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August 6, 2008
File No.: 04.02.06.02
Project No. 357891

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California Energy Commission
Systems Assessment and Facilities Siting Division
1516 9th Street, MS 15
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DOCKET 07-AFC-5
DATE <u>AUG 06 2008</u>
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RE: Data Response, Set 1F
Ivanpah Solar Electric Generating System (07-AFC-5)

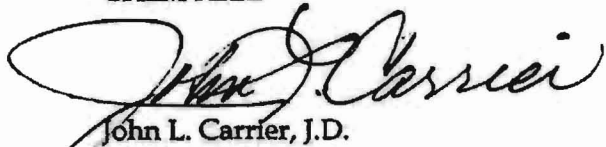
Dear Mr. McFarlin:

On behalf of Solar Partners I, LLC, Solar Partners II, LLC, Solar Partners IV, LLC, and Solar Partners VIII, LLC, please find attached one original and 12 hard copies of Data Response, Set 1F, which addresses Staff's data requests dated December 12, 2007.

Please call me if you have any questions.

Sincerely,

CH2M HILL


John L. Carrier, J.D.
Program Manager

Enclosure
c: POS List
Project File

Ivanpah Solar Electric Generating System (ISEGS)

(07-AFC-5)

Data Response, Set 1F (Responses to Data Requests: Biological Resources)

Submitted to the
California Energy Commission

Submitted by
**Solar Partners I, LLC; Solar Partners II, LLC; Solar Partners IV, LLC;
and Solar Partners VIII, LLC**

August 6, 2008

With Assistance from

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Introduction

Attached are Solar Partners I, LLC, Solar Partners II, LLC, Solar Partners IV, LLC, and Solar Partners VIII, LLC (Applicant) responses to the California Energy Commission (CEC) Staff's data requests numbers 1 through 116 for the Ivanpah Solar Electric Generating System (Ivanpah SEGS) Project (07-AFC-5). The CEC Staff served these data requests on December 12, 2007, as part of the discovery process for Ivanpah SEGS. The responses are grouped by individual discipline or topic area. Within each discipline area, the responses are presented in the same order as CEC Staff presented them and are keyed to the Data Request numbers (1 through 116). New graphics or tables are numbered in reference to the Data Request number. For example, the first table used in response to Data Request 15 would be numbered Table DR15-1. The first figure used in response to Data Request 15 would be Figure DR15-1, and so on. AFC figures or tables that have been revised have "R1" following the original number, indicating revision 1.

Additional tables, figures, or documents submitted in response to a data request (supporting data, stand-alone documents such as plans, folding graphics, etc.) are found at the end of a discipline-specific section and may not be sequentially page-numbered consistently with the remainder of the document, though they may have their own internal page numbering system.

The Applicant looks forward to working cooperatively with the CEC and the U.S. Bureau of Land Management (BLM) staff as the Ivanpah SEGS Project proceeds through the siting process. We trust that these responses address the Staff's questions and remain available to have any additional dialogue the Staff may require.

Biological Resources (13-14)

Background

There are significant populations of Sahara mustard, schismus, and cheatgrass in the project region. One of the BLM's primary responsibilities is to curtail the spread of invasive species for a number of reasons. For example, invasive species increase fire risk, reduce natural habitat for native plants and wildlife, and compete with native plants for water and other resources. On AFC page 5.2-60, section 5.2.11.2 Mitigation Measure 2 - Noxious Weeds states that a Noxious Weed Control Plan will be prepared and submitted to BLM prior to construction. However, BLM needs to review a draft Weed Management Plan sooner to facilitate completion of the final plan according to the template BLM provided to the applicant. Similarly, information on the soil source(s) for foundations and structural support is needed because soils brought in from another location will have to be tested for invasive species seeds and other contents.

Data Request

13. Please prepare and submit a Weed Management Plan to the Energy Commission and BLM that includes herbicides to be used in control methods.

Response: A draft Weed Management Plan is provided as Attachment DR13-1A.

14. Describe specific methods for weed management under heliostat structures (e.g., pre-emergent herbicide or other methods).

Response: The draft Weed Management Plan (Attachment DR13-1A) prepared in response to Data Request 13 includes information on weed control under the heliostat structures.

Attachment DR13-1A

**Weed Management Plan for the
Ivanpah Solar Electric Generating System
Eastern Mojave Desert
San Bernardino County, California**

Prepared for
Ivanpah Solar Electric Generating System

August 2008

CH2MHILL
2485 Natomas Park Drive
Sacramento, California 95833

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- C Example California BLM Pesticide Use Proposal
- D Example California BLM Pesticide Application Records Form

Acronyms and Abbreviations

°F	degrees Fahrenheit
BLM	Bureau of Land Management
Cal-IPC	California Invasive Plant Council
CDCA	California Desert Conservation Area
CDFA	California Department of Food and Agriculture
CDFG	California Department of Fish and Game
COC	conditions of certification
ECM	environmental compliance manager
EPA	U.S. Environmental Protection Agency
FLPMA	Federal Land and Policy Management Act
GIS	geographic information system
Ivanpah SEGS	Ivanpah Solar Electric Generating System
kV	kilovolt
mph	mile(s) per hour
NECO	Northern and Eastern Colorado
NEMO	Northern and Eastern Mojave
NPPA	Native Plant Protection Act
OHV	off-highway vehicle
PAR	pesticide application record
PEIS	<i>Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement</i>
PPA	Plant Protection Act of 2000
PUP	pesticide use proposal
U.S.C.	<i>U.S. Code</i>
USDA	U.S. Department of Agriculture
WEMO	Western Mojave

Introduction

1.1 Plan Purpose

This plan will include measures to fulfill the conditions of certification (COC) identified in the application for certification submitted to the California Energy Commission for the Ivanpah Solar Electric Generating System (Ivanpah SEGS) project. The COCs include development of a noxious weed control plan to provide (1) monitoring, preventative, and management strategies for weed control during construction activities at Ivanpah SEGS; (2) control and management of noxious weeds in areas temporarily disturbed during construction where revegetation will subsequently be implemented; (3) a long-term strategy for noxious weed control and management during the operational phase of Ivanpah SEGS; and (4), a noxious weed control program for the decommissioning phase and final site rehabilitation.

1.2 Noxious Weed Definition

The term “noxious weed” is defined in the federal Plant Protection Act (7 U.S. Code [U.S.C.] 7701 et seq.) as any plant or plant product that can directly or indirectly injure or cause damage to crops (including nursery stock or plant products); livestock, poultry, or other interests of agriculture; irrigation; navigation; the natural resources of the U.S.; the public health; or the environment. Noxious weeds are typically characterized by non-native plants that aggressively colonize new areas and can grow to dominate native plant communities if uncontrolled. Noxious weeds could outcompete native vegetation, alter physical or chemical soil conditions, and dominate the landscape to the detriment of native plants and wildlife. They could also preempt ground and surface water resources, compromise agricultural operations, conflict with recreational values, create fire hazards, and compromise aesthetic values of native or urban landscapes. Noxious weeds are often quick to colonize disturbed areas, including construction sites, roadsides, irrigated sites, or any other area with altered hydrology, soil structure, or soil chemistry.

1.3 Objectives

This plan includes a list and an assessment of noxious weeds that could potentially occur, or do occur, in the project site; a target list of weeds that will be controlled; survey methods for weed presence during construction and operation; weed control methods; and reporting requirements. Figures 1 through 3¹ show the vicinity map, site plan, and conceptual wash station plan for Ivanpah SEGS. Special consultations with respect to ubiquitous exotic species (e.g., *Bromus madritensis* ssp. *rubens*, *Erodium cicutarium*, *Schismus* spp.) are anticipated because control of these may be impractical. In evaluating weed infestations at the project site, the appropriate objectives will be defined on a case-by-case basis.

¹ Figures can be found at the end of this document.

Weed management objectives are important to specify before project inception, and need to be consistent with existing and proposed future site conditions, biology of the identified weed species, and environmental context of the project. Weed management objectives for Ivanpah SEGS include the following:

- **Eradication:** This control objective is to eliminate all individuals of a particular species within a specified area. This will be the goal for most weed species at Ivanpah SEGS, and is appropriate where the weed is of considerable economic and environmental concern and the population size is manageable.
- **Suppression:** This objective is aimed at reducing current infestation density, but not necessarily directed at reducing the total area or boundary of the infestation. This applies to many widely distributed, high-density weeds where eradication is not feasible.
- **Containment:** This objective is aimed at preventing infestation expansion and spread, and may be conducted with or without any attempt to reduce infestation density. Containment focuses on halting spread until suppression or eradication can be implemented, and is practical only to the extent that the spread of seeds or vegetative propagules can be prevented.

1.4 Management Roles

Ivanpah SEGS is ultimately responsible for implementing this plan. It is anticipated that Ivanpah SEGS' contractors and other designees responsible for implementing components of this plan will include the following:

- **Contractor(s)** – Contractual language will be included in all construction documents and ongoing maintenance contracts to ensure that all contractors, subcontractors, vendors, maintenance personnel and other parties, performing either construction or ongoing maintenance or repairs at the project site, abide by and implement the provisions of this plan. Implementing the construction provisions of this plan will be a part of construction contracts. Restoration contractors, landscape contractors, and other specialists will implement specific provisions of this plan either as subcontractors to the general construction contractor, or through independent contracts with Ivanpah SEGS.
- **Construction Manager** – The construction manager will have ultimate oversight of the construction contractor to ensure compliance with the provisions of this plan.
- **Environmental Compliance Manager** – Ivanpah SEGS will designate an environmental compliance manager (ECM) to provide oversight of construction practices and ensure compliance with the provisions of this plan. The ECM (including support staff as needed) will be contracted directly by Ivanpah SEGS and coordinate with the construction manager to ensure contractor compliance with environmental requirements for construction.
- **Bureau of Land Management** – As the administering land management agency, the Bureau of Land Management (BLM) will provide ultimate approval of the contents of this plan, and compliance oversight of its provisions. BLM will provide timely review of

work products including this plan, modifications or amendments to this plan, and subsequent reports as required in this plan.

Applicable Laws, Ordinances, Regulations, and Standards

2.1 Federal Laws and Regulations

2.1.1 Federal Noxious Weed Act Of 1974

This act (7 U.S.C. §§ 2801-2814, January 3, 1975, as amended 1988 and 1994) provides for the control and management of non-indigenous weeds that injure, or have the potential to injure, the interests of agriculture and commerce, wildlife resources, or the public health. It gives the Secretary of Agriculture broad powers in regulating transactions in and movement of noxious weeds. The act states that no person may import or move any noxious weed identified by regulations of the Secretary of Agriculture into or through the U.S., except in compliance with the regulations, which may require that permits be obtained. The act also requires each federal agency to develop a management program to control undesirable plants on federal lands under the agency's jurisdiction, and establish and adequately fund the program. Some of the provisions of this act were repealed by the Plant Protection Act of 2000 (PPA), including U.S.C. 2802 through 2813. However, Section 1 (findings and policy) and Section 15 (requirements of federal land management agencies to develop management plans) were not repealed (7 U.S.C. 2801 note; 7 U.S.C. 2814).

2.1.2 Plant Protection Act of 2000

The PPA, as amended (7 U.S.C. 7701-7786) states that the detection, control, eradication, suppression, prevention, or retardation of the spread of plant pests or noxious weeds is necessary for the protection of the agriculture, environment, and economy of the U.S. This act defines the term "noxious weed" (7 U.S.C. 7702 § 403) to mean any plant or plant product that can directly or indirectly injure or cause damage to crops (including nursery stock or plant products), livestock, poultry, or other interests of agriculture, irrigation, navigation, the natural resources of the U.S., the public health, or the environment. This act specifies that the Secretary of Agriculture may prohibit or restrict the importation, entry, exportation, or movement in interstate commerce of any noxious weed if it is determined "that the prohibition or restriction is necessary to prevent the introduction into the [U.S.] or the dissemination of a plant pest or noxious weed within the [U.S.]," and authorizes the issuance of implementing regulations. Subsequent regulations implemented by the Noxious Weed Control and Eradication Act of 2004 amended the PPA.

2.1.3 Noxious Weed Control and Eradication Act of 2004

The Noxious Weed Control and Eradication Act of 2004 (P.L. 108-412) amended the PPA by adding a new subtitle, "Subtitle E--Noxious Weed Control and Eradication" (7 U.S.C. 7781-7786), which authorizes the Secretary of Agriculture to establish a program to provide financial and technical assistance to control or eradicate noxious weeds to public and private landowners. This act defines noxious weeds and removes references to statutes that were

repealed upon enactment of the PPA. This act prohibits the movement of a federally designated noxious weed into or through the U.S. unless a permit is obtained for such movement and the movement is consistent with the specific conditions contained in the permit. This act specifies that such movement, under conditions specified in the permit, may not involve a danger of dissemination of the noxious weed in the U.S.; otherwise such a permit will not be issued.

Under this act, grants are available to weed management entities for the control or eradication of noxious weeds, and agreements may be made with weed management entities to provide financial and technical assistance for the control or eradication of noxious weeds.

2.2 State and Local Laws and Regulations

2.2.1 Native Plant Protection Act

The Native Plant Protection Act (NPPA) of the 1977 Fish and Game Code (Sections 1900 through 1913) directed the California Department of Fish and Game (CDFG) to carry out the Legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The NPPA gave the California Fish and Game Commission the power to designate native plants as "endangered" or "rare" and protect endangered and rare plants from take.

2.2.2 California Food and Agricultural Code

Various portions of this code pertain to noxious weed management. Specifically, Food and Agricultural Code Section 403 states that the Department of Food and Agriculture should prevent the introduction and spread of injurious insect or animal pests, plant diseases, and noxious weeds. Under Sections 7270 through 7224, the California Commissioner of Agriculture is granted the authority to investigate and control noxious weeds, and specifically to provide funding, research, and assistance to weed management entities, including eligible weed management areas or county agricultural commissioners, for the control and abatement of noxious weeds according to an approved integrated weed management plan.

California Food and Agriculture Code Section 5101 and 5205 provides for the certification of weed-free forage, hay, straw, and mulch. This portion of the code recognizes that many noxious weeds are spread through hay, straw, and mulch, used for both forage and ground covers. The code allows for in-field inspection and certification of crops to ensure that live roots, rhizomes, stolons, seeds, or other propagative plant parts of noxious weeds are not present in the crop to be harvested. Certified weed-free forage, hay, straw, and mulch are required on BLM land, and any mulch or hay bale materials used for erosion control at Ivanpah SEGS will be required to meet this certification.

2.2.3 Nevada Control of Insects, Pests, and Noxious Weeds Act of 1999

The State of Nevada's Control of Insects, Pests and Noxious Weeds Act (Nevada Revised Statutes, Chapter 555) grants the Director of the Nevada Department of Agriculture the authority to investigate and control noxious plants. This act defines noxious weeds as any species of plant which is, or is likely to be, detrimental or destructive and difficult to control or eradicate. This act designates a state quarantine officer who may serve notice in writing

upon the owner or occupant of land supporting noxious weeds to cut, eradicate, or destroy the weeds within such time and in such manner as designated and described in the notice. If not removed, the state may implement removal, at the county's or landowner's expense.

2.2.4 San Bernardino County General Plan

The Conservation/Open Space Element of the *County General Plan* (County of San Bernardino, 2007) contains specific objectives to preserve water quality and open space that benefit biological resources. It also contains specific policies and goals for protecting areas of sensitive plant, soils and wildlife habitat and for assuring compatibility between natural areas and development. The applicant has been informed by San Bernardino County that the county does not have jurisdiction over BLM-managed land.

2.3 Standards

This section discusses the conservation and management plans that have been developed that are relevant to surface management and noxious weed control at Ivanpah SEGS. These plans were either in response to regulatory mandates, or internal agency guidance, and are summarized in this section.

2.3.1 Conservation and Management Plans

Bureau of Land Management

To address the use of chemical treatments in noxious weed control, BLM prepared the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS). This document is the result of extensive public involvement and outlines the specific decisions, standard operating procedures, and mitigation measures for the use of herbicides on BLM lands. The selected alternative of the PEIS identifies the active herbicidal ingredients approved for use on BLM land, and the herbicidal ingredients that are no longer approved for use. The Record of Decision for the PEIS defers to approved land use plans the determination of areas to be treated through BLM's integrated pest management program, and makes no land use or resource allocations in this regard.

Appendix B, *Herbicide Treatment Standard Operating Procedures*, of the PEIS (Appendix A of this plan), specifies management of noxious weeds and application of pesticides on BLM land. Table B-1, *Prevention Measures*, specifies avoidance measures to limit noxious weed infestation, and Table B-2, *Standard Operating Procedures for Applying Herbicides*, provides details on herbicide application. The procedures listed in these appendix and tables are incorporated as requirements of this plan.

California Desert Conservation Area Plan

The California Desert Conservation Area (CDCA) comprises one of two national conservation areas established by Congress at the time of the passage of the Federal Land and Policy Management Act (FLPMA). The FLPMA outlines how BLM will manage public lands. Congress specifically provided guidance for the management of the CDCA and directed the development of the 1980 CDCA Plan (BLM, 1980). The document provides no

specifics about noxious weed management, but specifies management strategies for broad areas of the plan boundary.

Northern and Eastern Mojave Coordinated Management Plan

As an amendment to the CDCA Plan, BLM produced the *Northern and Eastern Mojave Management Plan* (NEMO; BLM, 2002). This document consists of proposed management actions and alternatives for public lands in the NEMO Planning Area. This area encompasses 3.3 million acres and is located in the Mojave Desert in southeastern California adjacent to Nevada. The area borders Nevada on the east, Fort Irwin and the West Mojave (WEMO) Planning Area on the west, and I-40 and the Northern and Eastern Colorado (NECO) Planning Area on the south. Ivanpah SEGS is located in the southeastern portion of the NEMO Planning Area boundary. The NEMO plan goals include requirements for establishing standards for public land health and guidelines for grazing management in the NEMO Planning Area; to identify management actions to conserve and recover threatened and endangered species; to make multiple use class decisions for lands released from wilderness consideration and make changes required to make the CDCA Plan conform to the California Desert Protection Act; to adopt an off-highway vehicle (OHV) strategy for motorized competitive speed events; and other measures. The NEMO is relevant to noxious weed control within the plan boundaries. Specifically, it requires tougher standards for public land management, grazing, OHV, and other public land use activities that could reduce noxious weed spread and establishment.

Noxious Weed Assessment

3.1 Noxious Weed Species

Noxious weeds (also sometime called invasive weeds) are defined for this document as species of non-native plants that are included on the weed lists of the California Department of Food and Agriculture (CDFA, 2007), the California Invasive Plant Council (Cal-IPC 2006), or those weeds of special concern identified by BLM. The Mojave Weed Management Plan website (<http://www.mojavewma.org/>) was also consulted to assemble a list of target noxious weeds to include in surveys. A list of invasive species that potentially could occur in the project site is provided in Table 1².

3.2 Field Surveys

Noxious weeds were searched for during all phases of the biological field surveys, when special attention was given to identifying non-native invasive plant species. During protocol surveys, all surveyors noted any plant species with which they were not familiar, and took samples, which were identified by the project's lead botanists, in part, to determine if these species were noxious weeds. The same procedure was used during reconnaissance surveys of the 1-mile buffer.

3.3 Known and Potential Weed Occurrences

Several noxious weeds are known to occur in the project vicinity. The weeds of highest concern in the general area include Sahara mustard (*Brassica tournefortii*) and saltcedar (*Tamarix ramosissima*), but other weeds of concern are also present (C. Grant and C. Sullivan, 2007, pers. comm.). Red brome (*Bromus madritensis* ssp. *rubens*), filaree (*Erodium cicutarium*), and other ubiquitous weeds are also present; however, because of the widespread nature of these weeds, control is considered impracticable. Table 1 lists potentially occurring invasive species, and identifies which species were observed during site surveys; ratings are also provided based on the California Invasive Species Council rating system, and the CDFA.

² Tables can be found at the end of this document.

SECTION 4.0

Weed Management Areas

Weed management will occur site-wide; however, different areas will require different specific management considerations depending on a range of factors described in this section.

4.1 Temporary Disturbance Areas

Project linears include new construction within undisturbed desert scrub for pipeline and transmission line rights-of-way, and activities associated with upgrades within existing rights-of-way. Construction staging areas and temporary access roads are also included. In most cases, disturbance will be temporary at these facilities. Pipeline construction will involve cut and cover techniques that will require recontouring and revegetation when complete. Transmission line construction will involve some temporary disturbance along with permanent tower placement and an access road for maintenance. Figure 2 shows the Ivanpah SEGS site plan and linear facilities.

Weed management issues at all temporary construction areas include the fact that soil disturbance during construction and temporary use will create habitat well suited to disturbance-adapted invasive species and, therefore, measures to minimize the potential for weed introduction by personnel and equipment will be needed. Areas temporarily disturbed will be revegetated, focusing on native species according to the specifications of the Ivanpah SEGS Revegetation and Rehabilitation Plan. Revegetation areas will continue to be prone to weed invasion and establishment, and ongoing monitoring and management will be required.

Potential areas meeting these criteria are described below. Weed management measures for these areas, including monitoring frequency, target weed species, and control methods, are included in this plan.

Gas Pipeline

Approximately 4,500 linear feet of 4- to 6-inch-diameter gas pipeline, installed at a minimum of 36 inches deep, will be installed as part of construction of Ivanpah 1. The gas line will connect to the existing Kern River Gas Transmission line to the project site. A 35- to 50-foot-wide construction corridor across the desert will be used for construction of the gas line. Most major pieces of construction equipment will remain along the pipeline route during construction. Regular weed monitoring and management during construction will be required, and weed management will be a key requirement of the revegetation effort after construction is complete.

Water Line

Well water will be used to supply domestic and industrial water needs. Two 100 percent redundant capacity wells will be located to the east of Ivanpah 2 that will supply water to all three plants. The wells will be connected to the project through a 570-foot water line to

Ivanpah 2, from where it will be extended to each plant. Approximately 4,000 linear feet of water line will be constructed as part of Ivanpah 1. Regular weed monitoring and management during construction will be required, and weed management will be a requirement of the revegetation effort after construction is complete.

Transmission Lines and Upgrades

One new single-circuit 115-kilovolt (kV) overhead transmission line extending from the Ivanpah 1 switchyard to the Ivanpah substation will be constructed at a length of about 5,800 feet. Regular weed monitoring and management during construction will be required. Some areas temporarily disturbed during construction will require revegetation, and weed management will be required at revegetation areas. In addition, ongoing access for tower cleaning will occur along the new transmission line. This has the potential for ongoing introduction of weedy species through soil disturbance and equipment entrance, with ongoing weed management requirements.

Staging and Laydown Area

The Ivanpah 1 site will serve as the location for storing pipe and other pipeline construction materials. Although most portions may be subjected to permanent development, any remaining portions will be restored and revegetated, with the same weed monitoring and management requirements of other temporary disturbance and revegetation areas.

4.2 Permanently Developed Areas

The areas describe in this section would be permanently developed, but could support weedy species along peripheral disturbed areas and function as seed reservoirs to adjacent natural habitats if not managed.

Heliostat Arrays and Service Tracks

Heliostat arrays may be set atop existing soil surfaces. Surface preparation will consist of shallow (less than 6 inches deep) blading of curvilinear, concentric service tracks, and alternating parallel rows of heliostats. Blading will be accomplished using a D-9 bulldozer or equivalent. Post-construction cleaning and other routine maintenance activities will result in continuing disturbance of much smaller areas.

Soil disturbance during construction will create habitat well suited to disturbance-adapted invasive species, and continual entrance of the area with personnel and heavy equipment will potentially introduce weed propagules. The area will require ongoing weed monitoring and maintenance during construction, and all equipment will require cleaning at wash stations as specified below. During operations, equipment and personnel will continue to access the area for heliostat cleaning and other maintenance. Wash water overflow from the ongoing cleaning of heliostat mirrors will provide a water source to support weed establishment and growth. These areas will require continual weed management, and application of pre-emergent herbicides will be implemented to inhibit weed germination and establishment.

Landscaped Areas

Landscaped areas will be present at the administrative building, entrance gate, and at a limited number of other visually prominent locations. Because there may be some irrigation application here, which could contribute to weed germination or establishment, ongoing weed control is anticipated.

Roads

Roadsides and the medians of unpaved service tracks are vulnerable to weed invasion. Roads often alter local hydrology; are subject to initial and ongoing disturbance during construction, maintenance, and use; provide topographic variation that could capture wind or waterborne seed; and may be subject to seed distribution from passing vehicles. Ongoing weed management will target roadside weeds during the operational phase.

Other Permanent Facilities

Peripheral areas throughout the facility are anticipated where conditions are suitable for weed establishment. This may include soils that have been cleared, compacted, or otherwise disturbed; areas where hydrology is altered, such as from increased drainage from developed areas; or areas where continued vehicle or foot traffic persist. Ongoing weed management will survey and target these areas for management to avoid creation of weed seed reservoir areas, which could affect adjacent undisturbed habitats.

Monitoring and Survey Methods

5.1 Weed Identification

Monitoring and removal of weeds requires skill and training in plant identification. Training in plant identification and field manuals with photographs of native desert plants and of common weeds will be provided to all field staff including biological monitors, weed abatement contractors, plant operators and staff, and construction workers. Online resources that are available including the following:

- The University of California digital library at <http://www.calflora.org/> contains species information and an extensive photo collection.
- The California Invasive Plant Council website is at <http://www.cal-ipc.org>. This website contains an invasive plant database, plant profiles, and extensive other information on invasive plants and control.
- The U.S. Department of Agriculture (USDA) National Invasive Species Information Center is at <http://www.invasivespeciesinfo.gov/>. This website has information on invasive species and links to the extensive USDA PLANTS database (<http://plants.usda.gov/>), with species profiles and photographs.
- The Mojave Weed Management Area has weed management goals to protect and enhance biodiversity, water resources, reduce fire hazards, and protect agricultural interests. The website is at <http://www.mojavewma.org/>, and has information on the common problem weeds in the area.
- The California Native Plant Society maintains information including a database on California vegetation including rare, threatened, and endangered plants (<http://www.cnps.org/>).
- BLM also maintains a website with useful information on noxious weeds, including management strategies for weeds in California (<http://www.blm.gov/weeds/>).
- The Center for Invasive Plant Management maintains a website with useful information and resources, including plant profiles, and can be accessed at <http://www.weedcenter.org/>.
- *Weeds of the West* by Tom D. Whitson is a valuable resource and available at many online book suppliers.

5.2 Surveys and Monitoring

5.2.1 Monitoring Methods

Surveys and monitoring will ensure timely detection and prompt eradication of weed infestations, which are essential to a long-term strategy for weed management.

Construction Areas

The ECM will oversee biological monitors who will be present during site clearing and construction activities. Biological monitors will be responsible for inspecting all construction areas, identifying the presence of noxious weeds, and inspecting equipment cleaning facilities for weed seed removal. The ECM will be responsible for prescribing management activities consistent with this plan when weeds become established. Monitoring of all construction areas will be conducted daily, including access routes, and will consist of walking or driving slowly over construction areas and observing for seedlings of exotic species. This will continue on a daily basis until ground-disturbing construction activities are completed. Semi-monthly monitoring will continue thereafter.

Revegetation Areas

During the revegetation period, regular monitoring of sites will occur. This will be conducted monthly for the first 2 years after construction, then quarterly for the third and fourth years, and semi-annually after that for a total of 10 years. Monitoring schedules will be sufficiently flexible to take advantage of the variable precipitation regime of the eastern Mojave Desert. Surveys will identify areas of significant weed invasion or establishment, and the weed species involved.

Monitoring of revegetation areas will also be required to track the progress of revegetation, and will occur concurrently. As part of this tracking, line or belt transects will be laid out to determine cover and density plant species, including native versus non-native species for the transect area.

General Operations Monitoring

General site monitoring of the operating facility will be conducted by grounds personnel on an ongoing basis. Weed control will be conducted, as needed, by grounds personnel, at a minimum of every other week during the growing season (March through August), and once a month otherwise. Grounds personnel will be trained to identify weedy and native species.

Known Infestation Areas

Where weed infestation occurs, and treatment is implemented, the area will be targeted for ongoing monitoring to ensure that treatments are effective and that complete eradication has been achieved. Visits to known infestation areas will continue until noxious weeds in the area are controlled.

5.2.2 Database and Mapping

Locations of noxious weed occurrences, with data on species, detection date, growth stage, infestation extent, treatments implemented, results of treatment, and current status will be maintained during the construction and operation phases. This will not be a requirement for the previously designated ubiquitous invasives. A geographic information system (GIS) will be used to map and store data. The priority of infestation areas will be established based on species, vulnerability of the site to invasion, growth stage, and effectiveness of treatment. Also included will be areas mapped as vulnerable to weed invasions. Vulnerability will be assessed on the following: (1) availability of weed propagule sources, such as along

roadsides, near soil stockpiles, or grazed areas; (2) areas disturbed, such as through land clearing and earthwork; or (3) areas near with known prior or treated weed infestations or existing infestations that are out of the managed area.

Noxious Weed Management

6.1 Species Descriptions and Management Strategy

Descriptions of the more common or troublesome noxious weeds occurring or potentially occurring at Ivanpah SEGS are provided in this section, along with the basic weed management strategy applicable to each. Table 1 provides a complete list of the weed species of concern in this area, and Table 2 provides additional information on management strategy and control methods for all observed and potentially occurring noxious weed species. Management strategies must encompass not only eradication, but also identify the means of eradication and the plant species to be eradicated.

Not all invasive plant species can or should be eradicated. Certain ubiquitous exotic species (*e.g. Bromus rubens*, *Schismus* spp., *Erodium cicutarium*) will be monitored and not immediately subject to control because control of these aggressive colonizers is impractical, and it would also likely slow site rehabilitation by slowing the rate of secondary succession and surface stabilization. In addition, these species can play a beneficial role in accelerating surface stabilization and, therefore, reduce soil erosion caused by sheet flow or high winds. Complete eradication of large areas where infestations are already established would likely adversely affect other pioneer species, and is likely to be impractical because the area is likely to be re-invaded from adjacent lands in the absence of physical barriers that isolate the area.

The following list provides brief descriptions of the weed species of particular concern at the Ivanpah SEGS. Additional weed species are listed in Table 1:

- Sahara mustard, or African mustard, (*Brassica tournefortii*) was not observed on the project site, but is known from the area and is of high concern. Cal-IPC has declared this plant highly invasive (Cal-IPC, 2006). This species will be eradicated whenever encountered.
- Red brome (*Bromus madritensis* ssp. *rubens*) is an introduced Eurasian grass adapted to warmer habitats that can be frequently found at the base of desert shrubs. It can also form carpet cover on fine-grained microhabitats in rough terrain off the bajada after wet years. It is widespread in the Mojave Desert and has been found in the Ivanpah SEGS. Seeds from this species can disperse readily and across large distances. Cal-IPC has declared this plant highly invasive (Cal-IPC, 2006). Stands of red brome have played an important role in accelerating wildfires in desert scrub communities (Brooks, 1999); a deleterious effect partly because warm-desert plant communities are ill-adapted to fire (Brown and Minich, 1986). Because of its widespread distribution, red brome is not considered feasible for general control and weed abatement measures for this species will not be required.
- Cheat grass (*Bromus tectorum*) is among the most widely distributed invasive plant species in the western U.S. Closely related to red brome, it is adapted to colder steppe

and woodland habitats. It is known to occur in the vicinity, and has not been observed on the project site. Cal-IPC has declared this plant highly invasive (Cal-IPC, 2006). Because of its widespread distribution, cheat grass is not considered feasible for general control and weed abatement measures will not be required.

- Mediterranean grass (*Schismus* spp.) was observed patchily distributed throughout the project site. Cal-IPC has determined that this plant has a limited invasiveness rating in California (Cal-IPC, 2006). BLM and other agencies recognize that because of the widespread distribution of Mediterranean grass, this species is not considered feasible to control; therefore, weed abatement efforts for Mediterranean grass will not be required.
- Although all invasive plants share the trait of being adapted to disturbed habitat, Russian thistle or tumbleweed (*Salsola tragus*) particularly tends to be restricted to roadway shoulders and to sites where the soil has been recently disturbed. This species was not observed at the project site, but is a common invader on disturbed sites. Cal-IPC has determined that this plant has a limited invasiveness rating in California (Cal-IPC, 2006). There is a high potential that Russian thistle could become established in the construction area and this species should be eradicated if observed.
- London rocket (*Sisymbrium irio*) is widespread throughout the warm deserts of North America. It was identified near the project site along Colosseum Road. Cal-IPC has declared this plant moderately invasive (Cal-IPC, 2006). London rocket will be eradicated at Ivanpah SEGS wherever it is observed.
- Mediterranean tamarisk or saltcedar (*Tamarix ramosissima*) has been observed near the project site; however, it is a riparian plant and is, therefore, restricted to microhabitats where there is perennial groundwater saturation such as springs and seeps, or runoff from poorly maintained water pipelines or well pumps. Cal-IPC has declared this plant highly invasive (Cal-IPC, 2006). This species will be eradicated wherever observed on the project site.
- Filaree or storksbill (*Erodium cicutarium*) is a widespread annual species common in disturbed habitats. It can form dense, transient populations when conditions are suitable. It has a limited overall rating by Cal-IPC, generally because the ecological impacts of the species are minor. Because of its widespread distribution, filaree is not considered feasible for general control and weed abatement measures will not be required onsite.

New Weeds

Weeds not identified in the descriptions above, or previously reported for the area or anticipated (Table 1), could colonize the site or invade site facilities, both during construction as well during operation. During construction, the ECM will be required to regularly update the list of potential noxious weeds, and identify any new potential threats. This will include developing a management strategy and management methods appropriate to the plant species and the nature of any potential invasion. Similarly, the facility plant manager or appropriate designee during operations will be required to continually update the potential noxious weed list and provide monitoring and management appropriate to any new species.

6.2 Preventative Measures

General measures to prevent the spread of weed propagules and inhibit their germination include the following:

- Limiting disturbance areas during construction to the minimal required to perform work and limiting ingress and egress to defined routes.
- Maintaining vehicle wash and inspection stations, and closely monitoring the types of materials brought onto the site to minimize the potential for weed introduction.
- Reestablishing vegetation as quickly as practicable on disturbed sites as the most effective long-term strategy to avoid weed invasions.
- Monitoring and rapid implementation of control measures to ensure early detection and eradication for weed invasions.

6.2.1 Construction

Worker Environmental Training

Noxious weed management will be incorporated as a part of mandatory site environmental training for all contractors or related personnel entering the site during construction. This will include all contractors, subcontractors, inspection personnel, construction managers, construction personnel, and individuals bringing vehicles or equipment onto the site. Training will include weed identification and a training module on the impacts of noxious weeds on agriculture, livestock, wildlife, and fire hazard. Impacts of noxious weeds on native vegetation, wildlife, and fire activity will be discussed including an explanation of how invasive grasses provide a fine fuel understory which can spread fire from shrub to shrub and how this has historically been absent in the native desert ecosystem. The measures to prevent the spread of noxious weeds in areas currently uninfested, and controls on their proliferation when already present, will also be explained.

Wash Stations

To prevent the spread of weed species into new habitats, wash stations will be set up in staging areas to remove any dirt or mud that could be attached to construction vehicles and which may contain weed seeds. Wash station locations will be determined during final design, but will be located before entering construction areas. Vehicles entering from offsite locations will be required to stop for cleaning. Heavy equipment entering the site on trailers will also require cleaning. The contractor, with ECM oversight, will ensure that vehicles and equipment are free of soil and debris capable of transporting noxious weed seeds, roots, or rhizomes before the vehicles and equipment are allowed to use access roads. Vehicles will be reasonably dry before leaving the wash station. Some noxious weeds, such as Sahara mustard require water for the scarification process and therefore vehicles leaving the station wet could promote recruitment of Sahara mustard.

Wash stations will be located away from any sensitive biological resources, and will be constructed with either a concrete wash pad, or a completely cleared and compacted soil or gravel pad. Silt fencing, weed-free certified hay bales, or other means of trapping wash

water sediment and seeds will be installed around the perimeter of wash stations. A concept design of a wash station is shown on Figure 3.

Vehicles will be washed with high-pressure water equipment before entering the construction site. The wash down will concentrate on tracks, feet, or tires and on the undercarriage, with special emphasis on axles, frame, cross members, motor mounts, and on and underneath steps, running boards, and front bumper/brush guard assemblies. Vehicles or heavy equipment will be required to remove all caked on mud and debris before entering site. Vehicle cabs will be swept out and refuse will be disposed of in waste receptacles. Sediment accumulated from the washing will be shoveled out daily and placed in a sealed container for disposal in an approved landfill. If removal requirements exceed the capability of the wash stations, equipment will be washed elsewhere before being allowed on the site.

Project workers will also inspect, remove, and dispose of weed seed and plant parts found on their clothing and personal equipment. The product will be bagged and disposed of in a dumpster for deposit in local landfills.

When vehicles and equipment are washed, a log will be kept stating the location, date and time, serial number and type of equipment, and methods used. The crewmember that washed the vehicle will sign the log. Written logs will be included in the monitoring reports.

Infestation Containment and Control

During construction, areas of concern will be identified and flagged in the field by biological monitors. The flagging will alert construction personnel that weeds are present and will prevent access into these areas until noxious weed management control measures have been implemented. Contractors will avoid or minimize all types of travel through weed-infested areas. Immediate control measures will be implemented as described in the sections below.

The contractor will begin project operations in weed-free areas whenever feasible before operating in weed-infested areas, until the ECM has verified completion of weed treatments within weed-infested areas.

Site Soil Management

The contractor will limit the size of any vegetation and/or ground disturbance to the absolute minimum necessary to perform the activity safely and as designed. The contractor will also avoid creating soil conditions that promote weed germination and establishment as practicable. Soil conditions that promote weed germination and establishment include soil excavation/disturbance, vegetation removal, soil compaction, loss or removal of topsoil, introduction of any chemical compounds, including fertilizer, and soil stockpiling.

In areas where infestations are identified, the contractor will stockpile cleared vegetation and salvaged topsoil adjacent to the area from which they are stripped to eliminate the transport of soil-borne noxious weed seeds, roots, or rhizomes. During reclamation, the contractor will return topsoil and vegetative material from infestation sites to the areas from which they were stripped.

Weed-free Products

The contractor will ensure that straw or hay bales used for sediment barrier installations are obtained from certified sources that are free of primary noxious weeds. Additional products such as gravel, mulch, and soil, may also carry weeds. Such products should be obtained from suppliers who can provide weed-free certified materials. Where feasible, mulch will be generated from native vegetation cleared from the site itself. Soil will not be imported onto the site.

Weed-free Seed

Seed purchased from commercial vendors for site restoration and revegetation will be labeled in compliance with the relevant provisions of the California Agriculture Code. In addition to having the correct label, the seed should be required to be free of noxious weeds and the label should so state. Preferably, seed should be collected as a part of the restoration contract from adjacent areas, which provides the additional benefit of ensuring local genetic stock.

Site Reclamation

Site reclamation and revegetation will be performed on all temporarily disturbed areas on the project site, including pipelines, transmission lines, and staging areas. The full description of site reclamation and revegetation measures is found in the *Ivanpah SEGS Revegetation and Rehabilitation Plan* (2008). Rapid implementation of effective site rehabilitation and revegetation will be an effective method of long-term weed control. Adequate native vegetative cover and recovering soil conditions will reduce the potential for invasion of noxious weeds.

6.2.2 Operations

Facility Staff Training

Noxious weed management will be incorporated as a part of mandatory site training for groundskeepers and maintenance personnel. Training will include weed identification and the impacts on agriculture, livestock, wildlife, and fire frequencies. The importance of preventing the spread of noxious weeds in areas currently uninfested, and controlling the proliferation of weeds already present, will also be explained.

Infestation Containment and Control

During operations, areas of concern will be identified and flagged in the field by groundskeepers. The flagging will alert personnel that weeds are present and will prevent access into these areas until noxious weed management control measures have been implemented. Immediate control measures will be implemented as described below.

6.2.3 Site Closure

Site decommissioning and closure will involve implementation of the *Ivanpah SEGS Revegetation and Rehabilitation Plan* (2008). This plan will include measures to avoid weed establishment throughout the site, and to implement long-term site rehabilitation and revegetation of all decommissioned facilities. Control of noxious weed establishment will be

a central goal of long-term site rehabilitation, the long-term success of which will be enhanced by revegetation measures promoting surface stability and soil development.

6.3 Eradication and Control Methods

6.3.1 Unacceptable Weed Removal Methods

Tilling

Tilling, or the turning over of soil, is a weed-control practice used on agricultural lands that may be appropriate for agriculture, but is inappropriate in this area for these purposes. However, this method is ineffective in desert landscapes, and will not be attempted. Within desert landscapes, tilled weeds are likely to set seed, even after burial. In addition, tilling is likely to disturb native cover stock, and will also disrupt the natural structure and chemistry of the soil, allowing weed seeds to proliferate from soil disturbance. Fragmenting weeds resulting from tilling will also lead to more widespread growth of non-native plants.

Mowing

Mowing is sometimes used to reduce weed cover and thatch late in the growing season, typically after annuals have matured. The method does not remove weeds; it merely cuts back the thatch that develops during the growing season. It is sometimes used as a fire control method, but will result in proliferation of weed seed and aggravation of weed infestation problems. Mowing is problematic for the following reasons: (1) Mowing would severely damage existing native plants, including small individuals that might or might not be visible at the time of mowing, but could be pushing their way through the canopy as they mature; (2) Mowing, which is typically done late in the spring or early summer, would result in maturation of weed seed from existing weeds after they are cut and left to desiccate, increasing weed seed in the seedbank and ensuring a robust crop of weeds in subsequent years; and (3) Native ground and shrub nesting birds could use the site, and breed on the site between February and August. The federal Migratory Bird Treaty Act (16 U.S.C. 703-712; 50 Code of Federal Regulations 10) prohibits the “take” of migratory birds, and protects eggs, nests, and feathers, unless permitted. Take is defined in part as “pursue, hunt, take, capture, kill, attempt to take, capture, or kill any migratory bird, any part, nest, or eggs of any such bird.” Hence, any mowing activity during the breeding season would potentially violate this federal law.

6.3.2 Physical Removal of Weeds

Physical control methods range from manual hand pulling of weeds to the use of hand and power tools to uproot, girdle, or cut plants. The Weed Wrench™ and Root Jack™ are lever arms with cam devices that secure stems; they are found in nurseries and may be used to pull out woody shrubs such as tamarisk or Russian olive. Hand removal by pulling is appropriate when the plants are large enough that they will not break and leave the roots behind, which could resprout. For localized weed control, this is the most effective method. This effort should be focused on weed species that have a single-root mass, facilitating easy removal. Hand-pulling is less effective in large areas and with weed species that spread through an underground root system (e.g., Bermuda grass).

Hoeing and weed whipping can be employed to control weeds in small areas. However, care must be employed when using these methods adjacent to native plants, so that native plants are not damaged. Hoeing or weed whipping must only be employed before the seed has set, otherwise this disturbance would only serve to further disperse and promote the establishment of the weed species. Pertinent considerations for hoeing and weed whipping include the following:

- Hoeing works best on patches of small weeds and with weeds that have a single-root mass. It is less effective on larger weeds that can regenerate from cut roots. It should not be used on weeds approaching maturity, as seeds can mature and be released on cut plants. Hoed plant material should be bagged and removed.
- Weed whipping can be used for weed removal in limited upland areas with herbaceous plant covers; however, it should not be used on weeds approaching maturity, as seeds can mature and be released on cut plants, and care must be employed when weed whipping adjacent to native plants. Cut plant material should be bagged and removed.

6.3.3 Chemical Methods for Weed Removal

Herbicide applications are a widely used, effective control method for removing infestations of invasive weed species. However, inadvertent application of herbicide to adjacent native plants must be avoided, which can often be challenging when weeds are interspersed with native cover.

Permitting and Regulatory Requirements

Before application of herbicide, contractors will be required to obtain any required permits from state and local authorities. Permits may contain additional terms and conditions that go beyond the scope of this plan. Only a State of California and federally certified contractor, who is also approved by BLM, will be permitted to perform herbicide applications. All herbicides will be applied in accordance with applicable laws, regulations, and permit stipulations. Only herbicides and adjuvants approved by the State of California and federal agency for use on public lands will be used within or adjacent to the project site. A list of approved herbicides and adjuvants is available in Appendix B.

The *Final Environmental Impact Statement on Vegetation Treatment on BLM Lands in Seventeen Western States* lists 10 herbicides acceptable for use on BLM lands (USDI, 2007). Guidelines for the use of chemical control of vegetation on BLM lands are presented in the *Chemical Pest Control Manual* (BLM, n.d.). These guidelines require submittal of a pesticide use proposal (PUP) and pesticide application records (PAR) for the use of herbicides on BLM lands. A sample form required for the submittal of a PUP is included in Appendix C.

Ivanpah SEGS will submit PARs for each use of herbicides on BLM lands within 24 hours of application. A sample form required for submittal of PARs is included in Appendix D. The occurrence of noxious weeds within the project footprint, or where the weeds occur, will be reported to the BLM district office. The appropriate weed control procedures, including target species, timing of control, and method of control, will be determined in consultation with BLM personnel. Ivanpah SEGS will be responsible for providing the necessary trained personnel or hiring a contractor to implement the required weed control procedures.

Types of Herbicides

Herbicides may be characterized as pre-emergent, post-emergent, selective and non-selective. A pre-emergent herbicide is one that generally controls ungerminated seeds by inhibiting germination. Post-emergent herbicides are generally lethal to emerged plants. A few herbicides have both pre- and post-emergent activity. Herbicides can be selective or non-selective. If an herbicide is selective, it will have activity on some species of plants and not others, often distinguishing between monocots (grasses) and dicots (broadleaf plants). A non-selective herbicide is one that is lethal to any plant species to which it is applied.

Herbicides kill plants through either contact or systemic action. Contact herbicides are most effective against annual weeds and kill only the plant parts on which the chemical is deposited. Systemic herbicides are absorbed either by roots or foliar parts of a plant and are then translocated within the plant system to tissues that might be remote from the point of application. Although systemic herbicides can be effective against annual and perennial weeds, they are particularly effective against established perennial weeds.

Pre-emergent herbicides inhibit germination of annuals from seed, but generally do not control perennial plants that germinate from bulbs, corms, rhizomes, stolens, or other vegetative structures. Common pre-emergent herbicide classes include the following:

- **Dinitroaniline Type:** Examples of this class are pendimethalin (Weedgrass™), trifluralin (Treflan™), benefin (Balan™), and combinations of these. These herbicides provide for pre-emergence control of annual grasses and other annuals. They are mitotic (cell division) inhibitors and are primarily effective in inhibiting root growth of germinating seeds. Selectivity is physiological or chemical in nature. Some of these herbicides could be lost by volatilization, and should not be applied in temperatures above 90 degrees Fahrenheit (°F). All of these herbicides need to be watered into the soil for proper activation. Some can persist for several months.
- **Dithiopyr (Dimension™)** belongs to a new class of herbicide known as pyridines. It is a selective herbicide primarily used for pre-emergence annual grass control in established turfgrass. However, it can be used for post-emergence control of young grass seedlings. It inhibits cell division and cell growth of meristematic regions (growing points of roots and shoots). Dithiopyr is lost from soil by chemical and microbial degradation.

The most commonly used post-emergent, non-selective herbicides contain a family of chemicals called glyphosates (N-[phosphonomethyl] glycine). Glyphosate (Rodeo™, Roundup™, and Accord™) is a non-selective, systemic herbicide that is effective on many annual and perennial plants. It works by blocking an enzyme pathway that is important for plant protein synthesis, which is most effective if full coverage over the plants leaf is accomplished. However, because of systemic action, even partial coverage can result in plant mortality. The herbicide is typically used in conjunction with linseed oil or another surfactant, which aids in spreading an even layer across the surface of the leaves. Because glyphosate can also be lost to volatilization, they should not be applied when the temperature exceeds 90°F.

The United States Environmental Protection Agency (EPA, 1993) has deemed glyphosate to have a relatively low degree of oral and dermal acute toxicity. It is considered to be immobile in soil and readily degraded by soil microbes to the metabolite aminomethyl

phosphonic acid and then to carbon dioxide. EPA states that it is minimally toxic to birds, fish, aquatic invertebrates, and honeybees (EPA, 1993).

Application and Handling

The following general precautions will be implemented for pesticide application: It is the responsibility of the pesticide user to observe all directions, restrictions, and precautions on pesticide labels. It is dangerous, wasteful, and illegal to do otherwise.

- Store all pesticides in original containers with labels intact and behind locked doors. Keep pesticides out of the reach of children.
- Use pesticides at correct label dosage and intervals to avoid illegal residues or injury to plants and animals.
- Use pesticides carefully to avoid drift or contamination of non-target areas.
- Surplus pesticides and containers should be disposed of in accordance with label instructions to prevent contamination of water and other hazards.
- Follow directions on the pesticide label regarding restrictions as required by state or federal laws and regulations.
- Avoid any action that may threaten a rare, threatened, or endangered species or its habitat.

Limitations. Herbicide applications must follow EPA label instructions. Application of herbicides will be suspended when any of the following conditions exists:

- Wind velocity exceeds 6 miles per hour (mph) during application of liquids or 15 mph during application of granular herbicides.
- Snow or ice covers the foliage of noxious weeds.
- Precipitation is occurring or is imminent.
- Air temperatures exceed 90°F.

Transport and Mixing. During the construction phase, herbicides will be transported to the project site daily with the following provisions:

- Only the needed quantity for that day's work will be transported.
- Concentrate will be transported in approved containers only and in a manner that will prevent tipping or spilling, and in a location that is isolated from the vehicle's driving compartment, food, clothing, and safety equipment.
- Mixing will be done offsite, over a drip-catching device, and at a distance greater than 200 feet from open or flowing water, wetlands, or other sensitive resources. No herbicides will be applied at these areas unless authorized by appropriate regulatory agencies.
- Herbicide equipment and containers will be inspected for leaks daily. Disposal of spent containers will be in accordance with the herbicide label.

During the operations phase of the project, herbicides will be stored only in cabinets of approved design and will be under lock and key.

Spray Methods. Vehicle-mounted sprayers (e.g., handgun, boom, and injector) will be used mainly in open areas that are readily accessible by vehicle. Hand application methods (e.g., backpack spraying) that target individual plants will be used to treat small or scattered weed populations in rough terrain. Calibration checks of equipment will be conducted at the beginning of spraying and periodically throughout treatment to ensure that proper application rates are achieved.

Herbicide Spills and Cleanup. Reasonable precautions will be taken to avoid herbicide spills. In the event of a spill, immediate cleanup will be implemented. Contractors will keep spill kits in their vehicles and in herbicide storage areas to allow for quick and effective response to spills. The following items are to be included in the spill kit:

- protective clothing and gloves
- absorptive clay, "kitty litter," or other commercial adsorbent
- plastic bags and bucket
- shovel
- fiber brush and screw-in handle
- dust pan
- caution tape
- highway flares (use on established roads only)
- detergent

Response to herbicide spills will vary with the size and location of the spill, but general procedures include the following:

- BLM notification
- traffic control
- dressing the cleanup team in protective clothing
- stopping the leaks
- containing the spilled material
- cleaning up and removing the spilled herbicide or contaminated adsorbent material and soil
- transporting the spilled pesticide and contaminated material to an authorized disposal site

Controlling Post-emergent Herbaceous Vegetation. To control herbaceous weedy vegetation, implement as follows:

- Apply a foliar application of Rodeo™ on each plant at a minimum rate of 2.5 percent (plus 2 percent by volume [V/V] of nonionic surfactant).
- Provide applications on a spray-to-wet basis with coverage uniform and complete.
- Avoid contact with established native shrub and grass species.

- Temporarily discontinue work in the event of gusty winds or winds in excess of 6 mph.
- Temporarily discontinue in the event of rainfall.
- Ensure applicators possess current pest control licenses valid in the State of California and wear gloves, masks, and long sleeves as protection from chemical injuries.
- Leave sprayed vegetation undisturbed for 7 days until visible effects of herbicide application are present consisting of wilted and brown foliage and disintegration of root material. The ECM will determine when adequate time has been allowed for this.
- Remove all treated plant materials using a flail mower or other appropriate means, and dispose of offsite at an appropriate landfill site.
- Cover all loads while removing vegetation using a tarpaulin.

Controlling Woody Vegetation. Woody vegetation should be controlled using cut and paint method of removal. To control woody vegetation, implement as follows:

- Cut sprouts or woody stems to a height of 12 inches or less above ground and remove all aboveground debris for disposal at a suitable landfill.
- Apply Round-Up™ or Rodeo™ at a 100 percent rate to the cut sprout within 2 minutes of cutting the stem.
- Apply Rodeo™ in areas that are in immediate contact with wetlands and/or other water bodies; Round-up™ will be used elsewhere. The ECM will determine the appropriate herbicide to use at each location.
- Cover all loads while removing vegetation using a tarpaulin.
- Apply follow-up foliar applications as described in the previous section to stem regrowth that occurs after initial control effort.
- Continue monitoring cut stems for as long as necessary to ensure complete mortality.

Controlling Pre-emergent Vegetation

Generally, it is anticipated that there are few areas where pre-emergent vegetation control would be required. Pre-emergent herbicides work only on vegetation reproducing from seed, and are not effective on other types of propagules, such as resprouts from root crowns which have been cut, rhizomes, or other material. The following situations may require use of pre-emergent herbicides:

- Areas that have repeated weed problems with annual plants, with evidence of a robust weed seed crop in the seed bank, will be sprayed with pre-emergent herbicides during appropriate pre-germination periods.
- Areas beneath the heliostat arrays, because they will receive overflow of wash water, can be particularly vulnerable to weed infestations.
- Areas surrounding the developed plant facilities, where vegetation is not planted, could benefit from pre-emergent treatments if weed problems are persistent.

Generally, pre-emergent herbicides would not be appropriate for revegetation areas or other native habitats because they are likely to inhibit the germination and growth of desirable native plant seed being used for restoration.

6.3.4 Competitive Vegetation

The use of native plants to outcompete invasive weed species and to accelerate secondary succession and, therefore, deny invasive pioneer exotics habitat is an effective, long-term weed control strategy incorporated for this project site. With site rehabilitation and revegetation, soil structure and native plant communities will reestablish. While full recovery may take decades, early successional communities can be established on the site within 1 to a few years. These communities have the potential to exclude weed invasion, and over time, weed control will require less effort. The *Ivanpah SEGS Revegetation and Rehabilitation Plan* (2008) has been prepared to implement this strategy.

Reporting Requirements

7.1 Report Content

Implementation of the noxious weed management plan will include the following data collection and reporting.

7.1.1 Construction Reports

During the project construction phases, ongoing reporting on noxious weed management will be included in all monitoring reports. Construction weed monitoring reports will include the following information:

- Survey findings on location, type, extent, and density of noxious weeds. These data will include mapping and photographs, as appropriate, as well as textual and tabular data content to fully describe conditions on the project site.
- Management efforts, including date, location, type of treatment implemented, and results. Ongoing evaluation of success of treatment will be included.
- Information on implementation and success of preventative measures, including status of equipment wash facilities and summary data of use; data on the worker environmental training program, including participants.
- Summary description of rehabilitation and revegetation efforts undertaken, and their status.

7.1.2 Long-term Monitoring Reports

After implementation of site revegetation, long-term monitoring reports will be focused on success of revegetation sites. Noxious weed management measures will be included in these reports, and will include the following relevant information:

- Survey findings on location, type, extent, and density of noxious weeds. These data will include mapping and photographs, as appropriate, as well as textual and tabular data content to fully describe conditions on the project site.
- Management efforts, including date of efforts, location, types of treatment implemented, and results. Ongoing evaluation of success of treatment will be included.
- The reports will also include a complete description of restoration efforts and status at meeting performance criteria.

7.2 Reporting Periods

7.2.1 Construction Period

It is anticipated that daily records will be kept by the ECM and the monitoring team. These daily records will be summarized into weekly summary reports describing information relevant to noxious weed management. Monthly or quarterly summary reports may also be produced.

A single post-construction report will be produced after each phase of construction is completed at Ivanpah, with a section summarizing the overall results of noxious weed management, and weed status at the site.

7.2.2 Long-term Monitoring Reports

Annual monitoring reports will be produced for the duration of the monitoring period. The site surveys conducted to support this are described as follows:

- Monthly surveys of revegetation sites will be conducted for the first year after installation. The data and results of these surveys will be compiled into the first year annual report, which include information on noxious weed management activities during that year.
- Quarterly visits will be implemented in year two. Results of quarterly visits will be summarized and reported in the second year annual report.
- Thereafter, semi-annual site visits will be conducted, summarized, and reported in an annual report through the completion of the monitoring period.
- At the end of the monitoring period, or if success criteria are met before that, a final monitoring report will be produced to describe the outcome to date of proposed restoration, including status of noxious weed management on the project site.

SECTION 8.0

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Tables

TABLE 1
Observed and Potentially Occurring Noxious Weeds at Ivanpah SEGS

Scientific Name	Common Name	Habitats of Concern and Comments	Observed During Surveys and Anticipated Distribution in Project Area	CDFR Rank	Cal-IPC Overall Rating	Alert	Cal-IPC Impacts Rating	Cal-IPC Invasive Rating	Cal-IPC Distribution Rating
<i>Ailanthus altissima</i>	tree of heaven	Riparian areas, grasslands, oak woodland. Impacts highest in riparian areas.	Not observed; doesn't seem to propagate beyond old homes and settlements	Not Listed	Moderate	No	B	B	B
<i>Alhagi camelorum</i>	camel thorn	Grassland, meadows, riparian and desert scrub, Sonoran thorn woodland. Very invasive in southwestern states. Limited distribution in California.	Not observed; edaphically constrained; only to be expected near the playa	A	Moderate	No	B	B	B
<i>Brassica tournefortii</i>	sahara mustard	Desert dunes, desert and coastal scrub	Observed; one individual observed and removed; could occur throughout area and will require monitoring;	Not Listed	High	No	A	A	B

TABLE 1
Observed and Potentially Occurring Noxious Weeds at Ivanpah SEGS

Scientific Name	Common Name	Habitats of Concern and Comments	Observed During Surveys and Anticipated Distribution in Project Area	CDFR Rank	Cal-IPC Overall Rating	Alert	Cal-IPC Impacts Rating	Cal-IPC Invasive Rating	Cal-IPC Distribution Rating
<i>Bromus diandrus</i>	Ripgut Brome	Dunes, scrub, grassland, woodland, forest. Very widespread, but monotypic stands uncommon.	Not observed; a facultative phreatophyte, but locally restricted to moist sandy soils; however, is recorded at a number of localities in the region and therefore included;	Not Listed	Moderate	No	B	B	A
<i>Bromus madritensis</i> ssp. <i>rubens</i>	red brome	Scrub, grassland, desert washes, woodlands	Observed; widespread - distributed throughout the project area, mostly at the base of shrubs;	Not Listed	High	No	A	B	A
<i>Bromus tectorum</i>	downy brome, cheatgrass	Interior scrub, woodlands, grasslands, pinon/Joshua tree woodland, chaparral.	Not observed;	Not Listed	High	No	A	B	A
<i>Cynodon dactylon</i>	bermudagrass	Riparian scrub in southern California. Common landscape weed, but can be very invasive in desert washes.	Not observed; could become a problem in heliostat washing areas; propagule source may be available at nearby golf course.	C	Moderate	No	B	B	B

TABLE 1
Observed and Potentially Occurring Noxious Weeds at Ivanpah SEGS

Scientific Name	Common Name	Habitats of Concern and Comments	Observed During Surveys and Anticipated Distribution in Project Area	CDFA Rank	Cal-IPC Overall Rating	Alert	Cal-IPC Impacts Rating	Cal-IPC Invasive Rating	Cal-IPC Distribution Rating
<i>Descurainia sophia</i>	flixweed, tansy mustard	Scrub, grassland, woodland. Impacts appear to be minor, but locally more invasive in northeast California.	Not observed.	Not Listed	Limited	No	C	B	B
<i>Elaeagnus angustifolia</i>	Russian olive	Interior riparian. Impacts more severe in other western states. Current distribution limited in California.	Not observed; escapees widespread in Clark and Nye Counties, Nevada, but restricted to townsites and occasional riparian habitats.	Not Listed	Moderate	No	B	A	B
<i>Erodium cicutarium</i>	redstem filaree	Many habitats. Widespread. Impacts minor in wildlands. High-density populations transient.	Observed.	Not Listed	Limited	No	C	C	A
<i>Halogeton glomeratus</i>	halogeton	Scrub, grasslands, pinyon-juniper woodland. Larger problem in Nevada. Monotypic stands are rare.	Not observed; edaphically constrained, only to be expected near the playa.	A	Moderate	No	B	A	B

TABLE 1
Observed and Potentially Occurring Noxious Weeds at Ivanpah SEGS

Scientific Name	Common Name	Habitats of Concern and Comments	Observed During Surveys and Anticipated Distribution in Project Area	CDFA Rank	Cal-IPC Overall Rating	Alert	Cal-IPC Impacts Rating	Cal-IPC Invasive Rating	Cal-IPC Distribution Rating
<i>Salsola paulsenii</i>	barbed-wire Russian thistle	Desert and Great Basin scrub. Limited distribution. Impacts in desert appear to be minor.	Not observed; widespread but typically uncommon except in recently disturbed habitats.	C	Limited	No	C	C	C
<i>Salsola tragus</i> ; <i>S. kali</i> ; <i>S. pestifer</i>	Russian thistle; tumble weed	Desert dunes and scrub, alkali playa. Widespread. Impacts minor in wildlands.	Not observed.	C	Limited	No	C	B	B
<i>Schismus arabicus</i> , <i>Schismus barbatus</i>	Mediterranean-grass	Scrub, thorn woodland. Widespread in deserts. Impacts can be more important locally.	Observed; observed patchily distributed throughout the project area.	Not Listed	Limited	No	B	C	A
<i>Sisymbrium irio</i>	London rocket	Scrub, grasslands. Widespread. Primarily in disturbed sites. Impacts vary locally.	Observed; a few individuals were observed in the vicinity of an existing well on Colosseum Road;	Not Listed	Moderate	No	B	B	A
<i>Solanum elaeagnifolium</i>	white horenettle	Primarily agricultural weed, but escaping to wildlands in other countries. May prove to be more important in future.	Not observed; can be expected to occur in project area.	B	Eval No List	No	D	B	C

TABLE 1
Observed and Potentially Occurring Noxious Weeds at Ivanpah SEGS

Scientific Name	Common Name	Habitats of Concern and Comments	Observed During Surveys and Anticipated Distribution in Project Area	CDFA Rank	Cal-IPC Overall Rating	Alert	Cal-IPC Impacts Rating	Cal-IPC Invasive Rating	Cal-IPC Distribution Rating
<i>Tamarix ramosissima</i>	saltcedar	Desert washes, riparian areas, seeps and springs	Observed; five <i>Tamarix</i> sp. individuals observed in the very southeast quadrant of the one mile buffer, east of I-15; edaphically constrained to old well sites, riparian areas, or other areas with available surface and/or ground water.	B	High	No	A	A	A
<i>Tribulus terrestris</i>	puncture vine		Not observed; likely that the next good summer rainy season should raise both <i>Solanum</i> and <i>Tribulus</i> .	C	Not Listed				

TABLE 1
Observed and Potentially Occurring Noxious Weeds at Ivanpah SEGS

Scientific Name	Common Name	Habitats of Concern and Comments	Observed During Surveys and Anticipated Distribution in Project Area	CDFRA Rank	Cal-IPC Overall Rating	Alert	Cal-IPC Impacts Rating	Cal-IPC Invasive Rating	Cal-IPC Distribution Rating
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CDFRA Ratings

"A" – Eradication, containment, rejection, or other holding action at the state-county level. Quarantine interceptions to be rejected or treated at any point in the state.

"B" – Eradication, containment, control or other holding action at the discretion of the commissioner.

"C" – State endorsed holding action and eradication only when found in a nursery; action to retard spread outside of nurseries at the discretion of the commissioner; reject only when found in a cropseed for planting or at the discretion of the commissioner.

"Q" – Temporary "A" action outside of nurseries at the state-county level pending determination of a permanent rating. Species on List 2, "Federal Noxious Weed Regulation" are given an automatic "Q" rating when evaluated in California

Sources:

CDFRA, 2004

Cal-IPC, 2006

Mojave Resource Conservation District, 2003

Notes:

Cal-IPC ratings:

High – These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed.

Moderate – These species have substantial and apparent – but generally not severe – ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, although establishment is generally dependent on ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited – These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

TABLE 2

Management Strategies and Control Methods for Observed and Potentially Occurring Noxious Weeds at Ivanpah SEGS

Scientific Name	Common Name	Management Strategy	Control Method
<i>Ailanthus altissima</i>	tree of heaven	Monitor for occurrence, and eradicate if found	Mature Trees: Cut trees and apply 100 percent herbicide to cut stem; spray new shoots - See Section 6.3.3, Chemical Methods for Weed Removal Saplings: Pull out entire plant and root - See Section 6.3.2, Physical Removal of Weeds
<i>Alhagi camelorum</i>	camel thorn	Monitor for occurrence, and eradicate if found	Individual Plants: Pull out entire plant and root and bag for disposal - see Section 6.3.2, Physical Removal of Weeds; Hand Pulling
<i>Brassica tournefortii</i>	sahara mustard	Monitor for occurrence in December-January prior to seed set, and eradicate if found; continue to monitor occurrence sites to ensure complete eradication	Individual Plants: Pull out entire plant and root and bag for disposal - see Section 6.3.2, Physical Removal of Weeds; Hand Pulling
<i>Bromus diandrus</i>	Ripgut Brome	Monitor for occurrence at heliostat arrays or other sites with regular water, and eradicate if found.	Stands: Spray with postemergent, systemic, selective (monocot) herbicide; after senescence, remove with flail mower and bag for disposal - See Section 6.3.3, Chemical Methods for Weed Removal
<i>Bromus madritensis ssp. rubens</i>	red brome	No Action; allow colonization as pioneer species in revegetation areas	N/A
<i>Bromus tectorum</i>	downy brome, cheatgrass	No Action; allow colonization as pioneer species in revegetation areas	N/A
<i>Cynodon dactylon</i>	bermudagrass	Monitor for occurrence at heliostat arrays or other sites with regular water, and eradicate if found.	Stands: Spray with postemergent, systemic, selective (monocot) herbicide; after senescence, remove with flail mower and bag for disposal - See Section 6.3.3, Chemical Methods for Weed Removal

TABLE 2

Management Strategies and Control Methods for Observed and Potentially Occurring Noxious Weeds at Ivanpah SEGS

Scientific Name	Common Name	Management Strategy	Control Method
<i>Descurainia sophia</i>	flixweed, tansy mustard	Monitor for occurrence, and eradicate if found	<p>Select Occurrences: Pull out entire plant and root and bag for disposal - see Section 6.3.2, Physical Removal of Weeds; Hand Pulling</p> <p>Monotypic Stands: Spray with postemergent herbicide; after senescence, remove with flail mower and bag for disposal - See Section 6.3.3, Chemical Methods for Weed Removal</p>
<i>Elaeagnus angustifolia</i>	Russian olive	Monitor for occurrence at heliostat arrays or other sites with regular water, and eradicate if found.	<p>Mature Trees/Shrubs: Cut trees and apply 100 percent herbicide to cut stem; spray new shoots - See Section 6.3.3, Chemical Methods for Weed Removal</p> <p>Saplings: Pull out entire plant and root - See Section 6.3.2, Physical Removal of Weeds</p>
<i>Erodium cicutarium</i>	redstem filaree	No Action; allow colonization as pioneer species in revegetation areas	N/A
<i>Halogeton glomeratus</i>	halogeton	Monitor for occurrence, and eradicate if found	<p>Select Occurrences: Pull out entire plant and root and bag for disposal - see Section 6.3.2, Physical Removal of Weeds; Hand Pulling</p> <p>Monotypic Stands: Spray with postemergent herbicide; after senescence, remove with flail mower and bag for disposal - See Section 6.3.3, Chemical Methods for Weed Removal</p>
<i>Salsola paulsenii</i>	barbed-wire Russian thistle	Monitor for occurrence, and eradicate if found	<p>Select Occurrences: Pull out entire plant and root and bag for disposal - see Section 6.3.2, Physical Removal of Weeds; Hand Pulling</p> <p>Monotypic Stands: Spray with postemergent herbicide; after senescence, remove with flail mower and bag for disposal - See Section 6.3.3, Chemical Methods for Weed Removal</p>

TABLE 2

Management Strategies and Control Methods for Observed and Potentially Occurring Noxious Weeds at Ivanpah SEGS

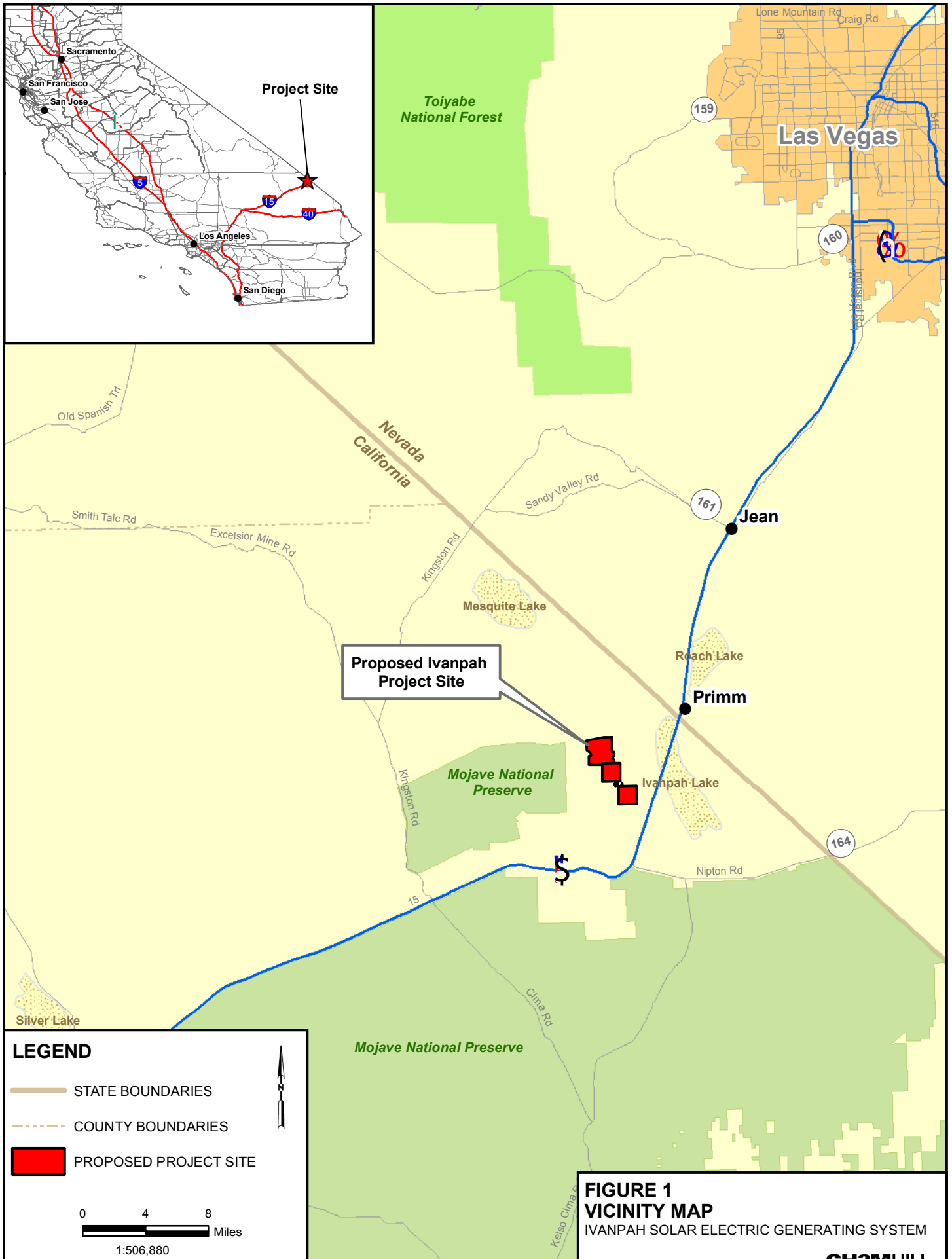
Scientific Name	Common Name	Management Strategy	Control Method
<i>Salsola tragus</i> ; <i>S. kali</i> ; <i>S. pestifer</i>	Russian thistle; tumble weed	Monitor for occurrence at heliostat arrays or other sites with regular water, and eradicate if found.	<p>Select Occurences: Pull out entire plant and root and bag for disposal - see Section 6.3.2, Physical Removal of Weeds; Hand Pulling</p> <p>Monotypic Stands: Spray with postemergent herbicide; after senescence, remove with flail mower and bag for disposal - See Section 6.3.3, Chemical Methods for Weed Removal</p>
<i>Schismus arabicus</i> , <i>Schismus barbatus</i>	Mediterranean-grass	No Action; allow colonization as pioneer species in revegetation areas	N/A
<i>Sisymbrium irio</i>	London rocket	Monitor for occurrence at heliostat arrays or other sites with regular water, and eradicate if found.	<p>Select Occurences: Pull out entire plant and root and bag for disposal - see Section 6.3.2, Physical Removal of Weeds; Hand Pulling</p> <p>Monotypic Stands: Spray with postemergent herbicide; after senescence, remove with flail mower and bag for disposal - See Section 6.3.3, Chemical Methods for Weed Removal</p>
<i>Solanum elaeagnifolium</i>	white horsenettle	Monitor for occurrence at heliostat arrays or other sites with regular water, and eradicate if found.	<p>Select Occurences: Pull out entire plant and root and bag for disposal - see Section 6.3.2, Physical Removal of Weeds; Hand Pulling</p> <p>Monotypic Stands: Spray with postemergent herbicide; after senescence, remove with flail mower and bag for disposal - See Section 6.3.3, Chemical Methods for Weed Removal</p>
<i>Tamarix ramosissima</i>	saltcedar	Monitor for occurrence at heliostat arrays or other sites with regular water, and eradicate if found.	<p>Mature Trees: Cut trees and apply 100 percent herbicide to cut stem; spray new shoots - See Section 6.3.3, Chemical Methods for Weed Removal</p> <p>Saplings: Pull out entire plant and root - See Section 6.3.2, Physical Removal of Weeds</p>

TABLE 2

Management Strategies and Control Methods for Observed and Potentially Occurring Noxious Weeds at Ivanpah SEGS

Scientific Name	Common Name	Management Strategy	Control Method
<i>Tribulus terrestris</i>	puncture vine	Monitor for occurrence, and eradicate if found	<p>Select Occurences: Pull out entire plant and root and bag for disposal - see Section 6.3.2, Physical Removal of Weeds; Hand Pulling</p> <p>Monotypic Stands: Spray with postemergent herbicide; after senescence, remove with flail mower and bag for disposal - See Section 6.3.3, Chemical Methods for Weed Removal</p>

Figures



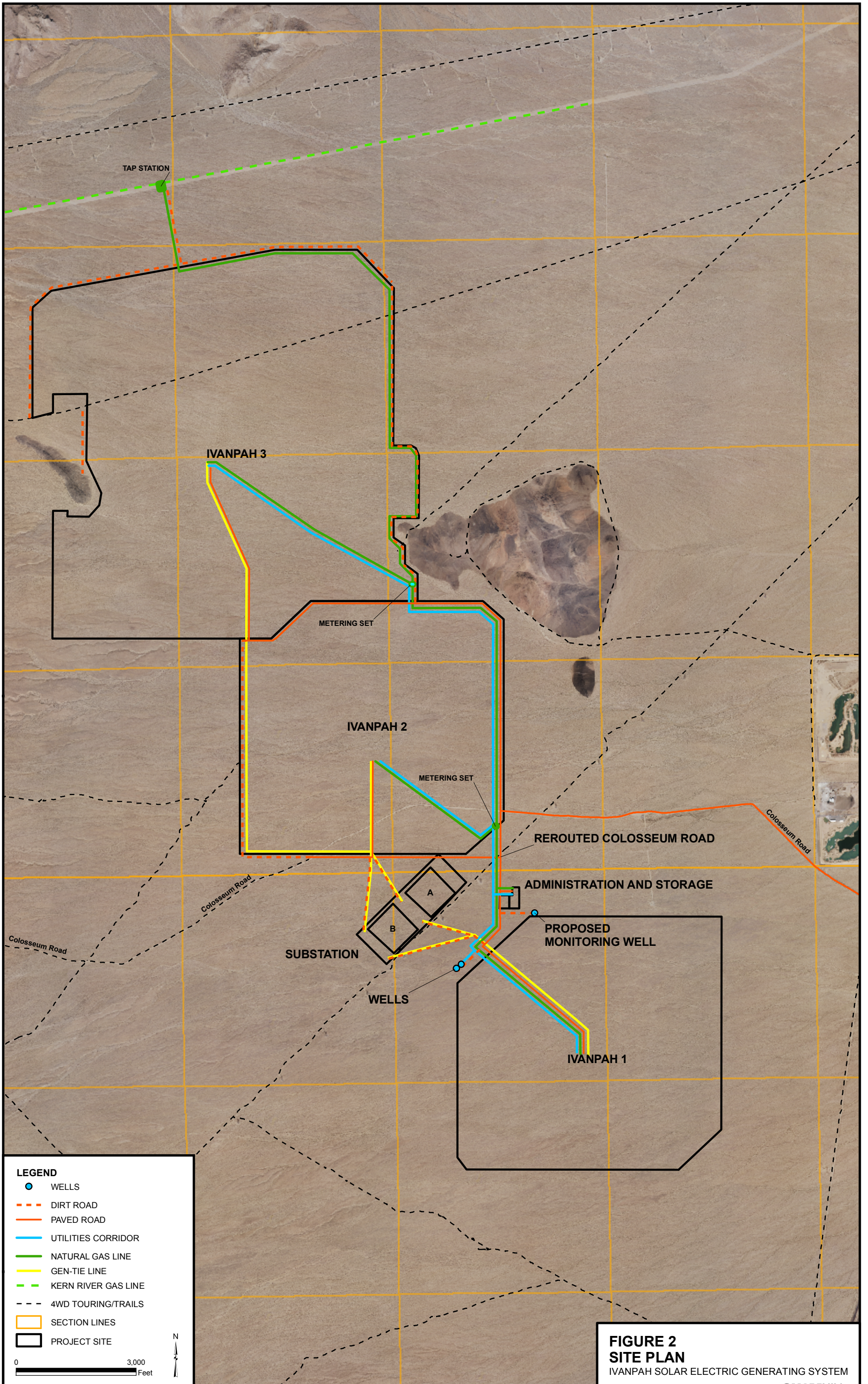
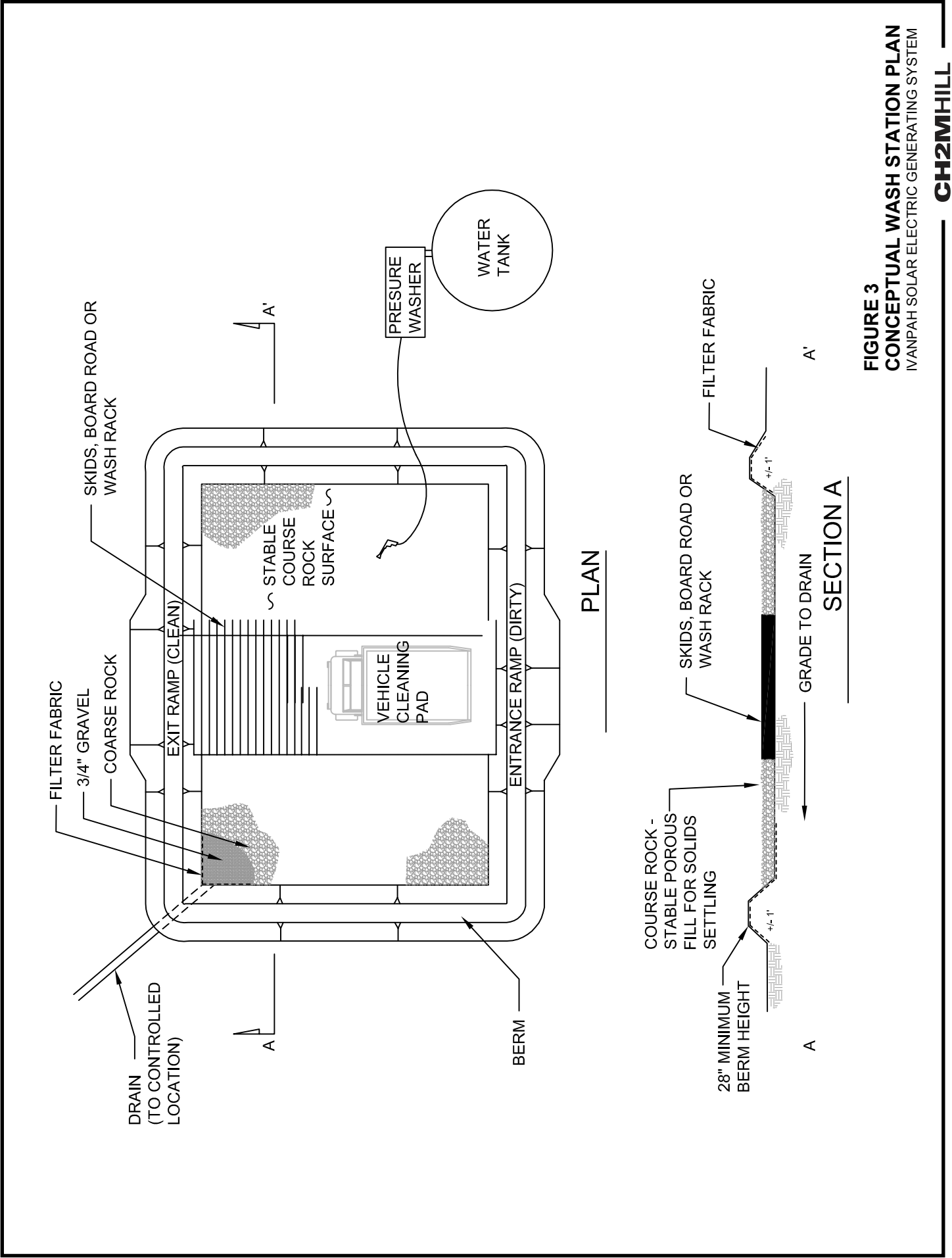


FIGURE 2
SITE PLAN
 IVANPAH SOLAR ELECTRIC GENERATING SYSTEM



DRAIN (TO CONTROLLED LOCATION)

FILTER FABRIC

3/4" GRAVEL

COARSE ROCK

EXIT RAMP (CLEAN)

SKIDS, BOARD ROAD OR WASH RACK

STABLE COARSE ROCK SURFACE

VEHICLE CLEANING PAD

ENTRANCE RAMP (DIRTY)

BERM

A

A'

PRESSURE WASHER

WATER TANK

28" MINIMUM BERM HEIGHT

COURSE ROCK - STABLE POROUS FILL FOR SOLIDS SETTLING

SKIDS, BOARD ROAD OR WASH RACK

FILTER FABRIC

GRADE TO DRAIN

A

A'

FIGURE 3
CONCEPTUAL WASH STATION PLAN
 IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

Appendix A
Herbicide Treatment Standard Operating
Procedures (Appendix B of the Vegetation
Treatments Using Herbicides on Bureau of Land
Management Lands in 17 Western States
Programmatic Environmental Impact Statement)

APPENDIX B

HERBICIDE TREATMENT STANDARD OPERATING PROCEDURES

This section identifies standard operating procedures (SOPs) that will be followed by the U.S. Department of the Interior Bureau of Land Management (USDI BLM) under all alternatives to ensure that risks to human health and the environment from herbicide treatment actions will be kept to a minimum. Standard operating procedures are the management controls and performance standards required for vegetation management treatments. These practices are intended to protect and enhance natural resources that could be affected by future vegetation treatments.

Prevention of Weeds and Early Detection and Rapid Response

Once weed populations become established, infestations can increase and expand in size. Weeds colonize highly disturbed ground and invade plant communities that have been degraded, but are also capable of invading intact communities. Therefore, prevention, early detection, and rapid response are the most cost-effective methods of weed control. Prevention, early detection, and rapid response strategies that reduce the need for vegetative treatments for noxious weeds should lead to a reduction in the number of acres treated using herbicides in the future by reducing or preventing weed establishment.

As stated in the BLM's *Partners Against Weeds: An Action Plan for the BLM*, prevention and public education are the highest priority weed management activities. Priorities are as follows:

- Priority 1: Take actions to prevent or minimize the need for vegetation control when and where feasible, considering the management objectives of the site.
- Priority 2: Use effective nonchemical methods of vegetation control when and where feasible.
- Priority 3: Use herbicides after considering the effectiveness of all potential methods or in combination with other methods or controls.

Prevention is best accomplished by ensuring the seeds and vegetatively reproductive plant parts of new weed species are not introduced into new areas.

The BLM is required to develop a noxious weed risk assessment when it is determined that an action may introduce or spread noxious weeds or when known habitat exists. If the risk is moderate or high, the BLM may modify the project to reduce the likelihood of weeds infesting the site, and to identify control measures to be implemented if weeds do infest the site.

To prevent the spread of weeds, the BLM takes actions to minimize the amount of existing non-target vegetation that is disturbed or destroyed during project or vegetation treatment actions (Table B-1). During project planning, the following steps are taken:

- Incorporate measures to prevent introduction or spread of weeds into project layout, design, alternative evaluation, and project decisions.
- During environmental analysis for projects and maintenance programs, assess weed risks, analyze potential treatment of high-risk sites for weed establishment and spread, and identify prevention practices.
- Determine prevention and maintenance needs, to include the use of herbicides if needed, at the onset of project planning.
- Avoid or remove sources of weed seed and propagules to prevent new weed infestations and the spread of existing weeds.

During project development, weed infestations are prioritized for treatment in project operating areas and along access routes. Weeds present on or near the site are identified, a risk assessment is completed, and weeds are controlled as necessary. Project staging areas are weed free, and travel through weed infested areas is avoided or minimized. Examples of prevention actions to be followed during project activities include cleaning all equipment and clothing before entering the project site; avoiding soil disturbance and the creation of other

soil conditions that promote weed germination and establishment; and using weed-free seed, hay, mulch, gravel, soil, and mineral materials on public lands where there is a state or county program in place.

Conditions that enhance invasive species abundance should be addressed when developing mitigation and prevention plans for activities on public lands. These conditions include excessive disturbance associated with road maintenance, poor grazing management, and high levels of recreational use. If livestock grazing is managed to maintain the vigor of native perennial plants, particularly grasses, the chance of weeds invading rangeland is much less. By carefully managing recreational use and educating the public on the potential impacts of recreational activities on vegetation, the amount of damage to native vegetation and soil can be minimized at high use areas, such as campgrounds and off-highway vehicle (OHV) trails. Early detection in recreation areas is focused on roads and trails, where much of the weed spread occurs.

The BLM participates in the National Early Warning and Rapid Response System for Invasive Plants (Figure B-1). The goal of this System is to minimize the establishment and spread of new invasive species through a coordinated framework of public and private processes by:

- Early detection and reporting of suspected new plant species to appropriate officials;
- Identification and vouchering of submitted specimens by designated specialists;
- Verification of suspected new state, regional, and national plant records;
- Archival of new records in designated regional and plant databases;
- Rapid assessment of confirmed new records; and
- Rapid response to verified new infestations that are determined to be invasive.

Herbicide Treatment Planning

BLM Manual 9011 (*Chemical Pest Control*) outlines the policies, and BLM Handbook H-9011-1 (*Chemical Pest Control*) outlines the procedures, for use of herbicides on public lands. As part of policy, the BLM is required to thoroughly evaluate the need for chemical treatments and their potential for impact on the environment. The BLM is required to use only U.S.

Environmental Protection Agency (USEPA)-registered herbicides that have been properly evaluated under National Environmental Policy Act (NEPA), and to carefully follow label directions and additional BLM requirements.

An operational plan is developed and updated for each herbicide project. The plan includes information on project specifications, key personnel responsibilities, and communication, safety, spill response, and emergency procedures. For application of herbicides not approved for aquatic use, the plan should also specify minimum buffer widths between treatment areas and water bodies. Recommended widths are provided in BLM Handbook H-9011-1 (*Chemical Pest Control*), but actual buffers are site and herbicide active ingredient specific, and are determined based on a scientific analysis of environmental factors, such as climate, topography, vegetation, and weather; timing and method of application; and herbicide risks to humans and non-target species. Table B-2 summarizes important SOPs that should be used when applying herbicides to help protect resources of concern on public lands.

Revegetation

Disturbed areas may be reseeded or planted with desirable vegetation when the native plant community cannot recover and occupy the site sufficiently.

Determining the need for revegetation is an integral part of developing a vegetation treatment. The most important component of the process is determining whether active (seeding/planting) or passive (natural recovery) revegetation is appropriate.

U.S. Department of the Interior policy states, "Natural recovery by native plant species is preferable to planting or seeding, either of natives or non-natives. However, planting or seeding should be used only if necessary to prevent unacceptable erosion or resist competition from non-native invasive species" (620 Departmental Memorandum 3 2004). This policy is reiterated in the USDI *Burned Area Emergency Stabilization and Rehabilitation Manual*, the BLM *Burned Area Emergency Stabilization and Rehabilitation Manual* (BLM H-1742-1), and the *Interagency Burned Area Rehabilitation Guidebook*.

**TABLE B-1
Prevention Measures**

BLM Activity	Prevention Measure
Project Planning	<ul style="list-style-type: none"> • Incorporate prevention measures into project layout and design, alternative evaluation, and project decisions to prevent the introduction or spread of weeds. • Determine prevention and maintenance needs, including the use of herbicides, at the onset of project planning. • Before ground-disturbing activities begin, inventory weed infestations and prioritize areas for treatment in project operating areas and along access routes. • Remove sources of weed seed and propagules to prevent the spread of existing weeds and new weed infestations. • Pre-treat high-risk sites for weed establishment and spread before implementing projects. • Post weed awareness messages and prevention practices at strategic locations such as trailheads, roads, boat launches, and public land kiosks. • Coordinate project activities with nearby herbicide applications to maximize the cost-effectiveness of weed treatments.
Project Development	<ul style="list-style-type: none"> • Minimize soil disturbance to the extent practical, consistent with project objectives. • Avoid creating soil conditions that promote weed germination and establishment. • To prevent weed germination and establishment, retain native vegetation in and around project activity areas and keep soil disturbance to a minimum, consistent with project objectives. • Locate and use weed-free project staging areas. Avoid or minimize all types of travel through weed-infested areas, or restrict travel to periods when the spread of seeds or propagules is least likely. • Prevent the introduction and spread of weeds caused by moving weed-infested sand, gravel, borrow, and fill material. • Inspect material sources on site, and ensure that they are weed-free before use and transport. Treat weed-infested sources to eradicate weed seed and plant parts, and strip and stockpile contaminated material before any use of pit material. • Survey the area where material from treated weed-infested sources is used for at least 3 years after project completion to ensure that any weeds transported to the site are promptly detected and controlled. • Prevent weed establishment by not driving through weed-infested areas. • Inspect and document weed establishment at access roads, cleaning sites, and all disturbed areas; control infestations to prevent weed spread within the project area. • Avoid acquiring water for dust abatement where access to the water is through weed-infested sites. • Identify sites where equipment can be cleaned. Clean equipment before entering public lands. • Clean all equipment before leaving the project site if operating in areas infested with weeds. • Inspect and treat weeds that establish at equipment cleaning sites. • Ensure that rental equipment is free of weed seed. • Inspect, remove, and properly dispose of weed seed and plant parts found on workers' clothing and equipment. Proper disposal entails bagging the seeds and plant parts and incinerating them.
Revegetation	<ul style="list-style-type: none"> • Include weed prevention measures, including project inspection and documentation, in operation and reclamation plans. • Retain bonds until reclamation requirements, including weed treatments, are completed, based on inspection and documentation. • To prevent conditions favoring weed establishment, reestablish vegetation on bare ground caused by project disturbance as soon as possible using either natural recovery or artificial techniques. • Maintain stockpiled, uninfested material in a weed-free condition.

**TABLE B-1 (Cont.)
Prevention Measures**

BLM Activity	Prevention Measure
Revegetation (Cont.)	<ul style="list-style-type: none"> • Revegetate disturbed soil (except travel ways on surfaced projects) in a manner that optimizes plant establishment for each specific project site. For each project, define what constitutes disturbed soil and objectives for plant cover revegetation. Revegetation may include topsoil replacement, planting, seeding, fertilization, liming, and weed-free mulching, as necessary. • Where practical, stockpile weed-seed-free topsoil and replace it on disturbed areas (e.g., road embankments or landings). • Inspect seed and straw mulch to be used for site rehabilitation (for wattles, straw bales, dams, etc.) and certify that they are free of weed seed and propagules. • Inspect and document all limited term ground-disturbing operations in noxious weed infested areas for at least 3 growing seasons following completion of the project. • Use native material where appropriate and feasible. Use certified weed-free or weed-seed-free hay or straw where certified materials are required and/or are reasonably available. • Provide briefings that identify operational practices to reduce weed spread (for example, avoiding known weed infestation areas when locating fire lines). • Evaluate options, including closure, to regulate the flow of traffic on sites where desired vegetation needs to be established. Sites could include road and trail rights-of-way (ROW), and other areas of disturbed soils.

In addition to these handbooks and policy, use of native and non-native seed in revegetation and restoration is guided by BLM Manual 1745 (*Introduction, Transplant, Augmentation and Reestablishment of Fish, Wildlife and Plants*). This manual states that native species shall be used, unless it is determined through the NEPA process that: 1) suitable native species are not available; 2) the natural biological diversity of the proposed management area will not be diminished; 3) exotic and naturalized species can be confined within the proposed management area; 4) analysis of ecological site inventory information indicates that a site will not support reestablishment of a species that historically was part of the natural environment; or 5) resource management objectives cannot be met with native species.

When natural recovery is not feasible, revegetation can be used to stabilize and restore vegetation on disturbed sites and to eliminate or reduce the conditions that favor invasive species. Reseeding or replanting may be required when there is insufficient vegetation or seed stores to naturally revegetate the site.

To ensure revegetation success, there must be adequate soil for root development and moisture storage, which provides moisture to support the new plants. Chances for revegetation success are improved by selecting seed with high purity and percentage germination; selecting native species or cultivars adapted to the area; planting at proper depth, seeding rate, and time of the year for

the region; choosing the appropriate planting method; and, where feasible, removing competing vegetation. Planting mixtures are adapted for the treatment area and site uses. A combination of forbs, perennial grasses, and shrubs is typically used on rangeland sites, while shrubs and trees might be favored for riparian and forestland sites. A mixture of several native plant species and types or functional groups enhances the value of the site for fish and wildlife and improves the health and aesthetic character of the site. Mixtures can better take advantage of variable soil, terrain, and climatic conditions, and thus are more likely to withstand insect infestations and survive adverse climatic conditions.

The USDI BLM Native Seed program was developed in response to Congressional direction to supply native plant material for emergency stabilization and longer-term rehabilitation and restoration efforts. The focus of the program is to increase the number of native plant species for which seed is available and the total amount of native seed available for these efforts. To date, the program has focused on native plant material needs of emergency stabilization and burned area rehabilitation in the Great Basin, but is expanding to focus on areas such as western Oregon, the Colorado Plateau, and most recently the Mojave Desert. The Wildland Fire Management Program funds and manages the effort.

The National Seed Warehouse is a storage facility for the native seed supply. Through a Memorandum of

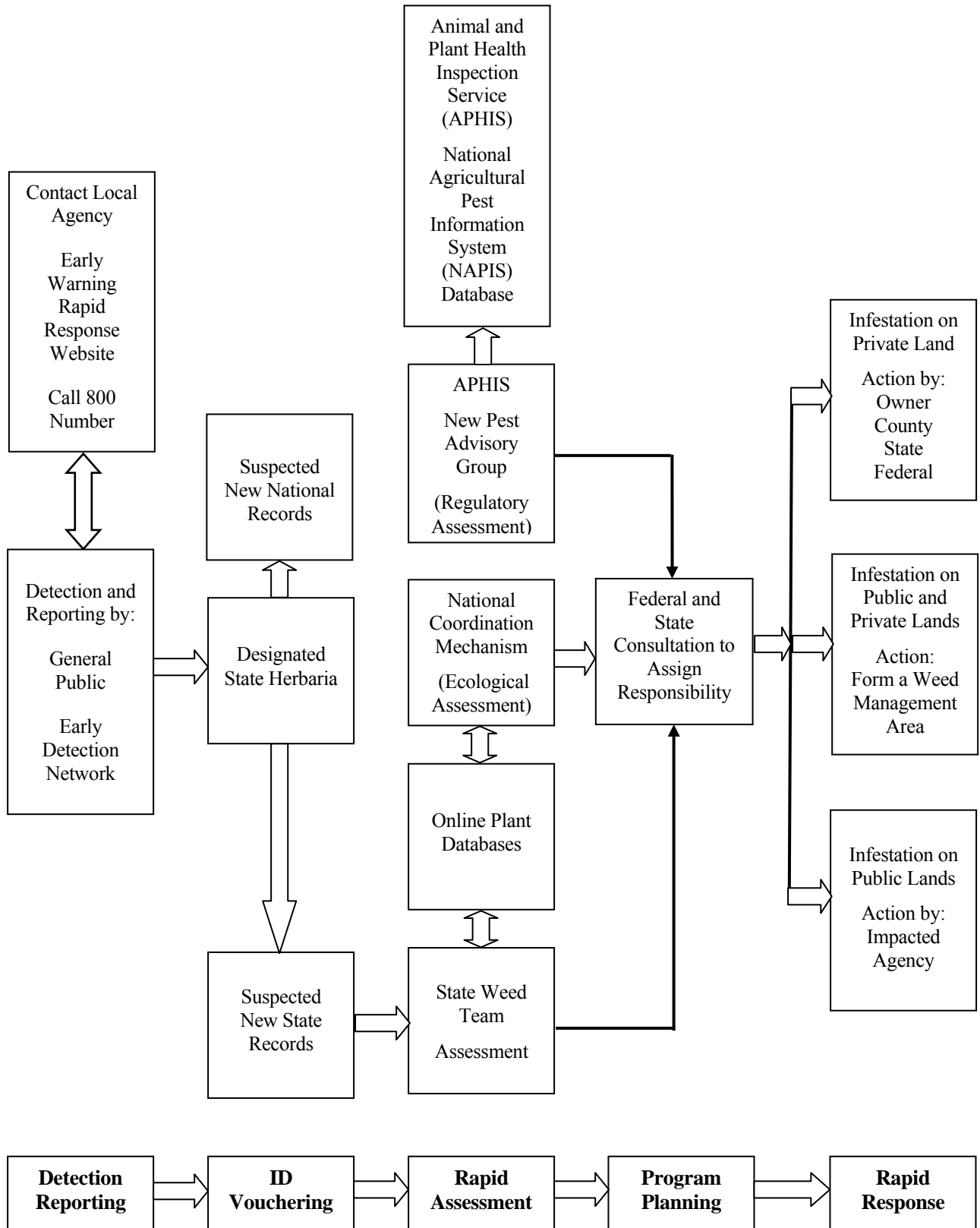


Figure B-1. National Early Warning and Rapid Response System for Invasive Plants.

Understanding with the BLM Idaho State Director, each state (Idaho, Oregon, Nevada, Utah and Colorado) can reserve an annual seed supply for purchase based on a reasonable projection of annual acreage to be stabilized or rehabilitated over a 5-year period.

The Great Basin Restoration Initiative (GBRI) grew out of concern for the health of the Great Basin after the wildfires of 1999. The goal of GBRI is to implement treatments and strategies to maintain functioning ecosystems and to proactively restore degraded ones at strategic locations. Native plants are emphasized in restoration projects where their use is practical and the potential for success is satisfactory. Monitoring is recommended to measure treatment success. To increase the availability of native plants, especially native forbs, the GBRI has established a collaborative native plant project, the Great Basin Native Plant Selection and Increase Project, to increase native plant availability and the technology to successfully establish these plants. This project is supported by funding from the BLM's Native Plant Initiative.

The BLM will follow the following SOPs when revegetating sites:

- Cultivate previously disturbed sites to reduce the amount of weed seeds in the soil seedbank.
 - Revegetate sites once work is completed or soon after a disturbance.
 - When available, use native seed of known origin as labeled by state seed certification programs.
 - Use seed of non-native cultivars and species only when locally adapted native seed is not available or when it is unlikely to establish quickly enough to prevent soil erosion or weed establishment.
 - Use seed that is free of noxious and invasive weeds, as determined and documented by a seed inspection test by a certified seed laboratory.
 - Limit nitrogen fertilizer applications that favor annual grass growth over forb growth in newly seeded areas, especially where downy brome (cheatgrass) and other invasive annuals are establishing.
- Use clean equipment, free of plants and plant parts, on revegetation projects to prevent the inadvertent introduction of weeds into the site.
 - Where important pollinator resources exist, include native nectar and pollen producing plants in the seed mixes used in restoration and reclamation projects. Include non-forage plant species in seed mixes for their pollinator/host relationships as foraging, nesting, or shelter species. Choose native plant species over manipulated cultivars, especially of forbs and shrubs, since natives tend to have more valuable pollen and nectar resources than cultivars. Ensure that bloom times for the flowers of the species chosen match the activity times for the pollinators. Maintain sufficient litter on the soil surfaces of native plant communities for ground-nesting bees.
 - Where feasible, avoid grazing by domestic and wild animals on treatment sites until vegetation is well established. Where total rest from grazing is not feasible, efforts should be made to modify the amount and/or season of grazing to promote vegetation recovery within the treatment area. Reductions in grazing animal numbers, permanent or temporary fencing, changes in grazing rotation, and identification of alternative forage sources are examples of methods that could be used to remove, reduce or modify grazing impacts during vegetation recovery.

Special Precautions

Special Status Species

Federal policies and procedures for protecting federally-listed threatened and endangered plant and animal species, and species proposed for listing, were established by the Endangered Species Act of 1973 and regulations issued pursuant to the Act. The purposes of the Act are to provide mechanisms for the conservation of threatened and endangered species and their habitats. Under the Act, the Secretary of the Interior is required to determine which species are threatened or endangered and to issue recovery plans for those species.

Section 7 of the Act specifically requires all federal agencies to use their authorities in furtherance of the Act to carry out programs for the conservation of listed

species, and to ensure that no agency action is likely to jeopardize the continued existence of a listed species or adversely modify critical habitat. Policy and guidance (BLM Manual 6840; *Special Status Species*) also stipulates that species proposed for listing must be managed at the same level of protection as listed species.

The BLM state directors may designate special status in cooperation with their respective state. These special status species must receive, at a minimum, the same level of protection as federal candidate species. The BLM will also carry out management for the conservation of state-listed species, and state laws protecting these species will apply to all BLM programs and actions to the extent that they are consistent with Federal Land Policy and Management Act (FLPMA) and other federal laws.

The BLM consulted with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) during development of the *Final Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS) as required under Section 7 of the Endangered Species Act. As part of this process, the BLM prepared a formal consultation package that included a description of the program; species listed as threatened or endangered, species proposed for listing, and critical habitats that could be affected by the program; and a Biological Assessment (BA) that evaluated the likely impacts to listed species, species proposed for listing, and critical habitats from the proposed vegetation treatment program. Over 300 species were evaluated in the BA. The BA also provides broad guidance at a programmatic level for actions that will be taken by the BLM to avoid adversely impacting species or critical habitat.

Before any vegetation treatment or ground disturbance occurs, BLM policy requires a survey of the project site for species listed or proposed for listing, or special status species. This is done by a qualified biologist and/or botanist who consults the state and local databases and visits the site at the appropriate season. If a proposed project may affect a proposed or listed species or its critical habitat, the BLM consults with the USFWS and/or NMFS. A project with a “may affect, likely to adversely affect” determination requires formal consultation and receives a Biological Opinion from the USFWS and/or NMFS. A project with a “may affect, not likely to adversely affect” determination requires informal consultation and receives a concurrence letter from USFWS and/or NMFS, unless that action is

implemented under the authorities of the alternative consultation agreement pursuant to counterpart regulations established for *National Fire Plan* projects.

Wilderness Areas

Wilderness areas, which are designated by Congress, are defined by the Wilderness Act of 1964 as places “where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain.” The BLM manages 175 Wilderness Areas encompassing over 7.2 million acres.

Activities allowed in wilderness areas are identified in wilderness management plans prepared by the BLM. The BLM does not ordinarily treat vegetation in wilderness areas, but will control invasive and noxious weeds when they threaten lands outside wilderness area or are spreading within the wilderness and can be controlled without serious adverse impacts to wilderness values.

Management of vegetation in a wilderness area is directed toward retaining the natural character of the environment. Tree and shrub removal is usually not allowed, except for fire, insect, or disease control. Reforestation is generally prohibited except to repair damage caused by humans in areas where natural reforestation is unlikely. Only native species and primitive methods, such as hand planting, are allowed for reforestation.

Tools and equipment may be used for vegetation management when they are the minimum amount necessary for the protection of the wilderness resource. Motorized tools may only be used in special or emergency cases involving the health and safety of wilderness visitors, or the protection of wilderness values.

Habitat manipulation using mechanical or chemical means may be allowed to protect threatened and endangered species and to correct unnatural conditions, such as weed infestations, resulting from human influence.

The BLM also manages a total of 610 Wilderness Study Areas (WSAs) encompassing nearly 14.3 million acres. These are areas that have been determined to have wilderness characteristics worthy of consideration for wilderness designation. The BLM’s primary goals in WSAs are to manage them so as to not impair their wilderness values and to maintain their suitability for

preservation as wilderness until Congress makes a determination on their future.

In WSAs, the BLM must foster a natural distribution of native species of plants and animals by ensuring that ecosystems and processes continue to function naturally.

Cultural Resources

The effects of BLM actions on cultural resources are addressed through compliance with the National Historic Preservation Act, as implemented through a national Programmatic Agreement (*Programmatic Agreement among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Regarding the Manner in Which BLM Will Meet Its Responsibilities Under the National Historic Preservation Act*) and state-specific protocol agreements with State Historic Preservation Officers (SHPOs). The BLM's responsibilities under these authorities are addressed as early in the vegetation management project planning process as possible.

The BLM meets its responsibilities for consultation and government-to-government relationships with Native American tribes by consulting with appropriate tribal representatives prior to taking actions that affect tribal interests. The BLM's tribal consultation policies are detailed in BLM Manual 8120 (*Tribal Consultation Under Cultural Resource Authorities*) and Handbook H-8120-1 (*Guidelines for Conducting Tribal Consultation*). The BLM consulted with Native

American tribes and Alaska Native groups during development of the PEIS. Information gathered on important tribal resources and potential impacts to these resources from herbicide treatments is presented in the analysis of impacts.

When conducting vegetation treatments, field office personnel consult with relevant parties (including tribes, native groups, and SHPOs), assess the potential of the proposed treatment to affect cultural and subsistence resources, and devise inventory and protection strategies suitable to the types of resources present and the potential impacts to them.

Herbicide treatments, for example, are unlikely to affect buried cultural resources, but might have a negative effect on traditional cultural properties comprised of plant foods or materials significant to local tribes and native groups. These treatments require inventory and protection strategies that reflect the different potential of each treatment to affect various types of cultural resources.

Impacts to significant cultural resources are avoided through project redesign or are mitigated through data recovery, recordation, monitoring, or other appropriate measures. When cultural resources are discovered during vegetation treatment, appropriate actions are taken to protect these resources.

TABLE B-2
Standard Operating Procedures for Applying Herbicides

Resource Element	Standard Operating Procedure
Guidance Documents	BLM Handbook H-9011-1 (<i>Chemical Pest Control</i>); and manuals 1112 (<i>Safety</i>), 9011 (<i>Chemical Pest Control</i>), 9012 (<i>Expenditure of Rangeland Insect Pest Control Funds</i>), 9015 (<i>Integrated Weed Management</i>), and 9220 (<i>Integrated Pest Management</i>).
General	<ul style="list-style-type: none"> • Prepare operational and spill contingency plan in advance of treatment. • Conduct a pretreatment survey before applying herbicides. • Select herbicide that is least damaging to the environment while providing the desired results. • Select herbicide products carefully to minimize additional impacts from degradates, adjuvants, inert ingredients, and tank mixtures. • Apply the least amount of herbicide needed to achieve the desired result. • Follow herbicide product label for use and storage. • Have licensed applicators apply herbicides. • Use only USEPA-approved herbicides and follow product label directions and “advisory” statements. • Review, understand, and conform to the “Environmental Hazards” section on the herbicide product label. This section warns of known pesticide risks to the environment and provides practical ways to avoid harm to organisms or to the environment. • Consider surrounding land use before assigning aerial spraying as a treatment method and avoid aerial spraying near agricultural or densely populated areas. • Minimize the size of application area, when feasible. • Comply with herbicide-free buffer zones to ensure that drift will not affect crops or nearby residents/landowners. • Post treated areas and specify reentry or rest times, if appropriate. • Notify adjacent landowners prior to treatment. • Keep a copy of Material Safety Data Sheets (MSDSs) at work sites. MSDSs are available for review at http://www.cdms.net/. • Keep records of each application, including the active ingredient, formulation, application rate, date, time, and location. • Avoid accidental direct spray and spill conditions to minimize risks to resources. • Consider surrounding land uses before aerial spraying. • Avoid aerial spraying during periods of adverse weather conditions (snow or rain imminent, fog, or air turbulence). • Make helicopter applications at a target airspeed of 40 to 50 miles per hour (mph), and at about 30 to 45 feet above ground. • Take precautions to minimize drift by not applying herbicides when winds exceed >10 mph (>6 mph for aerial applications), or a serious rainfall event is imminent. • Use drift control agents and low volatile formulations. • Conduct pre-treatment surveys for sensitive habitat and special status species within or adjacent to proposed treatment areas. • Consider site characteristics, environmental conditions, and application equipment in order to minimize damage to non-target vegetation. • Use drift reduction agents, as appropriate, to reduce the drift hazard to non-target species. • Turn off applied treatments at the completion of spray runs and during turns to start another spray run. • Refer to the herbicide product label when planning revegetation to ensure that subsequent vegetation would not be injured following application of the herbicide. • Clean OHVs to remove seeds.

**TABLE B-2 (Cont.)
Standard Operating Procedures for Applying Pesticides**

Resource Element	Standard Operating Procedure
<p>Air Quality See Manual 7000 (<i>Soil, Water, and Air Management</i>)</p>	<ul style="list-style-type: none"> • Consider the effects of wind, humidity, temperature inversions, and heavy rainfall on herbicide effectiveness and risks. • Apply herbicides in favorable weather conditions to minimize drift. For example, do not treat when winds exceed 10 mph (>6 mph for aerial applications) or rainfall is imminent. • Use drift reduction agents, as appropriate, to reduce the drift hazard. • Select proper application equipment (e.g., spray equipment that produces 200- to 800-micron diameter droplets [spray droplets of 100 microns and less are most prone to drift]). • Select proper application methods (e.g., set maximum spray heights, use appropriate buffer distances between spray sites and non-target resources).
<p>Soil See Manual 7000 (<i>Soil, Water, and Air Management</i>)</p>	<ul style="list-style-type: none"> • Minimize treatments in areas where herbicide runoff is likely, such as steep slopes when heavy rainfall is expected. • Minimize use of herbicides that have high soil mobility, particularly in areas where soil properties increase the potential for mobility. • Do not apply granular herbicides on slopes of more than 15% where there is the possibility of runoff carrying the granules into non-target areas.
<p>Water Resources See Manual 7000 (<i>Soil, Water, and Air Management</i>)</p>	<ul style="list-style-type: none"> • Consider climate, soil type, slope, and vegetation type when developing herbicide treatment programs. • Select herbicide products to minimize impacts to water. This is especially important for application scenarios that involve risk from active ingredients in a particular herbicide, as predicted by risk assessments. • Use local historical weather data to choose the month of treatment. Considering the phenology of the target species, schedule treatments based on the condition of the water body and existing water quality conditions. • Plan to treat between weather fronts (calms) and at appropriate time of day to avoid high winds that increase water movements, and to avoid potential stormwater runoff and water turbidity. • Review hydrogeologic maps of proposed treatment areas. Note depths to groundwater and areas of shallow groundwater and areas of surface water and groundwater interaction. Minimize treating areas with high risk for groundwater contamination. • Conduct mixing and loading operations in an area where an accidental spill would not contaminate an aquatic body. • Do not rinse spray tanks in or near water bodies. Do not broadcast pellets where there is danger of contaminating water supplies. • Maintain buffers between treatment areas and water bodies. Buffer widths should be developed based on herbicide- and site-specific criteria to minimize impacts to water bodies. • Minimize the potential effects to surface water quality and quantity by stabilizing terrestrial areas as quickly as possible following treatment.
<p>Wetlands and Riparian Areas</p>	<ul style="list-style-type: none"> • Use a selective herbicide and a wick or backpack sprayer. • Use appropriate herbicide-free buffer zones for herbicides not labeled for aquatic use based on risk assessment guidance, with minimum widths of 100 feet for aerial, 25 feet for vehicle, and 10 feet for hand spray applications.
<p>Vegetation See Handbook H-4410-1 (<i>National Range Handbook</i>), and manuals 5000 (<i>Forest Management</i>) and 9015 (<i>Integrated Weed Management</i>)</p>	<ul style="list-style-type: none"> • Refer to the herbicide label when planning revegetation to ensure that subsequent vegetation would not be injured following application of the herbicide. • Use native or sterile species for revegetation and restoration projects to compete with invasive species until desired vegetation establishes. • Use weed-free feed for horses and pack animals. Use weed-free straw and mulch for revegetation and other activities. • Identify and implement any temporary domestic livestock grazing and/or supplemental feeding restrictions needed to enhance desirable vegetation recovery following treatment. Consider adjustments in the existing grazing permit, to maintain desirable vegetation on the treatment site.

**TABLE B-2 (Cont.)
Standard Operating Procedures for Applying Pesticides**

Resource Element	Standard Operating Procedure
<p>Pollinators</p>	<ul style="list-style-type: none"> • Complete vegetation treatments seasonally before pollinator foraging plants bloom. • Time vegetation treatments to take place when foraging pollinators are least active both seasonally and daily. • Design vegetation treatment projects so that nectar and pollen sources for important pollinators and resources are treated in patches rather than in one single treatment. • Minimize herbicide application rates. Use typical rather than maximum rates where there are important pollinator resources. • Maintain herbicide free buffer zones around patches of important pollinator nectar and pollen sources. • Maintain herbicide free buffer zones around patches of important pollinator nesting habitat and hibernacula. • Make special note of pollinators that have single host plant species, and minimize herbicide spraying on those plants (if invasive species) and in their habitats.
<p>Fish and Other Aquatic Organisms</p> <p>See manuals 6500 (<i>Wildlife and Fisheries Management</i>) and 6780 (<i>Habitat Management Plans</i>)</p>	<ul style="list-style-type: none"> • Use appropriate buffer zones based on label and risk assessment guidance. • Minimize treatments near fish-bearing water bodies during periods when fish are in life stages most sensitive to the herbicide(s) used, and use spot rather than broadcast or aerial treatments. • Use appropriate application equipment/method near water bodies if the potential for off-site drift exists. • For treatment of aquatic vegetation, 1) treat only that portion of the aquatic system necessary to achieve acceptable vegetation management, 2) use the appropriate application method to minimize the potential for injury to desirable vegetation and aquatic organisms, and 3) follow water use restrictions presented on the herbicide label.
<p>Wildlife</p> <p>See manuals 6500 (<i>Wildlife and Fisheries Management</i>) and 6780 (<i>Habitat Management Plans</i>)</p>	<ul style="list-style-type: none"> • Use herbicides of low toxicity to wildlife, where feasible. • Use spot applications or low-boom broadcast operations where possible to limit the probability of contaminating non-target food and water sources, especially non-target vegetation over areas larger than the treatment area. • Use timing restrictions (e.g., do not treat during critical wildlife breeding or staging periods) to minimize impacts to wildlife.
<p>Threatened, Endangered, and Sensitive Species</p> <p>See Manual 6840 (<i>Special Status Species</i>)</p>	<ul style="list-style-type: none"> • Survey for special status species before treating an area. Consider effects to special status species when designing herbicide treatment programs. • Use a selective herbicide and a wick or backpack sprayer to minimize risks to special status plants. • Avoid treating vegetation during time-sensitive periods (e.g., nesting and migration, sensitive life stages) for special status species in area to be treated.
<p>Livestock</p> <p>See Handbook H-4120-1 (<i>Grazing Management</i>)</p>	<ul style="list-style-type: none"> • Whenever possible and whenever needed, schedule treatments when livestock are not present in the treatment area. Design treatments to take advantage of normal livestock grazing rest periods, when possible. • As directed by the herbicide product label, remove livestock from treatment sites prior to herbicide application, where applicable. • Use herbicides of low toxicity to livestock, where feasible. • Take into account the different types of application equipment and methods, where possible, to reduce the probability of contamination of non-target food and water sources. • Avoid use of diquat in riparian pasture while pasture is being used by livestock. • Notify permittees of the herbicide treatment project to improve coordination and avoid potential conflicts and safety concerns during implementation of the treatment. • Notify permittees of livestock grazing, feeding, or slaughter restrictions, if necessary. • Provide alternative forage sites for livestock, if possible.

**TABLE B-2 (Cont.)
Standard Operating Procedures for Applying Pesticides**

Resource Element	Standard Operating Procedure
<p>Wild Horses and Burros</p>	<ul style="list-style-type: none"> • Minimize using herbicides in areas grazed by wild horses and burros. • Use herbicides of low toxicity to wild horses and burros, where feasible. • Remove wild horses and burros from identified treatment areas prior to herbicide application, in accordance with herbicide product label directions for livestock. • Take into account the different types of application equipment and methods, where possible, to reduce the probability of contaminating non-target food and water sources.
<p>Cultural Resources and Paleontological Resources</p> <p>See handbooks H-8120-1 (<i>Guidelines for Conducting Tribal Consultation</i>) and H-8270-1 (<i>General Procedural Guidance for Paleontological Resource Management</i>), and manuals 8100 (<i>The Foundations for Managing Cultural Resources</i>), 8120 (<i>Tribal Consultation Under Cultural Resource Authorities</i>), and 8270 (<i>Paleontological Resource Management</i>)</p> <p>See also: <i>Programmatic Agreement among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Regarding the Manner in Which BLM Will Meet Its Responsibilities Under the National Historic Preservation Act</i></p>	<ul style="list-style-type: none"> • Follow standard procedures for compliance with Section 106 of the National Historic Preservation Act as implemented through the <i>Programmatic Agreement among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Regarding the Manner in Which BLM Will Meet Its Responsibilities Under the National Historic Preservation Act</i> and state protocols or 36 Code of Federal Regulations Part 800, including necessary consultations with State Historic Preservation Officers and interested tribes. • Follow BLM Handbook H-8270-1 (<i>General Procedural Guidance for Paleontological Resource Management</i>) to determine known Condition 1 and Condition 2 paleontological areas, or collect information through inventory to establish Condition 1 and Condition 2 areas, determine resource types at risk from the proposed treatment, and develop appropriate measures to minimize or mitigate adverse impacts. • Consult with tribes to locate any areas of vegetation that are of significance to the tribe and that might be affected by herbicide treatments. • Work with tribes to minimize impacts to these resources. • Follow guidance under Human Health and Safety in the PEIS in areas that may be visited by Native peoples after treatments.
<p>Visual Resources</p> <p>See handbooks H-8410-1 (<i>Visual Resource Inventory</i>) and H-8431-1 (<i>Visual Resource Contrast Rating</i>), and manual 8400 (<i>Visual Resource Management</i>)</p>	<ul style="list-style-type: none"> • Minimize the use of broadcast foliar applications in sensitive watersheds to avoid creating large areas of browned vegetation. • Consider the surrounding land use before assigning aerial spraying as an application method. • Minimize off-site drift and mobility of herbicides (e.g., do not treat when winds exceed 10 mph; minimize treatment in areas where herbicide runoff is likely; establish appropriate buffer widths between treatment areas and residences) to contain visual changes to the intended treatment area. • If the area is a Class I or II visual resource, ensure that the change to the characteristic landscape is low and does not attract attention (Class I), or if seen, does not attract the attention of the casual viewer (Class II). • Lessen visual impacts by: 1) designing projects to blend in with topographic forms; 2) leaving some low-growing trees or planting some low-growing tree seedlings adjacent to the treatment area to screen short-term effects; and 3) revegetating the site following treatment. • When restoring treated areas, design activities to repeat the form, line, color, and texture of the natural landscape character conditions to meet established Visual Resource Management (VRM) objectives.

**TABLE B-2 (Cont.)
Standard Operating Procedures for Applying Pesticides**

Resource Element	Standard Operating Procedure
<p>Wilderness and Other Special Areas</p> <p>See handbooks H-8550-1 (<i>Management of Wilderness Study Areas (WSAs)</i>), and H-8560-1 (<i>Management of Designated Wilderness Study Areas</i>), and Manual 8351 (<i>Wild and Scenic Rivers</i>)</p>	<ul style="list-style-type: none"> • Encourage backcountry pack and saddle stock users to feed their livestock only weed-free feed for several days before entering a wilderness area. • Encourage stock users to tie and/or hold stock in such a way as to minimize soil disturbance and loss of native vegetation. • Revegetate disturbed sites with native species if there is no reasonable expectation of natural regeneration. • Provide educational materials at trailheads and other wilderness entry points to educate the public on the need to prevent the spread of weeds. • Use the “minimum tool” to treat noxious and invasive vegetation, relying primarily on the use of ground-based tools, including backpack pumps, hand sprayers, and pumps mounted on pack and saddle stock. • Use chemicals only when they are the minimum method necessary to control weeds that are spreading within the wilderness or threaten lands outside the wilderness. • Give preference to herbicides that have the least impact on non-target species and the wilderness environment. • Implement herbicide treatments during periods of low human use, where feasible. • Address wilderness and special areas in management plans. • Maintain adequate buffers for Wild and Scenic Rivers (¼ mile on either side of river, ½ mile in Alaska).
<p>Recreation</p> <p>See Handbook H-1601-1 (<i>Land Use Planning Handbook, Appendix C</i>)</p>	<ul style="list-style-type: none"> • Schedule treatments to avoid peak recreational use times, while taking into account the optimum management period for the targeted species. • Notify the public of treatment methods, hazards, times, and nearby alternative recreation areas. • Adhere to entry restrictions identified on the herbicide product label for public and worker access. • Post signs noting exclusion areas and the duration of exclusion, if necessary. • Use herbicides during periods of low human use, where feasible.
<p>Social and Economic Values</p>	<ul style="list-style-type: none"> • Consider surrounding land use before selecting aerial spraying as a method, and avoid aerial spraying near agricultural or densely-populated areas. • Post treated areas and specify reentry or rest times, if appropriate. • Notify grazing permittees of livestock feeding restrictions in treated areas, if necessary, as per herbicide product label instructions. • Notify the public of the project to improve coordination and avoid potential conflicts and safety concerns during implementation of the treatment. • Control public access until potential treatment hazards no longer exist, per herbicide product label instructions. • Observe restricted entry intervals specified by the herbicide product label. • Notify local emergency personnel of proposed treatments. • Use spot applications or low-boom broadcast applications where possible to limit the probability of contaminating non-target food and water sources, especially vegetation over areas larger than the treatment area. • Consult with Native American tribes and Alaska Native groups to locate any areas of vegetation that are of significance to the tribes and Native groups and that might be affected by herbicide treatments. • To the degree possible within the law, hire local contractors and workers to assist with herbicide application projects and purchase materials and supplies, including chemicals, for herbicide treatment projects through local suppliers. • To minimize fears based on lack of information, provide public educational information on the need for vegetation treatments and the use of herbicides in an integrated pest management program for projects proposing local use of herbicides.

**TABLE B-2 (Cont.)
Standard Operating Procedures for Applying Pesticides**

Resource Element	Standard Operating Procedure
Rights-of-way	<ul style="list-style-type: none"> • Coordinate vegetation management activities where joint or multiple use of a ROW exists. • Notify other public land users within or adjacent to the ROW proposed for treatment. • Use only herbicides that are approved for use in ROW areas.
Human Health and Safety	<ul style="list-style-type: none"> • Establish a buffer between treatment areas and human residences based on guidance given in the HHRA, with a minimum buffer of ¼ mile for aerial applications and 100 feet for ground applications, unless a written waiver is granted. • Use protective equipment as directed by the herbicide product label. • Post treated areas with appropriate signs at common public access areas. • Observe restricted entry intervals specified by the herbicide product label. • Provide public notification in newspapers or other media where the potential exists for public exposure. • Have a copy of MSDSs at work site. • Notify local emergency personnel of proposed treatments. • Contain and clean up spills and request help as needed. • Secure containers during transport. • Follow label directions for use and storage. • Dispose of unwanted herbicides promptly and correctly.

Appendix B
Herbicides Approved for Use on
Public Lands in California

**Appendix B
Herbicides Approved for Use on Public Lands in California**

Active Ingredient	States based on current EIS/ROD & Injunctions	Trade Name	Manufacturer	EPA Registration No.	CA Registration No. *
Bromacil	AZ, CA, CO, ID, MT, ND, NM, NV, OK, SD, UT, WA, WY	Hyvar X	DuPont	352-287	Y
Bromacil + Diuron	AZ, CA, CO, ID, MT, ND, NM, NV, OK, SD, UT, WA, WY	Kroval I DF	DuPont	352-505	Y
2,4-D	AZ, CA, CO, ID, MT, ND, NM, NV, OK, East-OR, West-OR, SD, UT, WA, WY	2,4-D Amine 4	Albaugh, Inc./Agri Star	42750-19	Y
		2,4-D LV 4	Albaugh, Inc./Agri Star	42750-15	Y
		Solve 2,4-D	Albaugh, Inc./Agri Star	42750-22	Y
		Aqua-Kleen	Cerexagri, Inc.	228-378-4581	Y
		Aqua-Kleen	NuFarm Americas Inc.	71368-1	Y
		Weedar 64	NuFarm Americas Inc.	71368-1	Y
		Weedone LV-4 Solventless	NuFarm Americas Inc.	71368-14	Y
		Weedone LV-6	NuFarm Americas Inc.	71368-11	Y
		Clean Crop Amine 4	UAP-Platte Chem. Co.	34704-5 CA	Y
		Savage DF	UAP-Platte Chem. Co.	34704-606	Y
Dicamba	AZ, CA, CO, ID, MT, ND, NM, NV, OK, East-OR, West-OR, SD, UT, WA, WY	Clarity	BASF Ag. Products	7969-137	Y
		Vanquish	Syngenta	100-884	Y
		Weedmaster	BASF Ag. Products	7969-133	Y
		Veteran 720	Nufarm Americas Inc	228-295	Y
		Karmex DF	Griffin Company	1812-362	Y
		Direx 80DF	Griffin Company	1812-362	Y
		Direx 4L	Griffin Company	1812-257	Y
		Direx 4L-CA	Griffin Company	1812-257	Y
Glyphosate	AZ, CA, CO, ID, MT, ND, NM, NV, OK, East-OR, West-OR, SD, UT, WA, WY	Aqua Star	Albaugh, Inc./Agri Star	42750-59	Y
		Forest Star	Albaugh, Inc./Agri Star	42570-61	Y
		Gly Star Original	Albaugh, Inc./Agri Star	42750-60	Y
		Gly Star Plus	Albaugh, Inc./Agri Star	42750-61	Y
		Gly Star Pro	Albaugh, Inc./Agri Star	42750-61	Y
		Glyfos	Cheminova	4787-31	Y
		Glyfos PRO	Cheminova	67760-57	Y
		Glyfos Aquatic	Cheminova	4787-34	Y
		Accord SP	Dow AgroSciences	62719-322	Y
		Glypro	Dow AgroSciences	62719-324	Y

Herbicides Approved for Use on Public Lands in California

Active Ingredient	States based on current EIS/ROD & Injunctions	Trade Name	Manufacturer	EPA Registration No.	CA Registration No. *
Glyphosate (Cont.)	AZ, CA, CO, ID, MT, ND, NM, NV, OK, East-OR, West-OR, SD, UT, WA, WY	Glypro Plus	Dow AgroSciences	62719-322	Y
		Rodeo	Dow AgroSciences	62719-324	Y
		DuPont Glyphosate	DuPont	352-607	Y
		DuPont Glyphosate VMF	DuPont	352-609	Y
		Aquamaster	Monsanto	524-343	Y
		Roundup Original	Monsanto	524-445	Y
		Roundup Original II	Monsanto	524-454	Y
		Roundup Original II CA	Monsanto	524-475	Y
		Honcho	Monsanto	524-445	Y
		GlyphoMate 41	PBI Gordon Corp.	2217-847	Y
		Velpar L	DuPont	352-392	Y
		Velpar DF	DuPont	352-581	Y
		Pronone MG	Pro-Serve	33560-21	Y
		Pronone 10G	Pro-Serve	33560-21	Y
		Pronone 25G	Pro-Serve	33560-45	Y
Pronone Power Pellet	Pro-Serve	33560-41	Y		
Tebuthiuron	AZ, CA, CO, ID, MT, ND, NM, NV, OK, SD, UT, WA, WY	Spike 20P	Dow AgroSciences	62719-121	Y
		Spike 80W	Dow AgroSciences	62719-107	Y
		Spike 40P	Dow Agro Sciences	62719-122	Y
		Spike 80DF	Dow AgroSciences	62719-107	Y
Tebuthiuron+ Diuron	AZ, CA, CO, ID, MT, ND, NM, NV, OK, SD, UT, WA, WY	SpraKil SK-13 Granular	SSI Maxim Co., Inc.	34913-15	Y
		SpraKil SK-26 Granular	SSI Maxim Co., Inc	34913-16	Y
Triclopyr	AZ, CA, CO, ID, MT, ND, NM, NV, OK, SD, UT, WA, WY	Garlon 3A	Dow AgroSciences	62719-37	Y
		Garlon 4	Dow AgroSciences	62719-40	Y
		Remedy	Dow AgroSciences	62719-70	Y
		Pathfinder II	Dow AgroSciences	62719-176	Y
Triclopyr + 2,4-D	AZ, CA, CO, ID, MT, ND, NM, NV, OK, SD, UT, WA, WY	Crossbow	Dow AgroSciences	62719-260	Y
<p>Notes: 1. This is the approved under the 17 states EIS (2007). 2. If used in areas other than California, refer to the California Vegetation Management FEIS and ROD Risk Assessment, 1988.</p> <p>*Just because an herbicide has a federal registration, it may or may not be registered for use in California. This column identifies those formulations for which there is a California registration. For BLM purposes, it is taken one step further; a particular formulated herbicide may have a California and federal registration and still not be available for use on BLM-administered lands because the active ingredient is not approved according to the California Vegetation Management Environmental Impact Statement Record of Decision (2007) and may require tiering to the appropriate EIS.</p>					

Adjuvants Approved for Use on Public Lands in California

Adjuvant Class	Adjuvant Type	Trade Name	Manufacturer	Comments
Surfactant	Non-ionic	Spec 90/10	Helena	
		Optima	Helena	CA Reg. No. 5905-50075-AA
		Induce	Setre (Helena)	CA Reg. No. 5905-50066-AA
		Activator 90	Loveland	CA Reg. No. 34704-50034-AA
		LI-700	Loveland	CA Reg. No. 36208-50022, WA Reg. No. AW36208-70004
		Spreader 90	Loveland	WA Reg. No. 34704-05002-AA
		UAP Surfactant 80/20	Loveland	
		X-77	Loveland	CA Reg. No. 36208-50023
		Cornbelt Premier 90	Van Diest Supply Co.	
		Spray Activator 85	Van Diest Supply Co.	
		R-11	Wilbur-Ellis	CA Reg. No. 2935-50142
		R-900	Wilbur-Ellis	
		Super Spread 90	Wilbur-Ellis	WA Reg. No. AW-2935-70016
		Super Spread 7000	Wilbur-Ellis	CA Reg. No. 2935-50170 WA Reg. No. AW-2935-0002
	Spreader/Sticker	Cohere	Helena	CA Reg. No. 5905-50083-AA
		R-56	Wilbur-Ellis	CA Reg. No. 2935-50144
		Bond	Loveland	CA Reg. No. 36208-50005
		Dyne-Amic	Helena	CA Reg. No. 5095-50071-AA
		Kinetic	Setre (Helena)	CA Reg. No. 5905-50087-AA
		Phase	Loveland	CA Reg. No. 34704-50037-AA
		Silwet L-77	Loveland	CA Reg. No. 36208-50025
		Sylgard 309	Wilbur-Ellis	CA Reg. No. 2935-50161
Syl-Tac	Wilbur-Ellis	CA Reg. No. 2935-50167		

Adjuvants Approved for Use on Public Lands in California

Adjuvant Class	Adjuvant Type	Trade Name	Manufacturer	Comments
Oil-based	Crop Oil Concentrate	Crop Oil Concentrate	Helena	CA Reg. No. 5905-50085-AA
		Crop Oil Concentrate	Loveland	
		Herbimax	Loveland	CA Reg. No. 34704-50032-AA, WA Reg. No. 34704-04006
		R.O.C. Rigo Oil Conc.	Wilbur-Ellis	CA Reg. No. 2935-50098
	Methylated Seed Oil	Methylated Spray Oil Conc.	Helena	
		MSO Concentrate	Loveland	CA Reg. No. 34704-50029-AA WA Reg. No. 34704-04009
		Hasten	Wilbur-Ellis	CA Reg. No. 2935-50160 WA Reg. No. 2935-02004
		Super Spread MSO	Wilbur-Ellis	
	Vegetable Oil	Amigo	Loveland	CA Reg. No. 34704-50028-AA WA Reg. No. 34704-04002
		Competitor	Wilbur-Ellis	CA Reg. No. 2935-50173 WA Reg. No. AW-2935-04001
Fertilizer-based	Nitrogen-based	Quest	Setre (Helena)	CA Reg. No. 5905-50076-AA
		Dispatch	Loveland	
		Dispatch 111	Loveland	
		Dispatch 2N	Loveland	
		Dispatch AMS	Loveland	
		Bronc	Wilbur-Ellis	
		Bronc Max	Wilbur-Ellis	
		Bronc Max EDT	Wilbur-Ellis	
		Bronc Plus Dry EDT	Wilbur-Ellis	WA Reg. No.2935-03002
		Cayuse Plus	Wilbur-Ellis	CA Reg. No. 2935-50171

Adjuvants Approved for Use on Public Lands in California

Adjuvant Class	Adjuvant Type	Trade Name	Manufacturer	Comments
Special Purpose or Utility	Buffering Agent	Buffers P.S.	Helena	CA Reg. No. 5905-50062-ZA
		Tri-Fol	Wilbur-Ellis	CA Reg. No. 2935-50152
	Colorants	Signal	Precision	
		Hi-Light	Becker-Underwood	
	Compatibility/ Suspension Agent	Hi-Light WSP	Becker-Underwood	
		E Z MIX	Loveland	CA Reg. No. 36208-50006
		Support	Loveland	WA Reg. No. 34704-04011
	Deposition Aid	Blendex VHC	Setre (Helena)	
		ProMate Impel	Helena	
		Pointblank	Helena	CA Reg. No. 52467-50008-AA-5905
		Intac Plus	Loveland	
		Liberate	Loveland	CA Reg. No. 34704-50030-AA WA Reg. No. 34704-04008
		Weather Gard	Loveland	CA Reg. No. 34704-50042-AA
		Bivert	Wilbur-Ellis	CA Reg. No. 2935-50163
		EDT Concentrate	Wilbur-Ellis	
	Defoaming Agent	Sta Put	Setre (Helena)	CA Reg. No. 5905-50068-AA
		No Foam	Wilbur-Ellis	CA Reg. No. 2935-50136
		Buster Foam	Setre (Helena)	CA Reg. No. 5905-50072-AA
	Diluent/Deposition Agent	Cornbelt Defoamer	Van Diest Supply Co.	
		Improved JLB Oil Plus	Brewer International	
	Foam Marker	Align	Helena	
		R-160	Wilbur-Ellis	
	Invert Emulsion Agent	Redi-vert II	Wilbur-Ellis	CA Reg. No. 2935-50168
	Tank Cleaner	Wipe Out	Helena	
		Kutter	Wilbur-Ellis	
		Neutral-Clean	Wilbur-Ellis	
		Cornbelt Tank-Aid	Van Diest Supply Co.	
	Water Conditioning	Blendmaster	Loveland	
Choice		Loveland	CA Reg. No. 34704-50027-AA WA Reg. No. 34704-04004	
Choice Xtra		Loveland		
Choice Weather Master		Loveland	CA Reg. No. 34704-50038-AA	

Appendix C
Example California BLM Pesticide Use Proposal

Appendix C Example California BLM Pesticide Use Proposal

PROPOSAL NUMBER:
REFERENCE NUMBER:

FIELD OFFICE _____ COUNTY _____

LOCATION:

DURATION OF PROPOSAL:

I. PESTICIDE APPLICATION (including mixtures and surfactants):

	Trade Names	Common Names	EPA Registration No.	Manufacturer	Formulations (Liquid or Granular)	Method of Application
1						
2						
3						

MAXIMUM RATE OF APPLICATION:	
USE UNIT ON LABEL:	POUNDS ACID EQUIVALENT/ACRE:
1.	1.
2.	2.

INTENDED RATE OF APPLICATION:

APPLICATION DATES:

NUMBER OF APPLICATIONS:

II. PEST (List specific pest(s) and reason(s) for application):

III. MAJOR DESIRED PLANT SPECIES PRESENT:

IV. TREATMENT SITE: (Describe land type or use, size, stage of growth of target species, slope and soil type).

Example California BLM Pesticide Use Proposal

ESTIMATED ACRES

V. SENSITIVE ASPECTS AND PRECAUTIONS: (Describe sensitive areas [e.g., marsh, endangered, threatened, candidate and sensitive species habitat] and distance to treatment site. List measures taken to avoid impact to sensitive areas).

VI. NON-TARGET VEGETATION: (Describe the impacts, cumulative impacts, and mitigations to non-target vegetation that will be lost as a result of this chemical application).

VII. INTEGRATED PEST MANAGEMENT: (Describe how this chemical application fits into your overall integrated pest management program for the treatment area.)

Originator: _____
Company Name: _____
Phone: _____

Date: _____

Certified Pesticide Applicator:

(Signature)

Date: _____

Field Office Pesticide/Noxious Weed Coordinator

(Signature)

Date: _____

APPROVALS:

Date: _____

BLM Assistant Field Manager
Renewable Resources
(Signature)

APPROVALS (State Office Use Only):

Date: _____

BLM State Pesticide Coordinator
(Signature)

Date: _____

Deputy State Director, Natural Resources,
Lands and Planning
(Signature)

CONCUR OR APPROVED
 NOT CONCUR OR DISAPPROVED
 CONCUR OR APPROVED WITH MODIFICATIONS

Appendix D
Example California BLM Pesticide
Application Records Form

Appendix D
Example California BLM Pesticide Application Records Form

1. General Information

- a. Project Name: _____
- b. Operator: _____
- c. Pesticide Use Proposal Number: _____
- d. Reference Number: _____

2. Name of Applicator or Employee(s) Applying the Pesticide:

3. Date(s) of Application: _____
(MONTH, DAY, YEAR)

4. Time Frame of Application: _____

5. Location of Application: T _____, R _____, and Sec. _____
County _____

6. Type of Equipment Used: _____

7. Pesticide(s) Used: _____

Company or Manufacturer's Name: _____

Trade Name: _____

Type of Formulation: Liquid ___/ Granular ___/

8. Rate of Application Used:

- a. Active Ingredient per Acre _____
- b. Volume of Formulation per Acre _____

9. Treatment Area

- a. Actual Area Treated: _____
- b. Total Project Area: _____

10. Primary Pest(s) Involved: _____

11. Stage of Pest Development: _____

12. Site Treated: ___/ Native Vegetation ___/ Seeded Vegetation ___/ Other

13. Weather Conditions:

- a. Wind velocity: _____
- b. Wind direction _____
- c. Temperature _____

14. Monitoring Record (IF INSUFFICIENT SPACE-CONTINUE ON BACK):

This record is required and must be completed, except for monitoring within 24 hours after completion of application of pesticides. This record must be maintained for minimum of 10 years.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE
STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION
FOR THE *IVANPAH SOLAR ELECTRIC
GENERATING SYSTEM*

DOCKET NO. 07-AFC-5

PROOF OF SERVICE
(Revised 7/14/08)

INSTRUCTIONS: All parties shall 1) send an original signed document plus 12 copies OR 2) mail one original signed copy AND e-mail the document to the web address below, AND 3) all parties shall also send a printed OR electronic copy of the documents that shall include a proof of service declaration to each of the individuals on the proof of service:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 07-AFC-5
1516 Ninth Street, MS-14
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doCKET@energy.state.ca.us

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DECLARATION OF SERVICE

I, Mary Finn, declare that on August 7, 2008 I deposited copies of the attached Data Response, Set 1F in the United States mail at Sacramento, California with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

Transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, 1210. All electronic pages were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.



Mary Finn