (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Brush-Rhap Low Volatile 2D-2T (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Brush-Rhap Low volatile 3D-2T (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Brush-Rhap Low Volatile 3D-3T (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Brush-Rhap LV 2D-2T (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Brush-Rhap LV-2-2-0 (2,4-D + 2,4,5-T)
- Butoxyethanol ester of (2,4-dichlorophenoxy) acetic acid
- Butoxyethyl 2,4-dichlorophenoxyacetate
- Butyl (2,4-dichlorophenoxy)acetate
- Butyl 2,4-D
- Butyl 400 (butyl ester of 2,4-D)
- Butyl dichlorophenoxyacetate
- Butyl ester of dichlorophenoxyacetic acid
- Certified C-300 Selective Weed Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Chem-Pels Plus (isooctyl esters of 2,4-D and 2,4,5-T)
- Chemform Butoxy Brush Killer (butoxyethoxypropanol esters of 2,4-D and 2,4,5-T)
- Chemical Insecticide's Isopropyl Ester of 2,4-D Liquid Concentrate (isopropyl ester of 2,4-D)
- Chempar Low Volatile Brush Killer No. 2 (2,4,5-T + 2,4-D)
- Chipco Turf Herbicide "D" (2,4-D, form unspecified)
- Chipco Turf Herbicide "D" and "T" (dimethylamine salt of 2,4-D + triethylamine salt of 2,4,5-T)
- Chipco Turf Kleen (diethanolamine salts of 2-(2-methyl-4-chlorophenoxy)propionic acid and 2,4-D)
- Chipman 2,4-D Amine 80 (2,4-D, form unspecified)
- Chipman 2,4-D Amine No. 4 (dimethylamine salt of 2,4-D)
- Chipman 2,4-D Butyl Ester 334E
- Chipman 2,4-D Butyl Ester 4E
- Chipman 2,4-D Butyl Ester 6 (n-butyl ester of 2,4-D)
- Chipman 2,4-D Butyl Ester 6E
- Chipman 2,4-D Ester 128 (2,4-D ester, form unspecified)
- Chipman 2,4-D Ester 5% Dust (2,4-D ester, form unspecified)
- Chipman 2,4-D Ester 64 (2,4-D ester, form unspecified)
- Chipman 2,4-D Ester 80 L.V. (2,4-D ester, form unspecified)
- Chipman 2,4-D Gran 20 (isooctyl ester of 2,4-D)
- Chipman 2,4-D Low Volatile Ester 4L (isooctyl ester of 2,4-D)
- Chipman 2,4-D Low Volatile Ester 6 (isooctyl ester of 2,4-D)
- Chipman 2,4-D Low Volatile Ester 6L (isooctyl ester of 2,4-D)
- Chipman Amine Brush Killer (triethylamine salts of 2,4-D and 2,4,5-T)

- Chipman Brush Killer 128 (2,4-D + 2,4,5-T, forms unspecified)
- Chipman Brush Killer 128 L.V. (2,4-D + 2,4,5-T, forms unspecified)
- Chipman Brush Killer 128 Regular (2,4-D + 2,4,5-T, forms unspecified)
- Chipman Brush Killer 76 (isooctyl esters of 2,4-D and 2,4,5-T)
- Chipman Lawn Weed Killer (2,4-D [form unspecified] + d-isomer of mecoprop [2-(4-chloro-2-methylphenoxy)propionic acid])
- Chipman Low Volatile Brush Killer No. 2 (isooctyl esters of 2,4-D and 2,4,5-T)
- Chipman Low Volatile Brush Killer No. 3 (isooctyl esters of 2,4-D and 2,4,5-T)
- Chlorocrotyl ester of 2,4-D
- Chloroxone (2,4-D, form unspecified)
- Commercial Brush Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Crop Rider "45" (2-ethylhexyl ester of 2,4-D)
- Crop Rider 2.67D (butyl ester of 2,4-D)
- Crop Rider 20% Agua Granular (2-ethylhexyl ester of 2,4-D)
- Crop Rider 20% Terra Granular (2-ethylhexyl ester of 2,4-D)
- Crop Rider 3-34D-2 (isopropyl ester of 2,4-D)
- Crop Rider 3.34D (isopropyl ester of 2,4-D)
- Crop Rider 6D Weed Killer (butyl ester of 2,4-D)
- Crop Rider 6D-OS Weed Killer (butyl ester of 2,4-D)
- Crop Rider LV-6D (2-ethylhexyl ester of 2,4-D)
- Crop-Guard (isobutyl and n-butyl esters of 2,4-D)
- Cross Country Organic Lawn Food with Weed Killer (sodium salt of 2,4-D)
- Cross Country Poison Ivy Killer (butoxyethoxypropanol esters of 2,4-D and 2,4,5-T)
- Cross Country Weed Killer Spray (alkanolamine salts of 2,4-D)
- Cross Country Weedeath (isopropyl and triethylamine salts of 2,4-D)
- Crotilin (chlorocrotyl ester of 2,4-D)
- Crotylin (chlorocrotyl ester of 2,4-D)
- (2,4-Dichloor-fenoxy)azijnzuur
- (2,4-Dichlor-phenoxy)essigsaure
- (2,4-Dichlorophenoxy)acetic acid, butyl ester
- (2,4-Dichlorophenoxy)acetic acid, crotyl ester
- (2,4-Dichlorophenoxy)acetic acid, dimethylamine salt
- (2,4-Dichlorophenoxy)acetic acid, isooctyl ester
- (2,4-Dichlorophenoxy)acetic acid, isopropyl ester
- (2,4-Dichlorophenoxy)acetic acid, sodium salt
- 006 Shrub-A-Dub (isooctyl ester of 2,4-D + bromacil [5-bromo-3-sec-butyl-6-methyluracil] + pentachlorophenol + other chlorophenols)
- 006 Weed Killer (isooctyl ester of 2,4-D + bromacil [5-bromo-3-sec-butyl-6-methyluracil] + pentachlorophenol + other chloropenols)
- 2,4-D + Bromacil [5-bromo-3-sec-butyl-6-methyluracil] + pentachlorophenol + other phenols)
- 2,4-D acid
- 2,4-D amine (dimethylamine salt of 2,4-D)
- 2,4-D, alpha-chlorocrotyl ester
- 2,4-D, butyl ester
- 2,4-D, dimethylamine salt
- 2,4-D, isooctyl ester
- 2,4-D, isopropyl ester
- 2,4-Dichlorophenoxyacetic acid
- 2,4-Dichlorophenoxyacetic acid, 2-butenyl ester
- 2,4-Dichlorophenoxyacetic acid, 4-chlorocrotonyl alcohol ester
- 2,4-Dichlorophenoxyacetic acid, 4-chlorocrotonyl ester
- 2,4-Dichlorophenoxyacetic acid, butoxyethyl ester
- 2,4-Dichlorophenoxyacetic acid, butyl ester
- 2,4-Dichlorophenoxyacetic acid, isooctyl ester
- 2,4-Dichlorophenoxyacetic acid, isopropyl ester
- 2,4-Dichlorophenoxyacetic acid, sodium salt
- 2,4-Dichlorphenoxyacetic acid

- 2,4-Dow Weed Killer Formula 40 (alkanolamine salt of 2,4-D)
- 2,4-Dow Weed Killer Formula 40 (alkanolamine salts [of the ethanol and isopropanol series] of 2,4-D)
- 2,4-Dwuchlorofenoksyoctowy Kwas
- D 50 (2,4-D, form unspecified)
- D-Weed-O (isooctyl ester of 2,4-D + Bromacil [5-bromo-3-sec-butyl-6-methyluracil] + pentachlorophenol + other chlorophenols)
- Dacamine (N-oleyl 1,3-propylenediamine salts of 2,4-D and 2,4,5-T)
- Dacamine 1D/1T (N-oleyl 1,3-propylenediamine salts of 2,4-D and 2,4,5-T)
- Dacamine 2D/2T (N-oleyl 1,3-propylenediamine salts of 2,4-D and 2,4,5-T)
- Dacamine 4D (N-oleyl 1,3-propylenediamine salt of 2,4-D)
- Dal-E-Rad + 2 Powder (disodium methanearsonate [hexahydrate] + sodium 2,4-dichlorophenoxy acetate monohydrate)
- DB Granular (disodium tetraborate pentahydrate and decahydrate + 2,4-D)
- De Witt S-77 Weed Killer (dimethylamine salts of 2,4-D and 2,4,5-T)
- De-Pester Ded-Weed for Lawns (2,4-D + 2,4,5-T + Kerosene)
- De-Pester Ded-Weed LV-2 (2,4-D)
- De-Pester Ded-Weed ME-4 (butyl ester of 2,4-D)
- De-Pester Ded-Weed ME-5 (butyl ester of 2,4-D)
- De-Pester Ded-Weed ME-6 (butyl ester of 2,4-D)
- De-Pester Ded-Weed ME-9 (butyl ester of 2,4-D)
- Decamine (2,4-D, form unspecified)
- Ded-weed for Lawns, New Improved (isooctyl esters of 2,4-D and 2,4,5-T)
- Ded-weed LV-69 (2,4-D, form unspecified)
- Del SK 40 Heavy Duty Weed Killer (alkanolamine salts [of the ethanol and isopropanol series] of 2,4-D)
- Del-Kill Weed Killer 400 Liquid (mixed aliphatic hydrocarbons + isooctyl ester of
- Destruxol Weed Killer "D" (isooctyl esters of 2,4-D and 2,4,5-T)
- Di-Met Chickweed and Weed Killer (isooctyl esters of 2,4-D and silvex [2-(2,4,5-trichlorophenoxy) propionic acid])
- Di-Met Plus-2, Liquid for Crabgrass and Lawn Weeds (dodecyl ammonium methanearsonate + octyl ammonium methanearsonate + octyl ammonium salt of 2,4-D)
- Di-Met Plus-2, Liquid for Dallis Grass and Lawn Weeds (dodecyl ammonium methanearsonate + octyl ammonium methanearsonate + octyl ammonium salt of 2,4-D)
- Diamond Alkali Chemicals 2-2 2-Ethyl Hexyl Brush Killer (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Diamond Alkali Chemicals 4 2-Ethyl Hexyl D Weed Killer (2-ethylhexyl ester of 2,4-D)
- Diamond Alkali Chemicals 4-Mixed Amine-D Weed Killer (alkyl and dialkanolamine salts of 2,4-D)
- Diamond Alkali Chemicals Crop Rider Amine 4-D (alkyl and dialkanolamine salts of 2,4-D)
- Diamond Alkali Chemicals Crop Rider and Line Rider LV-4D (2-ethylhexy ester of 2,4-D)
- Diamond Alkali Chemicals Technical 2-Ethyl Hexyl-D (2-ethylhexyl ester of 2,4-D)
- Diamond Alkali Chemicals The Line Rider (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Diamond Shamrock Amine 2D/2T (dimethylamine salts of 2,4-D and 2,4,5-T)
- Diamond Shamrock Amine 6D (dimethylamine salt of 2,4-D)
- Diamond Shamrock Butyl 4D (butyl ester of 2,4-D)
- Diamond Shamrock Butyl 6D Weed Killer (butyl ester of 2,4-D)
- Diamond Shamrock Dormant Cane LV 3D/3T-OS (isooctyl esters of 2,4-D and 2,4,5-T)
- Diamond Shamrock LO-VOL 2D/2T (isooctyl esters of 2,4-D and 2,4,5-T)
- Diamond Shamrock LO-VOL 4D (isooctyl ester of 2,4-D)
- Diamond Shamrock LO-VOL 6D (isooctyl ester of 2,4-D)
- Dichlorophenoxyacetic acid
- Dichlorophenoxyacetic acid, butyl ester
- Dikonirt (sodium salt of 2,4-D)
- Dimethylamine, (2,4-dichlorophenoxy) acetate
- Dimethylammonium 2,4-dichlorophenoxy acetate
- Dinoxol (butoxyethanol esters of 2,4-D and 2,4,5-T)

- Dinoxol 64 (butoxyethanol esters of 2,4-D and 2,4,5-T)
- Dinoxol Super-6 (butoxyethanol esters of 2,4-D and 2,4,5-T)
- DMA-4 (dimethylamine salt of 2,4-D)
- Dolge E.W.T. Amine Type 2,4-D Weed Killer (diethanolamine salt of 2,4-D)
- Dormone (2,4-D, form unspecified)
- Dow 2,4-ccDichlorophenoxyacetic Acid, Sodium Salt (monohydrate sodium salt of 2,4-D)
- Dow Brush Killer 50-50 (butyl esters of 2,4-D and 2,4,5-T)
- Dow Brush Killer X (isooctyl esters of 2,4-D and 2,4,5-T)
- Dow Butyl 265 (butyl ester of 2,4-D)
- Dow Butyl 400 (butyl ester of 2,4-D)
- Dow DMA-4 (dimethylamine salt of 2,4-D)
- Dow Formula 40 (alkanolamine salt of 2,4-D)
- Dow Weed Killer X (butoxypropyl ester of 2,4-D)
- Dragon Lawn Weed Killer (2,4-D + dicamba [3,6-dichloro-2-methoxybenzoic acid])
- DRO 2,4-D Concentrate (diethylamine salt of 2,4-D)
- Dro Weedtrol Concentrate (disodium monomethyl creonate pentahydrate + sodium monohydrate of 2,4-D)
- Droweed Spot Treatment Kills Law Weeds (propylene glycol and butyl ether esters of 2,4-D)
- Du Pont Lawn Weed Killer (dimethylamine salt of 2,4-D)
- Du Pont Turf Food with Weed Killer (dimethylamine salt of 2,4-D)
- Du Pont Weed Killer No. 2 (dimethylamine salt of 2,4-D)
- Dupont Lawn Weeder (propylene glycol and butyl ether esters of 2,4-D)
- Emulsamine Brush Killer (dodecyl- and tetradecylamine salts of 2,4-D and 2,4,5-T)
- Emulsamine E-3 (dodecyl- and tetradecylamine salts of 2,4-D)
- Emulsavert 100 (2,4-D + 2,4,5-T + N,N-dimethyloleylamine salts of 2,4-D and 2,4,5-T)
- Emulsavert 248 (2,4-D + 2,4,5-T + N,N-dimethyloleylamine salts of 2,4-D and 2,4,5-T)
- Emulsavert-D (2,4-D, form unspecified)
- Envert-171 (2,4-D, form unspecified)
- Envert-DT (butoxyethanol esters of 2,4-D and 2,4,5-T)
- Esso Herbicide 10 (butyl ester of 2,4-D)
- Estasol (isopropyl ester of 2,4-D)
- Esteron 44 (isopropyl ester of 2,4-D)
- Esteron 44 Improved Weed Killer (butyl ester of 2,4-D)
- Esteron 44 Weed Killer (isopropyl and butyl esters of 2,4-D)
- Esteron 6E Herbicide (isooctyl ester of 2,4-D)
- Esteron 76 (isopropyl and butyl esters of 2,4-D)
- Esteron 76 BE (butyl ester of 2,4-D)
- Esteron 76 BE Herbicide (butyl ester of 2,4-D)
- Esteron 76-E Weed Killer (isopropyl and butyl esters of 2,4-D)
- Esteron 99 Concentrate (butoxyethanol ester of 2,4-D)
- Esteron 99 Weed Killer (propylene glycol butyl ether ester of 2,4-D)
- Esteron 99 Weed Killer Concentrate (propylene glycol butyl ether esters of 2,4-D)
- Esteron Brush Killer (old formulation) (isopropyl esters of 2,4-D and 2,4,5-T)
- Esteron Brush Killer (propylene glycol butyl ether esters of 2,4-D and 2,4,5-T)
- Esteron Brush Killer O.B. (propylene glycol butyl ether esters of 2,4-D and 2,4,5-T)
- Esteron Ten-Ten (propylene glycol butyl ether esters of 2,4-D)
- Estone (ethyl ester of 2,4-D)
- Feed No Weed (triethylamine salts of 2,4-D and 2,4,5-T)
- Felco Butyl Ester 600 2,4-D Weed Killer (butyl ester of 2,4-D)
- Felco HV2 Weed Killer (butyl ester of 2,4-D)
- Felco HV4 Weed Killer (butyl ester of 2,4-D)
- Felco Low Volatile Ester 600 (isooctyl ester of 2,4-D)
- Felco LV 400 Weed Killer (isooctyl ester of 2,4-D)
- Felco Super Brush Killer (butyl esters of 2,4-D and 2,4,5-T)
- Fenac Plus (dimethylamine salts of 2,4-D and 2,3,6-trichlorophenylacetic acid)
- Fence Painter Weed Out (monuron [3-(p-chlorophenyl)-1,1-dimethylurea] + sodium salt of 2,4-D + sodium tetraborate)

- Fence Rider "45" (isooctyl esters of 2,4-D and 2,4,5-T)
- Fence Rider 22 (butyl esters of 2,4-D and 2,4,5-T)
- Fence Rider LV-22 (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Fence Rider LV-3D/3T (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Fernesta (2,4-D, form unspecified)
- Fernimine (ethanol and ispropyl esters of 2,4-D)
- Fernoxene (sodium salt of 2,4-D)
- Fernoxone (2,4-D, form unspecified)
- Ferxone (2,4-D, form unspecified)
- Field-Clean (isooctyl ester of 2,4-D)
- Floratox 4 LB.LV 2,4-D Weed Killer (isooctyl ester of 2,4-D)
- Floratox 428 4-Pound 2,4-D Ester Weed Killer (butyl ester of 2,4-D)
- Floro Tox 2,4-D Amine Weed Killer (dimethylamine salt of 2,4-D)
- Foredex 75 (2,4-D, form unspecified)
- Foremost All Season Weed Killer (mixed aliphatic hydrocarbons + isooctyl ester of 2,4-D + pentachlorophenol + other chlorophenols + bromacil[5-bromo-3-sec-butyl-6-methyluracil])
- Formula 40 (ethanol and isopropyl esters of 2,4-D)
- FS Amine 400 Weed Killer (dimethylamine salt of 2,4-D)
- FS Ester 400 Weed Killer (butyl ester of 2,4-D)
- FS LV 400 Weed Killer (isooctyl ester of 2,4-D)
- G.L.F. Weed Killer 66 Sequestered (2,4-D, form unspecified)
- GCC-165 Weed Killer (isooctyl ester of 2,4-D + bromacil [5-bromo-3-sec-butyl-6-methyluracil] + pentachlorophenol + other chlorophenols)
- GCC-425 (isooctyl esters of 2,4-D, 2,4,5-T and 2-(2,4,5-trichlorophenoxy)propionic acid)
- GCC-429 (isooctyl esters of 2,4-D, 2,4,5-T and 2-(2,4,5-trichlorophenoxy)propionic acid)
- General Chemical 2,4-D 3.34 Butyl Ester Weed Killer
- General Chemical 2,4-D 4-Butyl Ester Weed Killer
- General Chemical 2,4-D 6.00 Butyl Ester Weed Killer
- General Chemical 2,4-D Butyl Ester Weed Killer
- Good-Life Weed Woe (diethanolamine salts of 2-(2-methyl-4-chlorophenoxy)propionic acid, 2,4-D and dicamba [3,6-dichloro-2-methoxy benzoic acid])
- Gormel's Brush Killer (propylene glycol butyl ether esters of 2,4-D and 2,4,5-T)
- Gormel's Weed and Clover Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Gormel's Weed Kil (alkanolamine salts [of the ethanol and isopropanol series] of 2,4-D)
- Green Cross Commercial Weed Killer "96" (2,4-D + butyl ester of 2,4-D)
- Green Cross Ester Weed Killer (2,4-D)
- Green Cross Roadside 2,4-D Low Volatile Weed Killer (isooctyl ester of 2,4-D)
- Green Cross Vegetation Killer (monuron [3-(p-chlorophenyl)-1,1-dimethylurea] + 2,4-D + 2,4,5-T)
- Green Cross Weed-No-More "80" (2,4-D)
- Green Cross Weed-No-More (butyl ester of 2,4-D)
- Green Light 2,4-D, 2,4,5-T Weed Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Green Light Broadleaf Weed Killer (alkanolamine salts [of the ethanol and isopropanol series] of 2,4-D)
- Green Light Weed Killer (alkanolamine salts [of the ethanol and isopropanol series] of 2,4-D + triethylamine salt of 2,4,5-T)
- Greenfield Broadleaf Weed and Crab Grass Killer (trifluralin [alpha,alpha,alpha-trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine] + disodium methylarsonate + sodium salts of 2,4-D and 2,4,5-T)
- Greenfield Crab Grass and Broadleaf Weed Killer (trifluralin [alpha,alpha,alpha-trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine] + disodium methylarsonate hexahydrate + isooctyl esters of 2,4-D and 2,4,5-T)
- Greenfield Crabgrass and Dandelion Killer (disodium methanearsonate + trifluralin [alpha,alpha,alpha-trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine] + sodium salts of 2,4-D and 2,4,5-T)
- Greenfield Dandelion and Broadleaf Weed Killer (isooctyl esters of 2,4-D and silvex [2-(2,4,5-trichlorophenoxy)propionic acid])

- Greenfield Dandelion and Chickweed Killer (isooctyl esters of 2,4-D and silvex [2-(2,4,5-trichlorophenoxy)propionic acid])
- Greenfield Two-Way green Power (isooctyl esters of 2,4-D and silvex [2-(2,4,5-trichlorophenoxy) propionic acid] + nitrogen + phosphoric acid + soluble potash)
- Greenfield Weeds As It Feeds For Lawns (isooctyl esters of 2,4-D and 2,4,5-T)
- Greever's 2,4-D Low Volatile Ester Weed Killer (isooctyl ester of 2,4-D)
- Greever's Low Volatile Brush Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Halts Plus With Dandelion Control (S-(0,0-diisopropyl phosphorodithioate) ester of N-(2-mercaptoethyl) benzenesulphonamide + 2,4-D + 2(2-methyl-4-chlorophenoxy)propionic acid)
- Hedonal (isooctyl ester of 2,4-D)
- Hedonal (The Herbicide) (2,4-D, form unspecified)
- Hedonol (2,4-D, form unspecified)
- Henry Field's Lawn Weed Killer (isooctyl ester of 2,4-D)
- Herbate Ester 128 (2,4-D, form unspecified)
- Herbate Ester 80 (isooctyl ester of 2,4-D)
- Home Use Weed Killer (alkanolamine salts [of the ethanol and isopropanol series] of 2,4-D)
- Hormit (sodium salt of 2,4-D)
- Hormoslyr 64 (2,4-D + 2,4,5-T)
- Hub States Selective Weed and Brush Killer Amine Formula 400 (diethylethanolamine salts of 2,4-D and 2,4,5-T)
- Instemul DA 120 Concentrate (oleyl amine salt of 2,4-D)
- Instemul DA 40 (oleyl amine salt of 2,4-D)
- Instemul DTA 22 (oleyl amine salt of 2,4-D + oleyllinoleyl amine salt of 2,4,5-T)
- Instemul DTA 66 Concentrate (oleyl amine salt of 2,4-D + oleyllinoleyl amine salt of 2,4,5-T)
- Isooctyl 2,4-dichlorophenoxyacetate (isooctyl ester of 2,4-D)
- Isooctyl alcohol, (2,4-dichlorophenoxy) acetate (isooctyl ester of 2,4-D)
- Jet-Weed Killer Power Pellets (2,4-D + silvex [2-(2,4,5-trichlorophenoxy)propionic acid])
- Kansel (2,4-D + dicamba [2-methoxy-3,6-dichlorobenzoic acid])
- Kilbrush 8-16 Ester (butyl esters of 2,4-D and 2,4,5-T)
- Knoxweed (eptam [S-ethyl dipropylthiocarbamate] + 10 E 2,4-D)
- Kro-Foot-Kil (dimethylamine salts of 2,4-D + phenylmercuric acetate)
- Krotilin (chlorocrotyl ester of 2,4-D)
- Krotiline (chlorocrotyl ester of 2,4-D)
- Lawn Weed Killer (triethanolamine salt of 2,4-D)
- Lawn Weed-Rhap (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Lawn-Keep (2,4-D, form unspecified)
- Lebanon Deluxe Weed and Feed with 2,4-D and Banvel D (dimethylamine salts of 2,4-D, dicamba [3,6-dichloro-2-methoxy-benzoic acid] and related acids)
- Lebanon Weedeth (dimethylamine salt of 2,4-D, dimethylamine salt of dicamba [3,6-dichloro-2-methoxy-benzoic acid] and related acid)
- Limit (chloro-N,N-diallylacetamide + 2,4-D)
- Line Rider 22 (butyl esters of 2,4-D and 2,4,5-T)
- Line Rider Invert D/T (isooctyl esters of 2,4-D and 2,4,5-T)
- Line Rider Invert D/T Concentrate (isooctyl esters of 2,4-D and 2,4,5-T)
- Line Rider LV-21 (isooctyl esters of 2,4-D and 2,4,5-T)
- Line Rider LV-4D (isooctyl ester of 2,4-D)
- Line Rider LV-6D (isooctyl ester of 2,4-D)
- Liqweedate (2-methoxy-4,6-bis(isopropylamine)-s-triazine + isooctyl esters of 2,4-D and 2,4,5-T)
- Liqweedate-2 (2-methoxy-4,6-bis(isopropylamine)-s-triazine + isooctyl ester of 2,4-D)
- Lironox (butyl ester of 2,4-D)
- Lithate 2,4-D (lithium salt of 2,4-D)
- Lo-Estasol (butoxyethanol ester of 2,4-D)
- Machete (alkanolamine salts [of the ethanol and isopropanol series] of 2,4-D)
- Macondray (2,4-D, form unspecified)
- Manco Kill-Weed (dimethylamine salt of 2,4-D)
- Manco Super Kill-Weed (isooctyl esters of 2,4-D and 2,4,5-T)

- Mecopar (diethanolamine salts of MCPP [2-(2-methyl-4-chlorophenoxy)propionic acid] and 2,4-D)
- MFA 40% Butyl Ester Weed Killer (butyl ester of 2,4-D)
- MFA LO-V Super Brush Killer (octyl esters of 2,4-D and 2,4,5-T)
- MFA LO-V Super Brush Killer (octyl esters of 2,4-D and 2,4,5-T)
- MFA No. 4 Weed Killer (butyl ester of 2,4-D)
- MFA No. 6 Weed Killer (butyl ester of 2,4-D)
- MFA Super Brush Kill (butyl esters of 2,4-D and 2,4,5-T)
- Miller's 4# Ester (butyl ester of 2,4-D)
- Miller's 6# Ester (butyl ester of 2,4-D)
- Miller's Lo Vol 4# 2,4-D (isooctyl ester of 2,4-D)
- Milorganite Plus 2,4-D (2,4-D, form unspecified)
- Miracle (2,4-D, form unspecified)
- Monosan (2,4-D, form unspecified)
- Monsanto 2,4-D 2,4,5-T Amine brush Killer (dimethylamine salt of 2,4-D + triethylamine salt of 2,4,5-T)
- Monsanto 2,4-D 2,4,5-T Amine Brush Killer (triethylamine salts of 2,4-D and 2,4,5-T)
- Monsanto 2,4-D 2,4,5-T Butyl Ester Brush Killer
- Monsanto 2,4-D 2,4,5-T Low Volatile Ester Brush Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Monsanto 2,4-D Amine (dimethylamine salt of 2,4-D)
- Monsanto 2,4-D Butyl Ester
- Monsanto 2,4-D Butyl Ester Concentrate
- Monsanto 2,4-D Granular (isooctyl ester of 2,4-D)
- Monsanto 2,4-D Isopropyl Ester
- Monsanto 2,4-D Low Volatile Ester (isooctyl ester of 2,4-D)
- Morselect (dimethylamine salt of 2,4-D)
- Moxone (2,4-D, form unspecified)
- Munichem Muni-Kill (mixed aliphatic hydrocarbons + isooctyl ester of 2,4-D + bromacil [5-bromo-3-sec-butyl-6-methyluracil] + pentachlorophenol + other chlorophenols)
- Naco LV-4D Weed Killer (isooctyl ester of 2,4-D)
- Nalkil Weed Killer 400 Liquid (isooctyl ester of 2,4-D + bromacil [5-bromo-3-sec-butyl-6-methyluracil] + pentachlorophenol + other chlorophenols)
- Navy Brand WKB-15 (isooctyl esters of 2,4-D and 2,4,5-T)
- Navy Brand WKB-28 (butoxyethoxypropanol esters of 2,4-D and 2,4,5-T)
- Niagara 2,4-D Weed Killer (Amine Form) (ethanol and propanolamine salts of 2,4-D)
- Niagara Brush-Killer (Ester Form) (butoxyethanol esters of 2,4-D and 2,4,5-T)
- Niagara Commercial Brush Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Niagara Estasol (isopropyl ester of 2,4-D)
- NSC 423 (2,4-D, form unspecified)
- Nutro Dandelion and Turf Weed Killer (2,4-D + dicamba [3,6-dichloro-2-methoxybenzoic acid])
- Nutro Turf Weed Killer (ethylhexyl ester of 2,4-D and silvex [2-(2,4,5-trichlorophenoxy) propionic acid])
- Nutro Weed Bomb (2,4-D + MCPP [2-methyl-4-chloro-phenoxy)propionic acid])
- Olin Butyl Ester 22 Brush Killer (butyl esters of 2,4-D and 2,4,5-T)
- Olin Butyl Ester D267 Weed Killer (butyl ester of 2,4-D)
- Olin Butyl Ester D4 Weed Killer (butyl ester of 2,4-D)
- Olin Butyl Ester D6 Weed Killer (butyl ester of 2,4-D)
- Olin Isopropyl Ester D334 Weed Killer (isopropyl ester of 2,4-D)
- Olin LV Ester 22 Brush Killer (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Olin LV Ester D4 Weed Killer (2-ethylhexyl ester of 2,4-D)
- Ortho 2,4-D LV Ester 4 (isooctyl ester of 2,4-D)
- Ortho Brush Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Pacific Cooperatives P 2,4-D Amine Weed Killer (dimethylamine salt of 2,4-D)
- Parsons 2,4-D Weed Killer (dimethylamine salt of 2,4-D)
- Parsons 2,4-D Weed Killer Butyl Ester
- Parsons 2,4-D Weed Killer Isopropyl Ester
- Parsons 2,4-D Weed Killer No. 40 (dimethylamine salt of 2,4-D)

- Parsons Corn-Tal Weed Killer (butyl, isopropyl and isooctyl esters of 2,4-D)
- Parsons Poison Ivy and Brush Killer No. 2 (isooctyl esters of 2,4-D and 2,4,5-T)
- Patterson's Hi-Test Butyl Ester 2,4-D Weed Killer
- Patterson's Lawn Weed Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Patterson's Super Brush Killer (butyl esters of 2,4-D and 2,4,5-T)
- Patterson's Super Brush Killer Low Volatile (isooctyl esters of 2,4-D and 2,4,5-T)
- Pax Action Weed'N Feed 18-4-4 (alkanolamine salt of 2,4-D + dimethylamine salt of dicamba [3,6-dichloro-2-methoxybenzoic acid] + nitrogen + phosphoric acid + soluble potash)
- Pax Total For Lawns 10-6-4 (N-Oleyl 1,3-propylenediamine salt of 2,4-D + dimethylamine salt of 2-(2-methyl-4-chlorophenoxy)propionic acid + dimethyl ester of tetrachloroterephthalic acid + disodium methanearsonate hexahydrate + heptachlor + related c
- Pennamine (2,4-D, form unspecified)
- Pennamine D (heptylamine salt of 2,4-D)
- Phenox (2,4-D, form unspecified)
- Pielik (2,4-D, form unspecified)
- Pielik E (sodium salt of 2,4-D)
- Pill Kill Kartridges for Dandelions and Broadleaf Weeds (2,4-D + silvex [2-(2,4,5-trichlorophenoxy)propionic acid])
- PL Devastate Non-Selective Weed Killer (isooctyl ester of 2,4-D + bromacil [5-bromo-3-sec-butyl-6-methyl-uracil] + pentachlorophenol + other chlorophenols)
- PL Liqui-date (isooctyl esters of 2,4-D, 2,4,5-T and silvex [2-(2,4,5-trichlorophenoxy) propionic acid])
- Planotox (butoxyethyl ester of 2,4-D)
- Plantgard (2,4-D, form unpecified)
- Plus 2 for Grass (2,4-D + 2-(2-methyl-4-chlorophenoxy) propionic acid)
- Pratt Lawn Weed Killer (2,4-D + 2,4,5-T)
- Pratt's Crabgrass and Broadleaf Weed Killer (octyl ammonium methyl arsonate + 2,4-D))
- Proturf Broad Spectrum Weedicide (2,4-D + dicamba [3,6-dichloro-2-methoxybenzoic acid])
- Proturf Broad Spectrum Weedicide II (2,4-D + 2-(2-methyl-4-chlorophenoxy)propionic acid)
- Proturf Fertilizer Plus Dicot Weed Control (2,4-D + dicamba [3,6-dichloro-2-methoxybenzoic acid])
- Proturf Fertilizer Plus Dicot Weed Control II (2,4-D + 2-(2-methyl-4-chlorophenoxy)propionic acid)
- R-H Weed Rhap 20 (2,4-D)
- Real-Kill Spot Weed Killer (amine salts of 2,4-D, dicamba [3,6-dichloro-2-methoxybenzoic acid] and MCPP [2-(2-methyl-4-chlorophenoxy) propionic acid])
- Real-Kill Spot Weed Killer (amine salts of 2,4-D, dicamba [3,6-dichloro-2-methoxybenzoic acid] and 2,4,5-T)
- Reasor-Hill Brush Rhap (2,4-D + 2,4,5-T)
- Red Devil Dry Weed Killer (2,4-D)
- Rhodia 2,4-D Butyl Ester 6L
- Rhodia 2,4-D Low Volatile Ester 4L (isooctyl ester of 2,4-D)
- Rhodia Low Volatile Brush Killer No. 2 (2,4-D + 2,4,5-T)
- Rid-O-Weed (isopropyl and diisopropanol amine salts of 2,4-D)
- Robot Gardener Weed and Crabgrass Killer (potassium cyanate + 2,4-D)
- Roundup Granular (2-chloro-N-isopropylacetanilide + isooctyl ester of 2,4-D)
- Roundup Wettable Powder (2-chloro-N-isopropylacetanilide + 2,4-D)
- S.I.R.-Ester (isooctyl esters of 2,4-D and 2,4,5-T)
- Salvik (2,4-D, form unspecified)
- Salvo (2,4-D, form unspecified)
- Science Lawn Weed-Killer (isooctyl esters of 2,4-D + 2,4,5-T)
- Scott's 4-XD Weed Control (2,4-D)
- Security Lawn Weed Killer (N-oleyl 1,3-propylenediamine salt of 2,4-D)
- Shell 40 (butyl ester of 2,4-D)
- Sodium 2,4-D
- Sodium 2,4-dichlorophenoxyacetate
- Spontox (2,4-D, or 2,4,5-T, forms unspecified)

- Spritz-Hormit (sodium salt of 2,4-D)
- Stull's Low Volatile Brush Killer No. 4 (isooctyl esters of 2,4-D and 2,4,5-T)
- Stull's Low Volatile Weed Killer (isooctyl ester of 2,4-D)
- Stull's Stu-Ester Low Volatile (isooctyl ester of 2,4,5-T)
- Super Crab-E-Rad + 2 (dodecylammonium methanearsonate + octylammonium methanearsonate + octylammonium salt of 2,4-D)
- Super D Weedone (diethylamine salts of 2,4-D and dicamba [3,6-dichloro-2-methoxybenzoic acid])
- Super Dal-E-Rad + 2 (dodecylammonium methanearsonate + octylammonium methanearsonate + octylammonium salt of 2,4-D)
- Sure Death 2,4-D Amine Weed Killer (dimethylamine salt of 2,4-D)
- Sure Death 40% Butyl Ester Type Weedkiller (butyl ester of 2,4-D)
- Sure Death Lawn Weed Killer (2-ethyl 4-methylpentanol and 2-ethylhexanol esters of 2,4-D and 2,4,5-trichlorophenoxypropionic acid)
- Sure Death No. 4 Butyl Ester Weed Killer (butyl ester of 2,4-D)
- Sure Death No. 6 Butyl Ester Weed Killer (butyl ester of 2,4-D)
- Sure Death No. 6-D Low Vol 2,4-D (2-ethyl 4 methylpentanol and 2-ethylhexanol esters of 2,4-D)
- Sure-Death Low-Vol 2,4-D #4 (2-ethylpentanol and 2-ethylhexanol esters of 2,4-D)
- Swift's Gold Bear 2-2 Brush Kill (isooctyl esters of 2,4-D and 2,4,5-T)
- Swift's Gold Bear 40 (triethylamine salt of 2,4-D)
- Swift's Gold Bear 44 Ester (isopropyl ester of 2,4-D)
- Swift's Gold Bear Woody Plant Control (isooctyl esters of 2,4-D and 2,4,5-T)
- T-H Ded-Weed ME-6 (butyl ester of 2, 4-D)
- T-H Ded-Weed ME-9 (butyl ester of 2,4-D)
- Techne 2,4-D Amine Weed Killer (dimethylamine salt of 2,4-D)
- Techne 40% Butyl Ester type Weed Killer (butyl ester of 2,4-D)
- Techne Butyl Ester Weed Killer No.4 (butyl ester of 2,4-D)
- Techne Butyl Ester Weed Killer No.6 (butyl ester of 2,4-D)
- Techne Low-Vol 2,4-D No.4 (2-ethylpentanol and 2-ethylhexanol esters of 2,4-D)
- Termicide 5-15 (triethanolamine salt of 2,4-D + triethanolamine methanearsonate)
- The Andersons Broadleaf Weed Killer (dimethylamine salt of 2,4-D + isooctyl ester of silvex [2-(2,4,5-trichlorophenoxy)propionic acid])
- The Andersons Weed and Feed (dimethylamine salt of 2,4-D + isooctyl ester of silvex [2-(2,4,5-trichlorophenoxy)propionic acid])
- The Crop Rider (butyl ester of 2,4-D)
- The Line Rider (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Thorokil (2,4-D + bromacil [5-bromo-3-sec-butyl-6-methyluracil] + pentachlorophenol)
- Tobacco States Brand Ester 210 (isooctyl ester of 2,4-D)
- Tobacco States Brand Ester 410 Concentrate (2-ethylhexyl ester of 2,4-D)
- Tobacco States Brand Ester Brush Killer 2-2 (butyl esters of 2,4-D and 2,4,5-T)
- Tobacco States Brand Low-Vol Brush Killer 2-20 (isooctyl esters of 2,4-D and 2,4,5-T)
- Tordon 101 Mixture (triisopropanol amine salts of 2,4-D and 4-amino-3,5,6-trichloropicolinic acid)
- Transamine OA-1.5D-1.5T (N,N-dimethyloleyllinoleylamine salts of 2,4-D and 2,4,5-T)
- Transamine OA-3D (N,N-dimethyloleyllinoleylamine salt of 2,4-D)
- Tributon (2,4-D + 2,4,5-T, forms unspecified)
- Triple Tonic (dimethylamine salts and propylene glycol butyl ether esters of 2,4-D + nitrogen + phosphoric acid + soluble potash)
- Turf Builder Plus 2 (2,4-D + 2-(2-methyl-4-chlorophenoxy)-propionic acid
- U 46 (2,4-D + 2,4,5-T, forms unspecified)
- U 46 DP (2,4-D, form unspecified)
- U 46 Spezial (2,4-D + 2,4,5-T, forms unspecified)
- U-5043 (2,4-D, form unspecified)
- Unico 2,4-D Ester Weed Killer (butyl ester of 2,4-D)
- Unico 2,4-D Lo-V Ester Weed Killer (2-ethylhexyl ester of 2,4-D)
- Unico Brush Killer (butyl esters of 2,4-D and 2,4,5-T)
- Unico Brush Killer A (butyl ester of 2,4-D + isooctyl ester of 2,4,5-T)

- Unico Lo-V Brush Killer (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Unico Turf Treeter Lawn Weed Killer (dimethylamine salts of 2,4-D and dicamba [3,6-dichloro-2-methoxy-benzoic acid])
- Utility Brush Killer No. 2 (isooctyl esters of 2,4-D and 2,4,5-T)
- Vaughan's Liquid K.O. (octyl ammonium salt of 2,4-D + octyl and dodecyl ammonium methylarsonate)
- Veg-I-Kill (isooctyl ester of 2,4-D + bromacyl [5-bromo-3-sec-butyl-6-methyluracyl] + pentachlorophenol + others chlorophenols)
- Veon BK (dimethylamine salts of 2,4-D and 2,4,5-T)
- Vergemaster (2,4-D, form unspecified)
- Verton 2-D (2,4,-D, form unspecified)
- Verton 2D (propylene glycol butyl ether ester of 2,4-D)
- Verton 4D (propylene glycol butyl ether ester of 2,4-D)
- Verton CE (propylene glycol butyl ether esters of 2,4-D and 2,4,5-T)
- Verton CE Herbicide (propylene glycol butyl ether esters of 2,4-D and 2,4,5-T)
- Verton D (2,4-D, form unspecified)
- Vi-Par (diethanolamine salts of 2-(2-methyl-4-chlorophenoxy)-propionic acid and 2,4-D)
- Vidon 638 (2,4-D, unspecified)
- Visko-Rhap 2,4-D Low Volatile Ester 4L (isooctyl ester of 2,4-D)
- Visko-Rhap A-1D (oleylamine salt of 2,4-D)
- Visko-Rhap A-3D (N,N-dimethyl oleyllinoleylamine salt of 24-D)
- Visko-Rhap Low Drift Herbicides (2,4-D, form unspecified)
- Visko-Rhap Low Volatile 1.5D-1.5T (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Visko-Rhap Low Volatile 1D-1T (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Visko-Rhap Low Volatile 4L (2,4-D, form unspecified)
- Visko-Rhap Low Volatile Ester 1D-1T (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Visko-Rhap Low Volatile Ester 2D (2-ethylhexyl ester of 2,4-D)
- Visko-Rhap Oil-Soluble Amine A-3D (N,N-dimethyloleyllinoleylamine salt of 2,4-D)
- Wasco Brush Killer (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Weed and Brush Off Amine Formula 400 (diethylethanolamine salts of 2,4-D and 2,4,5-T)
- Weed Broom (anhydrous disodium methanearsonate + lithium salt of bromacil [5-bromo-3-sec-butyl-6-methyluracil] + anhydrous sodium salt of 2,4-D)
- Weed Killer 646 (butyl ester of 2,4-D)
- Weed-Ag-Bar (2,4-D, form unspecified)
- Weed-B-Gon (2,4-D, form unspecified)
- Weed-Ban (amines [form unspecified] of 2,4-D and dicamba [3,6-dichloro-2-methoxybenzoic acid])
- Weed-Bane Amine (2,4-D, form unspecified)
- Weed-Bane Ester (2,4-D, form unspecified)
- Weed-Nix Lawn Food with 2,4-D and Banvel D (dimethylamine salts of 2,4-D, dicamba [3,6-dichloro-2-methoxy-benzoic acid] and related acids)
- Weed-No-More (2,4-D ester, form unspecified)
- Weed-Out Lawn Weed Control with 2,4-D and Silvex (dimethylamine salt of 2,4-D + isooctyl ester of silvex [2-(2,4,5-trichlorophenoxy)propionic acid])
- Weed-Rhap (2,4-D, form unspecified)
- Weed-Rhap A-4 (2,4-D)
- Weed-Rhap A-4D (dimethylamine salt of 2,4-D)
- Weed-Rhap B-2.67D (butyl ester of 2,4-D)
- Weed-Rhap B-266 (2,4-D)
- Weed-Rhap B-4 (2,4-D)
- Weed-Rhap B-4D (butyl ester of 2,4-D)
- Weed-Rhap B-6D (butyl ester of 2,4-D)
- Weed-Rhap I-3.34 (2,4-D)
- Weed-Rhap I-3.34D (isopropyl ester of 2,4-D)
- Weed-Rhap Low Volatile 4D (2-ethylhexyl ester of 2,4-D)
- Weed-Rhap Low Volatile 5D (2-ethylhexyl ester of 2,4-D)
- Weed-Rhap Low Volatile F4D For Mixing with Fertilizer (2-ethylhexyl ester of 2,4-D)

- Weed-Rhap Low Volatile-Granular D (2-ethylhexyl ester of 2,4-D)
- Weed-Rhap LV-4-0 (2,4-D)
- Weed-Rhap LV-4D (butoxyethanol ester of 2,4-D)
- Weedar (2,4-D or 2,4,5-T, forms unspecified)
- Weedar 64 (dimethylamine salt of 2,4-D)
- Weedar Amine Brush Killer (dimethylamine salt of 2,4-D + triethylamine salt of 2,4,5-T)
- Weedez Wonder Bar (triethylamine salt of 2,4-D)
- Weedone (2,4-D or 2,4,5-T, forms unspecified)
- Weedone 48 (2,4-D, form unspecified)
- Weedone 638 (2,4-D)
- Weedone 638 (butoxyethanol ester of 2,4-D)
- Weedone Aero-Concentrate 96 (butyl ester of 2,4-D)
- Weedone Aero-Concentrate E (butyl ester of 2,4-D)
- Weedone Brush Killer 32 (butoxyethanol esters of 2,4-D and 2,4,5-T)
- Weedone Brush Killer 64 (butoxyethanol esters of 2,4-D and 2,4,5-T)
- Weedone Brush Killer 977 (butoxyethanol esters of 2,4-D and 2,4,5-T)
- Weedone Brush Killer 977 Concentrate (butoxyethanol esters of 2,4-D and 2,4,5-T)
- Weedone Concentrate 48 (ethyl ester of 2,4-D)
- Weedone Industrial Brush Killer (butoxyethanol esters of 2,4-D and 2,4,5-T)
- Weedone LV-6 (butoxyethanol ester of 2,4-D)
- Weedone LV4 (butoxyethanol ester of 2,4-D)
- Weedone-170 (2,4-D, form unspecified)
- Woodbury Pre-Merge Granular 20 2,4-D (2-ethylhexanol ester of 2,4-D)
- Woodbury Woodkill Ester Conc. (butyl esters of 2,4-D and 2,4,5-T)
- Woodkill Ester Concentrate (butyl esters of 2,4-D and 2,4,5-T)
- Zehrung 2,4-D Selective Amine Weed Killer (dimethylamine salt of 2,4-D)
- Zehrung Weed Blitz (triethanolamine salts of 2,4-D and 2,4,5-T)
- Zep R-61 Weed Killer (dimethylamine salts of 2,4-D and 2,4,5-T)

ynonyms for 2,4,5-T and esters

- Abco Improved W.K-245 (isooctyl ester of 2,4,5-T)
- Abco W.K-DT 133 (isooctyl esters of 2,4-D and 2,4,5-T)
- Abco WKS-65 Brush Killer (isooctyl esters of 2,4-D, 2,4,5-T and silvex [2-(2,4,5-trichloro-phenoxy)propionic acid])
- Acetic acid, (2,4,5-trichlorophenoxy)-
- Acide trichloro-2,4,5 phenoxyacetique
- Acido(2,4,5-tricloro-fenossi)-acetico
- Acme Poison Ivy Killer (dimethylamine salt of 2,4-D + triethylamine salt of 2,4,5-T)
- Acme Weed-No-More Spotter (dimethylamine salt of 2,4-D + triethylamine salt of 2,4,5-T)
- Agent Orange (n-butyl esters of 2,4-D and 2,4,5-T)
- Agent Purple (n-butyl esters of 2,4-D and 2,4,5-T + isobutyl ester of 2,4,5-T)
- Allied Chemical Low Volatile 1-1/3-2/3 Brush Killer (2,4-D + 2,4,5-T + isooctyl esters of 2,4-D and 2,4,5-T)
- Amchem 2,4,5-T Low Volatile Ester Brush Killer (isooctyl ester of 2,4,5-T)
- Amchem 2,4-D 2,4,5-T Low Volatile Ester Brush Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Amchem 6DT. Low Volatile Ester Brush Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Amchem 6T Low Volatile Ester Brush Killer (isooctyl ester of 2,4,5-T)
- Amchem Amine 2,4,5-T for Rice (triethylamine salt of 2,4,5-T)
- Amchem Emulsamine Brush Killer (alkyl C_1_2 + C_1_4 amine salts of 2,4-D and 2,4,5-T)
- Amchem Isooctyl-DT (isooctyl esters of 2,4-D and 2,4,5-T)
- Amchem Isooctyl-DT6 (isooctyl esters of 2,4-D and 2,4,5-T)
- Amchem Isooctyl-T (isooctyl ester of 2,4,5-T)
- Amchem Isooctyl-T6 (isooctyl ester of 2,4,5-T)
- Amine 4T (2,4,5-T, form unspecified)
- Amine 4T2 (triethylamine salt of 2,4,5-T)
- Amoco 2,4,5-T Amine (triethylamine salt of 2,4,5-T)

- Amoco 2,4,5-T LV Ester (isooctyl ester of 2,4,5-T)
- Amoco Brush Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Antrol 2,4-D and 2,4,5-T Weed and Brush Killer (alkalonamine salts [of the ethanol and isopropanol series] of 2,4-D + triethylamine salt of 2,4,5-T)
- Associated Sales Low Volatile 2,4,5-T Brush Killer (isooctyl ester of 2,4,5-T)
- Balcom's Brush Killer Number 4 (isooctyl ester of 2,4,5-T)
- Balcom's G-K-20 (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Balcom's T-D Special Weed Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Breck's Lawn Weed Killer (butoxyethoxypropanol esters of 2,4-D and 2,4,5-T)
- Brulin's Brush Killer (butyl esters of 2,4-D and 2,4,5-T)
- Brush Killer 50-50 (butyl esters of 2,4-D and 2,4,5-T)
- Brush Killer T (butyl esters of 2,4,5-T)
- Brush Killer TX (isooctyl esters of 2,4,5-T)
- Brush Killer X (isooctyl esters of 2,4-D and 2,4,5-T)
- Brush-Blitz (isooctyl ester of 2,4,5-T)
- Brush-O-Cide (isooctyl esters of 2,4-D + 2,4,5-T)
- Brush-Off 445 Low Volatile Brush Killer (2,4,5-T, form unspecified)
- Brush-Off No. 438 Conc. 2-2 LV Brush Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Brush-Rhap A-2D-2T (dimethylamine salt of 2,4-D + triethylamine salt of 2,4,5-T)
- Brush-Rhap A-4T (triethylamine salt of 2,4,5-T)
- Brush-Rhap Amine A-2D-2T (dimethylamine salt of 2,4-D + triethylamine salt of 2,4,5-T)
- Brush-Rhap B-1.33D - 0.67T (butyl esters of 2,4-D and 2,4,5-T)
- Brush-Rhap B-2-2 (2,4-D + 2,4,5-T)
- Brush-Rhap B-2D-2T (butyl esters of 2,4-D and 2,4,5-T)
- Brush-Rhap B-4 (2,4,5-T)
- Brush-Rhap B-4T (butyl ester of 2,4,5-T)
- Brush-Rhap Injection Fluid Low Volatile 2D-2T (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Brush-Rhap Injection Fluid Low Volatile 3D-3T (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Brush-Rhap Injection Fluid Low Volatile 4T (2-ethylhexyl ester of 2,4,5-T)
- Brush-Rhap Injection Fluid-B (2,4,5-T)
- Brush-Rhap Low Volatile 2D-2T (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Brush-Rhap Low volatile 3D-2T (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Brush-Rhap Low Volatile 3D-3T (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Brush-Rhap Low Volatile 4T (2-ethylhexyl ester of 2,4,5-T)
- Brush-Rhap Low Volatile 5T (2-ethylhexyl ester of 2,4,5-T)
- Brush-Rhap Low Volatile 6T (2-ethylhexyl ester of 2,4,5-T)
- Brush-Rhap LV 2D-2T (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Brush-Rhap LV Injection Fluid-0 (2,4,5-T)
- Brush-Rhap LV-2-2-0 (2,4-D + 2,4,5-T)
- Brush-Rhap LV-4-0 (2,4,5-T)
- Brush-Rhap LV-40 (isooctyl esters of 2,4,5-T)
- Brush-Rhap LV-4T (2-ethylhexyl ester of 2,4,5-T)
- Brush-Rhap LV-6T (2-ethylhexyl ester of 2,4,5-T)
- Brush-Rhap LV-OXY-4T (2,4,5-T, form unspecified)
- Brush-Rhap OXY-4T (butoxyethanol ester of 2,4,5-T)
- Butyl 2,4,5-trichlorophenoxyacetate
- Certified C-300 Selective Weed Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Chem-Pels Plus (isooctyl esters of 2,4-D and 2,4,5-T)
- Chem-Weed 2,4,5-T (butoxyethoxypropanol ester of 2,4,5-T + 2,4,5-T)
- Chemform Butoxy Brush Killer (butoxyethoxypropanol esters of 2,4-D and 2,4,5-T)
- Chempar Low Volatile Brush Killer No. 2 (2,4,5-T + 2,4-D)
- Chipco Turf Herbicide "D" and "T" (dimethylamine salt of 2,4-D + triethylamine salt of 2,4,5-T)
- Chipco Turf Herbicide "T" (triethylamine salt of 2,4,5-T)
- Chipman 2,4,5-T 76 (L.V.) (2,4,5-T, form unspecified)
- Chipman 2,4,5-T Amine 4L (triethylamine salt of 2,4,5-T)
- Chipman 2,4,5-T Low Volatile Ester 4L (isooctyl ester of 2,4,5-T)
- Chipman 2,4,5-T Low Volatile Ester 6L (isooctyl ester of 2,4,5-T)

- Chipman Amine Brush Killer (triethylamine salts of 2,4-D and 2,4,5-T)
- Chipman Brush Killer 128 (2,4-D + 2,4,5-T, forms unspecified)
- Chipman Brush Killer 128 L.V. (2,4-D + 2,4,5-T, forms unspecified)
- Chipman Brush Killer 128 Regular (2,4-D + 2,4,5-T, forms unspecified)
- Chipman Brush Killer 76 (isooctyl esters of 2,4-D and 2,4,5-T)
- Chipman Low Volatile Brush Killer No. 2 (isooctyl esters of 2,4-D and 2,4,5-T)
- Chipman Low Volatile Brush Killer No. 3 (isooctyl esters of 2,4-D and 2,4,5-T)
- Chipman LVE-4L (isooctyl esters of 2,4,5-T)
- Chipman LVE-6L (isooctyl esters of 2,4,5-T)
- Clover Killer (butoxyethanol ester of 2,4,5-T)
- Commercial Brush Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Crop Rider 248 (2-ethylhexyl ester of 2,4-D)
- Crop Rider Amine 4T (triethylamine salt of 2,4,5-T)
- Crop Rider Amine 4T-2 (triethylamine salt of 2,4,5-T)
- Cross Country Poison Ivy Killer (butoxyethoxypropanol esters of 2,4-D and 2,4,5-T)
- Dacamine (N-oleyl 1,3-propylenediamine salts of 2,4-D and 2,4,5-T)
- Dacamine 1D/1T (N-oleyl 1,3-propylenediamine salts of 2,4-D and 2,4,5-T)
- Dacamine 2D/2T (N-oleyl 1,3-propylenediamine salts of 2,4-D and 2,4,5-T)
- Dacamine 4T (N-oleyl 1,3-propylenediamine salt of 2,4,5-T)
- Dacamine T (N-oleyl 1,3-propylenediamine salt of 2,4,5-T)
- De Witt S-77 Weed Killer (dimethylamine salts of 2,4-D and 2,4,5-T)
- De-Pester Ded-Weed 50-50 Brush-Kil (2,4,5-T)
- De-Pester Ded-Weed for Lawns (2,4-D + 2,4,5-T + Kerosene)
- De-Pester Ded-Weed LV-6 (2,4,5-T)
- De-Pester Ded-Weed LV-9 (2,4,5-T)
- De-Pester Ded-Weed T6 Brush Kil (amyl ester of 2,4,5-T)
- Ded-weed Brush Killer (2,4,5-T, form unspecified)
- Ded-weed for Lawns, New Improved (isooctyl esters of 2,4-D and 2,4,5-T)
- Ded-weed LV-6 Brush Kil (2,4,5-T, form unspecified)
- Destruxol Weed Killer "D" (isooctyl esters of 2,4-D and 2,4,5-T)
- Diamond Alkali Chemicals 2-2 2-Ethyl Hexyl Brush Killer (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Diamond Alkali Chemicals Technical 2-Ethyl Hexyl-T (2-ethylhexyl ester of 2,4,5-T)
- Diamond Alkali Chemicals The Line Rider (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Diamond Shamrock Amine 2D/2T (dimethylamine salts of 2,4-D and 2,4,5-T)
- Diamond Shamrock Amine 4T (triethylamine salt of 2,4,5-T)
- Diamond Shamrock Dormant Cane Concentrate LV-6T-OS (isooctyl ester of 2,4,5-T)
- Diamond Shamrock Dormant Cane LV 3D/3T-OS (isooctyl esters of 2,4-D and 2,4,5-T)
- Diamond Shamrock LO-VOL 2D/2T (isooctyl esters of 2,4-D and 2,4,5-T)
- Diamond Shamrock LO-VOL 4T (isooctyl ester of 2,4,5-T)
- Diamond Shamrock LO-VOL 6T (isooctyl ester of 2,4,5-T)
- Dinoxol (butoxyethanol esters of 2,4-D and 2,4,5-T)
- Dinoxol 64 (butoxyethanol esters of 2,4-D and 2,4,5-T)
- Dinoxol Super-6 (butoxyethanol esters of 2,4-D and 2,4,5-T)
- Dormant Cane Concentrate (2-ethylhexyl ester of 2,4,5-T)
- Dow 2,4,5-T Amine Weed Killer (triethylamine salt of 2,4,5-T)
- Dow Brush Killer 50-50 (butyl esters of 2,4-D and 2,4,5-T)
- Dow Brush Killer TX (butoxypropyl esters of 2,4,5-T)
- Dow Brush Killer X (isooctyl esters of 2,4-D and 2,4,5-T)
- Emulsamine 2,4,5-T (dodecyl- and tetradecylamine salts of 2,4,5-T)
- Emulsamine Brush Killer (dodecyl- and tetradecylamine salts of 2,4-D and 2,4,5-T)
- Emulsavert 100 (2,4-D + 2,4,5-T + N,N-dimethyloleylamine salts of 2,4-D and 2,4,5-T)
- Emulsavert 248 (2,4-D + 2,4,5-T + N,N-dimethyloleylamine salts of 2,4-D and 2,4,5-T)
- Envert-DT (butoxyethanol esters of 2,4-D and 2,4,5-T)
- Envert-T (butoxyethanol ester of 2,4,5-T)
- Estercide T-2 (2,4,5-T, form unspecified)
- Estercide T-245 (2,4,5-T, form unspecified)

- Esteron 245 (old formulation) (isopropyl and mixed amyl esters of 2,4,5-T)
- Esteron 245 (propylene and polypropylene butyl ether esters of 2,4,5-T)
- Esteron 245 Concentrate (propylene glycol butyl ether esters of 2,4,5-T)
- Esteron 245 Herbicide (propylene and polypropylene glycol butyl ether esters of 2,4,5-T)
- Esteron 245 O.S. (propylene glycol butyl ether esters of 2,4,5-T)
- Esteron Brush Killer (old formulation) (isopropyl esters of 2,4-D and 2,4,5-T)
- Esteron Brush Killer (propylene glycol butyl ether esters of 2,4-D and 2,4,5-T)
- Esteron Brush Killer O.B. (propylene glycol butyl ether esters of 2,4-D and 2,4,5-T)
- Feed No Weed (triethylamine salts of 2,4-D and 2,4,5-T)
- Felco 2,4,5-T Brush Killer (butyl ester of 2,4,5-T)
- Felco Super Brush Killer (butyl esters of 2,4-D and 2,4,5-T)
- Fence Rider "45" (isooctyl esters of 2,4-D and 2,4,5-T)
- Fence Rider 22 (butyl esters of 2,4-D and 2,4,5-T)
- Fence Rider 3.34-T Brush Killer (isopropyl ester of 2,4,5-T)
- Fence Rider 4T Brush Killer (butyl ester of 2,4,5-T)
- Fence Rider 6T Brush Killer (butyl ester of 2,4,5-T)
- Fence Rider LV-22 (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Fence Rider LV-3D/3T (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Fence Rider LV-4T Brush Killer (2-ethylhexyl ester of 2,4,5-T)
- Fence Rider LV-6T Brush Killer (2-ethylhexyl ester of 2,4,5-T)
- Forron (2,4,5-T, form unspecified)
- Fortex (2,4,5-T, form unspecified)
- Fruitone A (2,4,5-T)
- GCC-425 (isooctyl esters of 2,4-D, 2,4,5-T and 2-(2,4,5-trichlorophenoxy)propionic acid)
- GCC-429 (isooctyl esters of 2,4-D, 2,4,5-T and 2-(2,4,5-trichlorophenoxy)propionic acid)
- General Chemical 2,4,5-T Amine (triethylamine salt of 2,4,5-T)
- Gormel's Brush Killer (propylene glycol butyl ether esters of 2,4-D and 2,4,5-T)
- Gormel's Weed and Clover Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Green Cross Celatox 50/30 (2,4,5-T + MCP [(4-chloro-2-methyl-phenoxy)acetic acid])
- Green Cross Vegetation Killer (monuron [3-(p-chlorophenyl)-1,1-dimethylurea] + 2,4-D + 2,4,5-T)
- Green Light 2,4-D, 2,4,5-T Weed Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Green Light Weed Killer (alkanolamine salts [of the ethanol and isopropanol series] of 2,4-D + triethylamine salt of 2,4,5-T)
- Greenfield Broadleaf Weed and Crab Grass Killer (trifluralin [alpha,alpha,alpha-trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine] + disodium methylarsonate + sodium salts of 2,4-D and 2,4,5-T)
- Greenfield Crab Grass and Broadleaf Weed Killer (trifluralin [alpha,alpha,alpha-trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine] + disodium methylarsonate hexahydrate + isooctyl esters of 2,4-D and 2,4,5-T)
- Greenfield Crabgrass and Dandelion Killer (disodium methanearsonate + trifluralin [alpha,alpha,alpha-trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine] + sodium salts of 2,4-D and 2,4,5-T)
- Greenfield Weeds As It Feeds For Lawns (isooctyl esters of 2,4-D and 2,4,5-T)
- Greever's Low Volatile Brush Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Hercules (isooctyl esters of 2,4,5-T)
- HH Poison Ivy Killer (triethylamine salt of 2,4,5-T)
- Hormoslyr 64 (2,4-D + 2,4,5-T)
- Hub States Selective Weed and Brush Killer Amine Formula 400 (diethylethanolamine salts of 2,4-D and 2,4,5-T)
- Instemul DTA 22 (oleyl amine salt of 2,4-D + oleyllinoleyl amine salt of 2,4,5-T)
- Instemul DTA 66 Concentrate (oleyl amine salt of 2,4-D + oleyllinoleyl amine salt of 2,4,5-T)
- Instemul TA 120 Concentrate (oleyllinoleyl amine salt of 2,4,5-T)
- Instemul TA 40 (oleyllinoleyl amine salt of 2,4,5-T)
- Inverton 245 (2,4,5-T, form unspecified)
- Kansel (2,4,5-T + propylene glycol butyl ether esters of 2,4,5-T)
- Kilbrush 8-16 Ester (butyl esters of 2,4-D and 2,4,5-T)

- Kilex 3 (butyl ester of 2,4,5-T)
- L.V. Brush Rhap-4 (isooctyl ester of 2,4,5-T)
- Lawn Weed-Rhap (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Line Rider 22 (butyl esters of 2,4-D and 2,4,5-T)
- Line Rider 4T (butyl ester of 2,4,5-T)
- Line Rider Amine 4T-2 (alkyl amine salt of 2,4,5-T)
- Line Rider Invert D/T (isooctyl esters of 2,4-D and 2,4,5-T)
- Line Rider Invert D/T Concentrate (isooctyl esters of 2,4-D and 2,4,5-T)
- Line Rider Invert T (isooctyl ester of 2,4,5-T)
- Line Rider Invert T Concentrate (isooctyl ester of 2,4,5-T)
- Line Rider LV-21 (isooctyl esters of 2,4-D and 2,4,5-T)
- Line Rider LV-4T (2-ethylhexyl ester of 2,4,5-T)
- Line Rider LV-6T (2-ethylhexyl ester of 2,4,5-T)
- Liqweedate (2-methoxy-4,6-bis(isopropylamine)-s-triazine + isooctyl esters of 2,4-D and 2,4,5-T)
- LO-VOL 4T (2,4,5-T, form unspecified)
- Manco Super Kill-Weed (isooctyl esters of 2,4-D and 2,4,5-T)
- MFA 2,4,5-T Butyl Ester
- MFA LO-V 2,4,5-T (octyl ester of 2,4,5-T)
- MFA LO-V Super Brush Killer (octyl esters of 2,4-D and 2,4,5-T)
- MFA Super Brush Kill (butyl esters of 2,4-D and 2,4,5-T)
- Monsanto 2,4,5-T Amine (triethylamine salt of 2,4,5-T)
- Monsanto 2,4,5-T Butyl Ester (isobutyl and n-butyl esters of 2,4,5-T)
- Monsanto 2,4,5-T Low Volatile Ester (isooctyl ester of 2,4,5-T)
- Monsanto 2,4-D 2,4,5-T Amine Brush Killer (dimethylamine salt of 2,4-D + triethylamine salt of 2,4,5-T)
- Monsanto 2,4-D 2,4,5-T Amine Brush Killer (triethylamine salts of 2,4-D and 2,4,5-T)
- Monsanto 2,4-D 2,4,5-T Butyl Ester Brush Killer
- Monsanto 2,4-D 2,4,5-T Low Volatile Ester Brush Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- n-Butyl(2,4,5-trichlorophenoxy)acetate
- n-Butylester Kyselini 2,4,5-trichlorfenoxyoctove
- Navy Brand WKB-15 (isooctyl esters of 2,4-D and 2,4,5-T)
- Navy Brand WKB-28 (butoxyethoxypropanol esters of 2,4-D and 2,4,5-T)
- Niagara Brush-Killer (Ester Form) (butoxyethanol esters of 2,4-D and 2,4,5-T)
- Niagara Commercial Brush Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Olin Butyl Ester 22 Brush Killer (butyl esters of 2,4-D and 2,4,5-T)
- Olin LV Ester 22 Brush Killer (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Ortho Brush Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Parsons 2,4,5-T Brush Killer (2,4,5-T)
- Parsons Poison Ivy and Brush Killer No. 2 (isooctyl esters of 2,4-D and 2,4,5-T)
- Patterson's 2,4,5-T Low Volatile and Brush Killer (isooctyl ester of 2,4,5-T)
- Patterson's Lawn Weed Killer (isooctyl esters of 2,4-D and 2,4,5-T)
- Patterson's Super Brush Killer (butyl esters of 2,4-D and 2,4,5-T)
- Patterson's Super Brush Killer Low Volatile (isooctyl esters of 2,4-D and 2,4,5-T)
- Phorfox (2,4,5-T, form unspecified))
- PL Liqui-date (isooctyl esters of 2,4-D, 2,4,5-T and silvex [2-(2,4,5-trichlorophenoxy) propionic acid])
- Pratt Lawn Weed Killer (2,4-D + 2,4,5-T)
- Real-Kill Spot Weed Killer (amine salts of 2,4-D, dicamba [3,6-dichloro-2-methoxybenzoic acid] and 2,4,5-T)
- Reasor-Hill Brush Rhap (2,4-D + 2,4,5-T)
- Reddon (propylene glycol butyl ether esters of 2,4,5-T)
- Reddox (2,4,5-T, form unspecified)
- Rhodia Low Volatile Brush Killer No. 2 (2,4-D + 2,4,5-T)
- S.I.R.-Ester (isooctyl esters of 2,4-D and 2,4,5-T)
- Science Lawn Weed-Killer (isooctyl esters of 2,4-D + 2,4,5-T)
- Stull's Hardwood Spray (isooctyl ester of 2,4,5-T)
- Stull's Low Volatile Brush Killer No. 4 (isooctyl esters of 2,4-D and 2,4,5-T)

- Sure Death 2,4,5-T Conc. #4 (butyl ester of 2,4,5-T)
- Sure Death 2,4,5-T Conc. (2-ethyl 4-methylpentanol and 2-ethylhexanol esters of 2,4,5-T)
- Swift's Gold Bear 2-2 Brush Kill (isooctyl esters of 2,4-D and 2,4,5-T)
- Swift's Gold Bear 55 Brush Kill (isooctyl ester of 2,4,5-T)
- Swift's Gold Bear Woody Plant Control (isooctyl esters of 2,4-D and 2,4,5-T)
- 2,4,5-T Amine (dimethylamine salt of 2,4,5-T)
- 2,4,5-T Low Volatile Ester 6L (2,4,5-T, form unspecified)
- 2,4,5-T, butoxyethanol ester
- 2,4,5-T, butyl ester
- 2,4,5-T, isooctyl esters
- 2,4,5-T, oleic-1,3-propylenediamine salt
- 2,4,5-T, propyleneglycol butyl ether esters
- 2,4,5-T, triethylamine salt
- 2,4,5-T-dimethylamine salt
- 2,4,5-Trichlorophenoxyacetic acid
- T-5 Brush Kil (2,4,5-T, form unspecified)
- T-H Ded-Weed LV-6 (2,4,5-T)
- T-H Ded-Weed LV-9 (2,4,5-T)
- Techne 2,4,5-T Concentrate No.4 (butyl ester of 2,4,5-T)
- The Line Rider (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Tobacco States Brand Ester Brush Killer 2-2 (butyl esters of 2,4-D and 2,4,5-T)
- Tobacco States Brand Low-Vol Brush Killer 2-20 (isooctyl esters of 2,4-D and 2,4,5-T)
- Tormona (2,4,5-T, form unspecified)
- Transamine OA-1.5D-1.5T (N,N-dimethyloleyllinoleylamine salt of 2,4-D and 2,4,5-T)
- Transamine OA-3T (N,N-dimethyloleyllinoleylamine salt of 2,4,5-T)
- Trelease (butoxyethanol ester of 2,4,5-T)
- Tributon (2,4-D + 2,4,5-T, forms unspecified)
- (2,4,5-Trichloor-fenoxy)-azunzuur
- (2,4,5-Trichlor-phenoxy)-essigsaevre
- (2,4,5-Trichlorophenoxy)acetic acid
- Trinixol (2,4,5-T, form unspecified)
- Trinoxol (butoxyethanol ester of 2,4,5-T)
- Trinoxol Super-6 (butoxyethanol ester of 2,4,5-T)
- Trioxon (2,4,5-T, form unspecified)
- Trioxone (butyl ester of 2,4,5-T)
- U 46 (2,4-D + 2,4,5-T, forms unspecified)
- U 46 Spezial (2,4-D + 2,4,5-T, forms unspecified)
- Unico 2,4,5-T Lo-V Ester Brush Killer (2-ethylhexyl ester of 2,4,5-T)
- Unico Brush Killer (butyl esters of 2,4-D and 2,4,5-T)
- Unico Brush Killer A (butyl ester of 2,4-D + isooctyl ester of 2,4,5-T)
- Unico Lo-V Brush Killer (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Utility Brush Killer No. 2 (isooctyl esters of 2,4-D and 2,4,5-T)
- Veon (2,4,5-T, form unspecified)
- Veon 100 (triethylamine salt of 2,4,5-T)
- Veon 245 (triethylamine salt of 2,4,5-T)
- Veon BK (dimethylamine salts of 2,4-D and 2,4,5-T)
- Verton 2-T (2,4,5-T, form unspecified)
- Verton 2T (2,4,5-T, form unspecified)
- Verton 2T Herbicide (propylene glycol butyl ether esters of 2,4,5-T)
- Verton CE (propylene glycol butyl ether esters of 2,4-D and 2,4,5-T)
- Verton CE Herbicide (propylene glycol butyl ether esters of 2,4-D and 2,4,5-T)
- Verton T (propylene glycol butyl ether esters of 2,4,5-T)
- Visko-Rhap H Low Volatile 2T (2-ethylhexyl ester of 2,4,5-T)
- Visko-Rhap Low Volatile 1.5D-1.5T (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Visko-Rhap Low Volatile 1D-1T (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Visko-Rhap Low Volatile 2T (2-ethylhexyl ester of 2,4,5-T)
- Visko-Rhap Low Volatile 3T (2-ethylhexyl ester of 2,4,5-T)

- Visko-Rhap Low Volatile Ester 1D-1T (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Visko-Rhap Low Volatile Ester 2T (2-ethylhexyl ester of 2,4,5-T)
- Wasco Brush Killer (2-ethylhexyl esters of 2,4-D and 2,4,5-T)
- Weed and Brush Off Amine Formula 400 (diethylethanolamine salts of 2,4-D and 2,4,5-T)
- Weed-Rhap A-4T (triethylamine salt of 2,4,5-T)
- Weedar (2,4-D or 2,4,5-T, forms unspecified)
- Weedar 2,4,5-T (triethylamine salt of 2,4,5-T)
- Weedar Amine Brush Killer (dimethylamine salt of 2,4-D + triethylamine salt of 2,4,5-T)
- Weedone (2,4-D or 2,4,5-T, forms unspecified)
- Weedone (butoxyethanol ester of 2,4,5-T)
- Weedone 2,4,5-T (2,4,5-T, form unspecified)
- Weedone 2,4,5-T Special Air Spray Formula (butoxyethanol ester of 2,4,5-T)
- Weedone Brush Killer 32 (butoxyethanol esters of 2,4-D and 2,4,5-T)
- Weedone Brush Killer 64 (butoxyethanol esters of 2,4-D and 2,4,5-T)
- Weedone Brush Killer 977 (butoxyethanol esters of 2,4-D and 2,4,5-T)
- Weedone Brush Killer 977 Concentrate (butoxyethanol esters of 2,4-D and 2,4,5-T)
- Weedone Industrial Brush Killer (butoxyethanol esters of 2,4-D and 2,4,5-T)
- Woodbury Woodkill Ester Conc. (butyl esters of 2,4-D and 2,4,5-T)
- Woodkill Ester Concentrate (butyl esters of 2,4-D and 2,4,5-T)
- Zehrung 2,4,5-T blackberry Vine Killer (isopropyl ester of 2,4,5-T)
- Zehrung Weed Blitz (triethanolamine salts of 2,4-D and 2,4,5-T)
- Zep R-61 Weed Killer (dimethylamine salts of 2,4-D and 2,4,5-T)

Synonyms for MCPA

- (4-Chloro-ortho-toloxy)acetic acid
- (4-Chloro-ortho-tolyloxy)acetic acid
- [(4-Chloro-ortho-tolyl)oxy]acetic acid
- 2,4-MCPA
- 2-Methyl-4-chlorophenoxyacetic acid
- 2M-4CH
- 2M4KH
- 4-Chloro-ortho-cresoxyacetic acid
- Agritox
- Agroxon
- Agroxone
- AK-2M
- Anicon kombi
- Anicon M
- B-Selektonon M
- Banlene plus
- Banvel M
- Basagran-M
- BH MCPA
- Bordermaster
- Brominal M
- Brominal plus
- Bronate
- Cambilene
- Cekherbex
- Chiptox
- Chlorotoloxyacetic acid
- Chwastox
- Cornox M
- Ded-Weed
- Dicopur-M
- Dicotex

- Dikotes
- Dow MCP amine weed killer
- Emcepan
- Empal
- Empral
- Hedapur M52
- Hedarex M
- Hedonal M
- Herbicide M
- Hormotuho
- Hormotuho X super
- Hornotuha
- Kilsem
- Krezone
- Legumex DB
- Leuna M
- Leyspray
- Linormore
- M40
- MCP
- Mephanac
- Metaxon
- Methoxone
- Netazol
- Okultin M
- Phenoxylene plus
- Phenoxylene super
- Raphone
- Razol dock killer
- Rhomenc
- Rhomene
- Rhonox
- Seppic MMD
- Trasan
- U 46
- U 46 M-Fluid 4
- U 46 M-Fluid 6
- Ustinex
- Verdone
- Vesakontuho MCPA
- Weed-Rhap
- Weedar
- Weedar MCPA concentrate
- Weedar sodium MCPA
- Weedone MCPA ester
- Zelan

Synonyms for 2,4-DP

- 2-(2,4-Dichlorophenoxy)-propionic acid
- Dichlorprop

Synonyms for Silvex

- Fenoprop
- 2-(2,4,5-Trichlorophenoxy)propionic acid
- 2,4,5-TP

Synonyms for MCPP

- 2-(4-Chloro-ortho-tolyloxy)propionic acid
- Mecoprop

Last updated: 2 March 1998

9

Attach.

Attachment 9

REFERENCE (Include in correspondence)
IFB NO. 2300

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
SERVICE CENTER
PORTLAND, OREGON 97208

Contract # 14-11-0001-4111

Various
(District Office)
Tel. No.

INVITATION FOR BIDS

FOR

AERIAL SPRAYING OF HERBICIDE
(Description of Work - Project Name)

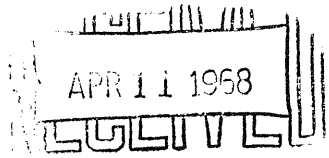
States of California, Idaho, Nevada and Oregon

BIDS WILL BE RECEIVED AT THE OFFICE OF THE BUREAU OF LAND MANAGEMENT, PORTLAND SERVICE CENTER, P. O. BOX 3861, (710 N. E. HOLLADAY ST.,), PORTLAND, OREGON, 97208, TELEPHONE 234-3361, EXT 629 OR 274 UNTIL THE TIME AND DATE SPECIFIED ON THE INVITATION.

TABLE OF CONTENTS

Instructions to Bidders - inside front cover and inside back cover.
Invitation, Bid and Award - General Provisions (reverse SF 19)
Bid Schedules, A, B and C (4 pages)
Representations and Certifications, Standard Form 19-B
Equal Opportunity Compliance Report Certification, Form 1140-1
Equal Opportunity Clause, Form 1140-2
Service Contract Act of 1965, Form 1510-16
Additional General Provisions, Clauses 1 through 53
Variable Supply Responsibilities (1 page)
Specifications Applicable to Spraying (7 pages)
Work Locations Maps (70)

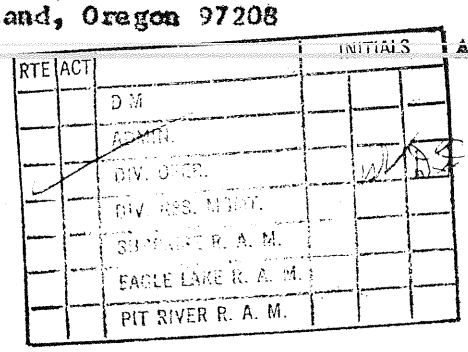
Attachment



1510-2 (P-735a)
14-11-0001-4112

Portland Service Center
P. O. Box 3861
Portland, Oregon 97208

April 8, 1968



CERTIFIED MAIL

Aero Range Service
713 South "F" Street
Lakeview, Oregon 97630

Gentlemen:

We have received satisfactory performance bond for Item No. 9 of Schedule "A" of IFB No. 2300 covering aerial spraying of herbicide. This acceptance has been assigned Contract No. 14-11-0001-4112. An executed copy of the contract is enclosed for your files.

This contract and any related subcontract is subject to the terms and conditions of the Contract Work Hours Standards Act of 1962 (overtime compensation), and the Service Contract Act of 1965, Form 1510-16. In the event any part of the work is to be subcontracted, the subcontract document must include adequate overtime compensation provisions and the applicable provisions of Form 1510-16. Your attention is also called to the requirement in the Equal Opportunity Clause, Form 1140-2, which stipulates that the paragraphs contained therein must likewise be included in any subcontract. A copy of any such subcontract shall be sent to the Contracting Officer for his review at the time it is written. Additional copies of Forms 1140-2 and 1510-16 are available upon specific request therefore.

All work performed under this contract shall be in strict accordance with the specifications and as directed by the Contracting Officer's authorized representative (COAR) who will notify you when work on this contract is to commence. Unless otherwise indicated the COAR is the District Manager, Bureau of Land Management, Susanville, California.

If you have any questions please write or call (tel. No. 503-234-3361, extension 274 or 629).

Sincerely yours,

/s/ Steve R. Drossos

Steve R. Drossos
Contracting Officer

Enclosures

cc:
COAR, Susanville
SD, California
DSC, Br. Financial Management

STANDARD FORM 19
DECEMBER 1965 EDITION
GENERAL SERVICES ADMINISTRATION
FED. PROC. REG. (41 CFR) 1-16.401
RLW:rw

INVITATION, BID, AND AWARD
(SERVICE CONTRACT)
Land Treatment

[X] CHECK IF SMALL BUSINESS SET-ASIDE OR OTHER NEGOTIATED PROCUREMENT *(If checked, "Bid" includes "Proposal")*

REFERENCE *(Include in correspondence)*
Contract 14-11-0001-4112
INVITATION NO. 2300

INVITATION FOR BIDS

DATE ISSUED: February 20, 1968

ISSUING OFFICE *
Bureau of Land Management
Portland Service Center
710 N. E. Holladay Street
Portland, Oregon

BID RECEIVING OFFICE *
Bureau of Land Management
Portland Service Center
P. O. Box 3861
Portland, Oregon 97208

Information regarding bidding material may be obtained from the issuing office.

SEALED BIDS in single copy covering work described in specifications, schedules, drawings and conditions entitled and dated as follows: AERIAL SPRAYING OF HERBICIDE

will be received at the Bid Receiving Office until 2:00 p.m., Pacific Std. Time *(Hour and Time Zone)* March 6, 1968 *(Date)* and at that time publicly opened.

at 710 N.E. Holladay Street, Portland, Oregon, Room 205

Sealed envelopes containing bids shall be addressed to the Bid Receiving Office and shall be marked to show: Bidder's Name and Address;* Reference IFB No. 2300 ; Time and Date of Opening; 2:00 p.m., PST, 3-6-68

BID *(This Section to be completed by Bidder)* → DATE BID SUBMITTED:

The undersigned agrees, if this bid is accepted within 30 calendar days after date of opening, to complete all work specified in strict accordance with the above-identified documents, within the time as shown herein, after receipt of Notice to Proceed, for the amount as indicated on the Bid Schedule, including all applicable Federal, State, and Local Taxes. The undersigned further agrees if any contract award resulting from this bid exceeds $2,500 TO COMPLY with the Labor Standards Provisions applicable to contracts in excess of $2,500 and TO FURNISH bid and performance bonds as stipulated in clause 4 of Additional General Provisions.

Bids are desired and will be considered on an individual item basis unless qualified "All or None" by specific group in the spaces provided at the end of each Bid Schedule. A second or third "All or None" group item bid submitted in letter form will be considered ONLY if it does NOT involve a project identified in the first "All or None" group bid. Alternate "All or None" bids will not be considered.

The representations and certifications on the accompanying STANDARD FORM 19-B are made a part of this bid.

NAME AND ADDRESS OF BIDDER *(Street, city, State)** *(Type or print.)*
AERO RANGE SERVICE
713 SO. E LAKEVIEW, OREGON
97630

SIGNATURE OF PERSON AUTHORIZED TO SIGN THIS BID →

SIGNER'S NAME AND TITLE *(Type or print.)*
GLENN PLATO Owner
713 SOUTH E LAKEVIEW, OREGON

AWARD *(This Section for Government only)*

DATE OF AWARD: April 8, 1968

THE ABOVE BID IS ACCEPTED IN THE AMOUNT OF $ 2,779.04 Item No. 9, Schedule "A"

[ ] YOU ARE DIRECTED TO PROCEED WITH THE WORK UPON RECEIPT OF THIS AWARD.

[ ] NOTICE TO PROCEED WILL BE ISSUED UPON RECEIPT OF ACCEPTABLE PAYMENT AND PERFORMANCE BONDS.

[X] Notice to Proceed will be issued by the Authorized Representative.

AP #6576

04/020/08/1260/510/ / /700/25/ /
/ /5/9/

THE UNITED STATES OF AMERICA

BY for STEVE R. DROSSOS
(Contracting Officer)
Steve R. Drosso
Chief, Procurement Section
(Title)

*Include "ZIP CODE" in all mailing addresses.

19-110

BID SCHEDULE A (Continued)

Item No.	Brush Control Project Name or other Identif.	Acceptable Type of aircraft: Fixed Wing: Low Speed - Less than 100 mph working speed	Fixed Wing: Unrestricted as to size & work speed TBM or equal	Helicopter	Perf. Time in Possible Work Hours	Rate of Application per acre: Lbs. Acid Equivalent: 2, 4-D	Lbs. Acid Equivalent: 2, 4-5T	Diesel oil, gals.	Tot. solution - Gal.	Est. Starting Date Apr., May, or June 1968	Est. Quantity in Acres	Bid Price per Acre	TOTAL AMOUNT BID
	Redding District												
	Siskiyou & Tehama Co.												
11a	Little Tablelands 200 Ac	No	No	Yes	10	3			5	5/15	585	$_____	$_____
b	Robinson Seeding 100 Ac					3			5	5/15			
c	Paskenta Seeding 285 Ac					4			5	5/20			
	Folsom District												
	Mariposa & Tuolumne Co.												
12a	Picture Gallery 250 Ac	No	No	Yes	12	2**	1**	3/4	5	4/22	1,200	$_____	$_____
b	Hunter Valley 200 Ac												
c	Quartz Mtn. 150 Ac	No	No	Yes	12	4**		3/4	5	4/22			
d	Montezuma 225 Ac												
e	Ned Gulch 395 Ac												

Bid and Performance bonds are required. See Clause 4, Additional General Provisions.

LIQUIDATED DAMAGES - $1.00 per acre for each acre not satisfactorily sprayed within total performance time allowed.

* TBM Class or equal
** Gov't will furnish f.o.b. mixing site

The following spaces are provided as a "one time only" optional bid item for those bidders desiring to submit a bid on one or more of the above projects as a single group. A group bid will have no adverse effect on individual item bids.

Group, "All-or-none", bid item Nos. _____ & _____ comprising approximately _____ acres for a per acre price of . . . . . $_____ $_____

Compt payment discount _____% _____ days.

_____
Bidders Signature
Tel. No. _____

BID SCHEDULE A

SCHEDULE "A"

Gov't will furnish herbicide, ...ng agent and flagmen. Con-...or to furnish necessary air-..., mixing equip., water, diesel oil (except Susanville), related supplies and labor to perform all work incidental to aerial application of herbicide on public domain lands as follows:

Item No.	Brush Control Project Name or other Identif.	Acceptable Type of aircraft: Fixed Wing: Low Speed - Less than 100 mph working speed	Acceptable Type of aircraft: Fixed Wing: Unrestricted as to size & work speed TBM or equal	Acceptable Type of aircraft: Helicopter	Perf. Time in Possible Work Hours	Rate of Application per acre: Lbs. Acid-Equivalent 2,4-D	Rate of Application per acre: Lbs. Acid-Equivalent 2,4-5T	Rate of Application per acre: Diesel oil, gals.	Rate of Application per acre: Tot. solution - Gal.	Est. Starting Date Apr., May, or June 1968	Est. Quantity in Acres	Bid Price per Acre	TOTAL AMOUNT BID
	OREGON												
	Vale District - Malheur Co.												
1a	Rabbit Farm 800 Ac)	Yes	No	Yes	15	2			5	4/15	4,275	$	$
b	Haystack Butte 3,475 Ac)												
2a	Red Butte 8,082 Ac)	No	Yes*	No	62	2			5	4/15	26,942	$	$
b	Butte Creek 12,500 Ac)												
c	Ackton Canyon 6,360 Ac)												
3a	Summit 3,100 Ac)	No	Yes*	No	23	2			5	4/24	7,100	$	$
b	Old Jaca 4,000 Ac)												
4a	Black Butte 1,000 Ac)	Yes	No	Yes	19	2			5	4/24	3,650	$ 68	$ 2482.00
b	Lazy T 2,650 Ac)												
5a	Sheepline 1,660 Ac)	No	No	Yes	9	3			6	4/28	2,628	$	$
b	Beaver 968 Ac)	No	No	Yes	5	2			5				
	IDAHO												
	Idaho Falls District Butte & Clark Co.												
6a	Rocky Butte 840 Ac)	Yes	Yes	Yes	10	2**			6	6/3	1,730	$	$
b	Reed 890 Ac)					3**			6				
	Salmon District Custer & Lemhi Co.												
7a	Long Creek 1,300 Ac)	Yes	No	Yes	20	2**			5	5/20	2,000	$	$
b	Smith Gulch 700 Ac)												
	Shoshone District Camas & Blaine Co.												
8a	Chukar 2,000 Ac)	No	No	Yes	48	2**			5	4/25	6,500	$	$
b	Macon Flat 3,500 Ac)												
c	Dry Creek 1,000 Ac)												
	NEVADA - Washoe Co.												
	Susanville, Calif. Dist. (Warehouse at Cedarville, Calif.)												
9	Massacre Lake	Yes	No	Yes	22	2		2½**	3	5/20	6,316	$ 44	$ 2779.04
	CALIFORNIA												
	Ukiah District Lake & Mendocino Co.												
10a	39th St. Fire Rehab 1,160 Ac)	No	No	Yes	20	4		½	5	5/1	2,315	$	$
b	Scotts Creek 250 Ac)												
c	Sulphur Discing 100 Ac)												
d	Sheldon Seeding 100 Ac)												
e	Hopland Grade 375 Ac)												
f	Indian Valley 250 Ac)												
g	Benmore Fire 80 Ac)												

The following spaces are provided as a "one time only" optional bid item for those bidders desiring to submit a bid on one or more of the above projects as a single group. A group bid will have no adverse effect on individual item bids.

Group, "All-or-none", bid item Nos. _____ $ _____ comprising approximately _____ acres for a per acre price of . . . . . $ _____ $ 5264.04

Prompt payment discount _____ % _____ days.

[signature]
Bidders Signature
Tel. No. 947-7424

SCHEDULE "B"

SCHEDULE B

Contractor to furnish necessary [illegible] aterials (herbicide, water, [illegible] oil), aircraft, other [illegible]ent, related supplies and [illegible] to perform all work except flagging incidental to aerial application of herbicide on public domain lands as follows:

Item No.	Brush Control Project Name or other Identif.	Acceptable Type of aircraft: Fixed Wing: Low Speed - Less than 100 mph working speed	Acceptable Type of aircraft: Fixed Wing: Unrestricted as to size & work speed TBM or equal	Acceptable Type of aircraft: Helicopter	Perf. Time in Possible Work Hours	Rate of Application per acre: Lbs. Acid Equivalent 2, 4-D	Rate of Application per acre: Lbs. Acid Equivalent 2, 4-5T	Rate of Application per acre: Diesel oil, gals.	Rate of Application per acre: Tot. solution - Gal.	Est. Starting Date Apr., May, or June 1968	Est. Quantity in Acres	Bid Price per Acre	TOTAL AMOUNT BID
	NEVADA - Lander & Eureka Co.												
	Battle Mountain District												
1a.	Pete Hansen 2,054 Ac												
b	Feustermaker 1,800 Ac												
c	Hiekinson 1,830 Ac	Yes	No	Yes	22	3		2½	3	5/15	6,872	$	$
d	Josephine 666 Ac												
e	Grub Flat 522 Ac												
	Elko District - Elko Co.												
2a	Harrison Pass 2,000 Ac												
b	Huntington 3,000 Ac	No	No	Yes	30	3		2½	3	5/15	8,000	$	$
c	Salmon Falls 3,000 Ac												
	Carson City District - Washoe Co. & Mono Co., Calif.												
3	West Dogskin	Yes	No	Yes	20	3		2½	3	5/15	2,560	$	$
4	Masonic	Yes	No	Yes	15	3		2½	3	6/10	1,300	$	$
	Las Vegas - Lincoln Co.												
5	Mustang	No	Yes	No	15	2		2½	3	5/6	2,500	$	$
	OREGON - Harney Co.												
	Burns District												
	Duhaime	No	Yes	No	18	2			5	5/1	4,850	$ 197	$ 9,534.50
	Squaw Basin 1,800 Ac					1½			5	5/20			
b	Otis Mtn. 1,935 Ac	Yes	No	Yes	20	1½			5	5/20	5,200	$	$
c	Heifer Canyon 700 Ac					2			5	5/15			
d	Zink Springs 765 Ac					1½			5	5/25			
	Baker District - Baker Co.												
8a	West Table Mtn. 1,500 Ac												
b	Peyron 1,400 Ac	No	No	Yes	18	2			4*	5/15	3,600	$	$
c	Chamberlain 700 Ac												
	Prineville District - Crook Co.												
9a	Hutton 1,750 Ac	No	No	Yes	20	2			4	6/1	5,030	$	$
b	Powell Butte 3,280 Ac												
10	IDAHO - Coeur d'Alene Distr	No	No	Yes	3	3		½	7	6/17	110	$	$

Bid and Performance bonds are required. See Clause 4, Additional General Provisions

LIQUIDATED DAMAGES - 50¢ per acre for each acre not satisfactorily sprayed within total performance time allowed.

*Gov't. will furnish water delivered to mixing site (Baker District only)

The following spaces are provided as a "one time only" optional bid item for those bidders desiring to submit a bid on one or more of the above projects as a single group. A group bid will have no adverse effect on individual item bids.

Group, "All-or-none", bid item Nos. _____ & _____ comprising approximately _____ acres for a per acre price of . . . . . $ _____ $ 9554.5

Prompt payment discount _____ % _____ days.

[signature]
Bidders Signature
Tel. No. [illegible]

SCHEDULE "C" — SCHEDULE "C" - INVERT EMULSION METH

Gov't. will furnish herbicide and flagmen. Contractor to furnish 2 helicopters, mixing equipment, water, diesel oil, replacement supplies and necessary labor to perform all work incidental to the invert emulsion method of aerial application of herbicide on public domain lands as follows:

Item No.	Brush Control Project Name or other Identif.	Acceptable Type of aircraft: Fixed Wing — Low Speed - Less than 100 mph working speed	Fixed Wing — Unrestricted as to size & work speed TEM or equal	Helicopter	Perf. Time in Possible Work Hours	Rate of Application per acre: Lbs. Acid Equivalent 2,4-D	Lbs. Acid Equivalent 2,4-5T	Diesel oil, gals.	Tot. solution - Gal.	Est. Starting Date Apr., May, or June 1968	Est. Quantity in Acres	Bid Price per Acre	TOTAL AMOUNT BID
	NEVADA - Humbolt & Elko Co.												
	Winnemucca District												
1a	Long Ridge 3,000 Ac)												
b	Antelope 1,300 Ac)												
c	Porcupine 440 Ac)			Yes									
d	N. Trap Butte 1,810 Ac)	No	No	2 Reg.	80 Hours for both Districts	2		*	4	5/15	12,600	$_____	$ XXXX
e	Sugarloof 2,000 Ac)												
f	Calico 3,450 Ac)												
g	Dyke Hot 300 Ac)												
h	Leonard Creek 300 Ac)												
	Elko District												
2	Simco No. 11	No	No	Yes		2 5/8		*	4	5/15	1,500	$_____	$ XXXX
											TOTAL BID ALL OR NONE Items 1 and 2		$_____

A minimum of 2 helicopters required for any contract resulting from award of this bid schedule.

*See specifications for invert emulsion method.

LIQUIDATED DAMAGES - $1.00 per acre for each acre not satisfactorily sprayed within the total performance time allowed.

Bid and Performance bonds are required. See Clause 4, Additional General Provisions.

The following spaces are provided as a "one time only" optional bid item for those bidders desiring to submit a bid on one or more of the above projects as a single group. A group bid will have no adverse effect on individual item bids.

Group, "All-or-none", bid item Nos. _____ & _____ comprising approximately _____ acres for a per acre price of . . . . . $_____ $_____

pt payment discount _____% _____days.

_____ Bidders Signature

Tel. No._____

INVITATION NO. 2300

BID SCHEDULE
(Continuation)

EQUIPMENT AND PILOT QUESTIONNAIRE

The following questionnaire must be completed and submitted with the bid. Failure to complete this questionnaire may be cause for rejection of bid as nonresponsive.

The following equipment, subject to inspection and approval by the Government, will be available for use on the projects bid.

	AIRCRAFT 1	AIRCRAFT 2	AIRCRAFT 3	MIXING	LOADING	METERING
TYPE						
MAKE	Stearman	Stearman	Stearman			
MODEL	450	450	450			
SIZE/CAPACITY						
CONDITION	Excellent	—	—			
LOCATION FOR INSPECTION	Lakeview, Oregon					
PROBABLE PILOT'S NAME	John Lilly	Glenn Platt	Charles Swingle	In the event of pilot substitution subsequent to contract award, I agree to immediately furnish, for approval of the Contracting Officer, name, license number and other important information pertinent to the substitute pilot.		
TOTAL PILOT HOURS	3000	7000	2000			
HOURS EXPERIENCE THIS TYPE WORK	1500	1850	850			
CURRENT FAA LICENSE NO.	—	3527[illegible]				

DATE 3-5-68 SIGNATURE Glenn Platt

ADDRESS 713 South F ST

TELEPHONE 947-7424

STANDARD FORM 19-B
DECEMBER 1965 EDITION
GENERAL SERVICES ADMINISTRATION
FED. PROC. REG. (41 CFR) 1-16.401

REPRESENTATIONS AND CERTIFICATIONS
(SERVICE CONTRACT)
Land Treatment

REFERENCE (*Enter same No.(s) as on SF 19/21*)

INVITATION NO. 2300

NAME AND ADDRESS OF BIDDER (*No., Street, City, State, and ZIP Code*)

DATE OF BID

In negotiated procurements, "bid" and "bidder" shall be construed to mean "offer" and "offeror."

The bidder makes the following representations and certifications as a part of the bid identified above. *(Check appropriate boxes.)*

1. SMALL BUSINESS

He ☒ is, ☐ is not, a small business concern. *(For this purpose, a small business concern is a business concern, including its affiliates, which (a) is independently owned and operated, (b) is not dominant in the field of operation in which it is bidding on Government contracts, and (c) had average annual receipts for the preceding 3 fiscal years not exceeding $7,500,000. For additional information see governing regulations of the Small Business Administration.)*

2. CONTINGENT FEE

(a) He ☐ has, ☒ has not, employed or retained any company or person (other than a full-time bona fide employee working solely for the bidder) to solicit or secure this contract, and (b) he ☐ has, ☐ has not, paid or agreed to pay any company or person (other than a full-time bona fide employee working solely for the bidder) any fee, commission, percentage or brokerage fee, contingent upon or resulting from the award of this contract; and agrees to furnish information relating to (a) and (b) above as requested by the Contracting Officer. *(For interpretation of the representation, including the term "bona fide employee," see Code of Federal Regulations, Title 41, Subpart 1-1.5.)*

3. TYPE OF ORGANIZATION

He operates as an ☒ individual, ☐ partnership, ☐ joint venture, ☐ corporation, incorporated in State of _____

4. INDEPENDENT PRICE DETERMINATION

(a) By submission of this bid, each bidder certifies, and in the case of a joint bid each party thereto certifies as to his own organization, that in connection with this procurement:

(1) The prices in this bid have been arrived at independently, without consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;

(2) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, in the case of a bid, or prior to award, in the case of a proposal, directly or indirectly to any other bidder or to any competitor, and

(3) No attempt has been made or will be made by the bidder to induce any other person or firm to submit or not to submit a bid for the purpose of restricting competition.

(b) Each person signing this bid certifies that:

(1) He is the person in the bidder's organization responsible within that organization for the decision as to the prices being bid herein and that he has not participated, and will not participate, in any action contrary to (a)(1) through (a)(3) above; or

(2) (i) He is not the person in the bidder's organization responsible within that organization for the decision as to the prices being bid herein but that he has been authorized in writing to act as agent for the persons responsible for such decision in certifying that such persons have not participated, and will not participate, in any action contrary to (a)(1) through (a)(3) above, and as their agent does hereby so certify; and (ii) he has not participated, and will not participate, in any action contrary to (a)(1) through (a)(3) above.

(c) This certification is not applicable to a foreign bidder submitting a bid for a contract which requires performance or delivery outside the United States, its possessions, and Puerto Rico.

(d) A bid will not be considered for award where (a)(1), (a)(3), or (b) above, has been deleted or modified. Where (a)(2) above, has been deleted or modified, the bid will not be considered for award unless the bidder furnishes with the bid a signed statement which sets forth in detail the circumstances of the disclosure and the head of the agency, or his designee, determines that such disclosure was not made for the purpose of restricting competition.

THE FOLLOWING NEED BE CHECKED ONLY IF BID EXCEEDS $10,000 IN AMOUNT.

5. EQUAL OPPORTUNITY

See form 1140-1 attached.

6. PARENT COMPANY AND EMPLOYER IDENTIFICATION NUMBER

Each bidder shall furnish the following information by filling in the appropriate blocks.

(a) Is the bidder owned or controlled by a parent company as described below? ☐ Yes ☒ No. *(For the purpose of this bid, a parent company is defined as one which either owns or controls the activities and basic business policies of the bidder. To own another company means the parent company must own at least a majority (more than 50 percent) of the voting rights in that company. To control another company, such ownership is not required; if another company is able to formulate, determine, or veto basic business policy decisions of the bidder, such other company is considered the parent company of the bidder. This control may be exercised through the use of dominant minority voting rights, use of proxy voting, contractual arrangements, or otherwise.)*

(b) If the answer to (a) above, is "Yes," bidder shall insert in the space below the name and main office address of the parent company.

NAME OF PARENT COMPANY	MAIN OFFICE ADDRESS (*No., Street, City, State, and ZIP Code*)

(c) Bidder shall insert in the applicable space below, if he has no parent company, his own Employer's Identification Number (E.I. No.) *(Federal Social Security Number used on Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941)*, or, if he has a parent company, the E.I. No. of his parent company.

EMPLOYER IDENTIFICATION NUMBER OF	PARENT COMPANY	BIDDER
⇨	93-0342698	AERO RANGE SERVICE 713 SO. E LAKEVIEW, OREGON

NOTE.—Bids must set forth full, accurate, and complete information as required by this invitation for bids (including attachments). The penalty for making false statements in bids is prescribed in 18 U.S.C. 1001.

19-301

* U.S. GOVERNMENT PRINTING OFFICE : 1966 O—215-104

Form 1140–1
(November 1966)
(formerly 1510–12)

Bid or invitation number or other identification:

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

EQUAL OPPORTUNITY COMPLIANCE REPORT CERTIFICATION

In accordance with 41 CFR 60–1.6(b) and Executive Order No. 11246 of September 24, 1965, the following certification will be completed by prospective contractors and subcontractors.

1. Have you participated in any contractual agreement which contained the Equal Opportunity Clause? ☐ Yes ☐ No *(If "yes," answer question 2)*

2. Were you required pursuant to the regulations on Equal Opportunity (41 CFR 60–1) to file a compliance report* as a result of such contractual agreements? ☐ Yes ☐ No *(If "yes," answer question 3)*

3. Did you file the compliance report as required? ☐ Yes ☐ No

In the event any work under this proposed contractual agreement is subcontracted, I will secure this same certification *(paragraphs 1 through 3 hereof)* from proposed subcontractors prior to award of any subcontract.

(Name of Bidder)

(Signature of Authorized Officer)

(Title)

(Date)

* Any person or entity subject to Executive Order 11246 who (a) has 50 or more employees; (b) is a prime contractor or first-tier subcontractor; and (c) whose contract, subcontract, or purchase order amounts to $50,000 or more ($100,000 or more if solely for standard commercial supplies and raw materials) must report on Standard Form 100. Construction contractors meeting requirements of $50,000 and employees performing construction work at the construction site are also required to report on Standard Form 100.

GPO 831-614

140–2
nber 1967)
(formerly 1510–11)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

EQUAL OPPORTUNITY CLAUSE

During the performance of this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, or national origin.

(3) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be cancelled, terminated or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The contractor will include the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions including sanctions for noncompliance: *Provided, however,* That in the event the contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

GPO 838-222

Form 1510–16
(March 1967)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SERVICE CONTRACT ACT OF 1965

If this contract is for more than $2,500, the following clause is made a part thereof:

This contract, to the extent that it is of the character to which the Service Contract Act of 1965 (P.L. 89–286) applies, is subject to the following provisions and to all other applicable provisions of the Act and the regulations of the Secretary of Labor thereunder (29 CFR Part 4).

(a) *Compensation.* Each service employee employed in the performance of this contract by the Contractor or any subcontractor shall be paid the minimum monetary wage and shall be furnished fringe benefits in accordance with the wages and fringe benefits determined by the Secretary of Labor or his authorized representative, as specified in any attachment to this contract. If there is such an attachment, any class of service employee which is not listed therein but which is to be employed under this contract, shall be classified or reclassified and paid wages conformably to the determination of the Secretary of Labor as specified in such attachment, by agreement between the interested parties, and the Contracting Officer shall report the action to the Administrator of the Wage and Hour and Public Contracts Divisions of the Department of Labor. If the interested parties do not agree on a classification or reclassification which is, in fact, conformable, the Contracting Officer shall submit the question, together with his recommendation, to the Administrator of the Wage and Hour and Public Contracts Divisions of the Department of Labor or his authorized representative for final determination. in addition, non-service employees shall be paid not less than the minimum wage specified under section 6(a)(1) of the Fair Labor Standards Act of 1938, as amended ($1.40 per hour as of February 1, 1967, and $1.60 per hour as of February 1, 1968).

(b) *Obligation to furnish fringe benefits.* The Contractor or subcontractor may discharge the obligation to furnish fringe benefits specified in the attachment by furnishing any equivalent combinations of fringe benefits, or by making equivalent or differential payments in cash, pursuant to applicable rules of the Administrator of the Wage and Hour and Public Contracts Divisions of the Department of Labor.

(c) *Minimum wage.* In the absence of a minimum wage attachment for this contract, neither the Contractor nor any subcontractor under this contract shall pay any of his employees performing work under the contract (regardless of whether they are service employees) less than the minimum wage specified by section 6(a)(1) of the Fair Labor Standards Act of 1938 ($1.40 per hour as of February 1, 1967, and $1.60 per hour as of February 1, 1968). Nothing in this provision shall relieve the Contractor or any subcontractor of any other obligation under law or contract for the payment of a higher wage to any employee.

(d) *Notification to employees.* The Contractor shall notify each service employee commencing work on this contract of the minimum monetary wage and any fringe benefits required to be paid pursuant to this contract, or shall post a notice of such wages and benefits in a prominent and accessible place at the worksite, using such poster as may be provided by the Department of Labor.

(e) *Safe and sanitary working conditions.* The Contractor shall not permit any part of the services called for by this contract to be performed in buildings or surroundings or under working conditions provided by or under the control or supervision of the Contractor which are unsanitary or hazardous or dangerous to the health or safety of service employees engaged to furnish these services.

(f) *Records.* Each Contractor or subcontractor performing work subject to the Act shall make and maintain for three years from the completion of the work the records identified below for each service employee performing work under the contract, and shall make them available for inspection and transcription by authorized representatives of the Administrator of the Wage and Hour and Public Contracts Divisions of the Department of Labor.

(1) His name and address.

(2) His work classification or classifications, rate or rates of monetary wages and fringe benefits provided, rate or rates of fringe benefit payments in lieu thereof, and total daily and weekly compensation.

(3) His daily and weekly hours so worked.

(4) Any deductions, rebates, or refunds from his total daily or weekly compensation.

(g) *Withholding of payments and termination of contract.* The Contracting Officer may withhold or cause to be withheld from the Government Prime Contractor under this or any other Government contract such sums as are necessary to pay underpaid employees. Additionally, any failure to comply with the requirements of the paragraphs of this clause relating to the Service Contract Act of 1965 may be grounds for termination of his right to proceed with the contract work. In such event, the Government may enter into other contracts or arrangements for completion of the work, charging the Contractor with any additional cost.

mine quantities of work perf ed for progress payment purposes, to be certain that ..ork is being performed in accordance with contract specifications, and to determine if work corrections are necessary. (See Clause 5 of the General Provisions on the reverse of the Standard Form 19.)

(b) The Contractor shall notify the COAR or the Project Inspector at least two days before the scheduled date of completion, so that the Government can schedule the final inspection. The time required for final inspection, and the correction of any noted performance deficiencies, if any, will be included in the allowable performance time unless such inspection is delayed through no fault of the Contractor, or substantial completion has previously occurred. The Contractor or his authorized representative *must* be at the project site at the time of final inspection.

20. *Payments* — The following supplements Clause 6 of the General Provisions on the reverse of Standard Form 19:

(a) When making progress payments, consideration may be given to the delivery on the site of materials which will become a part of the finished work and for which payment in full has been made by the Contractor, except that no consideration will be given to individual purchases of less than $500 for any one item. The need for partial or progress payments as permitted by the payment provisions of the invitation will not be treated as a handicap in making the award.

(b) The Government will make a survey, upon completion and final inspection of the work, to determine the actual quantities, to provide a basis for final payment.

(c) Contractor will submit an invoice, to support final payment, to the Branch of Financial Management, Bureau of Land Management, Federal Center, Building 50, Denver, Colorado, 80225.

(d) If the contract exceeds $2,500, the Contractor shall furnish the Contracting Officer a release on contract of all claims against the Government arising by virtue of this contract, other than claims in stated amounts, specifically excepted by the Contractor from the operation of the release. Bureau of Land Management Form 1510–21, *Release on Contract,* will be provided to the Contractor by the Government for this purpose.

21. *Damage or Loss During Project Term* — During the course of the contract, the Government shall have the right to accept any completed portions of the work; *Provided, however,* that upon completion of the contract, or final acceptance of any completed unit thereof, the work shall be delivered complete and undamaged.

22. *Cleanup* — The Contractor will be responsible for cleaning up all camp and work sites before leaving the area. Final payment may be withheld until the Contractor has complied with this requirement.

23. *Care of Government Furnished Equipment* — Every reasonable precaution *must* be taken to protect, preserve, and prevent damage to Government furnished equipment. Upon completion of work, the Contractor shall return such equipment to the Government storage site designated by the COAR. The Contractor will be held liable for the fair market value of any lost or damaged Government furnished equipment, after making proper allowance for normal wear and tear.

24. *Safety and Health Clause* — In order to protect the life and health of employees and other persons; prevent damage to property, materials, supplies, and equipment; and to avoid work in' ptions, the Contractor shall, in the performance of ...s contract, comply with the applicable provisions of Federal, State, and Municipal safety, health and sanitation laws and codes.

The Contractor shall also comply with all pertinent provisions of the "Manual of Accident Prevention in Construction," *(latest revised edition)* of the Associated General Contractors of America Incorporated, and amendments thereto. The Contracting Officer shall notify the Contractor, in writing, of any noncompliance and indicate to the Contractor the action to be taken. The Contractor shall, after receipt of such notice, immediately correct the conditions to which attention has been directed. Such notice when served on the Contractor or his representative(s) at the site of the work shall be deemed sufficient.

If the Contractor fails or refuses to comply promptly with requirements, the Contracting Officer may issue an order to suspend all or any part of the work. When satisfactory corrective action is taken, an order to resume work will be issued. No part of the time lost due to any such suspension order shall entitle the Contractor to any extension of time for the performance of the contract or to excess costs or damages.

Each Contractor is required to maintain an accurate record of all cases of death, occupational disease or traumatic injury to his employees occurring in the performance of his contract. The Contractor *must* enter each case on a Department of the Interior Form DI–134, obtainable from the COAR, and submit the form normally within three weeks of the injury to the Bureau Contracting Officer. All serious or fatal injuries shall be reported immediately.

25. *Federal, State, and Local Taxes*

(a) Except as may be otherwise provided in this contract, the contract price includes all applicable Federal, State, and local taxes and duties.

(b) Nevertheless, with respect to any Federal excise tax or duty on the transactions or property covered by this contract, if a statute, court decision, written ruling, or regulation takes effect *after* the contract date, and

(1) Results in the Contractor being required to pay or bear the burden of any such Federal excise tax or duty or increase in the rate thereof which would not otherwise have been payable on such transactions or property, the contract price shall be increased by the amount of such tax or duty or rate increase: *Provided,* That the Contractor if requested by the Contracting Officer, warrants in writing that no amount for such newly imposed Federal excise tax or duty or rate increase was included in the contract price as a contingency reserve or otherwise; or

(2) Results in the Contractor not being required to pay or bear the burden of, or in his obtaining a refund or drawback of, any such Federal excise tax or duty which would otherwise have been payable on such transactions or property, or which was the basis of an increase in the contract price, the contract price shall be decreased by the amount of the relief, refund, or drawback, or that amount shall be paid to Government, as directed by the Contracting Officer. The contract price shall be similarly decreased if the Contractor, through his fault or negligence or his failure to follow instructions of the Contracting Officer, is required to pay or bear the burden of, or does not obtain a refund or drawback of, any such Federal excise tax or duty.

(c) No adjustment pursuant to Paragraph (b) above will be made under this contract unless the aggregate

Form 1510–22
(March 1967)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

ADDITIONAL GENERAL PROVISIONS
LAND TREATMENT

1. *Definitions* – As used throughout this contract, the following terms shall have the meaning set forth below:

(a) The term "head of the agency" or "Secretary" means the Secretary, the Under Secretary, or Assistant Secretary, of the Department of the Interior, and the term "his duly authorized representative" means any person or persons or board *(other than the Contracting Officer)* authorized to act for the head of the agency or the Secretary.

(b) The term "Contracting Officer" means the person executing this contract on behalf of the Government, and any other officer or civilian employee who is a properly designated Contracting Officer; and the term includes, except as otherwise provided in this contract, the Contracting Officer's Authorized Representative (COAR) acting within the limits of his authority.

(c) The term "Project Inspector" means the person designated by the COAR to perform, as needed, on-the-job Government supervision of the work to be accomplished by the Contractor.

2. *Responsibilities of Authorized Representative and Project Inspector* – The COAR and/or the Project Inspector will be the Contractor's primary contacts. They will perform various acts of contract administration, such as designating work areas, arranging for payments, performance of inspections, determining quantities of work accomplished, etc. They are not authorized to make any rulings or commitments which vary the written terms of the contract.

3. *Modifications* – The text on the face of the covering Standard Form 19 is modified in that:

(a) No payment bond is required.

(b) Performance bond or guarantee need only be 50 percent of the contract price, as stated in Clause 4(b) below.

(c) Standard Form 19A is inapplicable.

4. *Bonds*

(a) *Bid Guarantee* – If the total amount bid exceeds $2,500, the bidder shall furnish with his bid a guarantee in an amount of not less than 20 percent of the total amount of the bid.

(b) *Performance Bond* – If the total contract price exceeds $2,500, the Contractor shall furnish to the Contracting Officer a completed performance bond on a Government Standard Form 25, in the penal sum of 50 percent of the contract price; or in lieu thereof the Contractor may furnish certain U. S. bonds, Treasury notes, other acceptable public debt obligations, a cashier's check, a certified check, a bank draft, a post office money order, or cash, in an amount or value equal to 50 percent of the contract price. *However*, if the Contractor furnishes other than Standard Form 25, he must comply with the requirements of 31 CFR 225.

5. *Notice of Small Business Set-Aside*

(a) Bids are solicited from, and contract(s) will be awarded only to, one or more small business concerns. This action is based on a determination by the Contracting Officer that it is in the interest of maintaining or mobilizing the Nation's full productive capacity, in the interest of war or national defense programs, or in the interest of assuring that a fair proportion of Government procurement is placed with small business concerns. Bids received from firms which are not small business concerns shall be considered nonresponsive.

(b) A "small business concern" is a concern, including its affiliates, which is independently owned and operated, is not dominant in the field of operation in which it is bidding on Government contracts, and can further qualify under the criteria set forth in regulations of the Small Business Administration (13 CFR 121.3–8).

6. *Notice to Proceed*

(a) After award of contract, the COAR will issue to the Contractor a written notice to proceed. The Contractor shall make no firm commitments to proposed subcontractors or suppliers, and shall make no expenditures, *except at his own risk*, prior to receiving notice to proceed. The Government shall have no liability whatsoever as a result of any such premature actions by the Contractor if no notice to proceed is issued.

(b) If, because of adverse climatological, soil, or vegetative conditions, notice to proceed cannot be issued in a timely manner, the Government reserves the right to delay issuance thereof until it determines that the work can be accomplished with satisfactory results. In no event may the Government so delay for more than 90 days after award of contract. If notice to proceed is not issued prior to the 90th day after award of contract, the contract shall thereafter be considered automatically terminated, with no written notice necessary and without liability to either party.

7. *Prosecution of the Work*

(a) The capacity of the Contractor's plant, method of operations, and the forces employed, shall at all times during the continuance of the contract be subject to the approval of the Contracting Officer, and shall be such as to insure the completion of the work within the specified period of time. To the extent stated in the specifications, the Contracting Officer shall have the right to select the sequence of order in which the individual projects will be completed.

(b) The Contracting Officer shall have the right to require the Contractor to remove from the work any employee found to be incompetent or habitually careless. This right is reserved personally to the Contracting Officer, who will exercise it by issuance of a written communication to the Contractor.

8. *Superintendence by Contractor* – The Contractor shall give his personal superintendence to the work; or have a competent foreman or superintendent, satisfactory to the Contracting Officer, on the work at all times during progress, with authority to act for the Contractor.

9. *Access to the Work and Responsibility for Restoration*

(a) Access to the work shall be provided by the Contractor at his expense. (See Clause 4 of the General Provisions on the reverse side of the covering Standard Form 19.) Prior to the building of any access roads across lands under the jurisdiction of the Bureau of Land Management, the Contractor shall first obtain the approval of the COAR.

ADDITIONAL GENERAL PROVISIONS
(Continued)

30. EQUAL OPPORTUNITY - NON-DISCRIMINATION

Any services provided as a result of this bid invitation are subject to equal opportunity clause as set forth in the attached Form 1140-2.

31. MINIMUM WAGES

The provisions of the Service Contract Act of 1965 as set forth in the attached Form 1510-16 are applicable. See also, Clause 52.

32. DISCOUNTS

Bidders may offer discounts for prompt payment. Such discounts, based upon the gross amount bid, will be considered in evaluating bids for award purposes ONLY when based on 20 or more days. Prompt payment discounts of less than ½ of 1% or for any percentage specifying a period less than 20 days WILL NOT be considered in bid evaluation but will be taken after contract award when properly earned. Computation of discount period will commence on the date of receipt of all required contract payment documents in the paying office.

33. REVISION OF QUANTITY

Due to budgetary and other possible limitations, the Government reserves the right to decrease estimated quantities shown herein up to 15%. The Government also reserves the right to increase such quantities whenever additional work required is contiguous, or of comparable accessibility and conditions, and is acceptable to the contractor. The bidder agrees to perform all additional work at the unit price bid and in accordance with all other terms and conditions. Any revision of quantity does not necessarily guarantee full payment of revised contract amount. Payments will be based on net quantity of work satisfactorily performed, allowed tolerances, if any, considered. Clause 13 is modified accordingly.

34. LOCATION OF WORK - SITE INSPECTION

The services required by this invitation are for the treatment and/or rehabilitation of Government owned lands shown on the bid schedule and on the attached maps. Exterior boundaries of the project site have been adequately flagged, marked, or otherwise defined by the Government. The contractor shall assume responsibility for any other flagging or marking necessary for conduct of the work. Boundaries indicated on project maps are approximately as marked on the ground. Prospective bidders are expected and urged to make an examination of the work sites. It will be the responsibility of each bidder to determine, to his satisfaction, working conditions incident to successful completion of the work.

35. ALTERNATE WORK SITES

Services may also be required on comparable alternate areas specified in writing by the COAR if, for any unforeseen reason, the services, as determined

by the project inspector, cannot be accomplished on the specific areas designated. Should the contractor find the selected alternate work area unacceptable and furnish reasonable proof to that effect, that part of the contract may, at the discretion of the Contracting Officer, be terminated without prejudice or claim against the Government.

36. SEQUENCE OF WORK

The Contracting Officer's authorized representative shall have the right to select the sequence of order in which the individual projects will be completed. In order to obtain the best working arrangements due consideration will be given to the contractor's location, type of equipment, soil conditions and other circumstances involved. Clause 7(a) is modified accordingly.

37. COMMENCEMENT OF WORK - PERFORMANCE TIME ALLOWED

The contractor shall commence work within 5 calendar days after the date of receipt of notice to proceed and in the sequence as directed by the project inspector. All work shall be completed within the performance time allowed unless an extension of time is deemed advisable in the best interests of the Government and is granted in writing by the Contracting Officer. Performance time provisions are also applicable to any work on alternate areas of similar topography, accessibility, and other general characteristics. When revisions in quantity are made, performance time will be revised accordingly and in proportion that the change bears to the initial quantity.

Except as may be otherwise provided, the award of more than one project item or group of projects where identified as sub-items will not serve to increase the maximum stated performance time. In the event of multi-district item award, the performance time specified for each project or group of projects will run concurrently. It shall be clearly understood that the performance time specified for each project may not be added together for the purpose of extending the working time available to any contractor who holds a contract for more than one major bid item.

38. SUBCONTRACTS

The contractor shall not, without written approval of the Contracting Officer, enter into any sub-contract covering any part of the work contemplated by the contract.

39. BOND REQUIREMENTS

Bid and performance bonds as set forth in Clause 4 of these Additional General Provisions are required.

40. PROJECT APPROVAL

Award of contract(s) will be contingent on approval of the project(s) by the Federal Committee on Pest Control.

41. LIQUIDATED DAMAGES

Time is of the utmost importance. If the work is not completed within the total completion time allowed - must be within the 21 day period following receipt of notice to proceed - the contractor shall pay to the Government, as fixed, agreed and liquidated damages, the sums per acre as shown below for each acre NOT satisfactorily sprayed:

Herbicide furnished by the contractor - 50¢ per acre

Herbicide furnished by the Government - $1.00 per acre

42. PERFORMANCE TIME - POSSIBLE WORK HOURS

A possible work hour is defined as any hour during which application of herbicide is possible and authorized by the project inspector.

Compilation of performance time, on each project for which a Notice to Proceed has been issued, will be based on possible work hours. This time will include all time used for mixing and loading of herbicide if done during possible work hours, or any down time which is not caused by weather conditions as determined by the project inspector.

Compilation of possible work hours will be maintained by the Government, however the contractor may designate in writing to the project inspector and furnish a contractor's representative, to compile hours with the Government timekeeper. Non-completion of a project within the period specified on the bid schedule may be cause for default and cancellation of the balance of the contract at no expense to the Government. On any contract exceeding 10,000 acres, the contractor shall, because of uncertain weather conditions and the short time span during which maximum kill can be obtained, perform at no less than 500 acres per possible work hour. Failure to meet or maintain this rate of progress may be determined as cause for default of contract.

43. BASIS FOR AWARD OF CONTRACT

Spraying shall be done during the months of April, May, or June. The exact beginning date, dependent on weather conditions and/or plant development, will be designated by the project inspector.

Because simultaneous spraying may be required, the Government, irrespective of composite bid results, will make separate contract awards for each respective BLM district and, where warranted, separate awards by project within a district, where completion on time might be in jeopardy because of insufficient contractor's equipment. All right is reserved to reject any bid in which it is determined that the bidder's facilities are not adequate to properly perform the services when required.

Bidders are advised that in the event of multiple items award it is likely that simultaneous performance will be required for the various projects. Successful bidder will be required to have sufficient facilities to simultaneously spray any or all projects under contract regardless of base of operations. On multiple awards, the Contracting Officer will assume, unless advised to the contrary in the bidder's proposal, that the bidder has necessary equipment available to adequately perform simultaneously on all projects awarded, in case the several District Managers concerned determine that spraying is necessary on their respective projects at or near the same time.

44. BASIS FOR PAYMENT

Payment, at the contract unit price, will be based on the actual number of horizontal acres (cadastral survey determination) satisfactorily sprayed within the designated boundaries as delineated on the attached project location maps.

45. CONTRACTOR'S PERSONNEL

It is expected that only high calibre, well qualified personnel will be provided to carry out the work contemplated by this bid invitation. Should the Contracting Officer determine that any such personnel is incompetent, lacking in experience, willfully or grossly negligent or otherwise a hindrance toward successful contract completion, the contractor, when so directed by the Contracting Officer, shall replace such personnel within the next 48 hour period.

46. EQUIPMENT BREAKDOWN

In the event of equipment breakdown or the unavailability of key personnel, the contractor, when so directed by the Contracting Officer, must furnish substitute equipment and/or personnel within the next 48 hour period.

47. LANDING FACILITIES - AIRSTRIPS

It will be necessary that the contractor arrange for such landing facilities as may be needed for performance of the contract. The use of any airports or existing permanent or temporary airstrips will be at the risk and discretion of the contractor, and the Government will not be held responsible for any loss, mishap, or accident due to condition of any landing areas used. In some cases, the location of suitable landing areas within the economic reach of the project area will determine the most adaptable aircraft, and bidders are advised to make inspections prior to submission of bid. If airstrips are shown on project location map(s), the Government makes no warranty as to availability or condition. Public highways or improved roads shall not, under any circumstances, be used as take-off or landing facilities for project work.

48. RISK DAMAGES

The contractor shall assume all risks in connection with the performance of the contract; and shall be liable for and save the Government harmless on

account of any damages to persons or property in connection with the prosecution of the work, including the aircraft pilot or other employees of the contractor. The contractor shall assume full and complete responsibility for any claim for injury or damage to crops on adjacent lands due to drift of spray materials.

49. INSURANCE

As there may be agricultural crops located adjacent to the areas of operations the contractor is reminded of his liability responsibilities. In this connection the successful bidder will be required to take out and maintain public liability and property damage insurance covering claims for damages for personal injury, including accidental death, as well as from claims for property damages, which may arise from any or all operations under this contract, whether such operations be by himself or by any subcontractor or by anyone directly or indirectly employed by either of them. Such insurance shall be as follows:

> Public liability insurance in an amount not less than $50,000.00 for injuries, including accidental death, to any one person, and subject to the same limit for each person, in an amount not less than $100,000.00, on account of one accident, and property damage insurance including spray damage, in an amount not less than $50,000.00. The contractor or any subcontractor subletting any of the work to be performed under this contract shall carry during the period of the subcontract contingent (protective) liability insurance in the same amounts as set out above.

A certificate of insurance must be filed with the Contracting Officer prior to or at the time the contract is signed.

50. CANCELLATION OF CONTRACT

Efficient kills of brush or other undesirable vegetation can be obtained only when conditions are ideal. Because these conditions have a narrow tolerance, the Government must necessarily reserve the right to cancel a contract in whole or in part if it should be determined that the work is not practical.

If it is determined that conditions are not suitable for herbicide treatment of a project area, the contractor will be advised in writing immediately upon such determination. Upon receipt of a notice of contract cancellation, in whole or in part, the contractor shall take immediate steps to cancel any related committments he may have made to suppliers or subcontractors. Any claims made against the Government because of contract cancellation under provisions of this paragraph will be negotiated with the Contracting Officer solely on the basis of actual "out-of-pocket" expenses incurred. No claim will be considered for overhead; loss of profit; equipment depreciation or amortization; general administrative or other intangible expense.

51. CONTRACTING OFFICER'S AUTHORIZED REPRESENTATIVE (COAR)

The Contracting Officer's authorized representative will be the District Manager, Bureau of Land Management, at the districts wherein the project work takes place.

The authorized representative of the Contracting Officer may designate an employee under his supervision as project inspector to provide on-site inspection and/or supervision of the work. Such employee will be responsible for giving the contractor any special instructions or guidance necessary to complete the work in an orderly manner.

52. WAGE RATES

In accordance with the Service Contract Act of 1965 (P.L. 89-286), the hourly rates for work on any part of this contract to which the act applies shall not be less than those listed in the attached "Wage Determination" of the Administrator, Wage and Hour and Public Contracts Division, U.S. Department of Labor, establishing the rates applicable to this contract. In the absence of a "Wage Determination" neither the contractor nor any subcontractor shall pay any of his employees performing work under the contract less than the minimum wage specified by law.

53. AMENDMENT TO SERVICE CONTRACT ACT OF 1965, FORM 1510-16

Section (e) is deleted and the following paragraph substituted therefor:

The contractor or subcontractor shall not permit any part of the services called for by this contract to be performed in buildings or surroundings or under working conditions provided by or under the control or supervision of the contractor or subcontractor which are unsanitary or hazardous or dangerous to the health or safety of service employees engaged to furnish these services. Except insofar as a noncompliance can be justified as provided in 29 CFR 1516.1(c), this will require compliance with the applicable standards, specifications, and codes developed and published by the United States Department of Labor or any other agency of the United States and nationally recognized professional organizations including without limitation, the following:

National Bureau of Standards, U. S. Department of Commerce.
Public Health Service, U. S. Department of Health, Education and Welfare.
Bureau of Mines, U. S. Department of Interior.
United States of America Standards Institute (American Standards Association).
National Fire Protection Association.
American Society of Mechanical Engineers.
American Society for Testing and Materials.
American Conference of Governmental Industrial Hygienists.

Information as to the latest standards, specifications and codes applicable to the contract is available at the office of the Director of the Bureau of Labor Standards, U. S. Department of Labor, Railway Labor Building, 400 First Street N. W.,,Washington, D. C. 20212, or at any of the regional offices of the Bureau of Labor Standards as follows:

1. North Atlantic Region, 341 Ninth Avenue, Room 920, New York, N. Y. 10001 (Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, Vermont, New Jersey, and Puerto Rico).

2. Middle Atlantic Region, 1110-B Federal Building, Charles Center, 31 Hopkins Plaza,Baltimore, Md. 21201, Baltimore, Md. 21202 (Delaware, District of Columbia, Maryland, North Carolina, Pennsylvania, Virginia, and West Virginia).

3. South Atlantic Region, 1371 Peachtree Street N. E., Suite 723, Atlanta, Ga. 30309 (Alabama, Florida, Georgia, Mississippi, South Carolina, and Tennessee).

4. Great Lake Region, 848 Federal Office Building, 219 South Dearborn St. Chicago, Ill. 60604 (Illinois, Indiana, Kentucky, Michigan, Minnesota, Ohio, and Wisconsin).

5. Mid-Western Region, 2100 Federal Office Building, 911 Walnut Street, Kansas City, Mo. 64106 (Colorado, Idaho, Iowa, Kansas, Missouri, Montana, Nebraska, North Dakota, South Dakota, Utah, and Wyoming).

6. Western Gulf Region, 411 N. Akard Street, Room 601, Dallas, Tex. 75201 (Arkansas, Louisiana, New Mexico, Oklahoma, and Texas).

7. Pacific Region, 10353 Federal Building, 450 Golden Gate Avenue, Bcx 36017, San Francisco, Calif. 94102 (Alaska, Arizona, California, Hawaii, Nevada, Oregon, Washington, and Guam).

VARIABLE SUPPLY RESPONSIBILITIES

STATE AND BLM DISTRICT	APPROX ACREAGE	HERBICIDE		WATER		DIESEL Oil	
		CONTRACTOR	BLM	CONTRACTOR	BLM	CONTRACTOR	BLM
CALIF.							
Folsom	1,200		X	X		X	
Redding	585		X	X			X
Susanville	6,316		X				
Ukiah	2,315		X	X		X	
IDAHO							
Coeur d'Alene	110	X		X			
Idaho Falls	1,730		X	X			
Salmon	2,000		X	X			
Shoshone	6,500		X	X			
NEVADA							
attle Mtn.	6,872	X				X	
Carson City	3,860	X				X	
Elko	8,000	X				X	
Elko*	1,500		X			X	
Las Vegas	2,500	X				X	
Winnemucca*	12,600		X			X	
OREGON							
Baker	3,600	X			X		
Burns	10,050	X		X			
Prineville	5,030	X		X			
Vale	44,595		X	X			

* Invert Emulsion Projects - Helicopter Only

In addition to above, the BLM will furnish any needed wetting agent, flagmen and their associated equipment. Except as noted the contractor shall furnish all necessary air and ground equipment, pilots, mechanics, laborers, herbicide, diesel oil, water, transportation and subsistence for his crews and any other supply necessary for efficient and timely contract completion.

SPECIFICATIONS FOR THE AERIAL APPLICATION OF HERBICIDE

1. GENERAL REQUIREMENTS

It is required that the areas designated on attached work location map(s) and as identified on the bid schedule be aerially sprayed with 2,4-D herbicide (and/or 2,4, 5-T) solution to control sagebrush, rabbit brush, weeds and other undesirable vegetation. All work shall be performed in the best approved commercial practices by competent pilots and ground crews experienced in this type of service, and in accordance with these specifications, the General Provisions, additional General Provisions and such other terms and conditions as are included in the bid package.

All aircraft used by the contractor shall be operated in accordance with requirements and regulations of the Federal Aviation Agency. Sufficient aircraft shall be furnished so as to complete each respective project within the time specified regardless of the distance of hauling.

2. CONTRACTOR'S SUPPLY RESPONSIBILITIES

The contractor shall furnish:

a. Adequate and sufficient aircraft with pilots experienced in applying herbicides in rough, mountainous terrain. Designated or acceptable type of aircraft - see bid schedule - shall be equipped with a leak-proof spray distribution system of either cylindrical jet producing nozzles, diaphragm type nozzles or other suitable type nozzles that has been proven or demonstrated to disperse herbicide solution in the manner and with the coverage expected. The spray system, regardless of type, shall have a positive anti-suck back, liquid shut-off device. Nozzles shall be not less than 1/8" diameter with simple orifice and no mechanism which could cause a sheet, cone, fan or other undesirable dispersion of discharged spray solution. Nozzles shall be equally and properly spaced so as to minimize propellor wash of spray solution during flight. Nozzles shall be directed with the slipstream and should not exceed 10 degrees downward angle. The boom span should approximate 2/3 of the wing span of the aircraft. So as to reduce amount of spray drawn into wing tip vortices, no operable nozzles shall be placed within 3 feet of each wing tip on fixed-wing aircraft. Any field adjustments deemed necessary for more adequate dispersal of spray solution shall be made only under direction of the project inspector. Aircraft chemical tanks to be equipped with visual sight gauge with first 50 gallons calibrated in 10 gal. increments.

b. Adequate and dependable mixing equipment consisting of a tank of suitable capacity equipped with power agitator for thorough mixing of spray materials. Also a high capacity, quick loading pump (min. 200 gpm) with accurate mechanical metering device for transferring solution from mixing tank to aircraft shall be provided. Sufficient personnel (no less than 2 persons) to load, mix and transfer solution from tank to aircraft shall be furnished during spray operations.

c. Adequate and sufficient vehicles with operators to transport herbicide, mixing or other equipment and supplies including water and/or diesel

oil carrier when specifically required elsewhere (bid schedule and/or location maps) in the bid invitation. Herbicide and/or other materials specified for supply by the Government shall be picked up by the contractor from the appropriate BLM district warehouse and transported at his expense to the mixing site. Such materials will be available for pickup during regular hours of work only. Unused Government furnished materials shall be returned to the point of issue by the contractor at his expense.

d. Subsistence, shelter, sleeping accommodations and transportation for contractor's crew except where special arrangements may be consummated with the Government for supply of any part or all of these personal needs.

e. Water and/or diesel oil carrier f.o.b. the project mixing site except as may be specifically designated for supply by the Government on the bid schedule.

d. Herbicide - Unless the Government specifically elects elsewhere in the bid invitation (Bid Schedule A only) to furnish the herbicide, the contractor shall furnish only a low volatile herbicide(s) which must be in sealed containers provided by the manufacturer or in a sealed tanker with a certificate from the manufacturer that the tanker was in fact loaded and sealed by such manufacturer at his plant. Sealed containers shall bear labels showing type of herbicide, formulation, date of manufacture, lot number and a certificate that 2, 4-D contents meet Federal Specification O-H-200a, Type III, Class 2. Any 2, 4, 5-T herbicide required shall meet Federal Specifications O-H-210a, Type II, Class 2. All herbicides furnished must be of recent manufacture and properly stored to prevent distressing. Following are several of the low volatile ester herbicides which will meet aforementioned requirements:

Iso-Octyl Ester	Butoxyethanol Ester
Propylene Glycol Butyl Ether Ester	Butoxyethroxpropyl Ester
Butoxyethroxypropanol Ester	Tetrahydrolfurfuryl Ester

For testing purposes, the contractor shall cooperate with the project inspector in taking of random samples of herbicide whenever required by the Government. Test expenses will be the responsibility of the Government.

3. THE GOVERNMENT'S SUPPLY RESPONSIBILITY

The Bureau of Land Management will supply, f.o.b. its applicable district office warehouse, the herbicide required for Schedule A projects. The Bureau of Land Management will also furnish f.o.b. project site (1) flagmen and their associated equipment and (2) any wetting agent considered necessary which shall be added to spray solution by the contractor at the rate of ½ pint per 100 gallons. Spray materials specifically designated for project delivery by BLM will be to a mixing site mutually agreeable to both parties.

4. TIME PERIOD FOR SPRAYING

The period during which herbicide can be effectively applied is extremely limited usually of about 3 weeks maximum duration. This period of time is geared to soil moisture content and soil and air temperatures causing a relatively rapid growth of vegetation to be killed. Accordingly it is expected that lower elevation projects will be ready for treatment be-

fore those of higher elevations. It is extremely important that spray operations be started and completed within this relatively short period of plant growth. The contractor must therefore be prepared to perform on short notice and thereafter perform continuously, weather permitting, until completion of each project for which he has received a notice to proceed.

5. SPRAY SOLUTION

The spray formulation shall consist of the quantity (pounds) of herbicide acid equivalent and water (and/or diesel oil if specified elsewhere) for a uniform application rate per acre as shown on either the bid schedule, project location map(s) or elsewhere in the bid package. Any wetting agents which may be provided by the Government shall be included in the spray solution (probably ½ pint per 100 gals.) as directed by the project inspector.

Bidders are cautioned that other than level project areas will require additional herbicide and other ingredients for total project completion.

6. APPLICATION OF SPRAY

The spray solution shall be discharged throughout the boom span by means of a high pressure pump under control of a pilot having no less than 25 spray application hours experience for the type of spray aircraft used on the project(s). Spray shall be uniformly discharged at the rate designated per acre with a mass medium diameter droplet size ranging from 200 to 300 microns. The uniformity of spray pattern shall not vary more than 10% from that established as acceptable by the project inspector. No adjustment in operating pressure after initial calibration shall be made by the contractor, either in flight or on the ground, without prior approval of the COAR.

Any areas missed by the contractor or sprayed to less than the concentration specified shall be reflown and brought up to standard, compensated by spraying additional acreage, or compensated by suitable contract adjustment, at the option of the Government, and at no additional cost to the Government.

Consistent with established safety practices, spray application flights must be low enough for proper distribution and coverage with the herbicide. Aircraft will not be allowed to spray or turn within one mile of agricultural crops or residences with plants susceptible to damage from the herbicide when using fixed-wing aircraft capable of applying spray at speeds of 100 MPH or less, or helicopters; and three miles when using larger fixed-wing aircraft, without specific authorization from the Contracting Officer. Flying shall be done during the cool period of the morning only when agricultural or other privately owned susceptible plants are within three miles of the spray area, unless otherwise specifically authorized by the project inspector. Otherwise, spray may be applied in the cool period of the morning and evening when the air is dense and still. Spray shall not be applied when wind velocities exceed 6 to 8 mph without permission from the project inspector. Spraying shall not be done after a rainstorm while vegetation is in drip stage.

Tests for uniformity and rate of application. - - The project inspector will make strip tests as operations progress to determine uniformity of application.

The density, uniformity and size of droplets of the spray pattern will be determined by the use of white cardboard or sheets of paper. The sheets will show the spray pattern.

The rate of application will be measured by first computing the area in acres sprayed per aircraft load, then dividing the number of gallons of chemical applied per aircraft load by the number of acres sprayed per load. Trial runs will be made to establish the rate of application and spray pattern. By use of the sheets of paper throughout the operation, uniformity of spray pattern will be maintained by comparing them with the pattern established as acceptable in the trial runs. Rates of application will be held constant by use of the formula: rate equals gallons applied divided by the number of acres sprayed.

Other operational tests such as swath width and adequacy of mixing equipment may be conducted by the Government to assure that minimum needs are met.

7. CONSIDERATION OF WILDLIFE HABITAT

Where considerations for the protection of wildlife habitat are required care will be taken to avoid drifting spray beyond such habitat boundaries. Where habitat areas such as rims, canyons, creek bottoms, and similar topography designated as valuable game habitat by the District Managers are concerned, within reasonable limits flight lines will be parallel to the areas for a sufficient distance to protect them from drifting spray, and no spray will be applied within a reasonable distance of such habitat as determined by the project inspector.

8. SPECIAL PRECAUTIONS

The contractor(s) will be required to leave a buffer strip of one swath width on each side of waterways and also take special precautions to avoid washing out any spray tanks in or near any of the streams.

SUPPLEMENTAL SPECIFICATIONS FOR
AERIAL APPLICATION OF HERBICIDE
(INVERT EMULSION)

1. AERIAL APPLICATION OF HERBICIDE (INVERT EMULSION)

a. General. The contractor shall furnish all necessary supervision, labor, equipment, transportation, and materials to complete the work in accordance with these specifications and the requirements set forth in this Invitation for Bids. The contractor shall furnish suitable mixing tanks for thoroughly mixing either or both of the oil and water phases of the spray material as needed. The contractor shall furnish properly equipped aircraft for bifluid application, with pilots(s) experienced in applying herbicides in rough terrain at high elevations. Air craft shall be equipped with a bifluid system adapted for the application of thickened, flash "invert" emulsion sprays as manufactured by the Stull Chemical Company, 3400 Nacogdoches Road, San Antonio, Texas, or equal. The "invert" emulsion is discharged from appropriate spray tips which will produce a spray droplet size of from 100 to 300 microns. Spray will not be closer than three (3) feet from wing tips on fixed wing planes to reduce the amount of spray drawn into wing tip verticos. The system must have positive shut-off for both liquid phases. The aircraft used by the contractor shall be operated in conformity with the requirements of the Federal Aviation Agency. The Government will flag or otherwise define the exterior boundaries of the area(s) to be sprayed. The contractor shall be in readiness to do this work promptly on or about the time set in the Bid Schedule, upon notification by the Contracting Officer. All provisions pertinent to the standard methods and conditions of aerial application of herbicide shall apply except as may be in conflict with these "invert emulsion" specifications.

b. Application of Spray. The contractor shall furnish the mixing equipment, a suitable ground crew, and perform the necessary mixing operations. The spray phases shall be properly mixed and the resulting spray distributed over the entire area at the rate specified in the Specification Sec. 3a. The uniformity of the spray pattern shall not vary more than ten (10) percent from that established as acceptable by the Contracting Officer under subparagraph (c) hereof. Any areas missed by the contractor or sprayed to less than the concentration specified shall be reflown and brought up to standard, compensated by spraying additional acreage, or compensated by suitable contract adjustment, at the option of the Government, and at no additional cost to the Government.

Flights must be low enough for proper distribution and coverage with the herbicide. Aircraft will not be allowed to spray or turn within 1/2 mile of agricultural crops or residences with plants susceptible to damage from the herbicide when using fixed-wing aircraft capable of applying spray at speeds of 100 MPH or less, or helicopters; and one mile when using larger fixed-wing aircraft, without specific authorization from the Contracting Officer. Flying shall be done during the cooler period of the morning only when agricultural or other privately owned susceptible plants are within one mile of the spray area, unless otherwise specifically authorized by

the Contracting Officer. Otherwise, spray may be applied in the cool period of the morning and evening when the air is relatively dense and still. Spray shall not be applied when wind velocities exceed the rate of eight (8) to twelve (12) miles per hour without permission from the Contracting Officer. Spraying shall not be done after a rainstorm until vegetation has had sufficient time to dry.

c. Tests for Uniformity and Rate of Application. The Contracting Officer will make strip tests as operations progress to determine uniformity of application.

The density, uniformity and size of droplets of the spray pattern will be determined by the use of white cardboard or sheets of paper. One or more sheets will be placed in line of flight for each time the area is traversed in the application of the chemical spray. The sheets will show the spray pattern.

The rate of application will be measured by first computing the area in acres sprayed per aircraft load, then dividing the number of gallons of chemical applied per aircraft load by the number of acres sprayed per load.

Trial runs will be made to establish the rate of application and spray pattern. By use of the sheets of paper throughout the operation, uniformity of spray pattern will be maintained by comparing them with the pattern established as acceptable in the trial runs. Rates of application will be held constant by use of the formula: rate equals gallons applied divided by the number of acres sprayed.

2. REFERENCED SPECIFICATIONS. Copies of the referenced specifications, standards, and codes referred to herein may be procured by the contractor, at his expense, from the following:

ASTM Specifications: American Society for Testing Materials
1916 Race Street
Philadelphia, Pennsylvania 19103

Federal Specifications: Superintendent of Documents
Government Printing Office
Washington, D. C. 20402

Single copies of Federal Specifications required for bidding purposes may also be secured without charge at Business Service Centers of Regional Offices of the General Services Administration.

3. SPRAY FORMULATION AND RATE OF APPLICATION (INVERT EMULSION)

a. Oil Phase Mixture - 1/8 gallon INSTEMUL DA 120, or equal, plus 3/8 gallon No. 2 diesel fuel to make ½ gallon of diesel diluted herbicide containing 3/8 lb. acid equivalent of 2, 4-D oil soluble amine.

b. Water Phase Mixture

1. Winnemucca District - An emulsiable concentrate of 2, 4-D Butyl Ester plus water in amounts sufficient to produce 3½ gallons of conventional (2, 4-D-in-water) emulsion containing a total of 1½ lb. acid equivalent of 2, 4-D in the 3½ gallons of conventional mixture.

2. Elko District - An emulsiable concentrate of 2, 4-D Butyl Ester plus water in amounts sufficient to produce 3½ gallons of conventional (2, 4-D-in-water) emulsion containing a total of 2¼ lb. acid equivalent of 2, 4-D in the 3½ gallons of conventional mixture.

c. Rate and Method of Application - Each one half (½) gallon of diesel diluted herbicide (oil phase mixture) shall be mixed in mixing chambers on the aircraft during spraying operations with each 3½ gallons of conventional emulsion (water phase mixture) so as to produce an invert (water-in-oil) emulsion, and this invert emulsion applied at the rate of four (4) gallons per acre.

P-1510-2-11
August 1965
Formerly A1-92

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Susanville
California

Inv. No. 2300
Bid Item No. A.9.
Proj. No. _____

Type of Project Brush Spray

Average Elevation 5700

Section	Twp.	Range
	44 N	21 E
	43 N	21 E
	42 N	20 E
	42 N	21 E

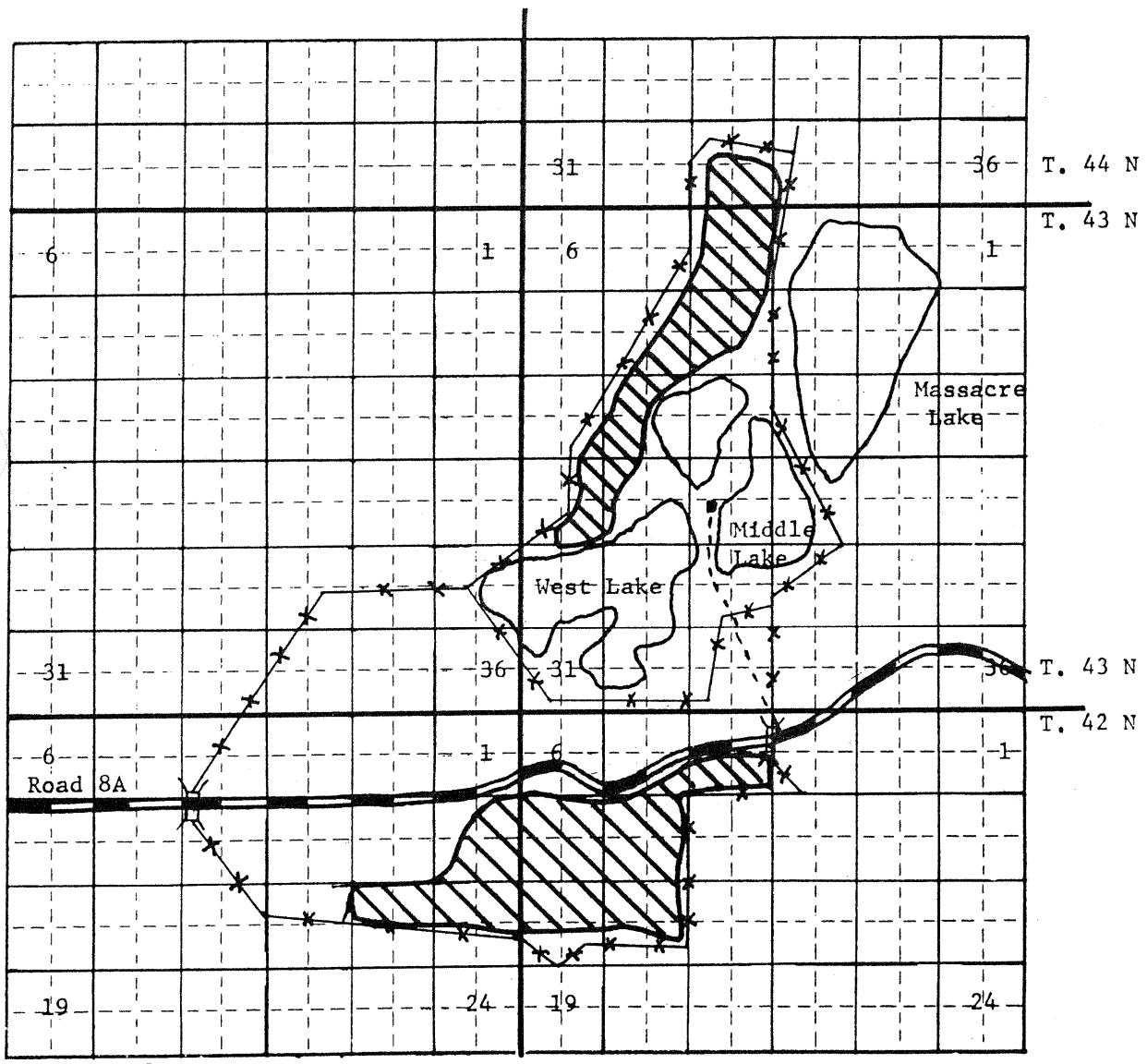
PROJECT MAP - TWO OR MORE TOWNSHIPS
For Use With
Invitation For Bid

Approx. Acreage 6316

M.D. Mer. Washoe County, Nevada

Project Layout by Ferdinand on 11/28/67

Project Officer-in-charge if other than the District Manager Howard Gebel



LEGEND

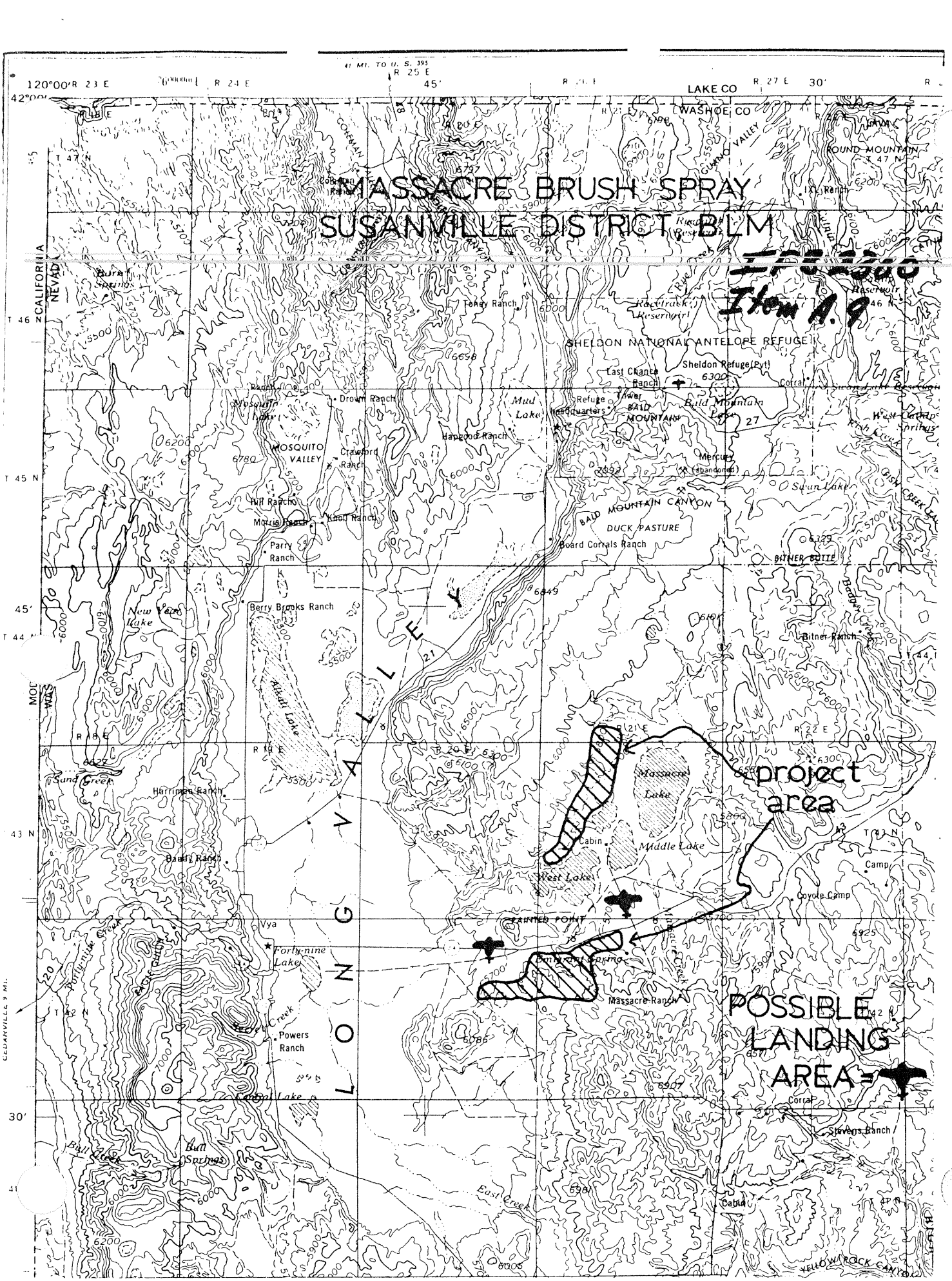
Project Area

Project Area

Improved Road
Unimproved Rd.
Spur Road
Corner Found

ESTIMATED UNITS OF WORK OTHER THAN ACRES

Plant seedlings: _____M DF; _____M PP; _____M
Hand Scalping _____%; Spacing _____
Snags: Fall _____ea. over _____'H aver. _____"DBH
Fencing: _____Mi. Tractor Work: _____Yds. _____Hrs.


MASSACRE BRUSH SPRAY
SUSANVILLE DISTRICT, BLM
IFS 2300
Item A.9
project area
POSSIBLE LANDING AREA
LAKE CO
WASHOE CO
CALIFORNIA
NEVADA
SHELDON NATIONAL ANTELOPE REFUGE
Sheldon Refuge (Pvt)
Last Chance Ranch
Refuge headquarters
BALD MOUNTAIN
Bald Mountain Lake
Mud Lake
Hapgood Ranch
Drown Ranch
MOSQUITO VALLEY
Crawford Ranch
Hill Ranch
Morris Ranch
Knoll Ranch
Parry Ranch
Berry Brooks Ranch
New Year Lake
Alkali Lake
Harriman Ranch
Sand Creek
Bandy Ranch
Vya
Forty-nine Lake
Powers Ranch
Central Lake
Bull Springs
Bull Creek
East Creek
Mercury (abandoned)
BALD MOUNTAIN CANYON
DUCK PASTURE
Board Corrals Ranch
BITNER BUTTE
Bitner Ranch
Swan Lake
Massacre Lake
Middle Lake
West Lake
Cabin
PAINTED POINT
Emigrant Spring
Massacre Ranch
Coyote Camp
Camp
Corral
Stevens Ranch
Cabin
YELLOW ROCK CANYON
LONG VALLEY
ROUND MOUNTAIN
Racetrack Reservoir
Toney Ranch
Bure Springs
Coleman Ranch
GUANO VALLEY
Fish Creek
Badger Creek
Massacre Creek
Portlynine Creek
EAGLE GULLY
Secret Creek
CEDARVILLE 9 MI.
120°00'
42°00'
45'
30'
R 23 E
R 24 E
R 25 E
R 27 E
R 18 E
R 19 E
R 20 E
R 21 E
R 22 E
T 47 N
T 46 N
T 45 N
T 44 N
T 43 N
T 42 N
41 MI. TO U. S. 395

10

Attachment

Form 7310–4
(April 1966)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SPECIFICATION DETAILS

Name of Project

Massacre Brush Spray

1. *General*––The following specification details are in addition to and/or modify the "Specification for Aerial Application of Herbicide" made a part of this invitation for bids and any contract resulting therefrom.

2. *Location of the Work*––The work is located in **Washoe County, Nevada approximately 25 miles east of Cedarville, California**

at the site(s) shown on the attached *Work Location Map* which is made a part hereof.

3. Approximate acreage **6,316**

4. Approximate starting date **May 20, 1968**

5. *Spray formula*––The herbicide shall be

2,4-D Ester Low volatile. Acid equivalent 4 pounds per gallon. The oil carrier should be light enough to be misciable with the herbicide. Number 2 diesel oil mee this requirement.

Rate of application: 1/2 gallon of 2,4-D (2 lbs) and 2½ gallons of oil, for a tota of 3 gallons per acre.

6. *Rate of application*––The spray formula shall be applied at the rate of **2** pounds acid equivalent herbicide per acre.

7. *Minimum aircraft requirements*––Aircraft of the type specified below shall be furnished for this project. Bidders offering aircraft other than that specified herein will be considered nonresponsive.

- ☐ Unrestricted
- ☒ Fixed-wing or helicopter; aircraft capable of applying spray at speeds of 100 MPH or less
- ☐ Helicopter only
- ☐ Other *(specify)* _____

8. *Flights paths to be flagged by* ☐ The Contractor ☒ The Government

9. *Materials*––

a. Materials to be furnished by Government––

- ☒ Herbicide and carrier, including wetting agent where required
- ☐ Carrier only, including wetting agent where required
- ☒ Herbicide only
- ☒ Materials will be available at the Government's warehouse at Cedarville, Calif. (Herbicide c

The Contractor shall load and transport such materials to the site(s) from which operations will be conducted. The cost of loading and transporting materials and of returning unused materials to the warehouse shall be included in the unit price bid in the Schedule for "Aerial application of herbicide."

☒ The Government will deliver the materials to the airstrip(s) from which the Contractor proposes to conduct the spraying operations. (Fuel and oil only)

Form 7310–3
(April 1966)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SPECIFICATIONS FOR AERIAL APPLICATION OF HERBICIDE

1. THE REQUIREMENT––It is required that the areas designated on the attached *Work Location Map* be aerially sprayed with herbicide solution in accordance with the contract, including the General Provisions, the Additional General Provisions, these specifications, and such other terms and conditions as are made a part hereof.

2. THE AERIAL APPLICATION OF HERBICIDE

A. *General*––The Contractor shall furnish the materials, equipment, and labor necessary to complete the work in accordance with these specifications and the requirements set forth in the "Specification Details." The Contractor shall furnish a suitable agitator and mixing tank for thoroughly mixing the spray material. The Contractor shall furnish properly equipped aircraft, with pilot(s) experienced in applying herbicides in rough terrain at high elevations. Aircraft shall be equipped with cylindrical jet producing nozzles, not less than 1/8–inch diameter, simple orifice with no mechanism which would cause a sheet, cone, fan or other dispersion of the discharged material. Nozzles will be directed with the slipstream or a maximum of 10 degrees downward. No nozzles to be placed within three feet of each wing tip on fixed wing planes, to reduce the amount of spray drawn into wing tip vortices. System must have positive liquid shut-off using one of the following: (a) individual nozzle check valves plus suck-back device; (b) individual nozzle check valves plus boom pressure release device; or (c) individual nozzle positive action valves. The aircraft used by the Contractor shall be operated in conformity with the requirements of the Federal Aviation Agency. The Government will flag or otherwise define the exterior boundaries of the area(s) to be sprayed. The Contractor shall be ready to do this work promptly upon notification by the Contracting Officer.

Time is of the essence. Failure to commence actual spraying operations within five (5) calendar days from the date of receipt of notice to proceed, weather permitting as determined by the Contracting Officer, will be considered cause for termination of the Contractor's right to proceed under the provisions of Clause 2 of the General Provisions of this contract.

B. *Airstrips*––It will be the responsibility of each bidder to determine the location of airstrips from which operations will be conducted. If airstrips are shown on the *Work Location Map*, the Government makes no warranty as to their availability or condition. The use of such facilities shall be arranged by and at the risk of the Contractor.

C. *Application of spray*––The Contractor shall furnish the mixing equipment, a suitable ground crew, and perform the mixing operation. The spray formulation shall be thoroughly mixed and distributed over the entire area at the rate specified in the "Specification Details." The uniformity of the spray pattern shall not vary more than ten (10) percent from that established as acceptable by the Contracting Officer under subparagraph "D" hereof. Any areas missed by the Contractor or sprayed to less than the concentration specified shall be reflown and brought up to standard, compensated by spraying additional acreage, or compensated by suitable contract adjustment, at the option of and at no additional cost to the Government.

Flights must be low enough for proper distribution and coverage with the herbicide. Aircraft will not be allowed to spray or turn within one mile of agricultural crops or residences with plants susceptible to damage from the herbicide when using fixed-wing aircraft or helicopters; capable of applying spray at speeds of 100 MPH or less, and three miles when using larger fixed-wing aircraft, without specific authorization from the Contracting Officer. Flying shall be done during the cool period of the morning and evening when the air is dense and still, as directed by the Contracting Officer. Spray shall not be applied when wind velocity exceed the rate set forth in the "Specification Details" without permission from the Contracting Officer. Spraying shall not be done while vegetation is in the "drip" stage during or after a rain storm.

D. *Test for uniformity and rate of application*––The Contracting Officer will make strip tests as operations progress to determine uniformity of application.

The density, uniformity, and size of droplets spray pattern will be determined by the use of white cardboard or paper. The sheets will show the spray pattern.

The rate of application will be measured by: (1) computing the area in acres sprayed per aircraft load; and (2) then dividing the number of gallons of chemical applied, per aircraft load, by the number of acres sprayed per load.

Trial runs will be made to establish the rate of application and spray pattern. By use of the sheets of paper throughout the operation, uniformity of spray pattern will be maintained by comparing them with the pattern established as acceptable in the trial runs. Rates of application will be held constant by use of the formula: rate equals gallons applied divided by the number of acres sprayed.

E. *Payment*––Measurement for payment for aerial spraying will be the actual area, in acres, within the designated boundaries sprayed in conformance with these specifications. Payment will be made at the unit price per acre bid in the Schedule for "Aerial application of herbicide."

F. *Risk damages*––The Contractor shall assume all risk in connection with the performance of the contract; and shall be liable for and save the Government harmless on account of any damages to persons or property in connection with the prosecution of the work, including the aircraft pilot or other employees of the Contractor. The Contractor shall assume full and complete responsibility for any claim for injury or damage to crops on adjacent lands due to drift of spray materials.

GPO 857-03

Form 7310–3
(April 1966)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SPECIFICATIONS FOR AERIAL APPLICATION OF HERBICIDE

1. THE REQUIREMENT––It is required that the areas designated on the attached *Work Location Map* be aerially sprayed with herbicide solution in accordance with the contract, including the General Provisions, the Additional General Provisions, these specifications, and such other terms and conditions as are made a part hereof.

2. THE AERIAL APPLICATION OF HERBICIDE

A. *General*––The Contractor shall furnish the materials, equipment, and labor necessary to complete the work in accordance with these specifications and the requirements set forth in the "Specification Details." The Contractor shall furnish a suitable agitator and mixing tank for thoroughly mixing the spray material. The Contractor shall furnish properly equipped aircraft, with pilot(s) experienced in applying herbicides in rough terrain at high elevations. Aircraft shall be equipped with cylindrical jet producing nozzles, not less than 1/8–inch diameter, simple orifice with no mechanism which would cause a sheet, cone, fan or other dispersion of the discharged material. Nozzles will be directed with the slipstream or a maximum of 10 degrees downward. No nozzles to be placed within three feet of each wing tip on fixed wing planes, to reduce the amount of spray drawn into wing tip vortices. System must have positive liquid shut-off using one of the following: (a) individual nozzle check valves plus suckback device; (b) individual nozzle check valves plus boom pressure release device; or (c) individual nozzle positive action valves. The aircraft used by the Contractor shall be operated in conformity with the requirements of the Federal Aviation Agency. The Government will flag or otherwise define the exterior boundaries of the area(s) to be sprayed. The Contractor shall be ready to do this work promptly upon notification by the Contracting Officer.

Time is of the essence. Failure to commence actual spraying operations within five (5) calendar days from the date of receipt of notice to proceed, weather permitting as determined by the Contracting Officer, will be considered cause for termination of the Contractor's right to proceed under the provisions of Clause 2 of the General Provisions of this contract.

B. *Airstrips*––It will be the responsibility of each bidder to determine the location of airstrips from which operations will be conducted. If airstrips are shown on the *Work Location Map*, the Government makes no warranty as to their availability or condition. The use of such facilities shall be arranged by and at the risk of the Contractor.

C. *Application of spray*––The Contractor shall furnish the mixing equipment, a suitable ground crew, and perform the mixing operation. The spray formulation shall be thoroughly mixed and distributed over the entire area at the rate specified in the "Specification Details." The uniformity of the spray pattern shall not vary more than ten (10) percent from that established as acceptable by the Contracting Officer under subparagraph "D" hereof. Any areas missed by the Contractor or sprayed to less than the concentration specified shall be reflown and brought up to standard, compensated by spraying additional acreage, or compensated by suitable contract adjustment, at the option of and at no additional cost to the Government.

Flights must be low enough for proper distribution and coverage with the herbicide. Aircraft will not be allowed to spray or turn within one mile of agricultural crops or residences with plants susceptible to damage from the herbicide when using fixed-wing aircraft or helicopters, capable of applying spray at speeds of 100 MPH or less, and three miles when using larger fixed-wing aircraft, without specific authorization from the Contracting Officer. Flying shall be done during the cool period of the morning and evening when the air is dense and still, as directed by the Contracting Officer. Spray shall not be applied when wind velocity exceed the rate set forth in the "Specification Details" without permission from the Contracting Officer. Spraying shall not be done while vegetation is in the "drip" stage during or after a rain storm.

D. *Test for uniformity and rate of application*––The Contracting Officer will make strip tests as operations progress to determine uniformity of application.

The density, uniformity, and size of droplets of the spray pattern will be determined by the use of white cardboard or paper. The sheets will show the spray pattern.

The rate of application will be measured by: (1) computing the area in acres sprayed per aircraft load; and (2) then dividing the number of gallons of chemical applied, per aircraft load, by the number of acres sprayed per load.

Trial runs will be made to establish the rate of application and spray pattern. By use of the sheets of paper throughout the operation, uniformity of spray pattern will be maintained by comparing them with the pattern established as acceptable in the trial runs. Rates of application will be held constant by use of the formula: rate equals gallons applied divided by the number of acres sprayed.

E. *Payment*––Measurement for payment for aerial spraying will be the actual area, in acres, within the designated boundaries sprayed in conformance with these specifications. Payment will be made at the unit price per acre bid in the Schedule for "Aerial application of herbicide."

F. *Risk damages*––The Contractor shall assume all risk in connection with the performance of the contract; and shall be liable for and save the Government harmless on account of any damages to persons or property in connection with the prosecution of the work, including the aircraft pilot or other employees of the Contractor. The Contractor shall assume full and complete responsibility for any claim for injury or damage to crops on adjacent lands due to drift of spray materials.

GPO 857-03

11

Form 7220-5
(Feburary 1967)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Attachment #0

PROJECT COMPLETION REPORT

CODE	NAME	CODE	NAME
1-2	State	7-9	County
04	California	903	Washoe County, Nevada
3-4	District	10-11	Sub-basin
02	Susanville	52	Northwest Great Basin
5-6	Fiscal Year	12-13	RESERVED FOR FUTURE USE
68	1968		
		14-17	Planning Unit
		0206	Massacre

18 Project No.	22 CTI RM	23 Program	25 Practice	29 Units	PROJECT EXPENDITURES: 35 Soil & Watershed	42 Range Improvement	47 Other BLM
334	2	11	301	0 6380	1 7081		

PROJECT EXPENDITURES: 52 Watershed Protection	57 Contribution	SEEDING: 62 Plant Contl	63 Appn.	64 Spp.	65 Gully Contl	Water Development: 67 Stockwater Reservoir	69 New Water	Flood Control Dam: 71 Permanent Storage	74 Sediment Storage	77 Flood Storage

Project Name: Massacre Brush Spray

Permittee Name: N/A

Program: Soil & watershed

Plant Control Method: Chemical

SEEDING — APPLICATION: N/A; SPECIES: N/A

Unit of Measurement: Acres

DATE			
PERMIT ISSUED	STARTED	COMPLETED	OF EASEMENT
	5-27-68	5-31-68	

Name of Owner: N/A

Land Status: [x] BLM [ ] Other Federal [ ] State [ ] County [ ] Private

Cooperative Agreement: [ ] Yes [x] No

Date:

Maintenance Responsibility of: Bureau of Land Management

Date sent to W.O. for recording:

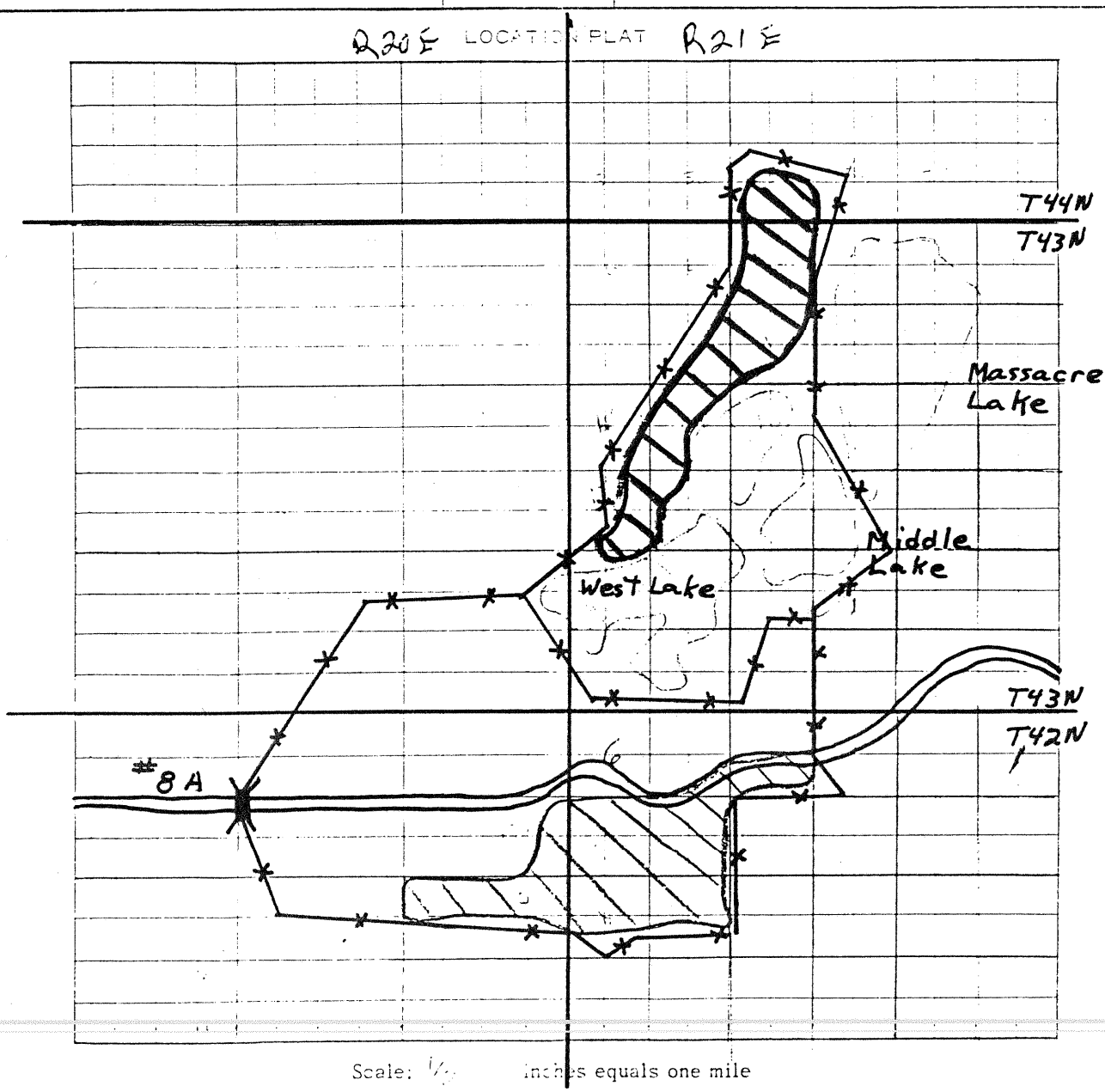
State Water Certificate No.	DATE			
	RECORDED	PROJECT MARKER PLACED	ABANDONED	ABANDONMENT REPORTED TO W.O.
N/A				

Completed Project Description

See attached

See Plat

LOCATION PLAT



Scale: ½ inches equals one mile

Prepared by	Title	Date
Duane Ferdinand	Range Conservationist	7-10-68
Approved by: Rex J. Morgan		Date 7/15/68

GPO 833-491

The Massacre Brush Spray consisted of the aerial application of 2-4-D herbicide on 6380 acres of predominately Sagebrush land. The chemical, Propylene Glycol Butyl Ether Ester - a low volatile ester herbicide, was applied at the rate of 2 pounds (½ gallon) per acre mixed with 2½ gallons of #2 diesel oil for a total solution of 3 gallons per acre. Two Stearman fixed wing aircraft were used to apply the chemical. Total performance time was 21 hours.

The contractor was Glenn Plato representing Aero Range Service of Lakeview, Oregon. The contract price for application was $0.44 per acre. Diesel fuel was supplied by Union Ice and Fuel of Susanville, California, and Standard Oil Company. Chemical supplied by Dow Chemical Company at $3.09/ gallon.

Cost Breakdown:

Chemical	3190 gallon @ $3.09	= $	9,857.10
	90 gallon	=	270.00
Diesel Carrier			
Union Ice & Fuel	11,950 gallon @ 0.124	=	1,481.80
Standard Oil	4,723 gallon @ 0.203	=	958.76
Contract	6380 acres @ $0.44	=	2,807.20
Vehicle		=	267.93
Salary		=	810.79
Per diem		=	483.00
Transport Diesel	11,950 gallon @ $.01	=	119.50
Other cost			25.05
	Total		$ 17,081.13

Cost per acre = $2.68

Five men were used to flag the flight lines. In addition, one man was constantly at the mixing site and one man was supervising the operation. The contractor furnished two men for the mixing operation.

Part of the area sprayed will be seeded next fall to crested wheatgrass.

12

INSPECTOR'S LOG

District Office
Susanville

Contract Number
14-11-0001-4112

Contract Name
Massacre Brush Spray

Date of Contract
April 8, 1968

Contractor
Aero Range Service
713 South "F" Street
Lakeview, Oregon 97630

Date Work Started
May 27, 1968, 19

Date Work Completed
May 31, 1968

Inspector HOWARD S. GEBEL JR

Report Number 1 | Date May 14, 1968

Weather Winds 15-20 M.P.H. | Min. Temp. | Max. Temp.

Precip. in. | Storm Period m. to m.

Soil Conditions

Work Period m. to m.

FORCE AND EQUIPMENT IN USE

	Skilled	Laborer
Superintendant		
Foreman		

NO. UNITS	DESCRIPTION	SIZE–CAPACITY	HOURS OPERATED

ESTIMATED QUANTITIES OF PAY WORK ACCOMPLISHED

ITEM NO.	ITEM	UNIT	QUANTITY

Narrative: Purchased 1500 gallons of diesel from Standard oil of Cedarville, and had it delivered to the mixing site at Massacre Lake.

Mr. Glenn Plato flew in at the site at 4:30 p.m. His helper mixed up 2000 gallons of mix.

I told Mr. Plato I would call in the morning and inform him of the weather, ~~weather~~ weather we can start spraying.

Mr. Plato signed the "Notice To Proceed."

Signature of Inspector Howard S. Gebel

Form 9100–1a (October 1964) (formerly 4–1715a)

Inspector: HOWARD S. GOEBEL JR.

Report Number 2 | Date May 22, 1968

Weather: Cloudy, Rainy | Min. Temp. | Max. Temp.

Precip. 0 in. | Storm Period m. to m.

Soil Conditions

Work Period m. to m.

FORCE AND EQUIPMENT IN USE

Superintendant	Skilled	Laborer
Foreman		

NO. UNITS	DESCRIPTION	SIZE–CAPACITY	HOURS OPERATED

ESTIMATED QUANTITIES OF PAY WORK ACCOMPLISHED

ITEM NO.	ITEM	UNIT	QUANTITY

Narrative: Call Mr. Plato in Lakeview, Oregon at 7:00 a.m. Weather too bad to spray.

Mr. Plato will spray tomorrow morning, unless I call him, and tell him not to come.

Signature of Inspector Howard S. Goebel Jr.

Form 9100–1a (October 1964) (formerly 4–1715a)

Inspector HOWARD S. GEBEL JR.

Report Number 3 | Date May 23, 1968

Weather Cloudy, Rainey | Min. Temp. | Max. Temp.

Precip. in. | Storm Period m. to m.

Soil Conditions

Work Period m. to m.

FORCE AND EQUIPMENT IN USE

Superintendant	Skilled	Laborer
Foreman		

NO. UNITS	DESCRIPTION	SIZE–CAPACITY	HOURS OPERATED

ESTIMATED QUANTITIES OF PAY WORK ACCOMPLISHED

ITEM NO.	ITEM	UNIT	QUANTITY

Narrative: Was at the project site at 0700. Waited for aircraft from Fahrenew, Oregon. Planes did not arrive due to low clouds at Fahrenew.

The air strip was too muddy for planes to land.

I decided to call off the spray project until the weather improves.

Called Mr. Plato that we possible could start next Monday or Tuesday May 27 or 28th.

Returned to Susanville.

Signature of Inspector Howard S. Gebel Jr.

Form 9100–1a (October 1964) (formerly 4–1715a)

Inspector	Duane Ferdman		
Report Number	4	Date May 27, 1968	
Weather		Min. Temp.	Max. Temp.
Precip.	in.	Storm Period	m. to m.
Soil Conditions			
Work Period	0705 m. to 1052 m.		

FORCE AND EQUIPMENT IN USE

Superintendant		Skilled	Laborer
Foreman			

NO. UNITS	DESCRIPTION	SIZE-CAPACITY	HOURS OPERATED
1	Stearman		

ESTIMATED QUANTITIES OF PAY WORK ACCOMPLISHED

ITEM NO.	ITEM	UNIT	QUANTITY

Narrative: Arrived @ project site @ 6 a.m. Government personnel:
Project office: Howard Gebel
Duane Ferdman
Flagmen: Bob Wrogg chief.
Bill Walke
Mike
Vern Ehly
Nebraska Droughter

Contractor Personnel:
Pilot: Glen Plato
Mixer: Harold Clifton
Dennis Warren

Only one aircraft arrived today. The other expected tomorrow. Test paper set out first and flagmen stationed on measured mile. First trial run started @ 0705. 30 gallons of mix used on the 14.4 acres (once each way). This figures to be 2 gallons/acre. The second trial run over the same acre was 2.6 gallons/acre. The first full length run was 3.44 mile long or [illegible] each way resulted in 25 acres.

Signature of Inspector

Form 9100-1a (October 1964) (formerly 4-1715a)

Inspector			
Report Number	Date	, 19	
Weather		Min. Temp.	Max. Temp.
Precip. in.	Storm Period m. to m.		
Soil Conditions			
Work Period m. to m.			

FORCE AND EQUIPMENT IN USE

Superintendant	Skilled	Laborer
Foreman		

NO. UNITS	DESCRIPTION	SIZE-CAPACITY	HOURS OPERATED

ESTIMATED QUANTITIES OF PAY WORK ACCOMPLISHED

ITEM NO.	ITEM	UNIT	QUANTITY

Narrative: 150 gallons was used on this run but spray tanks were empty 50 yards short of completion. He will cut back on pressure some.

By the time the Eight run completed, the flagmen are out of line. We are trying to line them up but we've got problems in communications. Flagmen are finally lined and ~~[illegible]~~ proceeded smoothly with a uniform 60' swath width.

A total of 15 ~~[illegible]~~ flights completed today or 17 counting the calibration flight. 15 flights × 2 = 30 swaths of 60' each or 1800' into the spray area. This checks out close with where the flagmen quit and according to an aerial photo count of acreage.

Signature of Inspector

Form 9100–1a (October 1964) (formerly 4–1715e)

Inspector			
Report Number	Date	, 19	
Weather		Min. Temp.	Max. Temp.
Precip. in.	Storm Period	m. to	m.
Soil Conditions			
Work Period	m. to		m.

FORCE AND EQUIPMENT IN USE

Superintendant		Skilled	Laborer
Foreman			

NO. UNITS	DESCRIPTION	SIZE-CAPACITY	HOURS OPERATED

ESTIMATED QUANTITIES OF PAY WORK ACCOMPLISHED

ITEM NO.	ITEM	UNIT	QUANTITY

Narrative: 2317 gallons of mix have been used. 2317 ÷ 3 gallons/acre = 772 acres sprayed. Photo acreage comes to about 832 acres.

The operation was shut down for the day about 1100 A.M. due to high temperature & slight wind. Total performance time used is from 0705 to 1052 or 3 hrs. 47 minutes. Flagman positions were marked. Contractor & crew returned to Lakeview.

Official acreage = 772 acres

Susanville contacted by radio. They relayed our diesel fuel requirements to Fred Morey. More fuel will arrive Wed. afternoon.

Signature of Inspector

Form 9100-1a (October 1964) (formerly 4-1715a)

Inspector	Duane Ferdinand		
Report Number	5	Date May 28, 1968	
Weather	clear	Min. Temp.	Max. Temp.
Precip.	in.	Storm Period m. to m.	
Soil Conditions			
Work Period	0530a m. to 1100 a m.		

FORCE AND EQUIPMENT IN USE

Superintendant		Skilled	Laborer
Foreman			

NO. UNITS	DESCRIPTION	SIZE-CAPACITY	HOURS OPERATED

ESTIMATED QUANTITIES OF PAY WORK ACCOMPLISHED

ITEM NO.	ITEM	UNIT	QUANTITY

Narrative: Contractors aircraft arrived @ landing strip @ 0530. Bureau personnel arrived immediately after. Two aircraft will be used today piloted by Glenn Plato and John Lily. Contractors mixing crew consists of Harold Clifton and Bruce Warren. Same Bureau personnel present as yesterday. Aircraft were warmed up and new pilot oriented to the project area. All flagmen were in place by 0600. Both planes in the air & spraying by 6:15. Plane No. N 91872 had a busted spray hose @ 10:00. He will be shut down for the day. The other plane continued spraying until 11:00 o'clock when the operation was shut down for the day due to wind & warm weather.

Signature of Inspector

Form 9100-1a (October 1964) (formerly 4-1715a)

Inspector

Report Number | Date , 19

Weather | Min. Temp. | Max. Temp.

Precip. in. | Storm Period m. to m.

Soil Conditions

Work Period m. to m.

FORCE AND EQUIPMENT IN USE

	Skilled	Laborer
Superintendant		
Foreman		

NO. UNITS	DESCRIPTION	SIZE–CAPACITY	HOURS OPERATED
	1048 0600		

ESTIMATED QUANTITIES OF PAY WORK ACCOMPLISHED

ITEM NO.	ITEM	UNIT	QUANTITY

Narrative: Total mix used today equals 1951 gallons as tallied from the aircraft gauges. This equal 1650 acres

Total for project above far as determined from aircraft gauges =

2317 gallon or 772 acres. 1st day
4931 gallon. or 1650 acres 2nd day
7248 gallon or 2422 acres Total.

Dot count on photo shows that 2326 acres have been sprayed.

2167
+ 4931
7098 gallon total.

$\frac{7098}{3}$ = 2366 acres Total

Performance Time today - 4 hrs. & 45 minute.

Signature of Inspector

Form 9100–1a (October 1964) (formerly 4–1715a)

Inspector ~~May 2~~ Duane [illegible]

Report Number 6 | Date May 29, 1968

Weather | Min. Temp. | Max. Temp.

Precip. in. | Storm Period m. to m.

Soil Conditions

Work Period m. to 1000 m.

FORCE AND EQUIPMENT IN USE

Superintendant	Skilled	Laborer
Foreman		

NO. UNITS	DESCRIPTION	SIZE-CAPACITY	HOURS OPERATED

ESTIMATED QUANTITIES OF PAY WORK ACCOMPLISHED

ITEM NO.	ITEM	UNIT	QUANTITY

Narrative: Bureau personnel arrived @ 4:45 at the mixing site contractor crew arrived @ 4:50. Same crew as yesterday. Weather conditions good. New shipment of Diesel fuel has not yet arrived. It was promised for here @ 4:30 only about an hours flying time of mix remains.

Ran out of mix @ 0805. a trip was made to Cedarville by myself @ 0600 to see where the shell oil truck was. It was not seen. Saw the District Manager Rex Morgan, we discussed the problem of diesel fuel & decided to order some from Standard oil in Cedarville. Contacted Marvin Hereford at his home. He will bring out 1500 gallons in

Signature of Inspector

Form 9100-1a (October 1964) (formerly 4-1715a)

Inspector			
Report Number	Date	, 19	
Weather		Min. Temp.	Max. Temp.
Precip. in.	Storm Period	m. to	m.
Soil Conditions			
Work Period	m. to		m.

FORCE AND EQUIPMENT IN USE

Superintendant		Skilled	Laborer
Foreman			

NO. UNITS	DESCRIPTION	SIZE-CAPACITY	HOURS OPERATED

ESTIMATED QUANTITIES OF PAY WORK ACCOMPLISHED

ITEM NO.	ITEM	UNIT	QUANTITY

Narrative: the first truck & 1700 gallon in a second truck should be out by 0800.

Standard oil truck arrived @ 0815 with 1500 gallons.

Rex called the office & talked to Cuprak. Pete called Fred Money but he didn't know where his fuel truck was. We will get 3200 gallon from S.O. for today. A new purchased order will be issued. 3202 gallons delivered.

Mixed & chemical mixed & plane off again @ 0845

Flying for today was completed by 1000 at this time 10-12 mph + wind blowing.

Signature of Inspector

Form 9100-1a (October 1964) (formerly 4-1715a)

Inspector

Report Number | Date , 19

Weather | Min. Temp. | Max. Temp.

Precip. in. | Storm Period m. to m.

Soil Conditions

Work Period 0530 a.m. to 1000 a.m.

FORCE AND EQUIPMENT IN USE

Superintendant	Skilled	Laborer
Foreman		

NO. UNITS	DESCRIPTION	SIZE—CAPACITY	HOURS OPERATED

ESTIMATED QUANTITIES OF PAY WORK ACCOMPLISHED

ITEM NO.	ITEM	UNIT	QUANTITY

Narrative: a total of 3410 gal. mix applied today on 1133 acres.

Total Summary for project thus far

	mix	acres
1st day	2317	772
2nd day	4931	1643
3rd day	3410	1133
Total	10658	3548

The above acreage figures based on the amount of mix used.

Total gallon mix needed = 19190

Total gallon used = 10658

Balance needed 8532

Total acres = 6316

Total completed = 3548

Balance remaining = 2768

2768 × 3 = 8304 mix needed

Performance test equals 5 hrs.

Signature of Inspector

Form 9100—1a (October 1964) (formerly 4—1715a)

Inspector

Report Number	Date , 19		
Weather		Min. Temp.	Max. Temp.
Precip. in.	Storm Period m. to m.		
Soil Conditions			
Work Period m. to m.			

FORCE AND EQUIPMENT IN USE

Superintendant	Skilled	Laborer
Foreman		

NO. UNITS	DESCRIPTION	SIZE-CAPACITY	HOURS OPERATED

ESTIMATED QUANTITIES OF PAY WORK ACCOMPLISHED

ITEM NO.	ITEM	UNIT	QUANTITY

Narrative: Diesel Fuel delivered:

S.O.-May 14 — 1500 gallons

Money-May 23 — ? gallon

S.O. May 29 3202 gallons

Total 11852

5000

16832

9829 gallons . 833 per load × 11.8 loads

Empty Barrels E 36 = 12 loads

$21 \times 55 = \frac{1155}{167} = 6.9$ loads

$6.9 \times 833 = 5648$ gallon of diesel needed

5648 − ? (on Hand) = 5000 gallon loads

Signature of Inspector

Form 9100-1a (October 1964) (formerly 4-1715a)

Inspector	Duane Ferdi[illegible]		
Report Number 6	Date May 30, 1968		
Weather		Min. Temp.	Max. Temp.
Precip. in.	Storm Period m. to m.		
Soil Conditions			
Work Period m. to m.			

FORCE AND EQUIPMENT IN USE

Superintendant	Skilled	Laborer
Foreman		

NO. UNITS	DESCRIPTION	SIZE-CAPACITY	HOURS OPERATED

ESTIMATED QUANTITIES OF PAY WORK ACCOMPLISHED

ITEM NO.	ITEM	UNIT	QUANTITY

35 00
[illegible]

Narrative: The Diesel fue[illegible] from Fred money arrived in Cedarville Last night @ 2000. He went directly to the project site to unload. Shown the way by Ferdinand who also helped unload. He brought out a total of 8020 gallon but but remaining requirements were for only 5000 gallons but we unloaded about 5500 gallons. There was no meter on the truck to measure the amount discharged. Completed unloading about 2400 after considerable trouble with the truck unloading equipment, especially the power takeoff. Also fuel was sprayed all over the contractors (plots) - mixing equipment and pickup ~~[illegible]~~ when the storage tank overflowed and the wind

Signature of Inspector

Form 9100-1a (October 1964) (formerly 4-1715a)

Inspector			
Report Number	Date , 19		
Weather		Min. Temp.	Max. Temp.
Precip. in.	Storm Period m. to m.		
Soil Conditions			
Work Period m. to m.			

FORCE AND EQUIPMENT IN USE

Superintendant		Skilled	Laborer
Foreman			

NO. UNITS	DESCRIPTION	SIZE-CAPACITY	HOURS OPERATED

ESTIMATED QUANTITIES OF PAY WORK ACCOMPLISHED

ITEM NO.	ITEM	UNIT	QUANTITY

Narrative: sprayed the fuel. also, a considerable amount was lost on the ground during unloading. The fuel delivered is darker than #2 diesel looks like some kind of light petroleum fuel. Bureau personnel arrived @ the mixing site @ 0445 this morning. Flagmen were in place by 0500.

The South pasture was completed by 0830. all flagmen were moved to the mixing site and on to the North pasture. Spraying commenced again @ 0855 and continued until 1112. at this time the aviation fuel was low, Plato had other commitments in Lakeview, and the flagmen can now move to the east half of the north pasture as there is only 3000 gallons of spray mix left ok enough for 1000 acres. The operation

Signature of Inspector

Form 9100-1a (October 1964) (formerly 4-1715a)

Inspector

Report Number | Date , 19

Weather | Min. Temp. | Max. Temp.

Precip. in. | Storm Period m. to m.

Soil Conditions

Work Period m. to m.

FORCE AND EQUIPMENT IN USE

	Skilled	Laborer
Superintendant		
Foreman		

NO. UNITS	DESCRIPTION	SIZE–CAPACITY	HOURS OPERATED

ESTIMATED QUANTITIES OF PAY WORK ACCOMPLISHED

ITEM NO.	ITEM	UNIT	QUANTITY

Narrative: was called off for the day although the conditions are good. Temperatures are starting to rise however. Flagmen will get up on there own labor on the next portion now

Contractor left shortly after the last flight was finished at about 1130

Performance Time today = 5 hours 30 minutes

Signature of Inspector

Form 9100–1a (October 1964) (formerly 4–1715a)

Inspector Duane Ferdinand

Report Number 7 | Date May 31, 1968

Weather | Min. Temp. | Max. Temp.

Precip. in. | Storm Period m. to m.

Soil Conditions

Work Period 0530 a.m. to 0730 a.m.

FORCE AND EQUIPMENT IN USE

	Skilled	Laborer
Superintendant		
Foreman		

NO. UNITS	DESCRIPTION	SIZE–CAPACITY	HOURS OPERATED

ESTIMATED QUANTITIES OF PAY WORK ACCOMPLISHED

ITEM NO.	ITEM	UNIT	QUANTITY

Narrative: Bureau personnel arrived on the project site @ 0440. Contractor personnel arrived @ 0510. Flagmen left for site @ this time.

All flying completed by 07 B.S.T. applied 2960 gallons this morning to complete the job. Total performance time equals 21 hours.

Signature of Inspector

Form 9100–1a (October 1964) (formerly 4–1715a)

Inspector: Duane Ferdun

Report Number: 8 | Date: June 3, 1968

Weather | Min. Temp. | Max. Temp.

Precip. in. | Storm Period m. to m.

Soil Conditions

Work Period m. to m.

FORCE AND EQUIPMENT IN USE

	Skilled	Laborer
Superintendant		
Foreman		

NO. UNITS	DESCRIPTION	SIZE–CAPACITY	HOURS OPERATED

ESTIMATED QUANTITIES OF PAY WORK ACCOMPLISHED

ITEM NO.	ITEM	UNIT	QUANTITY

Narrative: Invoice received from Union Ice & Fuel for 11,950 gallons of Diesel oil for transporting 16,000 gallons to the project site @ $160.00

$11950 gallons @ 12.4¢ = $1481.80

Total Fuel ordered

Union Ice & Fuel = 11950

Standard oil = 4702

Total = 16652 gal.

Total acres Sprayed:

Amt. of 2,4-D Available = 3190 gals.

Amt. of Diesel needed to properly mix with the 2,4-D. = 15950

Total mix = 19140 gals.

$\frac{19140}{3 \text{ gallons/ac}} = 6380$ acres.

6380 acres @ $.44/acre = $2807.20

The airplane tally sheets show a total of 19394 gallons sprayed

Signature of Inspector

Form 9100–1a (October 1964) (formerly 4–1715a)

Inspector

Report Number	Date , 19		
Weather		Min. Temp.	Max. Temp.
Precip. in.	Storm Period m. to m.		
Soil Conditions			
Work Period m. to m.			

FORCE AND EQUIPMENT IN USE

Superintendant	Skilled	Laborer
Foreman		

NO. UNITS	DESCRIPTION	SIZE-CAPACITY	HOURS OPERATED

ESTIMATED QUANTITIES OF PAY WORK ACCOMPLISHED

ITEM NO.	ITEM	UNIT	QUANTITY

Narrative: This difference can be due to the plan gauges which made it hard to determine if any was left after each run.

Contractor Plato was called and given the above figures. He was satisfied and will submit and invoice for 6380 acres @ $.44 = $2807.20.

Contractor Invoice was submitted for the above amount and submitted for payment on June 10.

Signature of Inspector Duane L Ferdinand

Form 9100-1a (October 1964) (formerly 4-1715a)

13

Form 1541-3
(July 1965)
(formerly 4-1599 a)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Attachment

CONFIRMATION/REPORT OF TELEPHONE CONVERSATION

Name: Glenn Plato		FROM Name: Arnold E. Bullock	
Office: Aerial Range Services		Office: Susanville District	
Location: LaGrande, OR		Location: Susanville, CA	
Telephone Number: 503 963 7424		Telephone Number: 916 257 2148	

Purpose of Call:

Extension and modification of Contract #14-11-001-4112, dated 4/9/68, Schedule "A" of IFB No. 2300, covering aerial spraying of herbicide as on attached maps.

Explanatory Remarks:

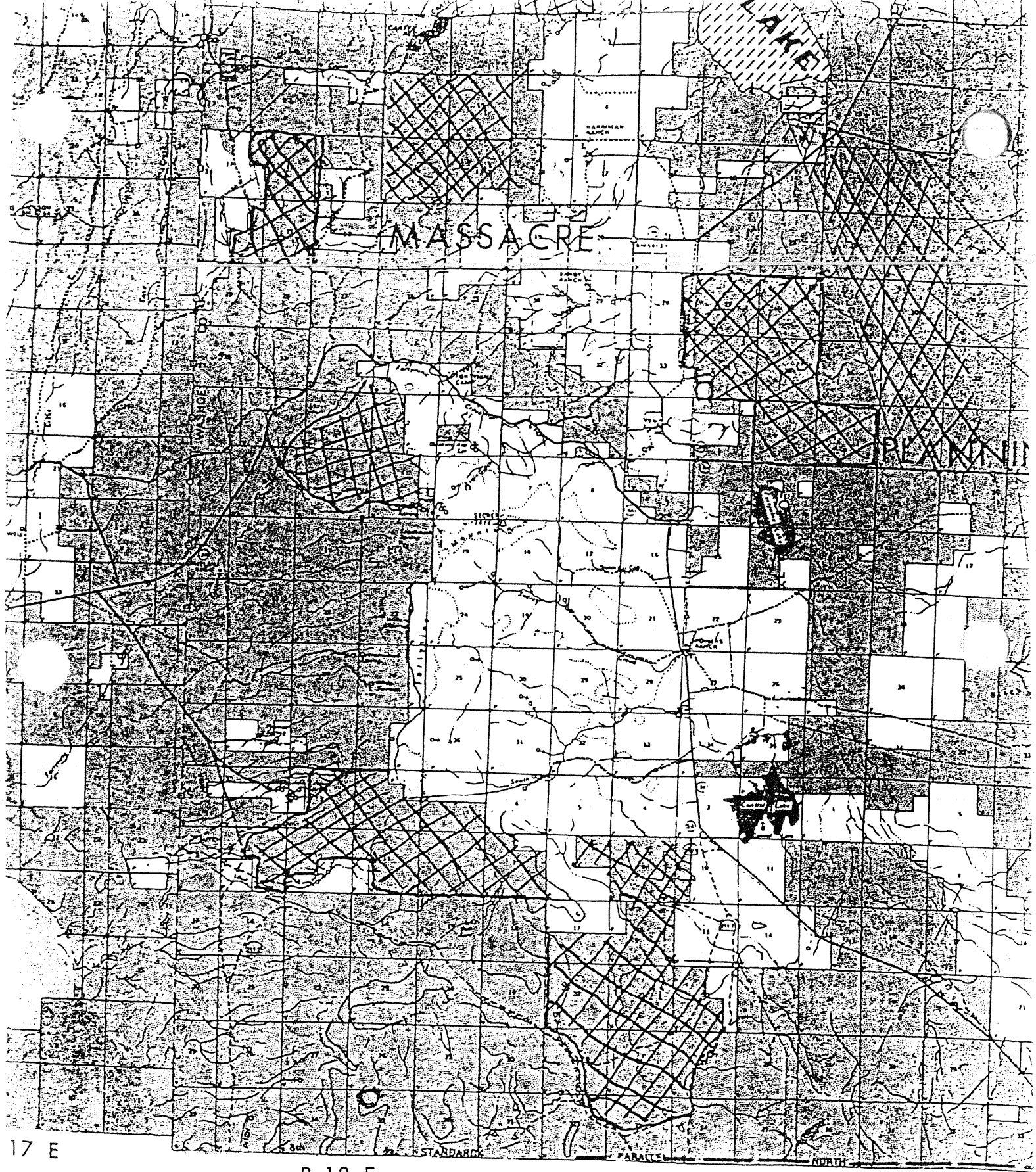
Notified Mr. Plato that the contract has been extended with carry-over funds, this date, as we previously discussed. Also noted that spray formulation and mixture to include equal parts of 2,4-D amine and 2,4,5-T silver, but that weights of herbicide will not change.

Pete Cuprak will be lead contact on this carry-over. Mr. Ferdinand and Mr. Gebo will work on FY 69 work projects. Completion date of contract extended to 8/31/68.

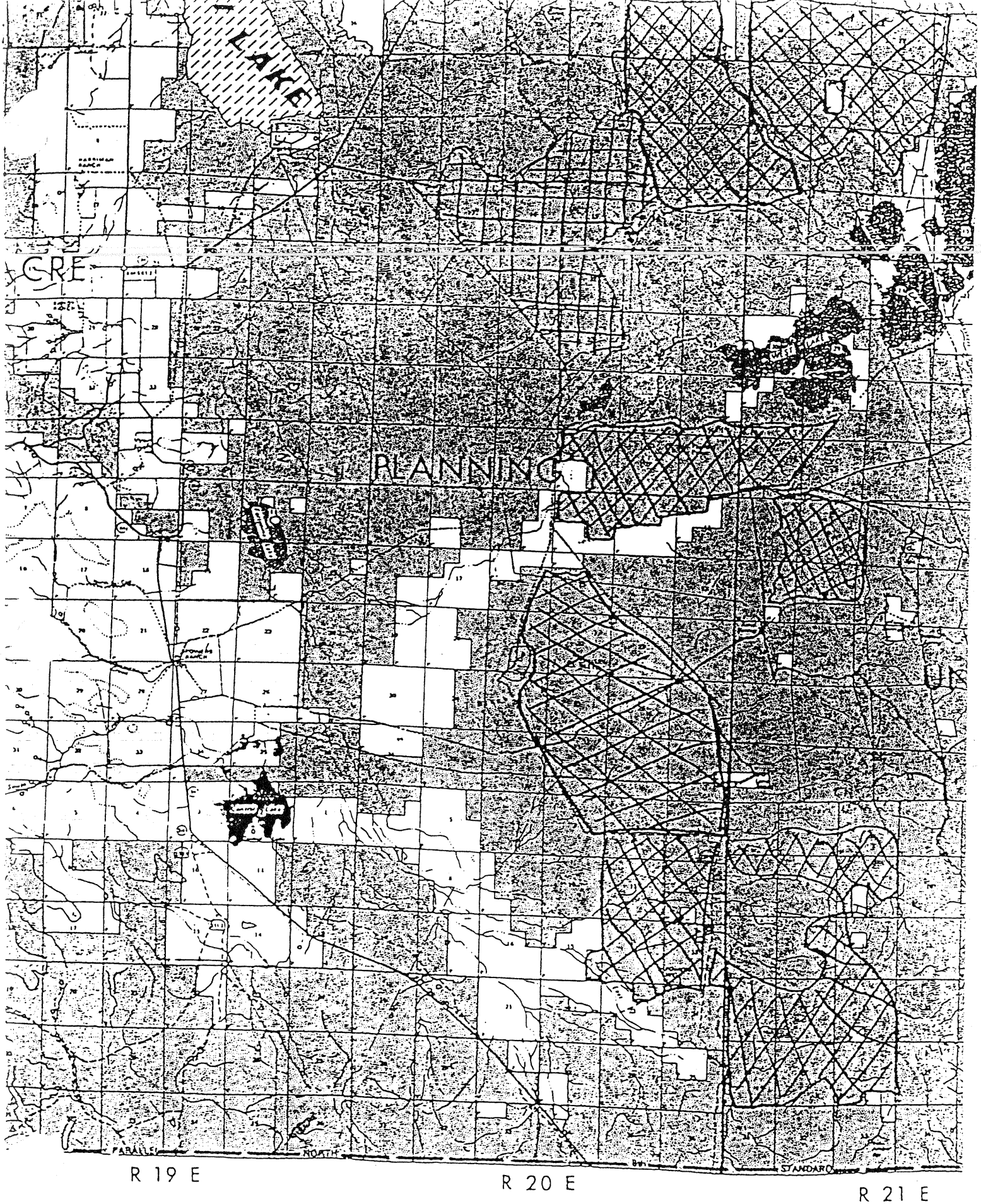
5/29/68
(Date)

Arnold E. Bullock
(Signature)
Acting District Manager
Susanville DO

JATION COPY



IFB No. 2300, FY68 Carryover Spraying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* U.S. GOVERNMENT PRINTING OFFICE 1961-781-272/117

a 1541—3
y 1965)
(formerly 4—1599 a)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CONFIRMATION REPORT OF TELEPHONE CONVERSATION

TO	Name Pete Cupak	FROM	Name Arnold E. Bullock
	Office Susanville District		Office Susanville District
	Location Susanville, CA		Location Susanville, CA
	Telephone Number 916 257 2148		Telephone Number 916 257 2148

Purpose of Call:

Attached is a copy of the telephone conversation Confirmation Report with Allen Plato regarding Massacre / Coohead herbicide spraying contract canyons into FY 69, as we previously discussed.

Explanatory Remarks:

Crew make up you will now be supervising remains the same, except for the addition of a new employee as of 6/16/68, Harlow, Richard. The lead count should be the same for overtime request, now that Ferdinand will be working on other FY 69 projects.

5/29/69
(Date)

Arnold E. Bullock
(Signature)
Acting District Manager

CONFIRMATION COPY

14

"Myers, Cliff" <cmyers@dscr.dla.mil>

06/26/2001 01:16 PM

To: "'Gina_Ramos@blm.gov'" <Gina_Ramos@blm.gov>
cc:
Subject: RE: Materials Surplus Questions on Agent Orange

Answers to your questions are in your attached email.

-----Original Message-----
From: Gina_Ramos@blm.gov [mailto:Gina_Ramos@blm.gov]
Sent: Monday, June 25, 2001 4:14 PM
To: cmyers@dscr.dla.mil
Subject: Materials Surplus Questions on Agent Orange
Importance: High

Defense Logistics Agency:

We are researching the possibility that the Bureau of Land Management may have received surplus pesticide materials from the Sierra Army Depot in Herlong, California or from any other surrounding military installations. Could you answer the following questions or direct to me to someone that may have more information?

- Was Agent Orange ever available to the agencies of the federal government as surplus specifically, in the late 1960's?

ANSWER: No. Agent Orange herbicide was for "for controlled military use only, not for resale." Herbicide was forbidden to be used within the USA.

- Did DOD ever sell, transfer, etc. any excess Agent Orange to the BLM?

ANSWER: No.

- Are there any records available from Sierra Army Depot (or other installations) identifying what pesticides, specifically Agent Orange was sold or given to federal agencies?

ANSWER: There are none. Herbicide was for military use only.

- What was done with surplus Agent orange when it was returned to the United States after the Vietnam war?

ANSWER: Agent Orange after Vietnam was stored on Johnston Island and not brought back to the US. These inventories and Remaining Agent Orange assets held by the Navy in Mississippi were incinerated and destroyed on the Dutch-owned ship the Vulcanus during the summer of 1977.

If you have any questions or need additional information, please contact me at gina_ramos@blm.gov or call me at 2202.452.5084.

Thank You,
Gina Ramos
Senior Weed Specialist
Bureau of Land Management
1849 C Street NW MS: 314LS
Washington, D.C. 20240
PH: 202.452.5084
Fax: 202.653-5279

15

JUN 13 1978

EPA-600/2-78-086
April 1978

Environmental Protection Technology Series

COMPLETED
ORIGINAL

AT-SEA INCINERATION OF HERBICIDE ORANGE ONBOARD THE M/T VULCANUS

Industrial Environmental Research Laboratory
Office of Research and Development
U.S. Environmental Protection Agency
Research Triangle Park, North Carolina 27711

275

-Sta.-431-I-13-

EPA-600/2-78-086
April 1978

AT-SEA INCINERATION OF HERBICIDE ORANGE ONBOARD THE M/T VULCANUS

by

D.G. Ackerman, H.J. Fisher, R.J. Johnson,
R.F. Maddalone, B.J. Matthews, E.L. Moon,
K.H. Scheyer, C.C. Shih, and R.F. Tobias

TRW, Inc.
One Space Park
Redondo Beach, California 90278

Contract No. 68-01-2966
Program Element No. 1AB604

EPA Project Officer: Ronald A. Venezia
U.S. Air Force Project Officer: James W. Tremblay

Industrial Environmental Research Laboratory
Office of Energy, Minerals, and Industry
Research Triangle Park, NC 27711

Prepared for

U.S. AIR FORCE
OEHL/EC
Brooks Air Force Base, Texas 78235

and

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Research and Development
Washington, D.C. 20460

ABSTRACT

This report describes at-sea incineration of approximately 10,400 metric tons of U.S. Air Force-owned Herbicide Orange onboard the incinerator ship M/T Vulcanus. Incineration took place within a Pacific Ocean burn zone located West of Johnston Atoll which was designated by the U.S. Environmental Protection Agency. Three shiploads of Herbicide Orange were incinerated. The first shipload was transported from the U.S. Naval Construction Battalion Base at Gulfport, Mississippi, to the burn zone and incinerated under provisions of U.S. EPA Research Permit No. 770DH001R. Shiploads two and three were subsequently taken onboard the Vulcanus at Johnston Island and incinerated under U.S. EPA Special Permit No. 770DH001S. The U.S. Air Force and Ocean Combustion Services, B.V., The Netherlands (owner of the M/T Vulcanus), were the permittees.

Monitoring, sampling, and analysis of the incineration process to assure compliance with U.S. EPA permit operating and safety conditions related to at-sea operations were performed by personnel of TRW, Inc., Redondo Beach, California. A U.S. EPA representative was onboard the Vulcanus during the Research Permit burn. A U.S. Air Force representative participated in the monitoring team activities during all three burns.

Monitoring activities utilized on-line instrumentation to measure carbon monoxide and dioxide, oxygen concentration, and total hydrocarbons from both incinerators. These parameters served as a measure of overall combustion efficiency with primary emphasis on the ratio of carbon dioxide to carbon monoxide in the effluent gases. Combustion efficiency exceeded 99.9% during all three burns. Herbicide Orange was injected into the incineration system at an average rate of 14.5 metric tons per hour. Optical pyrometer flame temperature measurements averaged 1500°C. A dwell time of 1.0 second was calculated for the combustion gases in the incinerators.

Effluent sampling was accomplished using a traversing sample probe installed on the starboard incinerator. A USAF benzene impinger train and a modified EPA Method 5 train were used to acquire combustion effluent samples. Analysis of these samples was conducted to determine destruction efficiencies for the normal butyl esters of 2,4-dichlorophenoxyacetic acid and 2,4,5 trichlorophenoxyacetic acid, primary constituents of Herbicide Orange, as well as 2,3,7,8 tetrachlorodibenzo-p-dioxin, a contaminant present in the herbicide. Destruction efficiencies in excess of 99.9% were determined for all three burns.

Destruction and combustion efficiencies measured during the Research and Special Permit burns met or exceeded requirements. All other conditions of the permits related to at-sea incineration operations were met including adherence to a comprehensive safety plan.

This report was submitted in fulfillment of Contract No. 68-01-2966 by TRW Defense and Space Systems Group, TRW Inc., under sponsorship of the U.S. Environmental Protection Agency. This report covers the period 15 April 1977 to 15 April 1978.

1. INTRODUCTION, BACKGROUND, AND SUMMARY

1.1 INTRODUCTION

Thermal destruction of combustible wastes at sea is recognized as an alternative to land based incineration. In late 1974 and in March of 1977, organochlorine wastes were incinerated in the Gulf of Mexico by the Motor Tanker (M/T) Vulcanus. These efforts, evaluated by the U.S. Environmental Protection Agency (U.S. EPA), provided a technical basis for concluding that at-sea incineration is a viable alternative to other means of disposal.

Incineration of U.S. Air Force stocks of Herbicide Orange was performed onboard the M/T Vulcanus operating in the Pacific Ocean west of Johnston Atoll. Approximately 10,400 metric tons were incinerated under permits granted by the U.S. EPA. The first shipload, loaded at the Naval Construction Battalion Center at Gulfport, Mississippi, was incinerated under Research Permit No. 770DH001R. The second and third shiploads, loaded at Johnston Island (one of the islands comprising Johnston Atoll), were incinerated under Special Permit No. 770DH001S.

The Herbicide Orange incinerated consisted of an approximate 50-50 mixture by volume of the n-butyl esters of 2,4-dichlorophenoxyacetic acid (2,4-D) and 2,4,5-trichlorophenoxyacetic acid (2,4,5-T)[1]. There was a small quantity of Orange II herbicide which consisted of an approximate 50-50 mixture by volume of 2,4-D and the iso-octyl ester of 2,4,5-trichlorophenoxyacetic acid[1]. Certain lots of the herbicide contained the contaminant 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). The TCDD concentration in the entire stock of herbicide averaged 1.9 ppm and ranged from 0 to 47 ppm[1]. Diesel fuel used to rinse herbicide drums and equipment associated with dedrumming and loading was mixed with the herbicide for incineration.

1. From U.S. EPA Special Permit No. 770DH001S.

1.2 BACKGROUND

The at-sea incineration of U.S. Air Force stocks of Herbicide Orange was a complex undertaking. A large number of U.S. Government organizations and civilian contractors contributed to the effort, and a brief discussion of the program organization will be helpful in understanding the scope of this report.

Permits to incinerate the waste were granted to the U.S. Air Force, owner of the waste, and to Ocean Combustion Services, B.V., of The Netherlands, owner of the M/T Vulcanus, as co-permittees.

The U.S. EPA contracted with TRW, Inc., to perform environmental monitoring during the incineration of the herbicide. This program was funded by the U.S. Air Force. The scope of TRW's activities under this contract included design and preparation of stack sampling and monitoring equipment, development of a comprehensive personnel protection plan, development and implementation of a sampling and analysis protocol, acquisition of samples and monitoring of combustion effluent during incinerator operation, analysis of the samples and monitoring data, and evaluation of the results.

TRW's role in the incineration program was thus limited to at-sea operations. It was TRW's responsibility to monitor the following permit conditions (renumbered but verbatim from Reference 1):

1. The Permittees are authorized to heat up incinerators with fuel oil while in route to the site but may not incinerate the described wastes except in the site which is defined in longitude and latitude as follows: From 15 degrees 45 minutes to 17 degrees 45 minutes north latitude. From 171 degrees 30 minutes to 173 degrees 30 minutes west longitude.

2. During start-up, Herbicide Orange shall not be fed into the incinerators until a flame temperature of 1280°C has been reached in the furnace and only one burner at a time shall be changed over to the waste. The start-up temperature of 1280°C must be reached before the next burner is changed over to Herbicide Orange.

3. Monitoring of the furnaces for temperature, and for completeness of combustion, shall be in effect during the change-over. A record of temperature shall also be maintained during this time.

4. The incinerator flame temperature shall be greater than 1250°C when burning waste.

5. An automatic shut-off device shall be in operation on both furnaces, set to turn off the flow of waste if the flame temperature drops below 1250°C.

6. The Herbicide Orange feed rate to each incinerator shall not exceed 11.5 tonnes/hour (11.5 metric tons/hour).

7. Incineration shall take place in the presence of excess air such that there shall be a 3 mole percent minimum oxygen content in the combustion product gas.

8. The combustion efficiency of the incineration and destruction efficiency of waste during the incineration will be at least 99.9 percent complete. If the efficiency level falls below 99.9 percent, the incinerators on the Vulcanus will be shut down immediately until corrective measures which assure 99.9 percent combustion efficiency are applied.

9. The emission rates of TCDD, 2,4-D, or 2,4,5-T will not be in excess of 0.1% of the total amounts of TCDD, 2,4-D or 2,4,5-T in the Herbicide Orange waste. (Wright State University had responsibility for analyses to determine emission rates of (TCDD.)

10.a. An automatic sealed monitoring device (black box) will be installed to record incineration activities and temperatures and camera to photograph the control panel every 15 minutes.

10.b. A manual log shall be kept and the following information recorded at 1-hour intervals:

a. Time, date
b. "Black box" temperature
c. Controller temperature reading
d. Waste feed rates
e. Switching of waste tanks
f. Wind speed and direction
g. Location

(For the third burn, this requirement was changed to 2-hour intervals.)

11. A device for addition of ammonia to make a visible plume will be installed.

12. Permittees shall ensure their position during transport and within the discharge site at all times by on-board navigational aids, and shall maintain documentation of position.

13. Permittees shall have installed and in operating condition a radio or other communications devices which are capable of voice transmission to the mainland from the Vulcanus when in route to the incineration site and during the incineration of the waste in the designated site. The frequency of reporting and information to be transmitted is set forth in the Herbicide Orange Contingency Plan contained in Appendix 9 of the hearing record of April 7, 1977.

14. During the burns the Permittees shall transmit the following information to EPA Headquarters every 24 hours:

    a. Operating temperatures

    b. Average combustion efficiency

    c. Significant malfunctions/incidents

15. The Permittees shall monitor for carbon monoxide, carbon dioxide, oxygen, 2,4-D, 2,4,5-T, TCDD and other parameters in accordance with the monitoring plan contained in Appendix B (of the permit).

16. The Permittees shall comply with all provisions of the comprehensive safety plan set forth in Appendix C (of the permit).

During incineration of the first shipload, a U.S. EPA Representative was onboard to determine compliance with permit conditions. During incineration of the second and third shiploads, the leader of the TRW sampling team was designated U.S. EPA Advisor relative to permit compliance.

The U.S. Air Force issued a contract (No. F41608-77-C-0169) to the Brehm Laboratory of Wright State University (WSU) to perform analyses for the toxic contaminant (2,3,7,8-tetrachlorodibenzo-p-dioxin, TCDD) in the combustion effluent samples taken onboard the ship during incineration. The analyses by Wright State were intended to determine compliance with the permit requirement that emissions of TCDD not exceed 0.1% of the total TCDD in the waste. In other words, the destruction efficiency of TCDD was required to be not less than 99.9%.

The U.S. Air Force issued a contract (No. F08635-76-D-0168) to Battelle-Columbus Laboratories (BCL) to perform land based environmental monitoring (air, land, and water) during the dedrumming and loading operations at Johnston Atoll. BCL also analyzed combustion effluent, potable water, and workspace air monitor samples from the ship for 2,4-D and 2,4,5-T.

U.S. Air Force Occupational and Environmental Health Laboratories (OEHL) at Kelly and Brooks Air Force Bases, Texas, analyzed miscellaneous samples from both land based and at-sea operations. BCL and WSU analyzed a variety of samples intended to determine the effect of U.S. EPA approved ship cleaning procedures after waste incineration had been completed. The TRW sampling team leader had been designated by the U.S. EPA to monitor that portion of the ship cleaning performed while the TRW team was still onboard the ship.

The final responsibility of TRW to the U.S. EPA was to prepare a final report assembling and evaluating all data relating to incineration operations so as to determine compliance with those permit conditions concerning at-sea operations.

1.3 SUMMARY

Incineration of the herbicide took place in a U.S. EPA-designated burn zone approximately 120 miles west of Johnston Atoll, as defined by the following coordinates: $15^{o}45'$ to $17^{o}45'$ N latitude and $171^{o}30'$ to $173^{o}30'$ W longitude. The relationship of the burn zone to Johnston Atoll and the Hawaiian Islands is shown in Figure 1.

A total of 10,400 metric tons (8780 m^3, 2.31 million gallons) of waste was burned, requiring 714 hours. The average incineration rate was 14.5 metric tons per hour or 7.3 metric tons per hour per incinerator. For all three burns, the average flame temperature was $1500^{o}C$ as determined by daily optical pyrometer measurements. The average incinerator wall temperature (controller thermocouple) was $1273^{o}C$ for all three burns. For the three burns, the average combustion effluent flow rate per incinerator was calculated to be 70,700 cubic meters per hour (dry gas at $20^{o}C$). Given these average conditions of combustion air and waste feed rates and temperature, the average calculated incinerator residence time was 1.0 second. The incinerator residence time was the time available for a waste molecule to be converted to combustion products.

Stack sampling operations utilized a USAF-OEHL benzene impinger train and a modified U.S. EPA Method 5 train (Lear-Siegler) which incorporated an organic vapor sorbent trap. The USAF-OEHL train was the primary train for acquiring samples for TCDD analysis, whereas the Lear-Siegler train was used to acquire samples to be analyzed for organic species potentially present in the combustion

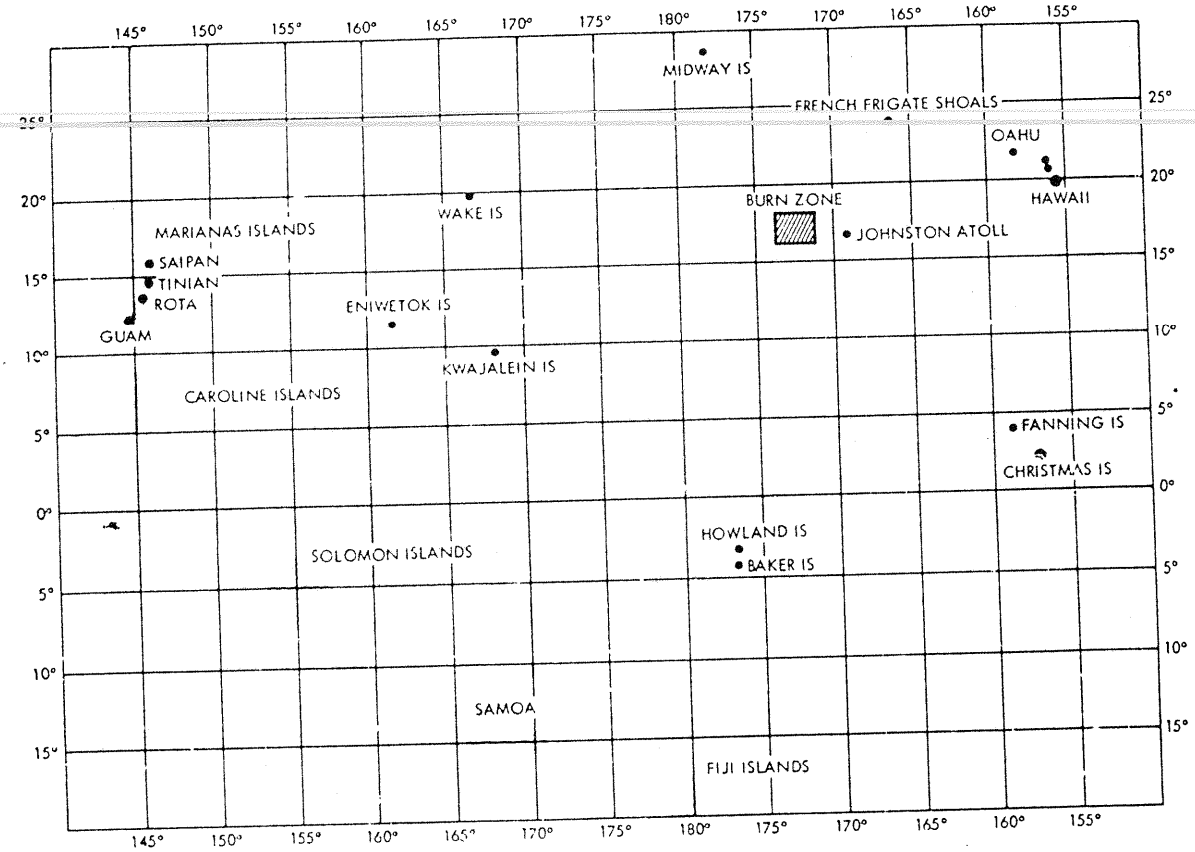

Figure 1. Geographical relationship of burn zone to Johnston Atoll and the Hawaiian Islands.

effluent. The Lear-Siegler train also served as a backup to the USAF-OEHL train. These stack samples were subsequently analyzed to determine how effectively the incineration process destroyed constituents of the waste. Stack samples were acquired by a remotely activated, water-cooled, stainless steel probe capable of traversing the starboard stack diameter of 3.4 meters.

During stack sampling operations, incineration effluent products were simultaneously monitored for total hydrocarbons, carbon monoxide, carbon dioxide, and oxygen. Concentrations of these species were measured in real time to monitor the overall combustion efficiency of the incinerator. Instrumentation for these measurements was housed in a modified shipping container lashed to the ship's deck.

Data from the on-line analyzers and the results of the analyses of the stack samples were used to calculate incineration efficiencies. Combustion efficiencies were calculated from the on-line monitoring data. Four different waste destruction efficiencies were calculated, one from the hydrocarbon analyzer data and three from laboratory analyses. These incineration efficiency terms are defined in Table 1. Average values for the incineration efficiencies are given in Table 2.

Results of the analyses by TRW, WSU, and BCL and of the reduction of the on-line monitoring data indicate that the performance of the Vulcanus' incinerators was consistently greater than 99.9% in terms of combustion and destruction efficiencies for 2,4-D and 2,4,5-T and total organic material. Analyses of first and third burn samples for TCDD led to destruction efficiencies greater than 99.9%. Analyses of second burn samples for TCDD led to destruction efficiencies of >99.89% and >99.87%. The fact that these destruction efficiencies were apparently marginally lower than the required 99.9% was because of problems during the TCDD analyses (Section 4.2.5). Chemical interferences during the TCDD analyses led to higher than usual detection limits. Although TCDD was detected in only part of one of the second burn samples, the detection limits are such that these two destruction efficiencies were calculated to be >99.89% and >99.87% rather than 99.9%. It is considered, therefore, that the chemical interferences

TABLE 1. DEFINITION OF INCINERATION EFFICIENCY TERMS

Efficiency Term		Method of Calculation
Overall combustion efficiency	DE_{CE}	$= 100 \times \frac{[\ \%\ CO_2\ ] - [\ \%\ CO\ ]}{[\ \%\ CO_2\ ]}$
Total hydrocarbon (THC) destruction efficiency	DE_{THC}	$= 100 \times \frac{[\ \text{THC fed}\ ] - [\ \text{THC found}\ ]}{[\ \text{THC fed}\ ]}$
Herbicide Orange (HO) destruction efficiency	DE_{HO}	$= 100 \times \frac{[\ \text{HO fed}\ ] - [\ \text{HO found}\ ]}{[\ \text{HO fed}\ ]}$
TCDD destruction efficiency	DE_{TCDD}	$= 100 \times \frac{[\ \text{TCDD fed}\ ] - [\ \text{TCDD found}\ ]}{[\ \text{TCDD fed}\ ]}$
Chlorinated hydrocarbon (CHC) destruction efficiency	DE_{CHC}	$= 100 \times \frac{[\ \text{CHC fed}\ ] - [\ \text{CHC found}\ ]}{[\ \text{CHC fed}\ ]}$

TABLE 2. SUMMARY OF CALCULATED INCINERATION EFFICIENCIES

	First Burn	Second Burn	Third Burn	Combined 3 Burns
DE_{CE}	99.992	99.989	99.983	99.990
DE_{THC}	99.982	99.992	-(a)	99.985
DE_{HO}	>99.999	>99.999	>99.999	>99.999
DE_{TCDD}	>99.99	>99.88	>99.96	>99.93
DE_{CHC}	>99.999	>99.999	>99.999	>99.999

(a) HC Analyzer was inoperative during third burn

and not inadequate incinerator performance caused the marginal destruction efficiencies. The extremely high destruction efficiencies for 2,4-D and 2,4,5-T during the second burn (Section 6) support this contention.

Mostly glass components were incorporated in the sampling trains which stood up well to the corrosive (HCl) combustion effluent. The on-line analyzer system functioned adequately and maintained adequate sensitivity for measuring combustion gases. Some damage to the CO and hydrocarbon analyzers occurred from the corrosive gases passing through them, necessitating more frequent maintenance and calibration. The damage was caused by an engineering oversight which left a cold spot in the system. Condensation thus occurred, and it was the condensate that damaged the instruments. No effects from the unusual shock vibration or saltwater environment were noted.

Incinerator controls and instrumentation were adequate. Redundant incinerator wall thermocouples would be desirable from an operational standpoint because loss of wall thermocouples would shut off incineration and because they cannot be replaced while the incinerators are hot.

The personnel protection procedures described in Section 5 worked satisfactorily. A boundary-isolation method of excluding Herbicide Orange from living areas of the ship was used effectively. There were no major exposures of personnel to Herbicide Orange. Minor exposures occurred during the first burn when the incinerator exhaust plume impinged on the ship. Brief plume impingements (5 to 60 seconds) resulted from burner flameouts caused by a layer of material (later identified as water with traces of arsenic and sodium salts of 2,4-D and 2,4,5-T) floating on top of the waste reaching the burners. Flameouts were avoided subsequently by switching two of the three burners in each incinerator to other tanks when nearing depletion of the waste tank being pumped.

A significant result was derived from on-line monitoring data taken during a traverse across the starboard stack. It was found that wall effects on the combustion effluent gas composition from Herbicide Orange incineration were nonexistent at distances greater than 10 cm from the inside incinerator wall surface. Therefore, incinerator combustion efficiency could be determined using a fixed position probe.

The at-sea incineration of Herbicide Orange was successfully completed. The Permittees complied with all permit conditions related to at-sea operations in the designated burn zone and listed in Section 1.2.

16

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IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

9220 (711)

November 25, 1966

Instruction Memo No. 66-485
Expires: 6/30/67

To: SD's, DM's, SCD's and BIFC

From: Assistant Director - Resource Management

Subject: Reporting Procedure for 1967 Pesticide Programs FD 12/27/66

The Department of the Interior Representative of the Federal Committee on Pest Control has requested agencies of the Department planning to use chemical pesticides in the 1967 season to report their programs.

Programs where there is no change from previous years in chemical, carrier, rate, or method of application, etc. may be reported in about the same detail as last year. Use enclosed Form A and please note the minor instruction changes that are underlined in Illustration 1. Districts should consolidate projects by target species and kind of treatment. On a separate page comment briefly on the success of similar projects and any problems or adverse effects encountered.

New or substantially changed projects are to be reported in a different format than was used last year. Sample outline is enclosed on Illustration 2. The latter is to be reported by projects that include changes in chemicals, formulations, methods of application (ground to aerial, as an example), significant increases in application rates, or other alterations that could have an important effect on the environment.

Control programs financed or performed on public lands by other agencies such as forest insect control handled by the Forest Service, grasshopper control by the Agricultural Research Service, and predator and rodent control by the Bureau of Sports Fisheries and Wildlife should not be included in your report. These agencies' reports cover the work they plan to do on all Federal lands. Chemicals used in small quantities in experimental trials, cooperative research, or other small plot application need not be reported.

A shortage of 2, 4, 5-T is expected due to military needs. If you do not have enough on hand to meet your needs, you should consider using other herbicides or putting the work off until 2, 4, 5-T is available. Substitute herbicides include fenuron and silvex for mesquite, silvex for shinnery oak and picloram for rabbitbrush. See BLM Manual 7311 for additional information.

State submissions should be in duplicate and should comprise a consolidation of district reports. Please meet the followup date shown.

Eugene V. Gemmell

3 Enclosures
Encl. 1 - Illustration 1
Encl. 2 - Form A (6 to each addressee)
Encl. 3 - Illustration 2

Distribution: (w/Enclosure 1 and 3)
D&RM - 5
Prot. (712f) - 5
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710, 730
RPM (711) - 10
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Illustration 2

FCPC FORM #B

FEDERAL COMMITTEE ON PEST CONTROL
SUMMARY REPORT ON NEW OR SUBSTANTIALLY
CHANGED PROJECTS OR PROGRAMS USING PESTICIDES
Calendar Year 1967

DATE: _____

1. Department, Agency, and Division:
2. Program Title:
3. Location:
4. Objectives:
5. Economic Importance:
6. Description of areas to be treated:
7. Special precautions exercised:
8. Are any other Federal Departments involved?
9. Are State and local governmental agencies involved?
10. Are private institutions, agencies, or individual interests involved?

This Form is to be used, in addition to Form A, for new or significantly changed specific projects, specific programs, or housekeeping-type programs as follows:

(1) Identify component reporting.
(2) List class of plant or animal pest to be controlled; e.g., grasshoppers, predatory animals, aquatic weeds, etc.
(3) Specific location.
(4) Explain the broad purpose(s) of the program or project.
(5) Indicate the economic basis on which the decision to use pesticides was based.
(6) Describe briefly the terrain, buildings, etc. and the human or other animal inhabitants in the areas to be treated.
(7) Types of clothing, equipment, and methods specifically used in the interest of protecting man, and nontarget animals and plants from adverse effects of control operations. Note particularly storage, application and container-disposal techniques. Include whether materials used were in accord with approved, registered use.
(8-10) Show what other Federal Departments, State or local government agencies, and private interests or institutions may be involved in the program or project, in terms of evaluating efficency and safety of pest control, technical guidance given, etc.

Enclosure 3

Form A

STATE:______________

SUMMARY OF PROJECTS INVOLVING PESTICIDES, CALENDAR YEAR 1967

Location (District)	No. of Proj.	Objective (Pest)	Pesticide Used: Common Name	Pesticide Used: Amt. Per Ac.	Carrier and Amount	Acreage To Be Treated	Method of Application	Crops	Water Areas	Period of Treatment

Enclosure

NO.860 P.18

E X A M P L E

Illustration 1

STATE:_____

SUMMARY OF PROJECTS INVOLVING PESTICIDES, CALENDAR YEAR 1967

Location (District)	No. of Proj.	Objective (Pest)	Pesticide Used: Common Name	Pesticide Used: Amt. Per Ac.	Carrier & Amount	Acreage to be Treated	Method of Application	Crops	Water Areas	Period of Treatment
Rock Springs	4	Sagebrush	2,4D Butyl Ester	2 lb./Ac. (1)	Water 5 gal./Ac.	2,000 Ac. or Warehouse	Aircraft (Fixed Wing)	5 Mi.	Live Stream ½ Mile	May

Instructions for Preparation of this Table:

1. Location by district.
2. Show the number of projects that are included in this entry by target species and method of control.
3. List species of plant or animal to be controlled; i.e., sagebrush, shinnery oak, Bark beetle, mice, etc.
4. Show common name and percent of active ingredient in formulation; i.e., 5% DDT. If more than one compound is used, make a new line entry for each one; list data for items 3, 4, and 5. Herbicides should be further identified by the amine or ester form to be used.
5. Indicate rate of application and number of treatments; i.e., 2 lb./ac. (1).
6. Indicate type of carrier and amount of total formulation per acre; i.e., water 5 gal./acre.
7. If not in acres, indicate as "Spot treatment," "Building," etc.
8. Specify aircraft, ground equipment, or hand treatment.
9. Indicate whether treatment involves meat animals, or food, or forage crops. If not insert "None."
10. Indicate whether treatment involves rivers, lakes, irrigation or domestic waters.
11. If single treatment, show month; if more than one treatment, list period as "spring," "summer," etc.

NOTE: In Column 4 specify the form of all pesticides used, such as wettable powder (w.p.), granular (gran.) emulsifiable concentrate (e.c.), or dust.

Enclosure 1

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IN REPLY REFER TO: 1—

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

9220 (712f)

Encl 1 s+1

October 17, 1966

Information Memorandum No. 66- 140
Expires 12/31/66

To: All SD's, DM's, SCD's, D-BIFC

From: Chief, Division of Resource Standards & Technology

Subject: Pesticides - Publications

Enclosed for your information is one copy of a publication titled "Scientific Aspects of Pest Control" recently published by the National Academy of Sciences and the National Research Council.

The publication is composed of papers presented at the National Pesticide Symposium held in Washington, D. C., February 1 - 3, 1966. The authors are leading authorities in their fields and represent a good cross section of the science and use of pesticides.

Additional copies may be obtained directly from the Library of Congress at $5 per copy or this office will assist you in obtaining more copies if they are needed.

George L. Turcott

Enclosure 1 (1 to ea. addressee)
Enc. 1 Scientific Aspects of
Pest Control

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17

Attachment

CENTRAL FILE COPY

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

NOV 2 1967
IN REPLY REFER TO:
7311.2(711)

October 31, 1967

Instruction Memo No. 67-453
Expires: 12/31/67

To: State Directors, SCD's

From: Assistant Director, Resource Management

Subject: Outlook for herbicide availability

Based on the present outlook, considering military demands and industry's capacity to produce 2-4-D, no 2-4-5-T will be available through 1970 and 2-4-D will be limited.

Field offices should consider some alternate projects if 2-4-D is not available or is limited next spring. Bid invitations for scheduled projects should be circulated and awarded early in the next calendar year. This is contingent on available funds.

National surveys are in progress which will provide better estimates of expected supply and demand of 2-4-D. Further information should be ready by December 1, 1967 to better evaluate the availability of 2-4-D. We will keep you informed.

Eugene V. Zumwalt

Distribution:

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18

Form 7310–4
(966)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SPECIFICATION DETAILS

Name of Project

Antelope Flat Revegetation Maintenance

1. *General*––The following specification details are in addition to and/or modify the "Specification for Aerial Application of Herbicide" made a part of this invitation for bids and any contract resulting therefrom.

2. *Location of the Work*––The work is located in **Washoe County, Nevada approximately 40 miles southeast of Cedarville, California**

at the site(s) shown on the attached *Work Location Map* which is made a part hereof.

3. Approximate acreage **800**

4. Approximate starting date **June 16, 1969**

5. *Spray formula*––The herbicide shall be

2, 4-D Ester low volatile. Acid equivalent 3 lb./acre.
Carrier will be water. Wetting agent to be included at the rate of ½ pint per 100 gallons.
Rate of application - 3/4 gallon of 2, 4-D (3lbs.) and 4¼ gallons of water for a total mixture of 5 gallons per acre.

6. *Rate of application*––The spray formula shall be applied at the rate of **3** pounds acid equivalent of herbicide per acre.

7. *Minimum aircraft requirements*––Aircraft of the type specified below shall be furnished for this project. Bidders offering aircraft other than that specified herein will be considered nonresponsive.

- ☐ Unrestricted
- ☒ Fixed-wing or helicopter; aircraft capable of applying spray at speeds of 100 MPH or less
- ☐ Helicopter only
- ☐ Other *(specify)* _____

8. *Flights paths to be flagged by* ☐ The Contractor ☒ The Government

9. *Materials*––

a. Materials to be furnished by Government––
- ☐ Herbicide and carrier, including wetting agent where required
- ☐ Carrier only, including wetting agent where required
- ☒ Herbicide only
- ☒ Materials will be available at the Government's warehouse at **Cedarville, California**

The Contractor shall load and transport such materials to the site(s) from which operations will be conducted. The cost of loading and transporting materials and of returning unused materials to the warehouse shall be included in the unit price bid in the Schedule for "Aerial application of herbicide."

☐ The Government will deliver the materials to the airstrip(s) from which the Contractor proposes to conduct spraying operations.

b. Materials to be furnished by the Contractor——

- [ ] Herbicide and carrier, including wetting agent where required
- [ ] Herbicide only
- [x] Carrier only, including wetting agent where required

The cost of all materials furnished by the Contractor shall be included in the unit price bid for "Aerial application of herbicide."

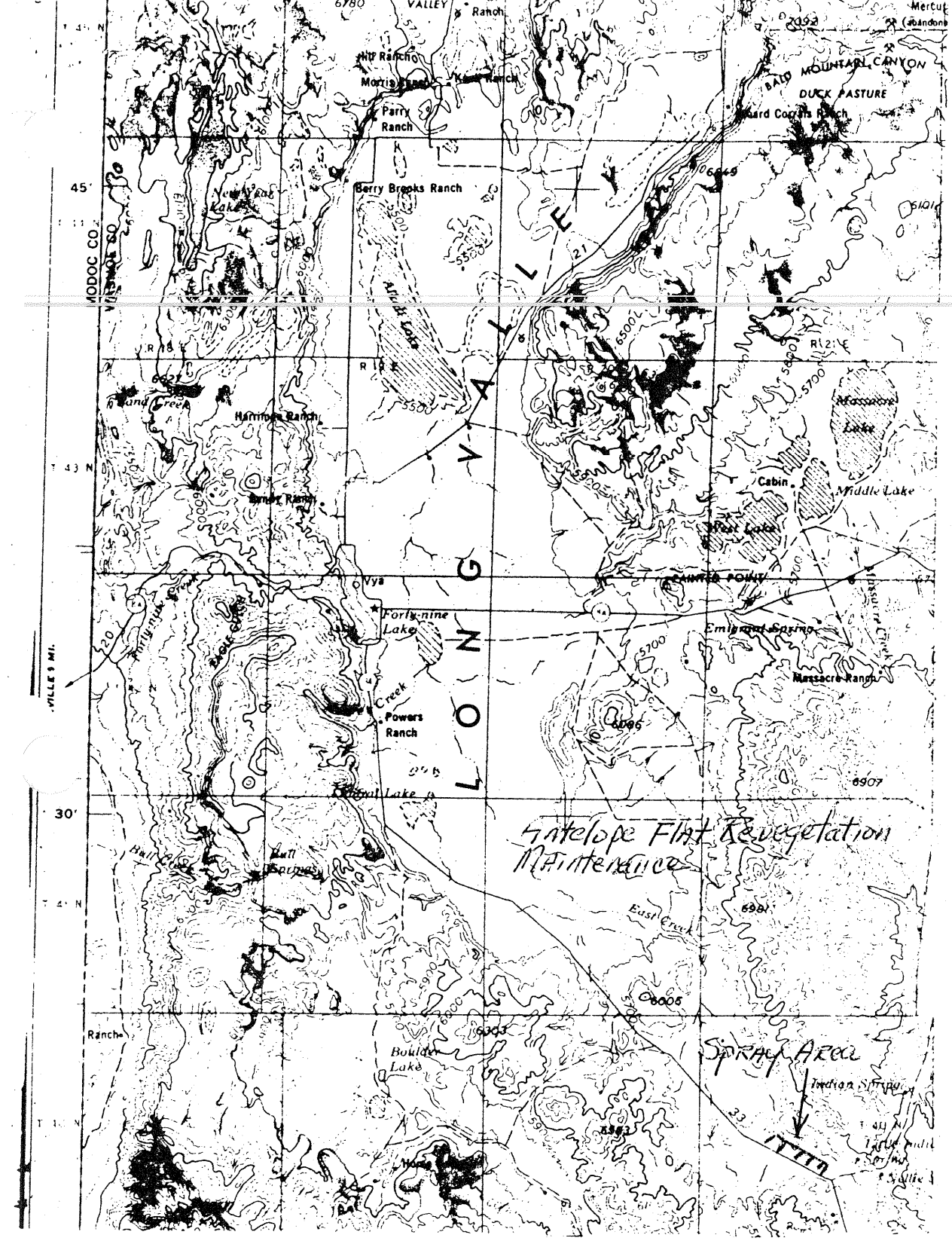
c. Others *(specify)* _____

10. *Maximum wind velocity at which spray may be applied——*

- [ ] 5 MPH
- [ ] 6 MPH
- [ ] 7 MPH
- [x] 8 MPH
- [ ] 9 MPH
- [ ] 10 MPH

11. *Special Instructions——*

None



VALLEY
Ranch
Hill Ranch
Morris Ranch
Parry Ranch
BALD MOUNTAIN CANYON
DUCK PASTURE
Berry Brooks Ranch
New Year Lake
MODOC CO
Alkali Lake
LONG VALLEY
Sand Creek
Harrison Ranch
Massacre Lake
Cabin
Middle Lake
West Lake
Vya
PAINTED POINT
Forty-nine Lake
Emigrant Spring
Massacre Ranch
Powers Ranch
Lake
Bull Springs
Antelope Flat Revegetation Maintenance
East Creek
Boulder Lake
Spray Area
Indian Spring
45'
30'

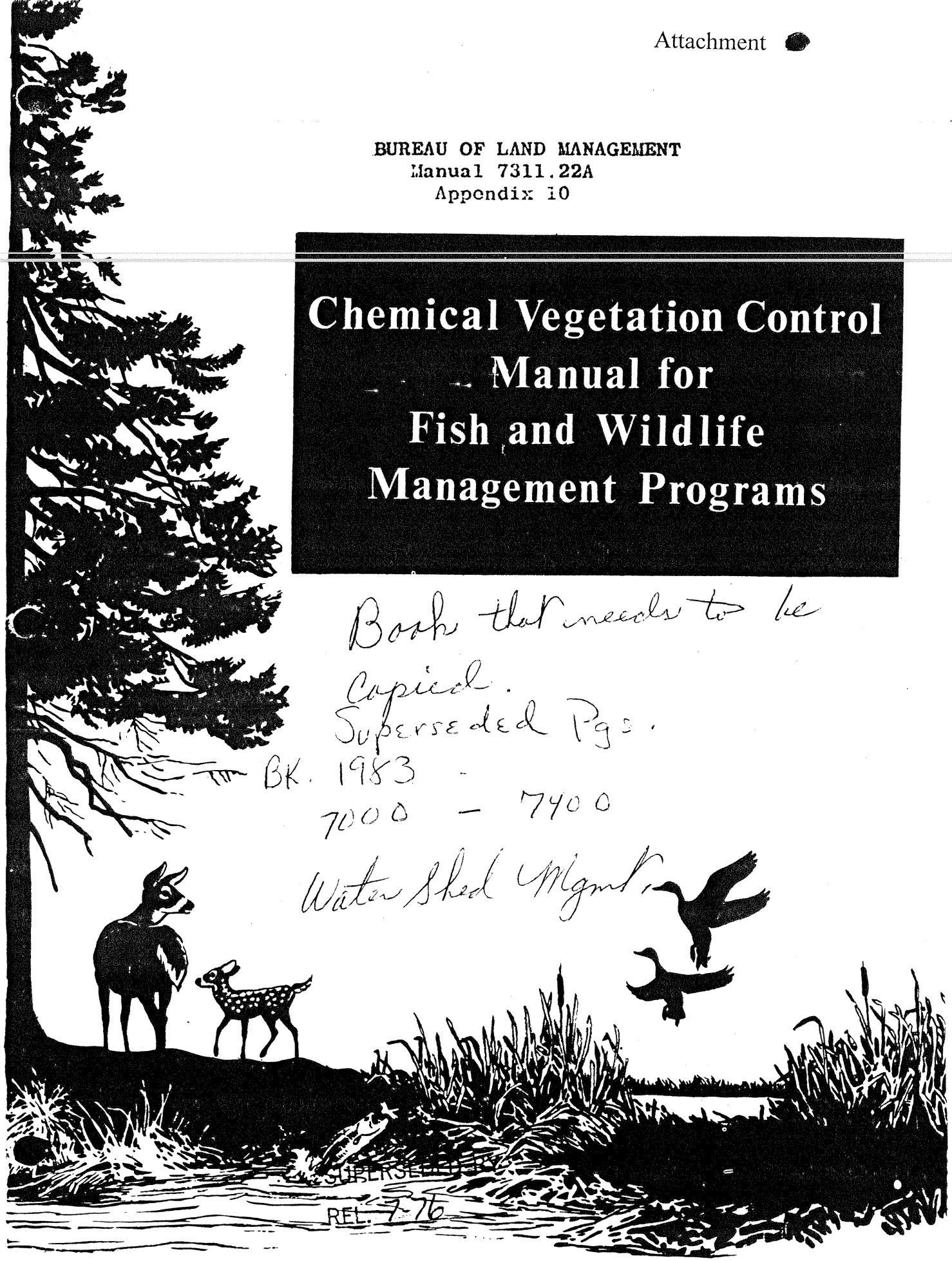
19

Attachment

BUREAU OF LAND MANAGEMENT
Manual 7311.22A
Appendix 10

Chemical Vegetation Control Manual for Fish and Wildlife Management Programs

Book that needs to be Copied. Superseded Pgs.
BK. 1983 -
7000 - 7400
Water Shed Mgmt.



SUPERSEDED
REL. 7-76

Form -2 (Nov. 1965)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MANUAL TRANSMITTAL SHEET

Release 7-6

Date 8/9/66

Subject

7311 - BRUSH AND WEED CONTROL

1. Explanation of Material transmitted: This release sets forth instructions and describes methodology for conducting chemical brush and weed control programs in the Bureau of Land Management.

2. Material Superseded: No Manual pages are superseded by this release. The draft Chemical Brush and Weed Control Handbook issued 1/28/65 is replaced in its entirety by this release.

3. Filing Instructions: After the attached sheets have been filed as indicated below, this transmittal may be destroyed.

INSERT:

TC-1 through TC-3 (2 sheets)
7311.2 through 7311.26C1a, with Table A (13 sheets)
Illustrations 1 through 10 (9 sheets)
Appendices 1 through 9 (27 sheets)
In new Manual Binder

REMOVE:

None

.21F3 SUPERSEDED BY
.22 REL. 7-7
.23B
.23B5
.25 - Table A, P. 142

Associate Director

rest of .2 SUPERSEDED BY
through REL. 7-67
App. 8, P. 2

all SUPERSEDED BY
rest REL. 7-76

Form 1221-2
(February 1967)

District Manager
Bureau of Land Management
300 N. Center St.
Casper, Wyo. 82601

BLM 542

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MANUAL TRANSMITTAL SHEET

Release
7-7

Date
9/7/67

Subject

7311 - BRUSH AND WEED CONTROL

1. Explanation of Material transmitted: This release provides certain corrections and modifications.

2. Material Superseded: Manual pages superseded by this release are listed under "REMOVE" below. No other BLM directives are superseded.

3. Filing Instructions: After the attached sheets have been filed as indicated below, this transmittal sheet may be destroyed.

INSERT	REMOVE
7311.21F3 and 7311.22 (Rel. 7-6) (1 sheet)	7311.21F3 and 7311.22 (Rel. 7-6, 8/9/66) (1 sheet)
7311.23B and 7311.23B5 (Rel. 7-6) (1 sheet)	7311.23B and 7311.23B5 (Rel. 7-6, 8/9/66) (1 sheet)
7311.25 - Table A, pages 1 & 2 (Rel. 7-6) (2 sheets)	7311.25 - Table A, pages 1 & 2 (Rel. 7-6, 8/9/66) (2 sheets)

Associate Director

.21F3 through .25 SUPERSEDED BY REL. 7-67

all rest SUPERSEDED BY REL. 7-76

Form 1-2
(November 1965)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MANUAL TRANSMITTAL SHEET

Release
7-9

Date
5/20/68

Subject

7311.2 - CHEMICAL VEGETATION CONTROL HANDBOOK

1. Explanation of Material Transmitted: The booklet on Chemical Vegetation Control for Fish and Wildlife Management programs will be used as a handbook supplementing BLM Manual 7311.2. The handbook provides additional guidance for vegetation control operations, including chemical, physical, and biological properties of certain herbicides currently available.

2. Material Superseded: No BLM directives are superseded. This handbook provides more current information on particular chemicals.

3. Reports Required: None.

4. Filing Instructions: This transmittal sheet will be filed in 7311.22A by regular manual holders. All manual holders will not receive copies of this handbook, due to the limited number of copies available. Special distribution will be made to those directly concerned with this subject. Those receiving the handbook may file it in the manual and discard the transmittal sheet; or file the transmittal sheet as a cross reference in the manual and use the handbook as a desk reference.

INSERT:	REMOVE:
7311.22A Appendix 10 (1 Handbook) Publication 48	None

5. Special Distribution: All supervisors, conservationists, and others engaged in Chemical control programs should read this handbook.

SUPERSEDED BY
REL. 7-76

John O. Crow
Associate Director

GPO 853-676

Form -2
(Nove 1965)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MANUAL TRANSMITTAL SHEET

Release
7-14

Date
1/22/69

Subject

7411 - BRUSH AND WEED CONTROL

1. Explanation of Material Transmitted: This release sets forth instructions, guidelines and procedures for conducting the mechanical brush and weed control programs on Bureau administered lands.

2. Material Superseded: None.

3. Reports Required: None.

4. Filing Instructions: This release makes reference to various manuals which have not been written. These are cross-referenced in the redesignation chart below. File this transmittal sheet with this release pending receipt of the references; then this transmittal sheet may be destroyed.

Redesignation Chart

Existing Manual Number	Manual Name	New Manual Number
7121.21	Surface-Water Hydrology	7315.1
None	Erosion	7317
None	Forms	7331

Remove	Insert
None	7411 Appendices (1-3) Illustrations (1-5) Total Sheets: 35

SUPERSEDED BY
REL. 7-80

Associate Director

GPO 853-676

Fc -1-2
(N er 1965)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MANUAL TRANSMITTAL SHEET

Release
7-16

Date
3/19/69

Subject

7411 - BRUSH AND WEED CONTROL

1. Explanation of Material Transmitted: This release covers pinyon-juniper control criteria, control methods, and conversion maintenance requirements.

2. Material Superseded: None.

3. Reports Required: None.

4. Filing Instructions: This release makes reference to various manuals which are being revised or in the process of being written. These are cross-referenced in the redesignation chart below. File this transmittal sheet with this release pending receipt of the manuals; then this transmittal sheet may be destroyed.

Redesignation Chart

Existing Manual Number	Manual Name	New Manual Number
None	Soils	7312
None	Cover	7313
None	Climate	7314
7311.2	Chemical	7411.2

REMOVE	INSERT
None	TC for 7411.5 (1 Sheet) 7411.5 (13 sheets) Total: 14 sheets

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Jerry L. O'Callaghan
Acting Associate Director

GPO 853-676

Form 1221-2
(February 1967)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MANUAL TRANSMITTAL SHEET

Release
Rel. 7-67

Date
4/16/79

Subject

7311 - BRUSH AND WEED CONTROL

1. Explanation of Material Transmitted: This release removes Manual Section 7311. This material is now outdated and unusable. Information on this subject matter will be presented in another Manual Section under another Subject-Function Classification Code.

2. Reports Required: None.

3. Material Superseded: Manual pages superseded by this release are listed under "REMOVE" below. No other BLM directives are superseded.

4. Filing Instructions: After the sheets listed below have been removed, this Transmittal Sheet may be discarded.

REMOVE:	INSERT:
.2 through Appendix 8, page 2 (Release 7-6) .21F3 through .25 (Release 7-7) (Total: 48 sheets)	None

OK
Klw
5/1/79

Roman H. Kaminga
Associate Director
Acting

Form 1221-2
(June 1969)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MANUAL TRANSMITTAL SHEET

Release 7-76
Date 6/30/83

Subject

7311 - BRUSH AND WEED CONTROL

1. Explanation of Material Transmitted: This release removes the subject Section from the BLM Manual because it is outdated.

2. Reports Required: None.

3. Material Superseded: The Manual Section superseded by this release is listed under "REMOVE" below. No other directives are superseded.

4. Filing Instructions: After the designated Section has been removed from the Manual as directed, this Transmittal Sheet may be discarded.

REMOVE:	INSERT:
All of 7311 (Release 7-6) 7-7	NONE
Appendix 10 (Booklet filed with Manual Section) (Rel. 7-9) MKB	
(Total: 26 Sheets)	

James M Parker
Associate Director

Form 1221-2
(June 1969)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MANUAL TRANSMITTAL SHEET

Release
7-80

Date
6/30/83

Subject

7411 - BRUSH AND WEED CONTROL

1. Explanation of Material Transmitted: This release removes the subject Section from the BLM Manual because it is outdated.

2. Reports Required: None.

3. Material Superseded: The Manual Section superseded by this release is listed under "REMOVE" below. No other directives are superseded.

4. Filing Instructions: After the designated Section has been removed from the Manual as directed, this Transmittal Sheet may be discarded.

REMOVE:	INSERT:
All of ~~4711~~ 7411 (Releases 7-14, 7-16, ~~and 7-6~~)	NONE

(Total: 53 Sheets)

James M Parker
Associate Director

INT 2775-83

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MANUAL TRANSMITTAL SHEET

Subject

7311 - BRUSH AND WEED CONTROL

1. Explanation of Material transmitted: This release sets forth instructions and describes methodology for conducting chemical brush and weed control programs in the Bureau of Land Management.

2. Material Superseded: No Manual pages are superseded by this release. The draft Chemical Brush and Weed Control Handbook issued 1/28/65 is replaced in its entirety by this release.

3. Filing Instructions: After the attached sheets have been filed as indicated below, this transmittal may be destroyed.

INSERT:	REMOVE:
TC-1 through TC-3 (2 sheets) 7311.2 through 7311.26C1a, with Table A (13 sheets) Illustrations 1 through 10 (9 sheets) Appendices 1 through 9 (27 sheets) In new Manual Binder	None

.21F3 SUPERSEDED BY
.22 REL 7-7
.23B
.2385
.25 - Table A, P. 142

rest of .2 SUPERSEDED BY
through REL 7-67
App. 8, P. 2

Associate Director

-2
nber 1965)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MANUAL TRANSMITTAL SHEET

Release
7-9

Date
5/20/68

Subject

7311.2 - CHEMICAL VEGETATION CONTROL HANDBOOK

1. Explanation of Material Transmitted: The booklet on Chemical Vegetation Control for Fish and Wildlife Management programs will be used as a handbook supplementing BLM Manual 7311.2. The handbook provides additional guidance for vegetation control operations, including chemical, physical, and biological properties of certain herbicides currently available.

2. Material Superseded: No BLM directives are superseded. This handbook provides more current information on particular chemicals.

3. Reports Required: None.

4. Filing Instructions: This transmittal sheet will be filed in 7311.22A by regular manual holders. All manual holders will not receive copies of this handbook, due to the limited number of copies available. Special distribution will be made to those directly concerned with this subject. Those receiving the handbook may file it in the manual and discard the transmittal sheet, or file the transmittal sheet as a cross reference in the manual and use the handbook as a desk reference.

INSERT:	REMOVE:
7311.22A Appendix 10 (1 Handbook) Publication 48	None

5. Special Distribution: All supervisors, conservationists, and others engaged in Chemical control programs should read this handbook.

SUPERSEDED BY
REL 7-76

John O. Crow
Associate Director

GPO 853-676

Form 1221-
(November 1965)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MANUAL TRANSMITTAL SHEET

Release
7-10

Date
7/10/68

Subject

7410 - LAND TREATMENT

1. Explanation of Material Transmitted: This release was prepared by the Denver Service Center and provides general guidelines for Land Treatment practices.

2. Material Superseded: No manual pages are superseded by this release.

3. Reports Required: None.

4. Filing Instructions: The Range Seeding Equipment Handbook, Appendix I, of this release was distributed in 1965 by memorandum from the Washington Office. All manual holders have not received copies of this handbook due to the limited number of copies available. Original distribution was made to those directly concerned with this subject. Those who have received this handbook should indicate "Appendix I, BLM Manual 7410" on the front cover and file in the manual and discard this transmittal sheet; or file this transmittal sheet as a cross reference in the manual and use the handbook as a desk reference. When additional copies are available, they will be automatically distributed.

Remove	Insert
None	TC-1 7410 (7 sheets) Appendix I, Range Seeding Equipment Handbook

John A. Carver
Associate Director

TC-1 SUPERSEDED BY
.2 REL. 7-45

all SUPERSEDED BY
rest REL. 7-79

GPO 853-67

7410 - LAND TREATMENT

.01 Purpose
.02 Objective
.03 Authority - See 7400
.04 Responsibility - See 7400
.05 Definitions - See 7400

.1 Need for Land Treatment
- .11 Vegetation
- .12 Erosion
- .13 Soils
- .14 Water
- .15 Resource Production
- .16 Downstream Values

.2 Selection of Land Treatment
- .21 Practices
- .22 Site Suitability
- .23 Land Use
- .24 Management
- .25 Coordination with Others
- .26 Economic Considerations (Reserved)

.3 Planning
- .31 Job Design
- .32 Specifications

.4 Implementation
- .41 Layout of Area
- .42 Time of Application
- .43 Supervision
- .44 Studies

.5 Equipment

Appendix

1 Range Seeding Equipment Handbook

SUPERSEDED BY
REL. 7-45

7410 LAND TREATMENT

.01 Purpose. This section provides the criteria, standards, and techniques for land treatment, including determination of needs, selection of practices, planning and implementation. Land treatment includes artificial vegetation control, seeding and planting, soil tillage, or similar work that is performed to improve undesirable watershed conditions that cannot be effectively corrected by management alone.

.02 Objective. Land treatment practices are applied to bring about the most rapid improvement consistent with the needs of the site and its potential for betterment. Specific objectives are to:

--Control rate of overland and channel flow, water and wind erosion, and resultant soil losses.

--Improve soil development, infiltration rates, and moisture capacity; dilute soluble salts; and provide proper plant nutrients.

--Improve quality and quantity of renewable resources.

--Protect on-site and off-site values from sediment and flood damages.

.03 Authority - See 7400

.04 Responsibility - See 7400

.05 Definitions - See 7400

SUPERSEDED BY
REL 7-79

7410 LAND TREATMENT

.1 Need for Land Treatment. Examine and analyze each site to determine if undesirable conditions exist that can best be corrected or improved by the application of treatment practices. Conditions to consider include:

.11 Vegetation. Areas with sparse vegetal cover and litter, or undesirable vegetation that does not effectively intercept rainfall or impede overland flow, with low forage or habitat value, or with poisonous or noxious qualities.

.12 Erosion. Evidence of water or wind erosion as indicated by pedestalled or buried plants, rills, and gullies, erosion pavement, active channel cutting, sediment accumulations above natural or artificial barriers, drifted soil, and dunes.

.13 Soils. Those soils currently producing less than their capabilities but having the characteristics for improvement through increased moisture capacity, improved infiltration, improved soil structure, leaching of salts and alkali accumulations to enhance plant production, etc.

.14 Water. Areas with evidence of excessive overland and channel flows indicated by high water marks, debris accumulations, scouring, and cutting of channel banks.

.15 Resource Protection. Areas having poor quality and low production of renewable resources such as livestock and wildlife forage, timber, and water.

.16 Downstream Values. Downstream lands, structures, or other improvements subject to flood and sediment damage, loss of capacities, and high maintenance requirements.

SUPERSEDED BY
REL. 7-79

.2 Selection of Land Treatment. The selection of the treatment practice(s) to meet the needs of the site depends on the objectives to be attained, individual practice benefits and limitations, site suitability, and other considerations. The application of more than one practice in the same area often results in the greatest overall improvement. Site conditions may require the use of water control structures in addition to land treatment practices. Most sites require specific analysis on which to base final practice(s) selection and design.

.21 Practices. Each treatment practice has been developed, and is applied, to correct or improve specific site needs and conditions. Each has certain limitations and site requirements for successful application. (See 7411 through 7416.)

.22 Site Suitability. Consider existing site conditions and proposed practice benefits, limitations or requirements with respect to the potential of the site. The same items which caused the existing unfavorable site condition(s) or that indicate the need for improvement, may also limit favorable response to treatment, i.e.; topography may be too rough to allow any type of tillage practice, seasonal precipitation may not warrant seeding, or big game concentrations may exist that cannot be controlled under existing regulations.

.23 Land Use. Current land use is an important factor when selecting sites and treatment practices. Temporary elimination or curtailment of uses may be necessary to prevent serious damage to new work and to permit existing vegetation to recover, or for seedings to become established. Areas subject to mining activities, geophysical explorations, oil and gas well drilling, and recreational developments are questionable sites for treatment unless required protection can be assured. Special consideration must be given to areas containing archeological, historical, geological, or scientific sites to provide protection of the site and the natural surroundings.

SUPERSEDED BY
REL. 7-45

.3 Planning. Begin planning to implement treatment well in advance of work plan schedules. Planning includes preparation of management plans in conjunction with other uses, arrangements for non-use or other site protection, job designs and specifications.

.31 Job Design. Design individual jobs to fit specific site conditions and to obtain the desired objectives. Design may vary from a simple work location map and job specifications to a detailed project plan involving several practices and jobs. Plan for irregular boundaries and leave untreated islands and strips along roadways and waterways to increase the edge effect for big game animals and to preserve a more natural appearance of the overall area when planning extensive vegetation control and watershed tillage practices.

.32 Specifications. Use preprinted specifications for all treatment practices, whenever possible. When preprinted specifications are not applicable or available, draft new specifications, setting forth a description of the required work.

SUPERSEDED BY
7-79

.4 Implementation. Items necessary to implement treatment operations include marking boundaries, determining time of application, detailed instructions and supervision, and location of study sites.

.41 Layout of Area. Perimeter boundaries of treatment areas must be well marked, including the delineation of islands that are not to be treated. Flag all section corners, bench marks, mining claim monuments, etc., to prevent their being obliterated. When a treatment practice is to be performed on the contour, establish the necessary level lines to assure that work is properly accomplished.

.42 Time of Application. When chemical control, seeding, fertilization, etc., are included in the operation, schedule work only for the time of year when best results for the specific practice can be expected. Normally, such treatment operations should not be performed when ground is frozen, contains excessive moisture, or when covered with snow.

.43 Supervision. The Contracting Officer's Authorized Representative (COAR) must explain all details of the work to the Contractor. This includes the uses, adjustments, and servicing requirements of all Bureau furnished equipment, and rates of application, dimensions, quantities, and control methods. Close supervision is necessary when operations are started. The COAR is responsible at all times to assure compliance with specifications. No changes are permitted except in the manner provided for in the contract. Details of the work must be fully understood by those concerned when the work is to be accomplished by force account crews.

.44 Studies. Locate plots, photo stations, transects, soil moisture measuring devices, etc., before and immediately after treatment operations to permit "before" and "after" observations to be made. This information is necessary when evaluating job success and for preparing future criteria for the practice. Timely followup must be assured. Studies need not be established on every job, but only when conditions are significantly different from other sites under observation. (See 4412, Physical Resource Studies; and, 6600, Wildlife Management Studies; etc.)

.5 Equipment. The Range Seeding Equipment Handbook, Appendix 1, describes most of the specialized equipment currently used to accomplish land treatment practices. Additional descriptions are contained in the separate practice sections 7411 through 7416.

SUPERSEDED BY.
REL. 7-79

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MANUAL TRANSMITTAL SHEET

Release 7-16

Date 3/19/69

Subject

7411 - BRUSH AND WEED CONTROL

1. Explanation of Material Transmitted: This release covers pinyon-juniper control criteria, control methods, and conversion maintenance requirements.

2. Material Superseded: None.

3. Reports Required: None.

4. Filing Instructions: This release makes reference to various manuals which are being revised or in the process of being written. These are cross-referenced in the redesignation chart below. File this transmittal sheet with this release pending receipt of the manuals; then this transmittal sheet may be destroyed.

Redesignation Chart

Existing Manual Number	Manual Name	New Manual Number
None	Soils	7312
None	Cover	7313
None	Climate	7314
7311.2	Chemical	7411.2

REMOVE	INSERT
None	TC for 7411.5 (1 Sheet) 7411.5 (13 sheets) Total: 14 sheets

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REL. 7-80

Jerry G. O'Callaghan
Acting Associate Director

GPO 853-676

7411 - BRUSH AND WEED CONTROL

Table of Contents

.5 Pinyon-Juniper Control
.51 Control Criteria
A. Site Classification
1. Climate
a. Growing Season
b. Precipitation
c. Temperature
2. Topography
a. Slope
b. Exposure
c. Elevation
3. Soils
a. Depth
b. Texture
c. Rockiness
d. Erosion
4. Vegetation
a. Tree Stand
b. Understory
5. Fauna
B. Resource Uses
1. Watershed
a. Protective Cover
b. Runoff
c. Conservation Treatments
2. Wildlife
a. Use Management
3. Livestock Grazing
a. Grazing Management
b. Forage Production
4. Woodland Products
5. Recreation
6. Scientific
.52 Conversion Methods
A. Tree Control
1. Chaining
a. Number of Chainings
b. Thinning
c. Size of Tractor
2. Tree Crushing
a. Soil Penetration
b. Attached Seeder

SUPERSEDED BY
REL. 7-80

3. Dozer Pushing
4. Windrowing
a. Seed Mixtures
5. Stacking
6. Brush Chopping
7. Hand Grubbing and Cutting
a. Stump Treatment
8. Burning
a. Windrow and Stack Burning
b. Individual Tree Burning
9. Chemical
a. Chemical Pellets
b. Granulated TBA
c. Application
B. Control Standards
1. Follow-up Treatment
2. Comparison of Tree Control Methods
3. Tree Kill Factors
a. Effect of Tree Height
b. Effect of Tree Diameter
c. Effect of Tree Density
C. Complementary Treatments
1. Seeding
a. Species for Seeding
b. Seeding Requirements
2. Brush Control
D. Influence of Tree Control
1. Debris and Small Trees
2. Browse Response
.53 Treatment Follow-up
A. Residual Stand
B. Tree Invasion
C. Rodent, Rabbit, and Insect Populations
D. Production Losses
E. Alternate Treatment Areas
F. Resource Use Changes
G. Soil Erosion

.5 Pinyon-Juniper Control. Use this treatment on woodlands under the following conditions:

--Where low production of desirable forage species has resulted from abusive use and invasion of pinyon and juniper.

--Where more effective erosion and runoff control is a critical need.

--Where proper use management can be provided.

--Where the terrain will permit treatment activities.

.51 Control Criteria. In determining control methods, consider site characteristics and resource uses.

A. Site Classification. To provide decision making guides for P-J control operations, evaluate site characteristics in conjunction with resource uses to be planned. Pertinent aspects of climatic, topographic, edaphic, vegetative, and faunal features must be studied and classified.

1. Climate. (See 7314).

a. Growing Season. This varies widely throughout the P-J type, dependent upon precipitation occurrence and its coaction with temperature.

b. Precipitation. Two fairly distinct patterns prevail. In the north part of the type (mostly Nevada, Utah, Colorado and north), precipitation occurs predominantly in winter and spring where most plant growth is in spring and early summer. The south portion (mainly Arizona and New Mexico) has predominantly summer precipitation and mid- and late-summer growth.

The southern portion of the P-J type usually supports a better understory than the northern part, and is more productive of natural trees and undercover. It is generally not well adapted to seeding of grasses nor apparently of most shrubs and forbs, while the northern area is much more productive of most seeded species. For success in seeding such plants as the wheatgrasses to the south, more precipitation (about 15" and over) is required with a fair amount of it coming in winter and spring. Farther north such plantings can be successfully made, if soil is adequate, with 12" of rainfall and up.

SUPERSEDED BY
REL. 7-80

c. Temperature. Variations in this factor are primarily with differences in latitude and elevation.

2. Topography.

a. Slope. Slope is the topographic factor of greatest concern in tree control operations. Normally the steeper and rougher parts of a control area will not be treated for tree removal, but left for wildlife cover or aesthetic reasons. Most tree control operations have been completed on areas with slopes of 15% or less, but most types of control equipment can be operated on slopes up to 30%. Some highly successful chaining and seeding work for the benefit of big game and watershed control has been done on rocky slopes in excess of 50%.

b. Exposure. Different exposures have pertinence in connection with specific uses, such as not converting northeast slopes on big game ranges, although such sites are those most productive of replacement vegetation.

c. Elevation. This has significance primarily in being correlated with precipitation amounts. It also has similar relationship to temperature and, therefore, growing season.

3. Soils. (See 7312). An extensive soil survey is helpful in planning P-J treatments. The smoother and more productive soils could be selected for conversion, and the rougher, more sterile breaks and patches left for game cover and aesthetic purposes.

a. Depth. For any appreciable productivity, total soil depth (that to which roots penetrate) should be 12" or more. Effective root depth penetration of desirable species for which conversion is being recommended is a good indicator of potential productivity.

b. Texture. P-J soils are ordinarily on the coarse side, and are usually rocky to some extent. These trees have higher moisture requirements than herbaceous plants, and most smaller woody species. Therefore, P-J prevails on coarser soils with lower moisture tensions, although they do occur on finer soils where conditions have permitted them to replace the smaller vegetation.

c. Rockiness. The amount of rock in soils may favorably affect moisture relations for plant production; but, it perhaps will have more significance in restricting the type of equipment that may be used in tree control and seeding operations.

d. Erosion. The extent and trend of soil erosion, either from wind or water action, is a direct reflection of watershed condition. It also indicates the need for giving priority to this conservation feature when planning treatment operations and consumptive use management.

4. Vegetation. The composition of tree stand and understory, and the density and stature of the trees are critical factors in determining desirability of tree control. Also, the adaptability and availability of replacement herbaceous and browse species might be controlling in the conversion decision.

a. Tree Stand. The size and density of trees determine the probability of successful control operations and preference in use of control methods. Determine the composition of the stand, size and density. Some factors to consider are:

--Pinyon have a higher moisture requirement than juniper which indicates higher precipitation, coarser soils, and the conversion longevity may be greater.

--Juniper is found on finer soils and on drier sites than pinyons. This may affect success of treatment.

--Poor sites produce short broad crowns for both trees.

b. Understory. For P-J stands with adequate well-distributed remnants of a desirable understory of herbaceous and shrubby plants, tree control without seeding may be sufficient. This is frequently the situation in the southern part (mostly Arizona and New Mexico) of the P-J type. Here most areas have a good cover of such grasses as Bouteloua gracilis, B. curtipendula, Hilaria jamesii, and Poa fendleriana along with various shrubs and forbs. Where undercover is sparse or of poor quality, tree control should be accompanied by seeding of desirable species.

5. Fauna. The variety of animals and their populations on P-J areas must be considered in determining treatments and/or management actions. Animal information need extends from livestock on through the wildlife species to insects. Significant existing or potential populations will be analyzed and appropriate control or development objectives set. These studies will provide guides in allocating resource uses and establishing treatment programs. Livestock use statistics should be available, and game mammal and bird estimates based preferably on use analyses (census, pellet groups and droppings, utilization transects, browse form and age classification, nesting surveys, etc.) will be provided. Beyond these, determinations of rabbit, rodent, and insect pressures on converted vegetation are essential. Such use is especially critical for natural or artificial plant reproduction.

7411 - BRUSH AND WEED CONTROL

B. Resource Uses. The requirements for maximum benefits to each resource use on a P-J area will be determined. Treatment plans will depend upon the importance and demand of each use that will be present on an area, and the degree of compatibility between them. For most areas, these will be watershed conservation, wildlife, and livestock grazing. Management of P-J stands for woodland product, recreational, aesthetic, and scientific considerations will be restricted to small select areas. Aesthetic quality is usually enhanced by properly conducted treatments for the major type uses. Treatment methods and patterns adopted will be largely a reflection of the predominant uses to be provided.

1. Watershed. The value of every land area as a watershed should be given paramount consideration. The need for maintaining the soil mantle in place as the production base is universal. Adequate cover to retard destructive runoff, bind the soil, and induce moisture infiltration is essential. Quantity and quality of water supplied and used on-site and off-site are to be given major attention. For most P-J areas, however, retention and use of precipitation moisture on-site will be of greater importance than off-site water yields.

a. Protective Cover. (See 7313.) Watershed cover consists of all surface elements lending protection to the soil mantle. Cover elements are classed as follows:

--Live vegetation

--Trees and shrubs

--Forbs

--Grasses

--Mosses and lichens

--Litter

--Erosion pavement

--Rocks

Careful consideration of watershed cover needs, especially through runoff periods, must be made when planning treatments and management for resource uses.

SUPERSEDED BY
REL. 7-80

7411 - BRUSH AND WEED CONTROL

(1) Amount. The proportion of the ground that must be covered to keep soil movement to a minimum varies with several site factors including nature of soil, slope, kind of vegetation, storm characteristics, and wind velocities. Cover requirement data for specific site conditions are very limited. However, studies on mountain slopes with fairly pervious soils and mixed vegetations have shown covers of 50 to 75 percent needed to prevent accelerated soil erosion from summer thunderstorms. On leveler areas somewhat less cover would be necessary; but where soils are fine textured and less permeable, the requirement is increased.

(2) Kind. Pinyon and juniper trees are not as effective in controlling soil erosion as smaller plants, especially grasses. Tree roots are more dispersed and do not provide the binding qualities or infiltration avenues of fibrous grass roots, or even the roots of other herbaceous and shrubby plants. The undercover is usually much suppressed where tree canopy cover exceeds 25%, or tree density reaches between 150 to 200 per acre. Under such conditions, runoff and erosion rates are likely to be high regardless of production potential for the site.

(3) P-J Site. Much of the P-J type is incapable of sufficient plant production to give adequate combined ground cover to prevent soil movement. This normal or geologic erosion is characteristic of many unproductive and unstable P-J sites. Almost invariably the former erosion rate has been increased as a result of abusive use of the vegetative resource. This has been largely grazing use, but in places other disturbances such as tree cutting and mining activities have eliminated protective cover.

b. Runoff. Increasing quality of runoff will usually be the watershed treatment objective on P-J areas rather than increasing quantity. Improved cover conditions augment infiltration and thereby reduce surface peak flows and retard soil movement. Total surface runoff probably will also be reduced, but any added subsurface water contributed to stream flow will tend to offset the surface loss. Some evidence of off-site water increase exists on certain treated sites where springs have been activated or flow for longer periods of time. However, other studies of tree replacement with smaller plants have failed to show any significantly increased water yields. Much more needs to be known about evapotranspiration losses from various types of cover on these watersheds. Regardless, the reduced sediment yields to streams are an evident benefit from treating many such areas.

c. Conservation Treatments. Any furrows, indentations, embankments, or other obstructions incident to treatment applications should be aligned as much as practicable along the contour. Some restraints in choosing from alternative treatment procedures include:

--Necessary treatment patterns for important uses.

--Restricting terrain features.

--Avoid making down-slope channels in which runoff may concentrate.

--Immediate watershed condition improvement after such treatments as chaining or tree crushing, which leave debris scattered.

--Ground exposure by other treatments until revegetation provides cover.

2. Wildlife. (See 6620 and 6630.) All P-J areas have significance for wildlife of some kind. Relative importance of existing populations, and those that might be sustained, must be determined. Normally, greater weight will be given to propagation and management of game species, especially big game; however, all faunal categories should be given consideration in proportion to public interests and demands.

SUPERSEDED BY
REL. 7-80

a. Use Management. Provisions are necessary for adequate resource use control, if treatments for restoring habitat productivity are to be successful. Animal populations must be kept at levels that do not endanger the revegetation effort. Also, as forage increases as a result of tree control or seeding, wildlife numbers will tend to increase. These must be controlled to the limits indicated by range condition and forage supply. Close cooperation with State Game and Fish Departments, the Bureau of Sports Fisheries and Wildlife, and other concerned agencies is essential to provide the management program needed. Besides public hunting, all other needed management actions, including objective harvesting, should be invoked in assuring proper animal use control.

3. Livestock Grazing. Usually the most dominant use of the P-J type is livestock grazing. Therefore, proper livestock control and management of grazing use will have major effect on conversion and/or management programs.

a. Grazing Management. Analysis may indicate that resource needs for a P-J area can best be met through livestock management alone. This may be the most feasible and least expensive approach, particularly where sufficient plant residuals remain to allow for vegetal changes and condition improvement through a grazing system (see 4112.16). If conversion is to be undertaken, it is essential that provision for livestock control be made to protect the site both during and after treatment. Allotment management plan or grazing system requirements are necessary (see 4112.15).

b. Forage Production. Conversion of trees to grass pastures with a primary objective of livestock forage development is advisable on leveler, more productive P-J sites. This will help absorb livestock use and facilitate protection of the steeper and less stable watershed areas. Also, critical game areas may in a like manner be relieved of dual use by such forage development.

4. Woodland Products. Use of the P-J type for various woodland products has been more important in the past. At present, no P-J area on Bureau lands is being managed specifically for any woodland product. Christmas tree culture appears to be a possibility, but intensive management for any others seems improbable.

5. Recreation. The scenic character of the P-J type is its main recreational value in most places. This will be weighed with other use values in determining relative significance to be assigned. When considering tree control operations, make appropriate allowances for:

--Screening belts and scenic strips along roadsides.

--Needed seeding of strips to grasses, forbs, or shrubs where sufficiently open.

--Clearing or crushing debris to enhance aesthetic appearance.

--Elimination of extended straight-line control area boundaries.

--Untreated patches around objects being preserved as archaeological sites.

--Identification and protection of important historic objects.

--Campgrounds and other recreational developments both existing and planned.

6. Scientific. Besides various kinds of archeaeological sites that may be preserved for their scientific value, other areas needed for such technical analysis within the P-J type will also receive appropriate protection. Among these will be natural areas and research study sites. Tree control operations will be modified to adequately accommodate such occurrences and needs.

.52 Conversion Methods. Treatments have mostly involved tree removal and seeding, although complementary brush control is sometimes used. Detailed information on various kinds of treatment equipment is contained in 7410, Appendix I, Range Seeding Equipment Handbook and also 7411.1. Only general information for each practice is given hereafter.

A. Tree Control. Most of these methods involve a mechanical removal of the trees, although some type of burning or chemical control is sometimes employed. Items to be considered when planning P-J control include the following:

--Need for complete tree eradication or for leaving area in some particular condition (debris left or cleared) may dictate equipment used.

--Time of treatment could be controlled by weather or requirements of auxiliary treatments such as seeding.

--Mechanical methods which uproot trees require good soil moisture for best results, but soil must not be wet.

--Maximum tree kill from burning occurs with low humidity and high temperature, but fire control need is critical in establishing burning periods.

--Chemicals must be applied at time of greatest effectiveness--usually during rapid plant growth period.

1. Chaining. This is the most frequently used practice in controlling P-J stands, and has replaced the less effective cabling operation. Current chaining operations employ loops of anchor chain weighing 45-90 lbs. per lineal foot dragged between two tractors. Only occasionally is chain under the 70-lb. size now used, since chaining advantage over cabling is due largely to weight. Chain lengths vary, but are usually between 150' and 250'. Typical swath widths are 75'-150'. Chains may be dragged straight or with swivels on each side to permit rolling. Small lengths of railroad iron may be welded at right angles to the links, thus putting teeth on the chain. Several other chain modifications have also been tried with varying success.

7411 - BRUSH AND WEED CONTROL

a. Number of Chainings. Either single (one-way) or double (two-way) chaining may be done depending on needs for complete control. Usually the two-way operation is completed to provide adequate tree control. Aerial broadcast seeding, if employed, will be ahead of single chaining or of the second or back pass in double chaining. This provides considerable seed coverage. In pulling trees and otherwise scarifying the ground surface, not only is seed planting accomplished, but moisture penetration is greatly increased also.

b. Thinning. Besides elimination of trees, chaining is useful in thinning out brush thickets associated with P-J, thereby making them more usable and productive. A modification of the chaining operation is to delay the second or back chaining for a period of time, usually one or more years, to provide better mulching of debris.

c. Size of Tractor. Size of tractors necessary depends upon:

--Chain size and length.

--Tree size and density.

--Nature of terrain.

2. Tree Crushing. This kind of control work is done by the modified Le Tourneau tree crusher, a specialized machine weighing 85 tons. It has been in use in New Mexico on private and National Forest P-J lands. Tree control accomplished is in many ways superior to that obtainable from chaining. The machine has three roller wheels 7' in diameter with 10" cutter blades at 2' intervals. A 27' push bar with toothed comb front is effective in pushing or pulling out of the ground or breaking off at the root crown most trees of 2-inch diameter or larger. All debris is crushed to within 18" from ground level, and branches and small trunks are reduced to short lengths by the roller blades. The machine handles tree stands of any density.

a. Soil Penetration. Besides the chopped debris acting as a mulch, the cutter blades usually penetrate the soil a minimum of 5", thus increasing aeration and rainfall absorption. Equipment operation should be such that cutter blade indentations are positioned as much as possible at right angles to the slope. Operations are limited to slopes not much over 15%, and to relatively non-rocky sites.

Cost of operations has been somewhat more than for double chaining, but the above advantages may offset this.

b. Attached Seeder. Electric broadcast seeders can be mounted to seed either in front or behind the machine. Where aesthetic appearance is a factor, this machine has the advantage of leaving a relatively smooth, uncluttered land surface over which livestock as well as game animals can readily move.

3. Dozer Pushing. This involves the use of dozer equipped tractors to push individual trees from the ground. A wide variety of equipment is used under different circumstances. Ordinary dozer blades are sometimes used, while several kinds of push bars have been devised and mounted on or with the blades in other operations. This practice can be used anytime soil moisture is adequate. Its use is generally restricted to tree stands of relatively low density, because of the low rate of accomplishment and high costs involved. It is usually accompanied by tree stacking or windrowing, and most frequently followed by burning. The practice is especially useful where it is particularly important to leave certain desirable shrubs undamaged.

4. Windrowing. Where type understory is either very sparse due to high tree density or is of poor quality, or where aesthetic appearance requires, chained or crushed areas might be best cleared for seed drilling. Under such conditions, dozing debris into windrows at various spacing intervals, depending upon amount of debris, will clear most of the area and prepare an adequate seedbed for drilling. Here again the decision must be made about which will influence watershed values most beneficially--operating the dozers with the contour and placing windrows up and down the slope, or positioning the windrows around the contour. Drilling will be parallel with the windrows.

a. Seed Mixtures. Seeded species or mixture will depend upon resource uses to be accommodated. Windrows will be burned and seeded, unless wildlife cover demands are controlling. Burning usually creates sufficient heat to kill all undercover plants and seeds along the windrow, thus requiring the subsequent seeding. Windrows will occupy from 3 to 10 percent of the area, depending upon amount of debris and its compaction. Where windrows are not scheduled to be burned, it is important to consider the affects windrows may have on the objectives for conversion of the P-J stand. Windrows make an ideal environment for rodents which can adversely affect young seedlings as well as established grasses and shrubs. (Also, see .53C of this release)

5. Stacking. This is the usual disposition of trees after dozer pushing, and might be used after chaining or crushing as well. The stacks or piles are most often randomly located, and spaced so as not to require long distance movement of trees. Generally, artificial seeding is not needed where this method is used, except at stack locations after burning. Again, staking provides an ideal environment for rodents and may present the same problem discussed under .52A4.

6. Brush Chopping. In cases where only small P-J trees occur, this type of equipment may prove useful. Such situations are infrequent and limited to small areas. The smaller models of the Marden and Fleco brush choppers will probably be ineffective. Only the heavier models have a fair chance of producing good results, even on small trees of seedling and sapling sizes.

7. Hand Grubbing and Cutting. These control methods find utility mainly on lightly infested areas either being invaded, or where residual trees are to be removed from previously treated control areas. Hand grubbing is restricted to seedling trees, but cutting by axe or power saw might be used on scattered trees of larger sizes as well as new reproduction. A moist soil is needed for grubbing, but cutting is not so restricted.

a. Stump Treatment. Of the pinyons and junipers, all will be killed by grubbing, and all except for sprouting junipers (Juniperus deppeana) by cutting near the crown at ground level. This species will require a chemical stump treatment as well. Saturation with fenuron, and perhaps monuron or 2,4,5-T, should be effective.

8. Burning. Although burning where possible has been rated the most effective P-J conversion procedure from the standpoint of tree kill and re-establishment of a desirable undercover, it is improbable that many controlled burns will be attempted on standing trees. If burning becomes possible during the less hazardous periods of the year, the practice may be amplified.

a. Windrow and Stack Burning. Most P-J burning will probably be of windrows and stacks in conjunction with chaining, crushing, or pushing operations. Broadcast burning of chained or crushed areas will be done wherever the aesthetic needs transcend wildlife or watershed cover significance. All of this burning will be timed for conditions affording greatest success, but still permitting adequate fire control assurance. Any burning to be done after a tree control treatment should be completed before the needles drop from the branches. Windrow and stack burning will generally kill all plants and seeds on the areas burned, but broadcast burning of scattered debris should not be so damaging. Natural recovery of shrubs and grasses, or the establishment of seeded species will usually be satisfactory on the latter areas.

b. Individual Tree Burning. Individual tree burning, though costly, may be a helpful operation where scattered small trees occur. This technique could be used to eradicate residual trees on previously treated control areas. Pickup mounted propane tanks and torches are most usable for this purpose. Adequate fire control equipment should be included in rigging for this type of work. Best tree kill is obtained when burning is completed during periods of low humidity and high temperature.

9. Chemical. No herbicide has as yet been recommended for broadcast application on pinyons or junipers. Experimental trials in Arizona and Wyoming have shown promise of picloram controlling juniper when applied at about 2 lbs. per acre in water as a spray. It also seems effective on this tree when applied in pelleted form. However, picloram cannot be recommended until it has been registered for such control use.

a. Chemical Pellets. Trials in New Mexico and Arizona have indicated that pelleted fenuron applied to the soil surface around the tree base is presently the best chemical control practice available for junipers and pinyons. These pellets should be applied at the following rates:

--1 tablespoon per tree up to 6' in height on light and medium-textured soils.

--2 tablespoons per tree up to 6' on heavy soils.

--2 tablespoons per tree from 6'-12' on light and medium soils.

--4 tablespoons per tree from 6'-12' on heavy soils.

b. Granulated TBA. Granulated TBA has also been effective in Arizona on juniper when applied at about the same rate and in the same manner as fenuron pellets described in a. above.

c. Application. Application of these pellets and TBA to the soil can apparently be made at any time during the year. They need adequate precipitation to leach the herbicide down into the root zone. These soil treatments are quite costly, and will perhaps be limited to sparse stands, or to eliminate trees left alive after chaining or other mechanical control operations.

SUPERSEDED BY
REL. 7-80

B. Control Standards. Usually where tree control treatment is being applied, tree kill should be as complete as possible. This has been the objective in perfecting more efficient control equipment. In no case is 100 percent control obtained by the large-scale treatment methods. Some proportion, usually of the smaller tree sizes, is left alive. Individual, residual tree eradication by dozing, burning, cutting, grubbing, or chemical treatment is necessary for complete stand control.

1. Follow-up Treatment. The need for such follow-up treatment must be carefully weighed. Often wildlife and aesthetic interests are accommodated by leaving a portion of the trees alive. This amounts to a thinning operation which permits undercover response. For maximum forage production for either livestock or game, complete tree control is necessary. Most efficient watershed cover has a varied composition, but does not necessarily need trees. An open tree stand with a good mixed understory containing considerable perennial grass should provide an effective protection cover. Heavier stands of trees lack adequate undercover, and should be planned only on limited areas where vital as wildlife cover.

2. Comparison of Tree Control Methods. Determination of tree kill results for the more commonly used control methods have been made. These studies gave average kill percentage ranges for various tree stands in different localities as follows:

Control Method	Avg. % Kill
Cabling	30-55
Single Chaining	40-70
Double Chaining	60-85
Chaining and Windrowing	95
Burning	95-100

Tree crushing and dozer pushing are comparable to the best of these methods, although specific kill data are not available. Fenuron pellet treatment is similarly effective, but impractical for broad-scale coverage.

3. Tree Kill Factors. Tree kill evaluations are based on complete foliage death. These often cannot be made accurately for at least a year after treatment. In chained, cabled, and crushed stands, trees continue to die for some time as further drying takes place of both damaged plants and the soils surrounding loosened roots. Chemical damage is likewise gradual and not fully apparent for some time after treatment. For several of the mechanical methods, tree characteristics are critical in determining results.

a. Effect of Tree Height. Tree size has a direct correlation with control success when using most mechanical means. Larger, more mature trees are mostly killed, while those from seedling through the smaller sizes frequently persist. A reasonable kill cannot be expected when tree heights are less than 10 feet. Separate consideration of stands in two height categories treated by one-way chaining only has provided these results:

Stand Size	% Kill
50% or more of trees over 10'	45-85; average 60
Over 50% of trees under 10'	Average 30

Similar relative results can be predicted for other chaining and crushing techniques.

SUPERSEDED BY
REL. 7-80

b. Effect of Tree Diameter. Good correlation has also been obtained in extensive studies between percent tree kill and the percent of trees 7" and over in diameter outside bark at 1' above ground. The following table may be considered a good guide in most parts of the P-J type for determining intensity of treatment for different size stands to give an acceptable tree kill.

Tree Diameter-Kill Correlation Table

Control Method	% of Trees 7" Diameter and Over at 1' Above Ground		
Chaining - two ways	15	45	78
Chaining - one way	30	60	85
Cabling	52	85	100
Acceptable % Kill	50	75	95

To illustrate use of the table, assume a stand with 60 percent of the trees over 7" in diameter at 1' above the ground, and an acceptable kill percent of 75. In the column above 75 percent, the 60 percent "7-inch diameter and over" occurs on the "one-way chaining" line. This method will provide the desired kill. By rough interpolation, it can be determined that "two-way chaining" would give over 84 percent kill on such a stand.

(1) Pinyon vs. Juniper Kill. Small size trees are usually little affected by chaining or cabling. Pinyons and junipers under 3" diameter at 1' above ground will likely remain erect. Pinyons of 3"-5" diameters and junipers of 6"-9" diameters will generally be knocked down, but often not killed. Junipers of the 3"-6" class may or may not be knocked down. It may be expected that proportionately more junipers than pinyons will be left alive after being knocked to the ground. Other treatments such as tree crushing, pushing, and burning will typically leave fewer trees alive than the chaining and cabling operations.

Where the stand contains 250 or more trees per acre of the 3" or smaller diameter class, some additional slash or debris treatment such as burning or windrowing should follow chaining or cabling. Residual trees respond to control release along with understory species, but this growth response is progressive and becomes greatest five years or more after treatment.

c. Effect of Tree Density. Besides size, the density of stand also will influence the method of control. Some treatments, such as individual tree burning and pushing, are feasible with only relatively few trees. Practices used on heavier stands, such as tree crushing and chaining, are usable with light stands as well; but the more expensive of these might be restricted to high density situations. For example, a program in New Mexico provides the following methods for specific tree stands:

Control Method	Tree Density
Tree crushing	Over 250/acre
Pushing (dozer)	100-250/acre
Individual burning	Under 100/acre

C. Complementary Treatments. These consist mainly of seeding and, in some places, brush control. Occasionally transplanting, contour furrowing or terracing, and erosion control structures may be used.

1. Seeding. (See 7413.) Several methods of seeding are used on P-J control areas. Those used with specific tree control procedures were mentioned in foregoing sections. Different modifications of seed broadcasting and drilling are used. These, along with specific information pertaining to seeding rates and time, and seed treatment and testing are covered in 7413.

a. Species for Seeding. Preferably the vegetative stand will be composed of species capable of producing maximum desirable cover for all allowable uses combined. First requirement is for a good conservation cover, then that which will most completely satisfy each other use to the degree allowed. On most P-J areas the desired vegetative cover would be mixed, since both watershed and wildlife will be involved, and usually livestock as well. Therefore, appropriate mixtures of shrubs, forbs, and grasses will be used, except where grasses only are to be planted for livestock pastures. Sometimes, both annual and perennial herbaceous species will be seeded where certain birds are to be a chief component of the site fauna.

(1) Grasses. Extensive seeding trials using grass species have been made in the P-J type showing the following grasses to be best adapted for seeding on large parts of the type. These grasses vary in moisture requirements to some extent. Agropyron cristatum and A. desertorum are most resistant, and perhaps Dactylis glomerata, Elymus cinereus, and Bromus inermis have the highest requirements:

Agropyron cristatum
Agropyron desertorum
Agropyron intermedium
Agropyron trichophorum
Elymus junceus
Agropyron smithii
Agropyron spicatum
Bromus inermis
Elymus cinereus
Dactylis glomerata

(2) Shrubs and Forbs. In widespread trials in Utah, and in other places for a few species, the following shrubs and forbs having big game forage and other values have proven to be useful in seeding under various conditions prevailing on the P-J type:

Shrubs

Cowania mexicana
Purshia tridentata
Purshia tridentata X Cowania mexicana
Purshia glandulosa
Artemisia tridentata
Artemisia nova
Artiplex canescens
Chrysothamnus nauseosus
Symphoricarpos oreophilus
Eurotia lanata
Ephedra viridis
Cercocarpus montanus
Amelanchier utahensis
Cercocarpus ledifolius
Ribes aureum
Prunus fasciculata
Lonicera tartarica
Sambucus coerulea

Forbs

Sanguisorba minor
Medicago sativa (Rambler, nomad, ladak)
Astragalus cicer
Melilotus officinalis
Hedysarum boreale
Balsamorhiza sagittata
Penstemon eatoni
Penstemon palmeri
Astragalus falcatus
Astragalus stenophyllus
Linum lewisii
Sphaeralcea grossulariaefolia
Lupinus sericeus
Lupinus caudatus
Medicago falcata
Helianthella uniflora
Balsamorhiza macrophylla

(3) Other Shrubs. Other shrubs have done very well in trial seedings on P-J sites in Utah. Seeds of the following three species have not been available for broad-scale plantings. The fruit is difficult to process, but future developments may make seed obtainable.

Rosa woodsii
Rosa acicularis
Berberis fremontii

(4) Availability of Seed. Seed availability is a problem with most of the shrubs and forbs listed above. As demand continues to increase, better supplies of at least some species will be developed.

SUPERSEDED BY
REL. 7-80

b. Seeding Requirements. The various adapted species have differing site requirements for successful establishment and growth. However, of the environmental factors, only moisture requirement provides significant differences. Besides moisture, the other most important criterion in seeding success is type of soil. Studies of several P-J areas seeded to wheatgrass in conjunction with tree control have provided standard requirements for several soil factors and annual precipitation. These are included in the following table:

P-J Seeding Recommendations 1/

Ecological Factors	Possible Success 2/	Recommended for Success
Annual precipitation	12" - 14"	14" or over
Total soil depth	12" - 16"	16" or over
Depth of A horizon	5" - 7"	7" or over
Texture of A horizon	Sandy loam-clay loam	Sandy loam-clay loam
Development of B horizon	Weakly developed	Well developed
Wheatgrass to seed	Crested	Crested, intermediate or pubescent

1/ Broadcast with chaining or drill with chaining and windrowing in north part of P-J type (Colorado, Utah and Nevada).

2/ If some of these conditions are found but the preponderance of site factors fall into the recommended group, the chance for seeding success is still very good.

(1) Northern vs Southern Part. The criteria given above are for areas in the northern part of the P-J type. They can perhaps be reasonably applied to areas in the southern portion that may need seeding by adding 1" or 2" to annual precipitation amounts, and leaving soil criteria values as they are. Seeding is not recommended very often in the south part of the type because of favorable understory or the summer rainfall pattern with low winter and spring moisture. Crested wheatgrass seems to need about 15" annual precipitation minimum in the southern area for successful full stand establishment.

(2) Seed Source. To increase chances for seeding success, seed source should be from sites similar to that being planted, or from other proven sites. Ecotypes locally obtained usually give good results, but only infrequently have proven best from among several seed accessions. However, local or similar site material is superior to most ecotypic strains from physiographically dissimilar areas.

2. Brush Control. (See 7411.1 and 7411.2.) Along with tree removal programs in some areas, it will be advantageous to control certain brush species which dominate intermixed types. Chief among these will be sagebrush, rabbitbrush, and oakbrush; although others will occasionally be involved. Often the method of control being used on P-J will be relatively ineffective on these associated brush species, and techniques suitable for their control will be used where substantial areas occur. In some cases complete control and seedbed preparation will be the objective, while brush thinning may be all that is desired in other places.

D. Influence of Tree Control. Where tree control without seeding is completed, response of the understory remnants in increased plant vigor is usually immediate. However, maximum resultant production is not realized for five or more years after tree removal. For seeded areas, the introduced plants will require at least two years for establishment, and then gradually increase in production.

1. Debris and Small Trees. Debris left on the ground is helpful in seeding establishment and perhaps in regeneration of remnant natives. Aerial broadcast seed distribution, however, will be somewhat adversely effected. Debris cover from chaining will typically vary from 10 to 50 percent of the ground surface, depending upon tree stand, but has averaged about 25 percent. This debris or slash may prove aesthetically undesirable. In addition to this restraint against leaving an area littered, any considerable number of small trees left erect or knocked down but not killed might require further treatment of debris such as burning, windrowing, or piling. Live ground trees probably affect a site as much as those left standing.

Another advantage to keeping debris on the ground is wildlife cover provided. All needs and influences must receive consideration in making treatment decisions.

2. Browse Response. Among the desirable understory plants, most P-J areas will have shrubs of importance to wildlife as well as watershed condition. Initially these species are damaged, but many resprout after treatments, including burning, and provide greater usable production than formerly. Some of the more important of these species are Purshia tridentata, P. glandulosa, Cowania mexicana, Cercocarpus montanus, C. betuloides, Amelanchier alnifolia, Quercus gambelii, Q. turbinella, Atriplex canescens, Garrya wrightii, Ceanothus greggii, Rhus trilobata, Arctostaphylos patula, Berberis fremontii, and Symphoricarpos oreophilus. Some of the taller growing shrubs such as Cercocarpus ledifolius may be excessively damaged and not have an adequate resprouting ability. Areas supporting any appreciable amount of such species of importance should usually be left untreated. Also, the more intensive clearing treatments such as windrowing should not be used on any area supporting an important stand of browse plants.

7411 - BRUSH AND WEED CONTROL

.53 Treatment Follow-Up. The need for such subsequent control work, and its timing, will depend upon several possible conditions and developments regarding the use of an area. Some of these criteria are residual stand development, tree or other plant invasion, increases in pest populations, loss of desirable production, alternate treatment areas, changes in resource uses, and erosional losses of soil mantle.

A. Residual Stand. Several of the tree control methods kill only a portion of the trees. If this residue is critical, or its growth makes it so, control treatment should ensue as soon as this determination is made. Methods to use will usually be from among these:

--Dozer pushing

--Individual tree burning

--Hand cutting or grubbing

--Fenuron pellet application

Unless the site is especially favorable to P-J competition, a good replacement cover resulting from the original conversion treatment should adequately suppress the remaining trees. Consumptive use of this cover should be restricted as necessary to maintain the newly established stand.

B. Tree Invasion. This may be due to either of the following causes:

--The site may be well adapted to tree production in having site qualities (coarse-textured, fairly deep soils in a good precipitation belt) which provide the high moisture availability needed by trees.

--Excessive removal of effectively competing vegetation has taken place, as was the case in most of the past P-J invasion.

In the latter case, use management improvement is a necessity if any follow-up control is to be effective. Methods of control will be the same as for residual stands, if any timely action is provided before trees have closed and grown to full stand stature.

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REL. 7-80

C. Rodent, Rabbit, and Insect Populations. With tree control treatment, site conditions are often produced which are conducive to increased populations of these pests. Invariably, such small mammals as kangaroo rats, mice, and rabbits will increase after tree removal, as will also insects to some degree, unless control action is taken.

New invasions of juniper might be largely due to adverse influence of these pests on protective cover. Usually, it is desirable to maintain a population of cottontail rabbits which presents a problem if other small mammals are controlled.

D. Production Losses. Increases in tree invasion and plant consuming pests will reduce desirable plant production on P-J control areas beyond that which had probably already occurred in permitting these infestations to arise. The original planned objective before tree control operations was to convert to a more beneficial cover for uses to be allowed. Follow-up actions are often necessary, if this desirable production is to be realized and maintained.

E. Alternate Treatment Areas. At any particular time, priority needs may exist to do original tree control work rather than expend funds and facilities for retreatments. Careful analysis of competing areas for current treatment will be necessary. All management influences as well as physical condition of the resources will be considered.

F. Resource Use Changes. The Bureau's land and resource managing program should be responsive to changing needs and demands for different resources. Any follow-up treatments or management actions on tree control sites should be predicated on the current situation. The objective basis for resource use and development decisions may be the same or different from that originally confronted. New decisions and programs will be formulated accordingly.

G. Soil Erosion. Resource management and development determinations should always be sensitive to the stability of the watershed involved. If loss of soil is exceeding normal rates, action should be planned which will lead to a solution of this deterioration problem. The productive base of the lands must be maintained or developed if desirable use intensity is to be realized.

Form -2 (Nov. 1965)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MANUAL TRANSMITTAL SHEET

Release 7-14

Date 1/22/69

Subject

7411 - BRUSH AND WEED CONTROL

1. Explanation of Material Transmitted: This release sets forth instructions, guidelines and procedures for conducting the mechanical brush and weed control programs on Bureau administered lands.

2. Material Superseded: None.

3. Reports Required: None.

4. Filing Instructions: This release makes reference to various manuals which have not been written. These are cross-referenced in the redesignation chart below. File this transmittal sheet with this release pending receipt of the references; then this transmittal sheet may be destroyed.

Redesignation Chart

Existing Manual Number	Manual Name	New Manual Number
7121.21	Surface-Water Hydrology	7315.1
None	Erosion	7317
None	Forms	7331

Remove	Insert
None	7411 Appendices (1-3) Illustrations (1-5) Total Sheets: 35

SUPERSEDED BY
REL. 7-80

Associate Director

GPO 853-676

7411 - BRUSH AND WEED CONTROL

.01 Purpose
.02 Objectives

.1 Mechanical Brush and Weed Control
.11 Basic Technical Information
A. Vegetation
B. Areas Appropriate for Treatment
C. Method of Control
D. Implements
E. Degree of Plant Control
F. Kill Standards
G. Determining Kill Efficiency
H. Topography
I. Climate
J. Soils
.12 Planning
A. Job Estimate
B. Job Feasibility
C. Coordination
.13 Practice Application
A. Area Identification
B. Preparation of Bid Draft
C. Time of Control
D. Supervision of Work
E. Safety
.14 Studies
A. Analysis of Study Results
B. Results
.2 Chemical (now 7311)
.3 Biological (reserved)
.4 Prescribed Burning (reserved)
.5 Pinyon-Juniper Control (reserved)

Illustrations:

1. Brush and Tree Chaining Specifications, Form 7410-4
2. Brush and Tree Chaining Detailed Specifications, Form 7410-5
3. Range Plowing Specifications, Form 7410-6
4. Root Plowing Specifications, Form 7410-7
5. Range or Root Plowing Detailed Specifications, Form 7410-8

7411- BRUSH AND WEED CONTROL

Appendices:

1. Recommended Mechanical Treatment by Plant
2. Mechanical Implements
3. Bibliography

7411 - BRUSH AND WEED CONTROL

.01 Purpose. Provides procedures, guidelines, and instructions for selecting and conducting the proper treatment to control brush and weeds to meet specific planned objectives.

.02 Objectives. To control or eradicate dominant or undesirable brush and weed species by the best available techniques and methods consistent with multiple resource management to accomplish the following:

- Reduce competition for native or previously seeded grasses, forbs, browse or trees.

- Manipulate vegetative cover for desired plant species composition.

- Control or eradicate noxious or poisonous species.

- Manipulate vegetative cover to obtain desired ground cover density.

- Provide a receptive seedbed for reseeding.

- Prepare brush and weeds for burning and/or chemical control.

- Provide litter incorporation.

- Enhance infiltration rates.

7411 - BRUSH AND WEED CONTROL

.1 Mechanical Brush and Weed Control is the practice of treating brush and weeds with mechanical implements. This is a common land treatment practice that involves many types of implements and a wide variety of plants.

.11 Basic Technical Information.

A. Vegetation. In studying the potential of any proposed control site, full consideration must be given to plant composition, plant density, and the physiological characteristics of plant species involved. These factors influence the type of implement that should be used and timing of treatment. For example, to eliminate rabbitbrush and other crown-sprouting plants, root must be cut sufficiently deep below the crown to prevent sprouting. Undesirable vegetation enhanced by a mechanical control method will not be treated mechanically. See Appendix 1 for sprouting and non-sprouting species, seed maturity dates and recommended mechanical control. When there are few plants of desirable species, establishment of improved ground cover is dependent upon mechanical seeding or planting. Other considerations usually are:

1. Evaluate effectiveness of different types of vegetation in preventing rainfall runoff (See 7315.1). Example: a good stand of sagebrush on soil group C (CN 66) is a more effective cover in preventing runoff than a poor cover of grass on the same soil (CN 86). Mechanical treatment will not be used if it results in significant accelerated erosion either directly or indirectly.

2. Choice of implements to control crown or root sprouting species is limited when a high percentage of control is desired.

3. Improvement of forage and habitat through partial control of crown or root sprouting vegetation is effective through use of several of the mechanical implements available.

4. Timing of treatment is important. Undesirable species which reproduce abundantly by seed should be treated before seed maturity when mechanical disturbance is less likely to disseminate and plant the seed.

5. Density, age group, and size and type of vegetal cover will influence the proper implement to be used. Thick, tough and willowy brush require an extra heavy-duty implement while a thin, soft vegetative cover will require a much lighter implement.

6. Some brush and weed re-establishment occurs after all types of mechanical control. Method and treatment design are controlling factors in the amount of undesirable vegetation that becomes re-established after treatment.

B. Areas Appropriate for Treatment.

1. Need for Treatment. Consider mechanical control of undesirable vegetation independently or in conjunction with other methods of land treatment. Mechanical control is required in areas where desired objectives cannot be obtained within a reasonable period of time by more economical methods such as intensive management practices or controlled burning. Consider mechanical control for areas having:

a. Predominance of undesirable plants with practically no desirable plants.

b. Predominance of plants that provide inadequate protective ground cover.

c. Poisonous plants.

d. Predominance of undesirable plants with a sparse understory of desirable plants. (10% to 15% composition of desirable plants has been considered the dividing point between mechanical treatment with seeding and chemical control with and without seeding on sagebrush areas).

e. Undesirable plants that are crowding out the existing desirable plants. (Same recommendation as indicated in "d" above).

f. Dense stands of brush that form an impenetrable mass.

g. Decadent stands of undesirable brush species that are capable of crown or root sprouting.

h. Need for an improved seedbed.

C. Methods. Control methods vary with vegetative, soil and climatic conditions. Each mechanical method has weaknesses and advantages. Generalized recommendations on choice of control method must be accepted with reservations. Site conditions and the method used will determine whether a follow-up treatment, such as seeding, burning, seeding and spraying, etc., is necessary. The methods having the greatest applicability for rangeland use are:

1. Plowing. Plowing is done with wheatland plows, brushland plows or offset disk plows when it is desirable to kill existing vegetation and prepare a seedbed for seeding. Treated areas should be relatively rock-free, support undesirable vegetative species, and have a relative absence of desirable plants. Consider the following in planning plowing:

a. Plowing to control vegetation and prepare a seedbed can usually be employed more effectively and on larger areas than other mechanical methods.

b. Select the plow that cuts the least depth but provides an adequate kill.

c. Nearly all perennial plants except those that spread by rootstocks or sprout from roots are killed by plowing at a depth of 2-4 inches.

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d. In most soils, plows are more effective and require less horsepower when the ground is not completely dry.

e. Disk type plows should weigh at least 290 pounds per foot of cutting width and be equipped with 26-inch disk when used in most brush and weed control jobs.

f. Annuals considered undesirable are generally thinned to a density that allows establishment of introduced species if disking is done in the spring between seed germination and seed ripening.

g. Where wind or water erosion hazards are high, other control methods such as top cutting or chemical control is preferable.

2. Chaining, railing or cabling is a low-cost method for thinning or crushing vegetation, and is useful where top control of a brush stand is desired. This method includes implements such as anchor chains, logs, railroad rails, I-beams and cables. The results of chaining, railing, etc., are:

a. Low kill on woody species that sprout from the crown.

b. Low kill on young, flexible stands of brush.

c. Decrease in soil erosion, especially where treatment is at right angles to the prevailing drainage and gully patterns.

d. Good kill on mature, even-aged, non-sprouting brush stands.

This method is used:

- In crushing stands of brush in preparation for burning.

- Mostly in pinyon-juniper areas.

- In rejuvenation of a stagnated stand of crown sprouting brush species.

3. Top cutters include flail and rotary cutters, self-propelled brush crushers, and pulled brush choppers. These implements provide temporary control of most vegetal top growth. Various implements cut and shred woody and herbaceous top growth, leaving a protective mulch on the soil surface. Consider the following when planning top cutting:

a. Most top cutters have not proved economical for brush and weed control work.

b. The mulch layer left after cutting makes drilling of seed difficult if several inches thick.

c. Crown sprouting is stimulated which may result in improved forage and habitat production.

d. Consider usage where wind and water erosion hazards prevent use of other methods.

e. When aesthetics are a consideration this method is often more desirable than chaining.

4. Root cutting is usually limited to eradication of crown sprouting species. The cutting implement is either wheeled or crawler tractor mounted and the cutting bar is drawn beneath the soil surface to sever underground stems and roots. Some factors to be considered are as follows:

a. Confine root cutting to level and rock-free areas.

b. Set the root cutting blade to cut just below the plant root crown.

c. Root cutting should be done only on badly depleted sites with good, deep soils where high productive potentials are apparent.

d. Root cutting is most successful when the soil is dry.

e. Fins welded to the root cutting blade help break up soil surface and expose roots for a better kill.

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REL. 7-80

f. Plants that do not spread by root stocks are almost completely killed.

g. Generally root cutting is too expensive for use on areas of low to moderate potential.

5. Blading includes use of motor grader blades, dozer blades, grubbing blade, Hula dozer blade, rock or brush rakes, and many other types. They are used primarily for scraping or individually digging brush plants. Some considerations are as follows:

a. Most of the blade and rake type implements are very effective in vegetation control but are slow and costly.

b. Blading with dozer blades is particularly useful for selective control of individual plants.

6. Harrowing with a self-cleaning pipe harrow, sometimes called a Dixie drag, is used occasionally for brush control. Its primary use is for control of brittle brush on rocky and rough ground.

D. Implements. See Appendix 2 for individual implements, their description, adaptability, advantages, limitations and power requirements.

Criteria for implement selection are many and varied. Basic considerations are vegetation, soil, climate, topography, erosion hazard and economics. Any one set of factors will often eliminate many of the implements or will even eliminate the use of a mechnical control method.

Select tried and proven equipment (except for experimental conditions) to do the brush and weed removal job as planned. To obtain the most effective or efficient results planning should be based on research findings, past experience by the Bureau or other agencies for similar sites and conditions.

E. Degree of Plant Control. The objective for controlling a particular plant species determines the degree of plant control required.

1. Complete Control is the eradication of undesirable, noxious or poisonous plants (80 to 100%).

2. Partial Control is the control of undesirable, noxious or poisonous plants to some degree less than complete control, with an acceptable maximum live plant allowance determined by the treatment objective.

a. Thinning. Reduce plant density to a degree that will enhance desirable plant composition and cover, provide a receptive seed bed, etc., in accomplishing objectives for partial control.

b. Block or Strip Control. Refers to a predetermined pattern of treatment that may include a combination of thinning, complete control and/or untreated blocks or strips interspersed within an area being treated.

3. Top Control is the temporary control and manipulation of all or portions of the vegetation above ground. Top control is most often used to encourage or induce sprouting, new growth and temporary control.

F. Kill Standards. Kill standards will vary according to program objectives and physical factors involved. These standards are measured in terms of the average number of live plants remaining per acre after treatment. The acceptable level of live plants per acre is the maximum live plant allowance for that particular treatment. Determining maximum live plant allowance is influenced by the following:

1. Is the plan to eradicate or control a particular species?

2. The vegetative type, size, age group; soil stability, productivity and texture; topography; adaptability of land treatments; and adaptability of implements, etc.

3. Constraints and needs of resources identified for wildlife, forage production, aesthetics, recreation, etc.

4. Other physical and non-physical factors apparent in the total program.

G. Determining Kill Efficiency. Efficiency of control or eradication is determined by the average number of live plants remaining per acre after treatement. A live plant is any plant whose root system or any part thereof remains firm enough in the ground to re-establish itself. This will differ between plant species and physical conditions involved. Re-establishment ability of each plant species being treated is to be determined for the particular site condition prior to determining kill efficiency.

The size of vegetation within the treated area influences the method used in determining compliance with predetermined kill standards. The methods used involve the following two general situations:

1. Small Shrubs, Forbs, and Grasses. When sampling such treated areas a minimum of 10 stops are required with five random samples to be taken at each stop. The five samples are to be taken within an area five acres in size and each sample is to consist of a 100 square foot circular plot with a radius of 5' 6-3/4". On areas of 100 acres or larger which introduce a difference in treatment conditions or in treatment efficiency, each area represented by these differences is to be sampled independently.

2. Large shrubs or trees. When sampling treated areas a minimum of 10 random samples are required for each treated area. Each sample is to consist of a 100 x 100 foot square plot (10,000 square feet). On areas of 100 acres or larger which introduce a difference in treatement conditions or a difference in treatment efficiency, each area represented by these differences is to be sampled independently.

H. Topography. The feasibility of a job depends a great deal on the topography. Steep slopes limit implement and equipment selectivity. Steepness of slope, length of slope, soil erosion hazard classification and potential percent of ground cover establishment provides criteria for establishing slope limitations.

1. Slopes greater than 30 percent should not be treated if the soils have a severe erosion potential. Slopes up to 55 percent with soils classified as having a low erosion potential have been treated with success and without accelerated erosion. Method of treatment, equipment, erosion potential and safety conditions are factors to consider when planning treatment on various slopes.

2. Equipment and Implements will be operated on the contour, except when:

a. Piling or windrowing vegetative material.

b. Indentations made by brush crushers or choppers (such as the Marden Brush Cutter) need to be on contour, thus requiring equipment to operate off contour.

c. Brush beating leaves a mulch depth adequate to prevent erosion.

d. Soil loss would not occur because of the proposed mechanical disturbance.

I. Climate. Total annual and seasonal distribution of precipitation and growing season monthly temperatures give an indication of potential success. Consider local variations such as rain shadows, frost pockets, wind concentration and micro-climates of the site. Climatic conditions are important in the time of control, and length of time to complete the job.

J. Soils. Conduct a soils investigation on each site. Depth, texture, stability, salinity, slope and surface conditions are all factors to help determine what equipment and implements can be effectively used. Factors to consider:

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REL. 7-80

1. Where erosion potential from wind or water is extreme, the damage done as a result of vegetal removal may more than outweigh the expected improvement unless a method of vegetal control is used which will not expose the soil accelerated erosion. See 7317.1 for criteria to classify erosion hazard condition class.

2. Where replacement of existing vegetation is desirable the soils must be able to support the replacement vegetation.

3. Existing surface conditions (rockiness) will influence the mechanical methods that could be used and limit degree of plant control.

4. Compacted or clayey soils require an extra heavy-duty implement or a twice over treatment to obtain the necessary soil penetration.

5. Excessive and deep plowing should be avoided in shallow soils underlain by bedrock, gravel or thick cemented pans. Generally these soils are weakly developed and low in fertility and organic matter. Excessive disking pulverizes the soil, reduces water and air movement, and causes formation of a thick surface crust resulting in development of a poor seedbed which restricts seedling emergence.

6. Sandy or pumice soils should not be disturbed because of their high wind erosion hazard and the difficulty in establishing a desirable vegetative cover after disturbance.

7. Loss of fertile top soil may necessitate complementary practices such as fertilization pitting or contour furrows to improve fertility and deter runoff until desirable vegetation is established.

.12 Planning. (See 7410.3). Adequate planning is essential to effective job accomplishments. Well documented and prepared plans, which include participation by all interested cooperators, prevent misunderstandings and lack of interest and increase support for the entire project area.

A. Job Estimate (Form 7330-1). A properly documented job estimate will be prepared for each job. The job estimate provides an estimate of all cost and methodology for present or future use. (See 7331).

B. Job Feasibility. The safeguarding and protecting of the natural resources is of paramount concern in planning a job. Sound interpretation and application of technical data will insure that mechanical brush and weed control be applied only where there is a reasonable chance of success or to meet the job objectives. Complete a Land Treatment Record (Form 7330-4) for each job. The Land Treatment Record will help evaluate job feasibility. (See 7331).

C. Coordination. Should there be any possibility that brush and weed control will adversely affect wildlife, livestock, recreation woodland, or scenic values, the problems shall be thoroughly investigated and fully considered. Adequate time for a proper evaluation of any potential conflicts is necessary.

.13 Practice Application. When the job is approved for initiation, prepare contract or force account information required for job action.

A. Area Identification. Clearly identify the job area and flag the job perimeter, cadastral survey corners, bench marks, antiquities and other important features that need to be identified.

B. Preparation of Bid Draft.

1. Specifications. Use standard paragraphs as much as possible. See Illustrations 1, 2, 3, 4 and 5 for examples of various types of specifications.

a. Performance Standards. Specifications are the written instructions which form the requirement and standards of performance of work required under a contract. The bidder must be able to determine by reading the specifications what he is required to furnish and accomplish.

b. Basis for Payment. Normally, payment is made on a horizontal acreage, but certain circumstances may make different pay schedules desirable. For example, in areas cut up by rocks, steep terrain, trees, areas left for wildlife, etc., that will make odd and various shaped tracts, accurate acreage will be difficult to compute. In this type of situation, it may be desirable to let contracts on an hourly basis.

2. Equipment and Implements. In stating the size of equipment and implements to be used, consider the minimum requirements for the complete job, not just specific locations. Shape of job area is important since many implements can turn only one way.

C. Time of Control depends on the implement and equipment, the vegetation to be controlled, the complementary practices, if any, soil conditions, etc.

D. Supervision of Work. The Contracting Officer's Authorized Representative (COAR) and/or the job inspector is responsible to see that the job is completed in accordance with the contract specifications. Maintain an accurate log of daily operations until the job is finished.

E. Safety. Safety must be practiced at all times. Procedures outlined in 1459 Employee Safety Handbook shall be followed. There are several excellent films on safety around heavy equipment.

.14 Studies. Data collected from studies initiated at the start of the job (7410.44) will be evaluated to determine the effectiveness of the practice.

A. Analysis of Study Results. An analysis of the data will be made to determine the results obtained and compared against the job objectives or between different implements.

B. Results. One copy of all studies will be forwarded to the appropriate Service Center by the District Office through the State Office. The Service Center Watershed Staff will prepare and forward recommendations to the Washington Office when the studies show that either standards or recommended treatments in the manual need to be revised.

BRUSH AND TREE CHAINING SPECIFICATIONS

Form 7410-4
(December 1968)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

BRUSH AND TREE CHAINING SPECIFICATIONS

1. *Requirement* – It is required that brush and trees be eradicated by chaining at the locations shown on the attached *Work Location Map* and stated in *Brush and Tree Chaining Detailed Specifications* (Form 7410–5, hereinafter referred to as *Detailed Specifications)* which are made a part hereof, in accordance with the contract, including the General Provisions and Additional General Provisions, and such other terms and conditions as are made a part hereof.

2. *Description of work* – The work consists of chaining of the designated areas by pulling a large anchor chain between two (2) crawler-type tractors to control undesirable plants and prepare a seedbed for replanting with suitable grasses or other plants.

3. *Staking* – Government will flag or otherwise define the outer perimeter of areas to be treated and will mark contour lines at intervals sufficiently to perform the work. Contractor is required to protect all section corners, bench marks, and other markers and stakes, which will be flagged by Government, from damage or removal. In case of their destruction or removal by Contractor, they will be replaced by Government and the actual cost for replacement will be deducted from payments due Contractor.

4. *Chaining*

(a) *General* – Contractor shall chain the designated areas in conformance with the specifications herein and the *Detailed Specifications*. Contractor shall furnish two (2) crawler-type tractors, with operators, per chain to pull and operate the chain. Each tractor shall have no less than one hundred thirty (130) drawbar horsepower, or be of equivalent size in torque-converter type, or as specified in the *Detailed Specifications*.

(b) *Equipment* – Contractor shall furnish all equipment, labor, and supplies necessary to accomplish the work as specified herein. The chain and chain repair part shall be stated in the *Detailed Specifications*. All equipment shall be maintained in good operating condition at all times. Contractor shall furnish all required fuel, oil, lubricants, repair tools, and repair parts for equipment furnished in the performance of the work.

(c) *Transportation of chain* – Contractor shall load and transport any Government-furnished chain and repair parts from the location specified in the *Detailed Specifications* to the worksites and between sites. Upon completion of the work or termination of the contract, the chain and repair parts shall be returned by Contractor to the pickup point or nearest depot or storage, as directed by the Contracting Officer. Contractor shall be responsible for the loss of, or damage to, Government-furnished chain due to theft or any other hazard.

(d) *Repairs to chain* – Contractor shall maintain and repair chain at worksite, using repair parts furnished by Government, if chain is furnished by Government; or his own repair parts if chain is furnished by Contractor, at no additional cost to Government. Because of the nature of the work, no payment will be made for time lost because of chain breakage; however, time lost by such cause will be considered as excusable delay under the terms of Clause 1 of the General Provisions of the contract and will not be charged against the completion period of the contract in computing the time allowed for prosecution of the work, unless it is determined by the Contracting Officer that Contractor failed to exercise due diligence in making the repairs. In such case, time lost over that which would normally be required to repair chain will be counted against the completion period. Accordingly, it is imperative that Contractor shall notify the Contracting Officer, in writing, of any such loss of time within ten (10) calendar days after completion of the repairs and resumption of work, if such time is not to be counted as worktime.

5. *Chaining operation*

(a) *General* – Unless otherwise directed by the Contracting Officer, all chaining shall be done on the contour as marked by Government. (In general, marking will conform to the prevailing contours of the land. Chaining swathes can include gentle undulations and short reverse slopes of 50 yards or less where continuous contour operation would be impractical.)

The two tractors shall operate as a unit with one on each end of the chain. Specific requirements for hitches, swivels, or other flexible couplings are stated in the *Detailed Specifications*. The tractors shall generally be operated parallel to each other, although there may be occasions when a "see-saw" type operation will be necessary, clearing a swath the approximate width stated in the *Detailed Specifications*. It is imperative, when working on the contour, that the tractors stay close enough together to maintain a proper bow in the chain. The chain shall not be permitted to straighten out between the pulling units.

The chaining operation shall not be done when the ground is frozen, covered with snow, or is extremely wet without permission from the Contracting Officer.

The Contracting Officer shall have the right to have Contractor adjust the chain lengths and clamps, speed of tractors, tractor spacing, and overlap of swaths to obtain optimum results and economy of operations as permitted by topography and surface conditions.

(b) *Payment* – Measurement for payment for chaining will be the number of acres of land satisfactorily treated in accordance with these specifications. Measurement will be made from field traverse, aerial photographs, or maps, at the discretion of the Contracting Officer. Payment will be made at the unit price per acre specified in the Bid Schedule which is made a part hereof and shall include the cost of all materials, supplies, equipment, transportation of chain, all work described herein and in the *Detailed Specifications*. All measurements will be based on horizontal distances.

BRUSH AND TREE CHAINING DETAILED SPECIFICATIONS

Form 7410-5 (December 1968)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

BRUSH AND TREE CHAINING
DETAILED SPECIFICATIONS

Name of Job: MINER'S MT No.

The following specification details are in addition to and/or modify the "Brush and Tree Chaining Specification" made a part of this invitation for bids and any contract resulting therefrom.

1. Give location of work as shown on the Work Location Map(s)

WAYNE COUNTY, 12 MILES SOUTHEAST of TORREY, UTAH

2. Specify approximate acreage to be treated (acres)	3. Type of brush or tree to be chained	4. Give approximate starting date
1200	PJ WITH ATR.	WITHIN 10 DAYS AFTER CONTRACT AWARD

5. CHAINING REQUIREMENTS

a. Chain requirements:	b. Chains and parts furnished by	c.
length 300 ft. approx. lbs/ft. 60	☒ Government * ☐ Contractor BLM, RICHFIELD, UTAH	☒ Double chaining ☐ Single chaining

d. Approximate width of swath to be covered by each pass of the chain: from 100 to 150 ft.

e. Two crawler type tractors per chain with 150 drawbar horse power or equivalent in torque converter drive

f. Measurement for payment will be made by ☐ Field traverse ☒ Aerial photos ☐ Maps

g. Plant kill efficiency: AVERAGE MAXIMUM LIVE PLANT ALLOWANCE PER ACRE AFTER TREATMENT - 3

h. Other requirements

1. TRAILS AND ROADS CHAINED OVER ARE TO BE CLEARED AND ANY DAMAGE REPAIRED BY CONTRACTOR.
2. GOVERNMENT WILL FURNISH COUPLINGS FOR THE THREE (3) ONE HUNDRED (100) FOOT CHAIN SECTIONS TO BE ASSEMBLED BY CONTRACTOR.
3. CONTRACTOR TO INSTALL "SEED DRIBBLERS" (Give NECESSARY DETAILS)

Remarks

SEED AND SEED DRIBBLER TO BE FURNISHED BY GOVERNMENT AT BLM WAREHOUSE, RICHFIELD, UTAH.

* If Government give location

SUPERSEDED
REL. 7-80

RANGE PLOWING SPECIFICATIONS

Form 7410-6
(December 1968)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RANGE PLOWING SPECIFICATIONS

1. *Requirement* – It is required that the areas shown on attached *Work Location Map* and described in the *Range and Root Plowing Detailed Specifications* (Form 7410–8, hereinafter referred to as *Detailed Specifications*), which are made a part hereof, be plowed in accordance with the contract, including the General Provisions, Additional General Provisions, these specifications, and such other terms and conditions as are made a part hereof.

2. *Description of work* – Work consists of plowing of the designated area to prepare a seedbed for planting of seed by means of standard, heavy-duty plowing equipment as hereinafter described.

3. *Staking* – Government will flag or otherwise define the outer perimeter of areas to be treated and contour lines at intervals sufficiently to perform the work. Contractor is required to protect all section corners, bench marks, and other markers and stakes, which will be flagged by Government, from damage or removal. In case of their destruction or removal by Contractor, they will be replaced by Government and the actual cost for replacement will be deducted from payments due Contractor.

4. *Range plowing*

(a) *General* – Contractor shall plow the designated areas in conformance with the specifications herein and the *Detailed Specifications*. Contractor shall furnish at the worksites all equipment, labor, supplies (including fuel, oil and gas) and materials required to complete the work, except as provided herein. Contractor shall service and repair his equipment as necessary to maintain satisfactory progress on the work.

(b) *Equipment* – (1) Contractor shall furnish sufficient plows and tractors to satisfactorily plow designated areas in the time specified. Plows shall be one-way Wheatland, Towner Off-set, or equivalent disk plows mounted on suitable wheels. The disks shall be no less than twenty-six (26) inches in diameter, with a gross weight per disk of no less than two hundred ninety (290) pounds, or the plows must be so equipped as to provide additional weight needed to meet the 290-pounds-per-disk requirement, if determined necessary by the Contracting Officer. The maximum width of each plow or suspended section of the plow shall not exceed twelve (12) feet. Contractor shall furnish, with skilled operators, the necessary tractors with sufficient drawbar horsepower to operate and pull the plows singly or in tandem according to Contractor's preference. The equipment shall be in good mechanical condition and shall be so maintained by Contractor, throughout the contract period. Contractor shall furnish all required transportation and repair parts for equipment.

(2) Government will furnish standard Brushland Plow equipment in the quantity and at the location stated in the *Detailed Specifications*. Plowing equipment to be furnished by Government is a Brushland, spring-loaded, disk-type plow. This equipment is primarily adapted for plowing sagebrush land where scattered rock exists that would break standard farm plows. The principles of disk plowing and disk tilling are followed, except that the disks are mounted in pairs and held in the ground by spring tension. When solid obstructions, such as rock or heavy roots are encountered, the obstructed pair of disks raises while the others continue to work. Each plow weighs approximately six thousand (6,000) pounds and will plow a swath approximately eight (8) feet wide.

Contractor shall furnish, with skilled operators, the necessary tractors with adequate drawbar horsepower to pull and operate the Government-furnished Brushland Plow(s). A tractor with a minimum of sixty-five (65) drawbar horsepower is required for a single Brushland Plow unit. Tractors shall be furnished in good condition and be so maintained throughout the term of this contract. Contractor shall furnish all required fuel, oil, gas, and repair parts for his equipment.

(c) *Transportation of Government Equipment* – Contractor or Government shall load and transport the plows from the location as stated in the *Detailed Specifications* to the worksites and between sites and upon completion of the work or termination of the contract, transport the plows to the original pickup point or nearer destination, if so directed by Contracting Officer.

Contractor shall load and transport spare parts from the location as stated in the *Detailed Specifications* to the worksites. Upon completion of the work or termination of the contract, will transport the spare parts to the original pickup point or nearer destination, if so directed by the Contracting Officer.

(d) *Lubrication and servicing of Government plows* – Contractor shall periodically lubricate and service the plows and their component parts in accordance with servicing chart furnished by Government. Contractor shall furnish necessary lubricating equipment and proper lubricants. Contractor shall check all bolts and nuts, on the machine, periodically to insure tightness and shall tighten them as necessary for proper maintenance.

(e) *Repairs to Government plows* – Contractor shall be equipped to make field repairs to the machine. A welding outfit shall be included in Contractor's repair equipment.

Contractor shall maintain and repair Government plows at worksite, using parts furnished by Government, at no additional cost to Government, unless the scope of such required repairs is such that work cannot be done in the field. Government will furnish field repair parts necessitated by normal wear or breakage not due to the fault or negligence of Contractor. No separate payment for repair work required herein will be made; however, because of the nature of the work, time lost by such cause will be considered as excusable delay under the terms of Clause 1 of the General Provisions of this contract and will not be charged against completion period of the contract in computing the time allowed for prosecution of the work, unless it is determined by the Contracting Officer that Contractor failed to exercise due diligence in making the repairs. In such case, time lost over that which would normally be required to repair plow will be counted against completion period. Accordingly, it is imperative that Contractor shall notify the Contracting Officer, in writing, of any such loss of time within ten (10) calendar days after completion of the repairs and resumption of the work, if such time is not to be counted as worktime.

Contractor shall be responsible for all Government-furnished equipment as long as it is in his custody, and shall protect the equipment and spare parts from loss or damage due to theft or any other cause. Worn or broken

RANGE PLOWING SPECIFICATIONS

parts replaced, by Contractor, shall be kept for inspection by the Contracting Officer. The cost of any repairs and repair parts therefor determined to be due to the fault or negligence of Contractor will be deducted from payments due under the contract.

(f) *Plowing operation* – (1) Unless otherwise directed by Contracting Officer, all plowing shall be done on the contour, either as staked by Government or using equipment contour levels. If contour levels are used, it shall be equivalent of the Cherokee Scout Contour Level as manufactured by the Craft and Carlson Manufacturing Company, Cherokee, Iowa. Plowing depth shall be four (4) to six (6) inches, except where, in the opinion of Contracting Officer, soil conditions will not permit plowing to that depth, in which case depth of plowing shall be as directed. It is the intent of this work to both eradicate undesirable plants and prepare a seedbed for replanting with suitable grasses or other plants. Accordingly, it is imperative that Contractor set the angle of the disks and depth of plowing to provided the most efficient brush removal and/or soil turnover within the number of plowings required in the *Detailed Specifications*.

(2) After completion of number of plowings required in *Detailed Specifications*, if the minimum level of efficiency in any area has not been met, and the cause of such failure to achieve this requirement was due to the failure of Contractor to properly set the plowing equipment or to otherwise properly perform the plowing operation in the opinion of Contracting Officer, Contractor shall repeat the plowing operations on such areas until the required minimum level of brush kill and/or soil turnover is obtained, at no additional cost to Government. However, if, in the opinion of Contracting Officer, Contractor has performed satisfactorily, but was unable to obtain required results through no fault of his own, Contracting Officer may require additional plowings or may accept work done at his discretion. Should additional plowing be required, such extra work will be negotiated and a suitable order for changes will be issued. In connection with the plowing operations, where the *Detailed Specifications* call for more than one plowing, it is the specific intent of these specifications that the areas shall be actually plowed the number of times stated.

(d) *Payment* – Measurement for payment for plowing will be the number of acres of land satisfactorily treated in accordance with these specifications. Measurement will be made from field traverse, aerial photographs, or maps, at the discretion of Contracting Officer. Payment will be made at the unit price per acre specified in the Bid Schedule which is made a part hereof and shall include the cost of all work described in this paragraph and in the *Detailed Specifications*, including replowing, if such work is required. All measurements will be based on horizontal distances.

ROOT PLOWING SPECIFICATIONS

Form 7410–7
(December 1968)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

ROOT PLOWING SPECIFICATIONS

1. *Requirement* – It is required that areas shown on attached *Work Location Map* and described in the *Range or Root Plowing Detailed Specifications* (Form 7410–8, made a part hereof and referred to as *Detailed Specifications* hereinafter), be root plowed in accordance with contract, including the General Provisions, Additional General Provisions, these specifications, and such other terms and conditions as are made a part hereof.

2. *Description of work* – Work consists of root plowing or knifing of designated areas to prepare a seedbed for planting of range grasses by means of standard, heavy-duty plowing equipment as hereinafter described.

3. *Staking* – Government will flag or otherwise define outer perimeter of areas to be treated and contour lines at intervals sufficiently to perform the work. Contractor is required to protect all section corners, bench marks, and other markers and stakes which will be flagged by Government, from damage or removal. In case of their destruction or removal by Contractor, they will be replaced by Government and actual cost for replacement will be deducted from payments due Contractor.

4. *Root Plowing and Knifing*

(a) *General* – Contractor shall root plow or knife the designated areas in conformance with the specifications herein and the *Detailed Specifications*. Contractor shall furnish at worksites all equipment, labor, supplies, and materials required to complete the work. Contractor shall service and repair his equipment, as necessary, to maintain satisfactory progress on the work.

(b) *Equipment* – Contractor shall furnish sufficient tractors, root plows, or root knives to satisfactorily treat designated area in the time specified. Root plow shall be a Fleco Root Plow Model RP7 or RP8 or equivalent. If a root knife is used, it will be approximately ten (10) feet in length and equipped with a steel riser to mark each end of the knife so that a minimum of six (6) inches overlap can be made on adjoining swath. Equipment must be capable of cutting to a depth of 0-20 inches to remove roots and crowns of mesquite and salt cedar. Contractor shall furnish, with skilled operators, necessary tractors with sufficient drawbar horsepower to operate and pull root plow or knife. Equipment shall be in good mechanical condition and be so maintained by Contractor throughout contract period. Contractor shall furnish all required transportation, fuel, oil, gas, and repair parts for his equipment.

(c) *Root Plowing operation* – (1) Unless otherwise directed by Contracting Officer, all plowing shall be done on contour either as staked by Government or using equipment contour levels. Contour levels will be equivalent of the Cherokee Scout Contour Level as manufactured by the Craft and Carlson Manufacturing Company, Cherokee, Iowa. Depth of root plowing or knifing shall be 12 to 16 inches, except where, in the opinion of the Contracting Officer, conditions require a change in depth, in which case root plowing or knifing shall be as directed.

(2) After completion of minimum number of plowings as stated in the *Detailed Specifications*, if minimum level of efficiency in any area has not been met, Contractor shall repeat the root plowing or knifing operations on such areas as determined by the Contracting Officer, until the required minimum level of brush kill and/or soil turnover is obtained at no additional cost to Government.

5. *Payment* – Measurement for payment for root plowing will be number of acres satisfactorily treated in accordance with these specifications. Measurement may be made by field traverse, aerial photographs, or maps at the option of Contracting Officer. Payment will be made at unit price per acre specified in the Bid Schedule which is made a part hereof and shall include cost of all work described in this paragraph and the *Detailed Specifications*, including replowing or knifing, if such work is required.

SUPERSEDED BY
REL. 7-80

RANGE OR ROOT PLOWING DETAILED SPECIFICATIONS

Form 7410-8
(December 1968)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RANGE OR ROOT PLOWING
DETAILED SPECIFICATIONS

Name of Job

The following specification details are in addition to and/or modify the "Range or Root Plowing Specifications" whichever is made a part of this invitation for bids and any contract resulting therefrom.

1. Give location of work as shown on the Work Location Map(s)

GRAHAM COUNTY, APPROX. 21 MILES SOUTH OF SAFFORD, ARIZONA

2. Specify approximate acreage to be treated *(acres)* 340

3. Give approximate starting date AS SOON AFTER AWARD AS POSSIBLE

4. RANGE OR ROOT PLOWING REQUIREMENTS

a. Plow units to be furnished by ☒ Government *(number)* 2 ☐ Contractor *(number)*

b. Give location of Government plow units and spare parts
BLM, SAFFORD, ARIZONA

c. Loading and transporting Government plows by ☒ Government ☐ Contractor

d. Minimum number of plowings ONE

e. Depth of range plowing 12 INCHES

f. Depth of root plowing —

g. Plant kill efficiency
COMPLETE CONTROL

h. Measurement for payment will be made by ☐ Field traverse ☒ Aerial photos ☐ Maps

i. Other requirements

Remarks

7411 - BRUSH AND WEED CONTROL

Recommended Mechanical Treatment by Plant

Recommended Mechanical Treatment by Plant

Species	Treatment	Sprouter	Seed Maturity	Remarks
GRASSES				
Cheatgrass (Downy chess) Bromus tectorum	Disk after plant emergence and before seed forms	No	Early spring through summer	Provides control of varying success. Fall germination is reliable only 20% of the time
Medusahead Taeniatherum asperum	Disk after spring germination and before seed maturity	No	Late spring through summer	Not too successful
Mediterranean Annual Grasses	Plowing or disking late fall	No	Early spring through late spring	Species composition will change. Sunlight tolerant plants the first year and shade tolerant plants the second year
FORBS				
Canada thistle Cirsium arvense	Repeated cultivation at 3-4 inch depth every 21 days	Yes	Late summer	Will give elimination in 1 to 1½ seasons
Death Camas Zigadenus spp.	Hand grubbing and destroy	Yes	Early summer	Disking appears to increase plant density
Halogeton Halogeton glomeratus	Hand grubbing before seed matures	No	Summer	Limited to spot infestations. Moisture requirement comes after perennial grasses are mostly dormant
Larkspur Delphinium spp.	Hand grubbing	Yes	Early summer for low larkspur to late summer for tall larkspur	Other methods are more economical
Little clubmoss Selanginella densa	Implement that will overturn the sod. Width of scalped strip should be about 20-22 inches			Research in progress on evaluation of various implements
Mules Ear Wyethia spp.	Disk in spring 6-8 inches (poor results)	Yes	Middle to late summer	Reproduces only by seed. Has a tendency to resprout from the top root sections

GPO 858-051

SUPERSEDED BY
REL. 7-80

Recommended Mechanical Treatment by Plant

Species	Treatment	Sprouter	Seed Maturity	Remarks
Russian thistle *Salsola kali tenuifolia*	Offers little competition to grass seedings due to summer growth habit	No	Early summer	Establishment of desirable vegetation will usually crowd out Russian thistle
Tarweed *Madia glomerata*	Disking after foliage develops but before seed begins to form	No	Late summer	Shallow rooted annual
Tumble-mustard *Sisymbrium altissimum*	Disk in spring after germination and before seed maturity	No	Middle to late spring	
Water hemlock *Cicuta douglasii*	Hand grubbing and destroyed by burning	Yes	Late summer	Extremely poisonous - handle with care and keep plant parts away from water
WOODY PLANTS				
Birchleaf Mtn. Mahogany *Cercocarpus betuloides*	Crushing and burning or extra heavy duty disking	Yes	Mid-summer	Temporary control measures
Bitterbrush *Purshia spp.*	Possible treatment with light chain or light disking to induce basal growth	Not a dependable sprouter	Summer	Crushing a decadent stand of bitterbrush sometimes stimulates sprouting
Blackbrush *Coleogyne ramosissima*	Disking	No *	Early summer	*Some sprouting has occurred after disking but not after burning
Bluebrush (Deerbrush) *Ceanothus integerrimus*	Crushing, burning and chemical treatment or extra heavy duty disking	Yes	Mid-summer	Heavy germination of seed after fire. Can be both sprouter and non-sprouter
Chamise *Adenostoma fasciculatum*	Crushing, followed by burning and chemical treatment. Extra heavy duty disking effective but higher cost	Yes	Summer	High germination following fire. 40-75 percent kill disking. Low germination following disking

GPO 858-051

Recommended Mechanical Treatment by Plant

Recommended Mechanical Treatment by Plant

Species	Treatment	Sprouter	Seed Maturity	Remarks
Pricklypear (cholla) Opuntia spp.	Mechanical grubbing and stacking. Stacking to be done no sooner than two months after grubbing, or later than 8 months after grubbing	Yes	Not applicable	Cut main root 2-4 inches below ground level and remove. Sprouts from individual plant parts. Do not scatter broken joints
Cliffrose Cowania mexicana stansburiana	Possible treatment with light chain or light disking to stimulate growth	Not a dependable sprouter	Late summer	
Creosote bush Larrea divaricata	Root plowing, disking or mechanical grubbing. Cut below root crown	Yes	Mid-spring	
Currant Ribes spp.	Hand grubbing	Yes	Mid-summer	Chemical control is more economical
Desert Ceanothus Ceanothus greggii	No recommended treatment. Methods used to date not successful.	No	Late spring	Some sprouting occurs rarely
Greasewood Sarcobatus spp.	Disking to a depth of 5-7 inches. 2-4 inches for Bailey greasewood	No	Mid-summer	S. vermiculatus has sprouted after fire
Greenleaf manzanita Arctostaphylos patula	Crush, burn and chemical treatment or blade	Yes	Early summer	Can be both sprouter and non-sprouter
Hairy manzanita Arctostaphylos columbiana	Crush and burn or blade with dozer. Extra heavy duty disking very effective - 80% kill	No	Early summer	
Horsebrush Tetradymia spp.	Disk or root plowing to a depth of 5-7 inches	Yes	Early summer	
Low sage Artemisia arbuscula	Disking with heavy duty disks	No	Aug. high elevation thru Oct. at lower elevations	Tough to uproot

GPO 858-051

SUPERSEDED BY
REL. 7-80

Recommended Mechanical Treatment by Plant

Species	Treatment	Sprouter	Seed Maturity	Remarks
Mediterranean sage Salvia aethiopis	Disking	No		
Mesquite Proposis juliflora		Yes	Late summer	
Thin to open stands 50-125 plants per acre	Hand or power grubbing			Control method depends on density and growth form
Moderate to dense stands 125 plants per acre or more	Chaining twice, once in the opposite direction. Heavy duty brush cutter. Root plowing or cutting 10-18 inches below surface			Temporary benefits 3-5 years. Retirement 5-10 years
Plains pricklypear Opuntia polyacantha	Grubbing, piling and burn. Beating in NE Wyoming has shown good kill results (90%)	Yes	Not applicable	Sprouts from individual plant parts
Pointleaf manzanita Arctostaphylos pungens	Crush and burn or blade	No	Late spring	
Pringle manzanita Arctostaphylos pringlei	Crush and burn or blade	No	Late spring	
Rabbitbrush Chrysothamnus spp.	Rootplow or disk to a depth of 5-7 inches. Cut below crowns	Yes	Late summer	Roots should be lying on soil surface to prevent re-rooting
Big sagebrush Artemisia tridentata	Disking. Type of disk depends on density of sage and rocks. Disk to a depth of 4 inches. Chaining, railing, cutting, and beating offer temporary control	No	Late summer	Type of implement and depth of treatment will often depend on associated species, such as rabbitbrush
Salt cedar (Five-stamen tamarisk) Tamarix pentandra	Root plowing and beating	Yes	Summer	Temporary control method
Shinnery oak (Harvard oak) Quercus havardii	Very difficult to control No recommended treatment. Methods used to date not very successful.	Yes		Spreads by underground stems

GPO 858-051

Recommended Mechanical Treatment by Plant

Recommended Mechanical Treatment by Plant

Species	Treatment	Sprouter	Seed Maturity	Remarks
Shrub oak *Quercus turbinella* and *Q. dumosa*	Very difficult to control. Heavy duty disking or root cutting has resulted in partial control.	Yes	Late summer	Heavy crown and root sprouter
Silver sage *Artemisia cana*	Disk to a depth of 6-8 inches	Yes	1 month after flowering Late summer	
Snakeweed *Gutierrezia spp.*	Disk before seed maturity	Yes	Middle summer	Short-lived perennial half-shrub
Squawbush (Skunkbush) *Rhus trilobata*	Recommended method for partial control not known.	Yes	Mid-summer	
Tansybush (Fernbush) *Chamaebatiaria millefolium*	Blading with dozer blade	Yes	Middle summer	Temporary control only
Tarbrush *Flourensia cernua*	Recommended method for partial control not known.	Unknown	Early summer through winter	
Threetip sagebrush *Artemisia tripartita*	Recommended method for partial control not known	Tendency to sprout from base	Late summer	
Varnishleaf ceanothus *Ceanothus velutinus* var *laevigatus*	Recommended method for partial control not known.	Yes	Early summer	
Wedgeleaf ceanothus *Ceanothus cuneatus*	Crushing, burning and chemical treatment	No	Middle summer	Heavy germination of seed after fire
Wright silktassel *Garrya wrightii*	Recommended method for partial control not known.	Yes	Late spring	

GPO 858-051

SUPERSEDED BY
REL. 7-80

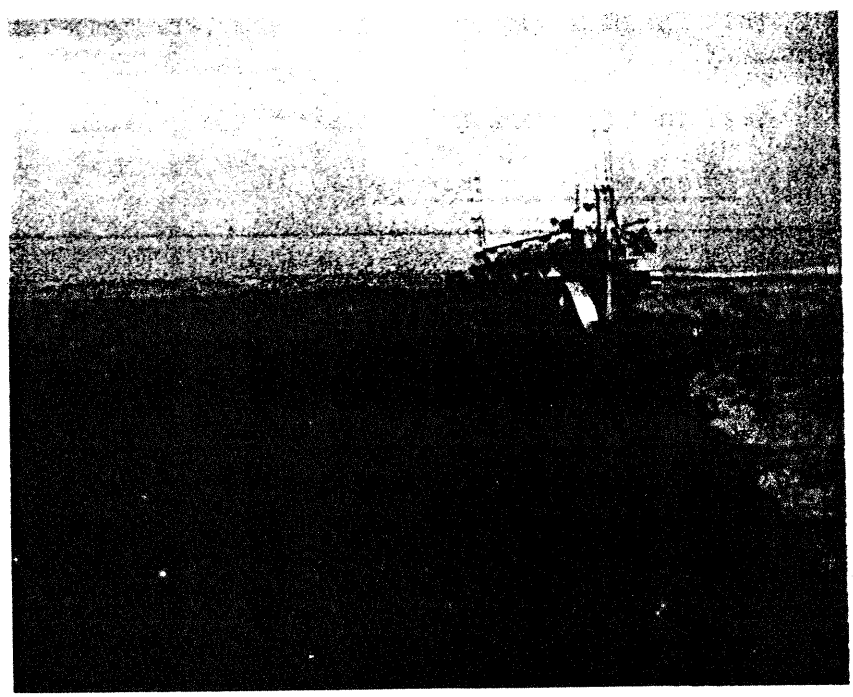
7411 - BRUSH AND WEED CONTROL

MECHANICAL IMPLEMENTS

1. DISKPLOWS. Diskplows are of various types. Some are individually mounted disks and some are mounted on a common axle.

a. Giant Diskplow.

(1) Description. The giant diskplow is commercially available. It usually has one to six disks and an average disk cutting width of 18", varies from 12" to 24" per blade. Blade size varies from 44" x 5/8" to 50" x 3/4". Each blade has a separate bearing and is slanted at an angle to the vertical. This angle on most plows can be adjusted for different soil conditions. The implements are supported by wheels and have adjustable depth control. Maximum working depth is 30" and minimum is 15".



Giant diskplow

SUPERSEDED BY
REL. 7-80

(2) Adaptability. The diskplow is normally used for deep plowing. It will work in heavy brush or rocky ground.

(3) Advantages.

(a) This implement is most useful for plowing thick stands of heavily taprooted competitive plants, such as wyethia, in firm soil.

(b) It will penetrate soil that is too hard for other plows and will also handle sticky or wet soils whereas other plows may not scour.

(4) Limitations.

(a) The narrow width of cut, combined with a heavy draft, usually makes this implement too costly for range brush and weed control.

(b) The plow cannot be used where large embedded rocks are present.

(c) This diskplow kills desirable vegetation.

(5) Power requirements.

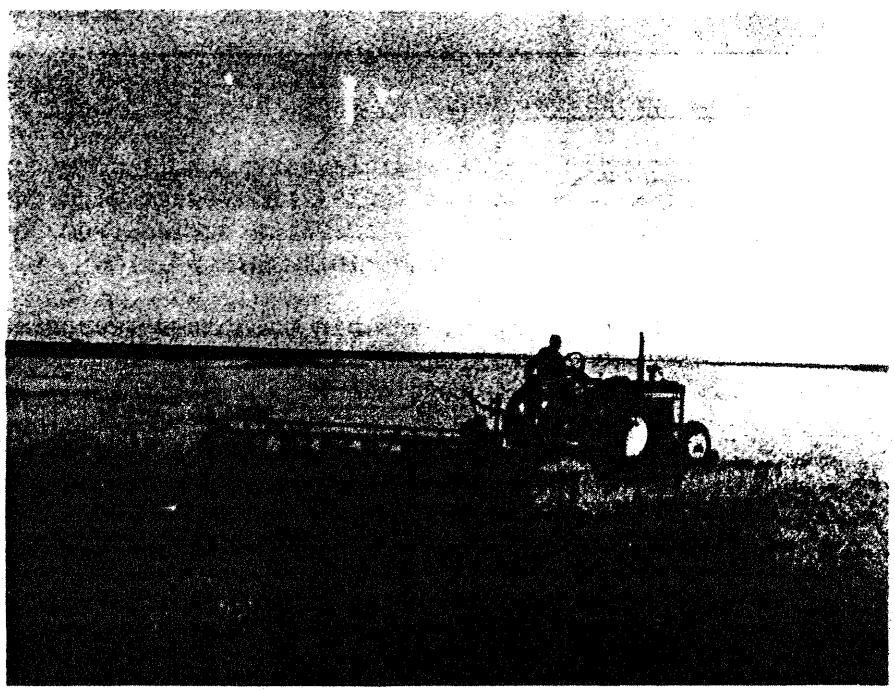
No. Blades	Blade Size	Maximum Cut	Approx. Weight	Min. HP Req'd
4	44" x 5/8"	96"	11,900	110
5	44" x 5/8"	120"	13,200	150
6	44" x 5/8"	144"	14,500	185
4	50" x 3/4"	96"	14,050	175
5	50" x 3/4"	120"	15,350	225

7411 - BRUSH AND WEED CONTROL

MECHANICAL IMPLEMENTS

b. Standard Diskplow.

(1) Description. The standard diskplow is commercially available. It has from one to six disks, an average disk cutting width of 9", varies from 6" to 15". Blade size varies from 24" to 38". Maximum working depth is 18" and minimum is 6".



Standard diskplow

(2) Adaptability. (See 1.a.(2) Giant Diskplow)

(3) Advantages. (See 1.a.(3)

(4) Limitations. (See 1.a.(4)

SUPERSEDED BY
REL. 7-80

(5) Power Requirements.

No. Blades	Maximum Cut	Approx. Weight	Min. HP Req'd
3	45"	3,655	45-75
4	60"	4,015	60-100
5	75"	4,845	85-105
6	90"	5,205	105-130

c. Reversible diskplow.

(1) Description. The reversible diskplow is commercially available. It has from three to six disks, an average disk cutting width of 9", varies from 6" to 15". Blade size varies from 24" to 38". Maximum working depth is 18" and minimum is 6".

(2) Adaptability. The reversible diskplows are primarily used to plow irrigated land where plowed ground must be turned in the same direction. It may have a potential use for strip clearing and small contours in the uplands.

(3) Advantages.

(a) Prevents dead heading where soil must be turned in one direction.

(4) Limitations.

(a) Has only been used on irrigated land.

(b) The narrow width of cut.

(c) Kills desirable vegetation.

7411 _ BRUSH AND WEED CONTROL

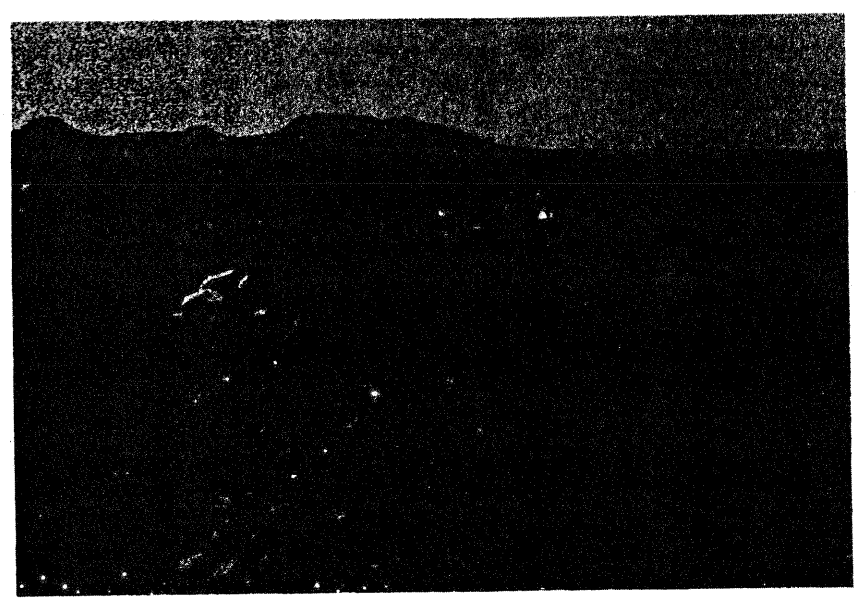
MECHANICAL IMPLEMENTS

(5) Power Requirements.

No. Blades	Maximum Cut	Approx. Weight	Min. HP Req'd
4	40"	5,300	45-65
5	50"	5,700	50-80
6	60"	6,100	55-90
3	45"	6,930	45-75
4	60"	8,280	60-100

d. Wheatland-type plow.

(1) Description. The wheatland-type plow, oneway disk, disk tiller, and vertical disk, consist of a series of disks (usually 13) that are spaced at fixed distances on a common axle. The axle and disks rotate as a unit and at an angle of 35° to 50° with the line of travel. The implement is supported by three wheels designated as land, front furrow, and rear furrow. Adjustments for both leveling and depth of penetration are easily made.



Wheatland-type Plow

SUPERSEDED BY
REL. 7-80

7411 - BRUSH AND WEED CONTROL

(2) Adaptability. The Wheatland-type plow is best suited to the removal of sagebrush on fairly rock-free ground. When operating under good conditions (rock-free, gravely or sandy loam and medium stand of brush) and in proper adjustment, brush kills of 80 to 95 percent can be obtained. In general, satisfactory sagebrush kill can be obtained when plowing 2 to 4 inches deep.

(3) Advantages.

(a) Commercially available.

(b) Gives good sagebrush kill on fairly level areas.

(c) Plowing depth can be adjusted to fit varying vegetative and soil conditions.

(d) Seedbed relatively good and easy to drill after plowing.

(4) Limitations.

(a) Careful and frequent maintenance is essential to prevent breakage. Much greater care is required with the implement than with the offset disk.

(b) Because of the necessity of frequent adjustments and the fairly light and rigid frame, inefficient operation and breakage are common. Many of the plowing contractors have strengthened the weak points on the frame and in normal operation have had relatively few breakdowns.

(c) Use pretty well limited to rock-free areas.

(d) Make left turns only -- not constructed for right turns.

(5) Power Requirements.

No. Plows.	Cutting Width	Approx. Weight	Min. HP Req'd
1	10'	3,000	40-70
2	14'	6,000	80-110
3	20'	9,000	90-120

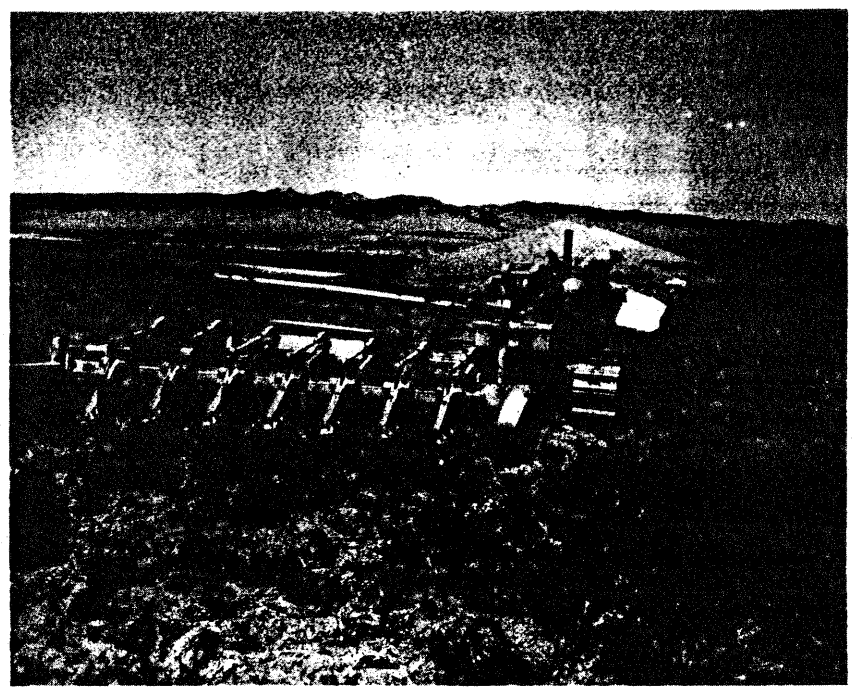
7411 - BRUSH AND WEED CONTROL

MECHANICAL IMPLEMENTS

2. BRUSHLAND PLOW.

a. Standard brushland plow.

(1) Description. This implement has seven disk arms, independently spring-loaded. Each arm supports one 28- and one 26-inch disk, supported by a single shaft and bearing assembly. If solid objects are encountered, the obstructed pair or pairs of disk raise while the others continue to work.



Standard Brushland Plow

(2) Adaptability. The implement is especially effective on sagebrush lands. It can be used in very rocky situations without excessive breakage and is considered superior to other seedbed preparation equipment in this regard.

SUPERSEDED BY
REL. 7-80

(3) Advantages.

(a) Extremely low breakage and maintenance cost.

(b) One-hundred percent removal of sagebrush is common on fairly rock-free soil and 90 percent or more under moderately rocky conditions.

(4) Limitations.

(a) The plow is not commercially available and the likelihood that it will be is remote considering the limited demand.

(b) The plow is hard to transport.

(c) Left turns only, not constructed for right turns.

(5) Power Requirements.

No. Plows	Cutting Width	Approx. Weight	Min. HP 1/ Req'd
1	10'	6,000	40-70
2	18'	11,800	80-110

1/ HP rated from level ground to 30 percent slopes.

b. Baby brushland plow.

(1) Description. Equipment was needed which would give about the same ground preparation as the standard brushland plow, but could be transported more easily and used for small job and experimental areas. The implement weighs 1,200 pounds and cuts a 30-inch swath.

(2) Adaptability. A pilot model has been used by USFS, Region 3 on small areas under varying conditions.

(3) Advantages.

(a) Fairly easily transported, less bulk.

(b) Use in small areas.

(c) Parts from the Standard brushland plow are interchangeable on some of the parts.

7411 - BRUSH AND WEED CONTROL

MECHANICAL IMPLEMENTS

(4) Limitations.

(a) Not commercially available.

(b) Steering difficult, especially on hard or rocky soil.

(c) In heavy, compact soils, ground preparation may not be satisfactory unless area is double plowed.

(d) Three point hitch required.

(5) Horsepower Requirements. The plow can be operated with a 22-horsepower-drawbar pull, crawler tractor.

3. OFFSET DISKPLOWS. Offset disks consist of two gangs of disks mounted on separate frames, one directly ahead of the other so that the soil and vegetative material are thrown in one direction by the lead gang and in another by the rear gang. The implement is available with wheels. Those not equipped with wheels, the entire weight rests on the disks. The looser the soil, the deeper the cut. Breakage is usually less on offset disk than on wheatland type plows. The cut-away disks, available on this implement, usually do a better job of cutting the vegetation into mulch than do other disks or plows. For convenience, offset disks are separated into four classes: extra heavy-duty (also with wheels), heavy-duty, light-duty, and horse-portable, extra light-duty.

a. Extra heavy-duty.

(1) Description. The extra heavy-duty offset disk is heavy construction throughout. Maximum penetration is 16". This implement is usually called the "Giant Heavy-duty" or "Giant Disk Tiller" by manufacturers.

SUPERSEDED BY
REL. 7-80

Extra Heavy-Duty Offset Notched Disk

(2) Adaptability. This implement is broadly adaptable in preparing seedbeds for rangeland and wildland revegetation. As the disk cuts both ways, a high percentage of sagebrush is normally killed. Very dense stands of brush or tough vegetation such as chaparral or juniper require at least a twice-over treatment.

(3) Advantages.

(a) This implement is excellent for brush kill and for preparing a seedbed on heavily crusted or compacted soils.

(b) Disk will penetrate up to 16" and give a high kill of undesirable deep rooted herbs and shrubs.

(c) There is little breakage in rock-free areas or where rocks are small and loose.

(d) Hydraulic or cable control available.

(e) High percentage of kill with once over plowing.

(4) Limitations.

(a) This disk requires more power than do other types of plows, thus increasing the cost of operation. Approximately twice as much power is needed as for the brushland plow.

(b) Breakage is high where there are large rocks or solid rock outcrops.

(c) Depth of plowing is difficult to regulate without depth-regulator attachments.

(d) Desirable grass, forbs and browse species are killed by disking.

(e) Disks often clog in heavy willowy brush, particularly when the ground is moist.

(f) When disks become worn or broken, all disks in a section must be replaced to prevent excessive strain on the new, larger disk or disks. However, this is not a serious limitation.

7411 - BRUSH AND WEED CONTROL

(5) Power Requirements.

Blade Size	No. Blades	Single Width of Cut	Approx. Weight	Min. HP Req'd.
32" x 3/8"	14	7'9"	7,980	50-60
36" x 1/2"	14	7'9"	8,600	65-75
32" x 3/8"	16	9'	8,620	75-85
36" x 1/2"	16	9'	9,480	80-90
32" x 3/8"	20	11'	9,240	90-105
36" x 1/2"	20	11'	10,270	100-115
32" x 3/8"	24	13'	9,860	105-115
36" x 1/2"	24	13'	11,100	115-130
36" x 3/8"	12	8'	7,830	60-75
38" x 1/2"	12	8'	8,800	70-85
36" x 1/2"	14	9'4"	8,500	75-85
38" x 5/8"	14	9'4"	9,600	85-95
36" x 1/2"	16	10'8"	9,200	100-110
38" x 5/8"	16	10'8"	10,500	110-120
36" x 1/2"	18	12'	9,940	115-125
38" x 5/8"	18	12'	11,400	125-135

b. Extra heavy-duty with wheels.

(1) Description. These are the same as the extra heavy-duty offset disk, except that wheeled carriages have been installed as a means of transporting them and controlling the depth of cut. Wheel-equipped units are available commercially.

7411 - BRUSH AND WEED CONTROL

MECHANICAL IMPLEMENTS

Extra Heavy-Duty Offset Disk with Wheels.

(2) Adaptability. Same as those for the extra heavy-duty offset disk.

(3) Advantages.

(a) Has all the advantages of the extra heavy-duty offset disk.

(b) Travel from field to field and over roads for short distances is simplified by the wheel carriage.

(c) The dual-type wheels serve to maintain depth at any desired limit.

(d) Cable or hydraulic control from tractor provides a means to clean brush from the implement by lifting it from the ground.

SUPERSEDED BY
REL. 7-80

(e) Wheels allow efficient use of implement in small areas as they provide a means of maneuvering to reach corners and tight areas.

(4) Limitations.

(a) Same as those for the extra heavy-duty offset disk, except that depth of cut can be controlled.

(b) Cannot be squadronized with wheels.

(5) Power Requirements.

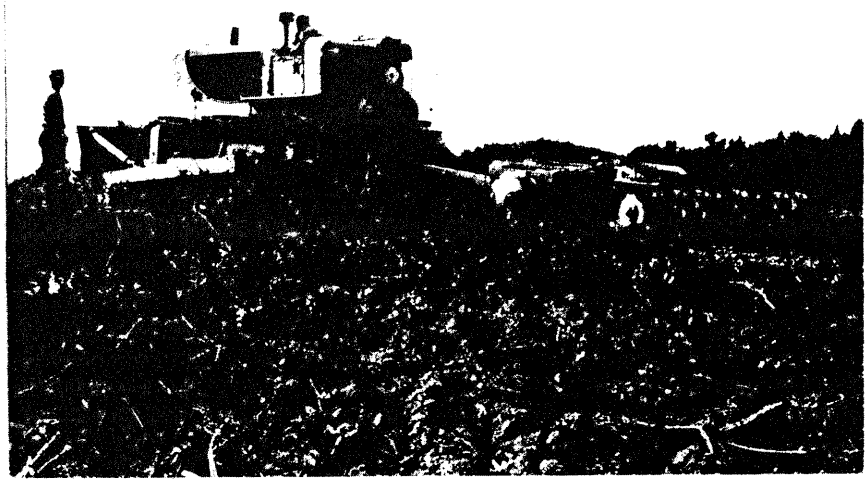
Blade Size	No. Blades	Width of Cut	Approx. Weight	Min. HP Req'd
32" x 3/8"	14	7'9"	12,480	50-60
36" x 1/2"	14	7'9"	13,100	60-75
32" x 3/8"	16	9'	13,120	75-85
36" x 1/2"	16	9'	13,980	80-90
32" x 3/8"	20	11'	13,740	90-105
36" x 1/2"	20	11'	14,770	100-115
32" x 3/8"	24	13'	15,600	105-115
36" x 1/2"	24	13'	15,600	115-130
38" x 1/2"	14	9'4"	12,950	75-85
38" x 5/8"	14	9'4"	14,080	85-95
36" x 1/2"	16	10'8"	13,790	100-120
38" x 5/8"	16	10'8"	15,080	110-120
36" x 1/2"	18	12'	14,520	115-125
38" x 5/8"	18	12'	15,970	125-135
36" x 1/2"	20	13'4"	15,580	120-140
38" x 5/8"	20	13'4"	17,200	130-150

c. Heavy-duty.

(1) Description. This implement is lighter than the extra heavy-duty offset disk but heavier than the light-duty offset disk. This implement is usually called the "Giant Offset Disk", "Stubble Plow", or "heavy-duty" by manufacturers.

7411 - BRUSH AND WEED CONTROL

MECHANICAL IMPLEMENTS



Heavy-Duty Offset Notched Disk

(2) Adaptability. This implement can be used on sites where the extra heavy-duty offset disk is not required, such as light vegetative cover, shallow rooted, undesirable plants, smaller horsepower requirements. Little breakage is encountered under normal operation.

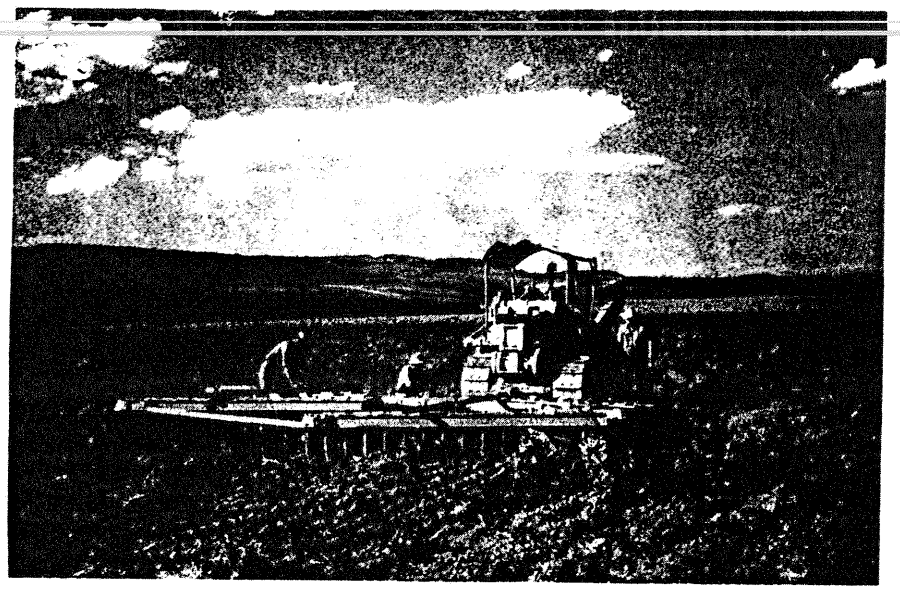
(3) Advantages.

(a) The implement is reasonably effective for fairly rock-free areas and will stand a limited amount of weighting down to plow firm soils.

(b) Any size may be purchased up to a 16- or 24-foot cutting width if a squadron unit is used. With wide widths, tractors of similar power ratings can cover more ground with this weight disk than with the extra heavy-duty disk.

(c) Maintenance costs are lower than for wheatland type plows.

7411 - BRUSH AND WEED CONTROL



Squadron Heavy-duty Offset Disk

(4) Limitations.

(a) Must be confined to relatively rock-free soils to obtain the best results and to reduce excessive breakage.

(b) In heavy stands of big brush, such as sagebrush, chamise and chaparral, the disks do not cut deeply enough to obtain a high percentage kill.

(c) Desirable native grasses and forbs are usually killed.

(d) Depth of plowing is not easily controlled.

(e) Disks often chip on rocks and if the gang assembly is allowed to loosen, disk, spool and arbor bolts will break.

7411 - BRUSH AND WEED CONTROL

MECHANICAL IMPLEMENTS

(5) Requirements.

Single Units				
Size Blade	No. of Blades	Width of Cut	Approx. Weight	Min. HP Req'd
28" x 5/16"	12	6'	3,400	30-42
28" x 5/16"	14	7'	3,960	35-49
28" x 5/16"	16	8'	4,380	40-56
28" x 5/16"	16	9'	4,550	45-65
32" x 5/16"	16	9'	4,800	55-75
28" x 5/16"	18	10'	4,980	50-70
32" x 5/16"	18	10'	5,250	50-80
28" x 5/16"	22	12'	5,820	60-84
32" x 5/16"	22	12'	6,150	72-96
28" x 5/16"	26	14'	6,870	70-98
28" x 5/16"	30	16'	8,315	80-112
32" x 5/16"	30	16'	8,765	90-125

Squadron Units				
Size Blade	No. of Blades	Width of Cut	Approx. Weight	Min. HP Req'd
28" x 5/16"	32	18'	11,430	90-126
32" x 5/16"	32	18'	12,260	108-144
28" x 5/16"	36	20'	10,840	100-140
32" x 5/16"	36	20'	11,376	120-160
28" x 5/16"	44	24'	11,750	120-168
32" x 5/16"	44	24'	12,414	144-192

d. Heavy-duty with wheels.

(1) Description. These are the same as the heavy-duty offset disk, except that wheeled carriages have been installed as a means of transporting them and controlling the depth of cut. Wheel-equipped units are available commercially.

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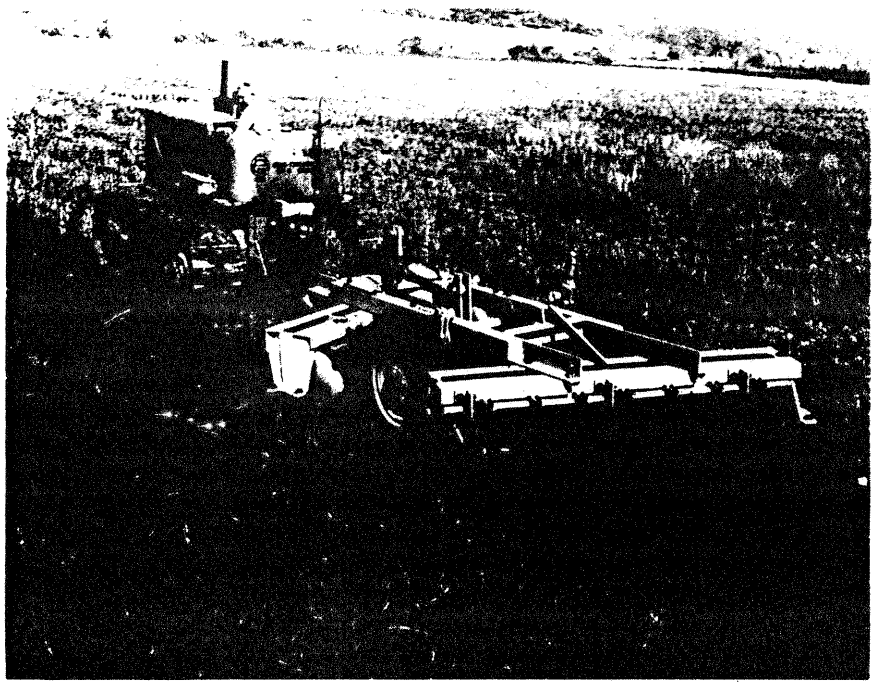
REL. 7-80



Heavy-duty Offset Disk with Wheels

(2) Adaptability. Same as heavy-duty offset disk.

(3) Advantages.

(a) Has all the advantages of the heavy-duty offset disk.

(b) Travel from field to field and over roads for short distances is simplified by the wheel carriage.

(c) The dual-type wheels serve to maintain depth at any desired limit.

(d) Cable or hydraulic control from tractor provides a means to clean brush from the implement by lifting it from the ground momentarily.

7411 - BRUSH AND WEED CONTROL

MECHANICAL IMPLEMENTS

(4) Limitations.

(a) Same as those for the heavy-duty offset disk, except that depth of cut can be controlled.

(b) Cannot be squadronized with wheels.

(5) Power Requirements.

Blade Size	No. of Blades	Width of Cut	Approx. Weight	Min. HP Req'd
28" x 5/16"	16	8'	5,600	40-56
28" x 5/16"	16	9'	6,470	45-65
32" x 5/16"	16	9'	6,720	52-75
28" x 5/16"	18	10'	6,700	50-70
32" x 5/16"	18	10'	7,000	60-80
28" x 5/16"	22	12'	7,300	60-84
32" x 5/16"	22	12'	7,600	72-96

e. Light-duty.

(1) Description. This implement of comparatively light construction and weight is designated as "light-duty". Some manufacturers classify disks of this class as "heavy-duty". Hydraulic control kits or mechanical closing devices are available to permit turns to the right.

(2) Adaptability. Light disks are well suited for (a) small plantings, (b) killing undesirable annuals or perennials, weeds and small sagebrush, and (c) use on mountain parks heavy loose-textured soils.

(3) Advantages.

(a) This light disk is easily transported.

(b) For larger acreages, a squadron can be assembled.

(c) The power required is less than for heavier type disks and therefore more economical to operate under certain conditions.

7411 - BRUSH AND WEED CONTROL

(4) Limitations.

(a) This implement is not effective on dry, hard soils even though additional weight is used.

(b) For best results the soil should be fairly free from rocks.

(c) This implement usually kills the desirable vegetation on the area.

(5) Power Requirements.

Blade Size	No. of Blades	Width of Cut	Approx. Weight	Min. HP Req'd
22"	16	6'	1,492	18-20
24"	16	6'	1,572	20-24
22"	18	6'9"	1,565	22-26
24"	18	6'9"	1,615	24-29
22"	20	7'6"	1,742	26-32
24"	20	7'6"	1,842	29-35
22"	22	8'3"	1,967	32-38
24"	22	8'3"	2,061	35-42
22"	24	9'	2,167	38-44
24"	24	9'	2,335	42-48
22"	26	9'9"	2,462	44-51
24"	26	9'9"	2,608	48-55
22"	28	10'6"	2,500	50-57
24"	28	10'6"	2,696	55-63
22"	32	12'	2,920	57-63
24"	32	12'	3,120	63-70

Blade spacing 9 inches

f. Extra light-duty, horse-portable.

(1) Description. This is a light offset disk that is adaptable to horse-drawn operation and breakdown for pack horse operations. It is smaller and lighter than the light-duty. Each gang has eight 14-inch disks spaced 6-5/8 inches apart.

7411 - BRUSH AND WEED CONTROL

MECHANICAL IMPLEMENTS

(2) Adaptability. This disk has been modified for use on alpine-weed types to which the only means of transporting equipment is by pack horse or small helicopter. The disk is easily dismantled for transportation. This implement is effective for annual weeds and for a light growth of perennial weeds on loose soil. Its best use on alpine areas is to follow and complement the alpine cultivator, especially where large or taprooted herbaceous plants are a part of the ground cover.

(3) Advantages.

(a) Easily pulled by a light crawler or wheel tractor if a dolly and pole is attached, it can be horse drawn by two or three horses.

(b) Maneuverable and light.

(c) There is little breakage in fairly rock-free areas.

(d) Trip action can be made from either front or rear.

(4) Limitations.

(a) Because of a narrow width of 4 feet, ground coverage is extremely slow.

(b) Effective only on annual and small perennial weeds.

(5) Power Requirements. A 20-drawbar horsepower tractor or two or three horses.

4. ROOT CUTTERS.

(1) Description. Root cutters consist of from one to five straight or V-shaped blades, mounted between two wheels or mounted at the rear of a tractor. Most of the cutters are designed to cut plants below the soil surface -- adjusting from 2 to 16 inches in depth. The V-shaped blades with fins have been the most successful for brush kill. Fins mounted on the cutting blade assist in breaking up and shattering hard surface crust and "riding up" the brush and larger roots to the surface.

7411 - BRUSH AND WEED CONTROL

Blade with Fins

(2) Adaptability. Root cutting has proven successful in control of all woody species except Gambel oak. Seeding by broadcasting before or during root cutting and in areas of over 15 inches of rainfall has been successful.

(3) Advantages.

(a) High kill of brush.

(b) Debris left on the ground protects the soil from wind and water erosion.

(c) Root cutters are available commercially.

(d) Prepares a seedbed which may be drilled or broadcast.

(4) Limitations.

(a) Cannot be used on rocky soil.

(b) Destroys desirable vegetal cover.

(c) Difficult to keep blades cutting at a satisfactory depth on uneven ground.

(d) Initial cost high.

(e) High horsepower requirement.

(f) Leaves trashy seedbed that is difficult to seed properly with a drill.

(5) Power Requirements.

Cutting Width	Approx. Weight 1/	Min. HP Req'd
6'6"	2,100	75
8'8"	7,572	100
10'8"	9,141	117
12'	11,891	177
15'10"	19,500	270

1/ Includes weight of lift frame.

5. HARROWS.

a. Pipe Harrow.

(1) Description. The pipe, or Dixie, harrow consists of a series of spiked pipes trailing lengthwise behind a spreader bar and swiveled so that they rotate freely, thus clean themselves of trash. Sleeves to prevent pipes from jumping across one another are provided for work on sloping ground.

(2) Adaptability. This implement was devised for removal of small, brittle sagebrush and for covering broadcast seed on areas too rocky or rough for other implements but where sufficient soil remains to insure seeding success. The harrow is a poor choice if more effective implements will work satisfactorily without undue breakage.

(3) Advantages.

(a) This implement can treat some very rocky ground that other implements including the brushland plow cannot work.

(b) Breakage of pipe harrows is low and operating costs are less than those of other implements.

(c) Desirable perennial grasses and browse species that resprout from the base are not greatly injured.

(d) Seed broadcast ahead of harrow well covered.

(4) Limitations.

(a) A much lower kill is obtained when plants are young and flexible (10-30%).

(b) The harrow will not clean itself of brush in willowy stands or where rocks do not cause the pipes to spin and bounce.

(c) Undesirable grasses, forbs, and sprouting brush species are relatively unaffected.

(d) Brings many large rocks to the surface.

(e) For transportation, it is usually necessary to disassemble the harrow. For short hauls, this can be expensive.

(f) Not manufactured commercially. Plan may be obtained from the San Dimas Equipment Center, USFS.

(5) Power Requirements. A 50-drawbar-horsepower tractor can pull a unit 14 feet wide. If two harrows are used, an 80 dbh tractor can handle them but a 90 dbh unit is preferred.

6. CHAINING AND CRUSHING.

a. Rails.

(1) Description. There are several designs of rails. All are made of railroad rail, H-beams or channel. They are pulled along the ground to break off or up-root brush. Three kinds are recommended: the "A" rail, the Supp rail, and the rail drag.

7411 - BRUSH AND WEED CONTROL

MECHANICAL IMPLEMENTS

(2) Adaptability. Railing has proven satisfactory as a low cost method for removal of mature stands of brittle sagebrush. Railing possibly has a limited place on selected areas.

(3) Advantages.

(a) Damages to perennial grasses are minor.

(b) Large acreages can be railed in a day and costs are low.

(c) Debris left on the ground protects the soil from erosion.

(d) Easy to construct.

(4) Limitations.

(a) Not suited to rough terrain or rocky ground.

(b) Brush not killed where plants are young or willowy.

(c) Unsatisfactory seedbed for drilling.

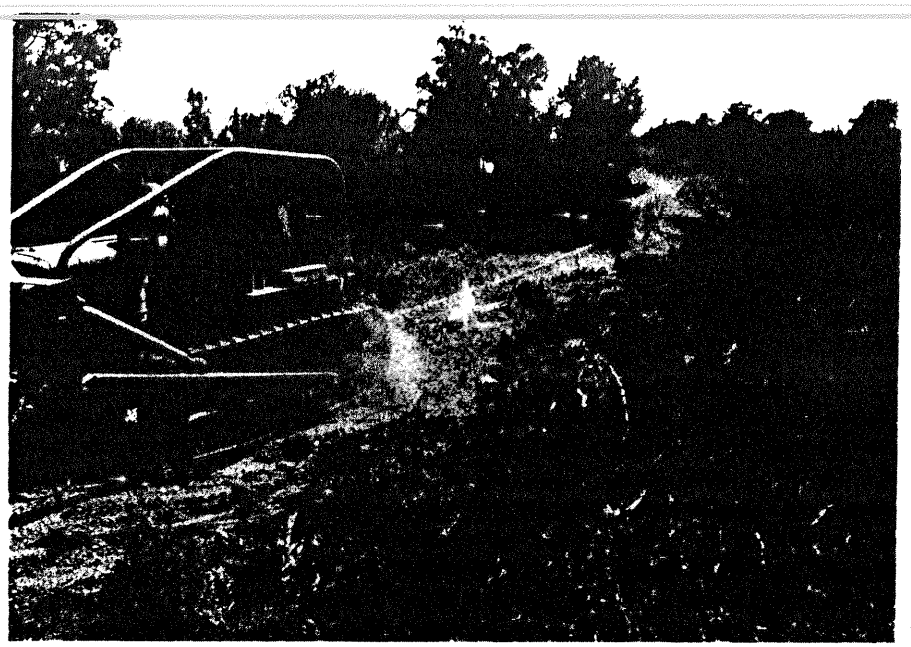
(d) Undesirable herbaceous plants and sprouting shrubs not killed.

(5) Power Requirements. Rails normally require about 1½ to 2 horsepower per foot width. The "A" and Supp rails are pulled by a 40-drawbar-horsepower crawler tractor.

b. Chains.

(1) Description. Anchor chains having links weighing from 25 to 110 pounds each are used for brush control or crushing. Chains with links weighing over 70 pounds are better for brush control than are lighter chains. Swivels can be used if desirable. Swivels will allow the chain to roll and clean itself.

7411 - BRUSH AND WEED CONTROL



Chaining Junipers

(2) Adaptability. Chaining is useful on lands too rough, steep and rocky for other equipment. Chaining for brush control is most valuable on large and brittle brush. Width of swath will vary with the length of chain, topography and vegetative cover, usually from 35 percent to 75 percent of the length of the chain.

(3) Advantages.

(a) Provides good coverage for broadcast seed.

(b) Perennial grasses and forbs are not seriously damaged.

(c) Well adapted for rough topography and rocky soils.

(d) Debris and trash protect the soil from erosion.

(4) Limitations.

(a) Not effective on small, willowy or sprouting shrubs.

(b) Special equipment is required for loading and transportation.

(5) Power Requirements. The size of the tractor depends upon the vegetation, topography, and length of the chain. For a 1,000-foot chain, or cable, two 150-horsepower tractors are required. For shorter chains, and on sagebrush with no trees, two 45-drawbar-horsepower tractors have been satisfactory.

c. Logs.

(1) Description. A large log from 15 to 30 feet long cut from native trees.

(2) Adaptability. Crushing brush in preparation for burning has successfully been used in chamise and chaparral in California.

(3) Advantages.

(a) Logs can be cut on or near the project site and left after completion of the project.

(b) Large acreages can be crushed in a day.

(4) Disadvantages.

(a) Only adaptable where large trees are available.

(b) Brush not killed, only crushed.

(c) Unsatisfactory seedbed for drilling.

7. BLADES. Blades are of many various types. They are mounted on all types of equipment and have many individual uses.

a. Grubbing blade.

(1) Description. A small blade usually mounted on a hydraulic lift.

SUPERSEDED BY
REL. 7-80

7411 - BRUSH AND WEED CONTROL

Wheeled Tractor Mounted Grubbing Blade

(2) Adaptability. The blade is adapted for individual plant removal.

(3) Advantages.

(a) Minimum ground disturbance.

(b) Complete uprooting of the plant.

(4) Limitations.

(a) Limited to fairly rock-free areas.

(b) Slope limitations on type of equipment used.

(c) Cost prohibitive in dense stands.

(d) Restricted to small shrubs.

7411 - BRUSH AND WEED CONTROL

MECHANICAL IMPLEMENTS

(5) Power Requirements. Regular farm type tractor with hydraulic system.

b. Hula Dozer.

(1) Description. The Hula Dozer is a hydraulic power-controlled tilt dozer equipped with four removable digging teeth evenly spaced below the dozer blade. The digging points can be positioned 10 inches below the dozer cutting edge to provide a brush rake. All tilt and pitch of the blade are made from the operator's position.

(2) Adaptability.

(a) Brush piling with minimum of dirt accumulation.

(b) Tree removal.

(c) Combination brush rake, grubbing tool, tree dozer and blade.

(3) Limitations.

(a) No practical limitations.

(b) Not commercially available. Specifications for blade are available from any Caterpillar dealer or from the USFS, Washington, D. C. 20250.

(4) Power Requirements. Designed blade to fit different horsepower crawler tractors.

c. Brush Rake Blade.

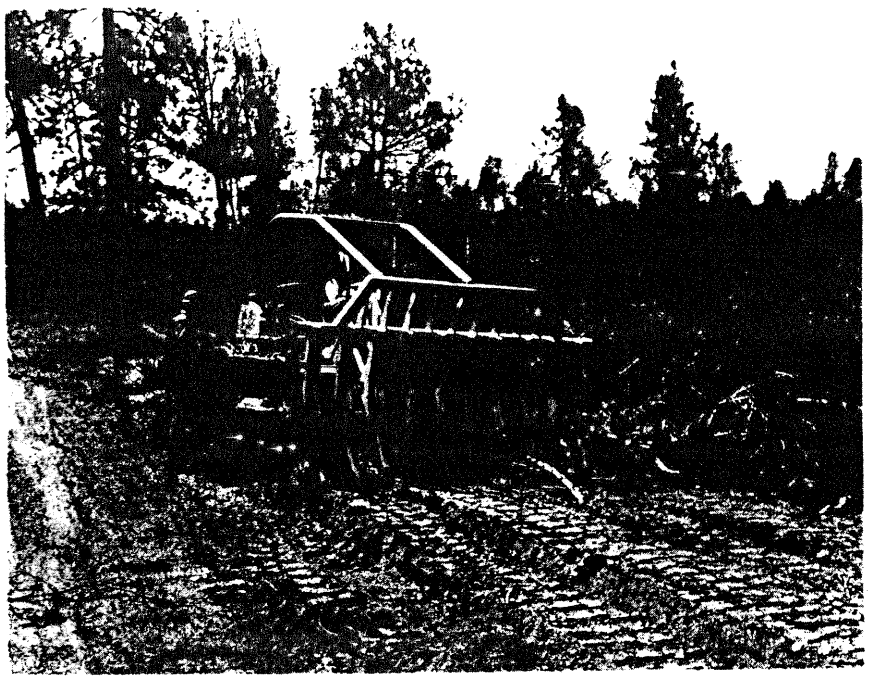
(1) Description. The brush rake is commercially available. Has various shapes and numbers of teeth. Other names are rock rake, root rake, blade rake, brush and clean-up rake, and many others. Each, as the name implies, has a special effective use.

The rakes usually have from five to twenty-one teeth. Distance between teeth varies from two feet (2') to seven and one-half inches (7½") respectively.

Rakes are built with teeth or tines which can penetrate into the ground to pick up surface and sub-surface growth. The openings between the teeth allow the soil to fall back into place instead of being removed and piled elsewhere.

7411 - BRUSH AND WEED CONTROL

MECHANICAL IMPLEMENTS



Multiapplication Rake

(2) Adaptability. The brush rakes are primarily used for heavy-duty brush and tree land clearing.

(a) Brush piling with minimum of dirt accumulation.

(b) Medium size tree removal.

(c) Root and crown removal of sprouting brush species.

(3) Limitations.

(a) No practical limitations except economics.

(4) Power Requirements. The following are the requirements for only one type of blade, but will give an indication of the power needed for the other types of blades also.

Raking Width	No. of Teeth	Tooth Penetration	Tooth Tip Opening	Approx. Weight	Min. HP Req'd
12'4½"	10	21"	13½"	9,500	230
11'3"	10	20"	10½"	6,000	200
10'1"	10	18"	9"	4,500	144
9'3"	10	16"	9"	3,100	75
7'10"	10	15"	10½"	1,700	52

8. BRUSH CUTTERS.

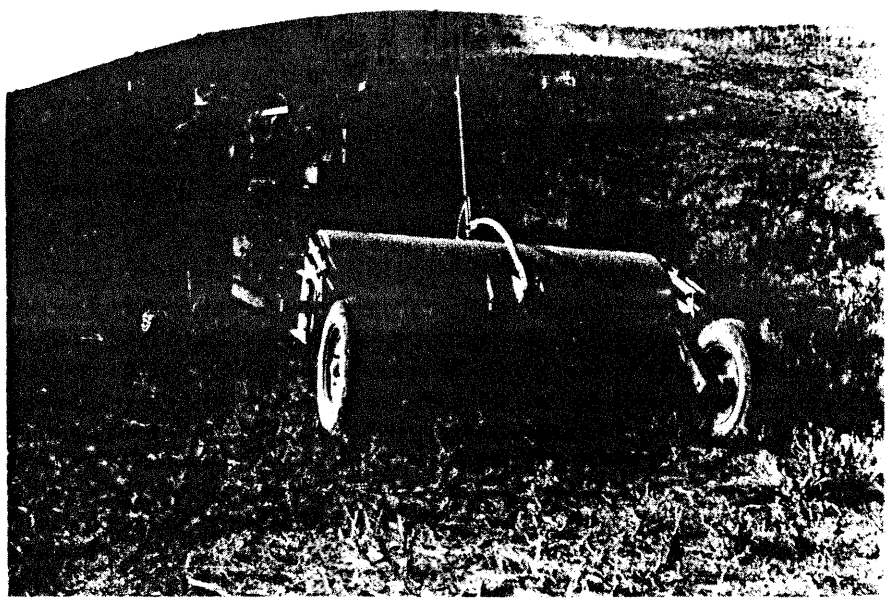
a. Flail and Rotary.

(1) Description. Beaters or cutters are mainly two types - one being a revolving shaft mounted between two wheels with flexible arms or flails of chain attached to the shaft, and the second type consists of horizontal cutting blades fastened to lower end of one or more vertical shafts. Cutting widths vary from 60 to 140 inches.

SUPERSEDED BY
REL. 7-80

7411 - BRUSH AND WEED CONTROL

MECHANICAL IMPLEMENTS



Flail Type Beater

(2) Adaptability. Brush beaters are useful for the release of native perennial grasses growing beneath brush and rejuvenation of sprouting species.

(3) Advantages.

(a) Effective in tall old mature stands of sagebrush (50-90 percent kill).

(b) Grasses and forbs are not damaged.

(c) Shredded brush forms a good mulch cover for protection against wind and water erosion.

(d) Beaters are available commercially.

(e) Drilling relatively easy after beating.

(4) Limitations.

(a) Use confined to relatively rock-free areas or where rocks do not protrude more than 3 inches above the soil surface.

(b) Low kill on young flexible brush.

(c) Undesirable grasses, forbs, and sprouting brush species are not controlled.

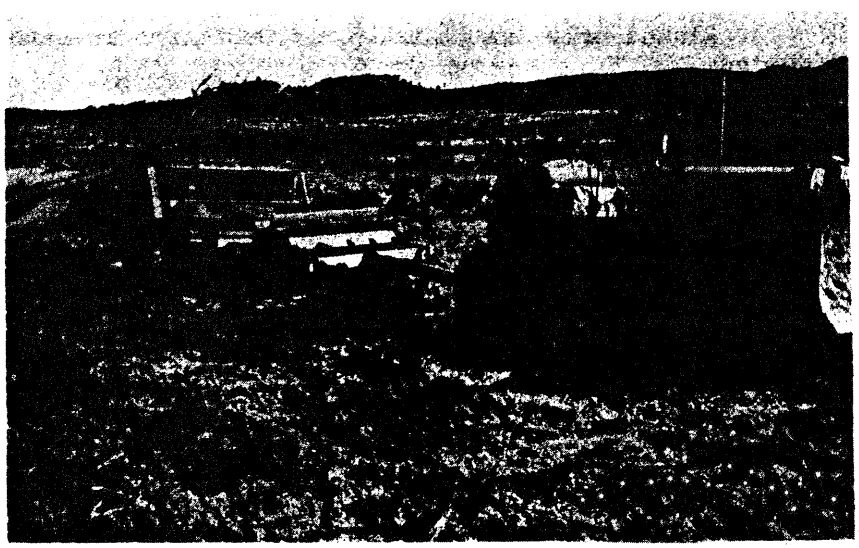
(d) Higher cost than other methods.

(e) Heavy mulch may prevent seeding by drilling.

(5) Power Requirements. Power requirements are dependent upon terrain, vegetal cover and implement width. Horsepower will vary from 20-drawbar to a 90-drawbar-horsepower tractor.

b. Rolling.

(1) Description. Brush choppers or cutters usually consist of a hollow steel cylinder-like roller with cutting bars on the rolling surfaces. Width varies from 5 feet to 14 feet.



Dual Brush Cutter with Seeder Attachment

SUPERSEDED BY
REL. 7-80

7411 - BRUSH AND WEED CONTROL

MECHANICAL IMPLEMENTS

(2) Adaptability. The brush cutter is still being evaluated for Bureau projects. It has been used on chaparral, creosote, sagebrush, and on small juniper trees. Implement is available commercially. If freezing weather occurs, fill roller with diesel fuel.

(3) Advantages.

(a) Small pits trap rain or snow aiding in reducing surface runoff.

(b) Debris incorporated in and left on the ground protects the soil from wind and water erosion.

(c) Weight can be varied for penetration.

(d) Equipment can go up or down the slope without increasing the erosion hazard.

(4) Limitations.

(a) Limited to rock-free areas.

(b) Low percentage kill on most types of vegetation, especially sprouting shrubs.

(c) Hard to handle, loading and unloading.

(d) Blades only last 6,000 to 9,000 acres in sandy and sandy loam soils.

7411 - BRUSH AND WEED CONTROL

(5) Power Requirements.

Width of Cut			Approx.	Min. HP
Single	Dual	Tandem	Weight 1/	Req'd
14			37,300	230 - up
12			33,100	185 - up
10			24,000	130 - up
8			20,000	102-130
6			6,800	35-50
	10	21'6"	48,100	260 - up
	8	15'6"	40,800	185 - up
	7	13'6"	26,900	102 - up
	6	11'6"	12,600	50 - up

1/ Filled with water

SUPERSEDED BY
REL. 7-80

7411 - BRUSH AND WEED CONTROL

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20

Instructions for Submitting Pest Control Programs for 1968

BACKGROUND

The charter of the Federal Committee on Pest Control (FCPC) provides that the Committee "may request any Federal agency to submit for review a detailed description of its proposed and current pest control programs, --- will review such --- programs from the standpoint of effectiveness, economic impact, and of hazards to human health, to livestock and crops, to fish and wildlife, and other elements of the environment. --- Based upon such review the Committee shall recommend to the heads of the Departments or agencies concerned, such modifications in the programs as the Committee feels will best serve the public interest. -- In no case, however, will the advice of this Committee supersede the responsibility of each Department and agency to carry out the functions assigned to it by legislative and executive mandates."

To expedite such submittal and review of plans for the calendar year 1968, the following guidelines have been prepared.

REVIEW OF PLANNED PROGRAMS

Each State Director should prepare a detailed description of all of its anticipated pest control programs or projects that fall into one or more of the following categories:

(a) usage of a pesticide that is not registered under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) for that particular purpose or in that particular way.

(b) usage of any of the compounds in any of the ways listed in Appendix A, "List of Pesticides of Special Interest to FCPC."

(c) use of pesticides in a federal installation when that usage is not under the direct supervision or on-site responsibility of a federal employee trained in the safe and effective use of the pesticides involved.

(d) any program or project in which one hundred or more contiguous acres will be treated as one application.

(e) any usage that would contaminate irrigation or domestic water supplies.

In those cases in which control measures are essentially identical to measures that were submitted and approved by FCPC last year, it is not necessary to resubmit for approval unless the control activities fall within categories (a) to (e) above. Such essentially identical programs

Encl. 1-1

or measures will however be submitted in duplicate on FCPC Form #1 to the Director's Office for informational purposes.

Reports should include specific details of location, pest to be controlled, the technical name of the pesticide, its concentration, how much is to be used (in terms of active ingredients), how it is to be formulated and applied, rate of application, and nature of area to be treated (barracks, kitchen, food warehouse, landscaped grounds, forest lands, crops, stream banks, lakes, ditches, etc.) It should be prepared on FCPC Form #1 (Rev. 67) in accordance with the instructions provided therefor. In the case of similar usages in different installations or locations, consolidation into a single entry on the report (simply indicating the distribution of locations) is encouraged but not required. FCPC Form #2 may be used, if convenient, to provide additional justification for unusual proposals or proposals of questionable safety or effectiveness.

Twenty-five copies of both FCPC Form #1 (Rev. 67) and FCPC Form #2, if used, should be submitted to the Director's Office, Attn. 711.

Emergency or Unexpected Programs

If an unexpected outbreak of a pest requires control measures that were not anticipated in the annual program reviewed by FCPC, then such a control effort is reviewed by FCPC as an emergency measure.

In those cases in which the emergency measures are essentially identical to measures that were submitted and reviewed by FCPC at the last annual review (identical compounds, mixtures, carriers, dosages, application, etc.) it is not necessary to resubmit it unless the control activities fall into one or more of the following categories:

(1) usage of a pesticide that is not registered under FIFRA for that particular purpose or in that particular way.

(2) usage of any of the compounds in any of the ways listed in Appendix A, "List of Pesticides of Special Interest to FCPC."

Activities that will fall into one or both of the above categories or that are not essentially identical to measures that were reviewed by FCPC at the last annual review, should be submitted on Form FCPC #1 (Rev. 67) and FCPC Form #2 in twenty-five copies. However, if time is important the necessary information may be phoned to the Director (711).

In addition to review by FCPC as described above, an emergency program in which any populated, non-federally owned land is to be treated with pesticides by or in cooperation with a federal agency, should be reported to the Director, in duplicate on FCPC Form #1, for information and records prior to initiation of the emergency program. Also, report in duplicate

GUIDE FOR REVIEW OF AGENCY PEST CONTROL PROGRAMS

A. PRIOR REVIEW

1. Have the health, economic, and/or aesthetic bases of your program been reviewed by the State Director?

2. Has preliminary review and approval been given by a State that may be involved?

B. PROGRAM MANAGEMENT

1. What, if any, changes have there been between last year's program and the proposed 1968 program:

   a. Scope?
   b. Location?
   c. Amount and toxicity of pesticides?
   d. Reasons for continuation or change?

2. Could less control be tolerated:

   a. What degree of control is your objective?
   b. On what basis has this criterion been set?
   c. What would the implications be if this degree of control was reduced (cost, health, aesthetic)?

3. Have alternative pesticides or non-pesticidal methods been explored?

   a. Is there a less toxic alternative?
   b. Is there a less persistent alternative?
   c. Is there a less expensive alternative?
   d. Has a non-chemical method of control been considered?

4. Are pest control programs routine or are they adjusted to meet actual needs?

5. How do you determine the effectiveness of a pest control program?

   a. Pre-post treatment evaluation?
   b. How often are evaluations made?

Encl. 4-1

C. PROTECTION AGAINST ADVERSE EFFECTS

1. Human health aspects:

   a. What precautions will be taken to prevent residues on food crops and forage?

   b. What precautions will be taken to minimize or prevent contamination of potable water supplies?

   c. What precautions will be taken to protect applicator or formulator personnel or other users; and the general public?

2. Possible adverse effects on the ecosystem:

   a. Precautions to protect wildlife.
   b. Precautions to protect fish and aquatic organisms.
   c. Precautions to protect microorganisms.

3. What is the LD-50 and other toxicological characteristics of any experimental pesticides?

4. What disadvantages, if any, would accrue through the use of the proposed pest control agents?

5. Is each pesticide used in accordance with registered use patterns?

6. Is the program conducted under the direction of trained personnel:

   a. Are field personnel familiar with the toxicity and proper handling of the pesticides?

   b. Do field personnel actually follow safe handling procedures?

D. APPLICATION INFORMATION

1. Rate of application:

   a. Pounds acid equivalent of herbicide per acre?
   b. Concentration of pesticides?
   c. Dosage rate of finished pesticide?

2. Number of pesticide applications per year?

3. If 2,4-D or 2,4, 5-T is used, what is the exact formulation (amine, ester, etc.)?

4. Have you listed all test plot or field test uses of pesticides each of which is 100 or more acres?

5. If you have test plot or field tests in less than 100 acre areas, how many of these do you estimate you have?

Appendix A
List of Pesticides of Special Interest to FCPC

Amitrole - any proposed usage that might contaminate food or feed crops or any type of water supply should be submitted regardless of volume.

Aramite - any proposed usage that might contaminate food or feed crops or any type of water supply should be submitted regardless of volume.

Cyanide, in any of its forms - any usage other than fumigation in vaults designed for that purpose.

DN Compounds such as dinitro cresol - if more than ten pounds or one gallon of concentrate is to be used.

Mercurials - any usage.

Nicotine, either as alkaloid or as a salt - any usage.

Sodium arsenite - any usage.

Sodium monofluoroacetate (1080) - any usage.

Thallium sulfate - any usage.

Aldrin, dieldrin, endosulfan, endrin, toxaphene - any usage other than termite control.

DDT, DDD (TDE), benzene hexachloride, lindane, chlordane, heptachlor, Kepone, Strobane, methoxychlor - if more than 100 pounds (active ingredients) are to be used per season on a contiguous block.

Parathion, methyl parathion, azinphosmethyl (Guthion), Azodrin, Bidrin, carbophenothion (Trithion), coumaphos, demeton, dioxathion, disulfoton (Di-Syston), EPN, ethion, mevinphos (Phosdrin), phorate (Thimet), phosphamidon, TEPP, diazinon - any usage.

Malathion, dichlorvos, dimethoate, naled (Dibrom), ronnel, Ruelene, trichlorofon, carbaryl, zectran - if more than 1000 pounds (active ingredients) are to be used per season on a contiguous block.

Encl. 3

FCPC FORM #2 (rev. 67)

FEDERAL COMMITTEE ON PEST CONTROL
SUMMARY REPORT ON NEW OR SUBSTANTIALLY
CHANGED PROJECTS OR PROGRAMS USING PESTICIDES
PROGRAM NO. _____

DATE _____

1. Department, Agency, & Division:

2. Program Title:

3. Pesticide (s) used:

4. Location:

5. Objectives:

6. Economic importance:

7. Description of areas to be treated:

8. Special precautions exercised:

9. Are any other Federal Departments involved?

10. Are State and local governmental agencies involved?

11. Are private institutions, agencies, or individual interests involved?

Encl 2

FCPC FORM #1 (rev. 67)

Department: _____ Agency: _____ Date Submitted: _____

Division: _____

Project No. (1)	State and/or Area (2)	Objective (3)	Pesticide to be Used: Name / Rate of Application (4)	No. of Units to be Treated (5)	Method of Application (6)	Sensitive Areas (7)	Time of Application (8)	Remarks (9)

9-1

Sensitive Areas

Some of the areas of most concern are sleeping quarters, food handling or preparation areas, any crop (specify what), food or milk animals, milking sheds, irrigation water, domestic water supplies, estuaries, and fish producing waters. Indicate which, if any, of these or similar areas may become contaminated and what protective measures, if any, are taken.

Time of Application

Be as specific as possible, i.e., expected month or months or if necessary the season of the year, and include information on the anticipated number and frequency of application.

Remarks

1. Indicate effectiveness in prior projects as specifically as possible, and undesirable side effects, if any.

2. Indicate training and experience of supervisor and/or pesticide applicators at each installation.

INSTRUCTION SHEET
FOR FCPC FORM #1 (Rev. 67)

Use of Form

This form should be used for all reports to FCPC.

Project Number

Use the same state, district, and calendar year number system as in AWP's. Example: 50-01-08-1 represents Alaska, Anchorage District, 1968 Calendar Year, Project #1.

State and/or Area

May be State and county, or a National Park, Wildlife Refuge, military base, or other designation that identifies the area geographically. If several installations are combined, an indication of geographical distribution such as "Southeast" is acceptable.

Objective

Identify the pests or plant to be controlled, by common name.

Pesticide to be Used

Name - Use accepted common or coined name. In the absence of either, use the chemical name. Do not use trade names. Specify the form of all pesticides used such as wettable powder (w.p.), granular (gran.), emulsifiable concentrate (e.c.), or dust. For 2,4-D, 2,4,5-T, silvex, endothal, and MCPA show the exact amine or ester form to be used.

Rate of Application - This is to be expressed in terms of the percent of active material and in terms of lbs/acre, lbs/100 gals., lbs/1000 ft. ^{2}, lbs/acre ft., lbs/lineal ft., lbs/1000 ft.^{3}, or other terms as applicable.

Number of Units to be Treated

Indicate the number of acres, square feet, animals, trees, or other appropriate unit.

Method of Application

Indicate the type of equipment as specifically as possible, e.g. helicopter, hand compression sprayer, Buffalo turbine, paint brush, etc. or techniques such as hand placement of baits, measured injection into irrigation water, etc.

on FCPC Form #1, essentially identical emergency measures and programs, which do not require clearance as outlined in (1) or (2), to the Director prior to operations.

CAUTION

Precise information on dosage of pesticides is important. The amount of a given pesticide required to control a particular pest has been carefully determined. Variations in either direction may prove to be ineffective or may endanger plants, animals, or humans. The directions on all registered labels have been prepared in the light of such factors and should be followed exactly. If for any reason any federal agency or cooperator finds it desirable to vary from instructions on the registered label, then the usage falls in category "a" or (#1) and such variation and the reasons for it should be explained in detail on the forms.

21

Attachment

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

DEC 13 1967

9220 (712f)

December 7, 1967

Instruction Memo No. 67-500
Expires: 6-30-68

To: SD's, DM's

From: Assistant Director, Resource Management

Subject Reporting Procedure for 1968 Pesticide Programs - FD 1/15/68

The Department of the Interior Representative of the Federal Committee on Pest Control (FCPC) has requested agencies of the Department planning to use chemical pesticides in the 1968 season to report their programs.

To assist you in making the 1968 reports, the following enclosures are included in this memo:

1. FCPC Form #1 (Rev. 67) and Instructions therefor.

2. FCPC Form #2 (Rev. 67).

3. Appendix A, "List of Pesticides of Special Interest to FCPC."

4. "Guide for Review of Agency Pest Control Programs" that indicates the types of considerations that FCPC feels are appropriate to a decision by a federal agency to control a particular pest. In questionable cases the FCPC may ask all of the pertinent questions in this Guide before making its recommendations. Field offices are requested to complete as much of this information as possible.

Control programs financed or performed on public lands by other agencies such as forest insect control handled by the Forest Service, grasshopper control by the Agricultural Research Service, and predator and rodent control by the Bureau of Sport Fisheries and Wildlife should not be included in your report. These agencies' reports cover the work they plan to do on all Federal lands. Chemicals used in small quantities in experimental trials, cooperative research, or other small plot application need not be reported.

The instructions and forms for 1968 projects are similar to those used in 1967. One important change is that in some instances, measures which are essentially identical to measures approved by the FCPC last year, need not be approved by the FCPC this year. However, they must still be reported to the Director's Office on FCPC Form #1, in duplicate.

Particular attention should be paid to the column headed "Sensitive Areas" on FCPC Form #1. Care should be taken to list and explain all potentially dangerous or critical situations.

State Directors are asked to consolidate district submissions. For projects requiring FCPC approval, submit 25 copies; for essentially identical projects not requiring approval of FCPC, submit for informational purposes duplicate copies. Forward your submissions to the Director, Attn. 711. Negative reports, if appropriate, are requested.

Acting

4 Enclosures
Encl. 1 - FCPC Form #1 (Rev. 67)
and Instructions
Encl. 2 - FCPC Form #2 (Rev. 67)
Encl. 3 - Appendix A
Encl. 4 - "Guide for Review of Agency
Pest Control Programs"

Distribution/with enclosures
D&RM - 5
712f - 5
711 - 10
730, 733 ,710-2
SCD's & BIFC
HE's

22

Z M. BURGE
UTIVE DIRECTOR
FOR, DIVISION OF
ANT INDUSTRY

PAUL LAXALT
GOVERNOR

JOHN L. O'HARRA, DVM
DIRECTOR, DIVISION OF
ANIMAL INDUSTRY

Attachment 1

STATE OF NEVADA
DEPARTMENT OF AGRICULTURE
350 CAPITOL HILL AVENUE - P.O. BOX 1209
RENO, NEVADA 89504
TELEPHONE 784-6401

RECEIVED
Bur of Land Management
NEVADA LAND OFFICE
JUL 19 1967 10:00 A.M.
NEVADA STATE OFFICE
RENO, NEVADA

July 17, 1967

Number Received 2		
Routing	Initial	Date
1 SD		
AO		
RUS		
ECON		
2 RPM		7/21
LO		
ENGR		
Library		
2 Action FD		
3 File 1220		

Mr. Nolan F. Kyle
Nevada State Director
Bureau of Land Management
Room 3008 Federal Building
300 Booth Street
Reno, Nevada 89502

Dear Mr. Kyle:

Enclosed are 25 copies of Nevada pest control licensing requirements for your distribution to prospective bidders on your brush control project.

Your initiating this idea and cooperation in advising these people of our requirements is sincerely appreciated.

We hope the 68 spray season will go without a hitch!

Yours very truly,

Raymond Rebuffo
Assistant Director
Division of Plant Industry

RR:b
Encl.

3:7000

FEB 27 1968

All District Managers

State Director, Nevada

Nevada Requirements For Airplane Pest Control License

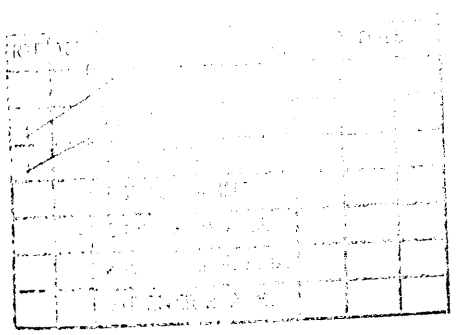
Your attention is directed to the attached copy of a memorandum and a notice issued by the State Department of Agriculture, relative to State regulations involving the flying of pesticides.

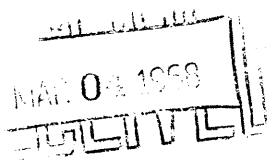
Districts will soon be getting notices relative to the successful bidder on sagebrush spray contracts. When you have been advised of the successful bidder, please forward to him without delay, a copy of the State of Nevada Requirements.

Acting

Attachments:2
Memo to all DM's from SD dated 7/21/67
Nevada Requirements for Airplane Pest Control License

MWBuzan:db





9400

3:7000

July 21, 1967

All District Managers

State Director, Nevada

Nevada Requirements For Airplane Pest Control License

This past spring the successful bidder for one of our sagebrush spraying projects failed to receive a proper license from the State, or to meet other requirements with the Nevada Department of Agriculture. As a result, this operator was grounded for two or three days until he had secured clearance from the State.

We have assured the Director, Division of Plant Industry, that we would assist in any way possible to prevent a re-occurrence for such laxness on the part of spray contractors. Therefore, in the future, after you have been advised of the successful bidder in connection with airplane spray contracts, a copy of the Nevada requirements should be forwarded to him at the same time you advise him when to start work. A small supply of an instruction sheet, together with the certificate of qualification, is being mailed to you for this purpose.

(Signed) [illegible]

Acting

Attachments

MWBuzan:db

E M. BURGE
UTIVE DIRECTOR
TOR, DIVISION OF
ANT INDUSTRY

PAUL LAXALT
GOVERNOR

JOHN L. O'HARRA, DVM
DIRECTOR, DIVISION OF
ANIMAL INDUSTRY

STATE OF NEVADA
DEPARTMENT OF AGRICULTURE
350 CAPITOL HILL AVENUE - P.O. BOX 1209
RENO, NEVADA 89504
TELEPHONE ~~786-6401~~ 784-6401

July 17, 1967

NEVADA REQUIREMENTS FOR AIRPLANE PEST CONTROL LICENSE

Applicants must satisfy all of the following requirements before a pest control license will be issued:

1. Company representative who will be flying pesticides and all pilots must pass the general written, the insecticide and/or the herbicide (weed control) examinations. No exceptions.

2. The company must file together with it application:

   A. A $25.00 license fee for the company and $10.00 for each pilot operator. The $25.00 fee may be credited to one pilot who commands the operation.

   B. A copy of your F.A.A. Agricultural Operator's Certificate.

   C. A certificate signed by you attesting to each pilot's capability of handling aircraft. (Sample certificate attached)

   D. Proof of insurance in the minimum amounts of 20/40/$20,000. Your policy or certificate must state that your property damage coverage includes drift damage coverage from use of insecticides and/or herbicides. Also insurance must state aircraft covered by make and license number.

Persons apprehended operating in violation of these requirements will be grounded until qualified and warrents issued for violations. Two warrents were issued during the spring of 1967.

It is not our intent to persecute or prosecute but only to seek compliance. Therefore, your strict adherence to these requirements will not only be appreciated but will expedite your business without delays.

Yours very truly,

Raymond Rebuffo

Raymond Rebuffo
Assistant Director
Division of Plant Industry

RR:b

AGRICULTURAL AIRCRAFT OPERATOR'S CERTIFICATE OF QUALIFICATION

TO: Nevada Department of Agriculture
Division of Plant Industry
P. O. Box 1209
Reno, Nevada

Date _____

This is to certify that _____
(Name)

_____
(Street address) (City) (State & Zip Code)

1. Has been thoroughly schooled by the undersigned in the following:

   a. Steps to be taken before starting operations including survey of the area to be worked. ☐

   b. Safe handling of economic poisons and the proper disposal of used containers of pesticides as required by Nevada Regulations. ☐

   c. Care and caution to be used to protect wildlife, livestock, crops, bees and humans. ☐

   d. Performance capabilities and operating limitations of aircraft to be used. ☐

2. Has been examined by the undersigned and is qualified to perform the following:

   a. Safe flight and application procedures. ☐

   b. Aircraft manuvers with the aircraft's maximum certified take-off weight, or an established special maximum weight load whichever is greater. Manuvers to include short field and soft field take-offs, flare-outs, swath runs, pull-ups and turnarounds. Rapid deacceleration for helicopter. ☐

3. Has had a minimum of five (5) hours familiarization time in the aircraft to be used and is rated to use the following aircraft for agricultural aircraft operations: _____

_____

Signed by holder of Agricultural Aircraft Operator Certificate issued by Federal Aviation Agency

(Rater) _____

(Address) _____

_____

23

Attachment

CENTRAL FILE COPY SC

United States Department of the Interior

7411 (350)

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

November 18, 1969

Instruction Memo No. 69-355
Expires 6/30/70

To: SCD's, SD's, DM's

From: Assistant Director, Resources

Subject: Use of Herbicide 2,4,5-T

This memo will confirm telephone call of November 10 to State Office, Division of RPM and Service Center S&T Staff on above subject.

The following is quoted from memo of November 3 from the Under Secretary of the Interior to Assistant Secretary, Public Land Management: "Effective immediately, you will halt all use in programs under your direction of the herbicide 2,4,5-T in populated areas or where residues from use could otherwise reach man."

Until such time that we can obtain an interpretation of areas where use of 2,4,5-T may continue, all field offices will discontinue any ongoing programs involving use of the subject herbicide.

For planning purposes, you may continue plans for programs involving the use of 2,4,5-T exercising your own judgment as to areas where use of the subject herbicide may continue in line with quote from the Under Secretary's memo of November 3. However, you should be thinking of alternatives in case 2,4,5-T is restricted for use in our programs. For example, other herbicides or other jobs.

We will keep you advised of further development on interpretation of the phrase "in populated areas or where residues from use could otherwise reach man."

Edward F. Woozley

Acting

DISTRIBUTION:
350 - 10
412 - 5
HE, BIFC, 500, 560, 300,
330, 340, 360, 380

520, 540, 140, 430

24

Attachment

CENTRAL FILE COPY

IN REPLY REFER TO:
7411:350

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

April 10, 1970

Instruction Memorandum No. 70-114
Expires: ~~6/30/70~~ 12-31-70

To: SD's, DM's, and SCD's

From: Director

Subject: Guidelines for Planning and Implementing Bureau of Land Management Pesticide Programs

In order to conduct assigned responsibilities for the management and protection of the public lands, it is often necessary to use herbicides, insecticides, rodenticides, and other pesticides. However, due to the great concern over possible impacts that pesticides may have on the environment, it is mandatory that all uses are reviewed and studied thoroughly with the thought of alternative methods. The Bureau will avoid any uses of chemical agents where there is scientific basis for belief that such uses will result in unnecessary, avoidable, or excessive hazards to man or the natural environment.

General Information

1. The Environmental Quality Council provides "Cabinet-level" guidance for all pesticide programs. A "Working Committee" of this council provides the review and guidance of Departmental programs, including the work previously accomplished by FCPC (Federal Committee on Pest Control).

2. The Department of Interior Intra-Departmental Pesticide Working Committee provides guidance for all Bureau pesticide programs. All pest control programs shall be prepared in accordance with guidelines established by the Environmental Quality Council.

3. The Bureau is authorized to approve those programs which were acceptable to FCPC in the past and do not involve the use of pesticides of special interest to the Department. (See Enclosures 1 and 2).

4. Any changes in approved programs must be submitted to the Director (350), listing the desired changes on same format as original submission.

5. Emergency or unexpected programs can be telephoned or teletyped to the Director (350). If the pesticide to be used is not listed on Enclosures 1 or 2, then approval can be given by the Director's office. If it is listed on Enclosures 1 or 2, then additional review is necessary by the pesticide working committees.

Criteria for Pest Control Programs

1. Identify the Problem. Organize and make systematic surveys of the objectives. Weigh benefits of control against the economic and social values threatened. Examine all alternatives to meet the objectives of your program. Consider the impact each will have on the ecosystem and total environment.

2. Choose Control Method. Determine for each target pest the possible courses of action and evaluate the relative merits for controlling the pest with least adverse effect on wildlife and other values. Choose the most suitable (e.g. mechanical, chemical, biological, etc.). Consider the use of chemicals as the last alternative. If the decision is made to use chemicals, the following criteria must be met:

   a. Use does not involve persistent compounds known to concentrate in living organisms. These include inorganic arsenicals and the chlorinated hydrocarbons; aldrin, BHC, chlordane, DDT, dieldrin, endrin, heptachlor, lindane, TDE, and toxaphene.

   b. The chemical, as formulated, must be registered under the Federal Insecticide, Fungicide and Rodenticide Act for the use proposed.

   c. Use the most selective chemical available for the specific use and apply at the minimum effective rate with the least toxic carrier.

   d. Use of the chemical is in accordance with applicable State and local laws and ordinances controlling application of pesticides.

   e. The program involving the pesticide conforms to standards approved by the Environmental Quality Council.

3. Determine Course of Action. Make technical recommendations based on nature of the threat, available control measures, expected tangible benefits, and feasibility of control objectives. Review the technical recommendations with all affected or interested groups. Decide (a)

whether to undertake control, (b) how it will be done, (c) by whom it will be done, (d) whether legal authority and funds are sufficient, (e) what precautions are necessary.

4. Plan and Carry Out Project. Define objectives clearly, determine the scope of the project and plan carefully and realistically. Integrate into the plan positive measures for protecting wildlife values, etc. Insure adequate supervision of the control program, keep procedure flexible enough to adjust to changing conditions. Measure effectiveness of control and impact on environment as work progresses. Establish definite boundaries of spray area.

5. Appraise Results. Review and assess project accomplishments to devise means of increasing effectiveness and lessening harmful side effects. Establish an active effort to find new methods and to increase effectiveness of control, yet minimize harmful effects on the ecosystem and the total environment.

6. Keep People Informed. Let the concerned public know at all stages what is being done and why it is being done.

7. Program Submissions. All proposed pesticide programs will be submitted to Director (350) for review and approval using same format as previous submissions.

Special Precautions

1. Do not apply pesticides unless it is definitely established that chemical control is clearly the preferred method.

2. Do not apply unless the pesticide is registered for the purpose intended and directions for its safe use are clearly understood.

3. Do not apply unless the selected chemical, its dosage, formulation, and manner of application are known to be effective against the pest and least harmful to wildlife and other values.

4. Do not apply in a large scale program until both the chemical and the method of application are thoroughly field tested.

5. Do not apply on more than the minimum area required for accomplishment of the objectives.

6. Do not apply in quantities greater than necessary to meet the control objectives.

7. Do not apply without adequate supervision to insure that all precautionary measures are taken.

8. Supervisory personnel should be adequately trained as to the salient characteristics of the chemicals to be used, correct methods of application, needed safety precautions, etc.

9. Make note of any adverse conditions and preserve the labels on the actual chemical containers for any future complaints that may occur.

Enclosures - 2
1 - List of Pesticide Usages of Special Interest to Department of Interior
2 - List of Pesticides Not Recommended for Use by Interior Agencies

Distribution: w/encls.
350 - 10
412 - 5
HE, BIFC, 540, 531, 500, 520, 430, 390, 300, 140, 130, 330, 340, 360, 560, 400, 510

LIST OF PESTICIDE USAGES OF SPECIAL INTEREST TO DEPARTMENT OF INTERIOR
FOR WHICH ADVANCE DEPARTMENTAL APPROVAL IS REQUIRED

Aldrin *

Amitrol

Aramite

Arsenical compounds
Azinphosmethyl (Guthion)
Azodrin

Benzene hexachloride
Bidrin
Carbophenothion (Trithion)

Chlordane *
Coumaphos
Cyanide compounds

DDT *

DDD (TDE)

Demeton
Diazinon *
Dieldrin *

Dioxathion
Diquat
Disulfoton (Di-syston)
DN compounds such as dinitrocresol
Dursban *

Endosulfan

Endrin

EPN

---

* Any use except termite control and indoor uses.

Encl. 1-1

Ethion
Heptachlor *
Kepone *
Lindane *
Mercurial compounds
Methyl parathion

Mevinphos (Phosdrin)

Mirex

Nicotine compounds
Paraquat
Parathion

Phorate (Thimet)

Phosphamidon

Picloram

Sodium monofluoroacetate (1080)
Temik
TEPP

Thallium sulfate

Toxaphene

Zectran

---

* Any use except termite control and indoor uses.

Encl. 1-2

LIST OF PESTICIDES NOT RECOMMENDED FOR USE BY INTERIOR AGENCIES

Aldrin

Amitrol

Azodrin

Bidrin

DDT

DDD (TDE)

Dieldrin

Endrin

Fenthion (Baytex)

Heptachlor

Inorganic Arsenical Compounds

Lindane

Mercurial Compounds

Strobane

Thallium Sulfate

Toxaphene

2,4,5-T

25

Excess Hazardous Material Surveys Conducted During Compliance Assessment - Safety, Health, and the Environment (CASHE) Audits

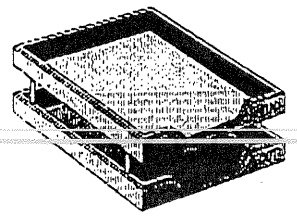
Background: The Bureau of Land Management (BLM) began formally auditing its facilities for compliance with safety, health, and environmental regulations in October 1993. These audits are conducted under the Compliance Assessment - Safety, Health, and the Environment (CASHE) Program. From October 1993 to the present, every BLM District/Field Office, with the exception of the Milwaukee and Tulsa Field Offices, have had a CASHE audit. All remote facilities (e.g., field stations, project offices, warehouses, recreation sites, fire stations, and wild horse and burro facilities) that report to a District/Field Office and store or potentially stores hazardous materials are also inspected during a CASHE audit. During those inspections, the CASHE Team identifies potentially excess hazardous materials for which field personnel have not identified a near term use (e.g., less than six months). The purpose of identifying those excess materials is to alert the facility of the need to properly excess or dispose of those materials if there is no legitimate use for them.

Discussion: The inspection of storage facilities throughout BLM routinely identifies a wide variety of excess hazardous materials. Excess hazardous materials more than 30 years old have been identified during CASHE audits. The CASHE Report for every District/Field Office that has had excess hazardous materials identified has a finding listing those materials. This finding provides the following information, assuming it is available, related to each excess material: 1) type of material (e.g., paint, fuel); 2) product name; 3) date of manufacture; and 4) shelf life or expiration date for the material. The most common excess hazardous materials identified are paints and related products and fuels. Occasionally excess or unusable pesticides and herbicides are identified. Examples of excess pesticides and herbicides identified during CASHE audits include: DDT and experimental herbicide formulations sent to a BLM office by a manufacturer. No product labeled "Agent Orange" has ever been found at a BLM facility.

The typical CASHE recommendations for management of the excess hazardous materials are donation of those materials to a legitimate near term user (assuming the material can still be legally used) or disposal of those materials as a hazardous waste. The vast majority of excess hazardous materials have been sent to a state/EPA permitted treatment, storage, or disposal facility. In some cases, container(s) of suspected hazardous materials are unlabeled. When this occurs, the District/Field Office pays for the identification of those unknown materials and subsequently for their proper disposal, if they cannot be legitimately used.

BLM has decided that CASHE audits are not one-time events and that they will be performed at all District/Field Offices on a regular basis. The frequency of follow-up CASHE audits has not been decided at this time, but it appears that this frequency will be four to six years. These follow-up CASHE audits began in October 2000. The CASHE Team has observed that the amount of excess hazardous materials identified during these follow-up audits has decreased significantly from the amount discovered during the initial audits.

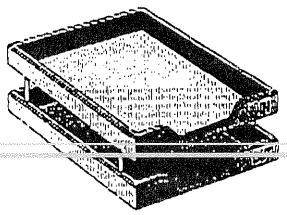
Prepared by: Ken Morin, P.E., CASHE Program
Lead Protection and Response Group, WO 360
Date prepared: June 11, 2001



Bureau of Land Management

Renewable Resources and Planning

Routing and Transmittal Slip



	TO		MS
✓	WO 200	Asst. Dir. Renewable Resource & Planning	5650
	WO 210	Planning, Assessment & Community Support	LS 2nd
✓	WO 220	Rangelands, Soils and Water	LS 2nd
	WO 230	Fish, Wildlife, & Forests	LS 2nd
	WO 240	Cultural Heritage, Wilderness, Special Areas & Paleontology	LS 2nd
	WO 250	Recreation	LS 2nd
	WO 260	Wild Horse and Borros	LS 3rd
✓	WO 100	Director	5660
	WO 101	Deputy Director	5646
	WO 300	AD, Minerals, Realty & Resource Protection	5627
	WO 500	AD, Information Resource Management	5642
	WO 600	AD, Communications	5646
	WO 700	AD, Human Resources	5628
	WO 800	AD, Business & Fiscal Resources	5617

pg 3 7/17

Necessary Action

Note and Return
Comment and Return

Note and Surname
Signature
See Me ✓

Approval
Your Information
Prepare Reply

Date 7-13-01	Sender GINA RAMOS, 220	Phone # 452-5084

Remarks:

United States Department of the Interior

OFFICE OF THE SOLICITOR
Washington, D.C. 20240

IN REPLY REFER TO:

APR 29 2002

Tracy Biggs, Esq.
Disclosure Unit
U.S. Office of Special Counsel
1730 M Street N.W.
Suite 300
Washington, D.C. 20036-4505

Re: OSC FILE No. DI-00-0378

Dear Ms. Biggs:

This letter is in response to your request for certain supplemental information in the above-referenced matter. You had initially asked us to interview five individuals listed in a memorandum dated June 4, 2001 by Linda Hansen, Field Manager, Eagle Lake Field Office, Bureau of Land Management. The memorandum was attached as exhibit 4 in our report to your office dated July 13, 2001.

The five individuals listed in Ms. Hansen's memorandum are Arnold Bullock, George Farris, Fred Alway, Ed Katlas, and Bob Moody. As we discussed with you, the BLM interviewed Mr. Bullock and Mr. Farris in preparing the July 13, 2001, report. Mr. Moody is deceased. We asked BLM Special Agent Dave Burns to interview Mr. Alway and Mr. Katlas. Mr. Burns did so, and a copy of his report is attached. As is apparent from Mr. Burn's report, neither Mr. Alway nor Mr. Katlas had any new information to offer on this matter.

We apologize again for the delay in getting this information to you. We trust it will now be possible for the OSC to prepare its final report and put this matter to rest. Please let me know if you need any further information.

Sincerely,

Hugo Teufel III
Associate Solicitor
Division of General Law

Attachment

0117900004	FOLLOW-UP INVESTIGATIVE REPORT Richard HARLOW et al On-the-job Exposure to Agent Orange Abuse of Power	8 April 2002
BY: Special Agent David Burns		

DETAILS OF INVESTIGATION:

Reference is made to the previous Civil and Criminal Reports of Investigation into this matter contained in the above referenced case file. At the request of the Washington Office (WO) of the Bureau of Land Management (BLM), Special Agent (SA) David Burns contacted Fred Alway and Ed Katlas to conduct follow up interviews. Both of these individuals had been previously identified as possibly having pertinent information about this investigation.

On 27 February 2002, at about 1216 hours, SA Burns contacted Fred Alway by telephone at (530) 257-4662. Fred told SA Burns the following, in summary:

> All of these events happened a long time ago, but he remembered Richard HARLOW. He did not remember BLM ever spraying Agent Orange, but he didn't remember what the chemicals were. He did not remember ever seeing green barrels with orange stripes on them. He remembered that BLM was getting a lot of surplus military equipment, but he remembered that BLM purchased all of the chemicals from commercial vendors. He said that BLM didn't ever get any surplus military chemicals. He didn't know anyone who had any ill effects from their involvement in spraying for BLM.

On 27 February 2002, at about 1310 hours, SA Burns contacted Ed Katlas at (707) 468-5550. Ed told SA Burns the following, in summary:

> He remembered Richard HARLOW, as a "range con" for BLM. He knew that BLM had used 2,4,5-T and had sprayed it. When prompted by SA Burns, he said that he was not really sure if it had been 2,4,5-T or 2,4-D that had been sprayed by aircraft as BLM had used both chemicals. He did not remember anyone calling it "Agent Orange." He saw the chemicals in 5 gallon cans and saw it being mixed at the4 project sites by the contractor's personnel. He was not involved in the Cowhead/Massacre Spray Project. He said that no one wore any protective clothing and the workers were hit by the spray. He didn't recall anyone having any ill effects from the exposure to the chemicals.

UNDEVELOPED LEADS: As directed by the WO.

DISPOSITION OF EVIDENCE:

No evidence was collected during this part of the investigation. Previously collected evidence remains in the custody of SA Burns.

INDEXING SECTION:

1) HARLOW, Richard — COMPLAINANT
Refer to tasking memo for details

2) ALWAY, Fred — WITNESS
(530) 257-4662
Susanville, CA

3) KATLAS, Ed — WITNESS
(707) 485-5550
Ukiah, CA