MINUTE ITEM

This Calendar Item No. C11
was approved as Minute Item
11 of the State Lands
Commission by a vote of 2
to 0 at its 5/25/86
meeting.

CALENDAR ITEM
C11

A 1

S 1

08/28/86
W 22624
McDonald

APPLICATION OF HERBICIDES TO SCHOOL LANDS,
CEDAR GULCH, SISKIYOU COUNTY

In 1982 a 59-acre brush field was cleared, and in 1983, 21,000 pine seedlings were planted on a school land parcel in Siskiyou County, then in 1984 16 additional acres were site prepared and in 1985 planted with 8,000 Douglas-Fir seedlings. Since the original clearing, brush, grasses and forbs have reinvaded the plantations and have become firmly established causing severe competition to the young conifer trees. To ensure healthy, adequately stocked plantations, it is necessary to eliminate the competing vegetation at this time. It is proposed to spray the approved herbicide Velpar with ground equipment to accomplish this plantation maintenance work.

AB 884: N/A.

OTHER PERTINENT INFORMATION:

i. Pursuant to the Commission's delegation of authority and the State CEQA Guidelines (14 Cal. Adm. Code 15061), the staff has prepared a Proposed Negative Declaration identified as EIR ND 402 State Clearinghouse No. 86072221. Such Proposed Negative Declaration was prepare and circulated for public review pursuant to the provisions of CEQA.

   Based upon the Initial Study, the Proposed Negative Declaration, and the comments received in response thereto, there is no substantial evidence that the project will have a significant effect on the environment. (14 Cal. Adm. Code 15074(b))

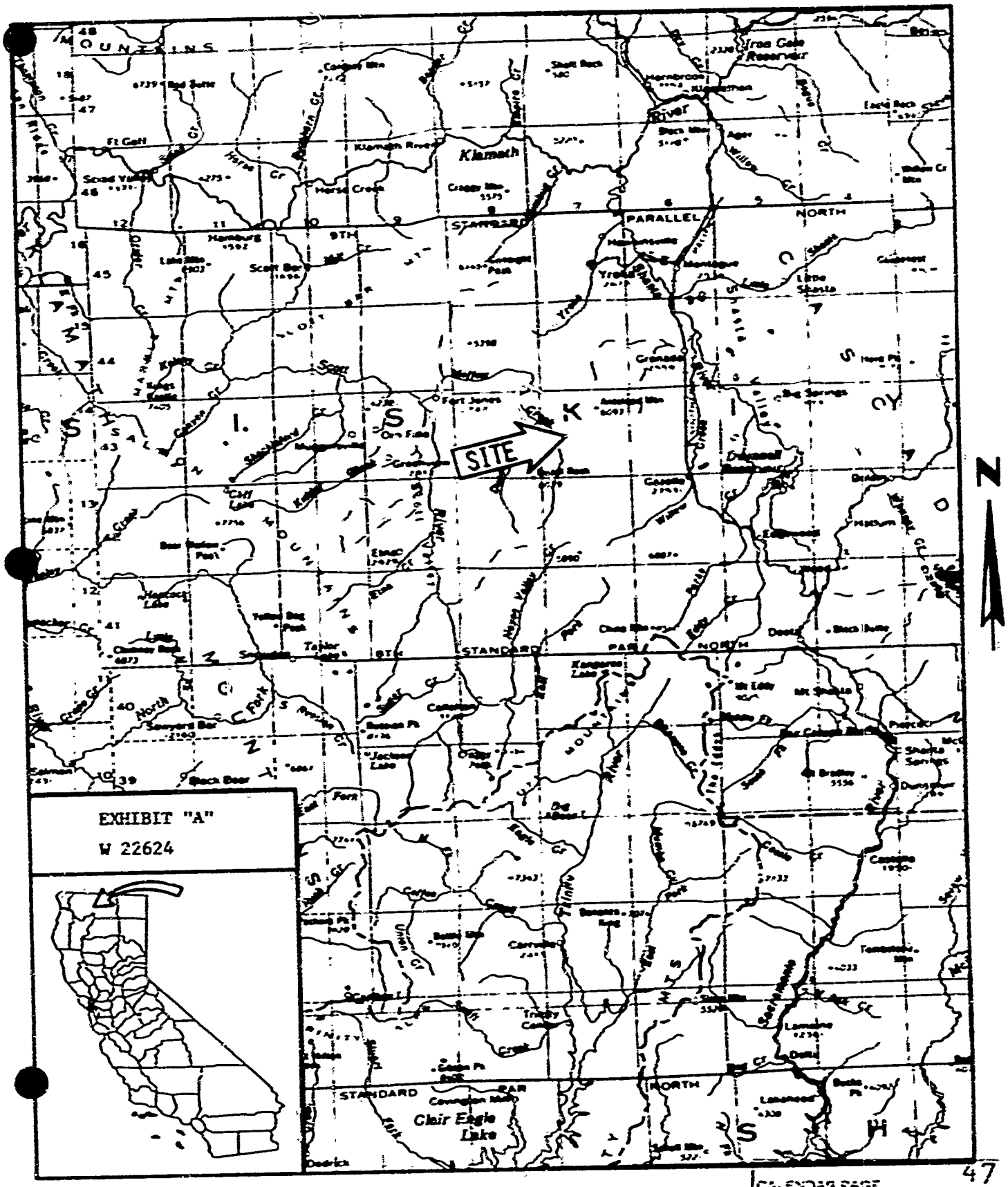
CALENDAR ITEM NO. C 11 (CONT'D)

EXHIBITS: A. Location Map.
B. Negative Declaration.

IT IS RECOMMENDED THAT THE COMMISSION:

1. FIND THAT A NEGATIVE DECLARATION, EIR ND 402, STATE CLEARINGHOUSE NO. 86072221, WAS PREPARED AND ADOPTED FOR THIS PROJECT PURSUANT TO THE PROVISIONS OF THE CEQA AND THAT THE COMMISSION HAS REVIEWED AND CONSIDERED THE INFORMATION CONTAINED THEREIN.

2. DETERMINE THAT THE PROJECT, AS APPROVED, WILL NOT HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT.


SITE
N
EXHIBIT "A"
W 22624
Iron Gate Reservoir
Klamath
Klamath River
Fort Jones
Yreka
Montague
Grenada
Edgewood
Dunsmuir
Shasta Springs
Castella
Clair Engle Lake
STANDARD PARALLEL NORTH
9TH
8TH
Hamburg
Scott Bar
Sawyers Bar
Etna
Callahan
Carrville
Lamoine
Delta
Lakehead
Deadrick

STATE OF CALIFORNIA
STATE LANDS COMMISSION

EXECUTIVE OFFICE
1807 - 13th Street
Sacramento, California 95814

Date: July 22, 1986

File Ref.: W 22624

SCH No.: 86072221

TO: INTERESTED PERSONS

SUBJECT: Review of Negative Declaration Pursuant to Section 15073 of the State CEQA Guidelines (14 Cal. Adm. Code)

An application is currently being processed by the staff of the State Lands Commission for the following described project:

Project Title: CEDAR GULCH PLANTATION MAINTENANCE

Project Proponent: STATE LANDS COMMISSION

Project Location: Section 16, T.43 N., R.7 W., M.D.M., approximately 12 miles south of Yreka, Siskiyou County.

Project Description: Spray Velpar L herbicide (Hexazinone) on 75 acres of timber plantation to control vegetation competing with conifer seedlings.

A Negative Declaration has been prepared for the project pursuant to the requirements of Section 15070 of the State CEQA Guidelines and is attached for your review. Your comments are requested by August 25, 1986. Please address your comments to the State Lands Commission office shown above, with attention to the undersigned. Should you have any questions, you may call me at (916)445-5034. Your cooperation in this matter is greatly appreciated.

ATTACHMENT

DEBRA JACOBS
Division of Research & Planning

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STATE OF CALIFORNIA–STATE LANDS COMMISSION

GEORGE DEUKMEJIAN, Governor

STATE LANDS COMMISSION
1807 13TH STREET
SACRAMENTO, CALIFORNIA 95814

PROPOSED NEGATIVE DECLARATION

EIR ND 402

File Ref.: W 22624

SCH#: 86072221

Project Title: CEDAR GULCH PLANTATION MAINTENANCE

Project Proponent: STATE LANDS COMMISSION

Project Location: Section 16, T.43 N., R. 7 W., M.D.M., approximately 12 miles south of Yreka, Siskiyou County.

Project Description: Spray Velpar L herbicide (Hexazinone) on 75 acres of timber plantation to control vegetation competing with conifer seedlings

Contact Person: DIANA JACOBS Telephone: (916)445-5034

This document is prepared pursuant to the requirements of the California Environmental Quality Act(Section 21000 et seq., Public Resources Code), the State CEQA Guidelines(Section 15000 et seq., Title 14, California Administrative Code), and the State Lands Commission regulations(Section 2901 et seq., Title 2, California Administrative Code).

Based upon the attached Initial Study, it has been found that:

[X] the project will not have a significant effect on the environment.

[ ] mitigation measures included in the project will avoid potentially significant effects.

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STATE LANDS COMMISSION

Date Filed: / /

File Ref.: W 22624

ENVIRONMENTAL IMPACT ASSESSMENT FORM — Part I

(To be completed by applicant)

FORM 69.3(11/82)

A. GENERAL INFORMATION

1. Name, address, and telephone number:

a. Applicant

California State Lands Commission
1807 13th Street
Sacramento, CA 95814
(916) 323-6795

b. Contact person if other than applicant:

Wade McDonald
Forester I
(916) 323-6795

2. a. Project location: (Please reference to nearest town or community and include county)

S½ NW¼, N½ SW¼, NW¼ SE¼, of Section 16, T43N, R7W, MDM approximately 12 miles south of Yreka, Siskiyou County, California.

b. Assessor's parcel number: 22 - 03 - 04

3. Existing zoning of project site: Agriculture

4. Existing land use of project site: Timber plantation

5. Proposed use of site: Douglas-fir and ponderosa pine timber plantation.

6. Other permits required: "N/A"

B. PROJECT DESCRIPTION

1. For building construction projects, complete "ATTACHMENT A".

2. For non-building construction projects: Describe fully, the proposed activity, its purpose and intended use, e.g. for proposed mineral prospecting permits, include the number of test holes, size of holes, amount of material to be excavated, maximum surface area of disturbance, hole locations, depth of holes, etc. Attach plans or other drawings as necessary.

C. ENVIRONMENTAL SETTING

1. Describe the project site as it exists before the project, including information on topography, soil stability, plants and animals and any cultural, historical, or scenic aspects. Describe any existing structures on the site, and the use of the structures.

2. Describe the surrounding properties, including information on plants and animals and any cultural, historical, or scenic aspects. Indicate the type of land use (residential, commercial, etc.), intensity of land use (one-family, apartment houses, shops, department stores, etc.), and scale of development (height, frontage, set-back, rear yard, etc.).

D. ENVIRONMENTAL IMPACT ASSESSMENT

Answer the following questions by placing a check in the appropriate box. Discuss all items checked "yes" or "maybe". (Attach additional sheets as necessary)

Will the project involve:	YES	MAYBE	NO
1. a change in existing features of any bays, tidelands, beaches, lakes, or hills, or substantial alteration of ground contours?	☐	☐	☒
2. a change in scenic views or vistas from existing residential areas or public lands or roads?	☐	☐	☒
3. a change in pattern, scale, or character of the general area of project?	☐	☐	☒
4. a significant effect on plant or animal life?	☐	☐	☐
5. significant amounts of solid waste or litter?	☐	☐	☒
6. a change in dust, ash, smoke, fumes, or odors in the vicinity?	☐	☐	☒
7. a change in ocean, bay, lake, stream, or ground water quality or quantity, or alteration of existing drainage patterns?	☐	☐	☒
8. a change in existing noise or vibration levels in the vicinity?	☐	☐	☒
9. construction on filled land or on slope of 10 percent or more?	☐	☐	☒
10. use or disposal of potentially hazardous materials, such as toxic or radioactive substances, flammables, or explosives?	☒	☐	☐
11. a change in demand for municipal services (police, fire, water, sewage, etc.)?	☐	☐	☒
12. an increase in fossil fuel consumption (electricity, oil, natural gas, etc.)?	☐	☐	☒
13. a larger project or a series of projects?	☐	☐	☒

E. CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this initial evaluation to the best of my ability, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Date: _____ Signed: _____

B. Project Description

The proposed project area is a 75-acre timber plantation in Siskiyou County, California. Fifty-nine acres of the plantation were mechanically site-prepared in the fall of 1982, and were subsequently planted in the spring of 1983 with 15,000 2-year old seedlings of ponderosa pine (Pinus ponderosa) and 6,000 seedlings of Monterey-knobcone pine cross (Pinus x attenuradiata). This 59 acres was also replanted in 1983 with 8,000 2-year old ponderosa pine. The remaining 16 acres were mechanically site-prepared in 1984 and planted with 10,000 2-year old Douglas-fir (Pseudotsuga menziesii) seedlings in the spring of 1985.

Since plantation establishment there has been a reinvasion of annual and perennial grasses, forbs, and brush. To control these plants, which are competing with plantation seedlings for available moisture, nutrients, and growing space, the project calls for the spraying of DuPont Velpar ® L herbicide (Hexazinone) at the rate of 1.9 pounds active ingredient per acre on the 16 acres of the 2-year-old planting and 2.1 pounds active ingredient per acre on the 59 acres of the 4-year-old planting. These prescriptions were developed for the plantation by Larry Ballew, DuPont Company Representative, based on specific soils, vegetation and climatic conditions determined for the project area. The spraying will be done by a licensed Pest Control Operator with a tractor and or backpack sprayers. (See attached Label facsimiles for more details on handling of the herbicide.) The chemical will be mixed on the site to be sprayed and will be applied when the site is dry. In the event of a chemical spill the chemical would stay on the site, i.e. there would be no overland flow of chemical into any bodies of water.

C. Environmental Setting

1. Project Site

Project Location

The 75-acre timber plantation is located on a 200-acre parcel of State-owned school lands, 12 miles south of Yreka, Siskiyou County, California. The 16-acre, younger portion of the plantation is an irregular parcel located in the middle of the plantation. (See attached maps).

TOTAL NUMBER OF PAGES 52
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Topography

The elevation of the subject site ranges from 4000 to 4400 ft. and is generally north-facing. Slopes range from 0-50 percent and average 40 percent.

Water Courses

The nearest water courses are Cedar Gulch, Mill Gulch, and Moffit Creek. Cedar Gulch, which is ephemeral, comes within a quarter mile of the north west corner of the parcel. Mill Gulch is a half mile to the south and is separated from the project area by a ridge. Moffit Creek is 2 1/2 miles to the west.

Soils

The soils on this parcel were mapped by the Soil Vegetation Survey (SVS) as being in the Marpa-Kinkle-Boomer complex. However, according to Richard Dixon, Forester II California Department of Forestry, they really do not fit into this complex. Apparently, the SVS lumped areas together so they would not have to sample every variation. Dixon said soils in the Marpa-Kinkle-Boomer complex were skeletal in nature, whereas the soils on the Cedar Culch parcel are not. (Skeletal soils are made up of particles of which 35 percent or more are greater than 2 millimeter in size.) Dixon said the gravel content on this parcel was less than 5 percent.

Two soil samples were taken to determine the percent organic matter, sand, silt and clay to aid in selecting herbicide application rates. The results of the soil analysis showed that the 16-acre younger portion of the plantation had an organic matter content of 6.07 percent, sand content of 67 percent, silt content of 23 percent, and clay content of 10 percent. The 59-acre older portion of the plantation had an organic matter content of 4.66 percent, sand content of 59 percent, silt content of 31 percent, and clay content of 10 percent. The soils on this parcel can be classified as being sandy loam.

Timber site productivity based on measured trees, and using Dunning's 1942 site curves for mixed conifers of the Sierra Nevada, was determined to be Site Class III (130).

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Vegetation

The vegetative cover of the site consists of three components:

(1) A few saplings, residual after logging, of two commercial timber species, ponderosa pine and Douglas-fir.

(2) Planted seedlings of ponderosa pine, Douglas-fir, and Monterey-knobcone pine cross.

(3) Competing weedy vegetation, primarily cheat grass, needle grass, common mullein, fireweed and manzanita. The crown closure of grass and forbs is approximately 80 percent and the shrub cover is less than five percent. The non-timber species observed on and adjacent to the project area include:

Greenleaf Manzanita (Arctostaphylos patula)

Birchleaf Mahogany (Cercocarpus betuloides)

Oso Berry (Osmoronia cerasiformis)

California Yerba Santa (Eriodictyon California)

Service-berry (Amelancher florida)

Oregon White Oak (Quercus garryana)

Gray Horsebrush (Tetsagymia canescens)

Fremont Silktassel (Garrya fremontii

Buck-brush (Ceanothus cuneatus)

Bitter Cherry (Prunus emarginata)

Western Juniper (Juniperis occidentalis)

Piper Mahonia (Mahonia piperiana)

Knobcone pine (Pinus attenuata)

Cheatgrass (Bromus tectorum)

Needle Grass (Stipa sp.)

Fireweed (Epilobium sp.)

Common mullein (Verbascum Thapsus)

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Based on observation, and on information from the California Natural Diversity Data Base, Department of Fish and Game, no rare or endangered plant species are located on or adjacent to the project area.

Wildlife

The proposed project area is not considered high quality wildlife habitat. The fauna consists primarily of limited local populations of rodents, other small mammals, and some birds.

Archaeological, Historical & Cultural Resources

The California Archaeological Site Survey indicates the site is of low sensitivity. The project has little chance of disturbing any undiscovered archaeological sites.

2. Surrounding Properties

The parcel is surrounded by private land holdings which are zoned either "agriculture" or "timber preserve". Throughout this portion of Siskiyou County, flat valleys are dedicated to agricultural use with range and timber production on surrounding hills.

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STATE LANDS COMMISSION

ENVIRONMENTAL IMPACT ASSESSMENT CHECKLIST – PART II

Form 1520 (7/82)

File Ref.: W 22624

I. BACKGROUND INFORMATION

A. Applicant: California State Lands Commission
1807 13th Street
Sacramento, CA 95814

B. Checklist Date: 1 / 7 / 85

C. Contact Person: Wade McDonald - Forester I

Telephone: (916) 323-6795

D. Purpose: Release Douglas-fir and ponderosa pine conifer seedlings from brush and grass competition.

E. Location: S½NW¼, N½SW¼, NW¼SE¼ of Section 16, T43N, R7W, MDM approximately 9 miles east of Fort Jones, Siskiyou County, California.

F. Description: Spray Velpar® L herbicide in order to control brush and grasses competing with conifer seedlings.

G. Persons Contacted: Harry Rectenwald, Water Biologist
Department of Fish and Game
Charles Greene, Water Quality Control Board
Larry Ballew, Forestry Consultant working on behalf of Dupont Company

II. ENVIRONMENTAL IMPACTS. *(Explain all "yes" and "maybe" answers)*

A. *Earth.* Will the proposal result in:

	Yes	Maybe	No
1. Unstable earth conditions or changes in geologic substructures?	☐	☐	X
2. Disruptions, displacements, compaction, or overcovering of the soil?	☐	☐	X
3. Change in topography or ground surface relief features?	☐	☐	X
4. The destruction, covering, or modification of any unique geologic or physical features?	☐	☐	X
5. Any increase in wind or water erosion of soils, either on or off the site?	☐	☐	X
6. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet, or lake?	☐	☐	X
7. Exposure of all people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards?	☐	☐	X

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	Yes	Maybe	No
B. *Air.* Will the proposal result in:			
1. Substantial air emissions or deterioration of ambient air quality?			X
2. The creation of objectionable odors?			X
3. Alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally?			X
C. *Water.* Will the proposal result in:			
1. Changes in the currents, or the course or direction of water movements, in either marine or fresh waters?			X
2. Changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff?			X
3. Alterations to the course or flow of flood waters?			X
4. Change in the amount of surface water in any water body?			X
5. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?			X
6. Alteration of the direction or rate of flow of ground waters?			X
7. Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?			X
8. Substantial reduction in the amount of water otherwise available for public water supplies?			X
9. Exposure of people or property to water-related hazards such as flooding or tidal waves?			X
10. Significant changes in the temperature, flow or chemical content of surface thermal springs?			X
D. *Plant Life.* Will the proposal result in:			
1. Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, and aquatic plants)?	X		
2. Reduction of the numbers of any unique, rare or endangered species of plants?			X
3. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?			X
4. Reduction in acreage of any agricultural crop?			X
E. *Animal Life.* Will the proposal result in:			
1. Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, or insects)?		X	
2. Reduction of the numbers of any unique, rare or endangered species of animals?			X
3. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?			X
4. Deterioration to existing fish or wildlife habitat?			X
F. *Noise.* Will the proposal result in:			
1. Increase in existing noise levels?			X
2. Exposure of people to severe noise levels?			X
G. *Light and Glare.* Will the proposal result in:			
1. The production of new light or glare?			X
H. *Land Use.* Will the proposal result in:			
1. A substantial alteration of the present or planned land use of an area?			X
I. *Natural Resources.* Will the proposal result in:			
1. Increase in the rate of use of any natural resources?			X
2. Substantial depletion of any nonrenewable resources?			X

	Yes	Maybe	No
J. *Risk of Upset.* Does the proposal result in:			
1. A risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals, or radiation) in the event of an accident or upset conditions?	X		
2. Possible interference with emergency response plan or an emergency evacuation plan?			X
K. *Population.* Will the proposal result in:			
1. The alteration, distribution, density, or growth rate of the human population of the area?			X
L. *Housing.* Will the proposal result in:			
1. Affecting existing housing, or create a demand for additional housing?			X
M. *Transportation/Circulation.* Will the proposal result in:			
1. Generation of substantial additional vehicular movement?			X
2. Affecting existing parking facilities, or create a demand for new parking?			X
3. Substantial impact upon existing transportation systems?			X
4. Alterations to present patterns of circulation or movement of people and/or goods?			X
5. Alterations to waterborne, rail, or air traffic?			X
6. Increase in traffic hazards to motor vehicles, bicyclists, or pedestrians?			X
N. *Public Services.* Will the proposal have an effect upon or result in a need for new or altered governmental services in any of the following areas:			
1. Fire protection?			X
2. Police protection?			X
3. Schools?			X
4. Parks and other recreational facilities?			X
5. Maintenance of public facilities, including roads?			X
6. Other governmental services?			X
O. *Energy.* Will the proposal result in:			
1. Use of substantial amounts of fuel or energy?			X
2. Substantial increase in demand upon existing sources of energy, or require the development of new sources?			X
P. *Utilities.* Will the proposal result in a need for new systems, or substantial alterations to the following utilities:			
1. Power or natural gas?			X
2. Communication systems?			X
3. Water?			X
4. Sewer or septic tanks?			X
5. Storm water drainage?			X
6. Solid waste and disposal?			X
Q. *Human Health.* Will the proposal result in:			
1. Creation of any health hazard or potential health hazard (excluding mental health)?		X	
2. Exposure of people to potential health hazards?		X	
R. *Aesthetics.* Will the proposal result in:			
1. The obstruction of any scenic vista or view open to the public, or will the proposal result in the creation of an aesthetically offensive site open to public view?			X
S. *Recreation.* Will the proposal result in:			
1. An impact upon the quality or quantity of existing recreational opportunities?			X

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	Yes	Maybe	No
T. *Cultural Resources.*			
1. Will the proposal result in the alteration of or the destruction of a prehistoric or historic archeological site?	☐	☐	X
2. Will the proposal result in adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object?	☐	☐	X
3. Does the proposal have the potential to cause a physical change which would affect unique ethnic cultural values?	☐	☐	X
4. Will the proposal restrict existing religious or sacred uses within the potential impact area?	☐	☐	X
U. *Mandatory Findings of Significance.*			
1. Does the project have the potential to degrade the quality of the environment, reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	X
2. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	☐	☐	X
3. Does the project have impacts which are individually limited, but cumulatively considerable?	☐	☐	X
4. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	X

III. DISCUSSION OF ENVIRONMENTAL EVALUATION *(See Comments Attached)*

IV. PRELIMINARY DETERMINATION

On the basis of this initial evaluation:

☐ I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A NEGATIVE DECLARATION will be prepared.

☐ I find the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Date: / /

For the State Lands Commission

Form 1330 (7/82)

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III. Discussion of Environmental Evaluation

D-1) In the project area there will be a reduction in the number of competing grass, forb, and brush plants. The reduction in their cover will promote the growth of conifer seedlings. This vegetation change is not considered on adverse impact.

E-1) In the project area there will be a reduction in the cover of grass, forb, and brush plants, with a promotion of conifer growth. Short-term minor reductions in existing local animal populations could be expected with the change in habitat. Eventually animal species composition will change as trees mature, replacing the forest cover. None of these changes is considered a significant impact.

Although Hexazinone is considered not toxic to birds and fish, and is only slightly toxic to mammals, Charles Green of the Regional Water Quality Control Board and Harry Rectenwald with the Department of Fish and Game expressed concern for potential stream contamination problems due to overspray drift or contaminated runoff. Because this project will only use ground spraying (i.e. no aerial spraying), and spraying will be done in dry weather, with soils well below field capacity, both kinds of potential impacts are considered fully mitigated.

J-1) In the event of an accident the soil could become contaminated with herbicides, or the applicators could be exposed to a level above which is considered safe.

Hexazinone does not persist in the soil for long periods of time. Soil degradation tests indicate that it has a half-life in the soil of from one to six months depending on field conditions. Microbial degradation is the primary way in which the chemical dissipates in the soil and degradation occurs most rapidly under warm, moist conditions.

Hexazinone is regarded as only slightly toxic:

Acute Oral Toxicity
- LD50 - 1690 mg/kg, rats
- LD50 - 860 mg/kg, guinea pigs
- ALD50 - 3400 mg/kg, dogs

It is considered a severe eye irritant. (For more toxicity information, please see attached material).

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If a spill should occur the herbicide would stay on the project area, because the spray will be mixed on-site, there are no permanent streams on-site, and it will be applied in dry weather. In other words, there will be no mixing of chemicals near or adjacent to any streams or other bodies of water.

SLC will contract with a licensed pesticide applicator who has experience in applying herbicides in the manner called for in the contract. There should be little risk to the applicators because of protective clothing requirements.

Q-1&2) The application will be done by a licensed Pest Control Operator who will follow label instructions carefully. The general public will not be exposed to hazard because the chemical will be mixed on the site.

0080M

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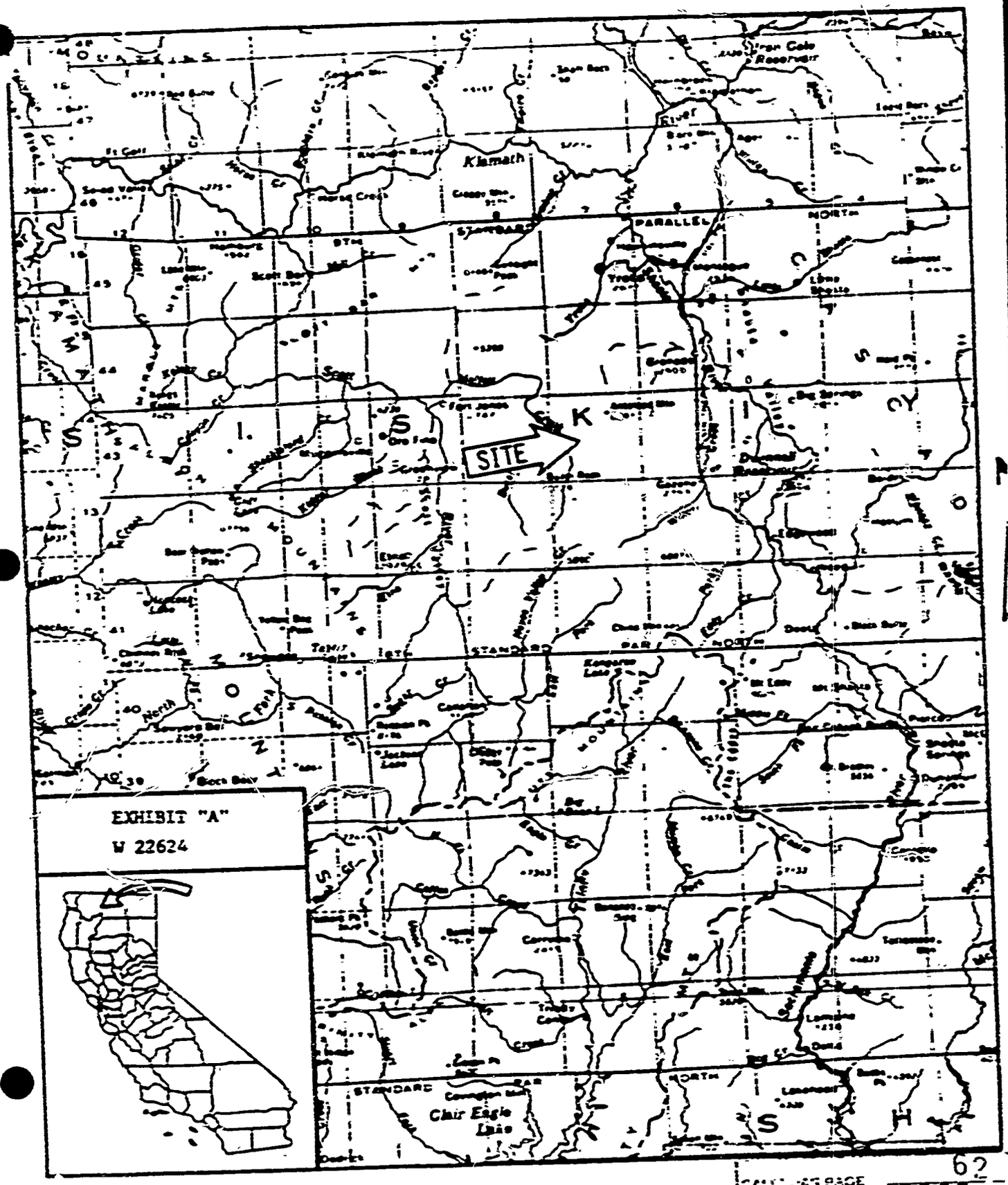
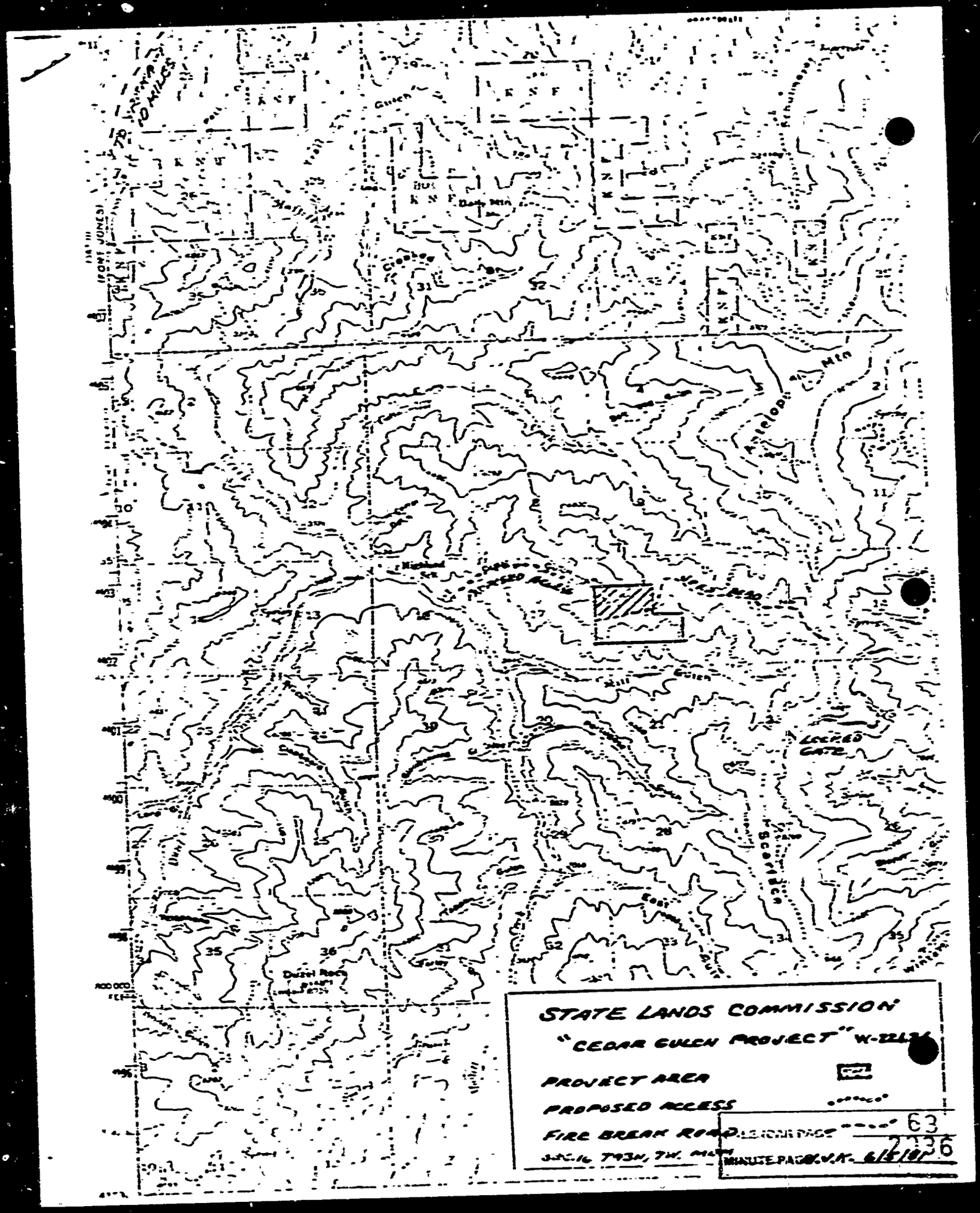

Klamath
PARALLEL
STANDARD
NORTH
SITE
Clair Eagle Lake
EXHIBIT "A"
W 22624


STATE LANDS COMMISSION
"CEDAR GULCH PROJECT" W-22L26
PROJECT AREA
PROPOSED ACCESS
FIRE BREAK ROAD
SEC. 16 T43N, 7W. MLM
LOCKED GATE
Antelope Mtn
Duzel Rock
Scarface
Gulch
Highland Sch
K N F
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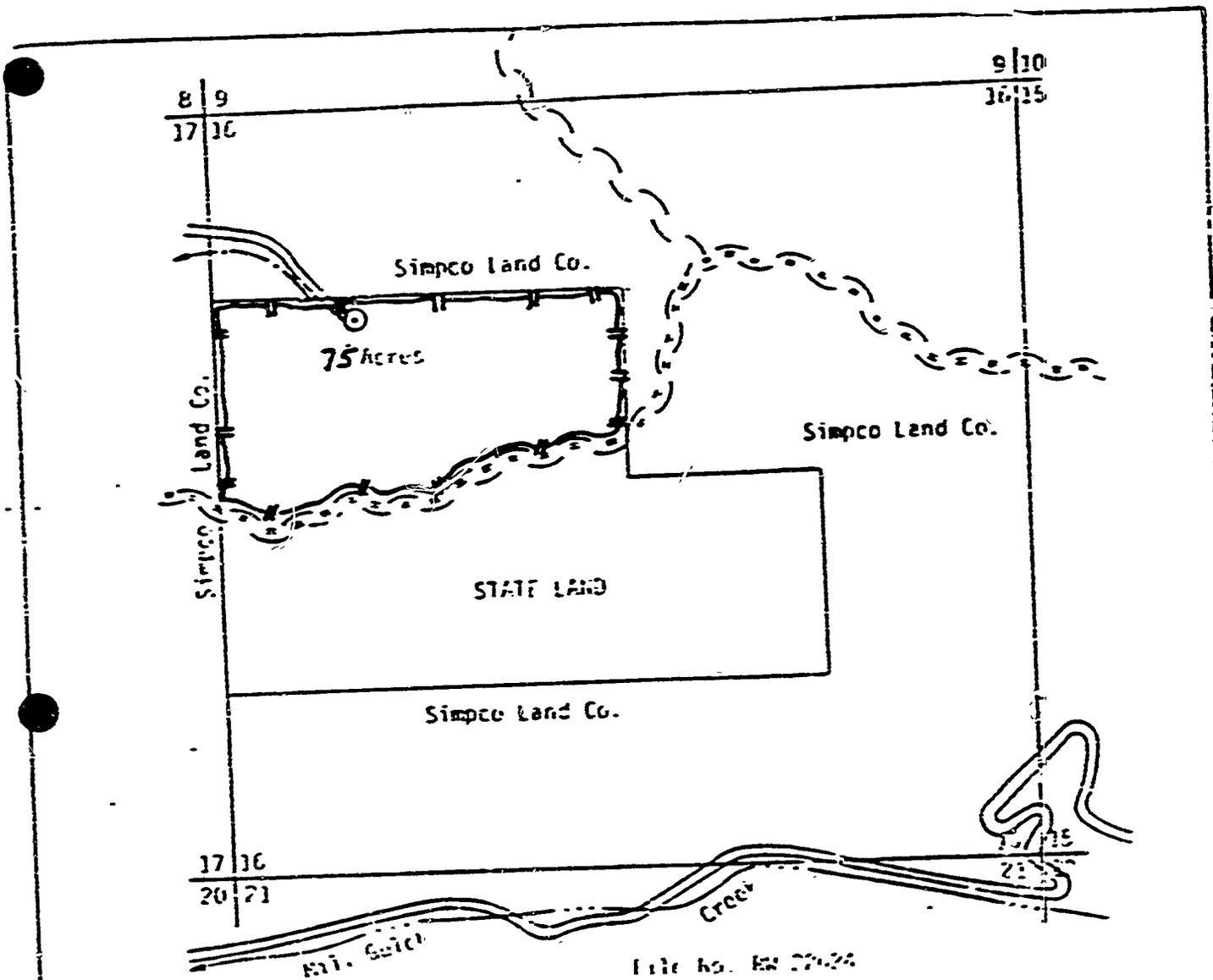
2036



File No. [illegible]

Boundary and acreage are approximate

Scale in feet

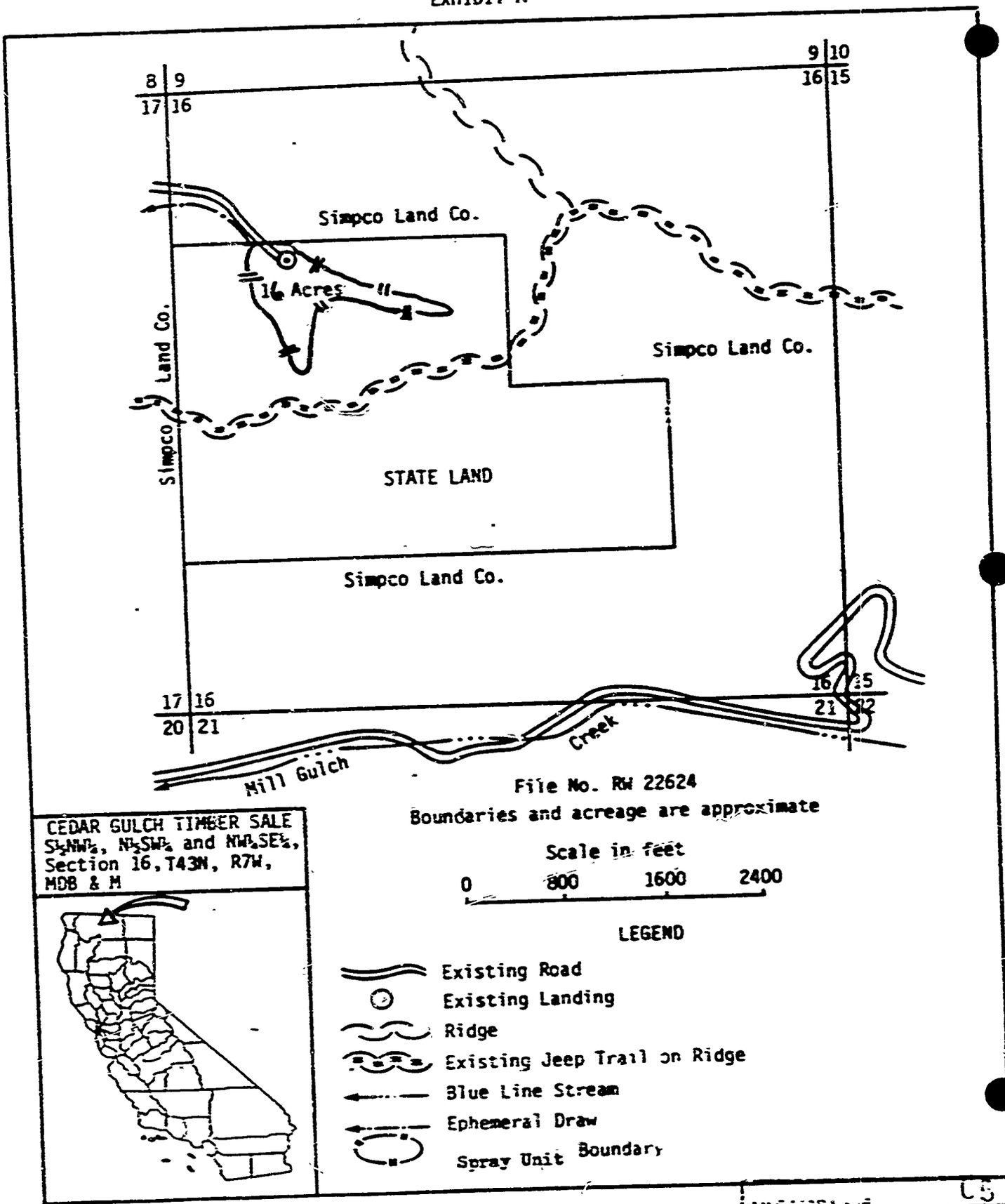
0 [illegible] 240

Section 16, T43N, R7W.

LEGEND

- Existing Road
- Existing Landing
- Ridge
- Existing Jeep Trail on Ridge
- Blue Line Stream
- Ephemeral Draw
- Spray Unit Boundary

EXHIBIT A



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ENVIRONMENTAL LABORATORY
2218 RAILROAD AVENUE, P.O. BOX 2088
REDDING, CA 96001—TELEPHONE (916) 243-5831

Physical
Chemical &
Bacteriological
Analysis

REF. NO. 14823
DATE 6/24/86
PAGE 1 OF 1

SPECIFIC ANALYSIS

REPORT TO STATE LANDS COMMISSION
1807 13th Street
Sacramento, CA 95814

ATTN: Wade R. McDonald PHONE: 323-6795

SAMPLE DESCRIPTION Soil SAMPLED BY:

DATE OF SAMPLE 6/5/86 DATE RECEIVED 6/9/86

	Sand	Silt	Clay	Organic Matter
UNITS	%	%	%	%
Sample #1	67	23	10	6.07
Sample #2	59	31	10	4.66

COMMENTS: cc: Larry Ballew
P.O. Box 10
Ahwahnee, CA 93601

All analyses by EPA or State of California recommended methods, unless otherwise noted

State Approved Water Laboratory for Chemical, Bacteriological, and Biosassay Examinations

The information shown on this sheet is test data only and no analysis or interpretation is intended or implied.

REPORTED BY: [signature]

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130% OF ACTUAL SIZE

DU PONT

NET 1 GALLON

VELPAR L

WEED KILLER

WATER DISPERSIBLE LIQUID • 1 GALLON CONTAINS 2 LBS. HEXAZINONE

ACTIVE INGREDIENT
Hexazinone [3-cyclohexyl-6-(dimethylamino)-1-methyl-1,3,5-triazine-2,4(1H,3H)-dione] 25%
INERT INGREDIENTS 75%
U.S. Pats. 3,902,887 & 3,983,116

EPA Reg. No. 352-352

Keep out of reach of children

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER! CAUSES EYE DAMAGE.

Do not get in eyes. Wear goggles or face shield and rubber gloves when handling. Avoid contact with skin and clothing. Avoid breathing spray mist. Harmful if swallowed.

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. For eyes, call a physician. Get medical attention if skin irritation persists. Remove and wash contaminated clothing before re-use.

ENVIRONMENTAL HAZARDS

Keep out of any body of water. Do not apply where runoff is likely to occur. Do not contaminate water by cleaning of equipment or disposal of wastes.

PHYSICAL AND CHEMICAL HAZARDS

Flammable. Keep away from heat, sparks, and open flame. Keep container closed.

IMPORTANT—Injury to or loss of desirable trees or other plants may result from failure to observe the following: Do not apply except as recommended or drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots. Do not use on lawns, walks, driveways, tennis courts, or similar areas. Prevent drift of spray to desirable plants. Keep from contact with fertilizers, insecticides, fungicides, and seeds.

Thoroughly clean all traces of "Velpar" L from application equipment immediately after use. Flush tank, pump, hoses and boom with several changes of water after removing nozzle tips and screens (clean these parts separately).

E. I. DU PONT DE NEMOURS & CO. (INC.), AGRICULTURAL CHEMICALS DEPT., WILM., DE

SPECIMEN LABEL

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GENERAL INFORMATION: Du Pont "Velpar" L Weed Killer is a water dispersible liquid to be [illegible] water and applied as a spray for selective weed control in Christmas tree plantations, for selective weed and brush control in reforestation areas, and for nonselective weed and brush control on [illegible]. It may also be applied undiluted as a basal soil treatment for brush control [illegible] areas [illegible] or to tree injection for selective brush control [illegible] equipment.

"Velpar" L is an effective general herbicide providing both contact and residual control of many weeds. At rates recommended for noncropland areas, it provides control of many annual and biennial weeds, brush, woody vines, and, except for johnsongrass, is effective for control of most perennial weeds. It is absorbed through the roots and foliage. For brush control, soil application or injection is most effective.

Moisture is required to activate "Velpar" L in the soil. Best results are obtained when weeds are less than 2 inches in height or diameter, soil is moist at time of application and ½ to 1 inch of rainfall occurs within 2 weeks after application. Foliar application to weeds is most effective under conditions of high temperature (80°F), high humidity and good soil moisture. Foliar application when vegetation is dormant or semi-dormant may not be effective.

On herbaceous plants, symptoms usually appear within 2 weeks after application under warm, humid conditions, while 4 to 6 weeks may be required when weather is cool. If rainfall after application is inadequate to activate "Velpar" L in the soil, plants may recover from contact effects and continue to grow.

On woody plants, symptoms usually appear within 3 weeks after sufficient rainfall has carried the herbicide into the root zone during periods of active growth. Defoliation and subsequent refoliation may occur, but susceptible plants are killed. The degree of control and duration of effect will vary with the amount of chemical applied, rainfall, temperature, weed and brush species, soil texture and other conditions.

NOTICE OF WARRANTY

Du Pont warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for purposes stated on such label only when used in accordance with directions under normal use conditions. It is impossible to eliminate all risks inherently associated with the use of this product. Ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials or the manner of use or application, all of which are beyond the control of Du Pont. In no case shall Du Pont be liable for consequential, special or indirect damages resulting from the use or handling of this product. All such risks shall be assumed by the Buyer. DU PONT MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Du Pont "Velpar" L should be used only in accordance with recommendations on this label or in separate published Du Pont recommendations available through local dealers.

Du Pont will not be responsible for losses or damages resulting from use of this product in any manner not specifically recommended by Du Pont. User assumes all risk associated with such non-recommended use.

For broadcast treatments using ground equipment, apply "Velpar" L as a spray just before or soon after weed emergence. Do not apply to frozen or snow-covered soil. Before spraying, calibrate equipment to determine the quantity of water necessary to uniformly and thoroughly cover the vegetation and/or soil in a measured area to be treated. Use at least 5 gallons of water for each gallon of "Velpar" L.

EPA Est. 5905-AR-1, 42751-MS-1
Superscript used is first letter of lot number

[illegible] the proper amount of "Velpar" L to a spray tank filled with the amount of water to be used and mix thoroughly. A [illegible] such as Du Pont Surfactant WK may then be added at the rate of 1 quart per 100 gals. of spray to improve wetting [illegible] or contact activity. After thoroughly mixing the spray solution, a suitable defoaming agent such as Dow Corning [illegible] "Antifoam" A-1 may also be added at the rate of 2 to 5 ozs. per 1,000 gals. of spray should foaming [illegible] a problem. Agitate thoroughly to disperse the defoaming agent.

[illegible] a fixed boom sprayer properly calibrated [illegible] speed and rate of delivery. When used in conifer plantings, avoid [illegible] overlapping and shut off spray booms while starting, turning, slowing or stopping or injury to the conifer trees may result. [illegible] application with a knapsack sprayer (non-cropland areas only), use sufficient water (60 to 200 gals. per acre) for thorough [illegible] coverage. For treating small non-cropland areas, a tank-type hand sprayer or sprinkling can may be used.

[GEN]ERAL WEED AND BRUSH CONTROL—NONCROPLAND AREAS. Railroad, Highway, Utility and Pipeline Rights-of-Ways, [illegible] Tank Farms, Storage Areas, Industrial Plant Sites, Drainage Ditch Banks and other similar areas.

[Use] the higher levels of the recommended dosage ranges under the following conditions: on hard-to-kill species, on fine-[textured] soils (clay, clay loam), on soils containing more than 5% organic matter or carbon, and on coarse-textured soils [illegible] loamy sand, gravelly soils) where rainfall exceeds 40 inches per year. Use the lower levels of the dosage ranges if [illegible] growing season is short.

[Weed] Control—Apply 3 to 6 gals. per acre for season long control of many annual, biennial and perennial weeds including [illegible] bermudagrass*, bluegrass, broomsedge, camphorweed, Canada thistle*, chickweed, clovers, dewberry, dog[fennel] [illegible] fescue*, fingergrass, foxtail, Guineagrass, [illegible], honeysuckle, lantana, morestail*, nutgrass, plantain, prickly [illegible] ragweed, smutgrass, Spanish needle, vaseygrass, wild blackberry* and wild carrot.

[Short]-term control (up to 3 months) of the above weeds, apply 1 to 2½ gals. per acre. Application at 1 to 2½ gals. per acre [illegible] provides short term control of many annual, biennial and perennial weeds including barnyardgrass, bindweed*, bouncing [illegible] bromegrass, buttergrass*, burdock, cocklebur, crabgrass, crown vetch, curly dock*, dandelion*, dogfennel*, [illegible] goatsbeard, vine, goldenrod, lespedeza, milkweed*, mustard, nutsedge* orchardgrass* oxalis, [illegible] pigweed, purslane, quackgrass, ryegrass, smartweed, spurge, trumpet creeper*, wild oats*, wild parsnip and [illegible] star thistle.

[For] small areas—Three fl. ozs. "Velpar" L per 250 sq. ft. is approximately 4 gals. per acre.

[Br]ush Control—Apply to soil during the period between late winter and early summer for control of blackgum, black cherry [illegible] flowering dogwood, green ash, hawthorn, hickory, oaks (except live oak), persimmon, sumac, sweetgum, and willow. In [are]as where the soil normally remains frozen during the winter, and spring rains are usually inadequate for soil activation, a [illegible] or winter treatment may be applied before the soil freezes.

[No]te: For effective brush control and prevention of damage to desirable vegetation, do not apply to brush standing in water. [illegible] not use water from treated ditches for irrigation. Do not use where desirable trees or shrubs are planted [illegible] adjacent to [illegible] treated area.

Broadcast Treatment—Apply 2 to 4 gals. of "Velpar" L per acre as a coarse spray with water. Direct the spray to the [soil] beneath woody plants to be controlled.

Undiluted Basal Soil Treatment—Apply "Velpar" L undiluted with an exact-delivery hand gun applicator. This equipment [delivers] a thin stream of predetermined volume when triggered. Apply at the rate of 2 to 4 milliliters for each 1" of stem diameter at [breast] height. Direct the treatment to the soil within 3 ft. of the root collar of woody plants to be controlled. When treating large stems, [if] more than one delivery of "Velpar" L is needed per stem, make applications on opposite sides of the stem.

[SE]LECTIVE WEED CONTROL—CHRISTMAS TREE PLANTATIONS (EAST OF THE ROCKY MOUNTAINS): "Velpar" L is [re]commended for control of certain weeds in Christmas tree plantations where Scotch Pine, Austrian Pine, Grand Fir, Saha [Sp]ruce and Noble Fir are grown. It is also recommended for use where Scotch Pine, Loblolly Pine, Ponderosa Pine, Austrian [illegible] Grand Fir, Saha Spruce and Noble Fir are grown.

[Sin]ce the effect of "Velpar" L on conifers varies with soil, uniformity of application, and environmental conditions, it is [sugg]ested that growers limit their first use to small areas.

[illegible] Because injury to conifers may result: Do not use in nurseries, seedbeds or ornamental plantings; do not use on trees [wh]ich show poor vigor because of insect, disease or winter injury, or show symptoms of other stress conditions; do not add [illegible]; injury may result when [illegible] applied over the top of conifers; do not use on poorly drained soils. In addition, conifer injury may result where [illegible] winter stress, disease, or insect damage follows application, or heavy rains occur soon after application. Do not use for [w]eed control in Christmas tree plantations in the state of Texas.

[illegible]

When used as directed, "Velpar" L controls annual bluegrass, barnyardgrass, bromegrass, bermudagrass, [illegible] common groundsel, common ragweed, [illegible], [illegible], [illegible], goosegrass [illegible] common [illegible], velvetgrass and wild carrot. Treatment provides partial control of [illegible], [illegible], [illegible], [illegible], [illegible], [illegible], [illegible] and [illegible] dock, dandelion, [illegible], [illegible], [illegible], [illegible], [illegible] and [illegible]. [illegible] equipment are [illegible]. For band application, use proportionately less; for example use ½ of the broadcast rates when treating a 3 ft. band where row spacing is 6 ft.

Apply as a broadcast spray in the spring prior to conifer bud break. If application is made after bud break, use directed spray equipment and prevent contact of conifer foliage or injury may occur.

Soil Texture**	FIRST YEAR PLANTATIONS*** Pints "Velpar" L Per Acre****	ESTABLISHED PLANTATIONS Pints "Velpar" L Per Acre****
Gravelly or Rocky Soils, Exposed Subsoils, Clay Knolls, Sand, or Sandy Soils with 85% or more Sand	Do Not Use	Do Not Use
Loamy Sand and Sandy Loam (58[illegible] Sand)	4	4-5
Loam, Silt Loam, Silt and Sandy Clay Loam	4-5	5-7
Silty Clay Loam, Clay Loam, Sandy Clay, Silty Clay, and Clay	5-6	7-8

**Do not use on any soil containing less than 1% organic matter. Do not use on loamy sand or sandy loam with less than 2% organic matter.

***Apply only to transplant stock that is 2 years old (2-0) or more (1 year old for [illegible]). Allow [illegible] one [illegible] after transplanting before applying "Velpar" L. Then apply only if [illegible] soil has settled [illegible] the time of the transplant.

****Use of rates in excess of those specified for the soil texture may result in injury to the conifers.

SELECTIVE BRUSH CONTROL—REFORESTATION AREAS

By Injection—Inject 1 milliliter of undiluted "Velpar" L through the bark of woody, [illegible] stems. [illegible] injections should be made at 6" intervals around the circumference and near the ground, [illegible] using tubular injector equipment, or at waist height when using the "HYPO-HATCHET" injector or similar device. Treatments should be made in the summer.

When used as directed, "Velpar" L controls black cherry, red maple, oaks (excluding live oak), and sweet gum.

Undiluted Basal Soil Treatment—Apply "Velpar" L undiluted with an exact-delivery hand gun applicator. This equipment delivers a thin stream of a predetermined volume when triggered. Apply at the rate of 2 to 4 milliliters for each 1" of stem diameter at breast height of trees to be controlled. When treating, direct the [illegible] to the soil within 3 ft. of the root collar of trees to be controlled. When [illegible] large stems and [illegible] than one delivery of "Velpar" L is needed per stem, make applications on opposite sides of the stem.

When used as directed, "Velpar" L controls [illegible] elm, wild cherry, oaks (excluding live oak), sumac and willow.

Notice to Buyer: Purchase of this material does not confer any rights under patents of countries outside of the United States.

STORAGE AND DISPOSAL

STORAGE: Do not subject to temperatures below 32°F. Store product in original container only, away from other pesticides, fertilizer, seed, or food.

DISPOSAL: Do not contaminate water, food, or feed by storage or disposal. Wastes resulting from the use of this product may be disposed of on site or at approved waste disposal facility. Triple rinse (or equivalent) the container. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

AG 21874 S783 8/15/83 Made in U.S.A.

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MINUTE PAGE [illegible]41

E-63872

AGRICULTURAL BULLETIN

DU PONT

Velpar® L Weed Killer
Forestry Site Preparation
& Conifer Release
West of the Rocky Mountains

SUPPLEMENTAL LABELING
EPA REG. NO. 352-392

VELPAR® L WEED KILLER
FOR CONTROL OF CERTAIN WEEDS AND BRUSH SPECIES FOR FORESTRY SITE PREPARATION & CONIFER RELEASE

DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with it labeling.

Du Pont Velpar® L Weed Killer is recommended for control of certain weeds and brush species in forestry site preparation and conifer release operations where Douglas Fir, Grand Fir, Noble Fir, White Fir, Ponderosa Pine, Jeffrey Pine and Sitka Spruce are grown.

Since the effect of "Velpar" L on conifers varies with soils, uniformity of application and environmental conditions, it is suggested that foresters limit their first use to small areas.

NOTE: Because injury to conifers may result: Do not use "Velpar" L in nurseries, seedbeds or ornamental plantings; do not use on trees which show poor vigor because of insect, disease or winter injury, or show symptoms of other stress conditions. Do not add surfactant if applied over the top of conifers. Do not use on poorly drained soils. Conifer injury may result where severe winter stress, disease or insect damage follows application, or if heavy rains occur soon after application.

HOW TO USE

Application Technique: Before spraying, calibrate equipment to determine the quantity of water necessary to uniformly and thoroughly cover the vegetation in a measured area to be treated. Use a fixed-boom sprayer with a pressure regulator properly calibrated to a constant speed of travel and rate of delivery. Avoid overlapping and shut-off spray booms while starting, turning, slowing or stopping, as injury to conifers may result.

Spray Volume and Equipment: Apply "Velpar" L by air or ground equipment. Select a spray volume that will insure a thorough and uniform application, at least 8 gals. of spray per acre by air and usually 25 gals. of spray per acre by ground, but not less than 5 gals. of water for each gallon of "Velpar" L. Use mechanical or by-pass agitation to thoroughly mix the spray solution. After initial mixing, do not use

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excessive agitation as foaming problems may result. To avoid foaming problems, use anti-foam agents and minimal agitation.

Herbaceous Weed Control

When used as directed, "Velpar" L controls weeds such as annual bluegrass, barnyardgrass, bromegrass, false dandelion (catsear), fleabane, common groundsel, foxtail, oxeye daisy, velvet grass and wild carrot. Treatment provides partial control of dandelion, fescue, goldenrod, heath aster, orchardgrass, ryegrass, smartweed, willowweed (fireweed).

Application Rates: Apply as a pre-plant or post-plant broadcast spray at rates of 2 to 4 qts per acre. Use the lower rates on coarse-textured soils and soils low in organic matter; use the higher rates on fine-textured soils and soils high in organic matter. Refer to "Use Limitations" section for specific details.

For band applications, use proportionately less; for example, use 1/2 the broadcast rate when treating a 3 ft band where row spacing is 6 ft.

Moisture is necessary to activate "Velpar" L. Best results are obtained when weeds are less than 2 inches in height or diameter, soil is moist at time of application and 1/2 to 1 inch of rainfall occurs within 2 weeks after application.

Timing:

West of Cascades (and other areas of high spring rainfall): For best results, apply in the spring when weeds are actively growing, but prior to bud break on conifers. If application is made after bud break, use directional spray equipment so that spray does not contact new growth as injury may result

East of Cascades (and other areas of low spring rainfall): For best results, apply in the fall before soil freezes or in the spring in anticipation of rainfall. Weed control results from spring applications will be dependent on sufficient rainfall following treatment to activate "Velpar" L. Spring applications should be made after snow cover melts but before bud break occurs.

Brush Control

Among the brush species controlled are: deerbrush ceanothus, squawcarpet, snowbrush ceanothus (varnishleaf ceanothus) and greenleaf manzanita.

Application Rates: Use "Velpar" L for brush control in forestry site preparation and conifer release where either Ponderosa Pine or Jeffrey Pine is the primary coniferous species. Apply "Velpar" L at rates of 3 to 6 qts per acre. Use the lower rates on coarse-textured soils and soils low in organic matter; use the higher rates on fine-textured soils high in organic matter.

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For best results, applications should be made to brush seedlings or sprouts when less than 18 inches in height or diameter. Applications may be made in the fall before the soil freezes or in the spring. Fall applications generally provide better results.

"Velpar" L effects may be slow to appear and maximum results will be seen 12-24 months following the application.

Use Limitations:

1. Do not use on gravelly or rocky soils, exposed subsoils, clay knobs, sand or sandy soils with 85% or more sand.

2. Do not use on any soil containing less than 1% organic matter.

3. On soils high in organic matter (greater than 5%) effectiveness of "Velpar" L is reduced and results may be unsatisfactory.

4. Do not use on loamy sand or sandy loam with less than 2% organic matter (except for Ponderosa and Jeffrey Pine).

5. On first year plantations, apply "Velpar" L (either pre-plant or post-plant) to transplant stock that is 2 years old (2-0) or more, (1 year old (1-0) for Ponderosa Pine and Jeffrey Pine).

6. When applying "Velpar" L after transplanting, wait until rainfall has settled the soil around the base of the transplants before making the treatment.

IMPORTANT

BEFORE USING "VELPAR" L, READ CAREFULLY OBSERVE THE CAUTIONARY STATEMENTS AND ALL OTHER INFORMATION APPEARING ON THE PRODUCT LABEL.

This bulletin contains new or supplemental instructions for use of this product which may not appear on package label. Follow the instructions carefully.

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E-61511

VELPAR®

HERBICIDE

FOR FASTER GROWING CONIFERS

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VELPAR®
HERBICIDE

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VELPAR®... THE VERSATILE FORESTRY HERBICIDE

CONIFERS GROW FASTER WITH VEGETATION CONTROL

This brochure is designed to explain how chemical control with versatile VELPAR herbicide can help you solve vegetation problems efficiently, effectively and economically.

As a timber producer, you want to maximize your production. That's why you need to control weeds, brush and other vegetation that compete for moisture, soil nutrients and sunlight.

Chances are you use a number of weapons to combat competing vegetation, and for good reasons. There are times when you need mechanical methods—dozers, mowers, chain saws—to clear the way for greater growth. There are times when you need controlled burns to wipe out undergrowth to stimulate faster tree growth. And there are times when chemical control with VELPAR is the best way to boost production.

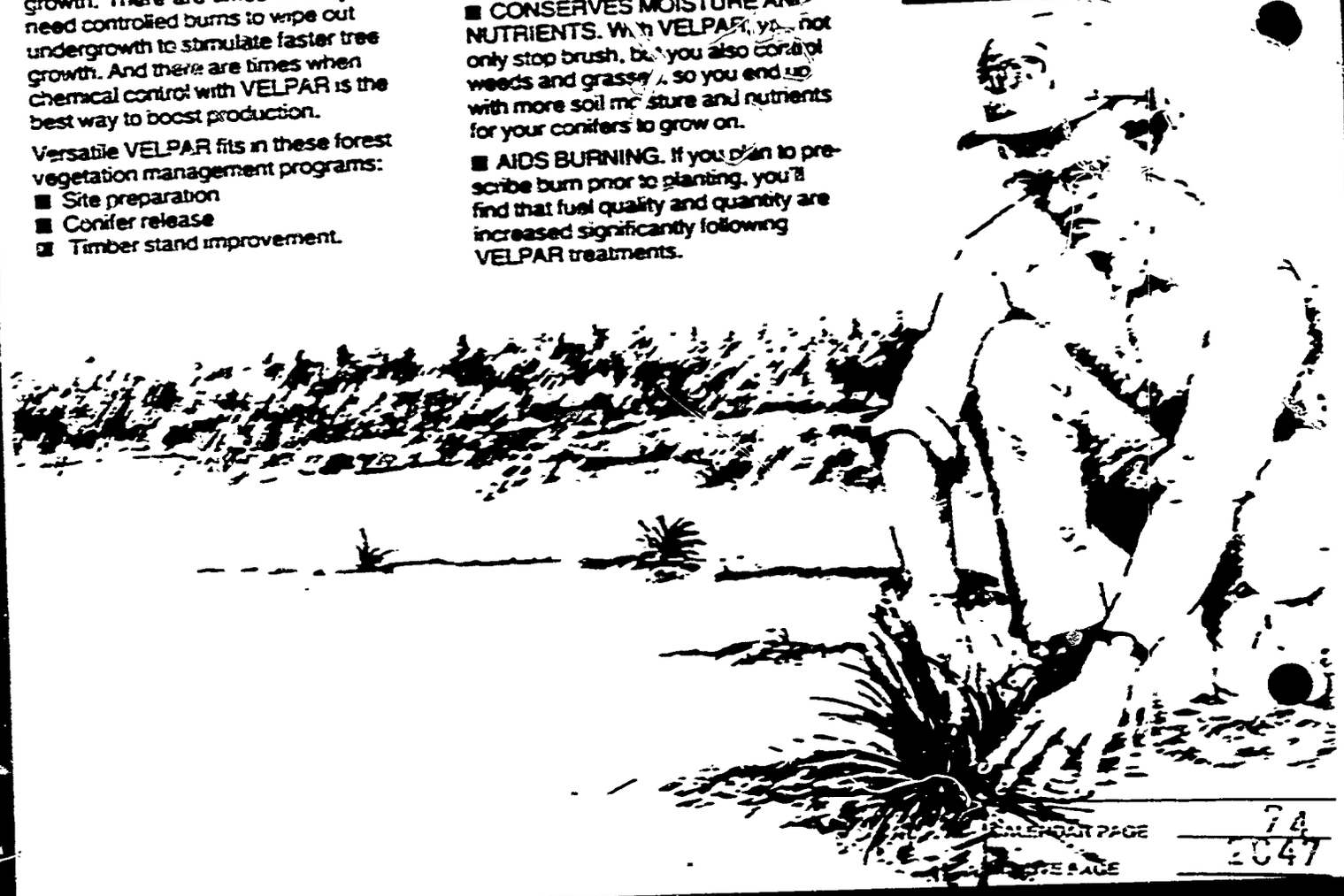
Versatile VELPAR fits in these forest vegetation management programs:

- Site preparation
- Conifer release
- Timber stand improvement.

VELPAR FOR SITE PREPARATION

VELPAR is ideal for use in preparing conifer planting sites for a number of reasons, including:

- REDUCES RESPROUTING. VELPAR controls most brush and reduces resprouting because of residual activity through the roots. Resprouting is a problem that often crops up following mechanical site preparation.
- LOW COST. Site preparation with VELPAR is less expensive than most mechanical methods.
- FAST. Spraying VELPAR allows you to control more acres of brush faster than mechanical operations, so you have more time for other management matters.
- CONSERVES MOISTURE AND NUTRIENTS. With VELPAR, you not only stop brush, but you also control weeds and grasses, so you end up with more soil moisture and nutrients for your conifers to grow on.
- AIDS BURNING. If you plan to prescribe burn prior to planting, you'll find that fuel quality and quantity are increased significantly following VELPAR treatments.
- REDUCED EROSION. Unlike dozers, VELPAR doesn't scrape off valuable topsoil to open land to erosion. And you don't have the problem of compaction which may affect the productivity of your site.
- IMPROVES WILDLIFE HABITAT Treatment with VELPAR can help provide a better environment for wildlife. In fact, in some states VELPAR is used to maintain wildlife openings.



VELPAR FOR CONIFER RELEASE

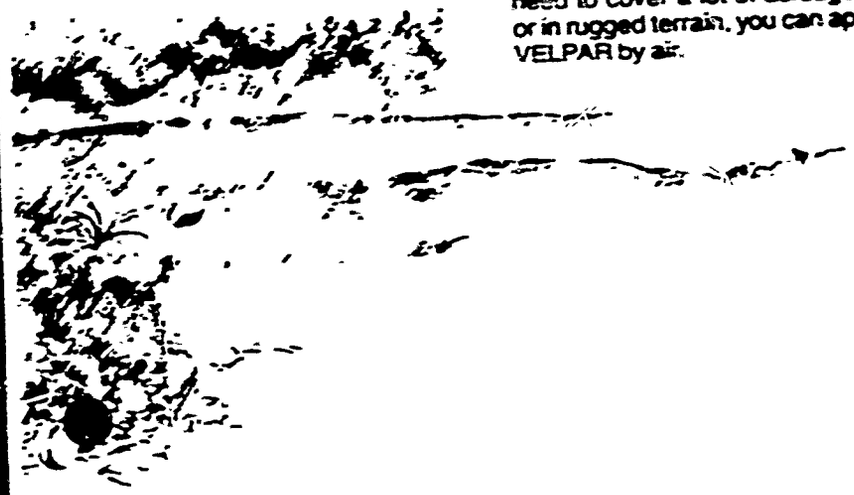
Reducing competing vegetation allows your conifers to grow faster and yield more at harvest. There are many other good reasons to use VELPAR for conifer release, including:

■ BETTER CONTROL. VELPAR controls more species of undesirable shrubs, brush, trees, weeds and grasses than any other forestry herbicide.

■ WON'T HARM MOST CONIFERS. Most conifer species tolerate VELPAR. However some conifer species may be harmed by treatment, so be sure to check the label and follow use directions before applying VELPAR.

■ APPLICATION FLEXIBILITY. You can use VELPAR in young plantings or in established stands. Newly established conifers get off to a faster start and grow more rapidly when you control vegetation with VELPAR. Later in a stand's life, VELPAR can also be used to reduce shading and crowding by brush and weeds. This allows conifers to thrive on extra sunlight, nutrients and water.

■ REDUCES FIRE RISK. By controlling vegetation and reducing fuel sources, VELPAR reduces the risk of fire in a conifer stand.



VELPAR FOR TIMBER STAND IMPROVEMENT

■ FAST AND EASY CONTROL. You can apply VELPAR with a spotgun that quickly and easily controls scattered clumps of brush and hardwood trees with minimal site disturbance.

■ LESS RESPROUTING. Hardwoods killed with VELPAR won't resprout like hardwoods cut down with a chain saw.

■ SHORT INVESTMENT. VELPAR applied near harvest requires only a short-term capital investment until pay-back.

■ IMPROVES LOGGING EFFICIENCY. By controlling brush and hardwoods with VELPAR, logging may be performed faster and easier.

■ QUICKER REGENERATION. Application of VELPAR for timber stand improvement may reduce or even eliminate the need for site preparation.

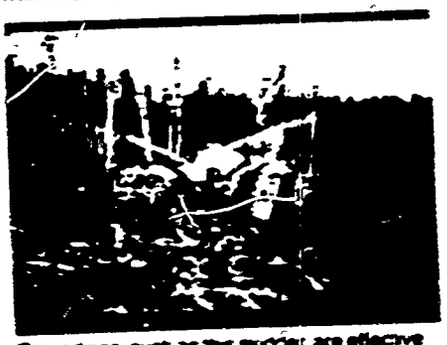
VERSATILE APPLICATION METHODS

Versatile VELPAR can be applied by air, ground or spotgun equipment.

AERIAL APPLICATION. When you need to cover a lot of acreage fast, or in rugged terrain, you can apply VELPAR by air.

VELPAR goes on fast by air. Treatment helps clear the way for pine plantings or conifer release by controlling deciduous brush and trees, as well as weeds and grasses.

GROUND APPLICATION. In less rugged terrain, VELPAR can be applied with ground equipment. This application option is useful in areas where spraying needs to be completed with a minimum amount of public visibility.



Ground rigs, such as this skidder, are effective tools for applying VELPAR.

HAND APPLICATION. For reforesting small acreages, or for timber stand improvement work, you can apply VELPAR L with an exact delivery spotgun. This application method is also useful for controlling undesirable vegetation in environmentally sensitive areas.

Spotgun treatment with VELPAR L is fast, easy and economical. A squeeze of the trigger knocks out brush and reduces sun-robbing canopy over conifer trees.

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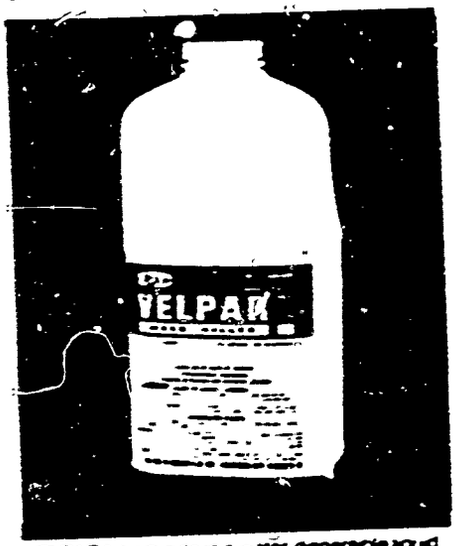
TWO CONVENIENT VELPAR® FORMULATIONS

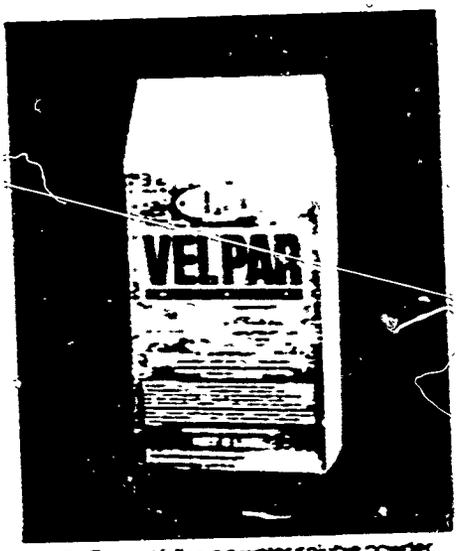
Two convenient forms of VELPAR are available for forest management vegetation control. They are VELPAR L, a liquid, and VELPAR, a water soluble powder.

Both products contain hexazinone as the active ingredient. Hexazinone is unique among forest herbicides for these reasons:

- It controls a wide variety of deciduous woody plants—brush, brambles and trees, in addition to several evergreen species found in the West.
- It controls a wide variety of broadleaf weeds and grasses.
- It can be used for site preparation, conifer release and timber stand improvement through a number of application techniques.
- It will not harm most conifer species (see label for tolerant species).



VELPAR L herbicide is a water-dispersible liquid containing 25% hexazinone (2 lbs. of hexazinone per gallon). It is sold in one, five and thirty-gallon containers. VELPAR L is mixed with water and applied as a spray to control weeds and brush. Also, it can be applied undiluted through a spotgun to control brush.



VELPAR weed killer is a water soluble powder containing 90% hexazinone. Sold in 5-pound bags as well as 50-pound bags. VELPAR is mixed with water and applied as a spray to control weeds or woody plants.

HOW VELPAR WORKS

Herbaceous Vegetation. VELPAR works two ways in controlling weeds, grasses, vines, brambles and other low-growing herbaceous vegetation. First, it is absorbed into the foliage where it provides a contact effect. Second, it provides soil residual control following rainfall whereby roots pick up the chemical and translocate it upward into the foliage where it inhibits photosynthesis. Its foliar activity works best in hot weather, but root absorption will occur during periods of active growth as long as rainfall follows application to move the chemical into the soil. Under warm, humid conditions, look for weeds to begin to die within 2 weeks after application. But if weather is cool, symptoms will probably not occur for 4 to 6 weeks. Treatment works best when good soil moisture is present at spraying and when at least ½ inch of rainfall occurs within 2 weeks after application.

Deciduous Brush. VELPAR controls brush through their root systems. Rainfall is necessary to carry hexazinone into the soil where it is absorbed by the roots of deciduous woody plants. Hexazinone is then translocated upward through the tree and into the foliage where it inhibits photosynthesis. It blocks the tree's ability to convert the sun's energy into green foliage, gradually causing the tree to die. Symptoms usually appear within 3 weeks after sufficient rainfall has carried VELPAR into the root zone when the tree is actively growing. Speed and degree of control usually depend on the amount of VELPAR applied, rainfall, temperature, brush species, soil texture and other environmental conditions.

Soil Texture Influences Performance

Soil properties play a major role in determining the effectiveness of VELPAR treatment. The heavier the soil (the higher the concentration of organic matter, clay and silt), the higher the rate of VELPAR required to obtain control.

On lighter soils (those with more sand and less clay, silt and organic matter) a lower rate of VELPAR is required to obtain good control. Consequently, you need to determine the soil type of the tract to be treated. Then consult the label to determine the correct rate of VELPAR to apply.

On tracts with variable soil types, the degree of vegetation control may vary. Therefore, it is best to determine the predominant soil type and match the rate to that soil type. Although this approach may result in retreatment of areas where the soil is heavier, it is generally more cost-effective, and avoids the possibility of injuring conifers with high product rates.

APPLICATION GUIDES

Aerial Equipment

To prepare your spray mixture, first fill the spray tank with half the amount of water to be used. Then add the proper amount of VELPAR or VELPAR L. Mix thoroughly and add the remaining amount of water. Follow this with a foaming agent and agitate thoroughly.

Special precautions should be taken to avoid spray drift. Consider using a drift control product in the spray tank to minimize the amount of small spray particles. Use nozzles that provide coarse spray particles. Also, try to maintain adequate buffer zones around the area to be treated, and do not spray when wind conditions favor drift.

Ground Equipment

Follow the same mixing procedure as outlined above for aerial applications. Make sure ground equipment is properly calibrated to uniformly deliver the correct rate across the spray swath. Also, use a defoamer in the spray tank, maintain adequate perimeter buffers, and avoid spraying when wind conditions favor drift.

When applying VELPAR L, use at least 5 gallons of water for each gallon of product. This is important because the solubility of VELPAR L in water varies with the temperature of the water (see Figure 1). For best spray mixes, adjust the amount of VELPAR L to the amount of water as determined by the water temperature.

Spotgun Equipment

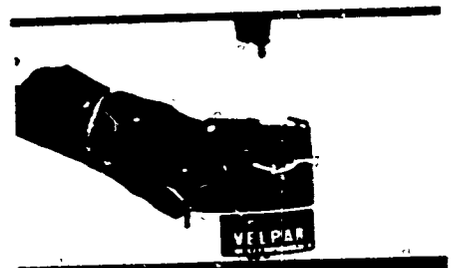
VELPAR L can be applied undiluted with an exact delivery spotgun applicator in three easy steps. ▶

USER PRECAUTIONS. VELPAR L may cause eye damage. *Do not get in eyes.* Wear goggles or face shield and rubber gloves when handling. Avoid contact with skin and clothing. Avoid breathing spray mist. Also harmful if swallowed. In case of contact, flush with water.

SUGGESTED SPOTGUN MAINTENANCE. For successful spotgun operation, follow these steps at completion of VELPAR L application.

STEP 1—Remove suction tube from VELPAR L jug and pump the gun empty of chemical.
STEP 2—Set gun for maximum discharge stroke.

Spotgun is set to deliver from two to four milliliters of VELPAR L with each squeeze of the trigger

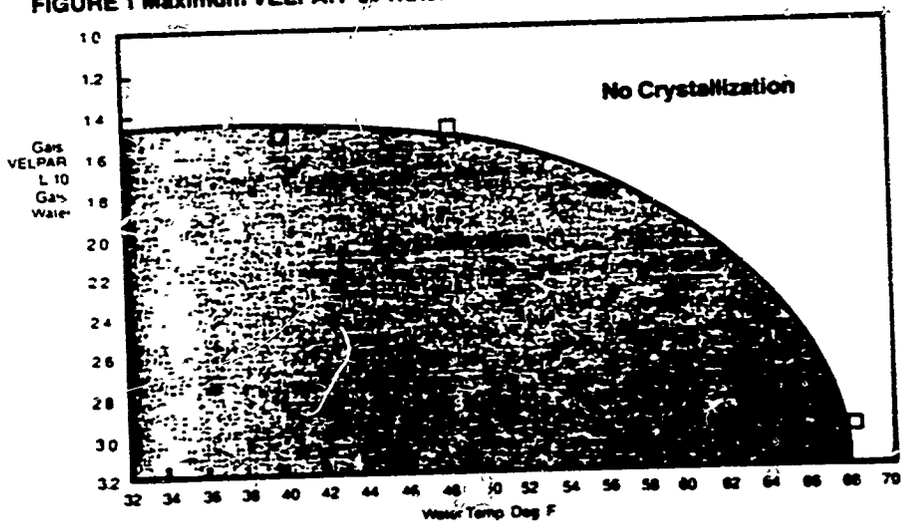


Gun is hooked up to jug of VELPAR L.

Gun is aimed at the base of brush and trigger is squeezed for every one-inch of stem diameter at breast height

STEP 3—Put suction tube into container of clean water
STEP 4—Pump gun until filled with water.
STEP 5—Direct discharge stream to target area and pump gun at least 15 strokes.
STEP 6—Remove suction tube from water and pump gun empty. Small amount of water remaining in gun is not harmful.
STEP 7—If desired, a few drops of lightweight oil (vegetable or machine oil) can be introduced into suction side of gun to aid ease of operation. Pump gun to coat inside with oil (this can be done with a small amount of water in gun)

FIGURE 1 Maximum VELPAR® L: Water Ratios as a Function of Water Temp.



Relative Toxicity of Some Herbicides to Rats

Common Name or Designation	Some Common Products	Oral LD_{50} mg/kg	Toxicity Rating	Dermal Response Rating
Paraquat	Various brands	120	3	3
2,4-D	Various brands	600	4	4
Triclopyr	Garlon[7]	630	4	4
Tebuthiuron	Spike[1]	644	4	4
MSMA	Various brands	800	4	4
ASPIRIN	(for comparison)	1,240	4	—
Hexazinone	VELPAR®	1,690	4	4
Dicamba	Banvel[2]	2,900	4	4
Prometon	Pramitol[3]	2,980	3	—
Atrazine	Various brands	3,080	4	5
TABLE SALT	(for comparison)	3,320	4	—
Diuron	KARMEX®	3,400	4	4
AMS	AMMATE®	3,900	4	5
Glyphosate	Roundup[5]	4,320	4	5
Sulfometuron Methyl	OUST®	>5,000	5	—
Simazine	Various brands	5,000	5	4
Sodium Chlorate	Sodium Chlorate	5,000	5	4
Bromacil	HYVAR® X, HYVAR® X-L	5,200	5	4
Asulam	Asulox[6]	8,000	5	5
Picloram	Tordon[7]	8,200	5	4
Dalapon	Dowpon[7]	7,570	5	3
Fosamine	KRENITE®	24,000	5	4
Amitrole	Various brands	24,600	5	4

[1] Registered trademark of Elanco Products Co
[2] Registered trademark of Velsicol Chemical Corp.
[3] Registered trademark of Ciba-Geigy Corp
[4] Registered trademark of Monsanto Company
[5] Registered trademark of Rhone-Poulenc Inc
[6] Registered trademark of Dow Chemical Co

USDA Agriculture Handbook No. 332-1969:

Toxicity Rating	Class	LD_{50} (mg/kg)	Probable Lethal Dose for 150-lb Man	Numerical Rating is based on the following classification
1	Extremely toxic	Less than 5	1 taste (less than 7 drops)	1 Absorbed and poisonous
2	Very toxic	5 to 49	7 drops to 1 tsp	2 Causes burns and blisters
3	Moderately toxic	50 to 499	1 tsp to 1 ounce	3 Moderately irritating
4	Slightly toxic	500 to 4,999	1 oz to 1 pint (1 lb)	4 Mildly irritating
5	Almost nontoxic	5,000 to [illegible]	1 pint to 1 quart	5 Nonirritating

SAFETY AND EFFECT OF VELPAR® ON MAN AND THE ENVIRONMENT

When using herbicides for the control of undesirable vegetation in forestry, two main areas of concern are:

- Safety to the applicator and other personnel in the application area, and
- Effect on the environment and the forest ecosystem.

Hexazinone, the active ingredient in VELPAR will answer your concern on both counts. It is relatively low in toxicity and its application presents little, if any, danger to wildlife, fish, soil or watersheds when used as directed.

Low Toxicity

Hexazinone's acute oral LD_{50} (lethal dose to kill 50% of the test animals) is 1,690 mg/kg (milligrams per kilogram of body weight) in studies with rats. Compared to other commonly used herbicides, the chemical is considered only "slightly toxic".

Acute Oral Toxicity of Hexazinone

—LD_{50} —1 690 mg/kg, rats
—LD_{50} — 860 mg/kg, guinea pigs
—ALD_{50}—3,400 mg/kg, dogs

Acute Skin Adsorption of Hexazinone

—LD_{50} (VELPAR L)— 7 500 mg/kg

Subacute Oral Toxicity of Hexazinone

—No effect at 300 mg/kg/day, five days per week for two weeks

Subchronic Oral Toxicity

—No effect (90 day) rats = 1,000 ppm

—No effect (90 day) dogs = 1,000 ppm

—No effect (8 weeks) mice > 5,000 ppm

—No effect (8 weeks) hamsters > 10,000 ppm

Chronic Oral Toxicity (90% soluble powder formulation)

—No effect (2 years) rats = 200 ppm

Reproduction Study—Rats (90% soluble powder formulation)

—No effect (3 generations) rats > 1,000 ppm

Teratogenic Oral Toxicity (Hexazinone)

—No effect. rats · 5,000 ppm

Inhalation (Hexazinone)

—LC_{50} rats · 7.48 mg/liter (1 hr. exposure)

Eye Effect (40 CFR 163.81-4, August 1978)

—Unformulated hexazinone. Administration of a 0.1 ml (42 mg) aqueous suspension of hexazinone to rabbit eyes caused persistent mild to moderate corneal cloudiness, moderate iritis and severe conjunctivitis. Classified as a severe eye irritant.

—Water soluble liquid formulation (VELPAR L). Administration of 0.1 ml to rabbit eyes caused persistent moderate to severe corneal injury, severe conjunctivitis and slight to moderate iritis. Classified as a severe eye irritant.

Fish and Wildlife Toxicity

LC_{50} (96 hour) rainbow trout · 320 420 ppm

LC_{50} (96 hour) bluegill sunfish · 370 420 ppm

LC_{50} (96 hour) fathead minnow 274 ppm

LC_{50} (48 hour) *Daphnia magna* 151 ppm

LC_{50} (96 hour) grass shrimp · 56 100 ppm

LC_{50} (96 hour) crab 1,000 ppm

EC_{50} (48 hour) oyster larvae · 320 560 ppm

LD_{50} (acute oral) bobwhite quail 2,258 mg/kg

LC_{50} (8 day dietary) bobwhite quail > 10,000 ppm

LC_{50} (8 day dietary) mallard duckling > 10,000 ppm

Hexazinone is not considered toxic to birds and fish. The following toxicity data are listed for comparison:

Toxaphene—LC_{50} (96 hour) bluegill sunfish 0.0035 ppm

Toxaphene—LC_{50} (48 hour) rainbow trout 0.0028 ppm

Toxaphene—LD_{50} (acute oral) mallard duck 70.7 mg/kg

Toxaphene—LD_{50} (acute oral) bobwhite quail 85.5 mg/kg

2,4-D—LC_{50} (48 hour) bluegill sunfish 1.3 ppm

2,4-D—LC_{50} (48 hour) rainbow trout 250 ppm

Atrazine—LC_{50} (48 hour) rainbow trout 12.6 ppm

Picloram—LC_{50} (48 hour) rainbow trout 34 ppm

Picloram—LC_{50} (24 hour) bluegill sunfish 26.5 ppm

Fate of VELPAR in the Soil

Hexazinone does not persist in the soil for long periods of time. Soil degradation tests indicate that it has a half-life in the soil of from one to six months depending on field conditions. Microbial degradation is the primary way in which the chemical dissipates in the soil and degradation occurs most rapidly under warm, moist conditions.

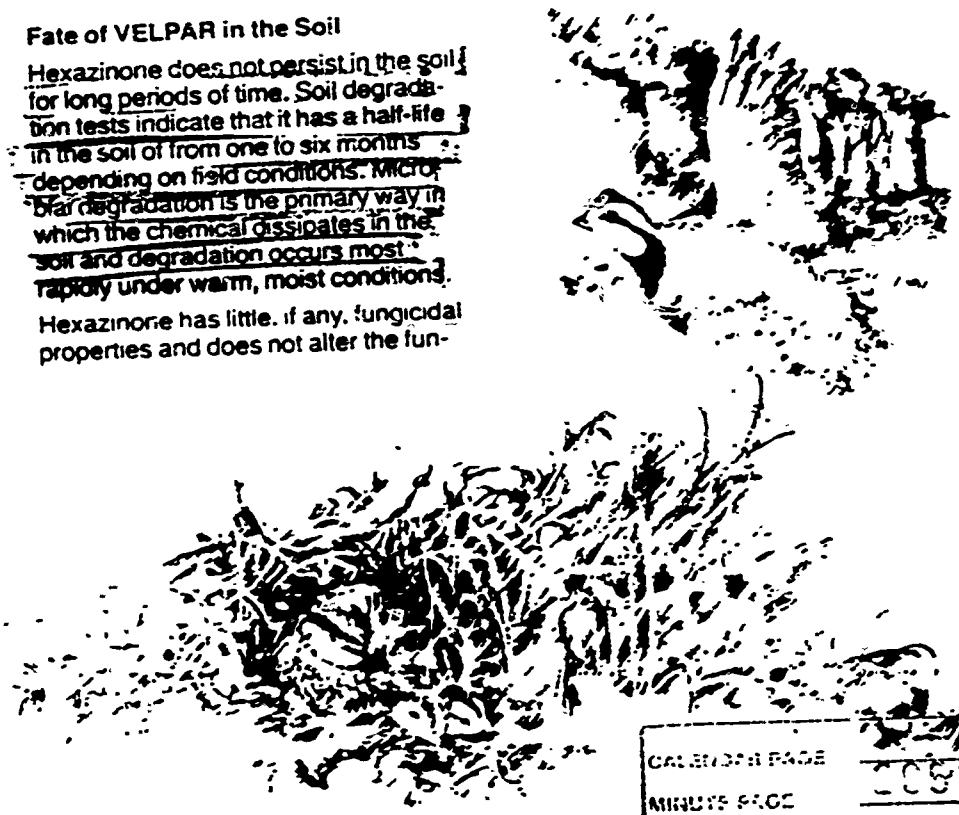
Hexazinone has little, if any, fungicidal properties and does not alter the fungal components in the soil. Also, it causes no detrimental effect on the soil nitrification process.

Nonhazardous to wildlife

A wildlife study at Cornell University indicates that forest animals are not likely to eat pellets containing hexazinone. Neither herbivores or carnivores voluntarily ate the pellets even when deprived of their regular diet. Birds showed no recognition of the presence of the pellets placed with a normal food source. There was no mortality nor unusual wildlife behavior associated with the exposure tests.

Safety to Honeybees

Hexazinone was found to be relatively nontoxic to honeybees in a laboratory study. Topical application to bees at 60 mg/bee (highest dose tested) resulted in only 10% bee mortality in a 48 hour test, indicating the LC_{50} is > 60 ug/bee. For comparison, Sevin (carbaryl) insecticide in the same test had an LC_{50} of 0.066 ug/bee (> 1,000 times more toxic than hexazinone).



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Safety to Invertebrates

The impact of hexazinone on invertebrates was tested following the chemical's application to forested watersheds. Tests conclude that:

- Hexazinone and its metabolites were generally not detected (<0.1 ppm) in aquatic invertebrates and macrophytes.
- No major alterations (species composition or diversity) were detected in the aquatic invertebrate community.
- At the end of the test, no major community changes occurred in the terrestrial microarthrapod samples.

Off-Site Movement Studied

The off-site movement of hexazinone from forest watersheds which may occur during storms was measured. Pellets containing hexazinone were used in the test. The conclusions indicated that:

- Hexazinone residues lost in storm runoff were well within acceptable loss limits (0.5% of applied) for agricultural and forest ecosystems.
- Use of recommended rates should not produce any adverse environmental effect on water quality or aquatic ecosystems.

Burning Treated Wood

Wood treated with VELPAR was analyzed for hexazinone residues at 4 months and 16 months after application. Results showed that:

- Only 21% of all wood samples contained hexazinone at 16 months.
- None of the stem sections contained a weighted residue level above 0.2 ppm, which is the allowable residue concentration at which no health effects will occur for ingested food crops.

TECHNICAL INFORMATION

Hexazinone, active ingredient of: VELPAR weed killer (90% a.i. soluble powder), and VELPAR L weed killer (2 lbs. a.i./gallon liquid).

1. Chemical and Physical Properties (Pure Compound)

- Empirical Formula: $C_{12}H_{20}N_4O_2$
- Molecular Weight: 252.3
- Physical State, Color and Odor: Negligible odor, white crystalline solid
- Melting Point: 115°-117°C
- Specific Gravity: 1.25
- Vapor Pressure: 6.4×10^{-5} mm Hg at 86°C 2×10^{-7} mm Hg at 25°C (extrapolated)
- Solubility at 25°C:

SOLVENT	g/100 g SOLVENT
Water	3.3
Chloroform	388
Methanol	265
Benzene	94
Dimethylformamide	83.6
Acetone	29.2
Toluene	38.6
Hexane	0.3

- Stability: Stable in aqueous solutions at pH 5, 7 and 9 at temperatures up to 37°C. Subject to microbial decomposition in the soil.

2. Use Precautions

Do not use where desirable plants are immediately adjacent to the treated area. Do not apply to plants standing in water. Do not apply or drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots. Do not use on lawns, walks, driveways, tennis courts or similar areas. Prevent drift of dry powder or spray to desirable plants. Do not contaminate any body of water.

SPECIAL NOTE: Prior to use, check specific product labeling to assure that registration covers intended application method, geographical location, weed/brush species to be controlled and desired conifer species.

3. Storage and Shipping Instructions

Keep from contact with fertilizers, insecticides, fungicides and seeds. Do not reuse container. Follow directions on product label for specific container disposal method.

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VELPAR®

HERBICIDE

Du Pont has professional sales representatives throughout the United States. They have the knowledge and experience to control weeds/brush and other undesirable vegetation in forests. For the name and address of the representative in your area contact your nearest Du Pont Company Regional Office:

EASTERN
308 E. Lancaster Ave.
Wynnewood, PA 19096
(215) 896-2581 (in PA)
1-800-345-1222 (except PA)

SOUTHERN
223 Perimeter Center Pkwy.
Atlanta, GA 30346
(404) 393-8100 (in GA)
1-800-241-9103 (except GA)

WESTERN
2180 Sand Hill Road
Suite 240
Menlo Park, CA 94025
(415) 854-1030 (in CA)
1-800-227-8392 (except CA)

MIDWESTERN
5725 E. River Rd.
Chicago, IL 60631
1-800-323-2164

CENTRAL
7401 W. Mansfield Ave.
Lakewood, CO 80235
(303) 987-2510 (in CO)
1-800-525-7864 (except CO)

With any chemical, follow labeling instructions and warnings carefully.

Cover photo courtesy of "USDA Forest Service."

E. I. du Pont de Nemours & Co. (Inc.)
Agricultural Chemicals Department
Wilmington, Delaware 19898

DU PONT

E-81283 1/84

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130% OF ACTUAL SIZE

DU PONT

NET 1 GALLON

VELPAR® L

WEED KILLER

SPECIMEN LABEL

WATER DISPERSIBLE LIQUID • 1 GALLON CONTAINS 2 LBS. HEXAZINONE

ACTIVE INGREDIENT
Hexazinone [3-cyclohexyl-6-(dimethylamino)-1-methyl-1,3,5-triazine-2,4(1H,3H)-dione] 25%
INERT INGREDIENTS 75%
U.S. Pats. 3,902,887 & 3,983,116 EPA Reg. No. 352-392

Keep out of reach of children

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER! CAUSES EYE DAMAGE.

Do not get in eyes. Wear goggles or face shield and rubber gloves when handling. Avoid contact with skin and clothing. Avoid breathing spray mist. Harmful if swallowed.

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. For eyes, call a physician. Get medical attention if skin irritation persists. Remove and wash contaminated clothing before re-use.

ENVIRONMENTAL HAZARDS

Keep out of any body of water. Do not apply where runoff is likely to occur. Do not contaminate water by cleaning of equipment or disposal of wastes.

PHYSICAL AND CHEMICAL HAZARDS

Flammable. Keep away from heat, sparks, and open flame. Keep container closed.

IMPORTANT—Injury to or loss of desirable trees or other plants may result from failure to observe the following. Do not apply except as recommended or drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots. Do not use on lawns, walks, driveways, tennis courts, or similar areas. Prevent drift of spray to desirable plants. Keep from contact with fertilizers, insecticides, fungicides, and seeds.

Thoroughly clean all traces of "Velpar" L from application equipment immediately after use. Flush tank, pump, hoses and boom with several changes of water after removing nozzle tips and screens (clean these parts separately).

E. I. DU PONT DE NEMOURS & CO. (INC.), AGRICULTURAL CHEMICALS DEPT., WILM., DE

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GENERAL INFORMATION Du Pont "Velpar" L Weed Killer is a water dispersible liquid to be mixed in water and applied as a spray for selective weed control in Christmas tree plantations, for selective weed and brush control in reforestation areas, and for nonselective weed and brush control on noncropland areas. It may also be applied undiluted as a basal soil treatment for brush control on noncropland areas and in reforestation areas, or by tree injection for selective brush control. It is non corrosive to equipment.

"Velpar" L is an effective general herbicide providing both contact and residual control of many weeds. At rates recommended for noncropland areas, it provides control of many annual and biennial weeds, brush, woody vines, and, except for johnsongrass, is effective for control of most perennial weeds. It is absorbed through the roots and foliage. For brush control, soil application or injection is most effective.

Moisture is required to activate "Velpar" L in the soil. Best results are obtained when weeds are less than 2 inches in height or diameter, soil is moist at time of application and ¼ to ½ inch of rainfall occurs within 2 weeks after application. Foliar application to weeds is most effective under conditions of high temperature (80°F), high humidity and good soil moisture. Foliar application when vegetation is dormant or semi-dormant may not be effective.

On herbaceous plants, symptoms usually appear within 2 weeks after application under warm, humid conditions, while 4 to 6 weeks may be required when weather is cool. If rainfall after application is inadequate to activate "Velpar" L in the soil, plants may recover from contact effects and continue to grow.

On woody plants, symptoms usually appear within 3 weeks after sufficient rainfall has carried the herbicide into the root zone during periods of active growth. Defoliation and subsequent refoliation may occur, but susceptible plants are killed. The degree of control and duration of effect will vary with the amount of chemical applied, rainfall, temperature, weed and brush species, soil texture and other conditions.

NOTICE OF WARRANTY

Du Pont warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for purposes stated on such label only when used in accordance with directions under normal use conditions. It is impossible to eliminate all risks inherently associated with the use of this product. Ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Du Pont. In no case shall Du Pont be liable for consequential, special or indirect damages resulting from the use or handling of this product. All such risks shall be assumed by the Buyer. DU PONT MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

DIRFCTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

Du Pont "Velpar" L should be used only in accordance with recommendations on this label or in separate published Du Pont recommendations available through local dealers.

Du Pont will not be responsible for losses or damages resulting from use of this product in any manner not specifically recommended by Du Pont. User assumes all risk associated with such non recommended use.

For broadcast treatments using ground equipment, apply "Velpar" L as a spray just before or soon after weed emergence. Do not apply to frozen or snow covered soil. Before spraying, calibrate equipment to determine the quantity of water necessary to uniformly and thoroughly cover the vegetation and soil in a measured area to be treated. Use at least 5 gallons of water for each gallon of "Velpar" L.

EPA Est. 5905 AR 1 42761 MS 1
Superscript used is first letter of lot number

…d the proper amount of "Velpar" L to a spray tank filled with the amount of water to be used and mix thoroughly. A …rfactant such as Du Pont Surfactant WK may then be added at the rate of 1 quart per 100 gals. of spray to improve wetting …nd contact activity. After thoroughly mixing the spray solution, a suitable defoaming agent such as DOW Corning Antifoam A or Hodag "Antifoam" F 1 may also be added at the rate of 1 to 5 ozs. per 1,000 gals. of spray should foaming …ecome a problem. Agitate thoroughly to disperse the defoaming agent.

…se a fixed boom sprayer properly calibrated to a constant speed and rate of delivery. When used in conifer plantings, avoid …verlapping and shut off spray booms while starting, turning, slowing, or stopping or injury to the conifer trees may result. …or application with a handgun sprayer (non cropland areas only), use sufficient water (50 to 200 gals. per acre) for thorough …overage. For treating small non cropland areas, a tank type hand sprayer or sprinkling can may be used.

…ENERAL WEED AND BRUSH CONTROL — NONCROPLAND AREAS: Railroad, Highway, Utility and Pipeline Right-of-Ways, …etroleum Tank Farms, Storage Areas, Industrial Plant Sites, Drainage Ditch Banks and other similar areas.

…se the higher levels of the recommended dosage ranges under the following conditions: on hard to kill species, on fine …extured soils (clay, clay loam); on soils containing more than 5% organic matter or carbon, and on coarse-textured soils …and, loamy sand, gravelly soils) where rainfall exceeds 40 inches per year. Use the lower levels of the dosage ranges if …e growing season is short.

…eed Control—Apply 3 to 6 gals. per acre for *season long control* of many annual, biennial and perennial weeds including …ahiagrass* bermudagrass* bluegrass, broomsedge, camphorweed, Canada thistle*, chickweed, clovers, dewberry, dog …ennel* fescue* fingergrass, foxtail, guineagrass, heath aster, honeysuckle, lantana, marestail* natalgrass, plantain, prickly …ettuce, ragweed, smutgrass, Spanish needle, vaseygrass, wild blackberry* and wild carrot.

…or *short-term control* (up to 3 months) of the above weeds apply 1 to 2½ gals. per acre. Application at 1 to 2½ gals. per acre …lso provides short term control of many annual, biennial and perennial weeds including barnyardgrass, broadweed*, bouncing bet* bromegrass, buffelgrass* burdock, cocklebur, crabgrass, crown vetch, curly dock* dandelion* dogbane* fiddle…neck, filaree, fleabane, goatsbeard vine, goldenrod, lespedeza, milkweed* mustard, nutsedge* orchardgrass* oxalis, …paragrass, pigweed, purslane, quackgrass, ryegrass, smartweed, spurge, trumpet creeper* wild oats* wild parsnip and …wild star thistle.

…or *small areas*—Three fl. ozs. "Velpar" L per 250 sq. ft. is approximately 4 gals. per acre.

Brush Control—Apply to soil during the period between late winter and early summer for control of blackgum, black cherry, …lm, flowering dogwood, green ash, hawthorn, hickory, oaks (except liveoak), persimmon, sumac, sweetgum, and willow. In …reas where the soil normally remains frozen during the winter and spring rains are usually inadequate for soil activation, a …all or winter treatment may be applied before the soil freezes.

Note: For effective brush control and prevention of damage to desirable vegetation, do not apply to … standing in water, …do not use water from treated ditches for irrigation, do not use where desirable trees or shrubs are immediately adjacent to …he treated area.

Broadcast Treatment—Apply 2 to 4 gals. of "Velpar" L per acre as a coarse spray with water. Direct the spray to the soil beneath woody plants to be controlled.

Undiluted Basal Soil Treatment—Apply "Velpar" L undiluted with an exact-delivery hand gun applicator. This equipment delivers a thin stream of predetermined volume when triggered. Apply at the rate of 2 to 4 milliliters for each 1" of stem diameter at breast height. Direct the treatment to the soil within 3 ft. of the root collar of woody plants to be controlled. When treating large stems and more than one delivery of "Velpar" L is needed per stem, make applications on opposite sides of the stem.

SELECTIVE WEED CONTROL—CHRISTMAS TREE PLANTATIONS (EAST OF THE ROCKY MOUNTAINS) "Velpar" L is recommended for control of certain weeds in Christmas tree plantations where Scotch Pine, Austrian Pine, Grand Fir, Sitka Spruce, and Noble Fir are grown. It is also recommended for use where Scotch Pine, Loblolly Pine, Ponderosa Pine, Austrian Pine, Grand Fir, Sitka Spruce and Noble Fir are grown.

Since the effect of "Velpar" L on conifers varies with soils, uniformity of application and environmental conditions, it is suggested that growers limit their first use to small areas.

Note: Because injury to conifers may result: Do not use in nurseries, seedbeds or ornamental plantings; do not use on trees which show poor vigor because of insect, disease or winter injury or show symptoms of other stress conditions; do not add surfactant if applied over the top of conifers; do not use on poorly drained soils. In addition, conifer injury may result where severe winter stress, disease or insect damage follows application or heavy rains occur soon after application. Do not use for weed control in Christmas tree plantations in the state of Texas.

*Can … hard to kill

When used as directed, "Velpar" L controls annual bluegrass, barnyardgrass, bentgrass, bromegrass, … common groundsel, common ragweed, lance-leaf … fleabane, tartar … oxeye daisy, … Pennsylvania smartweed, velvetgrass and wild carrot. Treatment provides partial control of curly dock, dandelion, … fescue, goldenrod, horseweed, orchardgrass and ryegrass. Rates expressed are broadcast. For band application, use proportionately less; for example, use ½ of the broadcast rates when treating a 3 ft. band where row spacing is 6 ft.

Apply as a broadcast spray in the spring prior to conifer bud break. If application is made after bud break, use directional spray equipment and prevent contact of conifer foliage or injury may result.

Soil Texture**	FIRST YEAR PLANTATIONS† Pints "Velpar" L Per Acre††	ESTABLISHED PLANTATIONS Pints "Velpar" L Per Acre††
Gravelly or Rocky Soils, Exposed Subsoils, Clay Knobs, Sand, or Sandy Soils with 85% or more Sand	Do Not use	Do Not Use
Loamy Sand and Sandy Loam (50-85% Sand)	4	4-5
Loam, Silt Loam, Silt and Sandy Clay Loam	4-5	5-7
Silty Clay Loam, Clay Loam, Sandy Clay, Silty Clay, and Clay	5-6	7-8

**Do not use on any soil containing less than 1% organic matter; do not use on loamy sand or sandy loam with less than 2% organic matter.

†Apply only to transplant stock that is 2 years old (2-0) or more (1 year old for loblolly pine). Allow at least two months after transplanting before applying "Velpar" L, then apply only if rainfall has settled the soil around the base of the transplants.

††Use of rates in excess of those specified for the soil texture may result in injury to the conifers.

SELECTIVE BRUSH CONTROL — REFORESTATION AREAS

By Injection — Inject 1 milliliter of undiluted "Velpar" L through the bark of undesirable trees. Injections should be made at 4" intervals around the circumference and near the ground level when using tubular injector equipment, or at waist height when using the HYPO-Hatchet® Injector or similar device. Treatments should be made in the summer.

When used as directed, "Velpar" L controls black cherry, red maple, oaks (including live oak) and sweet gum.

Undiluted Basal Soil Treatment — Apply "Velpar" L undiluted with an exact-delivery hand gun applicator. This equipment delivers a thin stream of a predetermined volume when triggered. Apply at the rate of 2 to 4 milliliters for each 1" of stem diameter at breast height of trees to be controlled. Direct the treatment to the soil within 3 ft. of the root collar of trees to be controlled. When treating large stems and more than one delivery of "Velpar" L is needed per stem, make applications on opposite sides of the stem.

When used as directed, "Velpar" L controls aspen, elm, wild cherry, oaks (including live oak), sumac and willow.

Notice to Buyer: Purchase of this material does not confer any rights under patents of countries outside of the United States.

STORAGE AND DISPOSAL

STORAGE. Do not subject to temperatures below 32°F. Store product in original container only away from other pesticides, fertilizer, food, or feed.

DISPOSAL: Do not contaminate water, food, or feed by storage or disposal. Wastes resulting from the use of this product may be disposed of on site or at approved waste disposal facility. Triple rinse (or equivalent) the container. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

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AGRICULTURAL BULLETIN

DUPONT

VELPAR® WEED KILLER
FORESTRY SITE PREPARATION &
CONIFER RELEASE
WEST OF THE ROCKY MOUNTAINS

SUPPLEMENTAL LABELING
EPA REG. NO. 352-378

VELPAR® WEED KILLER
FOR CONTROL OF CERTAIN WEEDS AND BRUSH SPECIES FOR
FORESTRY SITE PREPARATION & CONIFER RELEASE

DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

Du Pont Velpar® Weed Killer is recommended for control of certain weeds and brush species in forestry site preparation and conifer release operations where Douglas Fir, Grand Fir, Noble Fir, White Fir, Ponderosa Pine, Jeffery Pine and Sitka Spruce are grown.

Since the effect of "Velpar" on conifers varies with soils, uniformity of application and environmental conditions, it is suggested that foresters limit their first use to small areas.

NOTE: Because injury to conifers may result: Do not use "Velpar" in nurseries, seedbeds or ornamental plantings; do not use on trees which show poor vigor because of insect, disease or winter injury, or show symptoms of other stress conditions. Do not add surfactant if applied over the top of conifers. Do not use on poorly drained soils. Conifer injury may result where severe winter stress, disease or insect damage follows application, or if heavy rains occur soon after application.

HOW TO USE

Application Technique: Before spraying, calibrate equipment to determine the uniform quantity of water necessary to uniformly and thoroughly cover the vegetation in a measured area to be treated. Use a fixed-boom sprayer with a pressure regulator properly calibrated to a constant speed of travel and rate of delivery. Avoid overlapping and shut-off spray booms while starting, turning, slowing or stopping, as injury to conifers may result.

Spray Volume and Equipment: Apply "Velpar" by air or ground equipment. Select a spray volume that will insure a thorough and uniform application, at least 8 gals. of spray per acre by air and usually 25 gals. of spray per acre by ground, but not less than 10 gals. of water for each pound of "Velpar". Use mechanical or by-pass agitation to thoroughly mix the spray solution.

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Herbaceous Weed Control

When used as directed, "Velpar" controls weeds such as annual bluegrass, barnyardgrass, bromegrass, false dandelion (catsear), fleabane, common groundsel, foxtail, oxeye daisy, velvet grass and wild carrot. Treatment provides partial control of dandelion, fescue, goldenrod, heath aster, orchardgrass, ryegrass, smartweed, willowweed (fireweed).

Application Rates: Apply as a pre-plant or post-plant broadcast spray at rates of 1 to 2 lbs per acre. Use the lower rates on coarse-textured soils and soils low in organic matter; use the higher rates on fine-textured soils high in organic matter. Refer to "Use Limitations" section for specific details.

For band applications, use proportionately less; for example, use 1/2 the broadcast rate when treating a 3 ft band where row spacing is 6 ft.

Moisture is necessary to activate "Velpar". Best results are obtained when weeds are less than 2 inches in height or diameter, soil is moist at time of application and 1/2 to 1 inch of rainfall occurs within 2 weeks after application.

Timing:

West of Cascades (and other areas of high spring rainfall): For best results, apply in the spring when weeds are actively growing, but prior to bud break on conifers. If application is made after bud break, use directional spray equipment so that spray does not contact new growth as injury may result.

East of Cascades (and other areas of low spring rainfall): For best results, apply in the fall before soil freezes or in the spring in anticipation of rainfall. Weed control results from spring applications will be dependent on sufficient rainfall following treatment to activate "Velpar". Spring applications should be made after snow cover melts but before bud break occurs.

Brush Control

Among the brush species controlled are: deerbrush ceonothus, squawcarpet, snowbrush ceonothus (varnishleaf ceonothus) and greenleaf manzanita.

Application Rates: Use "Velpar" for brush control in forestry site preparation and conifer release where either Ponderosa Pine or Jeffrey Pine is the primary coniferous species. Apply "Velpar" at rates of 1 1/2 to 3 lbs per acre. Use the lower rates on coarse-textured soils and soils low in organic matter; use the higher rates on fine-textured soils and soils high in organic matter.

For best results, applications should be made to brush seedlings or sprouts when less than 18 inches in height or diameter. Applications may be made in the fall before the soil freezes or in the spring. Fall applications generally provide better results.

SUPPLEMENTAL LABELING
EPA REG. NO. 352-378

VELPAR® WEED KILLER
FOR CONTROL OF CERTAIN WEEDS AND BRUSH SPECIES FOR
FORESTRY SITE PREPARATION & CONIFER RELEASE

DIRECTIONS FOR USE

It is a violation of federal law to use this product
in a manner inconsistent with its labeling.

Du Pont Velpar® Weed Killer is recommended for control of certain weeds and brush species in forestry site preparation and conifer release operations where Douglas Fir, Grand Fir, Noble Fir, White Fir, Ponderosa Pine, Jeffery Pine and Sitka Spruce are grown.

Since the effect of "Velpar" on conifers varies with soils, uniformity of application and environmental conditions, it is suggested that foresters limit their first use to small areas.

NOTE: Because injury to conifers may result: Do not use "Velpar" in nurseries, seedbeds or ornamental plantings; do not use on trees which show poor vigor because of insect, disease or winter injury, or show symptoms of other stress conditions. Do not add surfactant if applied over the top of conifers. Do not use on poorly drained soils. Conifer injury may result where severe winter stress, disease or insect damage follows application, or if heavy rains occur soon after application.

HOW TO USE

Application Technique: Before spraying, calibrate equipment to determine the uniform quantity of water necessary to uniformly and thoroughly cover the vegetation in a measured area to be treated. Use a fixed-boom sprayer with a pressure regulator properly calibrated to a constant speed of travel and rate of delivery. Avoid overlapping and shut-off spray booms while starting, turning, slowing or stopping, as injury to conifers may result.

Spray Volume and Equipment: Apply "Velpar" by air or ground equipment. Select a spray volume that will insure a thorough and uniform application, at least 8 gals. of spray per acre by air and usually 25 gals. of spray per acre by ground, but not less than 10 gals. of water for each pound of "Velpar". Use mechanical or by-pass agitation to thoroughly mix the spray solution.

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AGRICULTURAL BULLETIN

DU PONT

Velpar® L Weed Killer
Forestry Site Preparation
& Conifer Release
West of the Rocky Mountains

SUPPLEMENTAL LABELING
EPA REG. NO. 352-392

VELPAR® L WEED KILLER
FOR CONTROL OF CERTAIN WEEDS AND BRUSH SPECIES FOR FORESTRY SITE PREPARATION & CONIFER RELEASE

DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with it labeling.

Du Pont Velpar® L Weed Killer is recommended for control of certain weeds and brush species in forestry site preparation and conifer release operations where Douglas Fir, Grand Fir, Noble Fir, White Fir, Ponderosa Pine, Jeffrey Pine and Sitka Spruce are grown.

Since the effect of "Velpar" L on conifers varies with soils, uniformity of application and environmental conditions, it is suggested that foresters limit their first use to small areas.

NOTE: Because injury to conifers may result: Do not use "Velpar" L in nurseries, seedbeds or ornamental plantings; do not use on trees which show poor vigor because of insect, disease or winter injury, or show symptoms of other stress conditions. Do not add surfactant if applied over the top of conifers. Do not use on poorly drained soils. Conifer injury may result where severe winter stress, disease or insect damage follows application, or if heavy rains occur soon after application.

HOW TO USE

Application Technique: Before spraying, calibrate equipment to determine the quantity of water necessary to uniformly and thoroughly cover the vegetation in a measured area to be treated. Use a fixed-boom sprayer with a pressure regulator properly calibrated to a constant speed of travel and rate of delivery. Avoid overlapping and shut-off spray booms while starting, turning, slowing or stopping, as injury to conifers may result.

Spray Volume and Equipment: Apply "Velpar" L by air or ground equipment. Select a spray volume that will insure a thorough and uniform application, at least 8 gals. of spray per acre by air and usually 25 gals. of spray per acre by ground, but not less than 5 gals. of water for each gallon of "Velpar" L. Use mechanical or by-pass agitation to thoroughly mix the spray solution. After initial mixing, do not use

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excessive agitation as foaming problems may result. To avoid foaming problems, use anti-foam agents and minimal agitation.

Herbaceous Weed Control

When used as directed, "Velpar" L controls weeds such as annual bluegrass, barnyardgrass, bromegrass, false dandelion (catsear), fleabane, common groundsel, foxtail, oxeye daisy, velvet grass and wild carrot. Treatment provides partial control of dandelion, fescue, goldenrod, heath aster, orchardgrass, ryegrass, smartweed, willowweed (fireweed).

Application Rates: Apply as a pre-plant or post-plant broadcast spray at rates of 2 to 4 qts per acre. Use the lower rates on coarse-textured soils and soils low in organic matter; use the higher rates on fine-textured soils and soils high in organic matter. Refer to "Use Limitations" section for specific details.

For band applications, use proportionately less; for example, use 1/2 the broadcast rate when treating a 3 ft band where row spacing is 6 ft.

Moisture is necessary to activate "Velpar" L. Best results are obtained when weeds are less than 2 inches in height or diameter, soil is moist at time of application and 1/2 to 1 inch of rainfall occurs within 2 weeks after application.

Timing:

West of Cascades (and other areas of high spring rainfall): For best results, apply in the spring when weeds are actively growing, but prior to bud break on conifers. If application is made after bud break, use directional spray equipment so that spray does not contact new growth as injury may result

East of Cascades (and other areas of low spring rainfall): For best results, apply in the fall before soil freezes or in the spring in anticipation of rainfall. Weed control results from spring applications will be dependent on sufficient rainfall following treatment to activate "Velpar" L. Spring applications should be made after snow cover melts but before bud break occurs.

Brush Control

Among the brush species controlled are: deerbrush ceonothus, squawcarpet, snowbrush ceonothus (varnishleaf ceonothus) and greenleaf manzanita.

Application Rates: Use "Velpar" L for brush control in forestry site preparation and conifer release where either Ponderosa Pine or Jeffrey Pine is the primary coniferous species. Apply "Velpar" L at rates of 3 to 6 qts per acre. Use the lower rates on coarse-textured soils and soils low in organic matter; use the higher rates on fine-textured soils high in organic matter.

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For best results, applications should be made to brush seedlings or sprouts when less than 18 inches in height or diameter. Applications may be made in the fall before the soil freezes or in the spring. Fall applications generally provide better results.

"Velpar" L effects may be slow to appear and maximum results will be seen 12-24 months following the application.

Use Limitations:

1. Do not use on gravelly or rocky soils, exposed subsoils, clay knobs, sand or sandy soils with 85% or more sand.

2. Do not use on any soil containing less than 1% organic matter.

3. On soils high in organic matter (greater than 5%) effectiveness of "Velpar" L is reduced and results may be unsatisfactory.

4. Do not use on loamy sand or sandy loam with less than 2% organic matter (except for Ponderosa and Jeffrey Pine).

5. On first year plantations, apply "Velpar" L (either pre-plant or post-plant) to transplant stock that is 2 years old (2-0) or more, (1 year old (1-0) for Ponderosa Pine and Jeffrey Pine).

6. When applying "Velpar" L after transplanting, wait until rainfall has settled the soil around the base of the transplants before making the treatment.

IMPORTANT

BEFORE USING "VELPAR" L, READ CAREFULLY OBSERVE THE CAUTIONARY STATEMENTS AND ALL OTHER INFORMATION APPEARING ON THE PRODUCT LABEL.

This bulletin contains new or supplemental instructions for use of this product which may not appear on package label. Follow the instructions carefully.

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AGRICULTURAL BULLETIN

DU PONT

VELPAR® WEED KILLER
CHRISTMAS TREE PLANTATIONS
WEST OF THE ROCKY MOUNTAINS

SUPPLEMENTAL LABELING
EPA REG. NO. 352-378

VELPAR® WEED KILLER
FOR CONTROL OF CERTAIN WEEDS IN CHRISTMAS TREE PLANTATIONS

DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

Du Pont Velpar® Weed Killer is recommended for control of certain weeds in Christmas tree plantations where Douglas Fir, Grand Fir, Noble Fir, Austrian Pine, Ponderosa Pine, Scotch Pine and Sitka Spruce are grown.

Since the effect of "Velpar" on conifers varies with soils, uniformity of application and environmental conditions, it is suggested that growers limit their first use to small areas.

NOTE: Because injury to conifers may result: Do not use "Velpar" in nursuries, seedbeds or ornamental plantings; do not use on trees which show poor vigor because of insect, disease or winter injury, or show symptoms of other stress conditions. Do not add surfactant if applied over the top of conifers. Do not use on poorly drained soils. Conifer injury may result where severe winter stress, disease or insect damage follows application, or if heavy rains occur soon after application.

HOW TO USE

Application Technique:

Before spraying, calibrate equipment to determine the quantity of water necessary to uniformly and thoroughly cover the vegetation in a measured area to be treated. Use a fixed-boom sprayer with a pressure regulator properly calibrated to a constant speed of travel and rate of delivery. Avoid overlapping and shut-off spray booms while starting, turning, slowing or stopping, as injury to conifers may result.

Spray Volume and Equipment:

Apply "Velpar" by air or ground equipment. Select a spray volume that will insure a thorough and uniform application, at least 8 gals. of spray per acre by air and usually 25 gals. of spray per acre by ground but not less than 10 gals. of water for every 1 lb. of "Velpar". Use mechanical or by-pass agitation to thoroughly mix the spray solution.

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Herbaceous Weed Control

When used as directed, "Velpar" at rates of 1 to 1 1/2 lbs per acre will control weeds such as annual bluegrass, barnyardgrass, bromegrass, false dandelion (catsear), fleabane, common groundsel, oxeye daisy and velvetgrass.

Treatment at 2 lbs per acre provides partial control of crabgrass, curly dock, dandelion, fescue, goldenrod, heath aster, orchardgrass, ryegrass, smartweed, wild carrot and willowweed (fireweed).

Moisture is necessary for full activation of "Velpar". Best results are obtained when weeds are less than 2 inches in height or diameter, soil is moist at time of application and 1/2 to 1 inch of rainfall occurs within 2 weeks after application.

West of Cascades: For best results, apply in the spring when weeds are actively growing, but prior to bud break on conifers. If application is made after bud break, use directional spray equipment so that spray does not contact new growth as injury may result.

East of Cascades: For best results, apply in the fall before soil freezes or in the spring in anticipation of rainfall. Weed control results from spring applications will be dependent on sufficient rainfall following treatment to activate "Velpar". Spring applications should be made after snow cover melts but before bud break occurs.

SELECTION OF USE RATES:

Rate selection is based on soil texture. Do not use rates in excess of those listed for a particular soil texture, as injury to conifers may result. To determine soil texture and organic matter content, have soil samples classified by a reputable laboratory.

SOIL TEXTURE*	CHRISTMAS TREE PLANTATIONS: 1st Year Plantings+ lb "Velpar" per acre	CHRISTMAS TREE PLANTATIONS: Established Trees++ lb "Velpar" per acre
Gravelly or rocky soils, Exposed subsoils, clay knobs, sand or sandy soils with 85% or more sand.	DO NOT USE	DO NOT USE
Loamy sand and sandy loam (50-85% sand)**	1	1 to 1 1/4
Loam, silt loam, silt and sandy clay loam	1 to 1 1/4	1 1/4 to 1 3/4
Silty caly loam, clay loam sandy clay, silty clay and clay, soils having more than 5% organic matter.***	1 1/4 to 1 1/2	1 3/4 to 2

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Rates expressed are for broadcast application. For band application, use proportionately less; for example, use 1/2 the broadcast rate when treating a 3 ft band where row spacing is 6 ft.

* Do not use on soils containing less than 1% organic matter.
** Do not use on loamy sand or sandy loam with less than 2% organic matter.
*** On soils high in organic matter, 5% or greater, the effectiveness of "Velpar" can be significantly reduced and weed control may be unsatisfactory.
\+ Apply only to healthy transplant stock that is two years old (2-0) or more. When applying "Velpar" after transplanting, wait until rainfall has settled the soil around the base of the transplants before making treat nt.
++ Rates recommended are for trees that have been established for 1 year or more.

IMPORTANT

BEFORE USING "VELPAR", READ AND CAREFULLY OBSERVE THE CAUTIONARY STATEMENTS AND ALL OTHER INFORMATION APPEARING ON THE PRODUCT LABEL.

This bulletin contains new or supplemental instructions for use of this product which may not appear on package label. Follow the instructions carefully. This labeling must be in the possession of the user at the time of pesticide application.

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