



CH2M HILL  
2485 Natomas Park Drive  
Suite 600  
Sacramento, CA 95833  
Tel 916-920-0300  
Fax 916-920-8463

August 5, 2009  
File No.: 04.02.16.02  
Project No. 357891

<b>DOCKET</b>	
<b>07-AFC-5</b>	
DATE	<u>8/5/2009</u>
RECD.	<u>8/6/2009</u>

Mr. John Kessler, Project Manager  
California Energy Commission  
Systems Assessment and Facilities Siting Division  
1516 9th Street, MS 15  
Sacramento, CA 95814-5504

RE: Data Response, Set 1N  
Ivanpah Solar Electric Generating System (07-AFC-5)

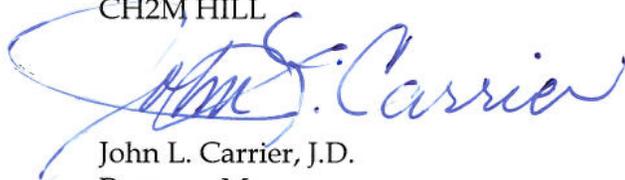
Dear Mr. Kessler:

On behalf of Solar Partners I, LLC, Solar Partners II, LLC, Solar Partners IV, LLC, and Solar Partners VIII, LLC (Applicant), please find attached one original and four hard copies, plus ten CD copies of Data Response, Set 1N.

Please call me if you have any questions.

Sincerely,

CH2M HILL



John L. Carrier, J.D.  
Program Manager

Enclosure

c: POS List  
Project File

DECLARATION OF SERVICE

I, Mary Finn, declare that on August 6, 2009, I served and filed copies of the attached, Data Response 1N. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: [\[www.energy.ca.gov/sitingcases/ivanpah\]](http://www.energy.ca.gov/sitingcases/ivanpah).

The documents have been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

*(Check all that Apply)*

FOR SERVICE TO ALL OTHER PARTIES:

  X   sent electronically to all email addresses on the Proof of Service list;

  X   by personal delivery or by depositing in the United States mail\* at **Sacramento, California** on August 6, 2009 with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

**AND**

FOR FILING WITH THE ENERGY COMMISSION:

  X   sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (*preferred method*);

**OR**

       depositing in the mail an original and 12 paper copies, as follows:

**CALIFORNIA ENERGY COMMISSION**

Attn: Docket No. 07-AFC-5  
1516 Ninth Street, MS-4  
Sacramento, CA 95814-5512  
[docket@energy.state.ca.us](mailto:docket@energy.state.ca.us)

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



Mary Finn

\*or by other delivery service, e.g., Fed Ex, UPS, courier, etc.

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# Ivanpah Solar Electric Generating System (ISEGS)

(07-AFC-5)

## Data Response, Set 1N

(Response to Data Request: Soil and Water)

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 5, 2009

With Assistance from

**CH2MHILL**  
2485 Natomas Park Drive  
Suite 600  
Sacramento, CA 95833

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# Introduction

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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. Attachments are keyed to the data response. Hence the first attachment to Data Response 64 would be called "Attachment DR64-1A."

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 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.

# Soils and Water Resources (64 – 65)

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## Background

A Federal Clean Water Act section 401 certification may be required. If there are potential impacts to surface waters (perennial and ephemeral) of the State and/or Waters of the United States, such as drainages, streams, washes, ponds, pools, and wetlands, this certification will be required from the RWQCB. These impacts need to be quantified and mitigated. Please refer to:  
[http://www.waterboards.ca.gov/lahontan/401WQC/401WQC\\_Index.htm](http://www.waterboards.ca.gov/lahontan/401WQC/401WQC_Index.htm).

## Data Request

64. Please discuss in detail whether a 401 certification is required. If required, please discuss compliance with the RWQCB requirements discussed on the following RWQCB webpage:  
<http://www.waterboards.ca.gov/lahontan/401WQC/401instructions2app.pdf>.

**Response:** Under federal Clean Water Act (CWA) section 401, every applicant for a federal permit or license for any activity that may result in a discharge to a water body must obtain State Water Quality Certification (Certification) that the proposed activity will comply with state water quality standards. Most Certifications are issued in connection with U.S. Army Corps of Engineers (Corps) CWA section 404 permits for dredge and fill discharges (State Water Resources Control Board website, accessed 8/4/09). The Corps issued a jurisdictional determination on May 28, 2009, finding that the surface waters present on the Ivanpah SEGS site were not Waters of the U.S. under federal jurisdiction (see Data Response Set 1M). Therefore, no CWA section 404 permit is required to be obtained from the Corps. If surface waters on the site are Waters of the State, and if a federal permit or license is required to be obtained for the project, then the RWQCB could issue a CWA section 401 Certification as described above.

In a meeting held on July 15, 2009, staff of the Regional Water Quality Control Board – Lahontan Region (RWQCB) determined that larger ephemeral washes, classified as Category 1, 2 or 3 washes in the jurisdictional delineation report (Data Response, Set 1G), are Waters of the State. Regional Water Board staff indicated that “Proposed Waste Discharge Requirements (WDRs)” will be issued following review by the Executive Officer. The Proposed WDRs will provide recommendations and requirements for discharges to Waters of the State associated with project activities, including discharges of dredged or fill material. Staff indicated that the following documentation must be submitted to the Lahontan RWQCB in order for staff to prepare the Proposed WDRs:

- Wetland Delineation Report (Attachment DR19-1B, Data Response Set 1G)
- Evaluation of Project Impacts on Beneficial Uses of Waters of the State (Attachment DR64-1A)
- Quantification of temporary, long-term, and permanent dredge/fill impacts to Waters of the State (Attachment DR64-1A)
- Construction Stormwater Pollution Prevention Plan (Appendix 5.15A2, Supplemental Data Response Set 2B)
- Operations Stormwater Pollution Prevention Plan (Appendix 5.15B2, attached)
- Dredge/Fill Fee Calculator form, with required fee (being submitted under separate cover)
- Spreadsheet matrix that identifies all pertinent documents and data responses that are relevant to water quality (provided as Table DR65-1, below)

No application for CWA section 401 Certification is required by the RWQCB and no Water Quality Certification will be issued pursuant to CWA section 401. In addition, we have include a copy of the July 23, 2009 letter from BLM to CDFG regarding coordination of mitigation for BrightSource Solar Development (Attachment DR64-2)

All requested documents will be submitted to the RWQCB on or about August 5, 2009.

65. Submit a jurisdictional delineation to the USACE, a section 401 water quality certification application to the RWQCB, and a Streambed Alteration Notification package to the CDFG. Provide copies of all these documents to the BLM and CEC. This response may be prepared in conjunction with the response to related Biological Resources data requests.

**Response:** Surface drainages were determined by the Corps to not be under federal jurisdiction, and no CWA section 404 permit will be obtained. Materials provided to the RWQCB to facilitate issuance of Proposed WDRs will be provided to BLM and CEC, except for materials that have been previously provided as data responses. The Applicant has provided Lahontan RWQCB with copies (on CD) of the relevant data responses so that it can prepare proposed WDRs for inclusion by CEC in the project license. A table showing the data responses provided on CD to the Lahontan RWQCB and the key documents contained therein, is provided as Table DR65-1.

TABLE DR65-1  
Data Response Sets Provided Electronically to Lahontan RWQCB

<b>Data Response Set</b>	<b>Attachment No.</b>	<b>Key Document</b>
Set 1A	—	General Data Response
Set 1D	—	Optimization Project Description
Set 1G	DR19-1B	Wetland Delineation Report
Set 1K	DR111-1A	Report of Waste Discharge (RWD) Application for Admin Bldg.
Set 1L	DR19-2A	Streambed Alteration Agreement Application (1602)
Set 1M	DR19-1D	USACE Jurisdictional Determination Letter
Set 2A	—	General Data Response
Set 2D	DR124-1A	Draft Biological Assessment
Set 2H	DR140-1B	Drainage, Erosion, and Sediment Control Plan (Appendix A of this document contains the engineering drawings)
Set 2I	DR130-2B	Plan of Development Project Description (Appendix A of this document contains the engineering drawings)
Set 2I	DR139-1A	Response to Comments on the Stormwater Plan (Exhibits to this document contain the stormwater analysis)
Set 2K	DR125-3B	Closure, Revegetation, and Rehabilitation Plan
Set 2K	DR125-4A	Response to Comments on the Closure, Revegetation, and Rehabilitation Plan
Supp Set 2B	Appendix5.15A2	Construction Stormwater Pollution Prevention Plan (SWPPP)
Supp Set 2F	S&W5-1	Letter about Soil Stabilization Products

# ATTACHMENT DR64-1A

TECHNICAL MEMORANDUM

**CH2MHILL**

## **Ivanpah Solar Electric Generating System (ISEGS) Project Beneficial Use and Dredge/Fill Impacts Analyses for Waters of the State**

PREPARED FOR: Steve De Young/BSE  
Tracie Wheaton/BSE

PREPARED BY: Kathy Rose/CH2M HILL  
Peggie King/CH2MHILL

COPIES: John Carrier/CH2MHILL  
Jen Renz/CH2MHILL

DATE: August 5, 2009

PROJECT NUMBER: 357891.TM.HR

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### **Summary**

Proposed construction, operations, and closure activities for the Ivanpah Solar Electric Generating System (SEGS) project were evaluated for their potential to adversely affect the designated beneficial uses (BUs) of Waters of the State, which are identified in the Water Quality Control Plan (Basin Plan) for the area within the Lahontan Regional Water Quality Control Board's (LRWQCB) jurisdiction. The evaluation concludes that the project would have no permanent impacts to BUs, and that long-term and temporary impacts to BUs would be fully mitigated.

### **Introduction**

The Ivanpah SEGS project will consist of three independent solar thermal electric generating facilities (or solar plants) that will be co-located approximately 1.6 miles west of the Ivanpah Dry Lake and 4.5 miles southwest of Primm, Nevada, in San Bernardino County, California (Figure 1). The project site will be located on federal property managed by the Bureau of Land Management (BLM). The three Ivanpah SEGS facilities will have a combined nominal rating of 400 megawatt (MW).

In total, Ivanpah SEGS will affect approximately 4,061.65 acres. Ivanpah 1 will require about 913.49 acres (1.43 square miles) and Ivanpah 2 will require about 920.72 acres (1.44 square miles), while Ivanpah 3 is larger and will require approximately 1,836.27 acres (2.9 square miles). Additionally, there will be a common area between Ivanpah 1 and 2 (approximately 377.50 acres) that will include the Southern California Edison (SCE) substation and shared facilities (administration/storage building, groundwater production wells, and portions of

the linear facilities). Portions of this common area will be used during construction for staging, laydown, and temporary construction offices. Additional land disturbance will be associated with the gas line tap station and its construction (1.26 acres), the gas line and its construction from the tap station to the edge of Ivanpah 3 (2.30 acres), the new dirt road to the mining claim (0.41 acres), and construction and paving of a portion of Colosseum Road from the Primm Valley Golf Club to the project (9.69 acres).

Construction activities will result in temporary, short-term disturbance to limited areas. These areas will be restored to pre-project conditions upon completion of construction. Long-term disturbance areas are affected during project operations and will be rehabilitated and restored upon decommissioning. Decommissioning activities themselves, could cause temporary, short-term disturbance to the landscape, similar to those of project construction. These impacts will likewise be mitigated through site rehabilitation and revegetation. Permanent disturbance areas occur where project facilities/structures will remain in place following closure. Permanent, long-term, and temporary land disturbance associated with implementation of Ivanpah SEGS are quantified in Table 1, below.

TABLE 1  
Areas of Permanent, Long-Term, and Temporary Disturbance (information taken from CH2M HILL 2009d)

Components	Acres
<b><i>Permanent Disturbance Area</i></b>	
Ivanpah 1	0
Ivanpah 2	0.86
Ivanpah 3	8.53
CLA including improvements to Colosseum Road	36.86
<b>TOTAL AREAS OF PERMANENT DISTURBANCE</b>	<b>46.25</b>
<b><i>Long-Term Disturbance Area</i></b>	
Ivanpah 1	913.66
Ivanpah 2	913.42
Ivanpah 3	1,427.83
CLA including Improvements to Colosseum Road	53.18
Kern River Gas Transmission Line (KRG T)	0.89
<b>TOTAL AREAS OF LONG-TERM DISTURBANCE</b>	<b>3,308.98</b>
<b><i>Temporary Disturbance Area</i></b>	
Ivanpah 1	1.37
Ivanpah 2	129.43
Ivanpah 3	400.33
Kern River Gas Transmission Line (KRG T)	2.67
CLA Including improvements to Colosseum Road	298.07

TABLE 1  
 Areas of Permanent, Long-Term, and Temporary Disturbance (information taken from  
 CH2M HILL 2009d)

Components	Acres
<b>TOTAL AREAS OF TEMPORARY DISTURBANCE</b>	831.88

The purpose of this technical memorandum is to identify and evaluate impacts to designated beneficial uses of Waters of the State, which could potentially be affected by construction, operations, and decommissioning of Ivanpah SEGS. Some Basin Plan designated BUs did not exist historically, do not exist currently, and will not exist in the foreseeable future; these BUs are noted but are not evaluated further in this memorandum. This evaluation will assist staff of the LRWQCB in providing recommendations, requirements and conditions in the form of “Proposed Waste Discharge Requirements” to the California Energy Commission (CEC), which will be incorporated into the permit to be issued by CEC for the project.

## Environmental Setting

The project site is located within the Ivanpah Valley, near the California-Nevada border (Figure 1). The valley covers about 560,000 acres, including 340,000 acres within California and 220,000 acres within Nevada. The California portion of the Ivanpah Valley is referred to as Ivanpah South (Durbin, 2007). The Ivanpah Valley is a closed basin and surface waters in the project area drain to and evaporate on Ivanpah Lake, a desert playa located 1.6 miles to the east of the project site. Waterways in or near the project site include numerous unnamed ephemeral washes on the lower part of the bajada at the base of the Clark Mountains to the west.

Numerous ephemeral washes dissect the project site and range in size from small (1 to 4 feet wide), weakly expressed erosional features to large, broad (over to 85 feet wide) drainages that occur throughout the Mojave Creosote Bush Scrub habitat. The active flow channels of the smaller washes are generally devoid of vegetation and typically have a sandy-gravel substrate, although some washes also contain cobble and scattered larger rocks. Most of the larger channels typically contain scattered vegetation including creosote bush and cheesebush, especially in braided channels that contain slightly elevated areas intermixed with the active flow channels. Mojave Wash Scrub is limited to the larger washes (typically over 15 feet) with sandy gravel substrate and well-defined banks. Vegetation associated with these features included catclaw (*Acacia greggii*), cheesebush, Mojave Desert California Buckwheat (*Eriogonum fasciculatum* ssp. *polifolium*), desert willow (*Chilopsis linearis*), black-banded rabbitbrush (*Chrysothamnus paniculatus*), bladder-sage (*Salazaria mexicana*), desert almond (*Prunus fasciculata*), Virgin River encelia (*Encelia virginensis*), Anderson’s boxthorn (*Lycium andersonii*), Cooper’s boxthorn (*Lycium cooperi*), sand-wash groundsel (*Senecio flaccidus* var. *monoensis*), wire lettuce (*Stephanomeria pauciflora*), and blue sage (*Salvia dorrii*) (For a complete description of plant communities present on the proposed Ivanpah SEGS site, see the Delineation of Waters of the United States report [CH2M HILL, 2008] and the Draft Biological Assessment [CH2M HILL, 2009a].) In addition, vegetation types observed

during rare plant surveys of the Ivanpah Substation to Mountain Pass Substation area are described in the Biological Survey Report prepared by EPG (EPG 2008).

Ephemeral washes in the project area were assigned a size category of 1, 2, 3, 4 or 5 (CH2M HILL, 2008) based on wash width. Category 1 washes are large ephemeral drainages over 36 feet wide. Category 2 washes are relatively large ephemeral drainages over 20 feet wide and no more than 35 feet wide. Category 3 washes are over 10 feet wide and no more than 20 feet wide. Category 4 includes ephemeral washes over 4 feet wide and no more than 10 feet wide. Category 1, 2, 3 and 4 washes include single, large channels with well-defined bed and banks, as well as broad, but weakly expressed, assemblages of braided erosional channels. Category 5 includes weakly expressed erosional/flow channels that generally lack defined cut banks and are no more than 4 feet wide. Ephemeral drainages within the project area are quantified below in Table 2. Waters of the State are comprised of Category 1, 2 and 3 ephemeral drainages. Category 4 and 5 channels are not considered to be Waters of the State (personal communication, Jen Renz/CH2MHILL and Linda Stone/LRWQCB). There are no springs, seasonal or perennial creeks, or wetlands located on or near the project site.

Approximately 198.72 acres of ephemeral washes were identified and mapped in the project study area. Approximately 16.78 acres of category 1 washes, 8.22 acres of category 2 washes, and 40.37 acres of category 3 washes, were mapped, for a total of about 65.37 acres of Waters of the State (see Figure 2).. The smaller ephemeral washes which are present within the project study area are not addressed in this BU analysis, since they are not Waters of the State.

TABLE 2  
Summary of Waters of the State Identified in the Project Study Area (CH2M HILL, 2008)

Wash Category	Project Feature	Number of Washes*	Wash Length (feet)	Wash Acreage
	Ivanpah 1	0	0	0.00
	Ivanpah 2	3	7,066	7.48
	Ivanpah 3	4	5,392	8.29
Category 1 (36-85 feet)	Utility Corridor	1	1,100	1.01
	Colosseum Road	0	0	0.00
	Substation and Administrative Area	0	0	0.00
<b>Category 1 Total</b>		<b>8</b>	<b>13,559</b>	<b>16.78</b>
Category 2 (21-35 feet)	Ivanpah 1	0	0	
	Ivanpah 2	4	5,847	3.90
	Ivanpah 3	7	6,399	3.96
	Utility Corridor	1	706	0.36
	Colosseum Road	0	0	0.00
	Substation and Administrative Area	0	0	0.00

TABLE 2  
 Summary of Waters of the State Identified in the Project Study Area (CH2M HILL, 2008)

Wash Category	Project Feature	Number of Washes*	Wash Length (feet)	Wash Acreage
	<b>Category 2 Total</b>	<b>12</b>	<b>12,953</b>	<b>8.22</b>
	Ivanpah 1	10	19,850	7.06**
	Ivanpah 2	22	21,903	7.79**
	Ivanpah 3	32	46,069	16.39**
Category 3 (11-20 feet)	Utility Corridor	8	8,497	3.02**
	Colosseum Road	9	6,018	2.14**
	Substation and Administrative Area	13	11,111	3.95**
	<b>Category 3 Total</b>	<b>94</b>	<b>113,446</b>	<b>40.37</b>
<b>Waters of the State (Categories 1, 2 and 3) (Total)</b>		<b>114</b>	<b>139,958</b>	<b>65.37</b>

Note:

\* Number of washes is based on number of segments in each category mapped in each of the project areas.

\*\* Acreage calculated using Wash Length and the median width of the category range

No wetlands were observed within the entire project area.

## Hydrology

Storm flows on the site result from two combined hydrologic processes: runoff from the mountain watersheds to the west and runoff generated on the alluvial fans themselves. The mountain watershed area draining to the site is approximately 13,900 acres, and is comprised of about 15 different subwatersheds ranging in size from 211 to 3,220 acres (West Yost Associates, 2009).

Development of the project would result in impervious surfaces limited to the areas occupied by power blocks, power tower, and related facilities. Once developed, the project would result in 38.2 acres of impervious surfaces, which would comprise only about 1 percent of the total project area. Solar field development will maintain unobstructed sheet flow, with water exiting the site in existing natural contours and flows. Relatively small rock filters and local diversion berms through the heliostat fields may be installed as required to discourage water from concentrating, and to maintain sheet flow (CH2M HILL, 2009b [specifically, Figure 9 of Appendix A]).

To protect the power block and tower areas from floods, a western diversion ditch will be constructed to channel storm runoff around each power block, power tower area and substation before discharging as sheet flow to the east of these structures (see Figure 18 of Appendix A to DESCP [CH2M HILL, 2009b]). Hydrologic and hydraulic modeling support the need for stormwater diversion channels to provide flood protection to structures. Models predict that post-project hydrology would not be substantially different than pre-project conditions for the 100-year storm event. Runoff volumes from the site are predicted

to increase between 0 and 3.2 percent, and peak flows are predicted to increase no more than 11 percent. Offsite flow increases are limited to just a few locations down gradient from the southern portion of Ivanpah 2 and the Construction Logistics Area (see West Yost Associates, 2009).

## Designated Beneficial Uses

Section 303 of the federal Clean Water Act (CWA) defines water quality standards to include both the BUs of the waters involved and the water quality criteria applied to protect those uses. BUs and water quality objectives have been established for all waters of the State, including both surface and ground waters. Designated BUs for surface waters and ground waters in the project area are identified in the Basin Plan for the areas under jurisdiction of the LRWQCB.

BUs for minor surface waters, including wetlands, springs, streams, lakes, and ponds, are identified in the LRWQCB Basin Plan for the Ivanpah hydrologic unit. Additionally, the Basin Plan states that “Unless otherwise specified, beneficial uses also apply to all tributaries of surface waters identified in Table 2 (i.e., specific surface waters which are not listed have the same beneficial uses as the streams, lakes, wetlands, or reservoirs to which they are tributary).” Therefore, beneficial uses that are designated for Ivanpah Lake would potentially apply to its tributary ephemeral washes. Beneficial uses applicable to the Waters of the State that would be potentially affected by the project (Category 1, 2 and 3 ephemeral washes), as well beneficial uses for Ivanpah Lake and groundwater, are identified and defined in Table 3, below.

TABLE 3  
 Existing and Potential Beneficial Uses of Waters of the State that are Relevant to the Project  
 (LRWQCB Basin Plan)

Beneficial Use Abbreviation	Beneficial Use Definition	Minor Surface Waters	Ivanpah Lake	Ivanpah Valley Ground Water
<b>MUN</b>	<b>Municipal and Domestic Supply.</b> Beneficial uses of waters used for community, military, or individual water supply systems including, but not limited to, drinking water supply.	X	X	X
<b>AGR</b>	<b>Agricultural Supply.</b> Beneficial uses of waters used for farming, horticulture, or ranching, including, but not limited to, irrigation, stock watering, and support of vegetation for range grazing.	X	X	X
<b>GWR</b>	<b>Ground Water Recharge.</b> Beneficial uses of waters used for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.	X	X	
<b>REC-1</b>	<b>Water Contact Recreation.</b> Beneficial uses of waters used for recreational activities involving body contact with water where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities,	X	X	

TABLE 3  
 Existing and Potential Beneficial Uses of Waters of the State that are Relevant to the Project  
 (LRWQCB Basin Plan)

Beneficial Use Abbreviation	Beneficial Use Definition	Minor Surface Waters	Ivanpah Lake	Ivanpah Valley Ground Water
REC-2	<b>Noncontact Water Recreation.</b> Beneficial uses of waters used for recreational activities involving proximity to water, but not normally involving body contact with water where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, and aesthetic enjoyment in conjunction with the above activities.	X	X	
COMM	<b>Commercial and Sportfishing.</b> Beneficial uses of waters used for commercial or recreational collection of fish or other organisms including, but not limited to, uses involving organisms intended for human consumption.	X		
WARM	<b>Warm Freshwater Habitat.</b> Beneficial uses of waters that support warm water ecosystems including, but not limited to, preservation and enhancement of aquatic habitats, vegetation, fish, and wildlife, including invertebrates.	X	X	
COLD	<b>Cold Freshwater Habitat.</b> Beneficial uses of waters that support cold water ecosystems including, but not limited to, preservation and enhancement of aquatic habitats, vegetation, fish, and wildlife, including invertebrates.	X	X	
SAL	<b>Inland Saline Water Habitat.</b> Beneficial uses of waters that support inland saline water ecosystems including, but not limited to, preservation and enhancement of aquatic saline habitats, vegetation, fish, and wildlife, including invertebrates.		X	
WILD	<b>Wildlife Habitat.</b> Beneficial uses of waters that support wildlife habitats including, but not limited to, the preservation and enhancement of vegetation and prey species used by wildlife, such as waterfowl.	X	X	
WQE	<b>Water Quality Enhancement.</b> Beneficial uses of waters that support natural enhancement or improvement of water quality in or downstream of a water body including, but not limited to, erosion control, filtration and purification of naturally occurring water pollutants, streambank stabilization, maintenance of channel integrity, and siltation control.		X	
FLD	<b>Flood Peak Attenuation/Flood Water Storage.</b> Beneficial uses of riparian wetlands in flood plain areas and other wetlands that receive natural surface drainage and buffer its passage to receiving waters.		X	
IND	<b>Industrial Service Supply.</b> Beneficial uses of waters used for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, geothermal energy production, hydraulic conveyance, gravel washing, fire protection, and oil well repressurization.			X

TABLE 3  
 Existing and Potential Beneficial Uses of Waters of the State that are Relevant to the Project  
 (LRWQCB Basin Plan)

Beneficial Use Abbreviation	Beneficial Use Definition	Minor Surface Waters	Ivanpah Lake	Ivanpah Valley Ground Water
FRSH	<b>Freshwater Replenishment.</b> Beneficial uses of waters used for natural or artificial maintenance of surface water quantity or quality (e.g., salinity).			X

## Beneficial Use Analysis

This section evaluates impacts to beneficial uses of all potentially-impacted Waters of the State that could result from project construction, operations, and decommissioning activities (see Table 3 for identification of those waters and their respective designated beneficial uses). In general, the low impact development approach used in site design allows for construction of the project without substantial grading or filling of drainages; therefore, substantial disturbance to Waters of the State is not expected. For example, heliostat placement and road crossings would largely follow existing contours, and earth movement would only occur where necessary for vehicle maneuvering. Refer to the project Plan of Development (POD; CH2M HILL, 2009d) for a complete description of the low impact design (LID) design approach that has been adopted by BrightSource for the Ivanpah SEGS project.

Beneficial uses could potentially be impacted either directly, through dredging or placement of fill in Waters of the State, or indirectly through activities that occur outside of Waters of the State but that affect the beneficial uses of those waters (e.g., increased amount of surface runoff through creation of impervious surfaces, which could lead to increased scour within drainages).

Furthermore, potential impacts to beneficial uses could occur to surface waters that are located within the project area, to downstream receiving waters (i.e., Ivanpah Lake), or to underlying groundwater that will be used during project operations. Each of these waters is considered to be Waters of the State.

### Direct Impacts to Waters of the State (Dredge and Fill)

Dredging and/or filling of Waters of the State would occur during the following project activities.

- Construction, maintenance and usage of road crossings
- Rerouting of trails
- Stabilization of streambed and banks using baskets, riprap and contouring
- Construction of the substation and administration buildings

- Installation of natural gas pipeline and water/gas utility lines

Incidental fill impacts could also occur through mowing of vegetation. Vegetation will be mowed in association with development of maintenance paths; and additional vegetation may be cut to accommodate heliostat placement and performance. Vegetation mowing around heliostats that are placed within Waters of the State would potentially result in incidental fill. However, because vegetation is primarily present only within upland “islands” within large, braided washes and active channels are largely devoid of vegetation, mowing will be very limited and cutting of vegetation will be able to be performed, at least to some extent, from maintenance paths. Therefore, mowing outside of the maintenance paths is considered to represent a very minor contribution to fill and is not quantified for purposes of estimating dredge and fill impacts for the project.

Permanent direct (dredge/fill) impacts associated with the Ivanpah SEGS will impact less than 0.5 percent of the project area and less than 3 percent of the existing Waters of the State within the project study area. Table 4 identifies temporary, long-term, and permanent impacts to Waters of the State resulting from dredge and fill activities. Total dredge/fill impacts are relatively minor and will not affect the function of Waters of the State. Therefore, direct impacts occurring through dredge and fill activities are expected to have only a nominal impact on BUs.

TABLE 4  
DREDGE AND FILL IMPACTS FOR IVANPAH SEG3

Project Feature	Linear Impact	Temporary <sup>1</sup>	Fill Impacts <sup>8</sup> (acres)			Dredge Impacts (cubic feet)		
			Long-Term <sup>2</sup>	Permanent <sup>3</sup>	Temporary	Long-Term	Permanent	
30-foot-wide asphalt roads (including 3-foot shoulder) <sup>4</sup>	Temporary: 150 feet Long-term: 622 feet Permanent: 2,157 feet	0.076	0.279 6,506 ft <sup>3</sup>	0.768 32,829 ft <sup>3</sup>	0	6,506 <sup>10</sup>	32,829 <sup>9</sup>	
24-foot-wide asphalt roads <sup>4</sup>	Temporary: 82 feet Long-term: 129 feet Permanent: 39 feet	0.044	0.077 3,365 ft <sup>3</sup>	0.014 604 ft <sup>3</sup>		3,365 <sup>11</sup>	604	
15-foot-wide dirt roads	Long-term: 32 feet		0.012					
12-foot-wide dirt roads <sup>5</sup>	Temporary: 206 feet Long-term: 1,420 feet Permanent: 60 feet	0.084	0.719	0.026				
12-foot-wide rerouted trails	Long-term: 51 feet Permanent: 218 feet		0.034	0.104				
10-foot-wide heliostat maintenance paths	Long-term: 11,260 feet	0	6.276	0				
Natural gas line corridor <sup>6</sup>	Temporary: 456 feet	0.194						
Gas and water utility lines <sup>7</sup>	Temporary: 150 feet	0.122	0	0	6105 <sup>12</sup> (trench excavation)			
Metering sets		0	0	0				
Power blocks, diversion channels and berms		0	0	0				
Gen-tie lines and towers		0	0	0				
Administration/Maintenance Building	Long-term: 227 feet	0	0.081	-				
Substation	Permanent: 152 feet	0	0	0.054				

TABLE 4  
 DREDGE AND FILL IMPACTS FOR IVANPAH SEGS

		Fill Impacts <sup>8</sup> (acres)			Dredge Impacts (cubic feet)		
Construction laydown, staging and stockpiling		0	0	0			
<b>TOTAL DREDGE AND FILL IMPACTS</b>	<b>Temporary: 1,045 feet Long-term: 13,742 feet Permanent: 2,627 feet</b>	<b>0.520</b>	<b>7.478</b>	<b>0.965</b>	<b>6,105</b>	<b>9,871</b>	<b>33,433</b>

<sup>1</sup>Temporary impacts are associated with construction activities, and these areas will be restored upon completion of construction.

<sup>2</sup>Long-term impacts continue for the duration of project operations, which is estimated at approximately 50 years. At project decommissioning, these areas will be rehabilitated and revegetated.

<sup>3</sup> Permanent impacts are associated with roads and structures that will remain following project closure.

<sup>4</sup> Temporary impact area includes a 7-foot construction corridor that extends on either side of the roadway footprint + shoulder.

<sup>5</sup> Temporary impact area includes 28-foot corridor for installation of water line from wells to main line; and 38-foot construction corridor for installation of gas line from tap point to top of Ivanpah 3.

<sup>6</sup> Temporary impact area includes 38-foot construction corridor associated installation of natural gas pipeline within 12-foot dirt road on east side of project area.

<sup>7</sup> Temporary impact area associated with installation of gas and water lines to Ivanpah 2 power block.

<sup>8</sup> Stream widths used in estimation of impact area were assumed to be 60.5 feet for Category 1 washes; 28 feet for Category 2 washes; and 15.5 feet for Category 3 washes.

<sup>9</sup> Dredge volume estimated for Colosseum Rd. improvement from golf course to Ivanpah 2. The road improvement will affect approximately 2,118 linear feet of Category 3 streambed, with a median width of 15.5 feet. Approximately 12 inches of existing streambed would be removed and replaced with the same volume of aggregate base and asphalt. The 30-foot-wide asphalt road would have a 3-foot gravel shoulder on either side. Volume of dredge in Waters of the State is based on median Category 3 stream width (not width of road, which is wider than the stream). Assume 12 inches of existing streambed is removed and replaced with an equal volume of asphalt and aggregate road base.

<sup>10</sup> Dredge volume estimated for channel crossings on east side of Ivanpah 2. There is one crossing of a Category 1 stream (36 linear feet), two crossings of Category 2 streams (total of 71 linear feet), and numerous Category 3 stream crossings (total of 515 linear feet). Assume 12 inches of existing streambed is removed and replaced with an equal volume of asphalt and aggregate road base. Roads will be removed at project closure, so impacts are considered to be long-term. (Impact area = linear impact x median width of channel x 1 ft depth of dredge).

TABLE 4  
DREDGE AND FILL IMPACTS FOR IVANPAH SEGS

	Fill Impacts <sup>8</sup> (acres)	Dredge Impacts (cubic feet)
<sup>11</sup> Dredge volume estimated for 1 stabilized channel crossing over Category 1 wash, on Ivanpah 2 road to power block; several crossings of Category 3 washes; permanent impacts are associated with Category 3 wash crossing on road to substation. Assume 12 inches of existing streambed is removed and replaced with an equal volume of asphalt and aggregate road base. Long-term and permanent impact = linear impact x median stream width x 1 foot dredge depth.		
<sup>12</sup> Dredge volume estimated for installation of natural gas pipeline and other water and gas utilities, assuming 2 crossings of Category 1 washes; 4 crossings of Category 2 washes, and 17 crossings of Category 3 washes. Assumes trench that is 8 feet wide at top, 3 feet wide at bottom, and 3 feet deep. Excavated material would be replaced following installation of utilities, so impacts are temporary.		

## **Beneficial Use Analysis for Ivanpah Lake**

Because larger washes tend to dissipate into smaller, more braided channels as they progress downslope, the majority of drainages, including those in the project area, terminate prior to reaching Ivanpah Lake. In proximity to Ivanpah Lake, defined erosional features diminish and broad surface flows predominate.

The project is not expected to result in a substantial change to the volume or velocity of flows that could potentially reach Ivanpah Lake. Peak flows are predicted to remain similar to pre-project conditions at downstream locations, and storm runoff volumes are likewise expected to remain very similar to pre-project conditions (see West Yost Associates, 2009). Therefore, the project is expected to have no impacts to the designated BUs of Ivanpah Lake.

## **Beneficial Use Analysis for Minor Surface Waters**

This section discusses the project's potential impacts to the designated BUs of minor surface waters (Category 1, 2 and 3 ephemeral washes) in the project area.

### **Municipal and Domestic Supply (MUN)**

Project construction, operations, and closure activities would have no impact on this beneficial use. Conditions within surface drainages do not currently support MUN, since water is rarely present. Furthermore, surface flows historically have been insufficient to support MUN, and flows are unlikely to be sufficient to support MUN in the foreseeable future. Drainages are ephemeral and convey only short duration flows in response to major storm events. Volume and duration of flow would not be substantially altered by the project.

Water quality objectives that are aimed at protecting the designated MUN beneficial use could be violated if pollutants are discharged into Waters of the State. Project construction and operation activities could potentially lead to accelerated erosion and sediment transport, introduce pollutants through improper material handling, equipment maintenance and storage. By implementing best management practices (BMPs) that are identified in the construction and industrial Stormwater Pollution Prevention Plans (SWPPPs) and the Drainage, Erosion and Sediment Control Plan (DESCP), impacts to water quality will be avoided or minimized during construction and operations activities. The construction and operations SWPPPs and DESCP can be consulted for a thorough description of BMPs to be implemented and monitoring to be undertaken. If wastewater is treated on the site and re-used for landscape irrigation, WDRs would be obtained from the LRWQCB. Conformation to permit conditions would ensure that water quality is adequately protected and no impacts to beneficial uses would occur.

### **Agricultural Supply (AGR)**

Land in the vicinity of the project is leased from BLM for grazing purposes, and water for cattle is obtained from springs located to the west of the project site. Ephemeral washes located downgradient from the water source for grazing cattle do not carry water except during large storm events, and Ivanpah SEGS would have a negligible effect on the amount, timing, or quality of surface flows in them. Therefore, no impacts to AGR beneficial use would occur.

### **Groundwater Recharge (GWR)**

Ivanpah SEGS would not negatively impact GWR, because it would not create substantial impervious surfaces that would generate substantial increased volumes and velocities of stormwater runoff that would preclude recharge. Most recharge occurs in the area via streambed infiltration of water generated through runoff-producing precipitation in the mountains (Durbin, 2007). Infiltration rates associated with minor surface waters (Category 1, 2 and 3 ephemeral washes) within the project study area would not be substantially impacted by Ivanpah SEGS; therefore, GWR will not be impacted.

### **Water Contact Recreation (REC-1)**

Minor surface waters (Category 1, 2 and 3 ephemeral washes) within the project study area do not currently support, nor are they likely to support in the future, REC-1 because surface flows do not normally occur except during substantial storms. While REC-1 is normally a designated BU for all waters to meet the Clean Water Act (CWA) presumption of “fishable and swimmable,” because this BU is not supported in minor surface waters in the project study area, it cannot be impacted by the project. The LRWQCB Basin Plan states, “Uses that did not exist, do not exist and will not exist in the foreseeable future, will not be required to be protected.”

Nevertheless, the project would not contribute pathogenic organisms to minor surface waters that would preclude their current or future REC-1 use. If wastewater is treated onsite and used for landscape irrigation, any discharge to land would comply with WDRs that would be obtained from the LRWQCB.

### **Noncontact Water Recreation (REC-2)**

Water quality considerations relevant to noncontact water recreation include, but are not limited to, activities such as hiking, camping, and aesthetic enjoyment. Recreation within the project boundary will be prevented for the 50-year operations period, and access will be restricted by fencing. To mitigate recreational impacts, however, existing trails will be rerouted around the project, and will reconnect with the trail system. Following the 50-year period of operations, fencing will be removed and the entire disturbed area will be restored. (See CH2M HILL, 2009d for the plan of restoration.) Therefore, there will be no permanent impacts to REC-2 BU, and temporal loss of REC-2 BU will be mitigated by rerouting the existing trail system around the project, allowing for continued recreational use of the area.

### **Commercial and Sportfishing (COMM)**

Minor surface waters (Category 1, 2 and 3 ephemeral washes) within the project study area do not support, nor are they likely to support in the future, commercial or sportfishing. Therefore, the project will not have an impact on COMM.

### **Warm Freshwater Habitat (WARM)**

Minor surface waters (Category 1, 2 and 3 ephemeral washes) within the project study area have never been known to support aquatic habitat or aquatic organisms. However, Mojave Wash Scrub vegetation is associated with some of the larger ephemeral washes within the project study area. During construction, vegetation within the channels may be mowed to a height of about 1 foot (but root systems will remain intact) to accommodate heliostats, and

vegetation will be removed where roads and trails cross the drainages. In construction-related temporary impact areas, rehabilitation and revegetation efforts will occur soon after completion of construction activities.

Vegetation height and presence will be managed in washes during the 50-year period of operations for the project. Upon decommissioning at project closure, all disturbed areas will be rehabilitated and revegetated. (See CH2M HILL, 2009d, for information pertaining to restoration/revegetation.) By allowing vegetation within the heliostat arrays to remain intact and potentially to regrow after project closure and by revegetating and restoring disturbed areas within minor surface waters, any potential temporal loss of WARM would be mitigated.

### **Cold Freshwater Habitat (COLD)**

Minor surface waters (Category 1, 2 and 3 ephemeral washes) within the project study area do not support, nor are they anticipated to support in the future, cold freshwater habitat. Therefore, the project will have no impact on COLD.

### **Wildlife Habitat (WILD)**

Ephemeral washes, although characterized by infrequent and short duration flows, create a mosaic of habitat areas due to changes in soil texture, distance, increased moisture and other factors that increase the diversity of vegetation across the landscape. In some areas, open sandy banks may provide suitable burrow sites for the desert tortoise and areas with increased soil moisture support diverse Mojave wash scrub habitats. Ephemeral washes may also provide suitable microsite habitat conditions for special-status plant species.

### **Threatened and Endangered Plant Species**

No federally or state-listed plant species were observed during floristic surveys at the Ivanpah SEGS project site. Eight special status plants, however, were observed during 2007 and 2008 surveys, including small-flowered androstephium (*Androstephium breviflorum*), Mojave milkweed (*Asclepias nyctaginifolia*), desert pincushion (*Coryphantha chloranta*), Utah vine Milkweek (*Cynanchum utahense*), nine-awned pappus grass (*Enneapogon desvauxii*), Parish's club-cholla (*Crusonia (=Opuntia) parishii*), Utah mortonia (*Mortonia utahensis*) and Rusby's desert mallow (*Sphaeralcea rusbyi* var. *eremicola*). A list of plant species observed during surveys is provided in the 2008 Botanical Resources Report (Attachment BR3-1A, Supplemental Data Response, Set 1D) prepared by GANDA (2008).

### **Desert Tortoise**

The project area is located in the southeastern portion of the Northern and Eastern Mojave (NEMO) Coordinated Management Plan (BLM, 2002). It is not within or adjacent to a BLM-designated Desert Wildlife Management Area (DWMA), area of critical environmental concern (ACEC) or Wildlife Habitat Management Area (WHMA). The Ivanpah SEGS project study area is not located within designated critical habitat for the desert tortoise but is located approximately 5 miles north of the Ivanpah critical habitat unit (which is just north of the I-15 and Route 164 interchange). The project study area is within suitable habitat for the desert tortoise; NEMO indicates that the non-lakebed portion of Ivanpah Valley is excellent quality tortoise habitat with some of the highest population densities in the East Mojave (CH2M HILL, 2009a).

Surveys conducted in 2007 and 2008 indicate that desert tortoise sign, including live tortoises, carcasses, and burrows, were observed within the project area (including Ivanpah 1, 2 and 3). The desert tortoise is listed as threatened species under the Federal Endangered Species Act (USFWS, 1990a) in response to loss and degradation of habitat caused by numerous human activities including urbanization, agricultural development, military training, recreational use, mining, and livestock grazing. The tortoise was state-listed in California as threatened in 1989, and is classified as State Protected and Threatened by the neighboring state of Nevada.

Prior to commencing construction activities, impacts to desert tortoise would be mitigated by constructing exclusionary fencing around the entire project boundary; surveying and relocating/translocating any desert tortoise that are present on the site. The project would indirectly impact WILD through the loss of burrowing, breeding, and foraging habitat for desert tortoise over the 50-year period of project operations. Furthermore, habitat quality would potentially be reduced if invasive plant species are introduced or soils become compacted as the result of the project. The draft Biological Assessment (CH2M HILL, 2009a) provides a thorough description of potential direct and indirect impacts to desert tortoise.

Upon project decommissioning, nearly all structures/facilities associated with the project would be removed and the entire disturbed area rehabilitated and revegetated. Restoration activities would include soil decompaction (where necessary for revegetation), relocation of cactus and succulents that were previously salvaged, and seeding with plant species that are native to the area. Rehabilitation and revegetation activities would partially mitigate impacts to WILD that occurred due to habitat degradation during project operations, although the draft Biological Assessment suggests that it may take many years for restored habitat to again be adequate to support desert tortoise. (See the Biological Assessment [CH2M HILL 2009a] and the Application for Incidental Take Permit [BrightSource, 2009] for additional measures that would be implemented during construction and operations to avoid and minimize adverse effects to the desert tortoise.) Removal of fencing and restoration of the site upon project closure would allow desert tortoise to once again use the site as habitat following completion of restoration activities. However, the application for Incidental Take Permit (BrightSource, 2009) indicates that approximately 3,712 acres of habitat would be considered permanently lost.

An application for an Incidental Take Permit under Section 2081(b) of the California Endangered Species Act, was submitted to the California Department of Fish and Game (CDFG) in May, 2009; and an application for a Streambed Alteration Agreement was submitted to CDFG, in June 2009. A compensatory mitigation plan to address significant direct, indirect, and cumulative impacts to desert tortoise, loss of habitat for special-status plant and animal species, and impacts to Waters of the State is being developed in coordination with the US Fish and Wildlife Service, CDFG, BLM and CEC. Mitigation is expected to include appropriate levels of habitat acquisition and enhancement, as well as funding for other agency-sponsored actions that would benefit desert tortoise and Mojave Desert plant and animal communities in the Ivanpah Valley (BrightSource, 2009). In a letter dated July 23, 2009, BLM confirms an agreement with CDFG regarding mitigation measures for the project (USDOJ, 2009). Implementation of the compensatory mitigation plan will likewise mitigate any direct, indirect or cumulative effects to WILD.

## Beneficial Use Analysis for Groundwater

During operations, the project would use approximately 100 acre-ft/yr of groundwater pumped from two production wells that would be developed in the Construction Logistics Area. This water would be used primarily for heliostat washing and boiler feedwater. Pumping is expected to produce localized minor groundwater level declines over time, with a 2.1-foot decline at 0.5 mile from the well, 1.4-foot at one mile, and 0.8-foot at 2 miles (Durbin, 2007). A groundwater budget was developed by Timothy J. Durbin, Inc. (2007), which demonstrated that even with Ivanpah SEGS use of groundwater, annual precipitation recharge and water-use returns would exceed pumping withdrawals. The recharge rate was estimated to currently be about 4,000 acre-ft/year, and current water-use returns are about 800 acre-ft/year, for a total of 4,800 acre-ft/yr. Current pumping of groundwater was estimated at 2,300 acre-ft/year. With proposed pumping by Ivanpah SEGS, plus additional pumping that is expected from the Molycorp Mine, groundwater withdrawals are expected to increase to 2,800 acre-ft/year, which is still less than the rate of recharge and returns (Timothy J. Durbin, Inc., 2007).

### Municipal and Domestic Supply (MUN)

The project would not adversely affect the quantity of groundwater available for municipal and domestic supply. Groundwater use by the project, alone or in combination with other projects in the Ivanpah Valley, would not cause annual groundwater withdrawals from the underlying aquifer to be greater than annual groundwater recharge and returns (Timothy J. Durbin, Inc., 2007).

The project would not adversely affect the quality of groundwater available for municipal and domestic supply. During project operations, concrete-lined ponds would be used should water need to be discharged due to a failure in the system. Use of these ponds would prevent pollutants from being discharged to land or to ephemeral washes where they could eventually contaminate underlying groundwater. These measures are identified in the operations SWPPP for the project (CH2M HILL, 2009e), and include practices such as providing secondary containment for hazardous materials, providing appropriate waste management, etc.

Because the project would not adversely affect the quantity or quality of underlying groundwater, it would not have a negative impact on MUN.

### Agricultural Supply (AGR)

The project would not adversely affect the quantity or quality of groundwater available for agricultural supply. (See discussion for MUN, above.)

### Industrial Service Supply (IND)

Ivanpah SEGS would use groundwater for consumptive use, which is consistent with the IND designation in the LRWQCB Basin Plan.

### Freshwater Replenishment (FRSH)

Ivanpah SEGS would not affect the use of groundwater for natural or artificial maintenance of surface water quantity or quality (e.g., salinity); therefore, the project would have no impact on FRSH.

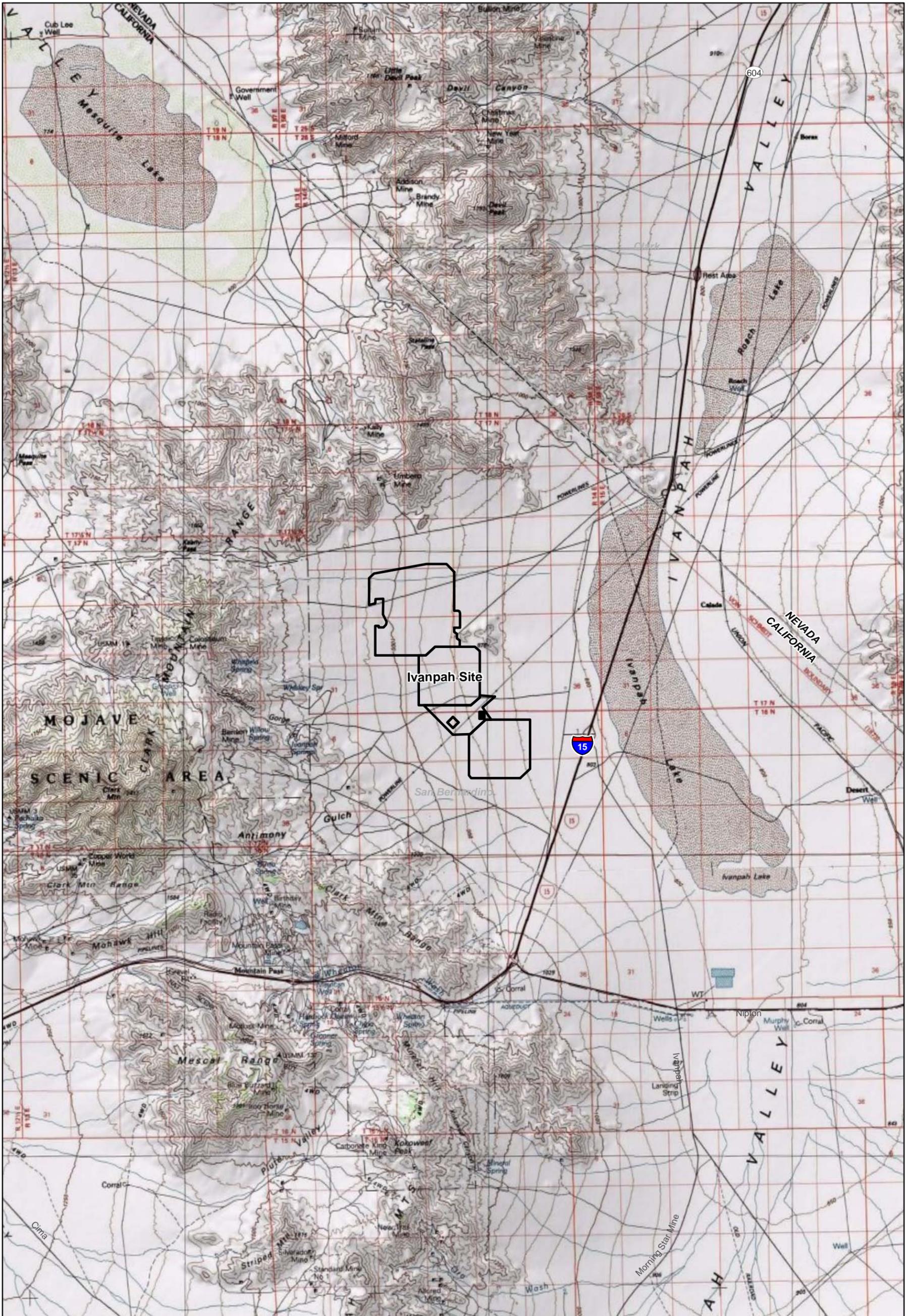
## Conclusions

The preceding analysis indicates that beneficial uses of all Waters of the State within the project study will be adequately protected during project construction, operations, and decommissioning activities. While some beneficial uses, such as WILD, will have temporal impacts associated with the 50-year period of operation, mitigation to be implemented in coordination with the California Department of Fish and Game will ensure that wildlife species and their habitat are fully protected. The LID approach to project design, development and implementation of construction and operations SWPPPs and DESCP, implementation of mitigation to be specified by CDFG, and implementation of a Rehabilitation and Restoration Plan upon project closure will ensure that impacts to all beneficial uses of Waters of the State are avoided, minimized or mitigated.

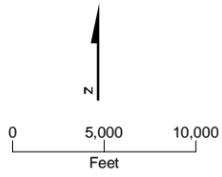
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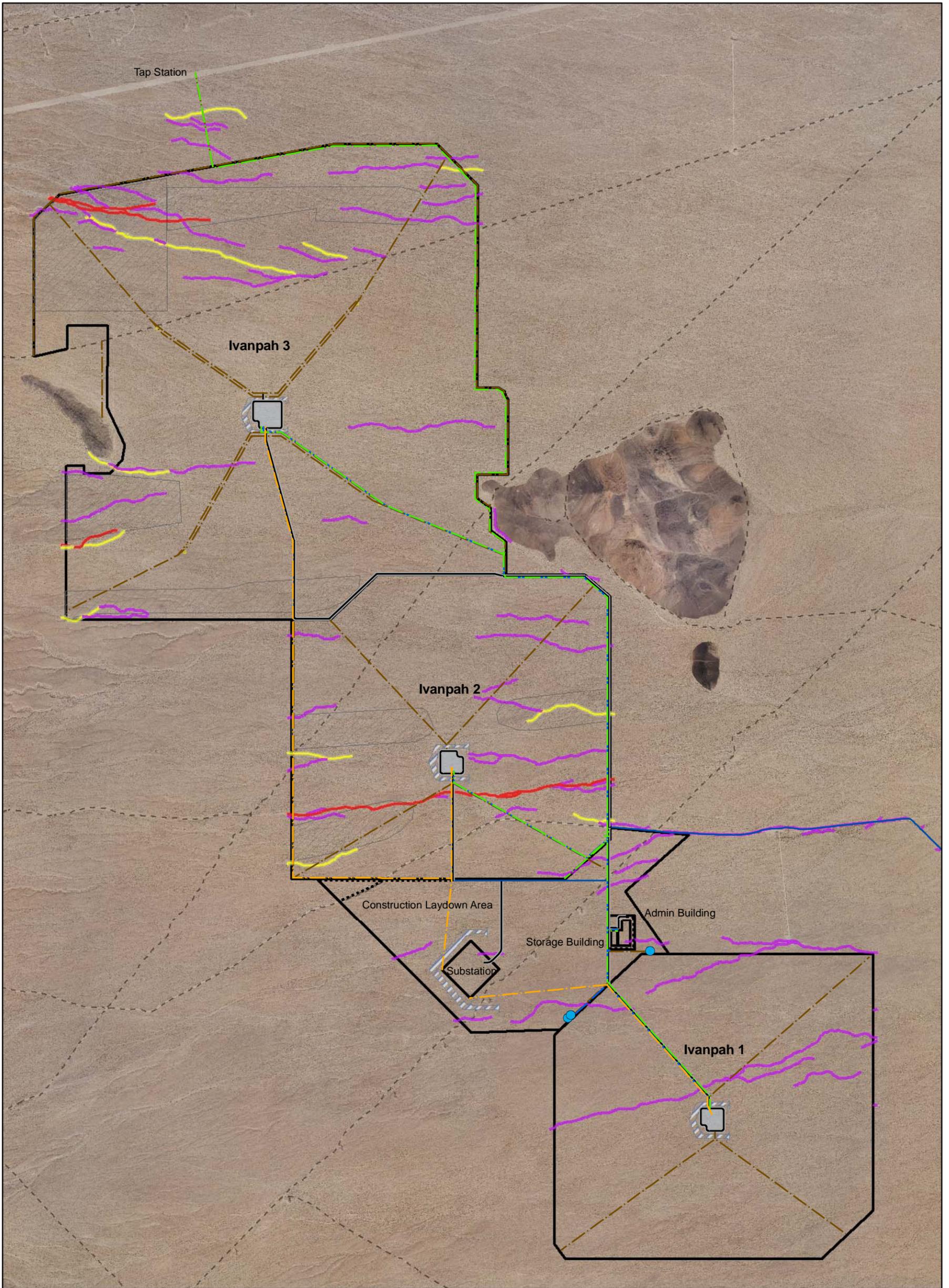
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LEGEND  
 [Black Outline] Project Site

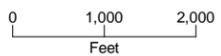


**Figure 1**  
**Regional Setting**  
 Ivanpah Solar Electric Generating System Project  
 San Bernardino County, CA



**LEGEND**

- |                                  |                               |                          |
|----------------------------------|-------------------------------|--------------------------|
| ● Wells                          | <b>Proposed Roads</b>         | <b>Site Features</b>     |
| <b>Ephemeral Wash Category</b>   | — Dirt Roads                  | ■ Power Block            |
| — 1 (36 Feet to 85 Feet)         | — Gravel Road                 | ▨ Diversion Channel      |
| — 2 (21 Feet to 35 Feet)         | — Paved Road                  | ▨ Proposed Grading Areas |
| — 3 (11 Feet to 20 Feet)         | — Paved Road - Colosseum Road | □ Project Site           |
| <b>Proposed Utility Features</b> | — Existing Trails             |                          |
| — Overhead Line                  |                               |                          |
| — Gas Line                       |                               |                          |
| — Water Line                     |                               |                          |



**Figure 2**  
**Waters of the State and**  
**Project Features**

Ivanpah Solar Electric Generating System Project  
San Bernardino County, CA

INSERT FIGURE 3, Dredge/Fill Impact Areas within Waters of the State, Ivanpah 1 (E-size)

INSERT FIGURE 4, Dredge/Fill Impact Areas within Waters of the State, Construction Logistics Area (E-size)

INSERT FIGURE 5, Dredge/Fill Impact Areas within Waters of the State, Ivanpah 2 (E-size)

INSERT FIGURE 6, Dredge/Fill Impact Areas within Waters of the State, Ivanpah 3 (E-size)

# ATTACHMENT DR64-2



## United States Department of the Interior



BUREAU OF LAND MANAGEMENT  
California State Office  
2800 Cottage Way, Suite W-1623  
Sacramento CA 95825  
www.blm.gov

JUL 23 2009

In Reply Refer To:  
2800 (CA930)P  
(CACA-48668)

Mr. Kevin Hunting  
California Department of Fish and Game  
1416 Ninth Street  
Sacramento, California 95814

**DOCKET**

**07-AFC-5**

DATE JUL 23 2009

RECD. JUL 30 2009

Subject: Coordination of Mitigation for BrightSource Solar Development

Dear Mr. Hunting:

This letter confirms agreement between the Bureau of Land Management (BLM) and the California Department of Fish and Game (DFG) regarding mitigation measures for the BrightSource Energy solar development project near Ivanpah, California (CACA-48668).

The current per acre mitigation fee established by the California State Director should be updated to reflect current land value and recent purchase prices. BLM will work with DFG and the applicant to establish the updated value.

The BLM mitigation ratio of 1 to 1 will be applied within the mitigation ratio that DFG has determined for the BrightSource project. The BLM acknowledges and accepts that BLM's mitigation requirement will primarily fund implementation of recovery actions jointly recommended by BLM, DFG and the United States Fish and Wildlife Service (FWS) biologists, while the remaining mitigation requirement will fund land acquisition.

Deed restriction language approved by the Department of Justice will be included in the deeds for lands acquired for project mitigation and donated to BLM for long-term management.

For any land enhancement actions or recovery actions implemented on existing BLM-owned lands as part of mitigation for this project, BLM will develop a Memorandum of Understanding with DFG containing provisions for notification of any proposed projects affecting those lands. The BLM agrees that future projects that may degrade or diminish the recovery value of this mitigation action will be compensated at a higher rate.

Thank you and your staff for your effort in working with the BLM and the FWS in determining a solution that meets all of our agencies' goals and missions. We look forward to continuing our collaborative efforts to promote renewable energy while protecting a healthy and functional desert ecosystem.

Sincerely,

James W. Abbott  
Acting State Director

PROOF OF SERVICE (REVISED 7/20/09) FILED WITH  
ORIGINAL MAILED FROM SACRAMENTO ON 8/4/09

MS

*Appendix 5.15B2*

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*Administrative Draft*

**Industrial Stormwater  
Pollution Prevention Plan  
Ivanpah Solar Electric Generating System  
San Bernardino County, California**

Submitted to the  
**Regional Water Quality Control Board**

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

With Technical Assistance by



Sacramento, California  
August 2009

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## SECTION 1

# Introduction

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Federal Regulations, administered by the Regional Water Quality Control Board (RWQCB), requires the proposed Ivanpah Solar Electric Generating System (Ivanpah SEGS or Facility) in San Bernardino County, California, to have a National Pollutant Discharge Elimination System General Permit for Discharges of Stormwater Associated with Industrial Activities, Excluding Construction Activities (hereafter referred to as the "Permit"). The purpose of the regulations is to protect water quality by reducing the amount of pollutants in stormwater. These pollutants come from outdoor activities as well as atmospheric deposition. The Permit covers the entire Facility. A copy of the Permit is included as Appendix A in the Stormwater Pollution Prevention Plan (SWPPP or plan). The original is kept by BrightSource Energy, Inc. (BSE) administration.

## 1.1 Purpose of the SWPPP

Federal and state regulations require BSE to prepare, retain onsite, and implement a SWPPP. The SWPPP has two major objectives: (1) to help identify the sources of pollution that affect the quality of industrial stormwater discharges and authorized non-stormwater discharges, and (2) to describe and ensure the implementation of Best Management Practices (BMPs) to reduce or prevent pollutants in industrial stormwater discharges and authorized non-stormwater discharges.

The SWPPP describes measures that will be taken throughout the Permit term. This SWPPP is to be kept on the premises at the office of the Facility Environmental Coordinator.

## 1.2 BMP Implementation Committee

The Permit requires that the SWPPP identify personnel to oversee the implementation of BMPs, to conduct monitoring activities, and to modify the SWPPP as necessary over time.

The SWPPP's key person is identified as the Facility Environmental Coordinator. Additional members of the Pollution Prevention Team are to be determined. The team will consist of representatives from all departments and levels that will have a role in implementing the SWPPP. Examples consist of the following: Site Repair Manager, Utilities Manager, Safety Director, Facilities Management, etc.

## 1.3 Implementation Schedule

All of what are called "management BMPs" (those that do not involve any major construction) are to be implemented by startup of operations for each phase. Currently, startup of operations is anticipated to be 2010 for Ivanpah 1, 2011 for Ivanpah 2, and 2013 for Ivanpah 3.

## 1.4 Protocol on Public Access to the SWPPP

Although this is an internal document meant for the use by BSE employees, it is a public document. Representatives of the Lahontan RWQCB who may occasionally visit the Facility are allowed direct access to the SWPPP when onsite. A copy of the SWPPP will be provided to the RWQCB upon request. Such a request made by the RWQCB, or other government agency, is to be forwarded to the Facility Environmental Coordinator.

## 1.5 Updating the SWPPP

The SWPPP shall be revised, as appropriate, and implemented prior to changes in industrial activities which: (i) may significantly increase the quantities of pollutants in stormwater discharge, (ii) cause a new area of industrial activity at the facility to be exposed to stormwater, or (iii) begin an industrial activity that would introduce a new pollutant source at the facility. BSE may also amend the plan if it is determined that there are more economical BMPs to reduce pollutants than the ones currently identified. With the involvement of the individuals listed in Section 1.2, the Facility Environmental Coordinator is responsible for determining if the SWPPP is to be amended.

The RWQCB may request revisions to the SWPPP. The Facility Environmental Coordinator shall submit a copy of the revised SWPPP and implementation schedule to the RWQCB and, within 14 days after implementing the revisions, provide written certification of compliance to the RWQCB.

## SECTION 2

# Drainage

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## 2.1 Watercourses and Critical Areas

### 2.1.1 Watercourses

The project area is located in the Ivanpah hydrologic unit of the South Lahontan Watershed, which includes approximately 278,486 acres in the Ivanpah and Pahrump Valleys of California and Nevada. In this area, all drainage is internal with the rapid runoff from mountains and alluvial fans collecting in closed basins in the Ivanpah Valley. Major surface water features within the Ivanpah Valley include Ivanpah Lake, Roach Lake, and numerous springs and ephemeral washes. The Ivanpah Valley is a topographically closed basin and surface water drainage evaporates on Ivanpah Lake or Roach Lake. The Ivanpah Valley is part of a larger hydrologic system that includes both Ivanpah Valley and Jean Lake Valley. The portion of the valley in California is generally referred to as Ivanpah South, while the portion of the basin in Nevada is generally referred to as Ivanpah North. Figures 1 and 2 show the locations of watercourses (all figures are located in Appendix B).

The project site is located within the Ivanpah South portion of the valley. Ivanpah South includes the 35-square-mile Ivanpah Lake, several ephemeral waterways, and scattered springs along the mountain front. Overall surface drainage in Ivanpah South is towards Ivanpah Lake (DWR, 2004). Ivanpah Lake is located approximately 2 miles east and down slope of the project area. Waterways in or near the project site include unnamed ephemeral washes. These ephemeral washes typically flow only in response to storm events. There are two mapped springs, Whisky Spring and Ivanpah Spring, located approximately 1.6 miles west of the proposed project site in the foothills of the Clark Mountains. There are no springs located on the project site.

### 2.1.2 Other Critical Areas

The project area is dissected by numerous ephemeral washes ranging in size from small (1 to 4 feet wide), weakly expressed erosional features to broad (over 10 feet wide) drainages. The active flow channels are devoid of vegetation and typically have a sandy-gravel substrate, although some washes also contain cobble and scattered larger rocks. Throughout the project area the majority of the washes are associated with Mojave Creosote Bush Scrub habitat. Species such as cheesebush, are common in some medium- to large-sized washes; especially in braided channels that contain slightly elevated areas intermixed with the active flow channels. Mojave Wash Scrub is limited to the larger washes (typically over 15 feet) with sandy gravel substrate and well defined banks.

Approximately 198.72 acres of ephemeral washes were identified and mapped in the project study area. Small to medium sized washes are common and widespread throughout the entire project area, while the larger washes are most abundant in the northern section of Ivanpah 3 as well as the eastern side of Ivanpah 2. The larger washes tend to dissipate into

smaller, more braided channels as they progress downslope. No other wetlands or waters were identified in the project area.

## 2.2 Precipitation

The project site is located in southern California's Mojave Desert in the Ivanpah Valley. Ivanpah Valley is a semi-arid, topographically closed basin. Average annual precipitation at the project site from 1971 to 2000 was between 5.5 and 6.7 inches. Most of the precipitation in the project area falls during January through March and July through September. The estimated rainfall for a 100 year 24-hour event is 3.28 inches, and 2.83 inches for a 6-hour event. For a 10-year 24-hour event the estimated rainfall is 1.92 inches, and 1.60 inches for a 6-hour event (site characterization Technical Memoranda associated with stormwater management are included in Appendix C).

## 2.3 Drainage

Stormwater runoff at the site is predominantly sheet flow from west to east, eventually discharging into Ivanpah Dry Lake. In support of a low-impact design (LID), with exception of the power block areas, solar field development will maintain sheet flow where possible, with water exiting the site in existing natural contours and flows. In addition, the majority of the project site will maintain the original grades and natural drainage features and, therefore, requires no added storm drainage control.

Existing small to moderate ephemeral washes will remain intact at locations capable of being traversed by installation equipment. Large ephemeral washes will be graded to the extent necessary to provide equipment access. In limited areas such as the power blocks and administrative areas, a storm drainage system will be designed using diversions channels, by-pass channels, or swales to direct run-on flow from up-slope areas, and run-off flow through and around each facility (Figure 3). The design will be developed for sheet flow for all storm events less than or equal to a 100-year, 24-hour storm event. Diversion channels will be designed so that a minimum ground surface slope of 0.5 percent shall be provided to provide positive, puddle-free drainage. Storm drainage channels will be sized to convey floods at relatively low velocities that will not result in significant scour or particle transport, and may be lined with a non-erodible material such as compacted rip-rap, geosynthetic matting, or engineered vegetation.

Stormwater will be allowed to sheet flow across roads. An "Irish Bridge" style crossing will be constructed where permanent asphalt paved access roads cross major ephemeral washes on the site. The Irish Bridges will be constructed of reinforced concrete or gabion baskets and are being designed to prevent the scour and washout of major asphalt access roads during storm events (Figure 4).

When necessary, offsite stormwater drainage will be collected using a system of swales, berms, and existing ephemeral washes to control and direct stormwater through and around the Ivanpah SEGS site.

The stormwater drainage system will be designed by using the Soil Conservation Service (SCS) method (TR-55), and by determining the amount of rainfall during a specific rainfall

storm event. This method is in accordance with requirements specified in the most current version of the San Bernardino County and Clark County requirements.

All surface runoff will be controlled in accordance with the requirements of the Permit, the requirements of the San Bernardino Water Quality Management Plan manual, and all other applicable laws, ordinances, regulations and standards (LORS).

*Design drawings when completed will be incorporated into the SWPPP.*

## 2.4 Hydraulic Analysis

Preliminary stormwater calculations are located in Appendix C. The watershed of the project area is 14,856 acres in size.

Hydrology calculations will be performed using methods that, at a minimum, adhere to the TR-55 (SCS) method. Calculations will determine the amount of pre- and post-development stormwater run-on and run-off for each basin or sub-basin within each facility.

San Bernardino County and Clark County requirements will be used (where applicable) to classify soil characteristics, expected soil types, and other design criteria necessary for use with the TR-55 calculations. Offsite flows will be determined using the western watershed boundaries from available state watershed information, contour intervals, and available soil mapping information. Watersheds will be further broken down into sub-basins as required to determine the western flow from the ephemeral washes upslope of the Ivanpah SEGS project areas. This process is necessary to determine the offsite flow required to design the bypass channels through the developed Ivanpah SEGS site.

# Site Location and General Environment

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## 3.1 General Nature of Facility Activities

The Ivanpah SEGS will consist of three independent solar thermal electric generating facilities (or solar plants) that will be located approximately 1.6 miles west of Ivanpah Dry Lake and 4.5 miles southwest of Primm, Nevada. The project will be located in San Bernardino County, California, on federal property managed by the Bureau of Land Management (BLM). The three Ivanpah SEGS facilities will have a combined net rating of approximately 400 megawatt (MW). The total Ivanpah SEGS project area consists of approximately 4,062 acres. Ivanpah 1 will require approximately 914 acres (1.43 square miles); Ivanpah 2 will require approximately 921 acres (1.44 square miles); and Ivanpah 3 is larger and will require approximately 1,836 acres (2.9 square miles). The developed areas for Ivanpah 1, 2, and 3 will cover a total of 3,671 acres (5.7 square miles). A detailed breakdown of the Ivanpah SEGS project components is provided in Table 3-1 (located in Appendix D due to its size).

Following completion of LID and issuance of permits, the proposed project will be constructed in three phases, and completed within 48 months (target completion by December 2013). Construction is planned in the following order: (1) Ivanpah 1 (the southernmost site; nominal 100 MW) and shared facilities; Ivanpah 2 (the middle site; nominal 100 MW); then Ivanpah 3 (the northern site, nominal 200 MW). For purposes of this plan, impacts have been placed into three categories.

**Permanently disturbed areas:** This includes those features that would remain after the project's 50-year span. They would include the Southern California Edison (SCE) substation and the paved portion of Colosseum Road from the Golf Club to the substation; the rerouted trails (i.e., the gravel road from the end of the paved portion of the rerouted Colosseum Road to where it connects with the Colosseum dirt road, the rerouted access tracks around the top of Ivanpah 3); and stabilized channel crossings.

**Long-term disturbance areas:** This includes facilities that will remain in place for the duration of the project. Examples include the solar plants, administration/warehouse building, water supply wells, monitoring well, and utility lines. Areas affected by these facilities will be revegetated following closure, which would be the same order as construction, with the exception that the shared facilities would be handled as part of the last phase that is closed.

**Temporary disturbance areas:** This includes areas that will be revegetated within 5 years from the time of disturbance. Facilities that fall into this category include the utility and roadway construction corridors and lightly graded areas within Ivanpah 2 and Ivanpah 3 (which will be revegetated within 1 year of completion of construction) and those areas within the Construction Logistics Area (CLA) that are used for construction (which will be revegetated once construction of all three solar plants is completed).

## 3.2 Maps of General Environs

Figure 5 shows the location of the Facility and the immediately surrounding areas. In addition, Figure 6 shows the aboveground transmission line corridor between the three solar plants, the new roads used to access each site, and the underground gas line corridor.

Stormwater runoff at the site is predominantly sheet flow from west to east, eventually discharging into Ivanpah Dry Lake.

## 3.3 Maps of Facility Layout

The Ivanpah SEGS site includes three solar concentrating thermal power plants, based on solar power tower and heliostat mirror technology, in which heliostat (mirror) fields focus solar energy on power tower receivers near the center of the heliostat array. Each phase is comprised of two main elements:

- Heliostat (or mirror) field and power towers
- Power block, with a steam turbine generator, boiler and auxiliary equipment

The heliostat (or mirror) fields focus solar energy on the power tower receivers near the center of each of the heliostat arrays (the 100-MW plants have one array and the 200-MW plant has five arrays). Within each array, heliostats are located on rows arranged in arcs with progressively larger radii. A power block is located near the center of each solar plant. The power block contains the power generation equipment including a steam turbine, natural gas-fired start-up boiler and auxiliary equipment.

## 3.4 Project Elements

### 3.4.1 Process Description

The heliostat (or mirror) fields focus solar energy on the power tower receivers near the center of each of the heliostat arrays (the 100-MW plants have one large array and the 200-MW plant has five arrays). In each solar plant, one Rankine-cycle reheat steam turbine receives live steam from the solar boilers and reheat steam from one solar reheater – located in the power block at the top of its own tower. The solar field and power generation equipment are started each morning after sunrise and insolation build-up, and shut down in the evening when insolation drops below the level required to keep the turbine online.

Each solar plant also includes a partial-load steam boiler, which is used for thermal input to the turbine during the morning start-up cycle to assist the plant in coming up to operating temperature more quickly. The boiler will also be operated during transient cloudy conditions, in order to maintain the turbine on-line and ready to resume production from solar thermal input, after the clouds pass. After the clouds pass and solar thermal input resumes, the turbine will be returned to full solar production.

Each plant uses an air-cooled condenser or “dry cooling,” to minimize water usage in the site’s desert environment. Water consumption would, therefore, be minimal – mainly to

provide water for washing heliostats. Auxiliary equipment at each plant includes feed water heaters, a deaerator, an emergency diesel generator, and a diesel fire pump.

### 3.4.2 Heliostat Fields

The 100-MW solar plants (Ivanpah 1 and 2) will each have heliostat arrays consisting of up to 55,000 heliostats. The 200-MW plant (Ivanpah 3) will have heliostat arrays consisting of up to 104,000 heliostats. The heliostat arrays would be arranged around a single centralized solar power tower (SPT). The heliostats would automatically track the sun during the day and reflect the solar energy to the boiler on top of the SPT.

Each of the heliostat mirrors is 7.2 feet high by 10.5 feet wide (2.2 meters by 3.2 meters) yielding a reflecting surface of 75.6 square feet (7.0 square meters). Each heliostat consists of two mirrors mounted on a single pylon, along with a computer-programmed aiming control system that directs the motion of the heliostat to track the movement of the sun. Communication cables connecting the heliostats between one another will be strung aboveground.

**Heliostat Field Preparation.** Consistent with the LID approach to this project, vegetation clearing in the heliostat fields will occur only where necessary to allow for equipment access and stormwater management.

An approximate 12 foot-wide linear swath of vegetation along the outer edge of each heliostat field will be cleared to create an internal perimeter path for installation and maintenance of the combined tortoise and security fence. In areas where clearing of vegetation is not necessary, the vegetation will be cut to a height that will allow clearance for heliostat function while leaving the root structures intact. The vegetation will be cut with a flail-type mower mounted on skids that will be mounted on a low-ground pressure tractor (approximately 4.2 pounds per square inch [psi]). Figure 7, shows the type of equipment that may be used. Occasional cutting of the vegetation may be required to control plant regrowth that could affect heliostat mirror movement.

**Installation of Heliostats.** The heliostats will be installed in two steps. Initially, the support pylons will be installed using a sonic (vibratory) technology, and then the mirrors and aiming system are mounted to the pylon. The vibratory installation allows the 6-inch diameter pylons to be embedded in the ground without the use of conventional drilling techniques or generation of drill cuttings. As a result of the LID, a majority of the project site will maintain the original grades and natural drainage features, and therefore construction will require machines that are maneuverable and can negotiate the terrain. Installation of the 6-inch galvanized heliostat pylons is presently planned to be done with a rubber tire hydraulic machine manufactured by ABI (see Figure 8). The machine will be stabilized with outriggers, then the pylons will be vibrated into the ground. The siting of pylons will be guided by global positioning system (GPS) technology. Pylons will be delivered by an all-terrain vehicle, such as the one in Figure 8, and trailer.

Installation of the heliostat mirrors will be accomplished with a rough terrain crane. The machine presently planned is a Grove 540E, shown in Figure 9. The crane will be able to mount mirrors on more than 20 pylons before moving to the next location (Figure 10). In addition, an aboveground communications cable will be strung linking the heliostats. The cable installation will be done manually.

**Maintenance Washing of Heliostat Mirrors.** Operation requirements necessitate the washing of some portion of the project's solar heliostats on a nightly basis. Individual heliostats are washed about once every 2 weeks (biweekly). The application rate per heliostat would be 2.5 gallons once every 2 weeks. Heliostat wash water requirements for Ivanpah 1 and 2 will be 3,575,000 gallons per year or 10.97 acre-feet per year (afy) and 6,760,000 gallons or about 20.75 afy for Ivanpah 3, for total deionized water consumption of 42.7 afy after project build-out.

Because of dust created during site grading, it is possible that this washing cycle may need to be more frequent during the first 5 months of construction of Ivanpah 3, when Ivanpah 1 is operating. It was conservatively estimated that the frequency of mirror washing would, at most, double (i.e., weekly washing). If washing frequency is doubled, the amount of water required would be: 55,000 heliostats x 2.5 gallons per heliostat x 22 weeks or 3,025,000 gallons (or about 9.3 acre-feet). Therefore, the amount of additional water required is estimated not to exceed 4.6 acre-feet.

High quality deionized water containing only minimal iron and copper from the water piping will be used for heliostat mirror washing. Assuming uniform dispersion of the 1.25 gallons of water across the mirror surface and no evaporation, runoff onto the ground will be about 0.17 gal, or about 22 fluid ounces per linear foot per washing episode. Given such small amounts, no water will run offsite as a result of heliostat washing. Due to the high evaporation rates in the area, and the minimal amount of runoff water used, it is likely that wash water will evaporate at or just below the ground surface in most seasons. The area underneath the mirrors will be inspected for weeds and addressed per the requirements of the Weed Management Plan (included as Appendix E).

Mirror washing will be performed biweekly (once every other week) by a machine currently under design. A concept of the washing machine is shown in Figure 11. The washer will haul at least 500 gallons of water. Continued research and development for a mirror washing machine is in progress. Therefore, the size and type of machine may change. The mirror washing machine will drive on the path created between every other heliostat row.

### 3.4.3 Power Block

Each solar power plant will have a power block located in the approximate center of the heliostat array. The power block includes an SPT, a receiver boiler, a steam turbine generator (STG) set, air-cooled condensers, and other auxiliary systems. The size of both Ivanpah 1 and 2 power blocks will be 13.5 and 13.2 acres, respectively; the Ivanpah 3 power block will be approximate 15 acres. Acreage estimates include the power block perimeter road, stormwater diversion channel and berm, and concrete holding basin. Each power block will contain, but is not limited to, the equipment listed below in Table 3-1. The power block footprint will be graded to create level pad elevations with approximately balanced cut and fill earthwork for each power block. In addition to the equipment listed in Table 3-1, Ivanpah 3 will have a system of steam pipelines connecting the four outlying SPTs to the power block. The SPTs will be within the power block at Ivanpah 1 and 2.

TABLE 3--1  
Power Block Equipment List

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Steam Turbine

Power Tower\*

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Generator	Switchyard
Auxiliary Boiler	Generator Step-up Transformer
Air-cooled Condenser	Unit Auxiliary Transformer
Feed Water Heaters	SUS Transformer
Boiler Feed Pumps	Raw Water/Fire Water Tank
Plant Services Building	Demineralized Water Tank
Water Treatment Equipment Area	Raw Water Forwarding Pumps
Underground Gas Pipeline	Demineralized Water Forwarding Pumps
Condensate Tank/Pump	115 kV Generation Tie Line
Emergency Generator	Concrete Holding Basins
Local Control Building	Access Roadway
Solar Superheater/Reheater Receiver	

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\*Ivanpah 3 will have four solar power towers in addition to the solar reheat tower in the Power Block

Stormwater runoff and runoff will be diverted around the power blocks. Two concrete-lined (or an approved alternate lining system) holding basins of about 40 feet by 60 feet by 6 feet deep are included in the power block area. They will be used for boiler commissioning and serve as an emergency outfall from any of the processes. No waste streams will be discharged to the concrete holding basins.

### 3.4.4 Solar Field, Solar Receiver Boiler, Steam Turbine Generator and Condenser

The SPT is a metal structure designed specifically to support the boiler and efficiently move high-quality steam through a STG at its base. Overall, the tower height would be 140 meters (approximately 459 feet). Additionally, a Federal Aviation Administration (FAA) - required lighting and a lightning pole will extend above the top of the towers approximately 5 to 10 feet. The height of the SPT allows heliostats from significant distances to accurately reflect sunlight to the receiving boiler. The receiving boiler is a traditional high-efficiency boiler positioned on top of the SPT. The boiler converts the concentrated energy of the sun reflected from the heliostats into superheated steam. The boilers will be supplied by conventional boiler manufacturers providing performance warranties and industry best practices, and will comply with standard boiler design parameters. The boiler's tubes are coated with a material that maximizes energy absorbance. The boiler has steam generation, superheating, and reheating sections and is designed to generate superheated steam at a pressure of 160 bars and a temperature of 550 degrees Celsius (°C).

### 3.4.5 Fuel System

Each phase of the project includes a small package natural-gas fired startup boiler to provide heat for solar plant startup and during temporary periods of cloud cover. Natural gas will be obtained by the construction of an approximately 6-mile-long, 4- to 6-inch diameter distribution pipeline from the existing Kern River Gas Transmission Company (KRGT) pipeline, which is located approximately 0.5 mile north of the Ivanpah 3 site. A

long-term gas metering tap station (100 feet x 150 feet) and a temporary construction area (200 feet x 200 feet) will be located at the point of connection along the existing KRGT Right-of-Way. A dirt access road will follow the pipeline for maintenance access.

### 3.4.6 Water Supply and Use

To conserve water in the site's desert environment, each plant will use a dry-cooling condenser. Water consumption is, therefore, minimal (estimated at no more than 100 acre-feet/year for all three units). Two new groundwater production wells will be drilled and developed to provide raw water for the Ivanpah SEGS project. The two wells will be located in the CLA near the northwest corner of Ivanpah 1 (Figure 12). These wells will supply all three solar plants and will be used for make-up water, mirror-wash water (each plant will include a water treatment and deionizing facility in the power block structure), and for domestic uses. The combined 400-MW capacity of the three plants will require up to 46 gallons per minute (gpm) of raw water from the groundwater production wells, or about 74.2 afy. However, to provide adequate operating flexibility, 100 afy of water is being requested.

Make-up water for the steam system will be treated by means of a mixed-bed ion-exchange system to produce feedwater-quality water for use in the boiler system. The ion exchange resins will be sent offsite for regeneration. Water will be distributed to the plants via underground high-density polyethylene (HDPE) or polyvinyl chloride (PVC) pipe. The pipe will be installed underground in utility corridors leading to the power blocks from the two supply wells. Each power block will contain a 250,000 gallon raw water tank. A portion of the raw water stored in the tank (100,000 gallons) will be designated for plant use, while the majority will be reserved for fire water.

The groundwater production wells will be accessed by a 12-foot-wide dirt access road. The water supply line will go from the wells along the paved access road on the northwest corner of Ivanpah 1, where it would connect to the water main. The water main would run north to the administration and maintenance complex, and then to Ivanpah 2 and Ivanpah 3 in the same corridor as the gas pipeline to those plants. A water pipeline will also extend southeast to the Ivanpah 1 power block along the paved access road leading to the power block.

The Ivanpah SEGS will operate an average of about 10 hours a day, 7 days a week throughout the year, with the exception of a scheduled shutdown in late December for maintenance. However, the water treatment plant will operate continuously, in order to minimize water treatment system size and capital cost, and to use off-peak energy at night.

A monitoring well will be installed southeast of the administration and maintenance complex near the northwest corner of Ivanpah 1 (see Figure 12).

### 3.4.7 Plant Cooling Systems

The cycle heat rejection system will consist of an air-cooled steam condenser system. The heat rejection system will receive exhaust steam from the low-pressure section of the steam turbine and feed water heaters and condense it back to water for reuse.

### 3.4.8 Waste Management

Waste management is the process whereby all wastes produced at Ivanpah SEGS are properly collected, treated (if necessary), and disposed of. Wastes include process and sanitary wastewater, nonhazardous waste and hazardous waste, both liquid and solid.

#### 3.4.8.1 Domestic Water Use and Wastewater Management

A small filtration and purification system (package treatment plant) will be used to provide potable water for domestic including sanitary uses (sinks, showers, and toilets) at the Administration/warehouse Building. Drinking water may also be trucked to the site. The power block sites will have portable toilets (porta-potties), self contained hand wash stations, and use bottled water. Portable toilets will be serviced by a waste management firm on a regular basis, depending on the number of toilets and staff at each facility.

#### 3.4.8.2 Plant Drains and Oil/Water Separator

General plant drains will collect containment area washdown, sample drains, and drainage from facility equipment drains. Water from these areas will be collected in a system of floor drains, hub drains, sumps, and piping and routed to the wastewater collection system. Drains that potentially could contain oil or grease will first be routed through an oil/water separator. Water from the plant wastewater collection system will be returned back into the raw water storage tank.

#### 3.4.8.3 Power Cycle Makeup Water Treatment Wastes

Distillate from the mixed-bed system will be used as the feed water for the power cycle makeup treatment system. The mixed-bed unit will be a self-contained skid mounted unit. Drains from the water treatment equipment will be routed to the raw water storage tank.

#### 3.4.8.4 Boiler Blowdown

Boiler blowdown will consist of boiler water discharged from each receiver boiler to control the concentration of dissolved solids and silica within acceptable ranges. Boiler blowdown will be discharged to flash tanks. Steam will be condensed and the condensate cooled. During the day, when the power plant operates, boiler feedwater is made-up and blown down at receiver-boiler towers at a rate of 30 gpm. Blowdown will be flashed, condensed, and used for mirror washing. Well pumps will operate for about 24 hours, pumping 11 gpm into the raw water tank.

#### 3.4.8.5 Solid Wastes

Ivanpah SEGS will produce maintenance and plant wastes typical of power generation operations. Generation plant wastes include oily rags, broken and rusted metal and machine parts, defective or broken electrical materials, empty containers, and other solid wastes, including the typical refuse generated by workers. Solid wastes will be trucked offsite by licensed haulers for recycling or disposal.

### 3.4.9 Management of Hazardous Materials

There will be a variety of chemicals stored and used during operation of Ivanpah SEGS. The storage, handling, and use of all chemicals will be conducted in accordance with applicable

LORS. Chemicals will be stored in appropriate chemical storage facilities. Bulk chemicals will be stored in storage tanks, and most other chemicals will be stored in returnable delivery containers. Chemical storage and chemical feed areas will be designed to contain leaks and spills. Concrete containment pits and drain piping design will allow a full-tank capacity spill without overflowing the containment. For multiple tanks located within the same containment area, the capacity of the largest single tank will determine the volume of the containment area and drain piping. Drain piping for reactive chemicals will be trapped and isolated from other drains to eliminate noxious or toxic vapors.

Safety showers and eyewashes will be provided adjacent to, or in the vicinity of, chemical storage and use areas. Plant personnel will use approved personal protective equipment during chemical spill containment and cleanup activities. Personnel will be properly trained in the handling of these chemicals and instructed in the procedures to follow in case of a chemical spill or accidental release. Adequate supplies of absorbent material will be stored onsite for spill cleanup.

### **3.4.10 Emission Control and Monitoring**

Air emissions from the combustion of natural gas in the start-up boiler will be controlled using state-of-the-art systems. To ensure that the systems perform correctly, continuous emissions monitoring for NO<sub>x</sub> and CO will be performed.

#### **3.4.10.1 NO<sub>x</sub> Emission Control**

The boiler will be provided with a Natcom low-NO<sub>x</sub> burner and 20 percent flue gas recirculation, to guarantee maximum NO<sub>x</sub> emission of 9 ppm (0.012 lb/MMBtu), which complies with the NSPS NO<sub>x</sub> standard of 0.2 lb/MMBtu..

#### **3.4.10.2 Particulate Emission Control**

Particulate emissions will be controlled by the use of best combustion practices, the use of natural gas, which is low in sulfur, as the sole fuel for the boilers, and high efficiency air inlet filtration.

#### **3.4.10.3 Continuous Emission Monitoring**

For each gas-fired boiler, a separate continuous emission monitoring system (CEMS) will sample, analyze, and record fuel gas flow rate, NO<sub>x</sub> and CO concentration levels, and percentage of O<sub>2</sub> in the exhaust gas from the boiler stacks. The CEMS will transmit data to a data acquisition system (DAS) that will store the data and generate emission reports in accordance with permit requirements. The DAS will also include alarm features that will send signals to the plant DCS when the emissions approach or exceed pre-selected limits.

### **3.4.11 Fire Protection**

The fire protection system will be installed that meets the approval of the San Bernardino County Fire Marshal and be designed to protect personnel and limit property loss and plant downtime in the event of a fire. The primary source of fire protection water will be the combined fire water/raw water storage tank. Each power block will have 150,000 gallons of water in the raw water tank dedicated to fire suppression.

An electric jockey pump and electric-motor-driven main fire pump will be provided to maintain the water pressure in the plant fire main to the level required to serve all fire fighting systems. In addition, a back-up diesel engine-driven fire pump will be provided to pressurize the fire loop if the power supply to the electric-motor-driven main fire pump fails. A fire pump controller will be provided for each fire pump.

The fire pump will discharge to a dedicated underground firewater loop piping system. Normally, the jockey pump will maintain pressure in the firewater loop. Both the fire hydrants and the fixed suppression systems will be supplied from the firewater loop. Fixed fire suppression systems will be installed at determined fire risk areas such as the transformers and turbine lube oil equipment. Sprinkler systems will also be installed in the Administration/Control/Warehouse/Maintenance Building and Fire Pump enclosure as required by National Fire Protection Association (NFPA) and local code requirements. Handheld fire extinguishers of the appropriate size and rating will be located in accordance with NFPA 10 throughout the facility.

### 3.4.12 Shared Utilities

Each of the Ivanpah SEGS units will be separately owned and operated. However, in many cases, all or portions of the utilities including natural gas pipeline, water supply line, and transmission lines will be shared among the owners. Further details are provided below.

#### 3.4.12.1 Interconnect to Electrical Grid

Ivanpah 1, Ivanpah 2, and Ivanpah 3 would be interconnected to the existing SCE grid through an upgraded SCE 115-kilovolt (kV) line passing between Ivanpah 1 and Ivanpah 2 on a northeast-southwest utility corridor. This SCE upgrade is a separate project to serve a number of developments planned in the general vicinity, and is not being built specifically for the Ivanpah SEGS project, but will provide sufficient capacity for the Ivanpah SEGS project as well as other projects anticipated by SCE. A substation will be constructed in the CLA between Ivanpah 1 and 2 that will be used to connect Ivanpah SEGS to the electrical grid (see Figure 13). The substation dimensions will be about 830 feet wide by 850 feet long, approximately 16.1 acres in size. In addition, a 24-foot-wide asphalt road about 1,760 feet long will be needed to connect the substation to the rerouted Colosseum Road on the south side of Ivanpah 2.

The transmission lines entering the new Ivanpah Substation will be 220 kV coming in from the east and 115 kV to the west.

The 115-kV transmission generation tie line (gen-tie line) from the edge of the Ivanpah 1 solar field to the substation will be over 2,850 feet long. The Ivanpah 2 and 3 gen-tie lines extend approximately 2,322 feet and 12,732 feet, respectively, from their switchyards at the power block before coming together. The combined gen-tie line (double-circuit) will then extend approximately 1,900 feet from the southern end of Ivanpah 2 to the substation. There will be a 12-foot-wide dirt service road running alongside the gen-tie lines. Each circuit will be supported by single-pole structure at appropriate intervals (approximately 750 feet apart) with final heights to be determined during detailed design. The shared gen-tie line for Ivanpah 2 and 3 will be carried on a double-circuit single pole line.

### 3.4.12.2 Substation

A permanent berm and stormwater diversion channel (about 8.3 acres in size) will be constructed around the substation to protect it from stormwater runoff (see Figure 13).

### 3.4.12.3 Telecommunication Line

The Ivanpah Substation will require new telecommunication infrastructure to be installed to provide protective relay circuits, Supervisory Control and Data Acquisition (SCADA) circuits, Special Protection System (SPS) circuits and telephone services. These telecommunication lines will be owned by SCE. The primary telecommunication line will be an optical ground wire strung on the new double-circuit 220 kV transmission line. A second redundant telecommunication line will be installed consisting of microwave radio from the new Ivanpah substation to the town of Nipton. From there a 5-mile underground fiber optic cable will be installed along Highway 164 to the Eldorado - Lugo 500 kV line where 25 miles of optical ground wire will be strung all the way to Eldorado substation.

To facilitate an interim 115 kV interconnection another telecommunication path will be added. This telecommunication path from the new Ivanpah substation to the local carrier facility interface in the Mountain Pass area to the west consists of approximately 8 miles of fiber optic cable to be installed overhead on existing poles and new underground conduits to be constructed in the substation and at the telecom carrier interface point. This fiber optic route consists of two segments. The first segment is from the new Ivanpah substation to the existing Mountain Pass Substation using the existing Nipton 33-kV distribution line poles built along the transmission line corridor that crosses between Ivanpah 1 and 2. The second segment will be from the Mountain Pass substation to the telecommunications facility on the east end of Mohawk Ridge, approximately 1.5 miles away from the Mountain Pass Substation.

## 3.5 Description of Storm Drainage System and Outfalls

The majority of the project site will maintain the original grades and natural drainage features and, therefore, will require no added storm drainage control. In limited areas, such as the power blocks, substation, and administrative areas, a storm drainage system will be designed using diversions channels, bypass channels, or swales to direct runoff flow from up-slope areas and runoff flow through and around each facility. Diversion channels will be designed so that a minimum ground surface slope of 0.5 percent will be provided to allow positive, puddle-free drainage. To reduce erosion, storm drainage channels may be lined with a nonerodible material such as compacted rip-rap, geo-synthetic matting, or engineered vegetation. The design will be developed for sheet flow for all storm events less than or equal to a 100-year, 24-hour storm event.

All surface runoff during and after construction will be controlled in accordance with the requirements of the National Pollutant Discharge Elimination System (NPDES) stormwater permit for construction activities, the requirements of the San Bernardino Water Quality Management Plan manual, and all other applicable LORS.

## 3.6 Erosion and Sediment Control Measures

Protection of soil resources will be an important factor in the design of Ivanpah SEGS erosion and sedimentation controls. To minimize wind and water erosion, open spaces will be preserved and left undisturbed maintaining existing vegetation (to the extent possible with respect to site topography and access requirements). To reduce runoff from compacted surfaces, infiltration rates will be returned to natural rates after construction.

Stone filters and check dams will be strategically placed throughout the project site to provide areas for sediment deposition and to promote the sheet flow of stormwater prior to leaving the project site boundary. Where available, native materials (rock and gravel) will be used for the construction of the stone filter and check dams. A rock crusher may be provided onsite to use local stone for the production of gravel. Diversion berms will be used to redirect stormwater as required.

Periodic maintenance will be conducted as required after major storm events and when the volume of material behind the check dams exceeds 50 percent of the original volume. Stone filters and check dams are not intended to alter drainage patterns but to minimize soil erosion and promote sheet flow.

## 3.7 Access

Project access will be from Colosseum Road to the project entrance road (Figure 14). Colosseum Road is an existing paved and dirt road, which will be paved (30 feet wide, 2 lanes) for a 1.6-mile distance from the Primm Valley Golf Club to the project site. The project will reroute a portion of Colosseum Road around the southern end of the Ivanpah 2 plant site for a distance of 0.6 miles. It will continue as a 30-foot paved 2-lane road along the southern perimeter of Ivanpah 2 (the northern periphery of the CLA) to the point where the asphalt road turns north toward the Ivanpah 2 power block. From that point the road will continue about 0.46 miles as a dirt road to where it meets with the existing Colosseum dirt road where it exits the CLA.

The internal roadway and utility corridors for each heliostat field and its power block will contain a 24-foot-wide paved access road from the entrance of the solar plant site to the power block and then around the power block.

Within the heliostat fields, 10-foot-wide paths will be located concentrically around the power block, or concentrically around the SPTs in the case of Ivanpah 3, to provide access to the heliostat mirrors for maintenance and cleaning. The paths will be located between every other row of heliostats and will not be graded except where topography necessitates limited cut and fill such as on the margins of incised washes. There will also be 12-foot-wide maintenance paths on the inside perimeter of the project boundary fence, which will be used for plant security and to monitor and maintain perimeter and tortoise fencing. These paths will be mowed but not graded except where necessary to cross washes.

Existing dirt trails that traverse the site will be rerouted either around the project site or to a proposed paved access road. Each rerouted dirt trail will be 8 to 12 feet wide (to match the existing trail) and will be reconnected to the original dirt trail on the other side of the project

site (see Figure 15). Permanent tortoise guards will be installed to prevent tortoises from entering internal roads (see Figure 16).

**Construction of Roads and Trails.** New asphalt roadways (such as the improvements made to Colosseum Road) will be constructed in accordance with approved local and federal standards using an engineered road base with either aggregate or bituminous concrete surface. Trails that are rerouted as well as interior dirt roads and maintenance paths will be mowed to reduce the height of the vegetation but not bladed. Blading will only occur where topography necessitates limited cut and fill such as on the margins of incised washes.

### 3.8 Construction Logistics Area

An administration, warehouse, and maintenance complex will be located in the eastern portion of CLA between the relocated Colosseum Road and the entrance to the Ivanpah 1 solar plant. It will include parking and landscape areas. The complex will require about 8.9 acres and will be served by power from the Ivanpah Substation, water from the water supply wells, and gas from the main gas trunk line running from the KRGT tap point to the Ivanpah 1 power block (see Figure 12). The CLA will also contain the main construction parking areas, construction trailers, tire cleaning station, fabrication buildings, and other construction support facilities. Its surface will be stabilized and dust suppression maximized with a layer of crushed stone in areas subject to heavy daily traffic. Permanent parking areas will be provided at each of the facility's power blocks (see Figure 17 for a typical layout of the power block). An asphalt-paved parking lot will be constructed at the administration/warehouse building. An asphalt parking area may be provided at the new SCE electrical substation and installed by SCE.

### 3.9 Fencing

Security fencing will be 8-foot-tall, galvanized steel, chain link topped with four razor-wire strands. Fencing will be positioned around the outer perimeter of each facility, the substation, and the administration/warehouse building. Tortoise barrier fencing will be combined with the perimeter security fence. In some cases, such as along the public perimeter road as well as the gas pipeline immediately east of Ivanpah 2 and 3, the security fence and tortoise fence will be separated. The tortoise fence will be installed to the east of that corridor, and the security fence to the west on the actual perimeter of the heliostat fields. The tortoise fence will be buried a minimum of 12 inches below ground level as shown in Figure 16.

### 3.10 Low-Impact Design and Construction

To date most solar energy facilities have approached the construction of their projects in the same fashion as most other industries. Initial site preparation includes "clearing and grubbing" followed by grading, which results in a surface that is level and clear and, therefore, optimum for construction. It is also devoid of life and frequently possesses hydrologic characteristics, such as increased potential for runoff, that require yet further engineering to mitigate. BSE believes that this is no longer an appropriate approach to take

in construction, and that attributes of the natural landscape in and of themselves possess properties that will assist in mitigating construction effects. The LID adopted for this project incorporates several approaches to reduce environmental impacts and take advantage of the site's natural attributes. These include the following.

- Cutting vegetation to a height that will not interfere with construction and operation of the heliostat fields but not clearing or grading
- Restricting clearing and grading activities to areas where foundations, drainage facilities, and all-weather roads must be placed
- Taking advantage of the natural permeability of the alluvium at the site by minimizing compaction and decompacting soils where necessary
- Implementing a revegetation and rehabilitation program to accelerate the return of areas that have been temporarily disturbed to a vegetated state
- Implementing a stormwater control design that promotes sheet flow and greater infiltration, rather than channelization and concentration of stormwaters

### 3.10.1 Vegetation Clearing and Cutting

The estimated size of each power generation facility is 914 acres for Ivanpah 1; 921 acres for Ivanpah 2; and 1,836 acres for Ivanpah 3. To construct the heliostat array fields located within these sites, some vegetation clearing will occur but only where necessary to allow for equipment access and stormwater management. In areas where general site grading is not required, vegetation clearing will not occur.

An approximate 12-foot-wide linear swath of vegetation along the entire outer edge of the area to be developed will be mowed (but not graded) to create an internal perimeter path for installation of the tortoise and security fencing. Vegetation clearing, with leveling or grading limited to arroyo walls will be performed throughout the sites beneath the heliostats where the existing vegetative cover will not permit access of installation equipment and materials. Off of access roads and maintenance tracks, vegetation will be cut to a height of approximately 1.0 to 1.5 feet to allow clearance for heliostat function and at the same time leave the soil surface and root structures intact. As noted earlier, the vegetation will be cut with a flail-type mower mounted on a low-ground pressure tractor. Occasional trimming of the vegetation may be required during the approximately 50-year operational phase of the project to control plant regrowth that could affect heliostat mirror movement.

Clearing and grubbing, where shrubs including roots are removed, will be performed for asphalt access roads for each facility, the power blocks, in CLA where existing topography must be modified to make suitable parking and laydown areas; in areas to be graded in Ivanpah 2 and 3; and to provide access for installation equipment and materials during construction (areas requiring leveling by grading). For all other areas, existing vegetation (and root systems) will be maintained to anchor the soil and reduce the potential for erosion. Where existing site topography is favorable, the natural drainage features will be maintained.

### 3.10.2 General Grading and Leveling

At some washes, slopes will be close to vertical, too steep for equipment, and therefore cuts into the side of the existing embankments will be necessary (a detail is provided on drawings in Figure 18). Surface rocks and boulders will need to be relocated to allow proper installation of heliostats and facilities when they cannot be avoided. These rocks and boulders will be harvested using LID construction techniques to minimize any necessary clearing or grading. Boulders will be harvested using a Caterpillar 950 (gross vehicle weight of 40,000 pounds [lbs] or similar), front-end loader with high floatation tires. The tires will generate much less impact than standard Caterpillar tires. The loader will be equipped with a skeleton bucket to harvest rocks larger than about 10 inches in diameter.

The highest concentration of large rocks occurs in the northeastern 156-acre area of Ivanpah 3 where the rocks and boulders will be used for rip-rap and other uses where possible. Site grading will be designed to maintain all local materials onsite and attempt to minimize the import of offsite material. To the extent possible, the site's excavation and embankment volumes will be approximately balanced to eliminate or minimize the import of material to the site. Light grading for equipment access and boulder clearing, including rock harvesting, is anticipated in a 380-acre area in Ivanpah 3, there may be up to 187,000 cubic yards (yd<sup>3</sup>) of material graded and rock harvested. These areas of light grading will be compacted to allow for existing infiltration rates.

Reusable local materials will be hauled to lay-down areas for reuse or placed directly in the fill or backfill locations. A stone crusher facility may be used onsite for the production of subgrade materials (gravel) from local stone. Stockpiles of local materials shall be neatly shaped and free to drain. Material that does not meet the requirements for fill, backfill, or subgrade shall be disposed of onsite in locations designated by BSE.

Heavy to medium grading will be performed within the solar project's proposed receiver tower and power block areas, for the substation, and within the administration/maintenance building area. The deepest excavations will be restricted to foundations and drainage diversion channels. Within each of these individual areas, BSE will approximately balance earthwork cuts and fills. The total quantity of cut anticipated for these areas is approximately 245,000 yd<sup>3</sup>. The majority of earthwork in the power block and common areas will be excavated and compacted with Caterpillar D-9 size bulldozers and sheepsfoot compactors. These areas will be compacted to the recommendations of the geotechnical report.

The surface soil grade of each facility will be designed to provide the minimum requirements for access of installation equipment and materials during site construction and operations. Most of the natural drainage features will be maintained and any grading required will be designed to promote sheet flow where possible. Areas disturbed by grading and other ground disturbance will be protected from erosion by implementation of appropriate BMPs.

## 3.11 Operation and Maintenance

BSE will operate the proposed power plants via a dedicated operations and maintenance company. The Facility will be operated and maintained by crews of operators, working out

of an Administration Building/Operations and Maintenance building located near the entrance to the project site. Management, engineering, administrative staff, skilled workers, and operators will serve multiple plants.

Staffing will be as described below.

Operation:

- 1 Process/performance engineer
- 5 Operators: One operator will be on duty in a common control room, an average of 12 hours a day

Maintenance:

- 1 Manager
- 15 Mirror washers/unskilled
- 3 Skilled
- 10 Subcontractor personnel (average number, covering scheduled maintenance works, logistics, and outside services)

Long term maintenance schedules are currently unavailable in detail, but will include periodic maintenance and overhauls in accordance with manufacturer recommendations. Solar field component replacement rates are anticipated to be 0.5 percent per year, on average.

Most unskilled labor demand includes 12 hours of nightly mirror washing, covering the entire solar field over a period of 2 weeks, to maintain heliostat performance degradation below 3 percent.

Administrative:

- 1 General Manager
- 4 Administrative (purchasing, accounts, warehouse, secretarial)
- 4 Security

## SECTION 4

# Description of Potential Sources of Pollution

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*The locations of various activities that could be sources of pollution are shown on a figure to be included in this SWPPP once final facilities design has been completed.*

Enclosed in Appendix F are various worksheets to assist the Facility Environmental Coordinator in record-keeping purposes. The worksheets are listed below:

- Worksheet #1 Activities Assessment Checklist
- Worksheet #2 Material Inventory- Potential to Contribute Pollutants to Stormwater Runoff
- Worksheet #3 Material Inventory- Significant Materials Exposed to Stormwater over the Past 3 Years
- Worksheet #4 Spills Inventory
- Worksheet #5 Non-stormwater Discharge Assessment and Certification
- Worksheet #6 Non-stormwater Discharge Assessment and Failure to Certify Notification
- Worksheet #7 Checklist for Consideration of Minimum BMPs
- Worksheet #8 Assessment of Potential Pollution Sources and Corresponding BMPs

## 4.1 Potential Pollutants

Table 4-1 lists the use and storage location of hazardous materials used/stored onsite.

TABLE 4-1  
 Use and Location of Hazardous Materials  
*Industrial Stormwater Pollution Prevention Plan, Ivanpah Solar Electric Generating System*

<b>Chemical</b>	<b>Use</b>	<b>Storage Location</b>	<b>State</b>	<b>Type of Storage</b>
Antiscalant (Permatreat PC-391)	Antiscalant for boiler and steam turbine	Hazardous materials storage shed	Liquid	Continuously onsite
Cleaning chemicals/detergents	Periodic cleaning of steam turbine	Maintenance shop	Liquid	Continuously onsite
Diesel No. 2	Fuel for fire pump engine/generators	Near fire pump	Liquid	Continuously onsite
Hydraulic oil	High-pressure turbine starting system, turbine control valve actuators	Contained within equipment	Liquid	Continuously onsite
Lubrication oil	Lubricate rotating equipment (e.g., steam turbine bearings)	Contained within equipment	Liquid	Continuously onsite
Mineral insulating oil	Transformers/switchyard	Contained within transformers	Liquid	Continuously onsite
Oxygen scavenger (Cortrol OS5607)	Oxygen scavenger for boiler cleaning solution and steam-water cycle	Containers near condensate polisher area	Liquid	Continuously onsite
Phosphate Treatment (Optisphere HP3100)	Phosphate treatment for boiler internal treatment	Hazardous materials storage shed	Liquid	Continuously onsite
Sodium Hydroxide Solution	pH Control	Hazardous materials storage shed	Liquid	Continuously onsite
Steam Condensate Treatment (Steamate NA1321)	Condensate and feedwater pH Control	Hazardous materials storage shed	Liquid	Continuously onsite
Sulfuric Acid	pH Control	Hazardous materials storage shed	Liquid	Continuously onsite
Lead Acid Batteries (Sulfuric Acid and Lead) size of batteries approx 10cm x 5cm x 7cm	Electrical Power	Heliostats	Gel	Continuously onsite
Sulfur hexafluoride	Switchyard/switchgear devices	Contained within equipment	Gas	Continuously onsite

### 4.1.1 Potential Sources of Pollution

Potential sources of pollution are:

- Spills and leaks could occur during fueling of vehicles and equipment
- Spills and leaks could occur during the unloading and loading of fuel and other materials when hauled
- Spills or leaks could occur from a rupture in a containment area
- Spills or leaks could occur from material storage containers
- Spills or leaks could occur of automotive and equipment fluids
- Spills could occur when transporting/transferring hazardous waste to designated receptacle
- Spills could occur from materials discharged from steam cleaning area
- Leaks could occur from the natural gas pipeline

SECTION 5

# Potential Pollutants

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## 5.1 Significant Materials That May Come in Contact with Stormwater

Worksheet 3 located in Appendix F and the tables in Section 5 will be updated with materials that may come in contact with stormwater once such operational information is known. Essentially all of these materials are related to Facility operations and to the maintenance, repair, and fueling of vehicles and materials handling equipment. Table 5-1 provides the most likely inventory of significant materials to be used/stored on the site that may come in contact with stormwater.

TABLE 5-1  
Ivanpah SEGS Inventory of Significant Materials That May Come in Contact With Stormwater  
*Industrial Stormwater Pollution Prevention Plan, Ivanpah Solar Electric Generating System*

Trade Name	Chemical Name	CAS Number	Maximum Quantity Onsite
Antiscalant (Permatreat PC-391)	Not Available	None	70 gal
Cleaning chemicals/detergents	Various	None	100 gal
Diesel No. 2	Oil	None	9,000 gal
Hydraulic oil	Oil	None	500 gal
Lubrication oil	Oil	None	30,000 gal
Mineral insulating oil	Oil	8012-95-1	105,000 gal
Oxygen scavenger (Cortrol OS5607)	Carbonic Dyhdrazide	497-18-7	170 gal
Phosphate Treatment (Optisperse HP3100)	Sodium Hydroxide	1310-73-2	62 gal
Sodium Hydroxide Solution	Sodium hydroxide (30%)	1310-73-2	170 gal
Steam Condensate Treatment (Steamate NA1321)	Ammonium Hydroxide	1336-21-6	300 gal
Sulfuric Acid	Sulfuric acid (20%)	7664-93-9	670 gal
Sulfur hexafluoride	Sulfur hexafluoride	2551-62-4	200 lb

## 5.2 Types of Pollutants by Potential Source

Table 5-2 is an example listing of the types of pollutants that may be present in stormwater from the Facility.

**TABLE 5-2**  
 Example Listing of the Types of Pollutants That May be Present in Stormwater From the Facility  
*Industrial Stormwater Pollution Prevention Plan, Ivanpah Solar Electric Generating System*

<b>Pollutant</b>
Oil/Grease
PAH (polynuclear aromatic hydrocarbons)
Petroleum hydrocarbons
Zinc
Copper
Cadmium
Chromium
Total Suspended Solids
Small floatable debris
Phenol
Benzene
Napthalene

### 5.3 Existing Data on Quality of Stormwater from Site

There are no data on the quality of the stormwater from the Facility site.

### 5.4 Estimate of Pollutant Loadings to Ivanpah Lake

Because of the lack of stormwater data, we are unable to calculate with sufficient accuracy the probably loadings of the various pollutants listed in Table 5-2.

### 5.5 Spills of Significant Materials After April 17, 1994

Regulations require that spills of significant materials after April 17, 1994 be listed. There have been no such spills at the Facility site.

### 5.6 Identification of Non-stormwater Discharges

The Permit requires that the Facility be investigated to identify all potential non-stormwater discharges and their sources. This will be conducted quarterly as part of the monitoring program.

## 5.7 Operations Waste Generation

During Ivanpah SEGS facility operation, the primary waste generated will be nonhazardous solid waste. However, varying quantities of both solid and liquid hazardous waste will also be generated periodically. The types of waste and their estimated quantities are discussed below.

### 5.7.1 Nonhazardous Solid Waste

The majority of nonhazardous waste will be sanitary sewer sludge, from the small sewage treatment unit, that will be shipped offsite to landfill and water treatment filters (granular activated carbon [GAC] vessels, mixed bed vessels, and the de-ionization trailer from the onsite water treatment unit. The Ivanpah SEGS facility will also produce maintenance and generating facility wastes, typical of power generation operations. These will include rags, broken and rusted metal and machine parts, defective or broken electrical materials, empty containers, the typical refuse generated by workers and small office operations, and other miscellaneous solid wastes. The quantity generated is estimated to be about 235 tons per year excluding sewer sludge. Large metal parts will be recycled.

### 5.7.2 Nonhazardous Wastewater

A water balance diagram for a 100-MW plant is provided in Figure 19. It illustrates the expected wastewater streams and flow rates for the Ivanpah 1 and 2 generating facilities. For the 200 MW (Ivanpah 3) plant, the water streams would be approximately doubled.

In addition, the sanitary wastewater collection treatment system will collect sanitary wastewater from sinks, toilets, and other sanitary facilities at the Administration/warehouse building and pass it through a package treatment plant with the liquid waste being used for landscape irrigation. The power block sites will have portable toilets (portapotties) and self contained hand wash stations. Portable toilets will be serviced by a waste management firm on a regular basis, depending on the number of toilets and staff at each facility.

General facility drainage will consist of plant raw water use such as area washdown, equipment leakage, and drainage from facility equipment areas. If cleaning chemicals are not used, water from these areas will be collected in a system of drains, hub drains, sumps, and piping and routed to the oil/water separator, and then to the waste collection tank. From there, the water will flow through a filter system and be sent back to the raw water storage tank for additional treatment prior to use at the facility.

### 5.7.3 Hazardous Waste

Hazardous waste generated will include waste lubricating oil, used oil filters, and chemical cleaning wastes. They will consist of alkaline and acidic cleaning solutions used during chemical cleaning of the boiler system turbine. These wastes generally contain high concentrations of heavy metals and will be collected for offsite disposal.

## SECTION 6

# Steps to Reduce Pollution

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The erosion and sedimentation control BMPs will be designed to meet the requirements of San Bernardino County (California) and Clark County (Nevada), unless other specific direction is provided by the BLM.

The following sections summarize existing and new BMPs, denoting which of the Permit categories (listed below) applies. *The schedule of implementation and the department that is responsible for carrying out the BMP will be provided once additional operations information is known.* Worksheet 7 in Appendix F “grades” the area for general housekeeping quality and will be updated accordingly.

## 6.1 Best Management Practices

Federal and state regulations require BMPs be put in place to reduce the contamination or potential for contamination of stormwater. BMPs can be simple and low cost, such as sweeping outside areas, or expensive such as installing an oil/water separator.

The Permit requires identifying BMPs in the following general areas:

1. **Good housekeeping:** Refers to those things that are done to keep the work areas clean.
2. **Preventative maintenance:** Maintenance of equipment in a way that anticipates problems that could occur, resulting in pollution.
3. **Spill prevention and response:** Particular attention is to be devoted to minimizing spills.
4. **Stormwater management practices:** This refers to BMPs that involve construction such as installation of an oil/water separator, or containment sump.
5. **Employee training:** The training program needs to include training as necessary for the various BMPs.
6. **Inspections:** The Facility must be inspected at least annually to be certain that all of the BMPs are being implemented, decide if they are effective, and make changes as necessary. A record of these inspections is to be kept.
7. **Monitoring:** During the wet season (August 1 through October 1 and November 1 through May 1), runoff from two consecutive events must be collected and analyzed.

The discussion that follows is a description of the proposed BMPs, listed by areas within the Facility.

## 6.2 Assignments to Implement the BMPs

The departments responsible for the various BMPs are listed below:

*To be provided once additional operations information is known.*

## 6.3 BMPs

### 6.3.1 Hazardous Materials Storage Shed

- All hazardous materials stored onsite will be handled and stored in accordance with applicable LORS.
- Secondary containment will be provided for all hazardous materials storage areas. Temporary containment facilities for hazardous materials should provide for a spill containment volume able to contain precipitation from a 25-year storm event, plus 10 percent of the aggregate volume of all containers or 100 percent of the capacity of the largest container within its boundary, whichever is greater. It should be impervious to the materials stored therein for a minimum contact time of 72 hours.
- All containers used to store hazardous materials will be inspected regularly for signs of leaking or failure. Tanks that are leaking, corroded, or otherwise deteriorating will be replaced with tanks in good condition. Any spilled liquids will be collected and disposed of properly.
- Incompatible materials will be stored in separate storage and containment areas.
- Areas susceptible to potential leaks and/or spills will be paved. Berms will be installed to divert runoff water from around these areas to reduce the amount of polluted stormwater leaving the area.
- Paved storage areas will be swept monthly. These areas will not be hosed down to a storm drain.
- Containment areas may drain to a collection area, such as an oil/water separator or a waste collection tank.
- Piping and tanks will be protected from potential traffic hazards by concrete or pipe-type traffic bollards and barriers.
- Paints, thinners, solvents, cleaners, sealants, and lubricants will be stored in a locked utility building. These materials will be handled per the manufacturers' directions and will be replenished as needed.
- All containers for chemical substances will be labeled according to their contents, including temporary storage containers. Hazardous substances will be labeled regarding the potential hazard.

### 6.3.2 Vehicles and Equipment

Fuel, oil, and hydraulic fluids will be transferred directly from a service truck to construction equipment tanks and will not otherwise be stored onsite. Fueling will be performed by designated, trained service personnel either before or at the end of the workday. Service personnel will follow standard operating procedures for filling and servicing construction equipment and vehicles.

- Refueling and maintenance of vehicles and equipment will occur in designated areas that are equipped with spill control features (e.g., berms, paved surfaces, spill response kits, etc.).
- Vehicle and equipment service and maintenance will be conducted by authorized personnel only.
- Refueling will be conducted only with approved pumps, hoses, and nozzles.
- Catch-pans will be placed under equipment to catch potential spills during servicing.
- All disconnected hoses will be placed in containers to collect residual fuel from the hose.
- Vehicle engines will be shut down during refueling.
- No smoking, open flame, or welding will be allowed in refueling or service areas.
- Refueling will be performed away from bodies of water to prevent contamination of water in the event of a leak or spill.
- All vehicle fluid removal or changing will be performed inside or under cover to prevent the run-on of stormwater and the runoff of spills.
- When refueling is completed, the service truck will leave the project site.
- Service trucks will be provided with fire extinguishers and spill containment equipment, such as absorbents.
- Should a spill contaminate soil, the soil will be put in containers for offsite disposal as a hazardous waste.
- Vehicles and equipment will be inspected regularly for leaks. Incoming vehicles and equipment will be checked for leaking oil or fluids. Leaking vehicles or equipment will not be allowed onsite.
- All maintenance and refueling areas will be inspected monthly. Results of inspections will be recorded in a logbook that will be maintained onsite.
- The emergency fuel containers will be U.S. Department of Transportation -approved, 5-gallon safety containers, secured to the construction equipment. The emergency fuel will be used only when regular vehicle fueling is unavailable.

### 6.3.3 Spills

- A stockpile of cleanup materials will be placed in a readily accessible location (e.g., near storage and maintenance areas).
- Small spills will be contained and cleaned up immediately by trained, onsite personnel. An absorbent material or damp mop will be used with as little water as possible for liquid spills. Cleanup of dry chemicals will include the use of brooms, shovels, sweepers, or plows.
- Larger spills will be reported via emergency phone numbers to obtain help from offsite containment and cleanup crews.

- If a spill involves hazardous materials equal to or greater than the specific reportable quantity, all federal, state, and local reporting requirements will be followed.
  - A spill of hazardous materials is to be reported to the Federal Interagency Communications Center (FICC) at 1-888-233-6518; the FICC provides 24-hour dispatching for fire and law enforcement.
  - The California Water Code, Section 13272(f), establishes a reportable quantity of 42 gallons for spills of petroleum products in water bodies.
- For emergency spills, the San Bernardino County Fire Department has a formally trained Hazardous Materials Response Team to provide assistance during a spill cleanup. The County Fire Department will respond and will identify the type and source of the hazardous material, oversee evacuation of people, and confine the spilled material if possible.

### 6.3.4 Spill Prevention Control and Countermeasures Plan

Federal and California regulations require a Spill Prevention, Control, and Countermeasure (SPCC) Plan if petroleum products above certain quantities are stored in Aboveground Storage Tanks (ASTs). Both federal and state laws apply only to petroleum products that might be discharged to navigable waters. If stored quantities are equal to or greater than 660 gallons for a single tank, or equal to or greater than 1,320 gallons total, an SPCC Plan must be prepared. The key elements of an SPCC Plan are:

- Name, location, and telephone number of the facility
- Spill record of the facility and lessons learned
- Analysis of the facility, including:
  - Description of the facilities and engineering calculations
  - Map of the site
  - Storage tanks and containment areas
  - Fuel transfer and storage and facility drainage
  - Prediction and prevention of potential spills
- Spill response procedures
- Agency notification
- Personnel training and spill prevention

Ivanpah SEGS will store up to 10,000 gallons of turbine lubrication oil and 3,000 gallons of diesel fuel onsite at each unit, for a total of 30,000 gallons of turbine lubrication oil and 9,000 gallons of diesel fuel. The nearest waterway is Ivanpah Lake, which is 1.6 miles east from the project site. Since the project will store more than 10,000 gallons of petroleum products, a SPCC Plan will be prepared for the project.

### 6.3.5 Loading/Unloading Area

- Transportation will comply with the applicable regulations for transporting hazardous materials, including the U.S. Department of Transportation, U.S. Environmental Protection Agency, California Department of Toxic Substances Control, California Highway Patrol, and California State Fire Marshal.
- Hazardous materials handling and storage procedures, and measures for providing training in the handling of hazardous materials will be set forth in more detail in hazardous materials plans that will be developed by the BSE prior to commencement of operation.
- Tank trucks or delivery vehicles will be parked in designated areas so that spills or leaks can be contained
- Loading and unloading will be conducted in dry weather if possible.
- The loading/unloading areas will be designed to prevent stormwater run-on. This could include grading, berming the area, and/or positioning the roof downpouts so they direct stormwater away from the loading/unloading areas
- The loading/unloading areas will be paved with concrete instead of asphalt.

### 6.3.6 Drying Beds

- The quality of waters entering the drying beds has not been determined at this time. Once additional project operation information is known, the need for BMPs will be assessed.

### 6.3.7 Employee Training

- A worker safety plan, in compliance with applicable regulations, will be prepared and implemented. It will include training for contractors and operations personnel.
- Training programs will include safe operating procedures, the operation and maintenance of hazardous materials systems, handling of and the dangers associated with hazardous materials, proper use of personal protective equipment, fire safety, and emergency communication and response procedures. Records of all plant personnel who received this training will be kept.
- Training procedures will include awareness about stormwater pollution and the relationship between job activities and potential pollutants. Refresher training will be provided once a year.
- All plant personnel will be trained in emergency procedures, including plant evacuation and fire prevention. In addition, designated personnel will be trained as members of a plant hazardous material response team; team members will receive the first responder and hazardous material technical training to be developed.
- Records of all plant personnel who received training will be kept on file.

### 6.3.8 Operations Waste Management

The handling and management of waste generated by Ivanpah SEGS will follow the hierarchical approach of source reduction, recycling, treatment, and disposal. The first priority will be to reduce the quantity of waste generated through pollution prevention methods (e.g., high efficiency cleaning methods). The next level of waste management will involve the reuse or recycle of wastes (e.g., used oil recycling). For wastes that cannot be recycled, treatment will be used, if possible, to make the waste non-hazardous (e.g., neutralization). Finally, offsite disposal will be used to dispose of residual wastes that cannot be reused, recycled, or treated. The following subsections present methods for managing both nonhazardous and hazardous waste generated by Ivanpah SEGS.

#### 6.3.8.1 Nonhazardous Waste

Wastewater from sinks and toilets in the Administrative/warehouse will be discharged to an onsite packaged sewage system. Treated wastewater will be used in local landscaping, and the sludge will be removed from the site by a sanitary service. The power block sites will have portable toilets (porta-potties). Portable toilets will be serviced by a waste management firm on a regular basis, depending on the number of toilets and staff at each facility. Nonhazardous plant wastewater will be recycled through the onsite water treatment system consisting of GAC units, mixed-bed vessels, and a de-ionization trailer. Recycled plant wastewater will be used for steam boiler makeup water, mirror washing, and other facility processes.

Nonhazardous solid waste or refuse will be collected and deposited in a local landfill. Whenever possible, recycling will be implemented throughout the facility to minimize the quantity of nonhazardous waste that must be disposed of in a landfill.

#### 6.3.8.2 Hazardous Waste

To avoid the potential effects on human health and the environment from the handling and disposal of hazardous wastes, procedures will be developed to ensure proper labeling, storage, packaging, recordkeeping, and disposal of all hazardous wastes. The following general procedures will be employed:

- Ivanpah SEGS will be classified as a hazardous waste generator. Prior to facility startup, application will be made to Department of Toxic Substances Control (DTSC) for a California hazardous waste generator identification number.
- Hazardous wastes will not be stored onsite for more than 90 days and will be accumulated according to CCR Title 22 requirements.
- Hazardous wastes will be stored in appropriately segregated storage areas surrounded by berms to contain leaks and spills. The bermed areas will be sized to hold the full contents of the largest single container and, if not roofed, sized for an additional 20 percent to allow for rainfall. These areas will be inspected daily.
- Hazardous wastes will be collected by a licensed hazardous waste hauler, using a hazardous waste manifest. Wastes will only be shipped to authorized hazardous waste management facilities. Biannual hazardous waste generator reports will be prepared

and submitted to DTSC. Copies of manifests, reports, waste analyses, and other documents will be kept onsite and remain accessible for inspection for at least 3 years.

- Employees will be trained in hazardous waste procedures, spill contingencies, and waste minimization.
- Procedures will be developed to reduce the quantity of hazardous waste generated. Nonhazardous materials will be used instead of hazardous materials whenever possible, and wastes will be recycled whenever possible.

Specifically, hazardous waste handling will include the following practices. Handling of hazardous wastes in this way will minimize the quantity of waste deposited to landfills.

- Waste lubricating oil will be recovered and recycled by a waste oil recycling contractor. Spent oil filters and oily rags will be recycled.
- Spent GAC vessels, the mixed bed vessels and de-ionization trailers will be recycled by the supplier.

### 6.3.8.3 Waste Disposal Sites

Nonhazardous solid waste (often referred to as solid waste, municipal solid waste, or garbage) will be recycled or deposited in a Class III landfill. Hazardous wastes, both solid and liquid, will be delivered to a permitted offsite Treatment, Storage, and Disposal facility for treatment or recycling or deposited in a permitted Class I landfill.

## 6.4 General Erosion and Sediment Control

Overall, the project is being designed to maintain, to the extent possible, the existing sheet flow patterns on the site. At completion of the project, onsite drainage will be accomplished through gravity flow. Stormwater will flow through the heliostat fields and be diverted around structures such as the power blocks on their north and south sides in drainage channels, to channel storm runoff around each area before overflowing through native stone rip-rap to reinstate natural sheet flow conditions. Stormwater within the power block areas will pass through an oil/water/sand separator prior to discharge.

Within the heliostat array fields, the cut vegetation will have the root structures intact to anchor the soil, reducing the potential for erosion.

Heliostats are relatively small (about 13 feet high), contain no hazardous materials, and are not essential structures (Figure 20). Their potential structural failure in flood conditions also does not pose a risk to personnel, and the heliostat fields, therefore, they require no special flood protection measures. Onsite water consumption will be minimal – mainly to replace boiler feedwater blowdown and provide deionized water for washing heliostat mirrors.

Stormwater will be allowed to sheet flow across paved access roads, and across Irish Bridges where the road crosses an ephemeral stream. Routine vehicle traffic during project operation would be limited to existing roads, most of which will be paved or covered with gravel. Mirror washing will be performed once every 2 weeks by the machine modified to have a reach to clean approximately 8 mirrors before needing to move; thereby, allowing the machine to drive on every other maintenance path (instead of every path) every 2 weeks.

Standard operating activities would not involve the disruption of soil. When linear facilities need to be inspected or maintained, vehicle traffic near these areas would be minimal.

Once the project grading plan has been finalized, a figure will be added to that shows the post-construction runoff and drainage patterns. In addition, the Final SWPPP will include a schedule for maintenance of post-construction BMPs.

# Monitoring and Record Keeping

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## 7.1 Checking on New BMP Implementation

An annual inspection is required that must be documented (see below and the Permit). This inspection will be carried out by the Facility Environmental Coordinator with the respective Managers assisting in their areas. Upon completion of the annual inspection, the BMP Implementation Committee will meet to consider: effectiveness of the BMP, progress with the more substantial BMPs, and changes to both the BMPs and the SWPPP.

The (inspector to be determined) will conduct weekly inspections of the Facility areas, and will use a checklist of BMPs to denote if they are in place, if there are problems, and if so, the solution. These checklists will be kept at the (location of checklists to be determined) office, with a copy forwarded to the Facility Environmental Coordinator.

## 7.2 Stormwater Monitoring

The Facility Environmental Coordinator will assign and train field personnel to collect runoff samples from two storms events during the wet season; the first storm of the wet season and one additional storm. Grab samples will be collected from:

*Several locations will need to be selected and given an ID number once additional Facility grading and operational information is known.*

These samples will be sent to an analytical lab will be identified in the future for analysis. The lab will provide appropriate sampling equipment to provide for the analyses of pH, total suspended solids, specific conductance, and total organic carbon. Other potential pollutants likely to be present in stormwater (as identified in Section 4) and associated with activities at this Facility will be analyzed during two consecutive monitoring events. However, any of these pollutants that are not found in significant quantities will be eliminated from future monitoring until the pollutant is likely to be present again.

Once collected, all samples will be preserved and properly transported immediately to the lab. Analytical results will be submitted to the Facility Environmental Coordinator and kept on file.

## 7.3 Record Keeping

Records of all stormwater monitoring information, inspections and visual observations, certification, corrective actions and follow-up activities, and copies of all reports will be retained for a period of at least 5 years.

*A copy of the Notice of Intent will included as Appendix G when filed.*

## 7.4 Comprehensive Site Compliance Evaluation

An evaluation report will be prepared annually to assist in evaluating the need to revise this SWPPP. A review of all monitoring data collected (i.e., visual observation records, inspection records, sampling and analysis results), BMPs, significant materials used, activities, and spills that have occurred including their causes and possible solutions will be conducted in the preparation of the evaluation report. The SWPPP will be revised as appropriate based on the evaluation and the revisions will be implemented within 90 days of the evaluation.

SECTION 8

# Certifications and Signatures

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“I certify under penalty of law that this document and all appendixes were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted, is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

**BY:** \_\_\_\_\_

**TITLE:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

SECTION 9

# References

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California Department of Water Resources (DWR). 2004. California's Groundwater - Bulletin 118. Basin Descriptions: Ivanpah Valley Groundwater Basin.  
[http://www.groundwater.water.ca.gov/bulletin118/basin\\_desc/basins\\_s.cfm](http://www.groundwater.water.ca.gov/bulletin118/basin_desc/basins_s.cfm).

State Water Resources Control Board Water Quality Order No. 97-03-DWQ National Pollutant Discharge Elimination System General Permit No. CAS000001 Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities, Excluding Construction Activities.

APPENDIX A  
**Permit**

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# State Water Resources Control Board



**Linda S. Adams**  
Secretary for  
Environmental Protection

**Division of Water Quality**  
1001 I Street • Sacramento, California 95814 • (916) 341-5538  
Mailing Address: P.O. Box 1977 • Sacramento, California • 95812-1977  
FAX (916) 341-5543 • Internet Address: <http://www.waterboards.ca.gov/stormwtr/index.html>

**Arnold Schwarzenegger**  
Governor

To: STORM WATER DISCHARGER

SUBJECT: CHECKLIST FOR SUBMITTING A NOTICE OF INTENT

In order for the State Water Resources Control Board to expeditiously process your Notice of Intent (NOI), the following items must be submitted to either of the addresses indicated below:

1. \_\_\_\_\_ NOI (please keep a copy for your files) with all applicable sections completed and original signature of the facility operator;
2. \_\_\_\_\_ Check made out to the “State Water Resources Control Board” with the appropriate fee. The regular fee is **\$830.00** (\$700 plus 18.5% surcharge).
3. \_\_\_\_\_ Site Map of the facility (see NOI instructions). **DO NOT SEND BLUEPRINTS**

U.S. Postal Service Address

Overnight Mailing Address

State Water Resources Control Board  
Division of Water Quality  
Attn: Storm Water Section  
P.O. Box 1977  
Sacramento, CA 95812-1977

State Water Resources Control Board  
Division Of Water Quality  
Attn: Storm Water, 15<sup>th</sup> Floor  
1001 I Street  
Sacramento, CA 95814

NOIs are processed in the order they are received. A NOI receipt letter will be mailed to the facility operator within approximately two weeks. Incomplete NOI submittals will be returned to the facility operator within the same timeframe and will specify the reason(s) for return. If you need a receipt letter by a specific date (for example, to provide to a local agency), we advise that you submit your NOI thirty (30) days prior to the date the receipt letter is needed.

Please do not call us to verify your NOI status. A copy of your NOI receipt letter will be available on our web page within twenty-four (24) hours of processing. Go to: <http://www.waterboards.ca.gov/stormwtr/databases.html> to retrieve an electronic copy of your NOI receipt letter. If you have any questions regarding this matter, please contact us at (916) 341-5538.

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WATER QUALITY ORDER NO. 97-03-DWQ  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
GENERAL PERMIT NO. CAS000001 (GENERAL PERMIT)

WASTE DISCHARGE REQUIREMENTS (WDRS)  
FOR

DISCHARGES OF STORM WATER ASSOCIATED WITH INDUSTRIAL ACTIVITIES  
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# FACT SHEET

FOR

STATE WATER RESOURCES CONTROL BOARD (STATE WATER BOARD)  
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WASTE DISCHARGE REQUIREMENTS (WDRS)

FOR

DISCHARGES OF STORM WATER ASSOCIATED WITH INDUSTRIAL ACTIVITIES  
EXCLUDING CONSTRUCTION ACTIVITIES

## BACKGROUND

In 1972, the Federal Water Pollution Control Act (also referred to as the Clean Water Act [CWA]) was amended to provide that the discharge of pollutants to waters of the United States from any point source is effectively prohibited unless the discharge is in compliance with an NPDES permit. The 1987 amendments to the CWA added Section 402(p) that establishes a framework for regulating municipal and industrial storm water discharges under the NPDES Program. On November 16, 1990, the U.S. Environmental Protection Agency (U.S. EPA) published final regulations that establish application requirements for storm water permits. The regulations require that storm water associated with industrial activity (storm water) that discharges either directly to surface waters or indirectly through municipal separate storm sewers must be regulated by an NPDES permit.

U.S. EPA developed a four-tier permit issuance strategy for storm water discharges associated with industrial activity as follows:

Tier I, Baseline Permitting--One or more general permits will be developed to initially cover the majority of storm water discharges associated with industrial activity.

Tier II, Watershed Permitting--Facilities within watersheds shown to be adversely impacted by storm water discharges associated with industrial activity will be targeted for individual or watershed-specific general permits.

Tier III, Industry-Specific Permitting--Specific industry categories will be targeted for individual or Industry-specific general permits.

Tier IV, Facility-Specific Permitting--A variety of factors will be used to target specific facilities for individual permits.

The regulations allow authorized states to issue general permits or individual permits to regulate storm water discharges.

Consistent with Tier I, Baseline Permitting, of the U.S. EPA permitting strategy, the State Water Board issued a statewide General Permit on November 19, 1991 that applied to all storm water discharges requiring a permit except construction activity. The monitoring requirements of this General Permit were amended September 17, 1992. A separate statewide general permit has been issued for construction activity.

To obtain authorization for continued and future storm water discharge under this General Permit, each facility operator must submit a Notice of Intent (NOI). This approach is consistent with the four-tier permitting strategy described in Federal regulations, i.e., Tier 1, Baseline Permitting. Tier 1, Baseline Permitting, enables the State to begin reducing pollutants in industrial storm water in the most efficient manner possible.

This General Permit generally requires facility operators to:

1. Eliminate unauthorized non-storm water discharges;
2. Develop and implement a storm water pollution prevention plan (SWPPP); and
3. Perform monitoring of storm water discharges and authorized non-storm water discharges.

#### **TYPES OF STORM WATER DISCHARGES COVERED BY THIS GENERAL PERMIT**

This General Permit is intended to cover all new or existing storm water discharges and authorized non-storm water discharges from facilities required by Federal regulations to obtain a permit including those (1) facilities previously covered by the San Francisco Bay Regional Water Quality Control Board Order No. 92-011 (as amended by Order No. 92-116), (2) facilities designated by the Regional Water Quality Control Boards (Regional Water Boards), (3) facilities whose operators seek coverage under this General Permit, (4) and facilities required by future U.S. EPA storm water regulations.

The General Permit is intended to cover all facilities described in Attachment 1, whether the facility is primary or is auxiliary to the facility operator's function. For example, although a school district's primary function is education, a facility that it operates for vehicle maintenance of school buses is a transportation facility that is covered by this General Permit.

The definition of "storm water associated with industrial activity" is provided in Attachment 4, Definition 9, of this General Permit. Facilities that discharge storm water associated with industrial activity requiring a General Permit are listed by category in 40 Code of Federal Regulations (CFR) Section 122.26(b)(14) (Federal Register, Volume 55 on

Pages 48065-66) and in Attachment 1 of this General Permit. The facilities can be publicly or privately owned. General descriptions of these categories are:

1. Facilities subject to storm water effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards (40 CFR Subchapter N);
2. Manufacturing facilities;
3. Mining/oil and gas facilities;
4. Hazardous waste treatment, storage, or disposal facilities;
5. Landfills, land application sites, and open dumps that receive industrial waste;
6. Recycling facilities such as metal scrap yards, battery reclaimers, salvage yards, automobile yards;
7. Steam electric generating facilities;
8. Transportation facilities that conduct any type of vehicle maintenance such as fueling, cleaning, repairing, etc.;
9. Sewage treatment plants;
10. Construction activity (covered by a separate general permit); and
11. Certain facilities (often referred to as "light industry") where industrial materials, equipment, or activities are exposed to storm water.

For the most part, these facilities are identified in the Federal regulations by a Standard Industrial Classification (SIC).

#### Category 1 Dischargers

The following categories of facilities currently have storm water effluent limitation guidelines for at least one of their subcategories. They are cement manufacturing (40 CFR Part 411); feedlots (40 CFR Part 412); fertilizer manufacturing (40 CFR Part 418); petroleum refining (40 CFR Part 419); phosphate manufacturing (40 CFR Part 422); steam electric power generation (40 CFR Part 423); coal mining (40 CFR Part 434); mineral mining and processing (40 CFR Part 436); ore mining and dressing (40 CFR Part 440); and asphalt emulsion (40 CFR Part 443). A facility operator whose facility falls into one of these general categories should examine the effluent guidelines to determine if the facility is categorized in one of the subcategories that have storm water effluent guidelines. If

a facility is classified as one of those subcategories, that facility is subject to the standards listed in the CFR for that category and is subject to this General Permit. This General Permit contains additional requirements (see Section B.6.) for facilities with storm water effluent limitations guidelines.

#### Category 5 Dischargers

Inactive or closed landfills, land application sites, and open dumps that have received industrial wastes (Category 5) may be subject to this General Permit unless the storm water discharges from the sites are already regulated by an NPDES permit issued by the appropriate Regional Water Board. Facility operators of closed landfills that are regulated by waste discharge requirements (WDRs) may be required to comply with this General Permit. In some cases, it may be appropriate for closed landfills to be covered by the State Water Board's General Permit during closure activities. The Construction Activities General Permit should cover new landfill construction. Facility operators should contact their Regional Water Board to determine the appropriate permit coverage.

#### Category 10 Dischargers

Facility operators of Category 10 (light industry) facilities are not subject to this General Permit if they can certify that the following minimum conditions at their facilities are met:

1. All prohibited non-storm water discharges have been eliminated or otherwise permitted.
2. All areas of past exposure have been inspected and cleaned, as appropriate.
3. All materials related to industrial activity (including waste materials) are not exposed to storm water or authorized non-storm water discharges.
4. All industrial activities and industrial equipment are not exposed to storm water or authorized non-storm water discharges.
5. There is no exposure of materials associated with industrial activity through other direct or indirect pathways such as particulates from stacks and exhaust systems.
6. There is periodic re-evaluation of the facility to ensure Conditions 1, 3, 4, and 5 are continuously met.

Currently, facility operators that can certify that the above conditions are met are not required to notify the State Water

Board or Regional Water Board. These facility operators are advised to retain such certification documentation on site.

The Ninth Circuit Court of Appeals invalidated the exemption granted by U.S. EPA for storm water discharges from facilities in Category 11 that do not have exposure and remanded the regulation to U.S. EPA for further action. The State Water Board, at this time, is not requiring storm water discharges from facilities in Category 11 that do not have exposure to be covered by this General Permit. Instead, the State Water Board will await future U.S. EPA or court action clarifying the types of storm water discharges that must be permitted. If necessary, the State Water Board will reopen the General Permit to accommodate such a clarification.

Section 1068 of the Intermodal Surface Transportation Act of 1991 exempts municipal agencies serving populations of less than 100,000 from Phase I permit requirements for most facilities they operate (uncontrolled sanitary landfills, power plants, and airports are still required to be permitted in Phase I). Phase II of the Permit Program scheduled to begin August 7, 2001 will cover the facilities that are exempt from Phase I permit requirements.

#### **TYPES OF DISCHARGES NOT COVERED BY THIS GENERAL PERMIT**

1. CONSTRUCTION ACTIVITY: Discharges from construction activity of five acres or more, including clearing, grading, and excavation. A separate general permit was adopted on August 20, 1992 for this industrial category.
2. FACILITIES WHICH HAVE NPDES PERMITS CONTAINING STORM WATER PROVISIONS: Some storm water discharges may be regulated by other individual or general NPDES permits issued by the State Water Board or the Regional Water Boards. This General Permit shall not regulate these discharges. When the individual or general NPDES permits for such discharges expire, the State Water Board or Regional Water Board may authorize coverage under this General Permit or another general NPDES permit, or may issue a new individual NPDES permit consistent with the Federal and State storm water regulations. Interested parties may petition the State Water Board or appropriate Regional Water Board to issue individual or General NPDES Permits. General Permits may be issued for a particular industrial group or watershed area.
3. FACILITIES DETERMINED INELIGIBLE BY REGIONAL WATER BOARDS: Regional Water Boards may determine that discharges from a facility or groups of facilities, otherwise eligible for coverage under this General Permit, have potential water quality impacts that may not be appropriately addressed by

this General Permit. In such cases, a Regional Water Board may require such discharges to be covered by an individual or general NPDES permit. Interested persons may petition the appropriate Regional Water Board to issue individual NPDES permits. The applicability of this General Permit to such discharges will be terminated upon adoption of an individual NPDES permit or a different general NPDES permit.

4. FACILITIES WHICH DO NOT DISCHARGE STORM WATER TO WATERS OF THE UNITED STATES: The discharges from the following facilities are not required to be permitted:
  - a. FACILITIES THAT DISCHARGE STORM WATER TO MUNICIPAL SANITARY SEWER SYSTEMS: Facilities that discharge storm water to municipal sanitary sewer systems or combined sewer systems are not required by Federal regulations to be covered by an NPDES storm water permit or to submit an NOI to comply with this General Permit. (It should be noted that many municipalities have sewer use ordinances that prohibit storm drain connections to their sanitary sewers.)
  - b. FACILITIES THAT DO NOT DISCHARGE STORM WATER TO SURFACE WATERS OR SEPARATE STORM SEWERS: Storm water that is captured and treated and/or disposed of with the facility's NPDES permitted process wastewater and storm water that is disposed of to evaporation ponds, percolation ponds, or combined sewer systems are not required to obtain a storm water permit. To avoid liability, the facility operator should be certain that no discharge of storm water to surface waters would occur under any circumstances.
5. MOST SILVICULTURAL ACTIVITIES: Storm water discharges from most silvicultural activities such as thinning, harvesting operations, surface drainage, or road construction and maintenance are exempt from this permit. Log sorting or log storage facilities that fall within SIC 2411 are required to be permitted.
6. MINING AND OIL AND GAS FACILITIES: Oil and gas facilities that have not released storm water resulting in a discharge of a reportable quantity (RQ) for which notification is or was required pursuant to 40 CFR Parts 110, 117, and 302 at any time after November 19, 1987 are not required to be permitted unless the industrial storm water discharge contributed to a violation of a water quality standard. Mining facilities that discharge storm water that does not come into contact with any overburden, raw materials, intermediate product, finished product, by-product, or waste product located at the facility are not required to be permitted. These facilities must be permitted if they have a new release of storm water resulting in a discharge of an RQ.

7. FACILITIES ON INDIAN LANDS: the U.S. EPA will regulate Discharges from facilities on Indian lands.

#### **NOTIFICATION REQUIREMENTS**

Storm water discharges from facilities described in the section titled "Types of Storm Water Discharges Covered by This General Permit" must be covered by an NPDES permit. An NOI must be submitted by the facility operator for each individual facility to obtain coverage. Certification of the NOI signifies that the facility operator intends to comply with the provisions of the General Permit. Facility operators who have filed NOIs for the State Water Board Order No. 91-013-DWQ (as amended by Order No. 92-12-DWQ) or San Francisco Bay Regional Water Board Order No. 92-011 (as amended by Order No. 92-116) will be sent an abbreviated NOI soon after adopting this General Permit that must be completed and returned within 45 days of receipt. Where operations have discontinued and significant materials remain on site (such as at closed landfills), the landowner may be responsible for filing an NOI and complying with this General Permit. A landowner may also file an NOI for a facility if the landowner, rather than the facility operator(s), is responsible for compliance with this General Permit.

A facility operator that does not submit an NOI for a facility must submit an application for an individual NPDES permit. U.S. EPA's regulations [40 CFR 122.21 (a)] exclude facility operators covered by a general permit from requirements to submit an individual permit application unless required by the Regional Water Board. The NOI requirements of this General Permit are intended to establish a mechanism which can be used to establish a clear accounting of the number of facility operators complying with the General Permit, their identities, the nature of operations at the facilities, and location.

All facility operators filing an NOI after the adoption of this General Permit must comply with this General Permit. Existing facility operators who have filed NOIs prior to the adoption of this General Permit shall continue to complete the requirements of the previous General Permit through June 30, 1997 including submitting annual reports to the Regional Water Boards by July 1, 1997. Group Leaders are required to submit a 1996-97 Group Evaluation Report by August 1, 1997.

#### **DESCRIPTION OF GENERAL PERMIT CONDITIONS**

##### Prohibitions

This General Permit authorizes storm water and authorized non-storm water discharges from facilities that are required to be covered by a storm water permit. This General Permit prohibits discharges of material other than storm water (non-storm water discharges) that are not authorized by the General Permit and discharges containing hazardous substances in storm water in excess of reportable quantities established at 40 CFR 117.3 and 40 CFR 302.4. Authorized non-storm water discharges are addressed in the Special Conditions of the General Permit.

#### Effluent Limitations

NPDES Permits for storm water discharges must meet all applicable provisions of Sections 301 and 402 of the CWA. These provisions require control of pollutant discharges using best available technology economically achievable (BAT) and best conventional pollutant control technology (BCT) to prevent and reduce pollutants and any more stringent controls necessary to meet water quality standards.

U.S. EPA regulations (40 CFR Subchapter N) establish effluent limitation guidelines for storm water discharges from facilities in ten industrial categories. For these facilities, compliance with the effluent limitation guidelines constitutes compliance with BAT and BCT for the specified pollutants and must be met to comply with this General Permit.

For storm water discharges from facilities not among the ten industrial categories listed in 40 CFR Subchapter N, it is not feasible at this time to establish numeric effluent limitations. The reasons why establishment of numeric effluent limitations is not feasible are discussed in detail in State Water Board Orders No. WQ 91-03 and WQ 91-04. Therefore, this General Permit allows the facility operator to implement best management practices (BMPs) to comply with the requirements of this General Permit. This approach is consistent with the U.S. EPA's August 1, 1996 "Interim Permitting Approach for Water Quality Based Effluent Limitations in Storm Water Permits".

#### Receiving Water Limitations

Storm water discharges shall not cause or contribute to a violation of an applicable water quality standard. The General Permit requires facility operators to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges through the development and implementation of BMPs which constitutes compliance with BAT and BCT and, in most cases, compliance with water quality standards. If receiving water quality standards are exceeded, facility operators are required to submit a written report providing additional BMPs that will be implemented to achieve water quality standards.

Storm Water Pollution Prevention Plans (SWPPPs)

All facility operators must prepare, retain on site, and implement an SWPPP. The SWPPP has two major objectives: (1) to help identify the sources of pollution that affect the quality of industrial storm water discharges and authorized non-storm water discharges, and (2) to describe and ensure the implementation of BMPs to reduce or prevent pollutants in industrial storm water discharges and authorized non-storm water discharges.

This General Permit requires development and implementation of an SWPPP emphasizing BMPs. This approach provides the flexibility necessary to establish appropriate BMPs for different types of industrial activities and pollutant sources. As this General Permit covers vastly different types of facilities, the State Water Board recognizes that there is no single best way of developing or organizing an SWPPP. The SWPPP requirements contain the essential elements that all facility operators must consider and address in the SWPPP. This General Permit's SWPPP requirements are more detailed than the previous general permit's SWPPP requirements, and the suggested order of the SWPPP elements have been rearranged (1) to correspond more closely with other storm water permits in effect throughout the country, and (2) to generally follow a more logical path. Facility operators that have already developed and implemented SWPPPs under previous general permits are required to review the SWPPP's requirements contained in this General Permit and then review their existing SWPPP for adequacy. If the existing SWPPP adequately identifies and assesses all potential sources of pollutants and describes the appropriate BMPs necessary to reduce or prevent pollutants, the facility operator is not required to revise the existing SWPPP.

One of the major elements of the SWPPP is the elimination of unauthorized non-storm water discharges to the facility's storm drain system. Unauthorized non-storm water discharges can be generated from a wide variety of potential pollutant sources. They include waters from the rinsing or washing of vehicles, equipment, buildings, or pavement; materials that have been improperly disposed of or dumped, and spilled; or leaked materials. Unauthorized non-storm water discharges can contribute a significant pollutant load to receiving waters. Measures to control spills, leakage, and dumping can often be addressed through BMPs. Unauthorized non-storm water discharges may enter the storm drain system via conveyances such as floor drains. All conveyances should be evaluated to determine whether they convey unauthorized non-storm water discharges to the storm drain system. Unauthorized non-storm water discharges (even when commingled with storm water) shall be eliminated or covered by a separate NPDES Permit.

There are many non-storm water discharges that, under certain conditions, should not contain pollutants associated with

industrial activity (i.e., air conditioning condensate, potable water line testing, landscaping overflow, etc.). Item D, Special Conditions, provides the conditions where certain listed non-storm water discharges are authorized by this General Permit.

#### Monitoring Program

The General Permit requires development and implementation of a monitoring program. The objectives of the monitoring program are to (1) demonstrate compliance with the General Permit, (2) aid in the implementation of the SWPPP, and (3) measure the effectiveness of the BMPs in reducing or preventing pollutants in storm water discharges and authorized non-storm water discharges.

All facility operators (with the exception of inactive mining operations) are required to:

1. Perform visual observations of storm water discharges and authorized storm water discharges.
2. Collect and analyze samples of storm water discharges. Analysis must include pH, total suspended solids (TSS), total organic carbon (TOC), specific conductance, toxic chemicals, and other pollutants which are likely to be present in storm water discharges in significant quantities, and those parameters listed in Table D of this General Permit. The Table D parameters are those listed in the U.S. EPA Multi-Sector General Permit. Facility operators subject to Federal storm water effluent limitation guidelines in 40 CFR Subchapter N must also sample and analyze for any pollutant specified in the appropriate category of 40 CFR Subchapter N.

Facility operators are not required to collect samples or perform visual observations during adverse climatic conditions. Sample collection and visual observations are required only during scheduled facility operating hours. Visual observations are required only during daylight hours. Facility operators that are unable to collect any of the required samples or visual observations because of the above circumstances must provide documentation to the Regional Water Board in their annual report.

Facility operators may be exempt from performing sampling and analysis if they: (1) do not have areas of industrial activity exposed to storm water, (2) receive an exemption from a local agency which has jurisdiction over the storm sewer system, or (3) receive an exemption from the appropriate Regional Water Board. Facility operators must always perform sampling and analysis for any pollutant specified in storm water effluent limitation guidelines.

This General Permit contains a new procedure where facility operators, if they meet certain minimum conditions, may certify compliance with the General Permit and reduce the number of

sampling events required to be sampled for the remaining term of the General Permit. Each Regional Water Board may develop instructions, guidance, and checklists to assist facility operators to complete sampling reduction requests.

Local agencies that wish to provide sampling and analysis exemptions or reductions to facility operators within their jurisdiction shall develop a certification program that clearly indicates the certification procedures and criteria used by the local agency. At a minimum, these programs should include site inspections, a review of the facility operator's SWPPP, and a review of other records such as monitoring data, receiving water data, etc. The certification program shall be approved by the local Regional Water Board before implementation.

#### Alternative Monitoring

Facility operators are required to develop a facility-specific monitoring program that satisfies both the minimum monitoring program requirements and the objectives of the monitoring program. Some facility operators have indicated that cost-effective alternative monitoring programs can be developed that provide equivalent or more accurate indicators of pollutants and/or BMP performance than a monitoring program based upon the minimum monitoring program requirements. An example of such an alternative monitoring program would be one that identifies sample locations at or near pollutant sources rather than sampling an entire drainage area where the storm water discharge has been diluted with storm water from areas with little or no industrial activity.

The State Water Board does not want to preclude facility operators from developing better, and perhaps more cost-effective, monitoring programs. This General Permit allows facility operators to submit alternative monitoring programs for approval by the Regional Water Board. For individual facilities, these proposals must be facility specific and demonstrate how the alternative monitoring program will result in an equivalent or more accurate indicator of pollutants and/or BMP effectiveness. Facility operators with similar industrial activities may also propose alternative monitoring programs for approval by the Regional Water Boards. These proposals must demonstrate how the alternative monitoring program will result in an equivalent or more accurate indicator of pollutants and/or BMP effectiveness for all of the participating facilities.

Facility operators shall continue to comply with the existing monitoring program requirements until receiving approval by the Regional Water Board.

### Group Monitoring

Each facility operator may either perform sampling and analysis individually or participate in a group monitoring program. A group monitoring program may be developed either by a group leader representing a group of similar facilities or by a local agency which holds a storm water permit for a municipal separate storm sewer system for industrial facilities within its jurisdiction. The group leader or local agency responsible for the group monitoring program must schedule all participating facilities to sample two storm events over the life of this General Permit. Facility operators subject to Federal effluent limitations guidelines in 40 CFR Subchapter N must individually sample and analyze for pollutants listed in the appropriate Federal regulations.

Participants within a group may be located within the jurisdiction of more than one Regional Water Board. Multi-Regional Water Board groups must receive the approval of the State Water Board Executive Director (with the concurrence of the appropriate Regional Water Boards).

Each group leader or local agency responsible for group sampling must: (1) provide guidance or training so that the monitoring is done correctly, (2) recommend appropriate BMPs to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges from group participants, (3) evaluate and report the monitoring data to the State Water Board and/or the appropriate Regional Water Board(s), and (4) conduct two on-site inspections at each facility over the five year term of this General Permit to evaluate facility compliance and recommend BMPs to achieve compliance with this General Permit. The group leader or local agency may designate, hire, or train inspectors to conduct these inspections that are or are not directly affiliated with the group leader or local agency. It is the group leader's or local agency's responsibility to select inspectors that are capable of evaluating each facility's compliance with the General Permit and can recommend appropriate BMPs. All group monitoring plans are subject to State Water Board and/or Regional Water Board(s) review. Consistent with the four-tier permitting strategy described in the Federal regulations, the Regional Water Board(s) may evaluate the data and results from group monitoring to establish future permitting decisions. As appropriate, the State Water Board and/or the Regional Water Board(s) may terminate or require substantial amendment to the group monitoring plans. The State Water Board and/or the Regional Water Board(s) may terminate a facility's participation in group monitoring or require additional monitoring activities.

### Retention of Records

The facility operator is required to retain records of all monitoring information, copies of all reports required by this General Permit, and records of all data used to complete the NOI for a period of five years from the date of measurement, report, or monitoring activity. This period may be extended by the State and/or Regional Water Boards. All records are public documents and must be provided to the Regional Water Boards on request.

#### Watershed Management

The State and Regional Water Boards are undertaking a focussed effort in watershed management throughout the State. In reissuing this General Permit, the State Water Board recognizes both the evolving nature of watershed management and the long-term desirability of structuring monitoring programs to support the Watershed Management Initiative. Therefore, the amended monitoring and reporting provisions provide flexibility for individual facility operators or groups of facility operators to propose and participate in, subject to Regional Water Board approval, watershed monitoring programs in lieu of some or all of the monitoring requirements contained in this General Permit.

#### Facility Operator Compliance Responsibilities

This General Permit has been written to encourage individual facility operators to develop their own SWPPP and monitoring programs. Many facility operators, however, choose to obtain compliance assistance either by hiring a consultant on an individual basis or by participating in a group monitoring plan. Regardless of how a facility operator chooses to pursue compliance, it is the facility operator that is responsible for compliance with this General Permit.

The State Water Board recognizes that industrial activities and operating conditions at many facilities change over time. In addition, new and more effective BMPs are being developed by various facility operators and by industrial groups. The SWPPP and monitoring program requirements include various inspections, reviews, and observations all of which recognize, encourage, and mandate an iterative self-evaluation process that is necessary to consistently comply with this General Permit. In general, facility operators that develop and implement SWPPPs that comply with this General Permit should not be penalized when discovering minor violations through this iterative self-evaluation process. The General Permit provides facility operators up to 90 days to revise and implement the SWPPP to correct such violations.

**STATE WATER RESOURCES CONTROL BOARD (STATE WATER BOARD)  
WATER QUALITY ORDER NO. 97-03-DWQ  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
GENERAL PERMIT NO. CAS000001 (GENERAL PERMIT)**

**WASTE DISCHARGE REQUIREMENTS (WDRS)  
FOR  
DISCHARGES OF STORM WATER ASSOCIATED WITH INDUSTRIAL ACTIVITIES  
EXCLUDING CONSTRUCTION ACTIVITIES**

The State Water Board finds that:

1. Federal regulations for storm water discharges were issued by the U.S. Environmental Protection Agency (U.S. EPA) on November 16, 1990 (40 Code of Federal Regulations [CFR] Parts 122, 123, and 124). The regulations require operators of specific categories of facilities where discharges of storm water associated with industrial activity (storm water) occur to obtain an NPDES permit and to implement Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to reduce or prevent pollutants associated with industrial activity in storm water discharges and authorized non-storm discharges.
2. This General Permit shall regulate storm water discharges and authorized non-storm water discharges from specific categories of industrial facilities identified in Attachment 1, storm water discharges and authorized non-storm water discharges from facilities as designated by the Regional Water Quality Control Boards (Regional Water Boards), and storm water discharges and authorized non-storm water discharges from other facilities seeking General Permit coverage. This General Permit may also regulate storm water discharges and authorized non-storm water discharges from facilities as required by U.S. EPA regulations. This General Permit shall regulate storm water discharges and authorized non-storm water discharges previously regulated by San Francisco Bay Regional Water Board Order, No.92-11 (as amended by Order No. 92-116). This General Permit excludes storm water discharges and non-storm water discharges that are regulated by other individual or general NPDES permits, storm water discharges and non-storm water discharges from construction activities, and storm water discharges and non-storm water discharges excluded by the Regional Water Boards for coverage by this General Permit. Attachment 2 contains the addresses and telephone numbers of each Regional Water Board office.
3. To obtain coverage for storm water discharges and authorized non-storm water discharges pursuant to this General Permit, operators of facilities (facility operators) must submit a Notice of Intent (NOI), in accordance with the Attachment 3

instructions, and appropriate annual fee to the State Water Board. This includes facility operators that have participated in U.S. EPA's group application process.

4. This General Permit does not preempt or supersede the authority of local agencies to prohibit, restrict, or control storm water discharges and authorized non-storm water discharges to storm drain systems or other water-courses within their jurisdictions as allowed by State and Federal law.
5. If an individual NPDES permit is issued to a facility operator otherwise subject to this General Permit or an alternative NPDES general permit is subsequently adopted which covers storm water discharges and/or authorized non-storm water discharges regulated by this General Permit, the applicability of this General Permit to such discharges is automatically terminated on the effective date of the individual NPDES permit or the date of approval for coverage under the subsequent NPDES general permit.
6. Effluent limitations and toxic and effluent standards established in Sections 208(b), 301, 302, 303(d), 304, 306, 307, and 403 of the Federal Clean Water Act (CWA), as amended, are applicable to storm water discharges and authorized non-storm water discharges regulated by this General Permit.
7. This action to adopt an NPDES general permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21100, et seq.) in accordance with Section 13389 of the California Water Code.
8. Federal regulations (40 CFR Subchapter N) establish effluent limitations guidelines for storm water discharges from some facilities in ten industrial categories.
9. For facilities which do not have established effluent limitation guidelines for storm water discharges in 40 CFR Subchapter N, it is not feasible at this time to establish numeric effluent limitations. This is due to the large number of discharges and the complex nature of storm water discharges. This is also consistent with the U.S. EPA's August 1, 1996 "Interim Permitting Approach for Water Quality Based Effluent Limitations in Storm Water Permits."
10. Facility operators are required to comply with the terms and conditions of this General Permit. Compliance with the terms and conditions of this General Permit constitutes compliance with BAT/BCT requirements and with requirements to achieve water quality standards. This includes the development and implementation of an effective Storm Water Pollution Prevention Plan (SWPPP) to reduce or prevent pollutants associated with industrial activity in storm water discharges and authorized non-storm water discharges.

11. Best Management Practices (BMPs) to reduce or prevent pollutants associated with industrial activity in storm water discharges and authorized non-storm water discharges are appropriate where numeric effluent limitations are infeasible, and the implementation of BMPs is adequate to achieve compliance with BAT/BCT and with water quality standards.
12. The State Water Board has adopted a Watershed Management Initiative that encourages watershed management throughout the State. This General Permit recognizes the Watershed Management Initiative by supporting the development of watershed monitoring programs authorized by the Regional Water Boards.
13. Following adoption of this General Permit, the Regional Water Boards shall enforce its provisions.
14. Following public notice in accordance with State and Federal laws and regulations, the State Water Board held a public hearing on November 12, 1996 and heard and considered all comments pertaining to this General Permit. A response to all significant comments has been prepared and is available for public review.
15. This Order is an NPDES General Permit in compliance with Section 402 of the CWA and shall take effect upon adoption by the State Water Board.
16. All terms that are defined in the CWA, U.S. EPA storm water regulations and the Porter-Cologne Water Quality Control Act will have the same definition in this General Permit unless otherwise stated.

IT IS HEREBY ORDERED that all facility operators required to be regulated by this General Permit shall comply with the following:

A. DISCHARGE PROHIBITIONS:

1. Except as allowed in Special Conditions (D.1.) of this General Permit, materials other than storm water (non-storm water discharges) that discharge either directly or indirectly to waters of the United States are prohibited. Prohibited non-storm water discharges must be either eliminated or permitted by a separate NPDES permit.
2. Storm water discharges and authorized non-storm water discharges shall not cause or threaten to cause pollution, contamination, or nuisance.

B. EFFLUENT LIMITATIONS:

1. Storm water discharges from facilities subject to storm water effluent limitation guidelines in Federal regulations (40 CFR

Subchapter N) shall not exceed the specified effluent limitations.

2. Storm water discharges and authorized non-storm water discharges regulated by this General Permit shall not contain a hazardous substance equal to or in excess of a reportable quantity listed in 40 CFR Part 117 and/or 40 CFR Part 302.
3. Facility operators covered by this General Permit must reduce or prevent pollutants associated with industrial activity in storm water discharges and authorized non-storm water discharges through implementation of BAT for toxic and non-conventional pollutants and BCT for conventional pollutants. Development and implementation of an SWPPP that complies with the requirements in Section A of the General Permit and that includes BMPs that achieve BAT/BCT constitutes compliance with this requirement.

C. RECEIVING WATER LIMITATIONS:

1. Storm water discharges and authorized non-storm water discharges to any surface or ground water shall not adversely impact human health or the environment.
2. Storm water discharges and authorized non-storm water discharges shall not cause or contribute to an exceedance of any applicable water quality standards contained in a Statewide Water Quality Control Plan or the applicable Regional Water Board's Basin Plan.
3. A facility operator will not be in violation of Receiving Water Limitation C.2. as long as the facility operator has implemented BMPs that achieve BAT/BCT and the following procedure is followed:
  - a. The facility operator shall submit a report to the appropriate Regional Water Board that describes the BMPs that are currently being implemented and additional BMPs that will be implemented to prevent or reduce any pollutants that are causing or contributing to the exceedance of water quality standards. The report shall include an implementation schedule. The Regional Water Board may require modifications to the report.
  - b. Following approval of the report described above by the Regional Water Board, the facility operator shall revise its SWPPP and monitoring program to incorporate the additional BMPs that have been and will be implemented, the implementation schedule, and any additional monitoring required.
4. A facility operator shall be in violation of this General Permit if he/she fails to do any of the following:

- a. Submit the report described above within 60 days after either the facility operator or the Regional Water Board determines that discharges are causing or contributing to an exceedance of an applicable water quality standard;
- b. Submit a report that is approved by the Regional Water Board; or
- c. Revise its SWPPP and monitoring program as required by the approved report.

D. SPECIAL CONDITIONS

1. Non-Storm Water Discharges

- a. The following non-storm water discharges are authorized by this General Permit provided that they satisfy the conditions specified in Paragraph b. below: fire hydrant flushing; potable water sources, including potable water related to the operation, maintenance, or testing of potable water systems; drinking fountain water; atmospheric condensates including refrigeration, air conditioning, and compressor condensate; irrigation drainage; landscape watering; springs; ground water; foundation or footing drainage; and sea water infiltration where the sea waters are discharged back into the sea water source.
- b. The non-storm water discharges as provided in Paragraph a. above are authorized by this General Permit if all the following conditions are met:
  - i. The non-storm water discharges are in compliance with Regional Water Board requirements.
  - ii. The non-storm water discharges are in compliance with local agency ordinances and/or requirements.
  - iii. BMPs are specifically included in the SWPPP to (1) prevent or reduce the contact of non-storm water discharges with significant materials or equipment and (2) minimize, to the extent practicable, the flow or volume of non-storm water discharges.
  - iv. The non-storm water discharges do not contain significant quantities of pollutants.
  - v. The monitoring program includes quarterly visual observations of each non-storm water discharge and its sources to ensure that BMPs are being implemented and are effective.

- vi. The non-storm water discharges are reported and described annually as part of the annual report.
- c. The Regional Water Board or its designee may establish additional monitoring programs and reporting requirements for any non-storm water discharge authorized by this General Permit.
- d. Discharges from firefighting activities are authorized by this General Permit and are not subject to the conditions of Paragraph b. above.

E. PROVISIONS

1. All facility operators seeking coverage by this General Permit must submit an NOI for each of the facilities they operate. Facility operators filing an NOI after the adoption of this General Permit shall use the NOI form and instructions (Attachment 3) attached to this General Permit. Existing facility operators who have filed an NOI pursuant to State Water Board Order No. 91-013-DWQ (as amended by Order No. 92-12-DWQ) or San Francisco Bay Regional Water Board Order No. 92-11 (as amended by Order No. 92-116) shall submit an abbreviated NOI form provided by the State Water Board. The abbreviated NOI form shall be submitted within 45 days of receipt.
2. Facility operators who have filed an NOI, pursuant to State Water Board Order No. 91-013-DWQ (as amended by Order No. 92-12-DWQ) or San Francisco Bay Regional Water Board Order No. 92-11 (as amended by Order No. 92-116), shall continue to implement their existing SWPPP and shall implement any necessary revisions to their SWPPP in accordance with Section A of this General Permit in a timely manner, but in no case later than August 1, 1997. Facility operators beginning industrial activities after adoption of this General Permit must develop and implement an SWPPP in accordance with Section A of this General Permit when the industrial activities begin.
3. Facility operators who have filed an NOI, pursuant to State Water Board Order No. 91-013-DWQ (as amended by Order No. 92-12-DWQ) or San Francisco Bay Regional Water Board Order No. 92-11 (as amended by Order No. 92-116), shall continue to implement their existing Monitoring Program and shall implement any necessary revisions to their Monitoring Program in accordance with Section B of the General Permit in a timely manner, but in no case later than August 1, 1997. Facility operators beginning industrial activities after adoption of this General Permit must develop and implement a Monitoring Program in

accordance with Section B of this General Permit when industrial activities begin.

4. Facility operators of feedlots as defined in 40 CFR Part 412 that are in full compliance with Section 2560 to Section 2565, Title 23, California Code of Regulations (Chapter 15) will be in compliance with all effluent limitations and prohibitions contained in this General Permit. Facility operators of feedlots that comply with Chapter 15, however, must perform monitoring in compliance with the requirements of Section B.4.d. and B.14. of this General Permit. Facility operators of feedlots must also comply with any Regional Water Board WDRs or NPDES general permit regulating their storm water discharges.
5. All facility operators must comply with lawful requirements of municipalities, counties, drainage districts, and other local agencies regarding storm water discharges and non-storm water discharges entering storm drain systems or other watercourses under their jurisdiction, including applicable requirements in municipal storm water management programs developed to comply with NPDES permits issued by the Regional Water Boards to local agencies.
6. All facility operators must comply with the standard provisions and reporting requirements for each facility covered by this General Permit contained in Section C, Standard Provisions.
7. Facility operators that operate facilities with co-located industrial activities (facilities that have industrial activities that meet more than one of the descriptions in Attachment 1) that are contiguous to one another are authorized to file a single NOI to comply with the General Permit. Storm water discharges and authorized non-storm water discharges from the co-located industrial activities are authorized if the SWPPP and Monitoring Program addresses each co-located industrial activity.
8. Upon reissuance of a successor NPDES general permit by the State Water Board, the facility operators subject to this reissued General Permit may be required to file an NOI.
9. Facility operators may request to terminate their coverage under this General Permit by filing a Notice of Termination (NOT) with the Regional Water Board. The NOT shall provide all documentation requested by the Regional Water Board. The facility operator will be notified when the NOT has been approved. Should the NOT be denied, facility operators are responsible for continued compliance with the requirements of this General Permit.

10. Facility operators who have filed an NOI, pursuant to State Water Board Order No. 91-013-DWQ (as amended by Order No. 92-12) or San Francisco Bay Regional Water Board Order No. 92-11 (as amended by Order No. 92-116) shall:
  - a. Complete the 1996-97 activities required by those general permits. These include, but are not limited to, conducting any remaining visual observations, sample collection, annual site inspection, annual report submittal, and (for group monitoring leaders) Group Evaluation Reports; and
  - b. Comply with the requirements of this General Permit no later than August 1, 1997.
11. If the Regional Water Board determines that a discharge may be causing or contributing to an exceedance of any applicable water quality standards contained in a Statewide Water Quality Control Plan or the applicable Regional Water Board's Basin Plan, the Regional Water Board may order the facility operator to comply with the requirements described in Receiving Water Limitation C.3. The facility operator shall comply with the requirements within the time schedule established by the Regional Water Board.
12. If the facility operator determines that its storm water discharges or authorized non-storm water discharges are causing or contributing to an exceedance of any applicable water quality standards, the facility operator shall comply with the requirements described in Receiving Water Limitation C.3.
13. State Water Board Order No. 91-013-DWQ (as amended by Order No. 92-12-DWQ) and San Francisco Bay Regional Water Board Order No. 91-011 (as amended by Order No. 92-116) are hereby rescinded.

F. REGIONAL WATER BOARD AUTHORITIES

1. Following adoption of this General Permit, Regional Water Boards shall:
  - a. Implement the provisions of this General Permit, including, but not limited to, reviewing SWPPPs, reviewing annual reports, conducting compliance inspections, and taking enforcement actions.
  - b. Issue other NPDES general permits or individual NPDES storm water permits as they deem appropriate to individual facility operators, facility operators of specific categories of industrial activities, or facility operators in a watershed or geographic area. Upon issuance of such NPDES permits by a Regional Water Board, the affected facility operator shall no longer

be regulated by this General Permit. Any new NPDES permit issued by the Regional Water Board may contain different requirements than the requirements of this General Permit.

2. Regional Water Boards may provide guidance to facility operators on the SWPPP and the Monitoring Program and reporting implementation.
3. Regional Water Boards may require facility operators to conduct additional SWPPP and Monitoring Program and reporting activities necessary to achieve compliance with this General Permit.
4. Regional Water Boards may approve requests from facility operators whose facilities include co-located industrial activities that are not contiguous within the facilities (e.g., some military bases) to comply with this General Permit under a single NOI. Storm water discharges and authorized non-storm water discharges from the co-located industrial activities and from other sources within the facility that may generate significant quantities of pollutants are authorized provided the SWPPP and Monitoring Program addresses each co-located industrial activity and other sources that may generate significant quantities of pollutants.

#### CERTIFICATION

The undersigned, Administrative Assistant to the State Water Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on April 17, 1997.

AYE: John P. Caffrey  
John W. Brown  
James M. Stubchaer  
Marc Del Piero  
Mary Jane Forster

NO: None

ABSENT: None

ABSTAIN: None

Maureen Marché

-10-

Administrative Assistant to the Board

SECTION A: STORM WATER POLLUTION PREVENTION PLAN REQUIREMENTS

1. Implementation Schedule

A storm water pollution prevention plan (SWPPP) shall be developed and implemented for each facility covered by this General Permit in accordance with the following schedule.

- a. Facility operators beginning industrial activities before October 1, 1992 shall develop and implement the SWPPP no later than October 1, 1992. Facility operators beginning industrial activities after October 1, 1992 shall develop and implement the SWPPP when industrial activities begin.
- b. Existing facility operators that submitted a Notice of Intent (NOI), pursuant to State Water Resources Control Board (State Water Board) Order No. 91-013-DWQ (as amended by Order No. 92-12) or San Francisco Bay Regional Water Quality Control Board (Regional Water Board) Order No. 92-11 (as amended by Order No. 92-116), shall continue to implement their existing SWPPP and shall implement any necessary revisions to their SWPPP in a timely manner, but in no case later than August 1, 1997.

2. Objectives

The SWPPP has two major objectives: (a) to identify and evaluate sources of pollutants associated with industrial activities that may affect the quality of storm water discharges and authorized non-storm water discharges from the facility; and (b) to identify and implement site-specific best management practices (BMPs) to reduce or prevent pollutants associated with industrial activities in storm water discharges and authorized non-storm water discharges. BMPs may include a variety of pollution prevention measures or other low-cost and pollution control measures. They are generally categorized as non-structural BMPs (activity schedules, prohibitions of practices, maintenance procedures, and other low-cost measures) and as structural BMPs (treatment measures, run-off controls, overhead coverage.) To achieve these objectives, facility operators should consider the five phase process for SWPPP development and implementation as shown in Table A.

The SWPPP requirements are designed to be sufficiently flexible to meet the needs of various facilities. SWPPP requirements that are not applicable to a facility should not be included in the SWPPP.

A facility's SWPPP is a written document that shall contain a compliance activity schedule, a description of industrial activities and pollutant sources, descriptions of BMPs, drawings, maps, and relevant copies or references of parts of other plans. The SWPPP shall be revised whenever appropriate and shall be readily available for review by facility employees or Regional Water Board inspectors.

3. Planning and Organization

a. *Pollution Prevention Team*

The SWPPP shall identify a specific individual or individuals and their positions within the facility organization as members of a storm water pollution prevention team responsible for developing the SWPPP, assisting the facility manager in SWPPP implementation and revision, and conducting all monitoring program activities required in Section B of this General Permit. The SWPPP shall clearly identify the General Permit related responsibilities, duties, and activities of each team member. For small facilities, storm water pollution prevention teams may consist of one individual where appropriate.

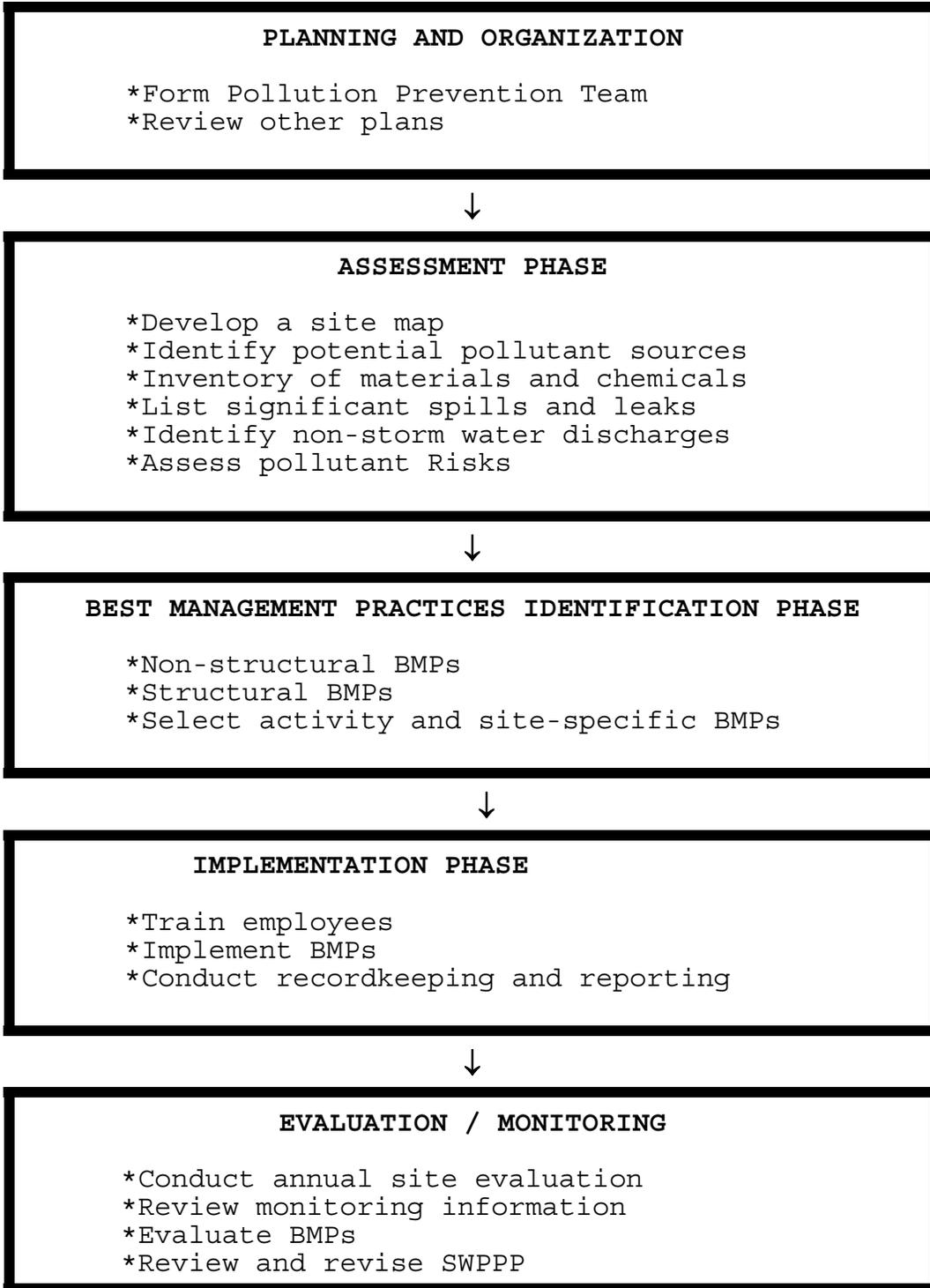
b. *Review Other Requirements and Existing Facility Plans*

The SWPPP may incorporate or reference the appropriate elements of other regulatory requirements. Facility operators should review all local, State, and Federal requirements that impact, complement, or are consistent with the requirements of this General Permit. Facility operators should identify any existing facility plans that contain storm water pollutant control measures or relate to the requirements of this General Permit. As examples, facility operators whose facilities are subject to Federal Spill Prevention Control and Countermeasures' requirements should already have instituted a plan to control spills of certain hazardous materials. Similarly, facility operators whose facilities are subject to air quality related permits and regulations may already have evaluated industrial activities that generate dust or particulates.

4. Site Map

The SWPPP shall include a site map. The site map shall be provided on an 8-½ x 11 inch or larger sheet and include notes, legends, and other data as appropriate to ensure that the site map is clear and understandable. If necessary, facility operators may provide the required information on multiple site maps.

**TABLE A  
FIVE PHASES FOR DEVELOPING AND IMPLEMENTING INDUSTRIAL  
STORM WATER POLLUTION PREVENTION PLANS**



The following information shall be included on the site map:

- a. The facility boundaries; the outline of all storm water drainage areas within the facility boundaries; portions of the drainage area impacted by run-on from surrounding areas; and direction of flow of each drainage area, on-site surface water bodies, and areas of soil erosion. The map shall also identify nearby water bodies (such as rivers, lakes, and ponds) and municipal storm drain inlets

where the facility's storm water discharges and authorized non-storm water discharges may be received.

- b. The location of the storm water collection and conveyance system, associated points of discharge, and direction of flow. Include any structural control measures that affect storm water discharges, authorized non-storm water discharges, and run-on. Examples of structural control measures are catch basins, berms, detention ponds, secondary containment, oil/water separators, diversion barriers, etc.
- c. An outline of all impervious areas of the facility, including paved areas, buildings, covered storage areas, or other roofed structures.
- d. Locations where materials are directly exposed to precipitation and the locations where significant spills or leaks identified in Section A.6.a.iv. below have occurred.
- e. Areas of industrial activity. This shall include the locations of all storage areas and storage tanks, shipping and receiving areas, fueling areas, vehicle and equipment storage/maintenance areas, material handling and processing areas, waste treatment and disposal areas, dust or particulate generating areas, cleaning and rinsing areas, and other areas of industrial activity which are potential pollutant sources.

5. List of Significant Materials

The SWPPP shall include a list of significant materials handled and stored at the site. For each material on the list, describe the locations where the material is being stored, received, shipped, and handled, as well as the typical quantities and frequency. Materials shall include raw materials, intermediate products, final or finished products, recycled materials, and waste or disposed materials.

6. Description of Potential Pollutant Sources

- a. The SWPPP shall include a narrative description of the facility's industrial activities, as identified in Section A.4.e above, associated potential pollutant sources, and potential pollutants that could be discharged in storm water discharges or authorized non-storm water discharges. At a minimum, the following items related to a facility's industrial activities shall be considered:

i. Industrial Processes

Describe each industrial process, the type, characteristics, and quantity of significant materials used in or resulting from the process, and a description of the manufacturing, cleaning, rinsing, recycling, disposal, or other activities related to the process. Where applicable, areas protected by containment structures and the corresponding containment capacity shall be described.

ii. Material Handling and Storage Areas

Describe each handling and storage area, type, characteristics, and quantity of significant materials handled or stored, description of the shipping, receiving, and loading procedures, and the spill or leak prevention and response procedures. Where applicable, areas protected by containment structures and the corresponding containment capacity shall be described.

iii. Dust and Particulate Generating Activities

Describe all industrial activities that generate dust or particulates that may be deposited within the facility's boundaries and identify their discharge locations; the characteristics of dust and particulate pollutants; the approximate quantity of dust and particulate pollutants that may be deposited within the facility boundaries; and a description of the primary areas of the facility where dust and particulate pollutants would settle.

iv. Significant Spills and Leaks

Describe materials that have spilled or leaked in significant quantities in storm water discharges or non-storm water discharges since April 17, 1994. Include toxic chemicals (listed in 40 CFR, Part 302) that have been discharged to storm water as reported on U.S. Environmental Protection Agency (U.S. EPA) Form R, and oil and hazardous substances in excess of reportable quantities (see 40 Code of Federal Regulations [CFR], Parts 110, 117, and 302).

The description shall include the type, characteristics, and approximate quantity of the material spilled or leaked, the cleanup or remedial actions that have occurred or are planned, the approximate remaining quantity of materials that may be exposed to storm water or non-storm water

discharges, and the preventative measures taken to ensure spill or leaks do not reoccur. Such list shall be updated as appropriate during the term of this General Permit.

v. Non-Storm Water Discharges

Facility operators shall investigate the facility to identify all non-storm water discharges and their sources. As part of this investigation, all drains (inlets and outlets) shall be evaluated to identify whether they connect to the storm drain system.

All non-storm water discharges shall be described. This shall include the source, quantity, frequency, and characteristics of the non-storm water discharges and associated drainage area.

Non-storm water discharges that contain significant quantities of pollutants or that do not meet the conditions provided in Special Conditions D. are prohibited by this General Permit (Examples of prohibited non-storm water discharges are contact and non-contact cooling water, boiler blowdown, rinse water, wash water, etc.). Non-storm water discharges that meet the conditions provided in Special Condition D. are authorized by this General Permit. The SWPPP must include BMPs to prevent or reduce contact of non-storm water discharges with significant materials or equipment.

vi. Soil Erosion

Describe the facility locations where soil erosion may occur as a result of industrial activity, storm water discharges associated with industrial activity, or authorized non-storm water discharges.

- b. The SWPPP shall include a summary of all areas of industrial activities, potential pollutant sources, and potential pollutants. This information should be summarized similar to Table B. The last column of Table B, "Control Practices", should be completed in accordance with Section A.8. below.

7. Assessment of Potential Pollutant Sources

- a. The SWPPP shall include a narrative assessment of all industrial activities and potential pollutant sources as described in A.6. above to determine:
- i. Which areas of the facility are likely sources of

pollutants in storm water discharges and authorized non-storm water discharges, and

- ii. Which pollutants are likely to be present in storm water discharges and authorized non-storm water discharges. Facility operators shall consider and evaluate various factors when performing this assessment such as current storm water BMPs; quantities of significant materials handled, produced, stored, or disposed of; likelihood of exposure to storm water or authorized non-storm water discharges; history of spill or leaks; and run-on from outside sources.
- b. Facility operators shall summarize the areas of the facility that are likely sources of pollutants and the corresponding pollutants that are likely to be present in storm water discharges and authorized non-storm water discharges.

Facility operators are required to develop and implement additional BMPs as appropriate and necessary to prevent or reduce pollutants associated with each pollutant source. The BMPs will be narratively described in Section 8 below.

8. Storm Water Best Management Practices

The SWPPP shall include a narrative description of the storm water BMPs to be implemented at the facility for each potential pollutant and its source identified in the site assessment phase (Sections A.6. and 7. above). The BMPs shall be developed and implemented to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. Each pollutant and its source may require one or more BMPs. Some BMPs may be implemented for multiple pollutants and their sources, while other BMPs will be implemented for a very specific pollutant and its source.

**TABLE B  
EXAMPLE  
ASSESSMENT OF POTENTIAL POLLUTION SOURCES AND  
CORRESPONDING BEST MANAGEMENT PRACTICES  
SUMMARY**

Area	Activity	Pollutant		Best Management Practices
		Pollutant Source	Pollutant	
Vehicle & Equipment Fueling	Fueling	Spills and leaks during delivery	fuel oil	- Use spill and overflow protection
				- Minimize run-on of storm water into the fueling area
		Spills caused by topping off fuel tanks	fuel oil	- Cover fueling area
				- Use dry cleanup methods rather than hosing down area
				- Implement proper spill prevention control program
				- Implement adequate preventative maintenance program to preventive tank and line leaks
Hosing or washing down fuel area	fuel oil	- Inspect fueling areas regularly to detect problems before they occur		
		- Train employees on proper fueling, cleanup, and spill response techniques.		
Leaking storage tanks	fuel oil	fuel oil	- Inspect fueling areas regularly to detect problems before they occur	
			- Train employees on proper fueling, cleanup, and spill response techniques.	
Rainfall running off fueling area, and rainfall running onto and off fueling area	fuel oil	fuel oil	- Inspect fueling areas regularly to detect problems before they occur	
			- Train employees on proper fueling, cleanup, and spill response techniques.	

The description of the BMPs shall identify the BMPs as (1) existing BMPs, (2) existing BMPs to be revised and implemented, or (3) new BMPs to be implemented. The description shall also include a discussion on the effectiveness of each BMP to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. The SWPPP shall provide a summary of all BMPs implemented for each pollutant source. This information should be summarized similar to Table B.

Facility operators shall consider the following BMPs for implementation at the facility:

a. Non-Structural BMPs

Non-structural BMPs generally consist of processes, prohibitions, procedures, schedule of activities, etc., that prevent pollutants associated with industrial activity from contacting with storm water discharges and authorized non-storm water discharges. They are considered low technology, cost-effective measures. Facility operators should consider all possible non-structural BMPs options before considering additional structural BMPs (see Section A.8.b. below). Below is a list of non-structural BMPs that should be considered:

i. Good Housekeeping

Good housekeeping generally consist of practical procedures to maintain a clean and orderly facility.

ii. Preventive Maintenance

Preventive maintenance includes the regular inspection and maintenance of structural storm water controls (catch basins, oil/water separators, etc.) as well as other facility equipment and systems.

iii. Spill Response

This includes spill clean-up procedures and necessary clean-up equipment based upon the quantities and locations of significant materials that may spill or leak.

iv. Material Handling and Storage

This includes all procedures to minimize the potential for spills and leaks and to minimize exposure of significant materials to storm water and authorized non-storm water discharges.

v. Employee Training

This includes training of personnel who are responsible for (1) implementing activities identified in the SWPPP, (2) conducting inspections, sampling, and visual observations, and (3) managing storm water. Training should address topics such as spill response, good housekeeping, and material handling procedures, and actions necessary to implement all BMPs identified in the SWPPP. The SWPPP shall identify periodic dates for such training. Records shall be maintained of all training sessions held.

vi. Waste Handling/Recycling

This includes the procedures or processes to handle, store, or dispose of waste materials or recyclable materials.

vii. Recordkeeping and Internal Reporting

This includes the procedures to ensure that all records of inspections, spills, maintenance activities, corrective actions, visual observations, etc., are developed, retained, and provided, as necessary, to the appropriate facility personnel.

viii. Erosion Control and Site Stabilization

This includes a description of all sediment and erosion control activities. This may include the planting and maintenance of vegetation, diversion of run-on and runoff, placement of sandbags, silt screens, or other sediment control devices, etc.

ix. Inspections

This includes, in addition to the preventative maintenance inspections identified above, an inspection schedule of all potential pollutant sources. Tracking and follow-up procedures shall be described to ensure adequate corrective actions are taken and SWPPPs are made.

x. Quality Assurance

This includes the procedures to ensure that all elements of the SWPPP and Monitoring Program are adequately conducted.

b. Structural BMPs

Where non-structural BMPs as identified in Section A.8.a. above are not effective, structural BMPs shall be considered. Structural BMPs generally consist of structural devices that reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. Below is a list of structural BMPs that should be considered:

i. Overhead Coverage

This includes structures that provide horizontal coverage of materials, chemicals, and pollutant sources from contact with storm water and authorized non-storm water discharges.

ii. Retention Ponds

This includes basins, ponds, surface impoundments, bermed areas, etc. that do not allow storm water to discharge from the facility.

iii. Control Devices

This includes berms or other devices that channel or route run-on and runoff away from pollutant sources.

iv. Secondary Containment Structures

This generally includes containment structures around storage tanks and other areas for the purpose of collecting any leaks or spills.

v. Treatment

This includes inlet controls, infiltration devices, oil/water separators, detention ponds, vegetative swales, etc. that reduce the pollutants in storm water discharges and authorized non-storm water discharges.

9. Annual Comprehensive Site Compliance Evaluation

The facility operator shall conduct one comprehensive site compliance evaluation (evaluation) in each reporting period (July 1-June 30). Evaluations shall be conducted within 8-16 months of each other. The SWPPP shall be revised, as appropriate, and the revisions implemented within 90 days of the evaluation. Evaluations shall include the following:

- a. A review of all visual observation records, inspection records, and sampling and analysis results.
- b. A visual inspection of all potential pollutant sources for evidence of, or the potential for, pollutants entering the drainage system.
- c. A review and evaluation of all BMPs (both structural and non-structural) to determine whether the BMPs are adequate, properly implemented and maintained, or whether additional BMPs are needed. A visual inspection of equipment needed to implement the SWPPP, such as spill response equipment, shall be included.
- d. An evaluation report that includes, (i) identification of personnel performing the evaluation, (ii) the date(s) of the evaluation, (iii) necessary SWPPP revisions, (iv) schedule, as required in Section A.10.e, for implementing SWPPP revisions, (v) any incidents of non-compliance and the corrective actions taken, and (vi) a certification that the facility operator is in compliance with this General Permit. If the above certification cannot be provided, explain in the evaluation report why the facility operator is not in compliance with this General Permit. The evaluation report shall be submitted as part of the annual report, retained for at least five years, and signed and certified in accordance with Standard Provisions 9. and 10. of Section C. of this General Permit.

10. SWPPP General Requirements

- a. The SWPPP shall be retained on site and made available upon request of a representative of the Regional Water Board and/or local storm water management agency (local agency) which receives the storm water discharges.
- b. The Regional Water Board and/or local agency may notify the facility operator when the SWPPP does not meet one or more of the minimum requirements of this Section. As requested by the Regional Water Board and/or local agency, the facility operator shall submit an SWPPP revision and implementation schedule that meets the minimum requirements of this section to the Regional Water Board and/or local agency that requested the SWPPP revisions. Within 14 days after implementing the required SWPPP revisions, the facility operator shall provide written certification to the Regional Water Board and/or local agency that the revisions have been implemented.

- c. The SWPPP shall be revised, as appropriate, and implemented prior to changes in industrial activities which (i) may significantly increase the quantities of pollutants in storm water discharge, (ii) cause a new area of industrial activity at the facility to be exposed to storm water, or (iii) begin an industrial activity which would introduce a new pollutant source at the facility.
- d. Other than as provided in Provisions B.11, B.12, and E.2 of the General Permit, the SWPPP shall be revised and implemented in a timely manner, but in no case more than 90 days after a facility operator determines that the SWPPP is in violation of any requirement(s) of this General Permit.
- e. When any part of the SWPPP is infeasible to implement by the deadlines specified in Provision E.2 or Sections A.1, A.9, A.10.c, and A.10.d of this General Permit due to proposed significant structural changes, the facility operator shall submit a report to the Regional Water Board prior to the applicable deadline that (i) describes the portion of the SWPPP that is infeasible to implement by the deadline, (ii) provides justification for a time extension, (iii) provides a schedule for completing and implementing that portion of the SWPPP, and (iv) describes the BMPs that will be implemented in the interim period to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. Such reports are subject to Regional Water Board approval and/or modifications. Facility operators shall provide written notification to the Regional Water Board within 14 days after the SWPPP revisions are implemented.
- f. The SWPPP shall be provided, upon request, to the Regional Water Board. The SWPPP is considered a report that shall be available to the public by the Regional Water Board under Section 308(b) of the Clean Water Act.

SECTION B. MONITORING PROGRAM AND REPORTING REQUIREMENTS

1. Implementation Schedule

Each facility operator shall develop a written monitoring program for each facility covered by this General Permit in accordance with the following schedule:

- a. Facility operators beginning industrial activities before October 1, 1992 shall develop and implement a monitoring program no later than October 1, 1992. Facility operators beginning operations after October 1, 1992 shall develop and implement a monitoring program when the industrial activities begin.
- b. Facility operators that submitted a Notice Of Intent (NOI) pursuant to State Water Resources Control Board (State Water Board) Order No. 91-013-DWQ (as amended by Order No. 92-12) or San Francisco Bay Regional Water Quality Control Board (Regional Water Board) Order No. 92-11 (as amended by Order No. 92-116), shall continue to implement their existing monitoring program and implement any necessary revisions to their monitoring program in a timely manner, but in no case later than August 1, 1997. These facility operators may use the monitoring results conducted in accordance with those expired general permits to satisfy the pollutant/parameter reduction requirements in Section B.5.c., Sampling and Analysis Exemptions and Reduction certifications in Section B.12., and Group Monitoring Sampling credits in B.15.k. For facilities beginning industrial activities after the adoption of this General Permit, the monitoring program shall be developed and implemented when the facility begins the industrial activities.

2. Objectives

The objectives of the monitoring program are to:

- a. Ensure that storm water discharges are in compliance with the Discharge Prohibitions, Effluent Limitations, and Receiving Water Limitations specified in this General Permit.
- b. Ensure practices at the facility to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges are evaluated and revised to meet changing conditions.
- c. Aid in the implementation and revision of the SWPPP required by Section A of this General Permit.
- d. Measure the effectiveness of best management practices (BMPs) to prevent or reduce pollutants in storm water

discharges and authorized non-storm water discharges. Much of the information necessary to develop the monitoring program, such as discharge locations, drainage areas, pollutant sources, etc., should be found in the Storm Water Pollution Prevention Plan (SWPPP). The facility's monitoring program shall be a written, site-specific document that shall be revised whenever appropriate and be readily available for review by employees or Regional Water Board inspectors.

3. Non-storm Water Discharge Visual Observations

- a. Facility operators shall visually observe all drainage areas within their facilities for the presence of unauthorized non-storm water discharges;
- b. Facility operators shall visually observe the facility's authorized non-storm water discharges and their sources;
- c. The visual observations required above shall occur quarterly, during daylight hours, on days with no storm water discharges, and during scheduled facility operating hours<sup>1</sup>. Quarterly visual observations shall be conducted in each of the following periods: January-March, April-June, July-September, and October-December. Facility operators shall conduct quarterly visual observations within 6-18 weeks of each other.
- d. Visual observations shall document the presence of any discolorations, stains, odors, floating materials, etc., as well as the source of any discharge. Records shall be maintained of the visual observation dates, locations observed, observations, and response taken to eliminate unauthorized non-storm water discharges and to reduce or prevent pollutants from contacting non-storm water discharges. The SWPPP shall be revised, as necessary, and implemented in accordance with Section A of this General Permit.

4. Storm Water Discharge Visual Observations

- a. With the exception of those facilities described in Section B.4.d. below, facility operators shall visually

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<sup>1</sup> "Scheduled facility operating hours" are the time periods when the facility is staffed to conduct any function related to industrial activity, but excluding time periods where only routine maintenance, emergency response, security, and/or janitorial services are performed.

observe storm water discharges from one storm event per month during the wet season (October 1-May 30). These visual observations shall occur during the first hour of discharge and at all discharge locations. Visual observations of stored or contained storm water shall occur at the time of release.

- b. Visual observations are only required of storm water discharges that occur during daylight hours that are preceded by at least three (3) working days<sup>2</sup> without storm water discharges and that occur during scheduled facility operating hours.
- c. Visual observations shall document the presence of any floating and suspended material, oil and grease, discolorations, turbidity, odor, and source of any pollutants. Records shall be maintained of observation dates, locations observed, observations, and response taken to reduce or prevent pollutants in storm water discharges. The SWPPP shall be revised, as necessary, and implemented in accordance with Section A of this General Permit.
- d. Feedlots (subject to Federal effluent limitations guidelines in 40 Code of Federal Regulations [CFR] Part 412) that are in compliance with Sections 2560 to 2565, Article 6, Chapter 15, Title 23, California Code of Regulations, and facility operators with storm water containment facilities shall conduct monthly inspections of their containment areas to detect leaks and ensure maintenance of adequate freeboard. Records shall be maintained of the inspection dates, observations, and any response taken to eliminate leaks and to maintain adequate freeboard.

##### 5. Sampling and Analysis

- a. Facility operators shall collect storm water samples during the first hour of discharge from (1) the first storm event of the wet season, and (2) at least one other storm event in the wet season. All storm water discharge locations shall be sampled. Sampling of stored or contained storm water shall occur at the time the stored or contained storm water is released. Facility operators that do not collect samples from the first storm event of the wet season are still required to collect samples from two other storm events of the wet season and shall explain in the Annual Report why the first storm event was not sampled.

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<sup>2</sup> Three (3) working days may be separated by non-working days such as weekends and holidays provided that no storm water discharges occur during the three (3) working days and the non-working days.

- b. Sample collection is only required of storm water discharges that occur during scheduled facility operating hours and that are preceded by at least (3) three working days without storm water discharge.
- c. The samples shall be analyzed for:
  - i. Total suspended solids (TSS) pH, specific conductance, and total organic carbon (TOC). Oil and grease (O&G) may be substituted for TOC; and
  - ii. Toxic chemicals and other pollutants that are likely to be present in storm water discharges in significant quantities. If these pollutants are not detected in significant quantities after two consecutive sampling events, the facility operator may eliminate the pollutant from future sample analysis until the pollutant is likely to be present again; and
  - iii. Other analytical parameters as listed in Table D (located at the end of this Section). These parameters are dependent on the facility's standard industrial classification (SIC) code. Facility operators are not required to analyze a parameter listed in Table D when the parameter is not already required to be analyzed pursuant to Section B.5.c.i. and ii. or B.6 of this General Permit, and either of the two following conditions are met: (1) the parameter has not been detected in significant quantities from the last two consecutive sampling events, or (2) the parameter is not likely to be present in storm water discharges and authorized non-storm water discharges in significant quantities based upon the facility operator's evaluation of the facilities industrial activities, potential pollutant sources, and SWPPP. Facility operators that do not analyze for the applicable Table D parameters shall certify in the Annual Report that the above conditions have been satisfied.
  - iv. Other parameters as required by the Regional Water Board.

6. Facilities Subject to Federal Storm Water Effluent Limitation Guidelines

Facility operators with facilities subject to Federal storm water effluent limitation guidelines, in addition to the requirements in Section B.5. above, must complete the following:

- a. Collect and analyze two samples for any pollutant specified in the appropriate category of 40 CFR Subchapter N. The sampling and analysis exemptions and reductions described in Section B.12. of this General Permit do not apply to these pollutants.
- b. Estimate or calculate the volume of storm water discharges from each drainage area;
- c. Estimate or calculate the mass of each regulated pollutant as defined in the appropriate category of 40 CFR Subchapter N; and
- d. Identify the individual(s) performing the estimates or calculations in accordance with Subsections b. and c. above.

7. Sample Storm Water Discharge Locations

- a. Facility operators shall visually observe and collect samples of storm water discharges from all drainage areas that represent the quality and quantity of the facility's storm water discharges from the storm event.
- b. If the facility's storm water discharges are commingled with run-on from surrounding areas, the facility operator should identify other visual observation and sample collection locations that have not been commingled by run-on and that represent the quality and quantity of the facility's storm water discharges from the storm event.
- c. If visual observation and sample collection locations are difficult to observe or sample (e.g., sheet flow, submerged outfalls), facility operators shall identify and collect samples from other locations that represent the quality and quantity of the facility's storm water discharges from the storm event.
- d. Facility operators that determine that the industrial activities and BMPs within two or more drainage areas are substantially identical may either (i) collect samples from a reduced number of substantially identical drainage areas, or (ii) collect samples from each substantially identical drainage area and analyze a combined sample from each substantially identical drainage area. Facility operators must document such a determination in the annual report.

8. Visual Observation and Sample Collection Exceptions

Facility operators are required to be prepared to collect samples and conduct visual observations at the beginning of the wet season (October 1) and throughout the wet season

until the minimum requirements of Sections B.4. and B.5. are completed with the following exceptions:

- a. A facility operator is not required to collect a sample and conduct visual observations in accordance with Section B.4 and Section B.5 due to dangerous weather conditions, such as flooding, electrical storm, etc., when storm water discharges begin after scheduled facility operating hours or when storm water discharges are not preceded by three working days without discharge. Visual observations are only required during daylight hours. Facility operators that do not collect the required samples or visual observations during a wet season due to these exceptions shall include an explanation in the Annual Report why the sampling or visual observations could not be conducted.
- b. A facility operator may conduct visual observations and sample collection more than one hour after discharge begins if the facility operator determines that the objectives of this Section will be better satisfied. The facility operator shall include an explanation in the Annual Report why the visual observations and sample collection should be conducted after the first hour of discharge.

9. Alternative Monitoring Procedures

Facility operators may propose an alternative monitoring program that meets Section B.2 monitoring program objectives for approval by the Regional Water Board. Facility operators shall continue to comply with the monitoring requirements of this Section and may not implement an alternative monitoring plan until the alternative monitoring plan is approved by the Regional Water Board. Alternative monitoring plans are subject to modification by the Regional Water Boards.

10. Monitoring Methods

- a. Facility operators shall explain how the facility's monitoring program will satisfy the monitoring program objectives of Section B.2. This shall include:
  - i. Rationale and description of the visual observation methods, location, and frequency.
  - ii. Rationale and description of the sampling methods, location, and frequency; and

- iii. Identification of the analytical methods and corresponding method detection limits used to detect pollutants in storm water discharges. This shall include justification that the method detection limits are adequate to satisfy the objectives of the monitoring program.
  
- b. All sampling and sample preservation shall be in accordance with the current edition of "Standard Methods for the Examination of Water and Wastewater" (American Public Health Association). All monitoring instruments and equipment (including a facility operator's own field instruments for measuring pH and Electro Conductivity) shall be calibrated and maintained in accordance with manufacturers' specifications to ensure accurate measurements. All laboratory analyses must be conducted according to test procedures under 40 CFR Part 136, unless other test procedures have been specified in this General Permit or by the Regional Water Board. All metals shall be reported as total metals. With the exception of analysis conducted by facility operators, all laboratory analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. Facility operators may conduct their own sample analyses if the facility operator has sufficient capability (qualified employees, laboratory equipment, etc.) to adequately perform the test procedures.

11. Inactive Mining Operations

Inactive mining operations are defined in Attachment 1 of this General Permit. Where comprehensive site compliance evaluations, non-storm water discharge visual observations, storm water discharge visual observations, and storm water sampling are impracticable, facility operators of inactive mining operations may instead obtain certification once every three years by a Registered Professional Engineer that an SWPPP has been prepared for the facility and is being implemented in accordance with the requirements of this General Permit. By means of these certifications, the Registered Professional Engineer having examined the facility and being familiar with the provisions of this General Permit shall attest that the SWPPP has been prepared in accordance with good engineering practices. Facility operators of mining operations who cannot obtain a certification because of noncompliance must notify the appropriate Regional Water Board and, upon request, the local agency which receives the storm water discharge.

12. Sampling and Analysis Exemptions and Reductions

A facility operator who qualifies for sampling and analysis exemptions, as described below in Section B.12.a.i., or who qualifies for reduced sampling and analysis, as described below in Section B.12.b., must submit the appropriate certifications and required documentation to the Regional Water Boards prior to the wet season (October 1) and recertify as part of the Annual Report submittal. A facility operator that qualifies for either the Regional Water Board or local agency certification programs, as described below in Section B.12.a.ii. and iii., shall submit certification and documentation in accordance with the requirements of those programs. Facility operators who provide certifications in accordance with this Section are still required to comply with all other monitoring program and reporting requirements. Facility operators shall prepare and submit their certifications using forms and instructions provided by the State Water Board, Regional Water Board, or local agency or shall submit their information on a form that contains equivalent information. Facility operators whose facility no longer meets the certification conditions must notify the Regional Water Boards (and local agency) within 30 days and immediately comply with the Section B.5. sampling and analysis requirements. Should a Regional Water Board (or local agency) determine that a certification does not meet the conditions set forth below, facility operators must immediately comply with the Section B.5. sampling and analysis requirements.

a. Sampling and Analysis Exemptions

A facility operator is not required to collect and analyze samples in accordance with Section B.5. if the facility operator meets all of the conditions of one of the following certification programs:

i. No Exposure Certification (NEC)

This exemption is designed primarily for those facilities where all industrial activities are conducted inside buildings and where all materials stored and handled are not exposed to storm water. To qualify for this exemption, facility operators must certify that their facilities meet all of the following conditions:

- (1) All prohibited non-storm water discharges have been eliminated or otherwise permitted.
- (2) All authorized non-storm water discharges have been identified and addressed in the SWPPP.
- (3) All areas of past exposure have been inspected and cleaned, as appropriate.
- (4) All significant materials related to industrial activity (including waste materials) are not exposed to storm water or authorized non-storm water discharges.
- (5) All industrial activities and industrial equipment are not exposed to storm water or authorized non-storm water discharges.
- (6) There is no exposure of storm water to significant materials associated with industrial activity through other direct or indirect pathways such as from industrial activities that generate dust and particulates.
- (7) There is periodic re-evaluation of the facility to ensure conditions (1), (2), (4), (5), and (6) above are continuously met. At a minimum, re-evaluation shall be conducted once a year.

ii. Regional Water Board Certification Programs

The Regional Water Board may grant an exemption to the Section B.5. Sampling and Analysis Requirements if it determines a facility operator has met the conditions set forth in a Regional Water Board certification program. Regional Water Board certification programs may include conditions to (1) exempt facility operators whose facilities infrequently discharge storm water to waters of the United States, and (2) exempt facility operators

that demonstrate compliance with the terms and conditions of this General Permit.

iii. Local Agency Certifications

A local agency may develop a local agency certification program. Such programs must be approved by the Regional Water Board. An approved local agency program may either grant an exemption

from the Section B.5. Sampling and Analysis Requirements or reduce the frequency of sampling if it determines that a facility operator has demonstrated compliance with the terms and conditions of this General Permit.

b. Sampling and Analysis Reduction

i. A facility operator may reduce the number of sampling events required to be sampled for the remaining term of this General Permit if the facility operator provides certification that the following conditions have been met:

- (1) The facility operator has collected and analyzed samples from a minimum of six storm events from all required drainage areas;
- (2) All prohibited non-storm water discharges have been eliminated or otherwise permitted;
- (3) The facility operator demonstrates compliance with the terms and conditions of the General Permit for the previous two years (i.e., completed Annual Reports, performed visual observations, implemented appropriate BMPs, etc.);
- (4) The facility operator demonstrates that the facility's storm water discharges and authorized non-storm water discharges do not contain significant quantities of pollutants; and
- (5) Conditions (2), (3), and (4) above are expected to remain in effect for a minimum of one year after filing the certification.

ii. Unless otherwise instructed by the Regional Water Board, facility operators shall collect and analyze samples from two additional storm events (or one additional storm event when certification filed for the wet season beginning October 1, 2001) during the remaining term of this General Permit in accordance with Table C below. Facility operators shall collect samples of the first

storm event of the wet season. Facility operators that do not collect samples from the first storm event of the wet season shall collect samples from another storm event during the same wet season. Facility operators that do not collect a sample in a required wet season shall collect the sample from another storm event in the next wet season. Facility operators shall explain in the Annual Report why the first storm event of a wet season was not sampled or a sample was not taken from any storm event in accordance with the Table C schedule.

Table C  
REDUCED MONITORING SAMPLING SCHEDULE

Facility Operator Filing Sampling Reduction Certification By	Samples Shall be Collected and Analyzed in These Wet Seasons	
	Sample 1	Sample 2
Oct. 1, 1997	Oct. 1, 1997-May 31, 1998	Oct. 1, 1999-May 31, 2000
Oct. 1, 1998	Oct. 1, 1998-May 31, 1999	Oct. 1, 2000-May 31, 2001
Oct. 1, 1999	Oct. 1, 1999-May 31, 2000	Oct. 1, 2001-May 31, 2002
Oct. 1, 2000	Oct. 1, 2000-May 31, 2001	Oct. 1, 2001-May 31, 2002
Oct. 1, 2001	Oct. 1, 2001-May 31, 2002	-

13. Records

Records of all storm water monitoring information and copies of all reports (including the Annual Reports) required by this General Permit shall be retained for a period of at least five years. These records shall include:

- a. The date, place, and time of site inspections, sampling, visual observations, and/or measurements;
- b. The individual(s) who performed the site inspections, sampling, visual observations, and or measurements;
- c. Flow measurements or estimates (if required by Section B.6);
- d. The date and approximate time of analyses;
- e. The individual(s) who performed the analyses;
- f. Analytical results, method detection limits, and the analytical techniques or methods used;
- g. Quality assurance/quality control records and results;

- h. Non-storm water discharge inspections and visual observations and storm water discharge visual observation records (see Sections B.3. and 4.);
- i. Visual observation and sample collection exception records (see Section B.5.a, 7.d, 8, and 12.b.ii.);
- j. All calibration and maintenance records of on-site instruments used;
- k. All Sampling and Analysis Exemption and Reduction certifications and supporting documentation (see Section B.12);
- l. The records of any corrective actions and follow-up activities that resulted from the visual observations.

14. Annual Report

All facility operators shall submit an Annual Report by July 1 of each year to the Executive Officer of the Regional Water Board responsible for the area in which the facility is located and to the local agency (if requested).

The report shall include a summary of visual observations and sampling results, an evaluation of the visual observation and sampling and analysis results, laboratory reports, the Annual Comprehensive Site Compliance Evaluation Report required in Section A.9., an explanation of why a facility did not implement any activities required by the General Permit (if not already included in the Evaluation Report), and records specified in Section B.13.i. The method detection limit of each analytical parameter shall be included. Analytical results that are less than the method detection limit shall be reported as "less than the method detection limit." The Annual Report shall be signed and certified in accordance with Standard Provisions 9. and 10. of Section C of this General Permit. Facility operators shall prepare and submit their Annual Reports using the annual report forms provided by the State Water Board or Regional Water Board or shall submit their information on a form that contains equivalent information.

15. Group Monitoring

Facility operators may participate in group monitoring as described below. A facility operator that participates in group monitoring shall develop and implement a written site-specific SWPPP and monitoring program in accordance with the General Permit and must satisfy any group monitoring requirements. Group monitoring shall be subject to the following requirements:

- a. A group monitoring plan (GMP) shall be developed and implemented by a group leader representing a group of

similar facility operators regulated by this General Permit or by a local agency which holds an NPDES permit (local agency permittee) for a municipal separate storm sewer system. GMPs with participants that discharge storm water within the boundaries of a single Regional Water Board shall be approved by that Regional Water Board. GMPs with participants that discharge storm water within the boundaries of multiple Regional Water Boards shall be approved by the State Water Board. The State Water Board and/or Regional Water Board(s) may disapprove a facility's participation in a GMP or require a GMP participant to conduct additional monitoring activities.

- b. Each GMP participant shall collect and analyze samples from at least two storm events in accordance with Section B.5. over the five-year period of this General Permit. The two storm event minimum applies to new and existing members. The group leader or local agency permittee shall schedule sampling to meet the following conditions: (i) to evenly distribute the sample collection over the five-year term of this General Permit, and (ii) to collect samples from the two storm events at each participant's facility in different and non-consecutive wet seasons. New participants who join in Years 4 and 5 of this General Permit are not subject to Condition (ii) above. Group leaders shall explain in the annual Group Evaluation Report why any scheduled samples were not collected and reschedule the sampling so that all required samples are collected during the term of this General Permit.
- c. The group leader or local agency permittee must have the appropriate resources to develop and implement the GMP. The group leader or local agency permittee must also have the authority to terminate any participant who is not complying with this General Permit and the GMP.
- d. The group leader or local agency permittee is responsible for:
  - i. Developing, implementing, and revising the GMP;
  - ii. Developing and submitting an annual Group Evaluation Report to the State Water Board and/or Regional Water Board by August 1 of each year that includes:
    - (1) An evaluation and summary of all group monitoring data,
    - (2) An evaluation of the overall performance of the GMP participants in complying with this General Permit and the GMP,

- (3) Recommended baseline and site-specific BMPs that should be considered by each participant based upon Items (1) and (2) above, and
    - (4) A copy of each evaluation report and recommended BMPs as required in Section B.15.d.v. below.
  - iii. Recommending appropriate BMPs to reduce or prevent pollutants associated with industrial activities in storm water discharges and authorized non-storm water discharges;
  - iv. Assisting each participant in completing their Annual Comprehensive Site Compliance Evaluation and Annual Report;
  - v. Conducting a minimum of two on-site inspections of each participant's facility (it is recommended that these inspections be scheduled during the Annual Comprehensive Site Compliance Evaluation) during the term of this General Permit to evaluate the participant's compliance with this General Permit and the GMP, and to recommend any additional BMPs necessary to achieve compliance with this General Permit. Participants that join in Years 4 and 5 shall be scheduled for one evaluation. A copy of the evaluation and recommended BMPs shall be provided to the participants;
  - vi. Submitting a GMP (or revisions, as necessary), to the appropriate Regional Water Board(s) and State Water Board no later than September 1, 1997 (or August 1 in subsequent years). Once approved, a group leader or local agency permittee shall submit a letter of intent by August 1 of each year to continue the approved GMP. The letter of intent must include a roster of participants, participant's Waste Discharge Identification number (WDID#), updated sampling schedules, and any other revisions to the GMP;
  - vii. Revising the GMP as instructed by the Regional Water Board or the State Water Board; and
  - viii. Providing the State Water Board and/or Regional Water Board with quarterly updates of any new or deleted participants and corresponding changes in the sampling and inspection schedule.
- e. The GMP shall:

- i. Identify the participants of the GMP by name, location, and WDID number;
  - ii. Include a narrative description summarizing the industrial activities of participants of the GMP and explain why the participants, as a whole, have sufficiently similar industrial activities and BMPs to be covered by a group monitoring plan;
  - iii. Include a list of typical potential pollutant sources associated with the group participant's facilities and recommended baseline BMPs to prevent or reduce pollutants associated with industrial activity in the storm water discharges and authorized non-storm water discharges;
  - iv. Provide a five-year sampling and inspection schedule in accordance with Subsections b. and d.v. above.
  - v. Identify the pollutants associated with industrial activity that shall be analyzed at each participant's facility in accordance with Section B.5. The selection of these pollutants shall be based upon an assessment of each facility's potential pollutant sources and likelihood that pollutants associated with industrial activity will be present in storm water discharges and authorized non-storm water discharges in significant quantities.
- f. Sampling and analysis shall be conducted in accordance with the applicable requirements of this Section.
  - g. Unless otherwise instructed by the Regional Water Board or the State Water Board Executive Director, the GMPs shall be implemented at the beginning of the wet season (October 1).
  - h. All participants in an approved GMP that have not been selected to sample in a particular wet season are required to comply with all other monitoring program and reporting requirements of this Section including the submittal of an Annual Report by July 1 of each year to the appropriate Regional Water Board.
  - i. GMP participants subject to Federal storm water effluent limitation guidelines must perform the monitoring described in Section B.6. and submit the results of the monitoring to the appropriate Regional Water Board within the facility operator's Annual Report.

- j. GMPs and Group Evaluation Reports should be prepared in accordance with State Water Board (or Regional Water Board) guidance.
- k. GMP participants may receive Sampling and Analysis Reduction sampling credit in accordance with the following conditions:
  - i. Current or prior participants (group participants) of approved GMPs, who have not collected and analyzed samples from six storm events as required in Section B.7.b.i.(1), may substitute credit earned through participation in a GMP for up to four of the six required storm events. Credits for GMP participation shall be calculated as follows:
    - (1) Credit may only be earned in years of participation where the GMP participant was not scheduled to sample and the GMP was approved.
    - (2) One credit will be earned for each year of valid GMP participation.
    - (3) One additional credit may be earned for each year the overall GMP sample collection performance is greater than 75 percent.
  - ii. GMP participants substituting credit as calculated above shall provide proof of GMP participation and certification that all the conditions in Section B.12.b.i. have been met. GMP participants substituting credit in accordance with Section B.15.k.i.(3) shall also provide GMP sample collection performance documentation.
  - iii. GMP participants that qualify for Sampling and Analysis Reduction and have already sampled a storm event after October 1, 1997 shall only be required to sample one additional storm event during the remainder of this General Permit in accordance with the "Sample 2" schedule (or "Sample 1" schedule when certification filed for the wet season beginning October 1, 2001) in Table C of this Section.
- n. Group leaders shall furnish, within 60 days of receiving a request from the State Water Board or Regional Water Board, any GMP information and documentation necessary to verify the Section B.15.k. sampling credits. Group leaders may also provide this information and documentation to the group participants.

16. Watershed Monitoring Option

Regional Water Boards may approve proposals to substitute watershed monitoring for some or all of the requirements of this Section if the Regional Water Board finds that the watershed monitoring will provide substantially similar monitoring information in evaluating facility operator compliance with the requirements of this General Permit.

**TABLE D  
ADDITIONAL ANALYTICAL PARAMETERS**

<u>Subsector</u>	<u>SIC</u>	<u>Activity Represented</u>	<u>Parameters</u>
<b>SECTOR A. TIMBER PRODUCTS</b>			
A1	2421	General Sawmills and Planing Mills .....	COD;TSS;Zn
A2	2491	Wood Preserving .....	As;Cu
A3	2411	Log Storage and Handling.....	TSS
A4	2426	Hardwood Dimension and Flooring Mills.....	COD;TSS
A4	2429	Special Product Sawmills, Not Elsewhere Classified.....	COD;TSS
A4	243X	Millwork, Veneer, Plywood, and Structural Wood .....	COD;TSS
A4	(except 2434--	Wood Kitchen Cabinet Manufacturers)	
A4	244X	Wood Containers .....	COD;TSS
A4	245X	Wood Buildings and Mobile Homes .....	COD;TSS
A4	2493	Reconstituted Wood Products .....	COD;TSS
A4	2499	Wood Products, Not Elsewhere Classified	
<b>SECTOR B. PAPER AND ALLIED PRODUCTS MANUFACTURING</b>			
B1	261X	Pulp Mills .....	
B2	262X	Paper Mills .....	
B3	263X	Paperboard Mills .....	COD
B4	265X	Paperboard Containers and Boxes.....	
B5	267X	Converted Paper and Paperboard Products, Except Containers and Boxes .....	
<b>SECTOR C. CHEMICAL AND ALLIED PRODUCTS MANUFACTURING</b>			
C1	281X	Industrial Inorganic Chemicals.....	Al;Fe;N+N
C2	282X	Plastics Materials and Synthetic Resins, Synthetic Rubber, Cellulosic, and Other Manmade Fibers Except Glass .....	Zn
C3	283X	Drugs .....	
C4	284X	Soaps, Detergents, and Cleaning Preparations; Perfumes, Cosmetics, and Other Toilet Preparations .....	N+N;Zn
C5	285X	Paints, Varnishes, Lacquers, Enamels, and Allied Products	
C6	286X	Industrial Organic Chemicals .....	
C7	287X	Nitrogenous and Phosphatic Basic Fertilizers, Mixed Fertilizer, Pesticides, and Other Agricultural Chemicals .....	Fe;N+N;Pb;Zn;P
C8	289X	Miscellaneous Chemical Products.....	
	3952	Inks and Paints, Including China Painting Enamels, India Ink, (limited to list) Drawing Ink, Platinum Paints for Burnt Wood or Leather Work, Paints for China Painting, Artist's Paints, and Artist's Watercolors .....	
<b>SECTOR D. ASPHALT PAVING/ROOFING MATERIALS MANUFACTURERS AND LUBRICANT MANUFACTURERS</b>			
D1	295X	Asphalt Paving and Roofing Materials .....	TSS
D2	2992	Lubricating Oils and Greases.....	

Parameter Names

Al - Aluminum	Cd - Cadmium	Cu - Copper	Mg - Magnesium	BOD - Biochemical Oxygen Demand
As - Arsenic	CN - Cyanide	Fe - Iron	Ag - Silver	N + N - Nitrate & Nitrite Nitrogen
NH <sub>3</sub> - Ammonia	Hg - Mercury	P - Phosphorus	Se - Selenium	Pb - Lead
Zn - Zinc	TSS -Total Suspended Solids	COD - Chemical Oxygen Demand		

<u>Subsector</u>	<u>SIC</u>	<u>Activity Represented</u>	<u>Parameters</u>
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**SECTOR E. GLASS, CLAY, CEMENT, CONCRETE, AND GYPSUM PRODUCT MANUFACTURING**

E1	3211	Flat Glass .....	
E1	322X	Glass and Glassware, Pressed or Blown .....	
E1	323X	Glass Products Made of Purchased Glass .....	
E2	3241	Hydraulic Cement .....	
E3	325X	Structural Clay Products .....	Al
E3	326X	Pottery and Related Products .....	Al
E3	3297	Non-Clay Refractories .....	Al
E4	327X	Concrete, Gypsum, and Plaster Products (Except Lime)..... (except 3274).	TSS;Fe
E4	3295	Minerals and Earths, Ground, or Otherwise Treated.....	TSS;Fe

**SECTOR F. PRIMARY METALS**

F1	331X	Steel Works, Blast Furnaces, Rolling & Finishing Mill.....	Al;Zn
F2	332X	Iron and Steel Foundries.....	Al;TSS;Cu;Fe;Zn
F3	333X	Primary Smelting and Refining of Nonferrous Metals.....	
F4	334X	Secondary Smelting and Refining of Nonferrous Metals.....	
F5	335X	Rolling, Drawing, and Extruding of Nonferrous Metals.....	Cu;Zn
F6	336X	Nonferrous Foundries (Castings).....	Cu;Zn
F7	339X	Miscellaneous Primary Metal Products	

**SECTOR G. METAL MINING (ORE MINING AND DRESSING) EXCEPT INACTIVE METAL MINING ACTIVITIES ON FEDERAL LANDS WHERE AN OPERATOR CANNOT BE IDENTIFIED**

G1	101X	Iron Ores .....	
G2	102X	Copper Ores.....	TSS;COD;N+N
G3	103X	Lead and Zinc Ores.....	
G4	104X	Gold and Silver Ores .....	
G5	106X	Ferroalloy Ores, Except Vanadium .....	
G6	108X	Metal Mining Services.....	
G7	109X	Miscellaneous Metal Ores .....	

**SECTOR H. COAL MINES AND COAL MINING-RELATED FACILITIES**

NA	12XX	Coal Mines and Coal Mining-Related Facilities.....	TSS;Al;Fe
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**SECTOR I. COAL MINES AND COAL MINING-RELATED FACILITIES**

I1	131X	Crude Petroleum and Natural Gas .....	
I2	132X	Natural Gas Liquids.....	
I3	138X	Oil and Gas Field Services .....	

**SECTOR J. MINERAL MINING AND DRESSING EXCEPT INACTIVE MINERAL MINING ACTIVITIES OCCURRING ON FEDERAL LANDS WHERE AN OPERATOR CANNOT BE IDENTIFIED**

J1	141X	Dimension Stone .....	TSS
J1	142X	Crushed and Broken Stone, Including Rip Rap.....	TSS
J1	148X	Nonmetallic Minerals, Except Fuels.....	TSS
J2	144X	Sand and Gravel .....	TSS;N+N
J3	145X	Clay, Ceramic, and Refractory Materials .....	
J4	147X	Chemical and Fertilizer Mineral Mining.....	
J4	149X	Miscellaneous Nonmetallic Minerals, Except Fuels.....	

<u>Subsector</u>	<u>SIC</u>	<u>Activity Represented</u>	<u>Parameters</u>
<b>SECTOR K. HAZARDOUS WASTE TREATMENT STORAGE OR DISPOSAL FACILITIES</b>			
NA	4953	Hazardous Waste Treatment Storage or Disposal .....	NH <sub>3</sub> ;Mg;COD;As Cd;CN;Pb Hg;Se;Ag
<b>SECTOR L. LANDFILLS AND LAND APPLICATION SITES</b>			
NA	4953	Landfills and Land Application Sites That Receive or..... Have Received Industrial Wastes, Except Inactive Landfills or Land Applications Sites Occurring on Federal Lands Where an Operator Cannot be Identified	TSS;Fe
<b>SECTOR M. AUTOMOBILE SALVAGE YARDS</b>			
NA	5015	Facilities Engaged in Dismantling or Wrecking Used Motor ..... Vehicles for Parts Recycling or Resale and for Scrap	TSS;Fe;Pb;Al
<b>SECTOR N. SCRAP RECYCLING FACILITIES</b>			
NA	5093	Processing, Reclaiming, and Wholesale Distribution of Scrap ..... and Waste Materials.....	TSS;Fe;Pb Al;Cu;Zn;COD
<b>SECTOR O. STEAM ELECTRIC GENERATING FACILITIES</b>			
NA	4911	Steam Electric Power Generating Facilities .....	Fe
<b>SECTOR P. LAND TRANSPORTATION FACILITIES THAT HAVE VEHICLE AND EQUIPMENT MAINTENANCE SHOPS AND/OR EQUIPMENT CLEANING OPERATIONS</b>			
P1	40XX	Railroad Transportation.....	
P2	41XX	Local and Highway Passenger Transportation .....	
P3	42XX	Motor Freight Transportation and Warehousing .....	
P4	43XX	United States Postal Service .....	
P5	5171	Petroleum Bulk Stations and Terminals.....	
<b>SECTOR Q. WATER TRANSPORTATION FACILITIES THAT HAVE VEHICLE (VESSEL) &amp; EQUIPMENT MAINTENANCE SHOPS AND/OR EQUIPMENT CLEANING OPERATIONS</b>			
NA	44XX	Water Transportation.....	Al;Fe;Pb;Zn
<b>SECTOR R. SHIP AND BOAT BUILDING OR REPAIRING YARDS</b>			
NA	373X	Ship and Boat Building or Repairing Yards.....	
<b>SECTOR S. AIR TRANSPORTATION FACILITIES</b>			
NA	45XX	Air Transportation Facilities That Have Vehicle..... Maintenance Ships, Material Handling Facilities, Equipment Cleaning Operations, or Airport and/or Aircraft Deicing/Anti-icing Operations	BOD;COD;NH <sub>3</sub> ;pH

<u>Subsector</u>	<u>SIC</u>	<u>Activity Represented</u>	<u>Parameters</u>
<b>SECTOR T. TREATMENT WORKS</b>			
NA	4952	Treatment Works Treating Domestic Sewage or Any Other Sewage Sludge or Wastewater Treatment Device or System Used in the Storage, treatment, recycling, or Reclamation of Municipal or Domestic Sewage with a Design Flow of 1.0 MGD or More or Required to Have an Approved Pretreatment Program.....	
<b>SECTOR U. FOOD AND KINDRED PRODUCTS</b>			
U1	201X	Meat Products .....	
U2	202X	Dairy Products.....	
U3	203X	Canned, Frozen and Preserved Fruits, Vegetables and Food Specialties .....	
U4	204X	Grain Mill Products.....	<b>TSS</b>
U5	205X	Bakery Products .....	
U6	206X	Sugar and Confectionery Products	
U7	207X	Fats and Oils.....	<b>BOD;COD;TSS;N+N</b>
U8	208X	Beverages .....	
U9	209X	Miscellaneous Food Preparations and Kindred Products.....	
NA	21XX	Tobacco Products .....	
<b>SECTOR V. TEXTILE MILLS, APPAREL, AND OTHER FABRIC PRODUCT MANUFACTURING</b>			
V1	22XX	Textile Mill Products.....	
V2	23XX	Apparel and Other Finished Products Made From Fabrics and Similar Materials.....	
<b>SECTOR W. FURNITURE AND FIXTURES</b>			
NA	25XX	Furniture and Fixtures .....	
NA	2434	Wood Kitchen Cabinets .....	
<b>SECTOR X. PRINTING AND PUBLISHING</b>			
NA	2732	Book Printing .....	
NA	2752	Commercial Printing, Lithographic .....	
NA	2754	Commercial Printing, Gravure .....	
NA	2759	Commercial Printing, Nor Elsewhere Classified .....	
NA	2796	Platemaking and Related Services .....	
<b>SECTOR Y. RUBBER, MISCELLANEOUS PLASTIC PRODUCTS, AND MISC. MANUFACTURING INDUSTRIES</b>			
Y1	301X	Tires and Inner Tubes .....	<b>Zn</b>
Y1	302X	Rubber and Plastics Footwear.....	<b>Zn</b>
Y1	305X	Gaskets, Packing, and Sealing Devices and Rubber and Plastics Hose and Belting .....	<b>Zn</b>
Y1	306X	Fabricated Rubber Products, Not Elsewhere Classified.....	<b>Zn</b>
Y2	308X	Miscellaneous Plastics Products .....	

<u>Subsector</u>	<u>SIC</u>	<u>Activity Represented</u>	<u>Parameters</u>
Y2	393X	Musical Instruments .....	
Y2	394X	Dolls, Toys, Games, and Sporting and Athletic Goods .....	
Y2	395X	Pens, Pencils, and Other Artists' Materials .....	
Y2	396X	Costume Jewelry, Costume Novelties, Buttons, and Miscellaneous Notions, Except Precious Metal.....	
Y2	399X	Miscellaneous Manufacturing Industries .....	

**SECTOR Z. LEATHER TANNING AND FINISHING**

NA	311X	Leather Tanning and Finishing .....	
NA	NA	Facilities that Make Fertilizer Solely From Leather Scraps and Leather Dust.....	

**SECTOR AA. FABRICATED METAL PRODUCTS**

AA1	3429	Hardware, Not Elsewhere Classified .....	Zn;N+N;Fe;Al
AA1	3441	Fabricated Structural Metal.....	Zn;N+N;Fe;Al
AA1	3442	Metal Doors, Sash, Frames, Molding, and Trim.....	Zn;N+N;Fe;Al
AA1	3443	Fabricated Plate Work (Boiler Shops) .....	Zn;N+N;Fe;Al
AA1	3444	Sheet Metal Work .....	Zn;N+N;Fe;Al
AA1	3451	Screw Machine Products.....	Zn;N+N;Fe;Al
AA1	3452	Bolts, Nuts, Screws, Rivets, and Washers .....	Zn;N+N;Fe;Al
AA1	3462	Iron and Steel Forgings.....	Zn;N+N;Fe;Al
AA1	3471	Electroplating, Plating, Polishing, Anodizing, and Coloring.....	Zn;N+N;Fe;Al
AA1	3494	Valves and Pipe Fittings, Not Elsewhere Classified.....	Zn;N+N;Fe;Al
AA1	3496	Miscellaneous Fabricated Wire Products.....	Zn;N+N;Fe;Al
AA1	3499	Fabricated Metal Products, Not Elsewhere Classified.....	Zn;N+N;Fe;Al
AA1	391X	Jewelry, Silverware, and Plated Ware.....	Zn;N+N;Fe;Al
AA2	3479	Coating, Engraving, and Allied Services.....	Zn;N+N

**SECTOR AB. TRANSPORTATION EQUIPMENT, INDUSTRIAL OR COMMERCIAL MACHINERY**

NA	35XX	Industrial and Commercial Machinery (except 357X Computer and Office Equipment) .....	
NA	37XX	Transportation Equipment (except 373X Ship and Boat Building and Repairing.....	

**SECTOR AC. ELECTRONIC, ELECTRICAL, PHOTOGRAPHIC, AND OPTICAL GOODS**

NA	36XX	Electronic and Other Electrical Equipment and Components, Except Computer Equipment .....	
NA	38XX	Measuring, Analyzing, and Controlling Instruments; Photographic, Medical, and Optical Goods; Watches and Clocks.....	
NA	357X	Computer and Office Equipment.....	

Section C: STANDARD PROVISIONS

1. Duty to Comply

The facility operator must comply with all of the conditions of this General Permit. Any General Permit noncompliance constitutes a violation of the Clean Water Act (CWA) and the Porter-Cologne Water Quality Control Act and is grounds for (a) enforcement action for (b) General Permit termination, revocation and reissuance, or modification or (c) denial of a General Permit renewal application.

The facility operator shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this General Permit has not yet been modified to incorporate the requirement.

2. General Permit Actions

This General Permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the facility operator for a General Permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any General Permit condition.

If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under Section 307(a) of the CWA for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this General Permit, this General Permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition, and the facility operator so notified.

3. Need to Halt or Reduce Activity not a Defense

It shall not be a defense for a facility operator in an enforcement action that it would have been necessary to halt or reduce the general permitted activity in order to maintain compliance with the conditions of this General Permit.

4. Duty to Mitigate

The facility operator shall take all responsible steps to minimize or prevent any discharge in violation of this General Permit which has a reasonable likelihood of adversely affecting human health or the environment.

5. Proper Operation and Maintenance

The facility operator at all times shall properly operate and maintain any facilities and systems of treatment and control (and related appurtenances) which are installed or used by the facility operator to achieve compliance with the conditions of this General Permit and with the requirements of storm water pollution prevention plans (SWPPPs). Proper operation and maintenance also include adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance may require the operation of backup or auxiliary facilities or similar systems installed by a facility operator when necessary to achieve compliance with the conditions of this General Permit.

6. Property Rights

This General Permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.

7. Duty to Provide Information

The facility operator shall furnish the Regional Water Quality Control Board (Regional Water Board), State Water Resources Control Board (State Water Board), U.S. Environmental Protection Agency (U.S. EPA), or local storm water management agency, within a reasonable time specified by the agencies, any requested information to determine compliance with this General Permit. The facility operator shall also furnish, upon request, copies of records required to be kept by this General Permit.

8. Inspection and Entry

The facility operator shall allow the Regional Water Board, State Water Board, U.S. EPA, and local storm water management agency, upon the presentation of credentials and other documents as may be required by law, to:

- a. Enter upon the facility operator's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this General Permit;
- b. Have access to and copy at reasonable times any records that must be kept under the conditions of this General Permit;

- c. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment) that are related to or may impact storm water discharge or authorized non-storm water discharge; and
- d. Conduct monitoring activities at reasonable times for the purpose of ensuring General Permit compliance.

9. Signatory Requirements

- a. All Notices of Intent (NOIs) submitted to the State Water Board shall be signed as follows:
  - (1) For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (a) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or (b) the manager of the facility if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
  - (2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
  - (3) For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official. The principal executive officer of a Federal agency includes the chief executive officer of the agency or the senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA).
- b. All reports, certifications, or other information required by the General Permit or requested by the Regional Water Board, State Water Board, U.S. EPA, or local storm water management agency shall be signed by a person described above or by a duly authorized representative. A person is a duly authorized representative only if:
  - (1) The authorization is made in writing by a person described above and retained as part of the SWPPP.

- (2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of manager, operator, superintendent, or position of equivalent responsibility or an individual or position having overall responsibility for named position.)
- (3) If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization must be attached to the SWPPP prior to submittal of any reports, certifications, or information signed by the authorized representative.

#### 10. Certification

Any person signing documents under Provision 9. above shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

#### 11. Reporting Requirements

- a. **Planned changes:** The facility operator shall give advance notice to the Regional Water Board and local storm water management agency of any planned physical alteration or additions to the general permitted facility. Notice is required under this provision only when the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged.
- b. **Anticipated noncompliance:** The facility operator will give advance notice to the Regional Water Board and local storm water management agency of any planned changes at the permitted facility which may result in noncompliance with General Permit requirements.

- c. Compliance schedules: Reports of compliance or noncompliance with or any progress reports on interim and final requirements contained in any compliance schedule of this General Permit shall be submitted no later than 14 days following each scheduled date.
- d. Noncompliance reporting: The facility operator shall report any noncompliance at the time monitoring reports are submitted. The written submission shall contain
  - (1) a description of the noncompliance and its cause;
  - (2) the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and
  - (3) steps taken or planned to reduce and prevent recurrence of the noncompliance.

12. Oil and Hazardous Substance Liability

Nothing in this General Permit shall be construed to preclude the institution of any legal action or relieve the facility operator from any responsibilities, liabilities, or penalties to which the facility operator is or may be subject under Section 311 of the CWA.

13. Severability

The provisions of this General Permit are severable; and if any provision of this General Permit or the application of any provision of this General Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this General Permit shall not be affected thereby.

14. Reopener Clause

This General Permit may be modified, revoked, and reissued, or terminated for cause due to promulgation of amended regulations, receipt of U.S. EPA guidance concerning regulated activities, judicial decision, or in accordance with 40 CFR 122.62, 122.63, 122.64, and 124.5. This General Permit may be reopened to modify the provisions regarding authorized non-storm water discharges specified in Section D. Special Conditions.

15. Penalties for Violations of General Permit Conditions.

- a. Section 309 of the CWA provides significant penalties for any person who violates a General Permit condition

implementing Sections 301, 302, 306, 307 308, 318, or 405 of the CWA, or any General Permit condition or limitation implementing any such section in a General Permit issued under Section 402. Any person who violates any General Permit condition of this General Permit is subject to a civil penalty not to exceed \$25,000 per day of such violation, as well as any other appropriate sanction provided by Section 309 of the CWA.

- b. The Porter-Cologne Water Quality Control Act also provides for civil and criminal penalties in some cases greater than those under the CWA.

16. Availability

A copy of this General Permit shall be maintained at the facility and be available at all times to the appropriate facility personnel and to Regional Water Board and local agency inspectors.

17. Transfers

This General Permit is not transferable from one facility operator to another facility operator nor may it be transferred from one location to another location. A new facility operator of an existing facility must submit an NOI in accordance with the requirements of this General Permit to be authorized to discharge under this General Permit.

18. Continuation of Expired General Permit

This General Permit continues in force and effect until a new general permit is issued or the State Water Board rescinds the General Permit. Facility operators authorized to discharge under the expiring general permit are required to file an NOI to be covered by the reissued General Permit.

19. Penalties for Falsification of Reports

Section 309(c)(4) of the CWA provides that any person who knowingly makes any false material statement, representation, or certification in any record or other document submitted or required to be maintained under this General Permit, including reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$10,000 or by imprisonment for not more than two years, or by both.

FACILITIES COVERED BY THIS GENERAL PERMIT

Industrial facilities include Federal, State, municipally owned, and private facilities from the following categories:

1. FACILITIES SUBJECT TO STORM WATER EFFLUENT LIMITATIONS GUIDELINES, NEW SOURCE PERFORMANCE STANDARDS, OR TOXIC POLLUTANT EFFLUENT STANDARDS (40 Code of Federal Regulations (CFR) SUBCHAPTER N). Currently, categories of facilities subject to storm water effluent limitations guidelines are Cement Manufacturing (40 CFR Part 411), Feedlots (40 CFR Part 412), Fertilizer Manufacturing (40 CFR Part 418), Petroleum Refining (40 CFR Part 419), Phosphate Manufacturing (40 CFR Part 422), Steam Electric (40 CFR Part 423), Coal Mining (40 CFR Part 434), Mineral Mining and Processing (40 CFR Part 436), Ore Mining and Dressing (40 CFR Part 440), and Asphalt Emulsion (40 CFR Part 443).
2. MANUFACTURING FACILITIES: Standard Industrial Classifications (SICs) 24 (except 2434), 26 (except 265 and 267), 28 (except 283 and 285) 29, 311, 32 (except 323), 33, 3441, and 373.
3. OIL AND GAS/MINING FACILITIES: SICs 10 through 14 including active or inactive mining operations (except for areas of coal mining operations meeting the definition of a reclamation area under 40 CFR 434.11(l) because of performance bond issued to the facility by the appropriate Surface Mining Control and Reclamation Act (SMCRA) authority has been released, or except for area of non-coal mining operations which have been released from applicable State or Federal reclamation requirements after December 17, 1990); oil and gas exploration, production, processing, or treatment operations; or transmission facilities that discharge storm water contaminated by contact with or that has come into contact with any overburden, raw material, intermediate products, finished products, by-products, or waste products located on the site of such operations. Inactive mining operations are mined sites that are not being actively mined but which have an identifiable facility operator. Inactive mining sites do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined material; or sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim.
4. HAZARDOUS WASTE TREATMENT, STORAGE, OR DISPOSAL FACILITIES: Includes those operating under interim status or a general permit under Subtitle C of the Federal Resource, Conservation, and Recovery Act (RCRA).
5. LANDFILLS, LAND APPLICATION SITES, AND OPEN DUMPS: Sites that receive or have received industrial waste from any of

the facilities covered by this General Permit, sites subject to regulation under Subtitle D of RCRA, and sites that have accepted wastes from construction activities (construction activities include any clearing, grading, or excavation that results in disturbance of five acres or more).

6. RECYCLING FACILITIES: SICs 5015 and 5093. These codes include metal scrapyards, battery reclaimers, salvage yards, motor vehicle dismantlers and wreckers, and recycling facilities that are engaged in assembling, breaking up, sorting, and wholesale distribution of scrap and waste material such as bottles, wastepaper, textile wastes, oil waste, etc.
7. STEAM ELECTRIC POWER GENERATING FACILITIES: Includes any facility that generates steam for electric power through the combustion of coal, oil, wood, etc.
8. TRANSPORTATION FACILITIES: SICs 40, 41, 42 (except 4221-25), 43, 44, 45, and 5171 which have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication) or other operations identified herein that are associated with industrial activity.
9. SEWAGE OR WASTEWATER TREATMENT WORKS: Facilities used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility with a design flow of one million gallons per day or more or required to have an approved pretreatment program under 40 CFR Part 403. Not included are farm lands, domestic gardens, or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with Section 405 of the Clean Water Act.
10. MANUFACTURING FACILITIES WHERE INDUSTRIAL MATERIALS, EQUIPMENT, OR ACTIVITIES ARE EXPOSED TO STORM WATER: SICs 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39, and 4221-4225.

**STORM WATER CONTACTS FOR**  
**THE STATE AND REGIONAL WATER BOARDS**

See Storm Water Contacts at:  
<http://www.waterboards.ca.gov/stormwtr/contact.html>

## NOTICE OF INTENT (NOI) INSTRUCTIONS

TO COMPLY WITH STATE WATER RESOURCES CONTROL BOARD  
WATER QUALITY ORDER NO. 97-03-DWQ  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
GENERAL PERMIT NO. CAS000001

### Who Must Submit

The facility operator must submit an NOI for each industrial facility that is required by U.S. Environmental Protection Agency (U.S.EPA) regulations to obtain a storm water permit. The required industrial facilities are listed in Attachment 1 of the General Permit and are also listed in 40 Code of Federal Regulations Section 122.26(b)(14).

The facility operator is typically the owner of the business or operation where the industrial activities requiring a storm water permit occur. The facility operator is responsible for all permit related activities at the facility.

Where operations have discontinued and significant materials remain on site (such as at closed landfills), the landowner may be responsible for filing an NOI and complying with this General Permit. Landowners may also file an NOI for a facility if the landowner, rather than the facility operator, is responsible for compliance with this General Permit.

### How and Where to Apply

The completed NOI form, a site map, and appropriate fee must be mailed to the State Water Resources Control Board (State Water Board) at the following address:

State Water Resources Control Board  
Division of Water Quality  
P.O. Box 1977  
Sacramento, CA 95812-1977  
Attn: Storm Water Permitting Unit

**Please Note: Do not send the original or copies of the NOI submittal to the Regional Water Quality Control Board (Regional Water Board).** The original NOI will be forwarded to the Regional Water Board after processing.

**Do not send a copy of your Storm Water Pollution Prevention Plan (SWPPP) with your NOI submittal.** Your SWPPP is to be kept on site and made available for review upon request.

### **When to Apply**

Facility operators of existing facilities must file an NOI in accordance with these instructions by March 30, 1992. Facility

operators of new facilities (those beginning operations after March 30, 1992) must file an NOI in accordance with these instructions at least 14 days prior to the beginning of operations.

Once the completed NOI, site map, and appropriate fee have been submitted to the State Water Board, your NOI will be processed and you will be issued a receipt letter with a Waste Discharge Identification (WDID) Number. Please refer to this number when you contact either the State or Regional Water Boards.

### **Fees**

The total annual fee is \$830. Checks should be made payable to: SWRCB

### **Change of Information**

If the information provided on the NOI or site map changes, you should report the changes to the State Water Board using an NOI form. Section I of the line-by-line instructions includes information regarding changes to the NOI.

### **Questions**

If you have any questions completing the NOI, please call the appropriate Regional Water Board (Attachment 2) or the State Water Board at (916) 341-5538.

## **NOI LINE-BY-LINE INSTRUCTIONS**

Please type or print your responses on the NOI. Please complete the NOI form in its entirety and sign the certification.

### **Section I--NOI STATUS**

Check box "A" if this is a new NOI registration.

Check box "B" if you are reporting changes to the NOI (e.g., new contact person, phone number, mailing address). Include the facility WDID #. Highlight all the information that has been changed.

Please note that a change of information **does not** apply to a change of facility operator or a change in the location of the facility. These changes require a Notice of Termination (NOT) and submittal of a new NOI and annual fee. Contact the State Water Board or Regional Water Boards for more information on the NOT Form and instructions.

Regardless of whether you are submitting a new or revised NOI, you must complete the NOI in its entirety and the NOI must be signed.

## Section II--Facility Operator Information

- Part A: The facility operator is the legal entity that is responsible for all permit related compliance activities at the facility. In most cases, the facility operator is the owner of the business or operation where the industrial activity occurs. Give the legal name and the address of the person, firm, public organization, or any other entity that is responsible for complying with the General Permit.
- Part B: Check the box that indicates the type of operation.

## Section III--Facility Site Information

- Part A: Enter the facility's official or legal name and provide the address. Facilities that do not have a street address must provide cross-streets or parcel numbers. Do not include a P.O. Box address in Part A.
- Part B: Enter the mailing address of the facility if different than Part A. This address may be a P.O. Box.
- The contact person should be the plant or site manager who is familiar with the facility and responsible for overseeing compliance of the General Permit requirements.
- Part C: Enter the total size of the facility in either acres or square feet. Also include the percentage of the site that is impervious (areas that water cannot soak into the ground, such as concrete, asphalt, and rooftops).
- Part D: Determine the Standard Industrial Classification (SIC) code which best identifies the industrial activity that is taking place at the facility. This information can be obtained by referring to the Standard Industrial Classification Manual prepared by the Federal Office of Management and Budget which is available at public libraries. The code you determine should identify the industrial activity that requires you to submit the NOI. (For example, if the business is high school education and the activity is school bus maintenance, the code you choose would be bus maintenance, not education.) Most facilities have only one code; however, additional spaces are provided for those facilities that have more than one activity.
- Part E: Identify the title of the industrial activity that requires you to submit the NOI (e.g., the title of SIC Code 2421 is Sawmills and Planing Mills, General). If you cannot identify the title, provide a description of the regulated activity(s).

#### **Section IV--Address for Correspondence**

Correspondence relative to the permit will be mailed occasionally. Check the box which indicates where you would like such correspondence delivered. If you want correspondence sent to another contact person or address different than indicated in Section II or Section III then include the information on an extra sheet of paper.

#### **Section V--Billing Address Information**

To continue coverage under the General Permit, the annual fee must be paid. Use this section to indicate where the annual fee invoices should be mailed. Enter the billing address if different than the address given in Sections II or III.

#### **Section VI--Receiving Water Information**

Provide the name of the receiving water where storm water discharge flows from your facility. A description of each option is included below.

1. Directly to waters of the United States: Storm water discharges directly from the facility to a river, creek, lake, ocean, etc. Enter the name of the receiving water (e.g., Boulder Creek).
2. Indirectly to waters of the United States: Storm water discharges over adjacent properties or right-of-ways prior to discharging to waters of the United States. Enter the name of the closest receiving water (e.g., Clear Creek).

#### **Section VII--Implementation of Permit Requirements**

Parts A and B: Check the boxes that best describe the status of the Storm Water Pollution Prevention Plan (SWPPP) and the Monitoring Program.

Part C: Check yes or no to questions 1 through 4. If you answer no to any question, you need to assign a person to these tasks immediately.

As a permit holder you are required to have an SWPPP and Monitoring Program in place prior to the beginning of facility operations. Failure to do so is in direct violation of the General Permit. Do not send a copy of your SWPPP with your NOI submittal.

Please refer to Sections A and B of the General Permit for additional information regarding the SWPPP and Monitoring Program.

#### **Section VIII--Site Map**

Provide a "to scale" drawing of the facility and its immediate surroundings. Include as much detail about the site as possible. At a minimum, indicate buildings, material handling and storage areas, roads, names of adjacent streets, storm water discharge points, sample collection points, and a north arrow. Whenever

possible limit the map to a standard size sheet of paper (8.5" x 11" or 11" x 17"). **Do not send blueprints** unless you are sending one page and it meets the size limits as defined above.

A location map may also be included, especially in cases where the facility is difficult to find, but are not to be submitted as a substitute for the site map. The location map can be created from local street maps and U.S. Geological Survey (USGS) quadrangle maps, etc.

A revised site map must be submitted whenever there is a significant change in the facility layout (e.g., new building, change in storage locations, boundary change, etc.).

### **Section IX--Certification**

This section should be read by the facility operator. The certification provides assurances that the NOI and site map were completed by the facility operator in an accurate and complete fashion and with the knowledge that penalties exist for providing false information. It also requires the Responsible Party to certify that the provisions in the General Permit will be complied with.

The NOI must be signed by:

**For a Corporation:** a responsible corporate officer (or authorized individual).

**For a Partnership or Sole Proprietorship:** a general partner or the proprietor, respectively.

**For a Municipality, State, or other non-Federal Public Agency:** either a principal executive officer or ranking elected official.

**For a Federal Agency:** either the chief or senior executive officer of the agency.

## NOTICE OF INTENT

TO COMPLY WITH THE TERMS OF THE  
GENERAL PERMIT TO DISCHARGE STORM WATER  
ASSOCIATED WITH **INDUSTRIAL ACTIVITY** (WQ ORDER No. 97-03-DWQ)  
(Excluding Construction Activities)

### SECTION I. NOI STATUS (please check only one box)

A. <input type="checkbox"/> New Permittee	B. <input type="checkbox"/> Change of Information    WDID # <input style="width: 100px;" type="text"/>
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### SECTION II. FACILITY OPERATOR INFORMATION (See instructions)

A. NAME: <input style="width: 95%;" type="text"/>	Phone: <input style="width: 95%;" type="text"/>
Mailing Address: <input style="width: 95%;" type="text"/>	
City: <input style="width: 95%;" type="text"/>	State: <input style="width: 20px;" type="text"/> Zip Code: <input style="width: 95%;" type="text"/>
Contact Person: <input style="width: 95%;" type="text"/>	
B. OPERATOR TYPE: (check one)    1. <input type="checkbox"/> Private Individual    2. <input type="checkbox"/> Business    3. <input type="checkbox"/> Municipal    4. <input type="checkbox"/> State    5. <input type="checkbox"/> Federal    6. <input type="checkbox"/> Other	

### SECTION III. FACILITY SITE INFORMATION

A. FACILITY NAME <input style="width: 95%;" type="text"/>	Phone: <input style="width: 95%;" type="text"/>
Facility Location: <input style="width: 95%;" type="text"/>	County: <input style="width: 95%;" type="text"/>
City: <input style="width: 95%;" type="text"/>	State: <input style="width: 20px;" type="text"/> C I A    Zip Code: <input style="width: 95%;" type="text"/>
B. MAILING ADDRESS: <input style="width: 95%;" type="text"/>	
City: <input style="width: 95%;" type="text"/>	State: <input style="width: 20px;" type="text"/> Zip Code: <input style="width: 95%;" type="text"/>
Contact Person: <input style="width: 95%;" type="text"/>	
C. FACILITY INFORMATION (check one) Total Size of Site: _____ Acres    Sq. Ft. <input style="width: 20px;" type="text"/>	Percent of Site Impervious (including rooftops) <input style="width: 20px;" type="text"/> %
D. SIC CODE(S) OF REGULATED ACTIVITY:	E. REGULATED ACTIVITY (describe each SIC code):
1. <input style="width: 40px;" type="text"/>	<input style="width: 95%;" type="text"/>
2. <input style="width: 40px;" type="text"/>	<input style="width: 95%;" type="text"/>
3. <input style="width: 40px;" type="text"/>	<input style="width: 95%;" type="text"/>

FOR STATE USE ONLY:

**SECTION IV. ADDRESS FOR CORRESPONDENCE**

Facility Operator Mailing Address (Section II)       Facility Mailing Address (Section III, B.)       Both

**SECTION V. BILLING ADDRESS INFORMATION**

SEND BILL TO:     Facility Operator Mailing Address (Section II)     Facility Mailing Address (Section III, B.)     Other (*enter information below*)

Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Contact Person: \_\_\_\_\_

**SECTION VI. RECEIVING WATER INFORMATION**

Your facility's storm water discharges flow: (*check one*)     Directly    OR     Indirectly to waters of the United States.

Name of receiving water: \_\_\_\_\_  
(river, lake, stream, ocean, etc.)

**SECTION VII. IMPLEMENTATION OF PERMIT REQUIREMENTS**

**A. STORM WATER POLLUTION PREVENTION PLAN (SWPPP) (*check one*)**  
 A SWPPP has been prepared for this facility and is available for review.  
 A SWPPP will be prepared and ready for review by (enter date): \_\_\_\_/\_\_\_\_/\_\_\_\_.

**B. MONITORING PROGRAM (check one)**  
 A Monitoring Program has been prepared for this facility and is available for review.  
 A Monitoring Program will be prepared and ready for review by (enter date): \_\_\_\_/\_\_\_\_/\_\_\_\_.

**C. PERMIT COMPLIANCE RESPONSIBILITY**  
 Has a person been assigned responsibility for:

1. Inspecting the facility throughout the year to identify any potential pollution problems? ..... YES \_\_\_ NO \_\_\_
2. Collecting storm water samples and having them analyzed?..... YES \_\_\_ NO \_\_\_
3. Preparing and submitting an annual report by July 1 of each year? ..... YES \_\_\_ NO \_\_\_
4. Eliminating discharges other than storm water (*such as equipment or vehicle wash-water*) into the storm drain?..... YES \_\_\_ NO \_\_\_

**SECTION VIII. SITE MAP**

I HAVE ENCLOSED A SITE MAP    YES     A new NOI submitted without a site map will be rejected.

**SECTION IX. CERTIFICATION**

"I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. In addition, I certify that I have read the entire General Permit, including all attachments, and agree to comply with and be bound by all of the provisions, requirements, and prohibitions of the permit, including the development and implementation of a Storm Water Pollution Prevention Plan and a Monitoring Program Plan will be complied with."

Printed Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date \_\_\_\_\_

Title: \_\_\_\_\_

**DEFINITIONS**

1. "Best Management Practices" ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment measures, operating procedures, and practices to control facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may include any type of pollution prevention and pollution control measure necessary to achieve compliance with this General Permit.
2. Clean Water Act (CWA) means the Federal Water Pollution Control Act enacted by Public Law 92-500 as amended by Public Laws 95-217, 95-576, 96-483, and 97-117; 33 USC. 1251 et seq.
3. "Facility" is a collection of industrial processes discharging storm water associated with industrial activity within the property boundary or operational unit.
4. "Non-Storm Water Discharge" means any discharge to storm sewer systems that is not composed entirely of storm water.
5. "Significant Materials" includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under Section 101(14) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); any chemical the facility is required to report pursuant to Section 313 of Title III of Superfund Amendments and Reauthorization Act (SARA); fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.
6. "Significant Quantities" is the volume, concentrations, or mass of a pollutant that can cause or threaten to cause pollution, contamination, or nuisance; adversely impact human health or the environment; and/or cause or contribute to a violation of any applicable water quality standards for the receiving water.
7. "Significant Spills" includes, but is not limited to: releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the CWA (see 40 CFR 110.10 and 117.21) or Section 102 of CERCLA (see 40 CFR 302.4).
8. "Storm water" means storm water runoff, snow melt runoff, and storm water surface runoff and drainage. It excludes infiltration and runoff from agricultural land.

9. "Storm Water Associated with Industrial Activity" means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the NPDES program. For the facilities identified in Categories 1 through 9 of Attachment 1 of this General Permit, the term includes, but is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials; manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process wastewaters (as defined at 40 CFR Part 401); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and finished products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water.

For the facilities identified in Category 10 of Attachment 1 of this General Permit, the term only includes storm water discharges from all areas listed in the previous sentence where material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery are exposed to storm water.

Material handling activities include the: storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, finished product, by-product, or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas. Industrial facilities (including industrial facilities that are federally, State, or municipally owned or operated that meet the description of the facilities listed in this paragraph) include those facilities designated under 40 CFR 122.26(a)(1)(v).

## ACRONYM LIST

BAT	Best Available Technology Economically Achievable
BCT	Best Conventional Pollutant Control Technology
BMPs	Best Management Practices
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Federal Superfund)
CFR	Code of Federal Regulations
CWA	Clean Water Act
General Permit	General Industrial Activities Storm Water Permit
GMP	Group Monitoring Plan
NEC	No Exposure Certification
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
O&G	Oil and Grease
RCRA	Resource, Conservation, and Recovery Act
Regional Water Board	Regional Water Quality Control Board
RQ	Reportable Quantity
SARA	Superfund Amendments and Reauthorization Act of 1986
SIC	Standard Industrial Classification
SMCRA	Surface Mining Control and Reclamation Act
SPCC	Spill Prevention Control and Countermeasures
State Water Board	State Water Resources Control Board
SWPPP	Storm Water Pollution Prevention Plan
TOC	Total Organic Carbon
TSS	Total Suspended Solids
U.S. EPA	U.S. Environmental Protection Agency
WDID	Waste Discharger Identification
WDRs	Waste Discharge Requirements

APPENDIX B  
**Figures**

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APPENDIX C

# Technical Memoranda

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**TABLE 1-1**  
Detailed Breakdown of Ivanpah SEGS Components

Components	Linear Feet	Acres			Total	Comments
		Temp	Long-Term	Permanent		
<b>AREA NORTH OF IVANPAH 3</b>						
Tap Station			0.34		0.34	Tap Station is 100' x 150'.
Tap Station Construction Area		0.92			0.92	Construction area is 200' x 200'
Gas Line from tap point to top of I-3	2,011	1.75			1.75	50' construction area corridor along gas line, less 12' dirt service road = 38' revegetated
Gas Line from tap point to top of I-3	2,011		0.55		0.55	12' dirt service road
<b>SUBTOTAL AREA NORTH OF IVANAPH 3</b>		<b>2.67</b>	<b>0.90</b>	<b>0.00</b>	<b>3.57</b>	
<b>Ivanpah 3</b>						
Gas Line Corridor 50' construction area (east side)	15,427	13.46			13.46	50' construction area corridor along gas line east side, less 12' dirt road = 38' revegetated
Gas Line Corridor (east side)	6,752			1.86	1.86	12' dirt road from gas line to trail 699226
Gas Line Corridor (east side)	7,103		1.96		1.96	12' dirt road from trail 699226 to trail 699198
Gas Line Corridor (east side)	1,572			0.43	0.43	12' dirt road from trail 699198 to asphalt road between Units 2 & 3
12' rerouted trail 699226 from gas line west side	6,906			1.90	1.90	12' dirt road from gas line to trail 699226 (west side of Ivanpah 3). No construction corridor since trail is just mowed.
Ivanpah 3 Metering set			0.01		0.01	Ivanpah 3 metering set 10' x 40' (construction area within the 50' construction area for gas & water line)
30' asphalt road between Ivanpah 2 & 3	4,751			3.93	3.93	SE corner of Ivanpah 3 to asphalt road going to PB (30' asphalt and 3' shoulder each side)
Asphalt road construction corridor	4,751	1.53			1.53	Between Units 2 & 3: 50' Corridor (30' road + 3' shoulder = 7' construction area on each side – 14' revegetated)
24' asphalt road to Power block (PB)	3,872		2.67		2.67	24' road + 3' shoulder on each side = 30' roadway

**TABLE 1-1**  
Detailed Breakdown of Ivanpah SEGS Components

Components	Linear Feet	Acres			Comments	
		Temp	Long-Term	Permanent		Total
Asphalt road construction corridor	3,872	1.24			1.24	44' corridor (30' roadway +3' shoulders = 7' construction area on each sides of road)
Power block (PB)			14.96		14.96	Includes road around PB, diversion berm and channel
Solar Power Towers			3.74		3.74	4 SPTs in the heliostat field
15' dirt road from PB to the four SPTs	10,300		3.55		3.55	
12' dirt road from SPTs to corners	25,617		7.06		7.06	
12' perimeter road	40,778		11.23		11.23	
Set back from property line			17.50		17.50	Undeveloped set back from any property line
10' heliostat maintenance paths (estimated at 15.5% of heliostat field) <sup>9</sup>	NA		210.98		210.98	Detailed information is not available.
Heliostat field			1,150.18		1,150.18	Remaining area within Ivanpah 3
Gas line from metering set to PB	5,823	0.0			0.00	Line will follow dirt road. No Additional Impact
Water line from metering set to PB	5,785	0.0			0.00	Line will follow dirt road. No Additional Impact
Construction corridor for gas & water line	5,823	3.74			3.74	40' construction corridor for gas & water line (40' corridor – 12' dirt road = 28' revegetation corridor)
Gen-tie corridor from PB to top of Ivanpah 2	4,065	0.36			0.36	Gen-tie line will follow asphalt road. 2 turning towers, 5 embedded towers
Gen-tie towers			0.006		0.006	Area of the tower footprints
Graded areas		380.00			380.00	Includes rock relocation area
Fill stockpiles			3.98		3.98	4' high fill stockpile, for use in decommissioning

<sup>9</sup> Heliostat maintenance paths for Ivanpah 1 and 2 comprise about 16.5 percent of the heliostat field. Because of the larger area of Ivanpah 3, greater distance between some heliostat rows, and unused areas 15.5 percent was determined to be a reasonable assumption.

**TABLE 1-1**  
Detailed Breakdown of Ivanpah SEGS Components

Components	Linear Feet	Acres			Comments	
		Temp	Long-Term	Permanent		Total
12' dirt trail to mining claim	1,492			0.41	0.41	
<b>SUBTOTAL IVANPAH 3</b>		400.33	1,427.81	8.53	1,836.68	Includes 1836.3 ac for Ivanpah 3 and 0.41 ac for mining access (less heliostat field)
			-1,150.18			
<b>Ivanpah 3 Revegetation Area</b>		400.33	277.64		677.97	
<b>Ivanpah 2</b>						
30' asphalt road from Ivanpah 3 to Colosseum Road	7,247		5.99		5.99	30' asphalt + 3' shoulder on either side = 36' roadway
Asphalt road construction corridor	7,247	2.33			2.33	50' construction corridor - 36' roadway = 7' construction area on each side of road =14' revegetation
Gas & water line corridor to PB	3,972	2.55			2.55	40' construction corridor - 12' dirt access road from PB to corner = 28' revegetation
24' asphalt road to PB	2,229		1.54		1.54	From re-routed Colosseum Rd to PB (24' road + 3' shoulders = 30' roadway)
Asphalt road construction corridor	2,229	0.72			0.72	44' construction corridor -30' roadway = 7' construction area on each side = 14' revegetation
Power block (PB)			13.17		13.17	Includes road around PB, diversion berm and channel
12' dirt service road from PB to corners	15,176		4.18		4.18	
Ivanpah 3 gen-tie along south side of Ivanpah 2	3,296	0.25			0.25	Construction corridor for 1 turning tower + 4 embedded towers (access along dirt perimeter road)
Ivanpah 3 gen-tie along south side of Ivanpah 2			0.004		0.004	Area of the 5 tower footprints
Ivanpah 3 gen-tie along west side of Ivanpah 2	5,371	0.38			0.38	Access along dirt perimeter road
Ivanpah 3 gen-tie along west side of Ivanpah 2			0.007		0.01	Area of the 8 tower footprints

**TABLE 1-1**  
Detailed Breakdown of Ivanpah SEGS Components

Components	Linear Feet	Acres			Total	Comments
		Temp	Long-Term	Permanent		
Ivanpah 2 gen-tie from PB to junction with Ivanpah 3 gen-tie	2,322	0.20			0.20	Construction corridor for 1 turning tower +3 embedded towers (access along paved road)
Ivanpah 2 gen-tie from PB to junction with Ivanpah 3 gen-tie			0.004		0.004	Area of the 4 tower footprints
12' perimeter road	24,167		6.66		6.66	
Set back from property line			4.71		4.71	undeveloped set back from property line
10' heliostat maintenance paths	629,528		144.52		144.52	
Heliostat field			729.16		729.16	Remaining area within Ivanpah 2 (includes graded area)
12' dirt trail along west side of Ivanpah 2	3,115			0.86	0.86	Rerouted trail 699198
12' dirt trail along southwest corner of Ivanpah 2	4,148		1.14		1.14	12' dirt road around west perimeter from trail 699198 to relocated Colosseum Road
Channel crossings			0.31		0.31	
Graded areas		123.00			123.00	
Fill stockpiles			2.03		2.03	4' high fill stockpile, for use in decommissioning
<b>SUBTOTAL IVANPAH 2</b>		129.43	790.43	0.86	920.72	
(less heliostat field)			-729.16			
<b>Ivanpah 2 Revegetation Area</b>		129.43	184.27		313.70	
<b>Construction Logistics Area (incl. improvements to Colosseum Road)</b>						
30' asphalt improved Colosseum Rd.	8,442			6.98	6.98	From Golf Club to T-intersection at Ivanpah 2 (30' asphalt road + 3' dirt shoulders = 36' roadway)
Asphalt road construction corridor	8,442	2.71			2.71	50' construction corridor - 36' roadway = 7' construction area each side = 14' revegetation

**TABLE 1-1**  
Detailed Breakdown of Ivanpah SEGS Components

Components	Linear Feet	Acres			Total	Comments
		Temp	Long-Term	Permanent		
Tire wash/concrete washout, off Colosseum Road		1.04			1.04	Area for turnouts and wash areas
30' asphalt re-routed Colosseum Road	4,343			3.59	3.59	From T-intersection with Colosseum around south end of Ivanpah 2 to road to PB (30' asphalt road + 3' dirt shoulders = 36' roadway)
Asphalt road construction corridor	4,343	1.40			1.40	50' construction corridor - 36' roadway = 7' construction area each side = 14' revegetation
12' gravel road to re-routed Colosseum trail	2,452			0.68	0.68	From end of asphalt section to where it exits the CLA on to connect to Colosseum dirt road
24' asphalt road to substation	1,761			1.21	1.21	24' asphalt + 3' dirt shoulders = 30' roadway
Asphalt road construction corridor	1,761	0.57			0.57	44' construction corridor - 30' roadway = 7' construction area on each side = 14' revegetation
Substation				16.10	16.10	Will remain post-project
Diversion berms & channel for substation				8.30	8.30	Will remain post-project
Ivanpah 2 & 3 T-line to substation construction corridor	1,898	0.35			0.35	20' construction corridor for double-circuit T-line -12' service road = 8' revegetation
12' dirt service road for dbl-circuit t-line	1,898		0.52		0.52	From Ivanpah 2 to Substation
Construction of double-circuit towers		0.20			0.20	Construction corridor for 1 turning tower + 3 embedded towers (access along dirt road)
Double-circuit gen-tie towers			0.004		0.00	Area of the 4 tower footprints
Gas meter set for Ivanpah 1 & 2			0.02		0.02	20' x 40' area on southeast corner of Ivanpah 2
Gas meter set construction area		0.92			0.92	200' x 200'
24' asphalt road from re-routed Colosseum Road to Ivanpah 1	2,153		1.48		1.48	24' asphalt from Ivanpah 2 to Ivanpah 1 + 3' dirt shoulders ea. side = 30' roadway

**TABLE 1-1**  
Detailed Breakdown of Ivanpah SEGS Components

Components	Linear Feet	Acres			Total	Comments
		Temp	Long-Term	Permanent		
Asphalt road construction corridor	2,153	0.69			0.69	44' Construction Corridor - 30' roadway = 7' construction area on ea. side = 14' revegetation
Gas & water line corridor to Unit 1	2,153				0.00	Runs along 24' asphalt road, no additional Impact
Administration/warehouse Building			8.90		8.90	Includes entrance road
12' dirt service road for monitoring well	866		0.24		0.24	12' road is just mowed, no construction area
Monitoring well			0.00		0.00	10' x 10' area
12' dirt service road for production wells	1,075		0.30		0.30	12' road is just mowed, no construction area
Production wells			0.00		0.00	10' x 10' area for each well
T-line from Ivanpah 1 to Substation	2,867	0.53			0.53	20' construction corridor for T-line. -12' service road = 8' reveg
12' service road from Ivanpah 1 to Sub	2,867		0.79		0.79	12' road is just mowed, no construction area
Construction of gen-tie towers		0.32			0.32	Construction corridor for 2 turning towers + 4 embedded towers (access along dirt road)
Gen-tie towers			0.005		0.005	Area of the 6 tower footprints
Construction parking		1.53			1.53	Assume 12' x 20' area for 39, 15-passenger vans & 192 personal vehicles + 20% additional area for access
Contractor Trailer area		18.57			18.57	Includes construction parking area
Equipment Laydown		20.46			20.46	Does not include tire wash, which is above
Area available for construction use		248.79			248.79	Additional area that can be used if needed
40-ac succulent storage & stockpile area			40.00		40.00	
Fill stockpiles			0.91		0.91	4' high fill stockpile, for use in decommissioning
<b>SUBTOTAL CLA &amp; Colosseum Rd</b>		298.07	53.18	36.85	387.19	Includes CLA (377.5 ac) + Colosseum Road (9.69 ac)

**TABLE 1-1**  
Detailed Breakdown of Ivanpah SEGS Components

Components	Linear Feet	Acres			Comments	
		Temp	Long-Term	Permanent		Total
<b>Ivanpah 1</b>						
24' Asphalt road from edge to PB	3,361		2.31		2.31	Portion within Ivanpah 1 (24' road + 3' dirt shoulders = 30-roadway)
Asphalt road construction corridor	3,361	1.08			1.08	44' construction corridor - 30' roadway = 7' construction area on each side = 14' revegetation
Gas & water line corridor to PB	3,361		0.00		0.00	Road corridor used to construct utilities on each side
Power block (PB)			13.54		13.54	Includes road around PB, diversion berm and channel
Gen-tie line from PB to end of Ivanpah 1	3,510				0.00	Asphalt road can be used as service access for transmission line
Construction of gen-tie towers		0.29			0.29	Construction corridor for 1 turning tower + 5 embedded towers
Gen-tie towers			0.005		0.01	Area of the 6 tower footprints
12' dirt service road from PB to corners	12,020		3.31		3.31	
12' perimeter road	23,857		6.57		6.57	
Set back from property line			8.79		8.79	undeveloped set back from property line
10' heliostat maintenance paths	636,325		146.08		146.08	
Heliostat field			731.49		731.49	Remaining area within Ivanpah 1
Fill stockpiles			1.57		1.57	4' high fill stockpile, for use in decommissioning
<b>SUBTOTAL IVANPAH 1</b>		1.08	912.41	0.0	913.49	
(less heliostat field)			-731.49			
<b>Ivanpah 1 Revegetation Area</b>		1.08	180.62			

Note: These numbers are based on the best available information at the time of preparation and are subject to change in the final design drawings.

APPENDIX D

## Table 1-1

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**TABLE 1-1**  
Detailed Breakdown of Ivanpah SEGS Components

Components	Linear Feet	Acres			Total	Comments
		Temp	Long-Term	Permanent		
<b>AREA NORTH OF IVANPAH 3</b>						
Tap Station			0.34		0.34	Tap Station is 100' x 150'.
Tap Station Construction Area		0.92			0.92	Construction area is 200' x 200'
Gas Line from tap point to top of I-3	2,011	1.75			1.75	50' construction area corridor along gas line, less 12' dirt service road = 38' revegetated
Gas Line from tap point to top of I-3	2,011		0.55		0.55	12' dirt service road
<b>SUBTOTAL AREA NORTH OF IVANAPH 3</b>		<b>2.67</b>	<b>0.90</b>	<b>0.00</b>	<b>3.57</b>	
<b>Ivanpah 3</b>						
Gas Line Corridor 50' construction area (east side)	15,427	13.46			13.46	50' construction area corridor along gas line east side, less 12' dirt road = 38' revegetated
Gas Line Corridor (east side)	6,752			1.86	1.86	12' dirt road from gas line to trail 699226
Gas Line Corridor (east side)	7,103		1.96		1.96	12' dirt road from trail 699226 to trail 699198
Gas Line Corridor (east side)	1,572			0.43	0.43	12' dirt road from trail 699198 to asphalt road between Units 2 & 3
12' rerouted trail 699226 from gas line west side	6,906			1.90	1.90	12' dirt road from gas line to trail 699226 (west side of Ivanpah 3). No construction corridor since trail is just mowed.
Ivanpah 3 Metering set			0.01		0.01	Ivanpah 3 metering set 10' x 40' (construction area within the 50' construction area for gas & water line)
30' asphalt road between Ivanpah 2 & 3	4,751			3.93	3.93	SE corner of Ivanpah 3 to asphalt road going to PB (30'asphalt and 3' shoulder each side)
Asphalt road construction corridor	4,751	1.53			1.53	Between Units 2 & 3: 50' Corridor (30' road + 3' shoulder = 7' construction area on each side – 14' revegetated)
24' asphalt road to Power block (PB)	3,872		2.67		2.67	24' road + 3' shoulder on each side = 30' roadway

**TABLE 1-1**  
Detailed Breakdown of Ivanpah SEGS Components

Components	Linear Feet	Acres			Comments	
		Temp	Long-Term	Permanent		Total
Asphalt road construction corridor	3,872	1.24			1.24	44' corridor (30' roadway +3' shoulders = 7' construction area on each sides of road)
Power block (PB)			14.96		14.96	Includes road around PB, diversion berm and channel
Solar Power Towers			3.74		3.74	4 SPTs in the heliostat field
15' dirt road from PB to the four SPTs	10,300		3.55		3.55	
12' dirt road from SPTs to corners	25,617		7.06		7.06	
12' perimeter road	40,778		11.23		11.23	
Set back from property line			17.50		17.50	Undeveloped set back from any property line
10' heliostat maintenance paths (estimated at 15.5% of heliostat field) <sup>9</sup>	NA		210.98		210.98	Detailed information is not available.
Heliostat field			1,150.18		1,150.18	Remaining area within Ivanpah 3
Gas line from metering set to PB	5,823	0.0			0.00	Line will follow dirt road. No Additional Impact
Water line from metering set to PB	5,785	0.0			0.00	Line will follow dirt road. No Additional Impact
Construction corridor for gas & water line	5,823	3.74			3.74	40' construction corridor for gas & water line (40' corridor – 12' dirt road = 28' revegetation corridor)
Gen-tie corridor from PB to top of Ivanpah 2	4,065	0.36			0.36	Gen-tie line will follow asphalt road. 2 turning towers, 5 embedded towers
Gen-tie towers			0.006		0.006	Area of the tower footprints
Graded areas		380.00			380.00	Includes rock relocation area
Fill stockpiles			3.98		3.98	4' high fill stockpile, for use in decommissioning

<sup>9</sup> Heliostat maintenance paths for Ivanpah 1 and 2 comprise about 16.5 percent of the heliostat field. Because of the larger area of Ivanpah 3, greater distance between some heliostat rows, and unused areas 15.5 percent was determined to be a reasonable assumption.

**TABLE 1-1**  
Detailed Breakdown of Ivanpah SEGS Components

Components	Linear Feet	Acres			Comments	
		Temp	Long-Term	Permanent		Total
12' dirt trail to mining claim	1,492			0.41	0.41	
<b>SUBTOTAL IVANPAH 3</b>		400.33	1,427.81	8.53	1,836.68	Includes 1836.3 ac for Ivanpah 3 and 0.41 ac for mining access (less heliostat field)
			-1,150.18			
<b>Ivanpah 3 Revegetation Area</b>		400.33	277.64		677.97	
<b>Ivanpah 2</b>						
30' asphalt road from Ivanpah 3 to Colosseum Road	7,247		5.99		5.99	30' asphalt + 3' shoulder on either side = 36' roadway
Asphalt road construction corridor	7,247	2.33			2.33	50' construction corridor - 36' roadway = 7' construction area on each side of road =14' revegetation
Gas & water line corridor to PB	3,972	2.55			2.55	40' construction corridor - 12' dirt access road from PB to corner = 28' revegetation
24' asphalt road to PB	2,229		1.54		1.54	From re-routed Colosseum Rd to PB (24' road + 3' shoulders = 30' roadway)
Asphalt road construction corridor	2,229	0.72			0.72	44' construction corridor -30' roadway = 7' construction area on each side = 14' revegetation
Power block (PB)			13.17		13.17	Includes road around PB, diversion berm and channel
12' dirt service road from PB to corners	15,176		4.18		4.18	
Ivanpah 3 gen-tie along south side of Ivanpah 2	3,296	0.25			0.25	Construction corridor for 1 turning tower + 4 embedded towers (access along dirt perimeter road)
Ivanpah 3 gen-tie along south side of Ivanpah 2			0.004		0.004	Area of the 5 tower footprints
Ivanpah 3 gen-tie along west side of Ivanpah 2	5,371	0.38			0.38	Access along dirt perimeter road
Ivanpah 3 gen-tie along west side of Ivanpah 2			0.007		0.01	Area of the 8 tower footprints

**TABLE 1-1**  
Detailed Breakdown of Ivanpah SEGS Components

Components	Linear Feet	Acres			Total	Comments
		Temp	Long-Term	Permanent		
Ivanpah 2 gen-tie from PB to junction with Ivanpah 3 gen-tie	2,322	0.20			0.20	Construction corridor for 1 turning tower +3 embedded towers (access along paved road)
Ivanpah 2 gen-tie from PB to junction with Ivanpah 3 gen-tie			0.004		0.004	Area of the 4 tower footprints
12' perimeter road	24,167		6.66		6.66	
Set back from property line			4.71		4.71	undeveloped set back from property line
10' heliostat maintenance paths	629,528		144.52		144.52	
Heliostat field			729.16		729.16	Remaining area within Ivanpah 2 (includes graded area)
12' dirt trail along west side of Ivanpah 2	3,115			0.86	0.86	Rerouted trail 699198
12' dirt trail along southwest corner of Ivanpah 2	4,148		1.14		1.14	12' dirt road around west perimeter from trail 699198 to relocated Colosseum Road
Channel crossings			0.31		0.31	
Graded areas		123.00			123.00	
Fill stockpiles			2.03		2.03	4' high fill stockpile, for use in decommissioning
<b>SUBTOTAL IVANPAH 2</b>		129.43	790.43	0.86	920.72	
(less heliostat field)			-729.16			
<b>Ivanpah 2 Revegetation Area</b>		129.43	184.27		313.70	
<b>Construction Logistics Area (incl. improvements to Colosseum Road)</b>						
30' asphalt improved Colosseum Rd.	8,442			6.98	6.98	From Golf Club to T-intersection at Ivanpah 2 (30' asphalt road + 3' dirt shoulders = 36' roadway)
Asphalt road construction corridor	8,442	2.71			2.71	50' construction corridor - 36' roadway = 7' construction area each side = 14' revegetation

**TABLE 1-1**  
Detailed Breakdown of Ivanpah SEGS Components

Components	Linear Feet	Acres			Total	Comments
		Temp	Long-Term	Permanent		
Tire wash/concrete washout, off Colosseum Road		1.04			1.04	Area for turnouts and wash areas
30' asphalt re-routed Colosseum Road	4,343			3.59	3.59	From T-intersection with Colosseum around south end of Ivanpah 2 to road to PB (30' asphalt road + 3' dirt shoulders = 36' roadway)
Asphalt road construction corridor	4,343	1.40			1.40	50' construction corridor - 36' roadway = 7' construction area each side = 14' revegetation
12' gravel road to re-routed Colosseum trail	2,452			0.68	0.68	From end of asphalt section to where it exits the CLA on to connect to Colosseum dirt road
24' asphalt road to substation	1,761			1.21	1.21	24' asphalt + 3' dirt shoulders = 30' roadway
Asphalt road construction corridor	1,761	0.57			0.57	44' construction corridor - 30' roadway = 7' construction area on each side = 14' revegetation
Substation				16.10	16.10	Will remain post-project
Diversion berms & channel for substation				8.30	8.30	Will remain post-project
Ivanpah 2 & 3 T-line to substation construction corridor	1,898	0.35			0.35	20' construction corridor for double-circuit T-line -12' service road = 8' revegetation
12' dirt service road for dbl-circuit t-line	1,898		0.52		0.52	From Ivanpah 2 to Substation
Construction of double-circuit towers		0.20			0.20	Construction corridor for 1 turning tower + 3 embedded towers (access along dirt road)
Double-circuit gen-tie towers			0.004		0.00	Area of the 4 tower footprints
Gas meter set for Ivanpah 1 & 2			0.02		0.02	20' x 40' area on southeast corner of Ivanpah 2
Gas meter set construction area		0.92			0.92	200' x 200'
24' asphalt road from re-routed Colosseum Road to Ivanpah 1	2,153		1.48		1.48	24' asphalt from Ivanpah 2 to Ivanpah 1 + 3' dirt shoulders ea. side = 30' roadway

**TABLE 1-1**  
Detailed Breakdown of Ivanpah SEGS Components

Components	Linear Feet	Acres			Total	Comments
		Temp	Long-Term	Permanent		
Asphalt road construction corridor	2,153	0.69			0.69	44' Construction Corridor - 30' roadway = 7' construction area on ea. side = 14' revegetation
Gas & water line corridor to Unit 1	2,153				0.00	Runs along 24' asphalt road, no additional Impact
Administration/warehouse Building			8.90		8.90	Includes entrance road
12' dirt service road for monitoring well	866		0.24		0.24	12' road is just mowed, no construction area
Monitoring well			0.00		0.00	10' x 10' area
12' dirt service road for production wells	1,075		0.30		0.30	12' road is just mowed, no construction area
Production wells			0.00		0.00	10' x 10' area for each well
T-line from Ivanpah 1 to Substation	2,867	0.53			0.53	20' construction corridor for T-line. -12' service road = 8' reveg
12' service road from Ivanpah 1 to Sub	2,867		0.79		0.79	12' road is just mowed, no construction area
Construction of gen-tie towers		0.32			0.32	Construction corridor for 2 turning towers + 4 embedded towers (access along dirt road)
Gen-tie towers			0.005		0.005	Area of the 6 tower footprints
Construction parking		1.53			1.53	Assume 12' x 20' area for 39, 15-passenger vans & 192 personal vehicles + 20% additional area for access
Contractor Trailer area		18.57			18.57	Includes construction parking area
Equipment Laydown		20.46			20.46	Does not include tire wash, which is above
Area available for construction use		248.79			248.79	Additional area that can be used if needed
40-ac succulent storage & stockpile area			40.00		40.00	
Fill stockpiles			0.91		0.91	4' high fill stockpile, for use in decommissioning
<b>SUBTOTAL CLA &amp; Colosseum Rd</b>		298.07	53.18	36.85	387.19	Includes CLA (377.5 ac) + Colosseum Road (9.69 ac)

**TABLE 1-1**  
Detailed Breakdown of Ivanpah SEGS Components

Components	Linear Feet	Acres			Comments	
		Temp	Long-Term	Permanent		Total
<b>Ivanpah 1</b>						
24' Asphalt road from edge to PB	3,361		2.31		2.31	Portion within Ivanpah 1 (24' road + 3' dirt shoulders = 30-roadway)
Asphalt road construction corridor	3,361	1.08			1.08	44' construction corridor - 30' roadway = 7' construction area on each side = 14' revegetation
Gas & water line corridor to PB	3,361		0.00		0.00	Road corridor used to construct utilities on each side
Power block (PB)			13.54		13.54	Includes road around PB, diversion berm and channel
Gen-tie line from PB to end of Ivanpah 1	3,510				0.00	Asphalt road can be used as service access for transmission line
Construction of gen-tie towers		0.29			0.29	Construction corridor for 1 turning tower + 5 embedded towers
Gen-tie towers			0.005		0.01	Area of the 6 tower footprints
12' dirt service road from PB to corners	12,020		3.31		3.31	
12' perimeter road	23,857		6.57		6.57	
Set back from property line			8.79		8.79	undeveloped set back from property line
10' heliostat maintenance paths	636,325		146.08		146.08	
Heliostat field			731.49		731.49	Remaining area within Ivanpah 1
Fill stockpiles			1.57		1.57	4' high fill stockpile, for use in decommissioning
<b>SUBTOTAL IVANPAH 1</b>		1.08	912.41	0.0	913.49	
(less heliostat field)			-731.49			
<b>Ivanpah 1 Revegetation Area</b>		1.08	180.62			

Note: These numbers are based on the best available information at the time of preparation and are subject to change in the final design drawings.

APPENDIX E

# Weed Management Plan

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(Previously submitted in Data Response Set 1F, filed on August 6, 2008)

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*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

APPENDIX F  
**Worksheets**

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## WORKSHEET #1 ACTIVITIES ASSESSMENT CHECKLIST

Name of Reviewer:	Date:		
ACTIVITIES - Check each activity present at site	EFFECTIVENESS		
	HIGH	MOD.	LOW
<input type="checkbox"/> Non-storm water discharges to drains. Describe BMPs in place:			
<input type="checkbox"/> Spill Prevention, Control and Cleanup. Describe BMPs in place:			
<input type="checkbox"/> Vehicle and equipment fueling. Describe BMPs in place:			
<input type="checkbox"/> Vehicle and equipment washing and steam cleaning. Describe BMPs in place:			
<input type="checkbox"/> Vehicle and equipment maintenance and repair. Describe BMPs in place:			
<input type="checkbox"/> Outdoors loading/unloading of liquid materials. Describe BMPs in place:			
<input type="checkbox"/> Outdoor container storage of liquids. Describe BMPs in place:			
<input type="checkbox"/> Outdoor process equipment operations and maintenance. Describe BMPs in place:			
<input type="checkbox"/> Outdoor storage of raw materials, products and byproducts. Describe BMPs in place:			
<input type="checkbox"/> Waste handling and disposal. Describe BMPs in place:			
<input type="checkbox"/> Contaminated or erodible surface areas. Describe BMPs in place:			
<input type="checkbox"/> Building and grounds maintenance. Describe BMPs in place:			
<input type="checkbox"/> Building repair, remodeling, and construction. Describe BMPs in place:			
<input type="checkbox"/> Parking/Storage Area Maintenance. Describe BMPs in place:			







**NON-STORM WATER DISCHARGE ASSESSMENT AND CERTIFICATION**

(Source: EPA, 1992)

Worksheet No. 5  
Completed by: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

Date of Test or Evaluation	Outfall Directly Observed During the Test (Identify as indicated on the site map)	Method Used to Test or Evaluate Discharge	Describe Results from Test for the Presence of Non-Storm Water Discharge	Identify Potential Significant Sources	Name of Person Who Conducted the Test or Evaluation

**CERTIFICATION**

I, \_\_\_\_\_ (responsible corporate official), certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

**A. Name & Official Title (type or print)** \_\_\_\_\_

**B. Area Code and Telephone No.** \_\_\_\_\_

**C. Signature** \_\_\_\_\_

**D. Date Signed** \_\_\_\_\_

Worksheet No. 6  
 Completed by: \_\_\_\_\_  
 Title: \_\_\_\_\_  
 Date: \_\_\_\_\_

**NON-STORM WATER DISCHARGE ASSESSMENT AND FAILURE TO CERTIFY NOTIFICATION**

(Source: EPA, 1992)

Directions: If you cannot feasibly test or evaluate an outfall due to one of the following reasons, fill in the table below with the appropriate information and sign this form to certify the accuracy of the included information.

List all outfalls not tested or evaluated, describe any potential sources of non-storm water pollution from listed outfalls, and state the reason(s) why certification is not possible. Use the key from your site map to identify each outfall.

Important Notice: A copy of this notification must be signed and submitted to the RWQCB within 180 days of the effective date of this permit.

Identify Outfall Not Tested/Evaluated	Description of Why Certification Is Infeasible	Description of Potential Sources of Non-Storm Water Pollution

**CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations, and that such notification has been made to the RWQCB within 180 days of \_\_\_\_\_ (date permit was issued), the effective date of this permit.

A. Name & Official Title (type or print)

B. Area Code and Telephone No.

C. Signature

D. Date Signed

**WORKSHEET No. 7**  
**CHECKLIST FOR CONSIDERATION OF MINIMUM BMPs**

Check which one of the following describe your facility.

Name of Reviewer:

Date:

**Yes No N/A**

- |                          |                          |                          |  |
|--------------------------|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are outside areas kept neat and clean?   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Is the facility orderly and neat?  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Is the process debris removed regularly?   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Is the area clear of excessive dust from industrial operations?  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Is there no evidence of leaks and drips from equipment and machinery?  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are employees regularly informed of the importance of good housekeeping?   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are catch basins, storm conveyance pipes, and storm water treatment facilities cleaned at the appropriate intervals (see Chapter 5)?   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are good housekeeping procedures and reminders posted in appropriate locations?  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are vehicle maintenance activities kept indoors and do not tend to "creep" out the front door of the maintenance shop?   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are containers for chemical substances and for temporary storage of wastes labeled?  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Is vehicle and equipment washing done in a designated area so that the wash water can be discharged to the sanitary or process wastewater sewer?   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are regular housekeeping practices carried out?  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Is there a spill prevention and response team?   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are appropriate spill containment and cleanup materials kept on-site and in convenient locations?  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are cleanup procedures for spills followed regularly and correctly?  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are used absorbent materials removed and disposed of in a timely manner?   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are personnel regularly trained in the use of spill control materials?   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Is exposed piping and process equipment regularly inspected and/or tested to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters? |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are drainage ditches or the areas around the outfall(s) free of erosion?   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are unpaved outdoor areas protected from water or wind erosion?  |

Any items checked "No" require consideration in the selection of BMPs.  
 N/A = Not Applicable.



APPENDIX G  
**Notice of Intent**

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**BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT  
COMMISSION OF THE STATE OF CALIFORNIA  
1516 NINTH STREET, SACRAMENTO, CA 95814  
1-800-822-6228 – WWW.ENERGY.CA.GOV**

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

DOCKET No. 07-AFC-5  
PROOF OF SERVICE  
(Revised 7/20/09)

**APPLICANT**

Solar Partners, LLC  
John Woolard,  
Chief Executive Officer  
1999 Harrison Street, Suite #500  
Oakland, CA 94612

Todd A. Stewart, Project Manager  
Ivanpah SEGS  
[sdeyoung@brightsourceenergy.com](mailto:sdeyoung@brightsourceenergy.com)

**E-mail Preferred**

Steve De Young, Project Manager  
Ivanpah SEGS.  
1999 Harrison Street, Ste. 2150  
Oakland, CA 94612  
[tstewart@brightsourceenergy.com](mailto:tstewart@brightsourceenergy.com)

**APPLICANT'S CONSULTANTS**

John L. Carrier, J. D.  
2485 Natomas Park Dr. #600  
Sacramento, CA 95833-2937  
[jcarrier@ch2m.com](mailto:jcarrier@ch2m.com)

**COUNSEL FOR APPLICANT**

Jeffery D. Harris  
Ellison, Schneider  
& Harris L.L.P.  
2600 Capitol Avenue, Ste. 400  
Sacramento, CA 95816-5905  
[jdh@eslawfirm.com](mailto:jdh@eslawfirm.com)

**INTERESTED AGENCIES**

California ISO  
[e-recipient@caiso.com](mailto:e-recipient@caiso.com)

Tom Hurshman,  
Project Manager  
Bureau of Land Management  
2465 South Townsend Ave.  
Montrose, CO 81401  
[tom\\_hurshman@blm.gov](mailto:tom_hurshman@blm.gov)

\*Raymond C. Lee, Field Manager  
Bureau of Land Management  
1303 South Highway 95  
Needles, CA 92363  
[Raymond.Lee@blm.gov](mailto:Raymond.Lee@blm.gov)

Becky Jones  
California Department of  
Fish & Game  
36431 41st Street East  
Palmdale, CA 93552  
[dfgpalm@adelphia.net](mailto:dfgpalm@adelphia.net)

**INTERVENORS**

California Unions for Reliable Energy ("CURE")  
Tanya A. Gulesserian  
Marc D. Joseph  
Adams Broadwell Joseph & Cardozo  
601 Gateway Boulevard, Ste 1000  
South San Francisco, CA 94080  
[tgulesserian@adamsbroadwell.com](mailto:tgulesserian@adamsbroadwell.com)

Western Watersheds Project  
Michael J. Connor, Ph.D.  
P.O. Box 2364  
Reseda, CA 91337-2364  
[mjconnor@westernwatersheds.org](mailto:mjconnor@westernwatersheds.org)

Gloria Smith, Joanne Spalding  
Sidney Silliman, Sierra Club  
85 Second Street, 2<sup>nd</sup> Fl.  
San Francisco, CA 94105  
[gloria.smith@sierraclub.org](mailto:gloria.smith@sierraclub.org)  
[joanne.spalding@sierraclub.org](mailto:joanne.spalding@sierraclub.org)  
[gssilliman@csupomona.edu](mailto:gssilliman@csupomona.edu)  
**E-mail Preferred**

## INTERVENORS CONT.

Joshua Basofin, CA Rep.  
Defenders of Wildlife  
1303 J Street, Ste. 270  
Sacramento, CA 95814  
[jbasofin@defenders.org](mailto:jbasofin@defenders.org)  
**E-mail Preferred**

\*Basin and Range Watch  
Laura Cunningham  
Kevin Emmerich  
P.O. Box 70  
Beatty, NV 89003  
[atomicoadranch@netzero.net](mailto:atomicoadranch@netzero.net)

\*Center for Biological Diversity  
Lisa T. Belenky, Sr. Attorney  
Ileene Anderson, Public Lands Desert Director  
351 California Street, Ste. 600  
San Francisco, CA 94104  
**E-mail Preferred**  
[lbelenky@biologicaldiversity.org](mailto:lbelenky@biologicaldiversity.org)  
[ianderson@biologicaldiversity.org](mailto:ianderson@biologicaldiversity.org)

## ENERGY COMMISSION

JEFFREY D. BYRON  
Commissioner and Presiding Member  
[jbyron@energy.state.ca.us](mailto:jbyron@energy.state.ca.us)

JAMES D. BOYD  
Vice Chairman and  
Associate Member  
[jboyd@energy.state.ca.us](mailto:jboyd@energy.state.ca.us)

Paul Kramer  
Hearing Officer  
[pkramer@energy.state.ca.us](mailto:pkramer@energy.state.ca.us)

John Kessler  
Project Manager  
[jkessler@energy.state.ca.us](mailto:jkessler@energy.state.ca.us)

Dick Ratliff  
Staff Counsel [dratliff@energy.state.ca.us](mailto:dratliff@energy.state.ca.us)

Elena Miller  
Public Adviser  
[publicadviser@energy.state.ca.us](mailto:publicadviser@energy.state.ca.us)

DECLARATION OF SERVICE

I, Mary Finn, declare that on August 6, 2009, I served and filed copies of the attached, Data Response 1N. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: [[www.energy.ca.gov/sitingcases/ivanpah](http://www.energy.ca.gov/sitingcases/ivanpah)].

The documents have been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

*(Check all that Apply)*

FOR SERVICE TO ALL OTHER PARTIES:

  X   sent electronically to all email addresses on the Proof of Service list;

  X   by personal delivery or by depositing in the United States mail\* at **Sacramento, California** on August 6, 2009 with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

**AND**

FOR FILING WITH THE ENERGY COMMISSION:

  X   sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (*preferred method*);

**OR**

       depositing in the mail an original and 12 paper copies, as follows:

**CALIFORNIA ENERGY COMMISSION**

Attn: Docket No. 07-AFC-5  
1516 Ninth Street, MS-4  
Sacramento, CA 95814-5512  
[docket@energy.state.ca.us](mailto:docket@energy.state.ca.us)

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



Mary Finn

\*or by other delivery service, e.g., Fed Ex, UPS, courier, etc.