



GENESIS SOLAR ENERGY

Contract #: A4PA
Report No: 0-CA-0-00-03

SOLAR FIELD DRAINAGE, EROSION AND SEDIMENT CONTROL PLAN (DESCP)

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(DESCP)

DRAINAGE, EROSION AND SEDIMENT CONTROL PLAN

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(DESCP)**DRAINAGE, EROSION AND SEDIMENT CONTROL PLAN**

This Drainage, Erosion & Sediment Control Plan (DESCP) was prepared in response to C.9.13 Proposed Condition/Mitigation Measures, Soil&Water-1, as required by the Genesis Solar Energy Project (09-AFC-8), Consolidated Conditions of Certification.

1.0 PROJECT OVERVIEW

Genesis Solar, LLC is proposing to construct, own and operate the Genesis Solar Energy Project near Ford Dry Lake on Bureau of Land Management (BLM) administrative lands in Riverside County, California. The Project Site is located in the Colorado Desert between the communities of Blythe, CA (approximately 25 miles east) and Desert Center, CA (approximately 27 miles west). The facility is a 250 megawatt (MW) solar thermal power generating plant.

The Site covers approximately 1,800 acres of federal land managed by the BLM. Surrounding land uses include Interstate 10 (I-10) to the south, the Palen McCoy Wilderness to the north, the Palen Dry Lake Area of Critical Environmental Concern (ACEC) to the west and open unrestricted access lands to the east. Most of the land near the Site is managed by BLM and there is no California State Land in the vicinity, but there are substantial private holdings.

The Project Site is situated within the Chuckwalla Valley. It is relatively flat, sloping from north to south, with Site elevations of approximately 400 to 370 feet above mean sea level. The Site is occupied by a community of low creosote and bursage scrub vegetation and covers portions of the Ford Dry Lake and McCoy Spring USGS topographic maps.

The first phase of construction will consist of the main access road running northwest from the Wiley's Well exit off I-10 to the project site, north of Ford Dry Lake. Phase 2 will consist of the westernmost solar field and power block and phase 3 will consist of the easternmost solar field and power block. This Drainage, Erosion and Sediment Control Plan (DESCP) covers both solar fields and power blocks phases 2 and 3.

2.0 DRAINAGE

Natural drainage across the Project Site is episodic; flow changes at usually irregular intervals, is shallow and occurs over a broad area primarily as sheet flow or in shallow washes. A number of ephemeral washes traverse the site as dry streambeds, which will flow after significant rainfall. The Site has been historically used for both off-highway vehicles and sheep grazing; however neither activity currently occurs. Surface water generally flows northeast to southwest, from the Palen and McCoy mountains thru the Chuckwalla Valley to the Ford Dry Lake.

The proposed Genesis Solar Energy Project (GSEP) plant is situated within the Chuckwalla Valley. Trapezoidal diversion channels with typical channel bank slopes of 3:1, and conveyance capacity of 100 year 24 hour rainfall frequency were selected for the design. Top of the inner channel banks are minimum 2 foot higher than outer channel banks. This was designed to protect the GSEP site against flooding. The channel details and configurations are shown on attached construction drawings. The main purpose of the channels is to divert incoming upstream flow and convey the flood water to the south of the project. In the event of the channel over running the outer banks, flows would continue on the outer existing grade, and around the solar fields in the direction of the Ford Dry Lake.

The resulting peak discharges from the hydrology computation are used for the channel design, and flow is released from the southern channel in a manner which reasonably mimics existing conditions with respect to flow

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depth and velocity, and does not result in erosion downstream of the facility. A computer simulation using FLO-2D is attached as a separated document.

3.0 OFF-SITE HYDROLOGY

During a 100-year event the GSEP site is protected from flooding by providing diversion channels with capacity to convey the offsite flood water around the site, southerly to mimic closely the existing condition. With this in mind, the GSEP offsite Hydrology Map (attached) shows the basin characteristics, drainage areas and drainage boundaries including the layout of the diversion channels, the West Channel, North-South Channel, and East Channel. The hydrology for the outer site diversion channel drainage calculation, and sizing selection were provided for the 100-yr 24-hr rainfall. Rainfall depths for the 5-, 10-, 25- and 100-year 24-hour rainfall events were determined to be 1.61 inches, 2.00 inches, 2.56 inches, and 3.51 inches, respectively, based on the National Oceanic and Atmospheric Administration’s (NOAA) Precipitation-Frequency Atlas of the United States (NOAA Atlas No. 14). The design criteria from the Riverside County Flood Control and Water Conservation District hydrology manual, unit hydrograph method was used to determine the peak discharges at specific locations of the GSEP site. (See the Revised Project Drainage Report for detail computations)

The channels are designed to contain the 100-year storm event within the channel banks. As shown below, there are four channels on site which have the following flows during the 100-year event:

TABLE I

| Offsite Stormwater Flow Rate (cfs) | |
|------------------------------------|--------|
| West - Channel A | 3,800 |
| North South - Channel B | 2,624 |
| North South - Channel C | 2,624 |
| North South - Channel B/C | 5,247 |
| East - Channel D | 21,690 |

All runoff diversion channels will be designed with a soil/cement mix or similar surface to prevent erosion by providing adequate protection against development of a controlled low-flow thalweg. The channels are designed with appropriate depth to width ratios and slope erosion control to prevent undercutting and head cutting within the channel.

4.0 ON-SITE HYDROLOGY

In the Solar fields the On-Site drainage was computed for the 10-year, 24-hr storm using Natural Resources Conservation Service (NRCS) TR-55, from USDA. Technical Release 55 (TR-55) presents simplified procedures for estimating runoff and peak discharges in small watersheds from 300 to 2,000 acres. For detailed procedures and methods in using NRCS TR-55 for peak discharge analysis reference Technical Release TR-55 “Urban Hydrology for Small Watersheds”, United States Department of Agriculture, Natural Resources Conservation Service. The summary of the peak discharges for the 10-year frequency are included in the Revised Project Drainage Report.

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5.0 SITE GRADING

Minimal grading will be performed in the solar field. The site will be terraced to minimize cut and fill and earth moving; final graded surface will be at 0.18% slope east to west. The Solar Fields are terraced in the north-south direction as depicted on construction drawings, and a portion of the west corner of the lowest terrace will also serve as a retention and water quality basin. Details are shown on the construction drawings.

TABLE II
Anticipated Grading Quantities, in cubic yard

| | Cut | Fill | Import | Export |
|--------------|-----------|-----------|--------|--------|
| Solar Unit 1 | 944,360 | 944,360 | 0 | 0 |
| Solar Unit 2 | 1,380,140 | 1,380,140 | 0 | 0 |

This includes 20% shrinkage and 0.25 ft subsidence

Clearing and grubbing will occur inside the entire GSEP site property limits, except for a small area located in the west south-west portion of the Solar Unit 1, which is depicted as Environmentally Sensitive Areas, will be left undisturbed. No fill is anticipated for the site, but in the event fill is required, material present on-site is expected to be adequate. Where there are proposed interior plant roads, subgrade will be compacted to provide a stable construction roadway. The earthworks process will be undertaken using standard contractor equipment, with dozers, elevating scrapers, hydraulic excavators, tire loaders, compacting rollers, and dump trucks. Where clearing is required to facilitate construction, but no grading or roads are required, vegetation will be mowed and allowed to re-grow after construction.

6.0 EROSION CONTROL

To control the discharge south of the Solar Unit 1 and Solar Unit 2, graded outlet control detention/sediment basin is provided. Hydraulic analysis is provided using FLO-2D computer modeling, and the results are shown on the FLO-2D report and the discharge from outlets mimic the pre-development conditions. (Refer to the FLO-2D computation report)

Erosion control with appropriate BMPs is placed in various areas, especially in the diversion channels for bank protection against bank and toe scouring. A set of erosion control plans is being prepared to be submitted with the construction drawing package. Temporary and permanent erosion BMPs are shown on detailed construction drawings.

Soil Wind and Water Erosion Control that will be provided to the construction site include, but are not limited to, the following BMPs:

- EC-1 Scheduling
- EC-2 Preservation of Existing Vegetation
- EC-5 Soil Binders
- EC-9 Earth Dikes and Drainage Swales

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EC-10 Flow Velocity Dissipation Devices

EC-12 Steam Bank Stabilization

SE-1 Silt Fence

SE-2 Sediment Basin

SE-3 Sediment Trap

SE-4 Check Dam

SE-8 Sand Bag Barrier

SE-10 Storm Drain Inlet Protection

WE-1 Wind Erosion Control

TC-1 Stabilized Construction Entrance/Exit

TC-2 Stabilized Construction Roadway

7.0 ON-SITE CONTACT INFORMATION

Resident Engineer

Rob K Holt, PE
Principal Engineer
201 E. Hobson Way,
Blythe, CA 92225
Office - (760) 922-4658

Emergency Contact Information

Gurudas M. Pai, PE
Lead Civil/Structural Engineer
47 Discovery, Irvine, CA 92618
Office - (949) 349-5994

8.0 CONSTRUCTION MONITORING PROGRAM

During the raining season the resident engineer will monitor erosion control measures set by the DESCP and design drawings on a daily basis at the beginning of each working day, when forecast precipitation exceeds 35% chance of occurrence.

The Maintenance schedule including post-construction maintenance of structural control BMPs will be discussed in the Project Monitoring Plan.

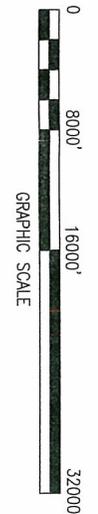
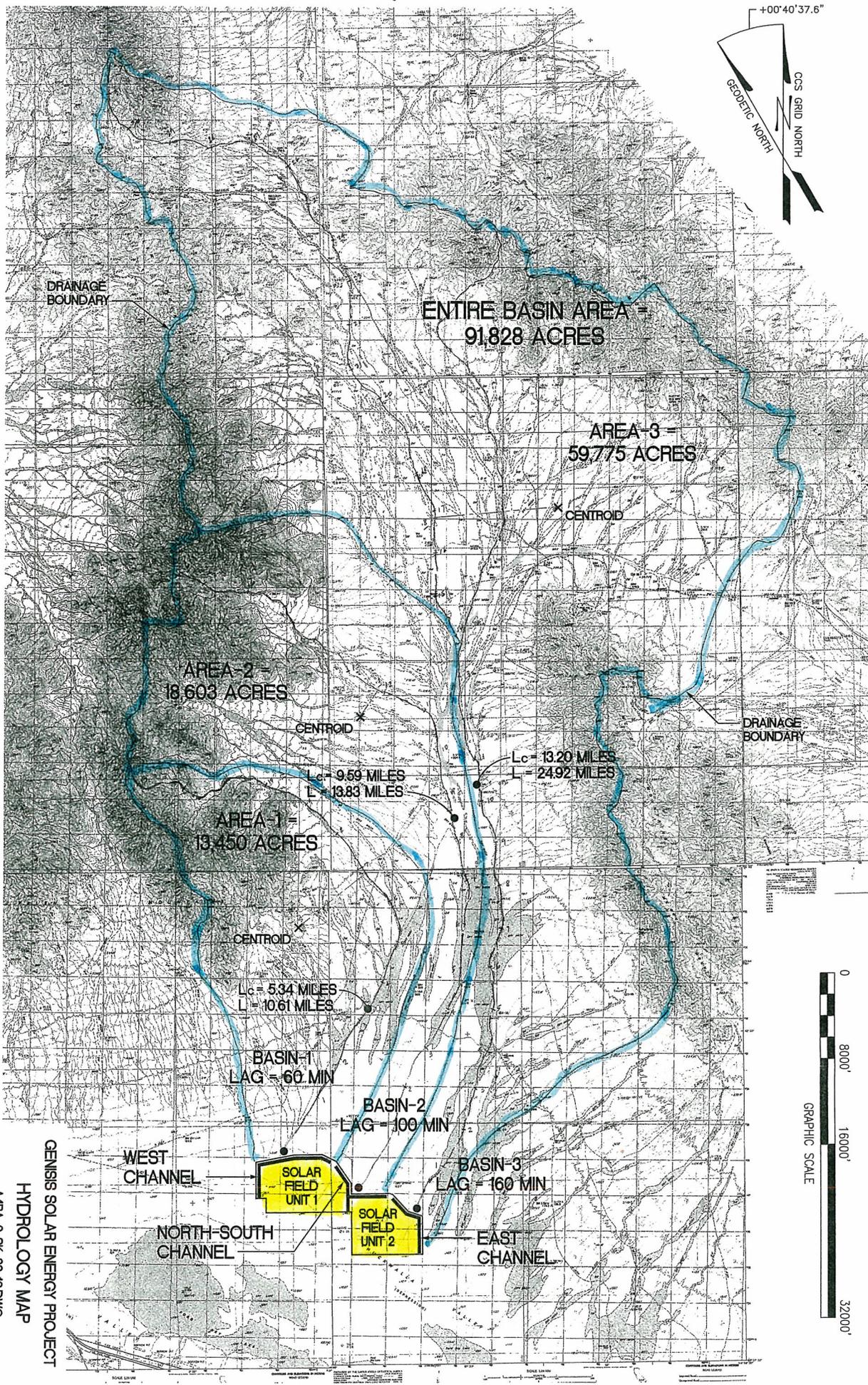
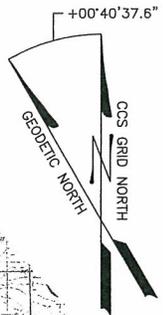
9.0 ATTACHMENTS

- Exhibit "A" Site Vicinity Map with linear facilities

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- Exhibit “B” Site Delineation Map
- Exhibit “C” Diversion Channel Allocation
- Exhibit “D” Onsite Hydrology Map Unit 1
- Exhibit “E” Onsite Hydrology Map Unit 2
- EPCC Construction Schedule
- Worker Safety Dust Control Plan
- Air Quality Construction Mitigation Plan



GENESIS SOLAR ENERGY PROJECT
 HYDROLOGY MAP
 A/F/A-0-SK-00-16-DWG



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Worker Safety Dust Control Plan



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1.0 PURPOSE

This document is to provide methods for mitigating or controlling fugitive dust for worker safety during construction activities. This document supports the CEC's Condition of Certification Worker Safety-8. The requirements in this document are in addition to the measures to address dust control presented in COC AQ-SC3 and AQ-SC4.

2.0 DUST WORKER SAFETY

In the event of a wind generated or construction related dust plume with PM10 concentrations exceeding 50 ug/m^3 , in a work area the onsite workers will have access to dust masks (NIOSH N-95 or better). These dust masks will be located at several locations including the area supervisor's construction connex, the construction safety supervisor's truck, or the job site tool box (local to the worker activity).

3.0 DUST CONTROL OF CONSTRUCTION ACTIVITIES

Particular care will be taken to ensure that excavations, embankments, stockpiles, access roads, plant sites, waste areas, and other work areas are maintained free from excess dust to such reasonable degree as to avoid causing a hazard or nuisance plume. Dust control may include the use of water dispersed by spraying with hoses or water trucks, use of an approved soil binder agent, implementation of various Best Management Practices (BMPs) for vehicles and the detailed measures addressed in the Air Quality Construction Mitigation Plan. These measures will be implemented as the work proceeds or whenever a dust nuisance or hazard occurs.

Dust control activities will also be employed at concrete debris staging areas. The prevention of the spread of concrete dust will require special handling throughout the project. Care will be taken to avoid unnecessarily shaking bags of cement, concrete mortar, or plaster.

4.0 REPORTING DUST RELATED INCIDENTS

Dust related incidents and mitigation events will be recorded by the construction safety supervisor and/or the Air Quality Construction Mitigation Manager (AQCMM) in the monthly compliance report to the CPM. The incident will outline the following:

- Cause of dust incident
- Results of dust incident
- Mitigation of dust
- Lessons learned



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AIR QUALITY CONSTRUCTION MITIGATION PLAN

Submitted to:
California Energy Commission
Sacramento California

Submitted by:
Genesis Solar, LLC



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Acronyms

AQCMM
AQCMP or Plan
ARB
CEC
CPM
DCP
hp
MDAQMD
GSEP or Project
MCR
SWPPP

Definition

Air Quality Construction Mitigation Manager
Air Quality Construction Mitigation Plan
Air Resources Board
California Energy Commission
Compliance Project Manager
Dust Control Plan
horsepower
Mojave Desert Air Quality Management District
Genesis Solar Energy Project
Monthly Compliance Report
Storm Water Pollution Prevention Plan



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INTRODUCTION

This Air Quality Construction Mitigation Plan (AQCMP or Plan) describes a program for ensuring compliance with permitting requirements related to suppression of air pollutant emissions during construction of the Genesis Solar Energy Project (GSEP or Project) in Riverside County, California. The Project will be owned and operated by Genesis Solar, LLC.

This Plan describes the measures and procedures that will be implemented to monitor and control Project site activities over the duration of the construction effort. This plan is being completed in response to Condition of Certification (COC) AQ-SC-2 assigned to this Project by the California Energy Commission (CEC). The first of the CECs Air quality conditions (AQ-SC1) describes the requirement for, and responsibilities of, the Air Quality Construction Mitigation Manager (AQCMM), who will be responsible for ensuring that required emission reduction measures are successfully implemented throughout the period of Project construction. The second measure/condition (AQ-SC2) requires the development of this Plan, which must be submitted to the CEC Compliance Project Manager (CPM) at least 30 days in advance of any ground disturbance. The specific emission-control measures required by the third, fourth, and fifth mitigation measures/conditions of certification (AQ-SC3, AQ-SC4, and AQ-SC5) are the primary focus of this AQCMP.

Project Description

The GSEP will consist of two independent concentrated solar electric generating facilities (aka power plants or units) with a nominal net electrical output of 125 megawatts (MW) each, for a total net electrical output of 250 MW. The project will use well-established parabolic trough solar thermal technology to produce electrical power using steam turbine generators (STG) fed from solar steam generators (SSG) which transfers energy from the solar heated heat transfer fluid (HTF) to the steam that drives the STG.

Each plant will use one natural gas-fueled auxiliary boiler to reduce start-up time and provide HTF freeze protection. Freeze protection will maintain the HTF at a minimum temperature of 100 degrees Fahrenheit (°F). These boilers will be the project's primary stationary emission sources.

The Project proposes to use an air cooled condenser (dry cooling) for power plant cooling. Water for non-cooling uses such as mirror washing will be supplied from on-site groundwater wells, which will also be used to supply water for employee use (*e.g.*,



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drinking, showers, sinks, and toilets). A package water treatment system will be used to treat the water to meet potable standards. A sanitary septic system and on-site leach field will be used to dispose sanitary wastewater. On-site evaporation ponds will be used to contain other process wastewater. Dewatered residues from the ponds will be sent to an appropriate off-site landfill as non-hazardous waste.

Other construction elements of the project include the access road, the natural gas pipeline connection, and the transmission line tie-in connection. The project's access road from the I-10 will be approximately 6.5 miles long. Natural gas will be supplied via an 8-inch, 6 mile long pipeline that will be connected with the Southern California Gas Company pipeline located just north of the I-10. The transmission line connection will include the construction of an approximately 6.5-mile (including the construction of 60 transmission line poles) 230-kV gen-tie transmission line that will meet the Blythe Energy Project Transmission Line (currently in construction) which it will share, requiring new line cables be strung to the Colorado River Substation. The new transmission line, access road, and natural gas pipeline will be co-located in one linear corridor to serve the main project facility.

Construction Emissions

The total duration of project construction for GSEP is estimated to be approximately 37 months. Different areas within the project site and the construction laydown areas will be disturbed at different times over the construction period. Total construction disturbance area will be approximately 1,800 acres, and the permanent disturbance area of the project operations will be approximately 1,360 acres. The maximum acreage disturbed on any one day during construction is estimated to be 160 acres.

Combustion emissions will result from the off-road construction equipment, including diesel construction equipment used for site grading, excavation, and construction of onsite structures, and water and soil binder spray trucks used to control construction dust emissions. Fuel combustion emissions also will result from exhaust from on-road construction vehicles, including heavy duty diesel trucks used to deliver materials, other diesel trucks used during construction, and worker personal vehicles and pickup trucks used to transport workers to and from and around the construction site.

Fugitive dust emissions will result from site grading/excavation activities, installation of new transmission lines, water and gas pipelines, construction of power plant facilities, roads, and substations, and vehicle travel on paved/unpaved roads.



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APPLICABLE REGULATIONS

Two primary sources degrade air quality on and around construction sites: dust (controlled by AQ-SC3 and AQ-SC4) and emissions from the engines of construction equipment (controlled by AQ-SC5). The project area lies inside the jurisdiction of the Mojave Desert Air Quality Management District. The following table summarizes the applicable laws, ordinances, regulations, and standards (LORS) that regulate both of these sources.

Table 1. Applicable LORS

| Name | Description |
|--|--|
| Federal LORS | |
| 40 Code of Federal Regulations (CFR) Part 52 | Nonattainment New Source Review (NSR) requires a permit and requires Best Available Control Technology (BACT) and Offsets. Permitting and enforcement delegated to MDAQMD. Prevention of Significant Deterioration (PSD) requires major sources or major modifications to major sources to obtain permits for attainment pollutants. GSEP is a new source that does not have a rule listed emission source thus the PSD trigger levels are 250 tons per year for NOx, VOC, SO2, PM2.5 and CO. |
| 40 CFR Part 60 | 40 CFR Part 60 New Source Performance Standards (NSPS), Subpart Dc Standards of Performance for Small Industrial-Commercial-Institutional Steam Generation Units. Establishes recordkeeping and reporting requirements for natural gas fired steam generating units. Subpart IIII Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. Establishes emission standards for compressions ignition internal combustion engines, including emergency generator and fire water pump engines. |
| 40 CFR Part 93 General Conformity | Requires determination of conformity with State Implementation Plan for Projects requiring federal approvals if project annual emissions are above specified levels. |
| State LORS | |
| Health and Safety Code (HSC) Section 40910-40930 | Permitting of source needs to be consistent with Air Resource Board (ARB) approved Clean Air Plans. |
| HSC Section 41700 | Restricts emissions that would cause nuisance or injury. |
| California Code of Regulations (CCR) Section 93115 | Airborne Toxics Control Measure for Stationary Compression Ignition Engines. Limits the types of fuels allowed, established maximum emission rates, establishes recordkeeping requirements on stationary compression ignition engines, including emergency generator and fire water pump engines. |



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| Local LORS – Mojave Desert Air Quality Management District | |
|--|---|
| Rule 201 and 203 Permits Required | Requires a Permit to Construct before construction of an emission source occurs. Prohibits operation of any equipment that emits or controls air pollutant without first obtaining a permit to operate. |
| Rules 401, 402, and 403 Nuisance, Visible Emissions, Fugitive Dust | Limits the visible, nuisance, and fugitive dust emissions and would be applicable to the construction period of the project. |
| Rule 404 Particulate Matter - Concentration | Limits the particulate matter concentration from stationary source exhausts. |
| Rule 406 Specific Contaminants | The rule prohibits sulfur compound emissions in excess of 500 ppmv. |
| Rule 407 Liquid and Gaseous Air Contaminants | The rule prohibits carbon monoxide emissions in excess of 2,000 ppmv. |
| Rule 409 Combustion Contaminants | Limits the emissions from fossil fuel combustion. |
| Rule 431 Sulfur Content of Fuels | Limits the sulfur content of liquid fuels to no more than 0.5 percent by weight. |
| Rule 900 Standard of Performance for New Stationary Source | Incorporates the Federal NSPS (40 CFR 60) rules by reference. |
| Rule 1303 New Source Review | Specifies BACT/Offsets technology and requirements for a new emissions unit that has potential to emit any regulated pollutants. |
| Rule 1306 Electric Energy Generating Facilities | Describes actions to be taken for permitting of power plants that are within the jurisdiction of the Energy Commission. |



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ROLES AND RESPONSIBILITIES OF THE AIR QUALITY CONSTRUCTION MITIGATION MANAGER

Figure 2-1, Organization of Air Quality Construction Mitigation Team, summarizes the functional personnel positions that may be staffed for the Project in order to implement this Plan. The responsibilities for each position are summarized below.

AQCMM – An experienced air quality compliance specialist will be selected to fill this position, and will have primary responsibility for ensuring compliance with the requirements of this AQCMP and for training and directing AQCMM Delegates. The AQCMM will also work with the primary construction contractor Site Manager to ensure that all construction workers are aware of the requirements of the AQCMP and that sufficient training of site personnel in their responsibilities under this Plan is conducted.

The qualifications of the selected individual to fulfill these responsibilities must be approved by the CPM at least 30 days prior to the start of ground disturbance at the Project site. The Project owner shall submit to the CPM for approval, the name, resume, qualifications, and contact information for the on-site AQCMM and all AQCMM Delegates. The AQCMM and all Delegates (see below) must be approved by the CPM before the start of ground disturbance. The AQCMM will be on-site as necessary during the entire length of the construction period, and will be in daily contact with the AQCMM Delegate(s) to ensure all feasible construction mitigation measures are implemented. The AQCMM shall not be terminated without written consent of the CPM.

AQCMM Delegates – Two to three additional qualified individuals may be selected to fill these positions. The AQCMM Delegates will have responsibility for assisting the AQCMM and in representing the AQCMM during absences at the site. Additionally, due to the size of the area, the delegates may need to be in different locations to ensure compliance during peak construction activities.

The AQCMM and AQCMM Delegates will have full access to all areas of construction on the project site and linear facilities, and will have the authority to stop any or all construction activities as warranted by applicable mitigation conditions. The AQCMM and AQCMM Delegates may have other responsibilities in addition to those described in the AQCMP.

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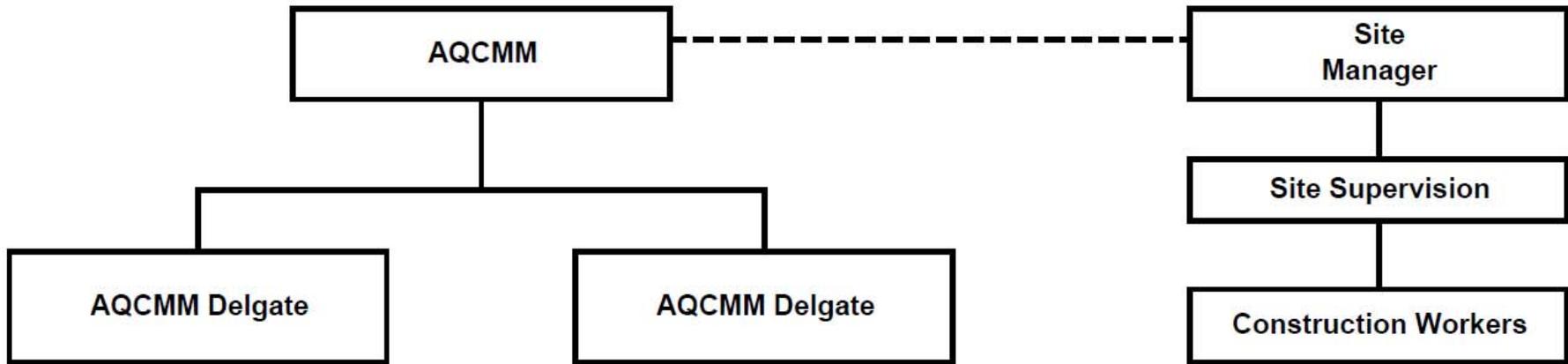


Figure 1
Organization of Air Quality Mitigation Team

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PROPOSED MITIGATION MEASURES

This section outlines the specific measures for limiting construction emissions that are incorporated in the Project permits, and describes the measures that will be implemented to ensure and document successful enforcement of these conditions. The two principal elements of the AQCMP are Fugitive Dust Control and Control of Diesel Equipment Exhaust Emissions. The **Fugitive Dust Control** and **Equipment Exhaust Emissions Controls** sections outline specific activities that will be monitored and requirements that will be enforced by the AQCMM and AQCMM Delegate(s) to achieve the objectives of both elements.

Fugitive Dust Control

Fugitive dust will potentially be generated by the mechanical disturbance of soils on the Project site by equipment engaged in grading, earth moving, loading, and unloading of bulk materials, trenching, excavating, and pile driving and by the travel of equipment and vehicles on paved and unpaved surfaces of the site. The AQCMM shall submit documentation to the CPM in each Monthly Compliance Report (MCR) that demonstrates compliance with the following mitigation measures/conditions of certification. Any deviation from these measures/conditions requires prior CPM approval.

The Primary Dust Control Objectives will be to prevent visible dust plumes from being transported:

- Off the project site, or
- To a distance of 200 feet beyond the centerline of the construction of linear facilities, or
- To within 400 feet upwind of any regularly occupied structures not owned by the Project owner.

The CEC and the MDAQMD set specific limitations on site activities, which will be designed to achieve these objectives, as described below.

- The main access roads through the facility to the power block areas will be either paved or stabilized using soil binders, or equivalent methods, to provide a stabilized surface that is similar to paving for the purposes of dust control. This may or may not include a crushed rock (gravel or similar material with fines removed) top layer. Main access roads through the facility will be either paved or stabilized prior to initiating construction in the main power block area, and delivery areas for operations materials (chemicals, replacement parts, etc.) will be paved or treated prior to taking initial deliveries.

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- All unpaved construction roads and unpaved operational and maintenance site roads, as they are being constructed, shall be stabilized with a non-toxic soil stabilizer or soil weighting agent that can be determined to be both as efficient or more efficient for fugitive dust control as Air Resources Board (ARB)-approved soil stabilizers, and shall not increase any other environmental impacts including loss of vegetation. All other disturbed areas in the Project and linear construction sites shall be watered as frequently as necessary during grading, and, after active construction activities, shall be stabilized with a nontoxic soil stabilizer or soil weighting agent, or alternative approved soil stabilizing methods, in order to comply with the dust mitigation objectives described above. The frequency of watering can be reduced or eliminated during periods of precipitation.
- No vehicle shall exceed 10 miles per hour on unpaved areas within the construction site. Vehicles may travel up to 25 miles per hour on stabilized unpaved roads or paved roads as long as such speeds do not create visible dust emissions.
- The construction site entrances shall be posted with visible speed limit signs.
- All construction equipment and vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways.
- Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.
- All unpaved exits from the construction site shall be graveled or treated to prevent track-out to public roadways.
- All construction vehicles shall enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM.
- Construction areas adjacent to any paved roadway below the grade of the surrounding construction area or otherwise directly impacted by sediment from site drainage shall be provided with sandbags or other measures to prevent run-off to roadways.
- All paved roads within the construction site shall be swept daily (or less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.



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- At least the first 500 feet of any public roadway exiting from the construction site shall be swept as needed (or less during periods of precipitation) on days when construction activity occurs or any other day when dirt or runoff from the construction site is visible on the public roadways.
- All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or shall be treated with appropriate dust suppressant compounds.
- All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard.
- Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this measure/condition shall remain in place until the soil is stabilized or permanently covered with vegetation.

If visible dust plumes are observed that do not conform to the Primary Dust Control Objectives cited at the beginning of this section, the AQCMM or Delegate will implement the following procedures for additional mitigation measures:

- Step 1: The AQCMM or Delegate will direct more intensive application of the existing mitigation methods within 15 minutes of making such a determination.
- Step 2: The AQCMM or Delegate will direct implementation of additional methods of dust suppression if Step 1, specified above, fails to result in adequate mitigation within 30 minutes of the original determination.
- Step 3: The AQCMM or Delegate will direct a temporary shutdown of the activity causing the emissions if Step 2, specified above, fails to result in effective mitigation within one hour of the original determination. The activity shall not restart until the AQCMM or Delegate is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes will not result upon restarting the shutdown source. Note that Genesis Solar may appeal to the CPM any directive from the AQCMM or Delegate to shut down an activity, provided that the shutdown would go into effect within one hour of the original determination, unless overruled by the CPM before that time.

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Dust control may be achieved by applying water before/during earthwork and onto unpaved traffic areas, phasing work to limit dust, and setting up wind fences to limit wind blown dust. Treatment, such as watering dusty roads and dirt piles, and cleaning tires to prevent tracking are effective measures of fugitive dust prevention and control.

Prevention includes setting up systems that minimize dust creation and controlling dust at the source. Speed limits of 10 mph will be enforced on-site, and access roads will be paved with asphalt or laid with gravel to minimize dust generated by heavy equipment and vehicle traffic. Gravel is an attractive solution for temporary sites such as parking lots and laydown areas that will not be needed for operation and maintenance. Not only is gravel less costly than pavement, it also produces less runoff. Also, bulk storage and transport of soils will be covered to prevent wind-blow erosion of those sources.

As deemed necessary and in accordance with this plan, a non-toxic soil stabilizer which is equal to or better than the one attached to the end of this plan may be used.

Equipment Exhaust Emissions Controls

Exhaust from diesel-powered construction equipment contains regulated pollutants that will be emitted to the atmosphere. The permits for the Project include measures/conditions specifying the following requirements to minimize these emissions:

- All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCMM showing that the engine meets the conditions set forth herein.
- All construction diesel engines, which have a rating of 50 horsepower (hp) or higher and lower than 750 hp, shall meet, at a minimum, the Tier 3 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, section 2423(b)(1) unless a good faith effort to the satisfaction of the CPM that is certified by the on-site AQCMM demonstrates that such engine is not available for a particular item of equipment. Engines larger than 750 hp shall meet Tier 2 engine standards. In the event that a Tier 3 engine is not available for any off-road equipment larger than 50 hp and smaller than 750 hp, that equipment shall be equipped with a Tier 2 engine, or an engine that is equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides (NO_x) and diesel particulate matter (DPM) to no more than Tier 2 levels unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types. For purposes of this measure/condition, the use of such devices is “not practical” for the following, as well as other, reasons:

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1. There is no available retrofit control device that has been verified by either the California Air Resources Board or U.S. Environmental Protection Agency to control the engine in question to Tier 2 equivalent emission levels and the highest level of available control using retrofit or Tier 1 engines is being used for the engine in question; or
 2. The construction equipment is intended to be on-site for ten (10) days or less.
 3. The CPM may grant relief from this requirement if the AQCMM can demonstrate that they have made a good faith effort to comply with this requirement and that compliance is not practical.
- The use of a retrofit control device may be terminated immediately, provided that the CPM are informed within 10 working days of the termination and that a replacement for the equipment item in question meeting the controls required above occurs within 10 days of termination of the use, if the equipment would be needed to continue working at this site for more than 15 days after the use of the retrofit control device is terminated, if one of the following conditions exists:
 1. The use of the retrofit control device is excessively reducing normal availability of the construction equipment due to increased downtime for maintenance, and/or reduced power output due to an excessive increase in backpressure.
 2. The retrofit control device is causing or is reasonably expected to cause significant engine damage.
 3. The retrofit control device is causing or is reasonably expected to cause a substantial risk to workers or the public.
 4. Any other seriously detrimental cause which has the approval of the CPM prior to the termination being implemented.
 - All heavy earthmoving equipment and heavy-duty construction related trucks with engines meeting the above requirements shall be properly maintained and the engines tuned to the engine manufacturer's specifications.
 - All diesel heavy construction equipment shall not remain running at idle for more than five minutes, to the extent practical. Vehicles that need to idle as part of their normal operation (such as concrete trucks) are exempted from this requirement.



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- Construction equipment will employ electric motors when feasible.

DOCUMENTATION AND RECORD KEEPING

The AQCMM will use a checklist of the above requirements and the measures implemented to ensure compliance with each of the permitting requirements for suppression of air pollutant emissions during construction. The checklist will be completed and signed by the AQCMM or an AQCMM Delegate to confirm that attention has been given to each requirement on each day when emissions-generating construction activities may have occurred, either within the Project site or along the routes of linear facilities being constructed. An example checklist form is provided as Exhibit 1, Draft Checklist for Monitoring Construction Air Quality Mitigation Activities for GSEP. This form may be modified when actual construction monitoring commences to make it more readily usable.

On a monthly basis, the AQCMM will prepare the materials listed below to be included in the MCR to the CPM. Any deviation from the following measures will require prior notification and approval by the CPM.

- A written summary or checklist of all actions taken to maintain compliance with the dust control measures and emission control measures,
- Copies of any complaints filed with ICAPCD in relation to Project construction,
- A list of all heavy equipment used on site during that month, including the owner of that equipment and a letter from each owner indicating that the equipment has been properly maintained, and
- Any other documentation deemed necessary by the CPM and AQCMM to verify compliance with the restrictions listed in the Proposed Mitigation Measures section of this Plan. Such information may be provided via electronic format or disk at the Project owner's discretion.

In order to avoid excessive or redundant requirements, the AQCMM will coordinate with the CPM and the MDAQMD to consolidate the reporting requirements of all agencies as much as possible.



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Exhibit 1, Draft Checklist for Monitoring Construction Air Quality Mitigation Activities for GSEP

| Date: | Project | AQCMM On Duty |
|----------------------|---|---------------------------------|
| Circle One | | |
| Yes No | Unpaved roads have been wetted once today (AQ-SC3:a, AQ-SC4) | |
| Yes No | Open soil piles have been wetted once today (AQ-SC3:a) | |
| Yes No | Soil piles not in use are covered (AQ-SC3:l) | |
| Yes No | Wind erosion control techniques (e.g., windbreak, water) are maintained (AQ-SC3:n) | |
| Yes No | Vehicles maintained 10 mph or under within construction site (AQ-SC3:c) | |
| Yes No | Posted speed limit signs visible (AQ-SC3:d) | |
| Yes No | Conducted visual check for dust plumes (AQ-SC4) | |
| Yes No | Conducted monitoring for PM ₁₀ (weekly) (AQ-SC5) | Test Date: <input type="text"/> |
| Yes No | Tire cleaning station is set up and construction equipment vehicle tires are consistently inspected and cleaned as necessary to be free of dirt prior to entering paved roadways (AQ-SC3:e) | |
| Yes No | Tire cleaning station gravel ramps are maintained and at least 20 feet in length (AQ-SC3:f) | |
| Yes No | All unpaved construction exits from linear laydown and substation construction areas are graveled or treated and maintained (AQ-SC3:g) | |
| Yes No | All construction vehicles are entering linear laydown areas and substation construction site through the treated entrance roadways (AQ-SC3:h) | |
| Yes No | The first 500 feet of any paved public roadway exiting from the project areas is free of dirt or runoff (AQ-SC3: k) | |
| Yes No | Construction vehicles that transport solid bulk material (that may cause visible emissions) on public roadways are covered, or the materials are wetted (AQ-SC3:m) | |
| Yes No | Paved roads within the construction site are free of accumulation of dirt and debris (AQ-SC3:j) | |
| Yes No | All construction vehicles display the AQCMM diesel fuel emissions control tag (AQ-SC5:a) | |
| Time: Observation | | |
| Action | | |
| Result | | |
| Time: Observation | | |
| Action | | |
| Result | | |



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Abbreviations and Acronyms:

AQCMM – Air Quality Construction Mitigation Manager
 mph – miles per hour
 ppm – parts per million

Exhibit 2, Sample Checklist Use

| | | | | | |
|--|-----------------------------|--|------|---------------|-----------|
| Date: | January 12, 2011 | Project | GSEP | AQCMM On Duty | Joe Smith |
| Circle One | | | | | |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Unpaved roads have been wetted once today | | | |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Open soil piles have been wetted once today | | | |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Soil piles not in use are covered | | | |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Conducted visual check for dust plumes | | | |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Conducted monitoring for PM ₁₀ (weekly) | | Test Date: | 01/12 |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Tire wash station is set up | | | |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | Speed limit signs still visible | | | |
| Time: 7:30 am | | | | | |
| Observation: Soil piles on sites not covered with tarp | | | | | |
| Action: Directed cover-up with tarps and secure with stakes | | | | | |
| Result: Prevention of dust formation from piles | | | | | |
| Time: 8:30 a 10:00 a 3:00 p | | | | | |
| Observation: Dust plume from haul truck extends to freeway (more than 200') | | | | | |
| Action: Directed additional watering. When plume was again sighted near trucks, ordered watering frequency to be increased to 3x/day | | | | | |
| Result: Plume is put down. Continued to form throughout the day, despite increased watering. | | | | | |
| Time: | | | | | |
| Observation: | | | | | |
| Action: | | | | | |
| Result: | | | | | |



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SOIL STABILIZER MATERIAL SAFETY AND DATA SHEET



Field Application Methods

Dust Control (Driving Surface Areas)

This application method is intended to provide a solution for areas requiring dust control where traffic is present and for protecting soil from wind erosion. This type of application is not intended for soil stabilization use. During times of extensive vehicular use it may be desirable to apply maintenance applications (frequency of applications dependent on volume of usage). Maintenance application will be at lower application rates and less and less frequency over time. DustLess™ does not dry out, wash out, evaporate, or harden, remaining in the soil for extended periods of time. This means eventually all of the loose particles will become treated over time.

Recommended Application Rates (per surface acre)

A minimum of 400 gallons of DustLess™ per surface acre for normal traffic areas. Increased application rates may be required for traffic extremes or extremely deep, persistent dust, high clay content, etc (see *DustLess Lifespan* document for details on the variables).

Recommended Application Method(s)

DustLess may be applied with a tank and pump, hydroseeder, water tanker, tank and gravity feed drip bar, or similar equipment - sized appropriately for the size of the application area.

DirtGlue Enterprises, © 2006

Material Safety Data Sheet

I. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION



DirtGlue Enterprises
83 Middle Road, Amesbury, MA 01913
Emergency Telephone Number: 888 606-6108

PRODUCT NAME: DustLess™
MSDS NUMBER: DLI210-08
EFFECTIVE DATE: December 10, 2008
TRADE NAME: DustLess™
CHEMICAL NAME: N/A

2. COMPOSITION

Blend of severely hydrotreated branched alkanes and alkylated organic compounds
Aromatic Carbon (Ca): 0%, Paraffinic Carbon (Cp): 63-69%, Alkylated organics (Cn): 31-37%

FORMULA: Non-hazardous, organic blended dust suppressant

3. HAZARD IDENTIFICATION

Non-Hazardous.

Prolonged exposure may cause skin irritation, drying, and/or cracking.

Prolonged exposure to mist may cause eye irritation, redness, swelling.

Ingestion hazard is nonexistent for small quantities.

Extreme overexposure or consumption of large quantities may cause diarrhea.

4. FIRST AID

Eyes: flush with water
Skin: flush with water,
Inhaled: breathe fresh air,
Ingested: drink water, call physician, do not induce vomiting.

5. FIRE SAFETY MEASURES

Flash point 351°F (177°C). OSHA Flammability Class: Not applicable.

This material may burn but will not ignite easily. Use dry chemical, carbon dioxide, foam or water spray for firefighting.

The products of degradation are less toxic than the product itself. These products are carbon oxides and water.

MATERIAL SAFETY DATA SHEET (pg. 2 of 3)

6. ACCIDENTAL RELEASE

Contain spill, absorb with sand, clay, etc. Keep sources of ignition away. Dispose of in accordance with local disposal regulations for non-hazardous material. Floor may be slippery. Do not cut, grind, or weld empty containers that have contained this product unless and until thoroughly cleaned. Clean-up crews should wear protective gear (gloves, long sleeves, goggles, masks, etc).

7. HANDLING & STORAGE

Keep covered, sealed, store in cool dry location. Use with adequate ventilation. Do not use near fire or flame.

8. EXPOSURE CONTROL & PERSONAL PROTECTION

| | |
|-------------------------|--|
| Respiratory protection: | None required for most operations. If respiratory irritation is experienced, use an air-purifying respirator |
| Ventilation: | Good general ventilation should be sufficient for most conditions |
| Eye protection: | Chemical goggles or full face shields |
| Skin protection: | Chemically impervious gloves. |

Storage and handling facilities should have a water source available for washing skin and eyes in the event of exposure.

9. PHYSICAL & CHEMICAL PROPERTIES

| | |
|--------------------|---------------------|
| BOILING POINT: | 510°F (266°C) |
| AUTOIGNITION TEMP: | 670°F (354°C) |
| VAPOR PRESSURE: | <1 mm Hg |
| SPECIFIC GRAVITY: | 0.83-0.89 |
| SOLUBILITY: | Insoluble |
| VOLATILITY: | Nil |
| APPEARANCE: | Watery clear liquid |
| ODOR: | None |
| pH: | Not Applicable |

10. STABILITY & REACTIVITY

Stable, non-reactive, non-corrosive, non-oxidizer, non-hazardous
Avoid contact with strong oxidizing agents

11. TOXICOLOGICAL INFORMATION & EFFECTS OF OVEREXPOSURE

Non-toxic, may be slight eye irritant, may cause slight skin irritation, extreme inhalation or ingestion may cause nausea or diarrhea.

Under normal use, testing on rats and rabbits has shown this product to be non-toxic and non-hazardous.

- Oral Toxicity (rats): Practically non-toxic [LD50 greater than 2000mg/kg]
- Dermal Toxicity (rabbits): Practically non-toxic [LD50 greater than 2000mg/kg]
- Inhalation Toxicity (rats): Non applicable – harmful concentrations of mist or vapor are unlikely through any customary or reasonably foreseeable handling or use of this product.

MATERIAL SAFETY DATA SHEET (pg 3 of 3)

The components of this product:

- a. Do not require OSHA Hazard cancer warning
- b. Not listed on the National Toxicology Program Annual Report
- c. Not classified by IARC as carcinogens
- d. Not classified by ACGIH as suspected human or animal carcinogens
- e. Contain no components on any of the following regulatory lists:
IARC, NTP Carcinogen, EPCRA CA Prop 65, MA RTK, NJ RTK, PA RTK

12. ECOLOGICAL INFORMATION

Product does not bioaccumulate. Products of degradation are carbon oxides and water. The products of degradation are less toxic than the product itself.

ECOTOXICITY

This material is not harmful to aquatic organisms.

BIOCONCENTRATION INFORMATION

This material is not readily biodegradable.

13. DISPOSAL

Absorb spills with sand or clay. Dispose of waste as per local regulations for non-hazardous material.

14. TRANSPORT INFORMATION

D.O.T. HAZARD CLASSIFICATION: None, Non-regulated.

TDG CLASSIFICATION: None, Not regulated.

IATA CLASSIFICATION: None, Not Regulated.

IMOC: None, Not regulated.

15. REGULATIONS

HAZARDOUS SUBSTANCE PER 40CFR 116:

None

D.O.T. PLACARDS:

None required

POISON CONSTITUENT PER 40CFR 173:

None

UN/NA CODE:

Not applicable

REPORTABLE QUANTITY:

Not applicable

OSHA HAZARD CLASS:

Non OSHA hazardous per
29CFR 1910

EPA SARA TITLE III:

None

ODS (40CFR82 Clean Air Act)

None

NON RESTRICTED FOR INTERNATIONAL ROAD, AIR, SEA TRANSPORT (NO IATA#)

16. OTHER INFORMATION

| |
|----------------------------|
| <u>Hazard Rating Scale</u> |
|----------------------------|

0 = insignificant, 1 = slight, 2 = moderate, 3 = high, 4 = extreme

HMIS HAZARD RATINGS: Reactivity = 0, Flammability = 1, Health = 1

Heavy Duty Driving Surfaces (mixed in to a depth of not more than two inches) – per surface acre

3,000 gallons (0.07 gal/sq ft) of DirtGlue polymer emulsion
(plus 300 gallons (0.007 gal/sq ft) for optional sealer coat)
Dilute DirtGlue at a ratio of 1:1 1/2 to 1:2 1/2 (one part of DirtGlue to 1/1/2 to 2 1/2 parts of water)

Example: dilution ratio 1:2 = 9,000 gallons of total liquid to be applied per surface acre

This application method is intended to provide a solution for areas with normal traffic requirements such as:

| | | |
|---------------|----------------------------|-----------------------|
| Private Roads | Storage Yards | Golf Cart Paths |
| Parking Lots | Construction Staging Areas | Walkways & Foot Paths |
| Driveways | Access & Haul Roads | Patios & Picnic Areas |

Temporary or Light Duty Driving Surfaces – (mixed in to a depth of not more than two inches) – per surface acre

1,500 gallons (0.035 gal/sq ft) of DirtGlue polymer emulsion
(plus 300 gallon (0.007 gal/sq ft) for optional sealer coat)
Dilute DirtGlue at a ratio of 1:2 to 1:3 (one part of DirtGlue to 2 to 3 parts of water)

Example: dilution ratio 1:3 = 4,800 gallons of total liquid to be applied per surface acre

This application method is intended to provide a solution for areas with light traffic or very temporary paving requirements such as:

| | |
|-----------------------------------|------------------------------|
| Temporary Construction Site Areas | Temporary Construction Roads |
| Temporary Access Roads | Temporary Storage Areas |

Upon purchase of DirtGlue polymer emulsion, detailed information will be provided on the application process and equipment needed.

DirtGlue Enterprises, ©2008

Material Safety Data Sheet

I. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION



DirtGlue Enterprises
83 Middle Road, Amesbury, MA 01913
Emergency Telephone Number 888 606-6108

PRODUCT NAME: DirtGlue® polymer emulsion
MSDS NUMBER: 0102 - 10
EFFECTIVE DATE: January 1 2007.
TRADE NAME: DirtGlue®.
CHEMICAL NAME: Aqueous Acrylate Polymer Emulsion.

2. COMPOSITION

| | | |
|---------------------------|----------------------------|-------------|
| Aqueous Acrylate Polymer; | CAS REG No: Non-Hazardous, | % WT: > 40. |
| Water; | CAS REG No: 7732-18-5, | % WT: < 57. |
| Aqueous ammonia | CAS REG No: 1336-21-6, | % WT: < 01. |
| Additive (proprietary) | CAS REG No: Non-Hazardous, | %WT: < 03. |

FORMULA: Aqueous Acrylate based Polymer Emulsion.

3. HAZARD IDENTIFICATION

Non-Hazardous.

MATERIAL SAFETY DATA SHEET (pg. 2 of 4)

4. FIRST AID

Eyes: flush with water, Skin: flush with water,
Inhaled: breath fresh air, Ingested: drink water, call physician.

5. FIRE SAFETY MEASURES

Non-combustible, non-explosive.

6. ACCIDENTAL RELEASE

Contain spill, absorb with sand, clay, etc. Dispose of in accordance with local disposal regulations for non-hazardous material. Floor may be slippery.

7. HANDLING & STORAGE

Keep covered, sealed, store in cool dry location, avoid freezing.

8. EXPOSURE CONTROL & PERSONAL PROTECTION

Respiratory; none required with adequate ventilation.
Eyes; goggles for possible splash, Skin; impervious gloves.

Storage and handling facilities should have water available for washing of skin and flushing eyes if necessary due to exposure or splash.

MATERIAL SAFETY DATA SHEET (pg 3 of 4)

9. PHYSICAL & CHEMICAL PROPERTIES

| | |
|--------------------------|------------------------|
| BOILING POINT: | 212 F or 100 C. |
| VAPOR PRESSURE: | 17mm Hg @ 20C. |
| SPECIFIC GRAVITY: | 1.01-1.18 |
| DILUTABILITY: | Dilutable in water |
| pH: | 7 - 9 |
| APPEARANCE: | Watery whitish liquid. |

10. STABILITY & REACTIVITY

Stable, non-reactive, non-corrosive, non-oxidizer, non-hazardous.

11. TOXICOLOGICAL INFORMATION & EFFECTS OF OVEREXPOSURE

Non-diluted: eye irritant, may cause slight skin irritation, extreme inhalation may cause nausea or vomiting.

12. ECOLOGICAL INFORMATION

No applicable data (n/a)

13. DISPOSAL

Absorb with sand or clay. Dispose as per local regulations for non-hazardous material.

MATERIAL SAFETY DATA SHEET (pg 4 of 4)

14. TRANSPORT INFORMATION

D.O.T. HAZARD CLASSIFICATION: None, Non-regulated.

15. REGULATIONS

HAZARDOUS SUBSTANCE PER 40CFR116: None.

D.O.T. PLACARDS: None required.

POISON CONSTITUENT PER 40CFR173: None.

UN/NA CODE: Not applicable.

REPORTABLE QUANTITY: Not applicable.

OSHA HAZARD CLASS: Non OSHA hazardous per 29CFR1910.

EPA SARA TITLE III: None.

NON RESTRICTED FOR INTERNATIONAL ROAD, AIR, SEA
TRANSPORT (NO IATA#)

16. OTHER INFORMATION

Hazard Rating Scale

0 = insignificant

1 = slight

2 = moderate

3 = high

4 = extreme

HMIS HAZARD RATINGS: Reactivity = 0, Flammability = 0, Health = 1