AUTHORITY TO CONSTRUCT ENGINEERING EVALUATION

Reviewed by: _____
Title: APCO KCAPCD
Date: 2/2/2012

Applicant: **Sierra Sands Unified School District**
Mailing Address: 113 Feldspar Avenue
Ridgecrest, CA 93555

Contact Name: Ms. Elaine Janson, Superintendent
Phone Number: (760) 499-1600 Fax Number: (760) 375-4562

Application No.: 0449001 Project #: 110815

Location: 500 East French Avenue, Ridgecrest (Burroughs High School)
QS/T/R: S: 34, T: 26S, R: 40E

Project Title: Fire Sprinkler Booster Pump

App. Rec.: 8/15/11 Deemed Complete:
180 Days: 2/15/11 Submittal Date:

Evaluation By: Julie Damo, AQE II

Project Contents:

I. PROPOSAL:

Sierra Sands Unified School District proposes installation of a 75 kilowatt emergency fire sprinkler booster pump driven by a 101 brake horsepower diesel-fueled piston engine

II. APPLICABLE RULES and REGULATIONS:

The following rules and regulations are potentially applicable to the project. Applicability and expected rule compliance are summarized in Section IX of this report.

Rule 210.1 New and Modified Stationary Source Review (Amended 5/4/00)

a) Provides for pre-construction review of new and modified stationary sources of affected pollutants to insure emissions will not interfere with the attainment of ambient air quality standards.
b) Insures that appropriate new and modified sources of affected pollutants are constructed with Best Available Control Technology, and
c) Provides for no significant net increase in emissions from new and modified stationary sources for all non-attainment pollutants and their precursors.

Rule 401 Visible Emissions (Amended 11/29/93)
Limits visible emissions to less than 20% opacity except for three minutes in any one-hour

Rule 404.1 Particulate Matter Concentration (Adopted 4/18/72 Renumbered 5/89)
A person shall not discharge from any single source operation, the construction or modification of which commenced after the adoption of this rule, particulate matter in excess of 0.1 grains per cubic foot of gas at standard conditions.

Rule 407 Sulfur Compounds (Adopted 4/18/72)
Limits the concentration of sulfur discharged into atmosphere at standard conditions

Rule 419 Nuisance (Amended 4/18/72)
A person shall not discharge from any source whatsoever such quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property.

Rule 427 Stationary Piston Engines (Oxides of Nitrogen) (Amended 5/4/00)
Limits oxides of nitrogen to levels consistent with Reasonably Available Control Technology. Applicable to rich-burn, lean-burn and diesel engines of more than 50 rated brake horsepower. Limits carbon monoxide emissions to insure maintenance of efficient combustion at reduced NO_X levels.

California Health and Safety Code (CH&SC), Section 41700 (Health Risk Assessment
Requires examination of potential health impacts on surrounding community if hazardous air pollutants are emitted.

California Code of Regulations (CCR), Title 17, Section 93115 (Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines)
Reduces diesel particulate matter and criteria pollutant emissions from stationary diesel-fueled compression ignition (CI) engines

California Code of Regulations (CCR), Title 17, Section 93116 (Airborne Toxic Control Measure) (ATCM) for Portable Compression Ignition Engines)
Reduces diesel particulate matter and criteria pollutant emissions from portable diesel-fueled compression ignition (CI) engines

III. EQUIPMENT SCHEMATIC: See Application Package

IV. EQUIPMENT LISTING:

Only one set of equipment will be installed for this project.

EQUIPMENT DESCRIPTION: 75 kilowatt Fire Sprinkler Booster Pump Driven by 101-bhp Diesel Piston Engine, including following equipment and design specifications:

75 kilowatt fire sprinkler booster pump driven by 101-bhp, 2100 rpm Clarke JU4H-UFAD4G diesel piston engine equipped with turbocharger.

V. ENGINEERING ANALYSIS:

CALCULATIONS

Engines are a source of criteria pollutants and hazardous air pollutants from diesel fuel combustion. The criteria pollutants are PM-10, oxides of sulfur and nitrogen, volatile organic compounds and carbon monoxide. Federal and state ambient air quality standards have been established for criteria pollutants. No state or federal standards have been established for hazardous air pollutants (HAP) but HAP emissions are associated with acute, chronic and carcinogenic health risks.

Emissions will be calculated using manufacturer's emission factors or emission factors from the Compilation of Air Pollutant Emission Factors: Volume I Stationary Point and Area Sources (EPA AP-42). Information from the Air Toxics "Hot Spots" program will be used to ascertain project's health impact to surrounding community. The Office of Environmental Health Hazard Assessment and the Air Resources Boards maintains a list of reference exposure levels for a variety of HAPs for acute, chronic and carcinogenic health risk. These RELs provide a means to estimate a project's health risk potential in terms of probability or chances in one million. Projects with values of less than one (in one million) for cancer risk and values less than 0.2 for acute/chronic non-cancer risk are not considered to pose a significant health risk. Maximum allowed hours of operation will be 800 hours per year, which was proposed by applicant.

Rule compliance calculations are usually performed to determine expected compliance with District rules limiting particulate matter and sulfur concentration. Particulate matter and sulfur concentration is typically not a concern with current diesel engine technology. Federal and state restrictions have been imposed on diesel engines to limit the amount of diesel particulate emitted. Additionally, restrictions on the amount of sulfur in diesel fuel have limited sulfur emissions.

CONTROLS

Engine is an EPA/ARB Certified Tier III engine, that is, the engine is guaranteed to meet established emission limitations pursuant to Title 17 California Code of Regulations §93115 on particulate matter, oxides of nitrogen, non-methane hydrocarbons and carbon monoxide.

Engine is equipped with a turbo-charger and crankcase ventilation, which are both standard equipment provided by the engine manufacturer. In the past, EKAPCD has required engines be retrofitted with crankcase ventilation for the purposes of compliance with Best Available Control Technology. A retrofit is not necessary.

Engine is an EPA/ARB Tier III Certified Engine. No sizing verification is required for engines used for emergency power.

VI. BACT DETERMINATION:

Engine is new (2010 model). Best Available Control Technology was determined in accordance with KCAPCD's official piston BACT policy. Oxides of nitrogen (NOx) BACT is satisfied with 2.8 grams-NOx per brake horsepower hour, which is less than maximum allowed emission factor of 5.8 grams-NOx per brake horsepower hour. Oxides of sulfur BACT is controlled through utilization of CARB diesel. Volatile organic compound (VOC) BACT is satisfied with crankcase ventilation, which is standard on the newer engines. Visible emissions shall be limited to 5% opacity or Ringelmann ¼ after engine achieves normal operating temperature.

VII. CEQA DETERMINATION:

KERN COUNTY APCD PERMITS - CEQA COMPLIANCE
Instructions for Checklist

This form is designed to be used by the permit application-processing engineer in implementing requirements of the California Environmental Quality Act (CEQA) for District permitting activities when the District is the lead or responsible agency under CEQA. The District is generally a responsible agency for portions of development projects requiring District permits. The District is a commenting agency for other parts of a project, such as, indirect source emissions and vehicle trips. Most District permits are considered exempt from CEQA (see District List of Exempt Projects). In most cases the environmental document prepared by the lead agency is adequate for the District permitting action. Certain District permit modifications may require supplemental CEQA documents.

CEQA compliance for a project subject to District permit requirements includes two steps:

A. Determining what CEQA-related information, if any, is required from the applicant to deem the application complete (this may also be identified at the pre-application stage, if there is one[1]).

B. Determining and documenting CEQA compliance for each permit application prior to granting a permit by completing the attached form.

The following instructions correspond to the questions on the form:

B.2. Projects subject to District permits often also require a land use or other permit from other agencies. The permit engineer should check the application or request from the applicant information regarding what other agencies will be requiring permits for the project and who the "Lead Agency" will be. The District permit processing should begin as soon as adequate information is available to deem the application complete, even if the lead agency has not completed the environmental document (Govt. Code ' 65941 (b), amended 1993), and if the applicant so requests (Govt. Code ' 65951, amended 1993).

B.3. For District permits that do not fall under the preceding cases, the engineer shall receive from the applicant a signed and dated environmental questionnaire (Initial Study checklist).

C.2. As a "responsible agency" under CEQA, the Control Officer shall consider information contained in the lead agency's final EIR or ND prior to granting the District permit. Acting on behalf of the Control Officer, the engineer shall review the ND or EIR and adopt any mitigation measures for air quality impacts or project alternatives over which the District has regulatory discretion.

C.3. If any component of the project is not listed, and if exceptions to these exemptions provided in the form are true, then the project cannot be considered exempt. In making a recommendation to issue the District permit, the permit engineer shall review the environmental questionnaire provided by the applicant to establish the project has no potential for resulting in a significant adverse environmental impact to any environmental media (see Initial Study form). The study shall also demonstrate the project will not contribute to significant cumulative impacts and will not have significant impact itself. Although no further action is required under CEQA, the applicant may request a Notice of Exemption to be filed, to reduce the statute of limitations from 180 days to 30 days, on challenges to the decision the project is exempt from CEQA.

[1] *Preapplication under PRC ' 21080.1(b) amended 1993-at the request of the applicant the lead agency must provide for pre-application consultation on the environmental document.*

KERN COUNTY APCD PERMITS -- CEQA COMPLIANCE CHECKLIST

Completeness Review Form

This form shall be completed by the permit application engineer for all Authority to Construct permit applications. The completed form shall be included in the Engineering Evaluation File.

A. General Information

Application Number: 0449001
Applicant Name: Sierra Sands Unified School District
Project Description: Emergency Sprinkler Booster Pump

B. Determination of Completeness

Check the corresponding action to be taken to determine the application is complete for CEQA purposes and fill in blanks where appropriate.

1. Ministerial Exemption

___This permit application is not subject to CEQA because the evaluation is a ministerial action conducted using fixed standards and objective measurements. No discretion or judgment is required in granting of this permit.

2. Project Was Exempted by or is Subject to Negative Declaration or EIR by Another Agency

___This permit application was exempted by or is subject to a ND or EIR prepared (or under preparation) by another agency. The District has received the necessary information indicating another agency is acting as the Lead Agency. Therefore, the application shall be deemed complete for CEQA purposes.

3. All Other Permits

X The District has received from the applicant, a completed, signed and dated environmental questionnaire and any other information necessary for preparing a negative declaration or EIR, if required (see Form Instructions B.3.). Therefore, the application shall be deemed complete for CEQA purposes.

C. Final Action

Check the appropriate action taken by the APCO prior to issuing the final permit.

1. Ministerial Action

___This permit application is exempt from CEQA because the permit evaluation is a ministerial action. CEQA does not apply to ministerial actions. No further action is necessary.

2. Project Was Exempted by or is Subject to Negative Declaration or EIR by Another Agency

___This permit application was exempted by or was subject to an EIR or Negative Declaration by another agency. The final action on the District permit was taken only after review and consideration of information in the certified CEQA document by the Control Officer, or authorized District representative of the Control Officer.

3. Exemption

X This permit application is exempt from CEQA because the project, as a whole, is listed in the District List of Exempt Projects AND because the project has no potential for causing a significant adverse environmental impact. A General Exemption under CEQA Section 15061 (b)(3) applies if the project is not listed in the District Exemption List AND it can be seen with certainty the project will not have a significant adverse effect on the environment. In making this determination,

a. A review of information submitted by the applicant has been conducted indicating there is no potential for a significant adverse environmental impact on any environmental media from the project;
b. Emissions offsets were not required by KCAPCD Rule 210.1, Subsection III.B.;
c. Recognized Best Available Control Technology (BACT) was proposed; and
d. No unusual circumstances such as location, or cumulative impacts from successive projects of the same type in the same place over time, were determined to result in significant adverse environmental impacts.

4. Permit is Not Exempt from CEQA

___This permit was found not to be exempt from CEQA and no other agency will be conducting a CEQA review for the project. The District has prepared and adopted a Negative Declaration/Addendum or certified an EIR for the project. The final action by the District was taken only after information contained in the final EIR or ND was considered and any significant adverse environmental effects were mitigated to the maximum extent feasible.

KERN COUNTY AIR POLLUTION CONTROL DISTRICT

ENVIRONMENTAL INFORMATION FORM AND INITIAL STUDY EVALUATION

Applicant: Sierra Sands Unified School District
Contact: Elaine Wamsley
Title: Asst. Superintendent **Phone:** (760) 499-1613
Project Description: Fire Sprinkler Booster Pump Burroughs HS.

Environmental Information	**Yes**	**No**	**Maybe**
Will the proposed project with regard to the proposed location:			
a. Conflict with the adopted environmental plans and goals of the community?	[ ]	[X]	[ ]
b. Have a substantial, demonstrable negative aesthetic effect?	[ ]	[X]	[ ]
c. Substantially affect a rare or endangered species of animal or plant or the habitat of the species?	[ ]	[X]	[ ]
d. Interfere substantially with the movement of any resident or migratory fish or wildlife species?	[ ]	[X]	[ ]
e. Substantially diminish habitat for fish, wildlife or plants?	[ ]	[X]	[ ]
f. Breach published national, state, or local standards relating to solid waste or litter control?	[ ]	[X]	[ ]
g. Substantially degrade water quality or contaminate a public water supply?	[ ]	[X]	[ ]
h. Substantially degrade or deplete ground water resources or interfere substantially with ground water recharge?	[ ]	[X]	[ ]
i. Disrupt or adversely affect a prehistoric or historic archeological site or a property of historic or cultural significance to a community or ethnic or social group; or a paleontological site except as part of scientific study?	[ ]	[X]	[ ]
j. Induce substantial growth or concentration of population?	[ ]	[X]	[ ]
k. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system?	[ ]	[X]	[ ]
l. Displace a substantial number of people?	[ ]	[X]	[ ]
m. Encourage activities which result in the use of large amounts of fuel, water or energy?	[ ]	[X]	[ ]
n. Use fuel, water or energy inefficiently?	[ ]	[X]	[ ]

o. Increase substantially the ambient noise level for adjoining areas?	[ ]	[X]	[ ]
p. Cause substantial flooding, erosion or siltation?	[ ]	[X]	[ ]
q. Expose people or structures to major geologic hazards?	[ ]	[X]	[ ]
r. Extend a sewer trunk line with capacity to serve new development?	[ ]	[X]	[ ]
s. Disrupt or divide the physical arrangement of an established community?	[ ]	[X]	[ ]
t. Create a potential public health hazard or involve the use, production, or disposal of materials which pose a hazard to people or animal or plant populations in the area affected?	[ ]	[X]	[ ]
u. Conflict with established recreational, educational, religious or scientific uses?	[ ]	[X]	[ ]
v. Convert prime agricultural land to non-agricultural use or impair the agricultural productivity of prime agricultural land?	[ ]	[X]	[ ]
w. Interfere with emergency response or evacuation plans?	[ ]	[X]	[ ]
x. Violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations?	[ ]	[X]	[ ]

NOTE: Please attach any pertinent explanatory information.

CERTIFICATION:

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

Signature: _____ **Date:** 8/9/11

VIII. EMISSION CALCULATIONS:

A. ASSUMPTIONS:

1. Emissions factors for particulate matter with an aerodynamic diameter of 10 (PM-10), oxides of nitrogen (NOx), volatile organic compounds as hydrocarbons (VOC as HC) and carbon monoxide (CO) were obtained from manufacturer.
2. Particulate matter consists of 100% PM-10.
3. Oxides of sulfur (SO_x) emissions based on equation listed in US EPA AP-42, Table 1.3-1, Criteria Pollutant Emission Factors for Fuel Oil Combustion: 142S lb/1000 gallons, where "S" is sulfur content weight percent.
4. The sulfur content is 15 parts per million or 0.0015.
5. Fuel use is 8.1 gallons per hour, which was provided by manufacturer.

B. CALCULATIONS:

PM-10

101 bhp * 0.11 gm/bhp-hr * (1/453.6) lb/gm =	**0.024**	***lb/hr***
0.024 *lb/hr* * 24 *hrs/day* =	**0.576**	***lb/day***
0.024 lb/hr * 200 hrs/yr * (1/2000) ton/lbs =	**0.002**	***ton/yr***

SOx

8.1 *gal/hr* *(142*0.0015)/1000 *lb/gal*	**0.002**	***lb/hr***
0.002 *lb/hr* * 24 *hrs/day* =	**0.048**	***lb/day***
0.002 *lb/hr* * 200 *hrs/yr* * (1/2000) *ton/lbs* =	**0.000**	**ton/yr**

NO_x

101 bhp * 2.80 gm/bhp-hr * (1/453.6) lb/gm =	**0.623**	***lb/hr***
0.623 *lb/hr* * 24 *hrs/day* =	**14.952**	***lb/day***
0.623 lb/hr * 200 hrs/yr * (1/2000) ton/lbs =	**0.062**	***ton/yr***

VOC as THC

101 bhp * 0.10 gm/bhp-hr * (1/453.6) lb/gm =	**0.022**	***lb/hr***
0.022 *lb/hr* * 24 *hrs/day* =	**0.528**	***lb/day***
0.022 lb/hr * 200 hrs/yr * (1/2000) ton/lbs =	**0.002**	***ton/yr***

CO

101 bhp * 0.50 gm/bhp-hr * (1/453.6) lb/gm =	**0.111**	***lb/hr***
0.111 *lb/hr* * 24 *hrs/day* =	**2.664**	***lb/day***
0.111 lb/hr * 200 hrs/yr * (1/2000) ton/lbs =	**0.011**	***ton/yr***

C. **POST-PROJECT CUMULATIVE NSR BALANCE AND SSPE:**
Emergency equipment is not required to be considered so the cumulative New Source Review Balance and Stationary Source Potential to Emit pursuant to Rule 210.1 will not be calculated.

IX. CONCLUSIONS:

Engine is a Tier III engine. Engine is clean burning and expected to meet all rules and regulations.

Rule 210.1 New and Modified Stationary Source Review (Amended 5/4/00)
a) Project's emissions will not interfere with the attainment of ambient air quality standards.
b) BACT for piston engine consists of 2.80 gm-NOx/bhp-hr, crankcase ventilation, CARB diesel and visible emission limited to no greater than Ringelmann ¼ or 5% opacity.
c) No offsets were triggered.

Rule 401 Visible Emissions (Amended 11/29/93)
Visible emissions are limited to no greater than Ringelmann ¼ or 5% opacity after engine achieves normal operating temperature. Compliance is expected.

Rule 404.1 Particulate Matter Concentration (Adopted 4/18/72 Renumbered 5/89)
Particulate matter concentration from Tier III certified engines are expected to emit less than 0.1 grains per standard cubic feet. Compliance is expected.

Rule 407 Sulfur Compounds (Adopted 4/18/72)
California has established diesel sulfur content regulatory standard of 15 parts per million or 0.0015 % sulfur, which is less than maximum allowed of 0.2%. Compliance is expected.

Rule 419 Nuisance (Amended 4/18/72)
No nuisance is expected from emergency fire sprinkler pump.

Rule 427 Stationary Piston Engines (Oxides of Nitrogen) (Amended 5/4/00)
Applicant is exempt from rule pursuant to Section IV.B. Engine shall be required to be equipped with an operational elapsed time meter. Compliance is expected.

California Health and Safety Code (CH&SC), Section 41700 (Health Risk Assessment)
Facility prioritization was performed for project since engine is for emergency use only. Total adjusted carcinogenic and non-carcinogenic scores are less than 0.02and 0.002, respectively, for a receptor proximity of 500 meters.

California Code of Regulations (CCR), Title 17, Section 93115 (Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines)
Since equipment is Tier III-certified, compliance with Regulation is expected. Maintenance and testing shall be limited to 50 hours per year. Compliance is expected.

X. RECOMMENDATIONS:

Issue Authority to Construct 0449001 with following conditions:

EQUIPMENT DESCRIPTION: 75 kilowatt Fire Sprinkler Pump Powered by a Generator Driven by 101-bhp Diesel Piston Engine, including following equipment and design specifications:

75 kilowatt fire sprinkler pump powered by a generator driven by 101-bhp, 2100 rpm Clarke JU4H-UFAD4G diesel piston engine equipped with turbocharger.

DESIGN CONDITIONS:

a. Engine shall be equipped with turbocharger. (Rule 210.1 BACT Requirement)
b. Elapsed time meter shall be installed and maintained indicating cumulative hours of engine operating time. (Rule 210.1)

OPERATIONAL CONDITIONS:

1. Total hours of operation shall not exceed 200 hours per year without prior District approval (Rule 210.1)
2. Hours of operation for maintenance and testing shall not exceed 50 hours per year. (Title 17 CCR Section 93115)
3. Fuel for diesel piston engine shall conform to California Air Resources Board standards for reformulated diesel fuel. (Rule 210.1 BACT Requirement)
4. Visible emissions shall not exceed Ringelmann No. ¼ or 5% opacity after engine achieves normal operating temperature. (Rule 210.1 BACT Requirement)
5. Exhaust gas particulate matter concentration shall be no more than 0.1 gr/scf. (Rule 404.1)
6. Sulfur compounds emissions shall be no more than 0.2% (2,000 ppmv) calculated as sulfur dioxide (SO2). (Rule 407)
9. Equipment shall be maintained according to manufacturer's specifications to ensure compliance with emission limitations. (Rules 209 and 210.1)
10. Compliance with all operational conditions shall be verified by appropriate recordkeeping, including records of operational data needed to demonstrate compliance. Such records shall be kept on site in readily available format. (Rule 209)
11. Operating record of this equipment shall be maintained, kept for minimum of two years, and made available upon request of District personnel. Record shall include, at minimum, hours of operation, amount of fuel oil supplied to this engine, date(s), and check(s). (Rules 209 and 210.1)
12. No emission resulting from the use of this equipment shall cause injury, detriment, nuisance, annoyance to or endanger comfort, repose, health, or safety of any considerable number of persons or public. (Rule 419 and CH&SC Sec 41700)

EMISSION LIMITS:

Maximum emission rate of each air contaminant from this emission unit shall not exceed following limits:

Particulate Matter:

0.11 g/bhp-hr (Title 17 CCR § 93115)
0.02 lbm/hr (of PM_{10})
0.58 lbm/day (of PM_{10})

	0.002 ton/yr (of PM_{10})
Sulfur Oxides (as SO_2):	0.002 lbm/hr 0.05 lbm/day
Oxides of Nitrogen (as NO_2):	2.80 g/bhp-hr (Rule 210.1, BACT Requirement) 0.62 lbm/hr 14.92 lbm/day 0.06 ton/yr
Volatile Organic Compounds (VOC):	0.02 lbm/hr 0.53 lbm/day 0.002 ton/yr
Carbon Monoxide:	0.11 lbm/hr 2.66 lbm/day 0.01 ton/yr

(Emission limits established pursuant to Rule 210.1, unless otherwise noted.)

01/24/2012 1:14 PM

Attachment A
Facility Prioritization

Sierra Sands **ATC** **0449001** **Project** **110815**

Diesel Exhaust Toxic Components

For engines < 600 bhp

Fuel Flow	8.1 *gal/hour*	AV, Fuel Consumption at 100% Load with Fan
#2 Diesel	0.019111 *MMBtu/lb*	HHV, Constant (Higher Heating Value)
Density	57.4 *lb/cu.ft*	ρ, Constant
Vol. Conv.	7.4805 *gal/cu.ft*	Conversion Constant
Fuel Flow	62.15359936 *lb/hr*	ρ*AV*Conv = mdot
Fuel Flow	1.187817437 *MMBtu/hr*	mdot*HHV
Yearly Use	200 *hrs/yr*	Applicant supplied

		Emission Factor	Emissions	
		lb/MMBtu	lb/hr	lb/year
	Acetaldehyde	7.670E-04	9.111E-04	0.182
	Acrolein	9.250E-05	1.099E-04	0.022
	1,3-Butadiene	3.910E-05	4.644E-05	0.009
	Benzene	9.330E-04	1.108E-03	0.222
*	Diesel Particulate	---	2.400E-02	4.800
	Formaldehyde	1.180E-03	1.402E-03	0.280
	Nitrogen Dioxide	---	0.623	124.600
PAH	Benz(a)anthracene	1.680E-06	1.996E-06	3.991E-04
PAH	Benzo(a)pyrene	1.880E-07	2.233E-07	4.466E-05
PAH	Benzo(b)flouranthene	9.910E-08	1.177E-07	2.354E-05
PAH	Benzo(k)flouranthene	1.550E-07	1.841E-07	3.682E-05
PAH	Chrysene	3.530E-07	4.193E-07	8.386E-05
PAH	Dibenz(a,h)anthracene	5.830E-07	6.925E-07	1.385E-04
PAH	Ideno(1,2,3-cd)pyrene	3.750E-07	4.454E-07	8.909E-05
PAH	Naphthalene	8.480E-05	1.007E-04	0.020
	Propylene	2.580E-03	3.065E-03	0.613
	Sulfur Dioxide (EF)	---	2.000E-03	0.400
	Sulfur Dioxide (ppm)		2.000E-03	0.400
	Toluene	4.090E-04	4.858E-04	0.097
	Xylene	2.850E-04	3.385E-04	0.068

Last Update: 10/96

Emission factors were obtained from EPA AP-42, Table 3.3-2, Speciated Organic Compound Emission Factors for Uncontrolled Diesel Engines. For engines greater than 600 bhp, refer to EPA AP42,

** Diesel particulate is not included in EPA table. Assume that diesel particulate is 100% PM-10*

Air Toxics "Hot Spots" Information and Assessment Act of 1987
Facility Prioritization Scores
Julie Damo

02-Feb-12

Name of Company:	**Sierra Sands**		
Facility Location:	**Burroughs High**		
Project Title	**Sprinkler Pump**		
Hours/Year Operation:	**200**	Stack Height:	
ATC:	**0449001**		
Project:	**110815**		
Data Entered By:	**Julie Damo**		
Reviewed By:			

LIFETIME EXPOSURE (70 YEARS)						
Proximity Factors (Meters, Scalar)	**Carcinogenic Scores**	**Non-Carcinogenic Scores**	**Facility Ranking**	**Carcinogenic Scores**	**Non-Carcinogenic Scores**	**Facility Ranking**
0 < R < 100 1.000	**2.46580**	**0.56282**	**Medium Priority**	2.43679	0.00000	**Medium Priority**
100 ≤ R < 250 0.250	0.61645	0.14071	**Low Priority**	0.60920	0.00000	**Low Priority**
250 ≤ R < 500 0.040	0.09863	0.02251	**Low Priority**	0.09747	0.00000	**Low Priority**
500 ≤ R < 1000 0.011	0.02712	0.00619	**Low Priority**	0.02680	0.00000	**Low Priority**
1000 ≤ R < 1500 0.003	0.00740	0.00169	**Low Priority**	0.00731	0.00000	**Low Priority**
1500 ≤ R < 2000 0.002	0.00493	0.00113	**Low Priority**	0.00487	0.00000	**Low Priority**
2000 < R 0.001	0.00247	0.00056	**Low Priority**	0.00244	0.00000	**Low Priority**

SITE SPECIFIC EXPOSURE						
Screening Adjustment Factor (Annual Exposure, hrs/hrs)	(Engine Hours/Total Hours in Year) =		0.006552511	Engine Hours = 200	Hours in Year = 8760	
Screening Adjustment Factor (Long-Term Exposure, yrs/yrs)	(Useful Life/Lifetime) =		0.571428571	Useful Life = 40	Lifetime = 70	
(Meters, Scalar)	**Carcinogenic Scores**	**Non-Carcinogenic Scores**				
0 < R < 100 1.000	0.0092	0.0021				
2000 < R 0.001	0.0000	0.0000	Site Specific Exposure Scores = Adjustment Factors * Lifetime Exposure Scores			

CONCLUSION

Carcinogenic and non-carcinogenic scores are less than 1.0 in one million. Facility ranking is low priority. Health risk assessment does not need to be performed.

Carcinogenic and non-carcinogenic values obtained from Consolidated Table of OEHHA/ ARB Risk Assessment Health Values 11/7/02

Air Toxics "Hot Spots" Information and Assessment Act of 1987
Kern County APCD
Last Update: April 2003

Company Name:	**Sierra Sands**		
Facility Location:	**Burroughs High**		
Project Title:	**Sprinkler Pump**		
Operating Hours/Year:	**200**	**Stack Height:**	
ATC:	**0449001**		
Project:	**110815**		
Data Entry By:			
Representing:	**Julie Damo**		
Emission Year:			

Substance	Annual Emissions (lbs/yr)	Maximum Hourly Emissions (lbs/hr)	Average Hourly Emissions (lbs/hr)	Unit Risk Carcinogenic		Unit Risk Chronic	Unit Risk Acute
Acetaldehyde	1.822E-01		9.111E-04	2.76E-06	c	9.00E+00	
Acrolein	2.197E-02		1.099E-04			6.00E-02	1.90E-01
1,3-Butadiene	9.289E-03		4.644E-05	1.70E-04	c	2.00E+01	
Benzene	2.216E-01		1.108E-03	2.90E-05	c	6.00E+01	1.30E+03
Diesel particulate	4.800E+00			3.00E-04		5.00E+00	
Formaldehyde	2.803E-01		1.402E-03	6.00E-06	c	3.00E+00	9.40E+01
Nitrogen dioxide	1.246E+02		6.230E-01			4.70E+02	4.70E+02
PAH's			0.000E+00		c		
Benz[a]anthracene	3.991E-04		1.996E-06	1.10E-04	c		
Benzo[a]pyrene	4.466E-05		2.233E-07	1.10E-03	c		
Benzo[b]fluoranthene	2.354E-05		1.177E-07	1.10E-04	c		
Benzo[k]fluoranthene	3.682E-05		1.841E-07	1.10E-04	c		
Chrysene	8.386E-05			1.10E-05			
Dibenz[a,h]anthracene	1.385E-04		6.925E-07	1.20E-03	c		
Indeno[1,2,3-cd]pyrene	8.909E-05		4.454E-07	1.10E-04	c		
Napthalene	2.015E-02					9.00E+00	
Propylene	6.129E-01		3.065E-03		c	3.00E+03	
Sulfur dioxide	4.000E-01		2.000E-03			6.60E+02	6.60E+02
Toluene	9.716E-02		4.858E-04			3.00E+02	3.70E+04
Xylenes (mixed isomers)	6.771E-02		3.385E-04			7.00E+02	2.20E+04