San Joaquin Valley
Air Pollution Control District

Guidelines for Expedited Application Reviews (GEAR)
Soil Decontamination Operations

Approved by: ___________________________
David Warner
Director of Permit Services

Date: __April 28, 2008__

Purpose: To outline the procedures for expedited processing of Authority to Construct (ATC) applications for soil decontamination operations. These procedures will apply to processing of applications received over the counter or through the mail.

I. Applicability

This policy applies to applications for Authority to Construct for new soil decontamination operations at facilities that emit no more than 10 tons/yr of volatile organic compounds (VOC) from the stationary source. (Note that decontamination activities at an existing facility should be logged into a separate stationary source).

II. Permit Application and Supplementary Forms

The applicant must complete a regular ATC application form and the Soil Decontamination supplemental application form.

III. Priority Processing

The applications will be processed on an expedited basis if the complete application, complete supplemental form, and filing fee for each permit unit are submitted. In order to meet the expedited time frame, the engineer assigned for preliminary review will deem the application complete (if appropriate), write the application review, and finalize the project. The application review and final ATC will be submitted to the lead engineer for review and signature.

Final action on all projects will occur within fourteen (14) days after the submittal of the complete application package.

The priority processing will be preempted if:

- The application is subject to any public noticing requirements, including school notice per CH&SC 42301.6 (within 1,000 ft of any K-12 school), or
- The application is part of a stationary source project where issuance of the permit will affect the outcome of the stationary source project.

**IV. Application Review**

In order to standardize the application reviews for this source category, the relevant standard application review templates found on the intranet will be used.

The hard copy version for the GEAR Policy Manual includes a copy of the required engineering evaluations with conditions and supplemental application form. The actual application review will include the Top-Down BACT analysis along with the BACT Guideline, a Health Risk Assessment (HRA), Emission Profile(s), and draft ATC(s).

The use of this standard application review will ensure:

A. That the proposed project complies with the Best Available Control Technology (BACT) requirements as specified in the District's current BACT Clearinghouse.
B. That the proposed project does not trigger offset requirements.
C. That the PTO has enforceable daily emissions limitations (DEL).
D. That the proposed project complies with all applicable prohibitory rules.

**VI. Authority to Construct Conditions**

To ensure uniformity, a standard set of conditions will be used as a base for all applications (see attached engineering evaluations). Additional requirements may be required on a site-specific basis.

**VII. Updates**

This GEAR will be updated as necessary to accommodate any changes in prohibitory rules, BACT Clearinghouse, cost information for the top-down analysis or other items affecting the policy. The Permitting Handbook will also be updated whenever this GEAR document is updated. Each update will be submitted to the GEAR coordinator for review, and the coordinator will forward the updates for the Director's approval.
Engineering Evaluation
(Thermal/Catalytic Oxidizer)
I. Proposal

Facility Name is applying for an Authority to Construct (ATC) permit for a soil remediation operation served by a thermal/catalytic oxidizer.

OR

Facility Name is applying for an Authority to Construct (ATC) permit to modify their soil remediation operation to (state the type of modification).

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (9/21/06)
Rule 2520 Federally Mandated Permits (6/21/01)
Rule 4101 Visible Emissions (2/17/05)
Rule 4102 Nuisance (12/17/92)
Rule 4201 Particulate Matter Concentration (12/17/92)
Rule 4301 Fuel Burning Equipment (12/17/92)
Rule 4305 Boilers, Steam Generators, and Process Heaters – Phase II (8/21/03)
Rule 4306 Boilers, Steam Generators, and Process Heaters – Phase III (3/17/05)
Rule 4651 Volatile Organic Compounds from Decontamination of Soil (9/20/07)
Rule 4801 Sulfur Compounds (12/17/92)
CH&SC 41700 California Health and Safety Code (Health Risk Assessment)
CH&SC 42301.6 California Health and Safety Code (School Notice)
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines
III. Project Location

The facility is located at location. The District has verified that the facility is located within 1,000 feet of the outer boundary of any K-12 school. Therefore, pursuant to CH&SC 42301.6, California Health and Safety Code (School Notice), public notification is required.

If located at existing stationary source

Although this operation is located at Facility Name and #, it is considered a different stationary source by virtue of it being a different process with a different SIC code.

IV. Process Description

The remediation system will consist of a vapor extraction blower and a thermal/catalytic oxidizer. The vapor extraction blower will remove gasoline vapors from the contaminated soil and convey a mixture of gasoline vapors and air to the thermal/catalytic oxidizer. The thermal/catalytic oxidizer will destroy at least 95% of the VOC in the process stream prior to discharge into the atmosphere.

Operating Schedule:

The operating schedule is [ ] hr/day, [ ] days/week, and [ ] weeks/year. The expected life of the project is [ ] years.

V. Equipment Listing

Thermal/Catalytic Oxidizer System:

Manufacturer: [ ]
Model #: [ ] in
Burner Rating: [ ] MMBtu or KVA
Supplemental Fuel: Natural Gas, LPG or Electric
Destruction Efficiency: [ ] % (District BACT requirement: 95%)
Residence Time: [ ] sec (0.5 sec is a minimum District requirement)
Stack Flowrate: [ ] scfm

Extraction Blower/Motor:

Power Rating: [ ] hp

C-XXXX-X-X: SOIL REMEDIATION PROJECT SERVED BY A XX.X MMBTU/HR [MANUFACTURER AND MODEL #] [NATURAL GAS/LPG]-FIRED THERMAL/CATALYTIC OXIDIZER
VI. Emission Control Technology Evaluation

**Thermal Oxidizer:**

During thermal oxidation, the temperature of the process stream is increased from ambient to 1400°F with the assistance of a natural gas/LPG fueled burner. The combustion chamber will be maintained at 1400°F. The heated gases are turbulently mixed with oxygen and retained for a minimum of 0.5 seconds in the combustion chamber to ensure maximum VOC incineration. The thermal oxidizer will operate with a destruction efficiency of at least 95%.

**Catalytic Oxidizer:**

The catalytic oxidizer utilizes a catalytic element installed downstream of the combustion chamber burners. The precious metals in the catalytic element will accelerate the oxidation process at a lower temperature than for thermal oxidation.

*(i) If a gaseous fuel burner is used to maintain the minimum temperature*

Natural gas/LPG will be used as a supplemental fuel when needed to maintain a combustion chamber temperature of 600°F. The natural gas/LPG fueled burner will be used to heat the VOC contaminated process stream from ambient temperature to 600°F before the process stream passes through the catalytic element. The catalytic oxidizer will operate with a destruction efficiency of at least 95%.

*(ii) If an electric heating element is used to maintain the minimum temperature*

An electric heating element will be used to maintain a catalyst bed temperature of 600°F. The catalytic oxidizer will operate with a destruction efficiency of at least 95%.

VII. Emissions Calculations

**A. Assumptions**

VOC concentrations are measured with reference to methane. This requires that the molecular weight be adjusted to methane. Since the applicant stated that the maximum influent concentration is [ ] ppmv as [gasoline @ 100 lb/lb-mole], the adjusted concentration can be determined as follows:

\[
(mass\ emissions)_{as\ methane} = mass\ emissions_{as\ gasoline}
\]

\[
(concentration \times flowrate \times molar\ volume \times molecular\ weight)_{methane} = (concentration \times flowrate \times molar\ volume \times molecular\ weight)_{gasoline}
\]

\[
(concentration \times molecular\ weight)_{methane} = (concentration \times molecular\ weight)_{gasoline}
\]

concentration_{methane}
= \text{concentration}_{\text{gasoline}} \times \text{molecular weight}_{\text{gasoline}} / \text{molecular weight}_{\text{methane}}

\text{Maximum Influent Concentration (ppmv as methane)} \\
= \text{concentration}_{\text{gasoline}} \times \text{molecular weight}_{\text{gasoline}} / \text{molecular weight}_{\text{methane}} \\
= [ \ ] \text{ppmv-gasoline} \times 100 \text{ lb-gasoline/lb-mole} / 16.043 \text{ lb-methane/lb-mole} \\
= [ \ ] \text{ppmv as methane}

\text{Process Weight:}

- Maximum influent concentration: [ ] ppmv as methane OR mg/m$^3$ of VOC being removed from the soil (proposed by applicant)
- Maximum influent rate: [ ] scfm
- Control efficiency: [ ]\% (as proposed by the applicant) minimum BACT requirement
- Maximum effluent VOC concentration = [ ] ppmv as methane OR mg$^3$/m$^3$ x (1 – 0.95)

\text{B. Emission Factors}

\text{Thermal/Catalytic Oxidizer}

Maximum effluent VOC concentration \\
= [ ] ppmv as methane OR mg$^3$/m$^3$ x (1 – 0.95)

\text{Natural Gas}

The following emission factors for NO$_x$, CO, VOC, and PM$_{10}$ are from AP-42 (7/98), Table 1.4-1 & 1.4-2. The SO$_x$ emission factor is from District Policy APR 1720.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>EF$_{(#text{Natural Gas})}$ (lb/MMBtu)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO$_x$</td>
<td>0.1</td>
</tr>
<tr>
<td>SO$_x$ $^1$</td>
<td>0.00285</td>
</tr>
<tr>
<td>PM$_{10}$</td>
<td>0.0076</td>
</tr>
<tr>
<td>CO</td>
<td>0.084</td>
</tr>
<tr>
<td>VOC</td>
<td>0.0055</td>
</tr>
</tbody>
</table>

\text{Liquid Petroleum Gas}

The following emission factors for NO$_x$, CO, VOC, and PM$_{10}$ are from AP-42 (7/98), Table 1.5-1 for LPG combustion.

\footnote{Based on a natural gas HHV of 1000 Btu/scf and a total sulfur content of 1.0 gr/100 scf of gas (District Policy APR 1720).}
### C. Calculations

1. **Pre-Project Potential to Emit (PE1)**

   Since this is a new emissions unit, the PE1 = 0

   **OR**

   The daily, annual, and quarterly pre-project emissions are shown below:

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>EF(LPG) (^2) (lb/MMBtu)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO(_x)</td>
<td>0.15</td>
</tr>
<tr>
<td>SO(_x)</td>
<td>0.0164</td>
</tr>
<tr>
<td>PM(_{10})</td>
<td>0.0044</td>
</tr>
<tr>
<td>CO</td>
<td>0.021</td>
</tr>
<tr>
<td>VOC(_{\text{non-methane}})</td>
<td>0.0055</td>
</tr>
</tbody>
</table>

2. **Post Project Potential to Emit PE (PE2)**

   Emissions from **Thermal/Catalytic Oxidizer**:

---

\(^2\) Based on a heating value of 91,500 Btu/gal for propane (AP-42, Section 1.5, 10/96).

\(^3\) SO\(_x\) = 0.1(S), where S = sulfur content in gr/100 scf = 0.1 (15) = 1.5 lb/1000 gal => (1.5 lb/1000 gal ÷ 0.0915 MMBtu/gal) = 0.0164 lb/MMBtu where, maximum sulfur content of LPG is 15 gr/100 scf (CRC Handbook of Tables for Applied Engineering Science, 2nd Edition, page 390).
<table>
<thead>
<tr>
<th>Control Efficiency:</th>
<th>[ ] % (Per applicant, District BACT requirement: 95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. Influent Conc.:</td>
<td>[ ] ppmv as methane</td>
</tr>
<tr>
<td>Max. Effluent Conc.</td>
<td>Max Influent Conc. $\times (1 - \text{Control Efficiency}) = [\ ] \text{ppmv x } (1 - 0.95) = [\ ] \text{ppmv as methane}$</td>
</tr>
<tr>
<td>Influent Flow Rate:</td>
<td>[ ] ft$^3$/min (as proposed by the applicant)</td>
</tr>
<tr>
<td>Molecular Wt. of Contaminant:</td>
<td>16.043 lb/lb-mole (converted M$_w$ obtained from the applicant to methane)</td>
</tr>
<tr>
<td>Molar Volume of Gas:</td>
<td>379.5 ft$^3$/lb-mole</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PE$_{\text{Uncontrolled}}$</th>
<th>$\text{Concentration (ppmv)} \times \text{Influent Flow Rate (ft}^3/\text{min}) \times \frac{1 \text{ lb-mole}}{379.5 \text{ ft}^3} \times \frac{\text{Mol. Wt. (lb/lb-mole)}}{1440 \text{ min/day}}$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$= ([ ] \times 10^{-6}) \times ([ ] \text{ft}^3/\text{min}) \times (1 \text{ lb-mole}/379.5 \text{ ft}^3) \times (16.043 \text{ lb/lb-mole}) \times 1440 \text{ min/day}$</td>
</tr>
<tr>
<td></td>
<td>$= [\ ] \text{lb-VOC/day}$</td>
</tr>
</tbody>
</table>

*If Concentration given in mg/m$^3$ use the following equation, otherwise delete it*

<table>
<thead>
<tr>
<th>PE$_{\text{Uncontrolled}}$</th>
<th>$\text{Concentration (mg/m}^3) \times \text{Influent Flow Rate (ft}^3/\text{min}) \times \frac{(\text{m}^3/35.31 \text{ ft}^3)}{(\text{g}/1000 \text{ mg}) \times (\text{lb}/453.6 \text{ g}) \times 1440 \text{ min/day}}$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$= ([ ] \text{mg/m}^3) \times ([ ] \text{ft}^3/\text{min}) \times (\text{m}^3/35.31 \text{ ft}^3) \times (\text{g}/1000 \text{ mg}) \times (\text{lb}/453.6 \text{ g}) \times 1440 \text{ min/day}$</td>
</tr>
<tr>
<td></td>
<td>$= [X] \text{lb-VOC/day}$</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PE$_{\text{Controlled}}$</th>
<th>$\text{PE$_{\text{Uncontrolled}}$ (lb/day) } \times (1 - \text{Control Efficiency})$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$= ([X] \text{lb/day}) \times (1 - 0.95)$</td>
</tr>
<tr>
<td></td>
<td>$= [Y] \text{lb-VOC/day}$</td>
</tr>
</tbody>
</table>

If the daily PE (Y) above is below 2 pounds per day, add the following section; otherwise delete it.

Once effluent VOC emissions drop below 2 pounds per day, the emissions unit is no longer subject to BACT and may operate at a lower control efficiency or without any controls at all. However, since the VOC emissions calculated above are below 2.0 lb-VOC/day, the calculated VOC emission will be adjusted to 2.0 lb-VOC/day in order to show no increase in emissions from this operation once the control device is reduced or taken off-line. The effluent concentration will be recalculated as follows:

Concentration (ppmv) = \( \frac{(2.0 \text{ lbs/day})}{[\text{Influent Flow Rate (ft}^3/\text{min}) \times 1 \text{ lb-mole}/379.5 \text{ ft}^3 \times \text{Mol. Wt. (lb/lb-mole)} \times 1440 \text{ min/day}] \)

Concentration (ppmv) = \( (2.0 \text{ lbs/day}) \div [(\text{ft}^3/\text{min}) \times (1 \text{ lb-mole}/379.5 \text{ ft}^3) \times (\text{lb/lb-mole}) \times 1440 \text{ min/day} \times 10^{-6}] \)

= \([ ] \text{ppmv}\)
### Post-Project Potential to Emit (PE2)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>( \text{PE}_{\text{Controlled}} ) (lb/day)</th>
<th>( \text{PE}_{\text{annual}} ) (lb/yr)</th>
<th>( \text{PE}_{\text{quarterly}} ) (lb/qtr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO(_x)</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>SO(_x)</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>PM(_{10})</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>CO</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>VOC</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

Note: \( \text{PE}_{\text{annual}} \) (lb/yr) = \( \text{PE}_{\text{Controlled}} \) (lb/day) x 365 (days/yr)

Note: \( \text{PE}_{\text{quarterly}} \) (lb/qtr) = \( \text{PE}_{\text{annual}} \) (lb/yr) ÷ 4 (qtr/yr)

### Emissions from Combustion of Supplemental Fuel:

(Note: Delete this section if the emission unit is exclusively an electrically heated catalytic oxidizer)

Max Burner Rating = \[ \] MMBtu/hr  
Operating hours = 24 hr/day

\[
\begin{align*}
\text{PE}_{\text{Natural Gas/LPG}} \text{ (lb/day)} &= \text{Max Natural Gas/LPG} \ (\text{MMBtu/hr}) \times \text{EF} \ (\text{lb/MMBtu}) \times 24 \text{ hr/day} \\
\text{PE}_{\text{NOx}} \text{ (lb/day)} &= \left[ \right] \text{MMBtu/hr} \times \left[ \right] \text{lb-NOx/MMBtu} \times 24 \text{ hr/day} \\
&= \left[ \right] \text{lb-NOx/day} \\
\text{PE}_{\text{SOx}} \text{ (lb/day)} &= \left[ \right] \text{MMBtu/hr} \times \left[ \right] \text{lb-SOx/MMBtu} \times 24 \text{ hr/day} \\
&= \left[ \right] \text{lb-SOx/day} \\
\text{PE}_{\text{PM10}} \text{ (lb/day)} &= \left[ \right] \text{MMBtu/hr} \times \left[ \right] \text{lb-PM10/MMBtu} \times 24 \text{ hr/day} \\
&= \left[ \right] \text{lb-PM10/day} \\
\text{PE}_{\text{CO}} \text{ (lb/day)} &= \left[ \right] \text{MMBtu/hr} \times \left[ \right] \text{lb-CO/MMBtu} \times 24 \text{ hr/day} \\
&= \left[ \right] \text{lb-CO/day} \\
\text{PE}_{\text{VOC}} \text{ (lb/day)} &= \left[ \right] \text{MMBtu/hr} \times 0.0055 \text{ lb-VOC/MMBtu} \times 24 \text{ hr/day} \\
&= \left[ \right] \text{lb-VOC/day}
\end{align*}
\]
Facility Name
Facility #, Project #

### Emissions Solely from Combustion

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>$\text{PE}_{(\text{Natural Gas or LPG})}$ only (lb/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO$_x$</td>
<td>[ ]</td>
</tr>
<tr>
<td>SO$_x$</td>
<td>[ ]</td>
</tr>
<tr>
<td>PM$_{10}$</td>
<td>[ ]</td>
</tr>
<tr>
<td>CO</td>
<td>[ ]</td>
</tr>
<tr>
<td>VOC (non-methane)</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

Total Emissions from Soil Remediation System:

$$\text{PE}_{\text{Total}} = \text{PE}_{\text{Thermal or Catalytic/Controlled}} + \text{PE}_{\text{Natural Gas or LPG}}$$

### Total Post-Project Potential to Emit (PE2)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>$\text{PE}_{\text{Thermal/Catalytic Controlled}}$ (lb/day)</th>
<th>$\text{PE}_{\text{Natural Gas or LPG}}$ (lb/day)</th>
<th>$\text{PE}_{2\text{Daily+}}$ (lb/day)</th>
<th>$\text{PE}_{2\text{Annual}}$ (lb/yr)</th>
<th>$\text{PE}_{2\text{Quarterly}}$ (lb/qtr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO$_x$</td>
<td>---</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>SO$_x$</td>
<td>---</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>PM$_{10}$</td>
<td>---</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>CO</td>
<td>---</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>VOC</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

Note: $\text{PE}_{\text{Annual}}$ (lb/yr) = $\text{PE}_{\text{Daily}}$ (lb/day) x 365 (days/yr)

Note: $\text{PE}_{\text{Quarterly}}$ (lb/qtr) = ($\text{PE}_{\text{Annual}}$ (lb/yr)) ÷ 4 qtr/yr

### 3. Pre-Project Stationary Source Potential to Emit (SSPE1)

**[For New Facilities]**

Since this is a new facility, SSPE1 is equal to zero.

**[For existing facilities]**

Pursuant to Section 4.9 of District Rule 2201, the Pre-project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

Since this is an existing facility, SSPE1 is equal to the $\text{PE}_{\text{Total}}$ Pre-Project for all criteria pollutants.
The Pre-project Stationary Source Potential to Emit (SSPE1) is presented in the following table:

<table>
<thead>
<tr>
<th>Permit #</th>
<th>NOx</th>
<th>SOx</th>
<th>PM10</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-xxxx-x-x</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>C-xxxx-x-x</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
</tr>
</tbody>
</table>

4. Post-Project Stationary Source Potential to Emit (SSPE2)

Pursuant to Section 4.10 of District Rule 2201, the Post-project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site. The Post-project Stationary Source Potential to Emit (SSPE2) is presented in the following table:

<table>
<thead>
<tr>
<th>Permit #</th>
<th>NOx</th>
<th>SOx</th>
<th>PM10</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-xxxx-x-x</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>C-xxxx-x-x</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
</tr>
</tbody>
</table>

5. Major Source Determination

Pursuant to Section 3.24 of District Rule 2201, a Major Source is a stationary source with post-project emissions or a Post Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values. However, Section 3.24.2 states, “for the purposes of determining major source status, the SSPE2 shall not include the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.”
Since none of the threshold values in the above table are exceeded, this facility is not a Major Source.

Or

Since the annual VOC emissions are above the major source threshold values in the above table, this facility is now a Major Source for VOC. (If this is true, this project is NO LONGER A GEAR. Check with your supervisor before further processing.)

6. Baseline Emissions (BE)

a) Annual BE

BE = Pre-project Potential to Emit for:
- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to Section 3.22

Since this is a new facility, the annual BE is equal to zero.

OR

Since this unit is not located at a major source, BE = Pre-project Potential to Emit.

<table>
<thead>
<tr>
<th>Annual BE (lb/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permit Number</td>
</tr>
<tr>
<td>C-xxxx-xx</td>
</tr>
</tbody>
</table>

b) Quarterly BE (QBE)

The QBE is required, unit by unit, pollutant by pollutant, to determine the Quarterly Net Emissions Change below.

[For New Facilities]

Since this is a new facility, the quarterly BE is equal to zero.

[For Existing Facilities]
Facility Name
Facility #, Project #

QBE = PE1quarterly

<table>
<thead>
<tr>
<th>Permit Number</th>
<th>NOx</th>
<th>SOx</th>
<th>PM10</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-xxxx-xx</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

7. Quarterly Net Emissions Change (QNEC)

The QNEC is entered into PAS database and subsequently reported to CARB. The QNEC is calculated for each pollutant, for each unit, as the difference between the post-project quarterly permitted emissions and the quarterly baseline emissions.

QNEC = PE2 (lb-VOC/qtr) – BE (lb-VOC/qtr)

<table>
<thead>
<tr>
<th>Permit Number</th>
<th>NOx</th>
<th>SOx</th>
<th>PM10</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-xxxx-xx</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

8. Major Modification

Major Modification is defined in 40 CFR Part 51.165 as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act."

As discussed in Section VII.C.5 above, the facility is not a Major Source for any criteria pollutant; therefore, the project does not constitute a Major Modification.

9. Federal Major Modification

As shown above, this project does not constitute a Major Modification. Therefore, in accordance with District Rule 2201, Section 3.17, this project does not constitute a Federal Major Modification and no further discussion is required.

VIII. Compliance

Rule 2201 - New and Modified Stationary Source Review Rule

A. BACT

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following*:
a. Any new emissions unit with a potential to emit exceeding two pounds per day,
b. The relocation from one Stationary Source to another of an existing emissions unit
   with a potential to emit exceeding two pounds per day,
c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an
   AIPE exceeding two pounds per day, and/or
d. Any new or modified emissions unit, in a stationary source project, which results in a
   Major Modification.

*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of
less than 200,000 pounds per year of CO.

The applicant is proposing to install a new emissions unit with a PE of [ ] lb/day for VOC as
calculated in section VII.C.2. Since the daily VOC emissions are [greater or not greater]
than 2.0 lbs/day, BACT [will or will not] be triggered. The daily emissions for [NOx, SOx,
PM₁₀, and CO] are also above 2.0 lb/day. Therefore, BACT will be triggered for [NOx,
SOx, PM₁₀, CO, and VOC].

OR

The applicant is proposing to modify its existing emissions unit with an AIPE of [ ] lb/day
for VOC as calculated in the following section. Since the daily VOC emissions are [greater
or less] than 2.0 lbs/day, BACT [will or will not] be triggered. The daily AIPE for [NOx,
SOx, PM₁₀, and CO] are also above 2.0 lb/day. Therefore, BACT will be triggered for
[NOx, SOx, PM₁₀, CO, and VOC].

Adjusted Increase in Permitted Emissions (AIPE)

\[
\text{AIPE} = \text{PE}_2 - \text{HAPE}
\]

\[
\begin{align*}
\text{AIPE} &= \text{Adjusted Increase in Permitted Emissions, lb/day.} \\
\text{PE}_2 &= \text{the emission unit’s post project Potential to Emit, lb/day.} \\
\text{HAPE} &= \text{the emission unit’s Historically Adjusted Potential to Emit, lb/day.}
\end{align*}
\]

Historically Adjusted Potential to Emit (HAPE) Calculations:

\[
\text{HAPE} = \text{PE}_1 \times (\text{EF}_2 / \text{EF}_1)
\]

\[
\begin{align*}
\text{PE}_1 &= \text{The emission unit’s Potential to Emit prior to modification or relocation.} \\
\text{EF}_2 &= \text{The emission unit’s permitted emission factor for the pollutant after} \\
&\quad \text{modification or relocation. If EF}_2 \text{ is greater than EF}_1 \text{ then EF}_2/\text{EF}_1 \text{ shall be} \\
&\quad \text{set to 1.} \\
\text{EF}_1 &= \text{The emission unit’s permitted emission factor for the pollutant before the} \\
&\quad \text{modification or relocation.}
\end{align*}
\]
EF1 = [ ] % (Taken from project # [ ])
EF2 = [ ] % (As proposed by the applicant, 95% District BACT requirement)

\[
\text{AIPE (lb/day)} = \text{PE}_2 \text{ (lb/day)} - \left[ \text{PE}_1 \text{ (lb/day)} \times \left( \frac{\text{EF}_2}{\text{EF}_1} \right) \right]
\]
\[
= \text{PE}_2 \text{ (lb/day)} - \left[ \text{PE}_1 \text{ (lb/day)} \times \left( \frac{0.95}{0.95} \right) \right]
\]
\[
= \text{PE}_2 \text{ (lb/day)} - \left[ \text{PE}_1 \text{ (lb/day)} \times 1 \right]
\]
\[
= \text{PE}_2 \text{ (lb/day)} - \text{PE}_1 \text{ (lb/day)}
\]

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>PE₂ Daily Post Project (lb/day)</th>
<th>PE₁ Daily Pre Project (lb/day)</th>
<th>AIPE (lb/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOₓ</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>SOₓ</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>PM₁₀</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>CO</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>VOC</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

2. **BACT Guidance**

Per District Policy APR 1305, Section IX, “A top-down BACT analysis shall be performed as a part of the Application Review for each application subject to the BACT requirements pursuant to the District’s NSR Rule for source categories or classes covered in the BACT Clearinghouse, relevant information under each of the following steps may be simply cited from the Clearinghouse without further analysis.”

SJRUAPCD BACT Clearinghouse Guideline 2.1.1 specifies the achieved in practice or contained in SIP BACT and technologically feasible BACT for soil remediation operations utilizing a thermal/catalytic oxidation system. Therefore, relevant information will be cited without further analysis.

*See Appendix I: BACT Clearinghouse Guideline 2.1.1*

3. **Top-Down BACT Analysis**

**VOC:**

The applicant is proposing to use a thermal/catalytic oxidizer at 95% or greater control efficiency. Per the Top-Down analysis in Appendix I of this evaluation, the proposed equipment satisfies the BACT requirement.

(Add the following section if BACT for NOₓ is triggered; otherwise, delete.)
NOx:

The applicant is proposing to use a thermal/catalytic oxidizer at 95% or greater control efficiency. Per the Top-Down analysis in Appendix I of this evaluation, the proposed equipment satisfies the BACT requirement.

B. Offsets

1. Offset Applicability

Pursuant to Section 4.5.3, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the Post Project Stationary Source Potential to Emit (SSPE2) equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The following table compares the post-project facility-wide annual emissions in order to determine if offsets will be required for this project.

<table>
<thead>
<tr>
<th>Offset Determination (lb/year)</th>
<th>NOx</th>
<th>SOx</th>
<th>PM10</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post Project SSPE (SSPE2)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Offset Threshold</td>
<td>20,000</td>
<td>54,750</td>
<td>29,200</td>
<td>200,000</td>
<td>20,000</td>
</tr>
<tr>
<td>Offsets triggered?</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

2. Quantity of Offsets Required

As shown in the table above, the SSPE2 is not greater than or equal to the offset threshold levels for any criteria pollutant. Therefore, offsets will not be required.

OR

As shown in the table above, the SSPE2 meets or exceeds the offset threshold levels. Therefore, offsets will be required. *(If this is true, this project is NO LONGER A GEAR. Check with your supervisor before further processing.)*

C. Public Notification

1. Applicability

Public noticing is required for:

a. Any new Major Source, which is a new facility that is also a Major Source,
b. Major Modifications,
c. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
d. Any project which results in the offset thresholds being surpassed, and/or
e. Any project with an SSIE of greater than 20,000 lb/year for any pollutant.
a) New Major Source

*Example (a): (For a new facility – non Major Source.)*
New Major Sources are new facilities, which are also Major Sources. As shown in Section VII.C.5 above, the SSPE2 is not greater than the Major Source threshold for any criteria pollutant. Therefore, public noticing is not required for this project for new Major Source purposes.

*Example (c): (For an existing facility.)*
New Major Sources are new facilities, which are also Major Sources. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

b) Major Modification

As demonstrated in VII.C.7, this project does not constitute a Major Modification; therefore, public noticing for Major Modification purposes is not required.

c) PE > 100 lb/day

*Example (a): (For a project not including a new emissions unit.)*
Applications which include a new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. There are no new emissions units associated with this project; therefore public noticing is not required for this project for Potential to Emit Purposes.

*Example (b): (For a project including a new emissions unit – PE ≤ 100 lb/day.)*
Applications which include a new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. As seen in Section VII.C.2 above, this project does not include a new emissions unit which has daily emissions greater than 100 lb/day for any pollutant, therefore public noticing for PE > 100 lb/day purposes is not required.

*Example (c): (For a project including a new emissions unit – PE > 100 lb/day.)*
The PE2 for this new unit is compared to the daily PE Public Notice thresholds in the following table:
### PE > 100 lb/day Public Notice Thresholds

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>PE2 (lb/day)</th>
<th>Public Threshold</th>
<th>Public Notice Triggered?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOX</td>
<td>100.5</td>
<td>100 lb/day</td>
<td>Yes</td>
</tr>
<tr>
<td>SOX</td>
<td>21.2</td>
<td>100 lb/day</td>
<td>No</td>
</tr>
<tr>
<td>PM$_{10}$</td>
<td>25.6</td>
<td>100 lb/day</td>
<td>No</td>
</tr>
<tr>
<td>CO</td>
<td>124.7</td>
<td>100 lb/day</td>
<td>Yes</td>
</tr>
<tr>
<td>VOC</td>
<td>48.9</td>
<td>100 lb/day</td>
<td>No</td>
</tr>
</tbody>
</table>

Therefore, public noticing for PE > 100 lb/day purposes is required.

d) Offset Threshold

*Example (a): (For a project not surpassing the offset threshold.)*

The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

<table>
<thead>
<tr>
<th>Offset Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pollutant</td>
</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td>NOX</td>
</tr>
<tr>
<td>SOX</td>
</tr>
<tr>
<td>PM$_{10}$</td>
</tr>
<tr>
<td>CO</td>
</tr>
<tr>
<td>VOC</td>
</tr>
</tbody>
</table>

As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

*Example (b): (For a project surpassing the offset threshold.)*

The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

<table>
<thead>
<tr>
<th>Offset Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pollutant</td>
</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td>NOX</td>
</tr>
<tr>
<td>SOX</td>
</tr>
<tr>
<td>PM$_{10}$</td>
</tr>
<tr>
<td>CO</td>
</tr>
<tr>
<td>VOC</td>
</tr>
</tbody>
</table>
As detailed above, offset thresholds were surpassed for NO\textsubscript{X} with this project; therefore public noticing is required for offset purposes.

(Note: Public notification is independent of whether or not Offsets are required. For example, if this project involves the installation of emergency (offset-exempt) equipment and the offset threshold is surpassed, then public notification would still be triggered. And conversely, if this project involves the installation of new equipment which required offsets; however, the SSPE1 was already greater than the offset threshold, public notification would not be triggered.)

e) SSIPE > 20,000 lb/year

An SSIPE exceeding 20,000 pounds per year for any one pollutant triggers public notice.

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e. SSIPE = SSPE2 – SSPE1. The values for SSPE2 and SSPE1 are calculated according to Rule 2201, Sections 4.9 and 4.10, respectively. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table:

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>SSPE2 (lb/year)</th>
<th>SSPE1 (lb/year)</th>
<th>SSIPE (lb/year)</th>
<th>SSIPE Public Notice Threshold</th>
<th>Public Notice Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{X}</td>
<td>876</td>
<td>0</td>
<td>876</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>SO\textsubscript{x}</td>
<td>37</td>
<td>0</td>
<td>37</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>8,438</td>
<td>3,776</td>
<td>4,662</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>CO</td>
<td>730</td>
<td>0</td>
<td>730</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>VOC</td>
<td>19,966</td>
<td>0</td>
<td>19,966</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
</tbody>
</table>

As demonstrated above, the SSIPEs for all pollutants were less than 20,000 lb/year; therefore public noticing for SSIPE purposes is not required.
Example (b): (For a project where the SSIPE > 20,000 lb/year.)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>SSPE2 (lb/year)</th>
<th>SSPE1 (lb/year)</th>
<th>SSIPE (lb/year)</th>
<th>SSIPE Public Notice Threshold</th>
<th>Public Notice Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOX</td>
<td>35,453</td>
<td>11,267</td>
<td>24,186</td>
<td>20,000 lb/year</td>
<td>Yes</td>
</tr>
<tr>
<td>SOX</td>
<td>6,482</td>
<td>4,533</td>
<td>1,949</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>PM10</td>
<td>8,438</td>
<td>5,971</td>
<td>2,467</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>CO</td>
<td>42,080</td>
<td>21,956</td>
<td>20,124</td>
<td>20,000 lb/year</td>
<td>Yes</td>
</tr>
<tr>
<td>VOC</td>
<td>29,008</td>
<td>25,942</td>
<td>3,066</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
</tbody>
</table>

As demonstrated above, the SSIPEs for NOX and CO were greater than 20,000 lb/year; therefore public noticing for SSIPE purposes is required.

2. Public Notice Action

Example (a): (For a project not requiring public notification.)

As discussed above, this project will not result in emissions, for any criteria pollutant, which would subject the project to any of the noticing requirements listed above. Therefore, public notice will not be required for this project.

Example (b): (For a project requiring public notification – PE > 100 lb/day.)

As discussed above, public noticing is required for this project for NOX emissions in excess of 100 lb/day. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

(Note: When public notification is required an additional section in the EE gets added, Section VIII-Rule 2201-F, see below)

D. Daily Emissions Limits (DEL)

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.15 to restrict a unit’s maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.15.1 and 3.15.2, the DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

a) The total VOC emissions from the soil remediation system served by the thermal oxidizer shall not exceed [ ] pounds in any one day.

b) VOC concentration of the exhaust gas from the soil remediation system served by the thermal/catalytic oxidizer shall not exceed [ ] ppmv, as methane. [District Rule 2201]

c) The soil ventilation rate and the exhaust gas flow rate shall not exceed [ ] scfm.
E. Compliance Assurance

The following measures shall be taken to ensure continued compliance with District Rules:

1. Source Testing

VOC Source testing upon initial startup is required.

2. Monitoring

Monitoring of influent and exhaust VOC concentrations will be required weekly. If the uncontrolled VOC emission rate is below 2.0 lb/day as demonstrated by five consecutive weekly samples, the control device may be taken off-line and sampling shall be performed monthly for ongoing demonstration to show that the uncontrolled VOC emissions are below 2.0 lb/day.

3. Record Keeping

The permittee shall maintain records for all monitored data for a period of five years.

4. Reporting

The permittee shall submit initial startup test report and maintain all other monitoring records on site. Such records shall be made available for District inspection upon request.

F. Ambient Air Quality Analysis

(Note: Applicable only when public notice is triggered, otherwise delete this section.)

An AAQA is conducted by the Technical Services group, for any project which has an increase in emissions and triggers public notification requirements. Discuss the AAQA results as follows.

For example:
Section 4.14.1 of this Rule requires that an ambient air quality analysis (AAQA) be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The Technical Services Division of the SJVAPCD conducted the required analysis. Refer to Appendix X of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO\textsubscript{X}, CO, and SO\textsubscript{X}. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO\textsubscript{X}, CO, or SO\textsubscript{X}.

The proposed location is in a non-attainment area for PM\textsubscript{10}. The increase in the ambient PM\textsubscript{10} concentration due to the proposed equipment is shown on the table titled Calculated
Facility Name  
Facility #, Project #

Contribution. The levels of significance, from 40 CFR Part 51.165 (b)(2), are shown on the table titled Significance Levels.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Significance Levels (μg/m³) - 40 CFR Part 51.165 (b)(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Annual Avg.</td>
</tr>
<tr>
<td>PM₁₀</td>
<td>1.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Calculated Contributions (μg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Annual Avg.</td>
</tr>
<tr>
<td>PM₁₀</td>
<td>0.XX</td>
</tr>
</tbody>
</table>

As shown, the calculated contribution of PM₁₀ will not exceed the EPA significance level. This project is not expected to cause or make worse a violation of an air quality standard.

(Note: Special permit conditions may be required as a result of the AAQA.)

Rule 2520  Federally Mandated Operating Permits

Since this facility's potential emissions do not exceed any major source thresholds of Rule 2201, this facility is not a major source, and Rule 2520 does not apply.

Rule 4101  Visible Emissions

Rule 4101 states that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity.

As long as the equipment is properly maintained and operated, compliance with visible emissions limits is expected under normal operating conditions.

Rule 4102  Public Nuisance

Section 4.0 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, compliance with this rule is expected.

California Health & Safety Code 41700 (Health Risk Assessment)

Discuss whether a Health Risk Assessment is required and/or the results of the HRA, including any special conditions to consider when issuing the ATC(s).
District Policy APR 1905 – Risk Management Policy for Permitting New and Modified Sources specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

**Example (a): (For a project with no increase in emissions.)**
As demonstrated above, there are no increases in emissions associated with this project, therefore a health risk assessment is not necessary and no further risk analysis is required.

*(Note 1: An HRA is necessary if there is a change in any HRA parameter, i.e. exhaust flow rate changes, stack changes, fuel use and type changes, receptor distances, etc.)*

*(Note 2: If example (a) is used, delete the following sections, since they don’t apply if an HRA was not performed.)*

**Example (b): (For a project with a Prioritization score \( \leq 1. \))**
An HRA is not required for a project with a total facility prioritization score of less than or equal to one. According to the Technical Services Memo for this project (Appendix X), the total facility prioritization score including this project was less than or equal to one. Therefore, no future analysis is required to determine the impact from this project and compliance with the District’s Risk Management Policy is expected.

**Example (c): (For a project with a Prioritization score \( > 1. \))**
An HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (Appendix X), the total facility prioritization score including this project was greater than one. Therefore, a health risk assessment was required to determine the short-term acute and long-term chronic exposure from this project.

The cancer risk for this project is shown below:

<table>
<thead>
<tr>
<th>Unit</th>
<th>Cancer Risk</th>
<th>T-BACT Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>X-XXXX-X-X</td>
<td>XX per million</td>
<td>Yes/No</td>
</tr>
</tbody>
</table>

**Discussion of T-BACT**

Discuss whether a T-BACT is or is not triggered and the requirements which satisfy T-BACT (if any).

**Example (a): (For a project where T-BACT not triggered.)**
BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is not required for this project because the HRA indicates that the risk is not above the District’s
thresholds for triggering T-BACT requirements; therefore, compliance with the District’s Risk Management Policy is expected.

**Example (b): (For a project where T-BACT is triggered)**
BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is required for this project because the HRA indicates that the risk is above the District’s thresholds for triggering T-BACT requirements.

For this project T-BACT is triggered for VOC. T-BACT is satisfied with BACT for VOC (see Appendix X), which is the use of a thermal/catalytic oxidation system with a 95% or greater control efficiency; therefore, compliance with the District’s Risk Management Policy is expected.

*(Note: List all conditions necessary to ensure that the equipment is operated in the manner assumed when the RMR was performed.)*

See Appendix II: Health Risk Assessment Summary

**Rule 4651 – Volatile Organic Compounds From Decontamination of Soil**

The applicant is not proposing to excavate, transport, handle, ex-situ decontaminate, or dispose contaminated soil. Therefore, per section 2.0, this rule is not applicable.

**CH&SC 42301.6 California Health & Safety Code (School Notice)**

The applicant has indicated that this facility is [not] within 1,000 feet of a K-12 school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is [not] required.

**California Environmental Quality Act (CEQA)**

The District performed an Engineering Evaluation (this document) for the proposed project and determined that the project qualifies for ministerial approval under the District’s Guideline for Expedited Application Review (GEAR). Section 21080 of the Public Resources Code exempts from the application of CEQA those projects over which a public agency exercises only ministerial approval. Therefore, the District finds that this project is exempt from the provisions of CEQA.

**IX. Recommendations**

Issue Authority to Construct C-xxxx-x-x subject to the permit conditions on the attached draft Authority to Construct.
X. Billing Information

<table>
<thead>
<tr>
<th>Permit Number</th>
<th>Fee Schedule</th>
<th>Fee Description</th>
<th>Annual Fee</th>
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<tbody>
<tr>
<td>C-XXXX-X-X</td>
<td>3020-01-[]</td>
<td>[ ] Electric HP</td>
<td>$882.00</td>
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</table>

Appendices

I: BACT GUIDELINE 2.1.1 & TOP-DOWN BACT ANALYSIS
II: HRA SUMMARY
III: DRAFT AUTHORITY TO CONSTRUCT
IV: EMISSIONS PROFILE
APPENDIX I

BACT GUIDELINE 2.1.2 & TOP-DOWN BACT ANALYSIS
San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 2.1.1*
Last Update: March 17, 1997

Emissions Unit: Soil Remediation Operation - Thermal Oxidizer

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Achieved in Practice or contained in SIP</th>
<th>Technologically Feasible</th>
<th>Alternate Basic Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOC</td>
<td>Thermal Oxidizer @ 1400°F and 0.5 sec</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>OR</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Catalytic Oxidizer @ 600°F and 0.5 sec both at 95% or greater control efficiency</td>
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<tr>
<td>NOx</td>
<td></td>
<td>1. Natural gas with low NOx burner</td>
<td>Carbon adsorption - as an alternative for VOC control (not valid for vapor generation units)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Water injection (valid only for vapor generation units)</td>
<td></td>
</tr>
</tbody>
</table>
Top-Down BACT Analysis for VOC

a. Step 1 - Identify All Possible VOC Control Technologies

The SJVUAPCD BACT Clearinghouse Guideline 2.1.1 identifies for this soil remediation operation:

- Achieved-in-practice BACT: Thermal Oxidizer @ 1400°F and 0.5 sec, @ 95% or greater control efficiency.

- Achieved-in-practice BACT: Catalytic Oxidizer @ 600°F and 0.5 sec, @ 95% or greater control efficiency.

- No technologically feasible alternatives are listed.

b. Step 2 - Eliminate Technologically Infeasible Options

There are no technologically infeasible options listed.

c. Step 3 - Rank Remaining Control Technologies by Control Effectiveness

- Achieved-in-practice BACT: Thermal Oxidizer @ 1400°F and 0.5 sec, @ 95% or greater control efficiency.

- Achieved-in-practice BACT: Catalytic Oxidizer @ 600°F and 0.5 sec, @ 95% or greater control efficiency.

d. Step 4 - Cost Effectiveness Analysis

The only control technology alternative in the ranking list from Step 3 has been achieved in practice. Therefore, per SJVUAPCD BACT policy, the cost effectiveness analysis is not required.

e. Step 5 - Select BACT

The applicant is proposing BACT by the use of a thermal and/or catalytic oxidizer @ 1400°F and 600°F respectively and 0.5 sec, with a control efficiency of 95% or greater.

OR

The applicant is proposing a thermal oxidizer @ 1400°F and 0.5 sec, with a control efficiency of 95% or greater.

OR
The applicant is proposing a catalytic oxidizer @ 600°F and 0.5 sec, with a control efficiency of 95% or greater.
Top-Down BACT Analysis for NOₙ

a. Step 1 - Identify All Possible VOC Control Technologies

Achieved-in-Practice

- None

(If this facility is a small emitter, include the following Technologically Feasible discussion. Otherwise, discuss with supervisor. A small emitter is defined as a facility with emissions less than a) 2 ton/yr of each pollutant or b) 40 lb-NOₓ/day, 30 lb-SOₓ/day, 30 lb-PM₁₀/day, 220 lb-CO/day, 30 lb-VOC/day)

Technologically Feasible

A small emitter is not required to use technologically feasible options. Therefore, the following will not be included in this assessment.

- Natural gas with low NOₓ burner
- Water injection (valid only for vapor generation units)

Alternate Basic Equipment

- Carbon adsorption - as an alternative for VOC control (not valid for vapor generation units)

b. Step 2 - Eliminate Technologically Infeasible Options

There are no technologically infeasible options listed.

c. Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Carbon adsorption (No NOₓ emissions; 100% control)

d. Step 4 - Cost Effectiveness Analysis

A small emitter is only required to consider the cost effectiveness of achieved-in-practice alternate basic equipment as follows:

\[ CE_{alt} = \frac{(COST_{alt} - COST_{basic})}{(EMISSION_{basic} - EMISSION_{alt})} \]

where,

\[ CE_{alt} = \text{the cost effectiveness of alternate basic equipment expressed as dollars per ton of emissions reduced} \]
\[ \text{COST}_{\text{alt}} = \text{the equivalent annual capital cost of the alternate basic equipment plus its annual operating cost} \]

\[ \text{COST}_{\text{basic}} = \text{the equivalent annual capital cost of the proposed basic equipment, without BACT, plus its annual operating cost} \]

\[ \text{EMISSION}_{\text{basic}} = \text{the emissions from the proposed basic equipment, without BACT.} \]

\[ \text{EMISSION}_{\text{alt}} = \text{the emissions from the alternate basic equipment} \]

Carbon adsorption is most likely to cost out with the cost of carbon alone. Since there is no \( \text{NO}_x \) emissions from carbon adsorption, \( \text{EMISSION}_{\text{alt}} = 0 \).

As a worst case, it will be assumed that there is no cost for the basic equipment. This will result in the following equation:

\[ \text{CE}_{\text{alt}} = \frac{\text{COST}_{\text{alt}}}{\text{EMISSION}_{\text{basic}}} \]

In this project, to control the same amount of VOC, it would take \( [\text{lb}] \) lb of carbon per day as shown below:

Amount of carbon (lb/day)
= amount of VOC controlled x lb-carbon/lb-VOC
= [ ] lb-VOC/day x 5 lb-carbon/lb-VOC
= [ ] lb-carbon/day

The cost of carbon is approximately $3/lb\(^4\), resulting in the following daily cost:

\[ \text{COST}_{\text{alt}} = \frac{3}{\text{lb}} \times [\text{lb}] \text{lb-carbon/day} \]

\[ \text{EMISSION}_{\text{basic}} = \text{equal to the daily } \text{NO}_x \text{ emissions generated as shown in Section VII.C.2 of this evaluation. The resulting CE}_{\text{alt}} \text{ is as follows:} \]

\[ \text{CE}_{\text{alt}} = \frac{\text{COST}_{\text{alt}}}{\text{EMISSION}_{\text{basic}}} \times (\text{lb to ton conversion}) \]

\[ = [\text{lb}] (\$/\text{day}) / [\text{lb-NOx/day}] \times (2000 \text{ lb/1 ton}) \]

\[ = [\text{lb}] \$/\text{ton-NOx} \]

The cost effectiveness for \( \text{NO}_x \) is $9,700/ton, which is greater than the \( \text{CE}_{\text{alt}} \) calculated above. Therefore, the use of carbon adsorption is not cost-effective and is not required.

\(^4\) Data from Timothy Souther of Geomatrix – May 8, 2007.
e. Step 5 - Select BACT

No NO\textsubscript{x} control technology is required as shown by this top down BACT analysis.
APPENDIX II

HRA SUMMARY
APPENDIX III

DRAFT AUTHORITY TO CONSTRUCT
APPENDIX IV

EMISSIONS PROFILE
Conditions

If Using Electric Heater Only

Only an electrical coil shall be used as an auxiliary method of supplying power for the combustion of VOC. [District Rule 2201]

Thermal Oxidizer (Natural Gas)

{1420} The soil remediation system shall be maintained in proper operating condition at all times. [District Rule 2201]

{15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]

{98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

{14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

{2857} Only natural gas shall be used as auxiliary fuel for the combustion of VOC. [District Rule 2201]

{1423} Either the VOC control efficiency shall not be less than 95%, or the total VOC emission rate shall not exceed 2 pounds in any one day. [District Rule 2201]

The effluent gas flowrate after the control device shall not exceed xxx scfm. [District Rule 2201]

The effluent VOC concentration level after the control device shall not exceed xxx ppmv, as methane. [District Rule 2201]

{1463} The total VOC emissions from the soil remediation system served by the thermal oxidizer shall not exceed XX pounds in any one day. [District Rule 2201]

The emissions from the combustion of natural gas shall not exceed any of the following limits: 0.1 lb-NOx/MBtu, 0.084 lb-CO/MBtu, 0.0076 lb-PM10/MBtu, 0.0055 lb-VOC/MBtu, or 0.00285 lb-SOx/MBtu. [District Rule 2201]

{1462} The minimum operating temperature for the combustion chamber of the thermal oxidizer shall be maintained at or above 1400 degrees F. [District Rule 2201]

{2775} The thermal oxidizer shall be equipped with an operational temperature gauge to...
indicate the temperature of the combustion chamber. A continuously recording device shall be utilized to indicate the combustion chamber temperature during operation. [District Rule 2201] N

{1470} The soil remediation system shall not be operated unless the combustion chamber is at or above minimum operating temperature. The system shall automatically terminate operation if the temperature drops below the minimum operating temperature. [District Rule 2201] N

{1413} Sampling ports adequate for extraction of grab samples, measurement of gas flow rate, and use of an FID, PID, or other District-approved VOC detection device shall be provided for both the influent and the effluent gas streams. [District Rule 1081] N

{1414} Laboratory samples shall be taken at the initial inspection, under the supervision of the APCD Inspector. Samples shall be taken from both the influent and the effluent gas stream sampling ports. [District Rule 1081] N

{1416} Measurements to determine the influent and the effluent gas flow rates shall be taken at the initial inspection. Flow rate calculations shall be submitted to the District along with the laboratory sample analysis results. [District Rule 1081] N

{1417} Initial compliance with VOC emission rate and control efficiency requirements shall be demonstrated by the results of the laboratory sample analysis. The results shall be submitted to the District within 60 days of the test. [District Rule 1081] N

{403 modified} Ongoing compliance with VOC emission rate and control efficiency requirements shall be demonstrated at least once per month by sampling both the influent and the effluent gas streams with an FID, PID, or other District-approved VOC detection device. [District Rule 1081] N

{1425} Records of the cumulative running time and the measured influent and effluent VOC concentrations shall be maintained. [District Rule 2201] N

{2780} All records shall be retained for a minimum of five years, and shall be made available for District inspection upon request. [District Rule 2201] N

**Thermal Oxidizer (LPG)**

{1420} The soil remediation system shall be maintained in proper operating condition at all times. [District Rule 2201] N

{15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] N

{98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102] N
Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] N

Only liquefied petroleum gas shall be used as auxiliary fuel for the combustion of VOC. [District Rule 2201] N

Either the VOC control efficiency shall not be less than 95%, or the total VOC emission rate shall not exceed 2 pounds in any one day. [District Rule 2201] N

The effluent gas flowrate after the control device shall not exceed xxx scfm. [District Rule 2201] N

The effluent VOC concentration level after the control device shall not exceed xxx ppmv, as methane. [District Rule 2201]

The total VOC emissions from the soil remediation system served by the thermal oxidizer shall not exceed XX pounds in any one day. [District Rule 2201] N

The emissions from the combustion of LPG shall not exceed either of the following limits: 0.15 lb-NOx/MMBtu, 0.021 lb-CO/MMBtu, 0.0044 lb-PM10/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.0164 lb-SOx/MMBtu. [District Rule 2201]

The minimum operating temperature for the combustion chamber of the thermal oxidizer shall be maintained at or above 1400 degrees F. [District Rule 2201] N

The thermal oxidizer shall be equipped with an operational temperature gauge to indicate the temperature of the combustion chamber. A continuously recording device shall be utilized to indicate the combustion chamber temperature during operation. [District Rule 2201] N

The soil remediation system shall not be operated unless the combustion chamber is at or above minimum operating temperature. The system shall automatically terminate operation if the temperature drops below the minimum operating temperature. [District Rule 2201] N

Sampling ports adequate for extraction of grab samples, measurement of gas flow rate, and use of an FID, PID, or other District-approved VOC detection device shall be provided for both the influent and the effluent gas streams. [District Rule 1081] N

Laboratory samples shall be taken at the initial inspection, under the supervision of the APCD Inspector. Samples shall be taken from both the influent and the effluent gas stream sampling ports. [District Rule 1081] N

Laboratory samples shall be analyzed for VOC. [District Rule 2201] N

Measurements to determine the influent and the effluent gas flow rates shall be
taken at the initial inspection. Flow rate calculations shall be submitted to the District along with the laboratory sample analysis results. [District Rule 1081] N

{1417} Initial compliance with VOC emission rate and control efficiency requirements shall be demonstrated by the results of the laboratory sample analysis. The results shall be submitted to the District within 60 days of the test. [District Rule 1081] N

{403 modified} Ongoing compliance with VOC emission rate and control efficiency requirements shall be demonstrated at least once per month by sampling both the influent and the effluent gas streams with an FID, PID, or other District-approved VOC detection device. [District Rule 1081] N

{1425} Records of the cumulative running time and the measured influent and effluent VOC concentrations shall be maintained. [District Rule 2201] N

{2780} All records shall be retained for a minimum of five years, and shall be made available for District inspection upon request. [District Rule 2201] N

**Catalytic Oxidizer (Natural Gas)**

{1420} The soil remediation system shall be maintained in proper operating condition at all times. [District Rule 2201] N

{15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] N

{98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102] N

{14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] N

{2857} Only natural gas shall be used as auxiliary fuel for the combustion of VOC. [District Rule 2201] N

{1423} Either the VOC control efficiency shall not be less than 95%, or the total VOC emission rate shall not exceed 2 pounds in any one day. [District Rule 2201] N

The effluent gas flowrate after the control device shall not exceed xxx scfm. [District Rule 2201] N

The effluent VOC concentration level after the control device shall not exceed xxx ppmv, as methane. [District Rule 2201]

{1465} The total VOC emissions from the soil remediation system served by the catalytic oxidizer shall not exceed xxx pounds in any one day. [District Rule 2201] N
The emissions from the combustion of natural gas shall not exceed any of the following limits: 0.1 lb-NOx/MMBtu, 0.084 lb-CO/MMBtu, 0.0076 lb-PM\textsubscript{10}/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.00285 lb-SOx/MMBtu. [District Rule 2201] N

{1464} The minimum operating temperature for the combustion chamber of the catalytic oxidizer shall be maintained at or above 600 degrees F. [District Rule 2201] N

{2861} The catalytic oxidizer shall be equipped with an operational temperature gauge to indicate the temperature of the combustion chamber. A continuously recording device shall be utilized to indicate the combustion chamber temperature during operation. [District Rule 2201] N

{1470} The soil remediation system shall not be operated unless the combustion chamber is at or above minimum operating temperature. The system shall automatically terminate operation if the temperature drops below the minimum operating temperature. [District Rule 2201] N

{1413} Sampling ports adequate for extraction of grab samples, measurement of gas flow rate, and use of an FID, PID, or other District-approved VOC detection device shall be provided for both the influent and the effluent gas streams. [District Rule 1081] N

{1414} Laboratory samples shall be taken at the initial inspection, under the supervision of the APCD Inspector. Samples shall be taken from both the influent and the effluent gas stream sampling ports. [District Rule 1081] N

{1416} Measurements to determine the influent and the effluent gas flow rates shall be taken at the initial inspection. Flow rate calculations shall be submitted to the District along with the laboratory sample analysis results. [District Rule 1081] N

{1417} Initial compliance with VOC emission rate and control efficiency requirements shall be demonstrated by the results of the laboratory sample analysis. The results shall be submitted to the District within 60 days of the test. [District Rule 1081] N

{403 modified} Ongoing compliance with VOC emission rate and control efficiency requirements shall be demonstrated at least once per month by sampling both the influent and the effluent gas streams with an FID, PID, or other District-approved VOC detection device. [District Rule 1081] N

{1425} Records of the cumulative running time and the measured influent and effluent VOC concentrations shall be maintained. [District Rule 2201] N

{2780} All records shall be retained for a minimum of five years, and shall be made available for District inspection upon request. [District Rule 2201] N

**Catalytic Oxidizer (LPG)**
The soil remediation system shall be maintained in proper operating condition at all times. [District Rule 2201] N

No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] N

No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102] N

Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] N

Only liquefied petroleum gas shall be used as auxiliary fuel for the combustion of VOC. [District Rule 2201] N

Either the VOC control efficiency shall not be less than 95%, or the total VOC emission rate shall not exceed 2 pounds in any one day. [District Rule 2201] N

The effluent gas flowrate after the control device shall not exceed xxx scfm. [District Rule 2201] N

The effluent VOC concentration level after the control device shall not exceed xxx ppmv, methane. [District Rule 2201]

The total VOC emissions from the soil remediation system served by the catalytic oxidizer shall not exceed xxx pounds in any one day. [District Rule 2201] N

The emissions from the combustion of LPG shall not exceed either of the following limits: 0.15 lb-NOx/MMBtu, 0.021 lb-CO/MMBtu, 0.0044 lb-PM_{10}/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.0164 lb-SOx/MMBtu. [District Rule 2201]

The minimum operating temperature for the combustion chamber of the catalytic oxidizer shall be maintained at or above 600 degrees F. [District Rule 2201] N

The catalytic oxidizer shall be equipped with an operational temperature gauge to indicate the temperature of the combustion chamber. A continuously recording device shall be utilized to indicate the combustion chamber temperature during operation. [District Rule 2201] N

The soil remediation system shall not be operated unless the combustion chamber is at or above minimum operating temperature. The system shall automatically terminate operation if the temperature drops below the minimum operating temperature. [District Rule 2201] N

Sampling ports adequate for extraction of grab samples, measurement of gas flow rate, and use of an FID, PID, or other District-approved VOC detection device shall be provided for both the influent and the effluent gas streams. [District Rule 1081] N
Laboratory samples shall be taken at the initial inspection, under the supervision of the APCD Inspector. Samples shall be taken from both the influent and the effluent gas stream sampling ports. [District Rule 1081] N

Measurements to determine the influent and the effluent gas flow rates shall be taken at the initial inspection. Flow rate calculations shall be submitted to the District along with the laboratory sample analysis results. [District Rule 1081] N

Initial compliance with VOC emission rate and control efficiency requirements shall be demonstrated by the results of the laboratory sample analysis. The results shall be submitted to the District within 60 days of the test. [District Rule 1081] N

Ongoing compliance with VOC emission rate and control efficiency requirements shall be demonstrated at least once per month by sampling both the influent and the effluent gas streams with an FID, PID, or other District-approved VOC detection device. [District Rule 1081] N

Records of the cumulative running time and the measured influent and effluent VOC concentrations shall be maintained. [District Rule 2201] N

All records shall be retained for a minimum of five years, and shall be made available for District inspection upon request. [District Rule 2201] N

**Thermal and Catalytic Oxidizer (Natural Gas)**

The soil remediation system shall be maintained in proper operating condition at all times. [District Rule 2201] N

No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] N

No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102] N

Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] N

Only natural gas shall be used as auxiliary fuel for the combustion of VOC. [District Rule 2201] N

Either the VOC control efficiency shall not be less than 95%, or the total VOC emission rate shall not exceed 2 pounds in any one day. [District Rule 2201] N

The total VOC emissions from the soil remediation system served by the thermal or catalytic oxidizer shall not exceed XX pounds in any one day. [District Rule 2201] N
The emissions from the combustion of natural gas shall not exceed any of the following limits: 0.1 lb-NOx/MMBtu, 0.084 lb-CO/MMBtu, 0.0076 lb-PM$_{10}$/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.00285 lb-SOx/MMBtu. [District Rule 2201] N

{1462} The minimum operating temperature for the combustion chamber of the thermal oxidizer shall be maintained at or above 1400 degrees F. [District Rule 2201] N

{1464} The minimum operating temperature for the combustion chamber of the catalytic oxidizer shall be maintained at or above 600 degrees F. [District Rule 2201] N

{1469} The thermal/catalytic oxidizer shall be equipped with an operational temperature gauge to indicate the temperature of the combustion chamber. A continuously recording device shall be utilized to indicate the combustion chamber temperature during operation. [District Rule 2201] N

{1470} The soil remediation system shall not be operated unless the combustion chamber is at or above minimum operating temperature. The system shall automatically terminate operation if the temperature drops below the minimum operating temperature. [District Rule 2201] N

{1413} Sampling ports adequate for extraction of grab samples, measurement of gas flow rate, and use of an FID, PID, or other District-approved VOC detection device shall be provided for both the influent and the effluent gas streams. [District Rule 1081] N

{1414} Laboratory samples shall be taken at the initial inspection, under the supervision of the APCD Inspector. Samples shall be taken from both the influent and the effluent gas stream sampling ports. [District Rule 1081] N

{1416} Measurements to determine the influent and the effluent gas flow rates shall be taken at the initial inspection. Flow rate calculations shall be submitted to the District along with the laboratory sample analysis results. [District Rule 1081] N

{1417} Initial compliance with VOC emission rate and control efficiency requirements shall be demonstrated by the results of the laboratory sample analysis. The results shall be submitted to the District within 60 days of the test. [District Rule 1081] N

{403} Ongoing compliance with VOC emission rate and control efficiency requirements shall be demonstrated by sampling both the influent and the effluent gas streams with an FID, PID, or other District-approved VOC detection device. [District Rule 1081] N

{1356} Sampling to demonstrate ongoing compliance shall be performed at least once per month. [District Rule 1081] N

{1425} Records of the cumulative running time and the measured influent and effluent VOC concentrations shall be maintained. [District Rule 2201] N

{1471} The Air Pollution Control Inspector shall be notified in writing when the thermal
incinerator will be modified to operate in the catalytic oxidizer mode prior to the modification. [District Rule 2201] N

{2780} All records shall be retained for a minimum of five years, and shall be made available for District inspection upon request. [District Rule 2201] N

**Thermal and Catalytic (LPG)**

{1420} The soil remediation system shall be maintained in proper operating condition at all times. [District Rule 2201] N

{15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] N

{98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102] N

{14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] N

{2859} Only liquefied petroleum gas shall be used as auxiliary fuel for the combustion of VOC. [District Rule 2201] N

{1423} Either the VOC control efficiency shall not be less than 95%, or the total VOC emission rate shall not exceed 2 pounds in any one day. [District Rule 2201] N

The effluent gas flowrate after the control device shall not exceed xxx scfm. [District Rule 2201] N

The effluent VOC concentration level after the control device shall not exceed xxx ppmv, as methane. [District Rule 2201]

{modified 1463} The total VOC emissions from the soil remediation system served by the thermal or catalytic oxidizer shall not exceed XX pounds in any one day. [District Rule 2201] N

{1465} The total VOC emissions from the soil remediation system served by the catalytic oxidizer shall not exceed xxx pounds in any one day. [District Rule 2201] N

The emissions from the combustion of LPG shall not exceed either of the following limits: 0.15 lb-NOx/MMBtu, 0.021 lb-CO/MMBtu, 0.0044 lb-PM10/MMBtu, 0.0055 lb-VOC/MMBtu, or 0.0164 lb-SOx/MMBtu. [District Rule 2201]

{1462} The minimum operating temperature for the combustion chamber of the thermal oxidizer shall be maintained at or above 1400 degrees F. [District Rule 2201] N
The minimum operating temperature for the combustion chamber of the catalytic oxidizer shall be maintained at or above 600 degrees F. [District Rule 2201] N

The thermal/catalytic oxidizer shall be equipped with an operational temperature gauge to indicate the temperature of the combustion chamber. A continuously recording device shall be utilized to indicate the combustion chamber temperature during operation. [District Rule 2201] N

The soil remediation system shall not be operated unless the combustion chamber is at or above minimum operating temperature. The system shall automatically terminate operation if the temperature drops below the minimum operating temperature. [District Rule 2201] N

Sampling ports adequate for extraction of grab samples, measurement of gas flow rate, and use of an FID, PID, or other District-approved VOC detection device shall be provided for both the influent and the effluent gas streams. [District Rule 1081] N

Laboratory samples shall be taken at the initial inspection, under the supervision of the APCD Inspector. Samples shall be taken from both the influent and the effluent gas stream sampling ports. [District Rule 1081] N

Measurements to determine the influent and the effluent gas flow rates shall be taken at the initial inspection. Flow rate calculations shall be submitted to the District along with the laboratory sample analysis results. [District Rule 1081] N

Initial compliance with VOC emission rate and control efficiency requirements shall be demonstrated by the results of the laboratory sample analysis. The results shall be submitted to the District within 60 days of the test. [District Rule 1081] N

Ongoing compliance with VOC emission rate and control efficiency requirements shall be demonstrated at least once per month by sampling both the influent and the effluent gas streams with an FID, PID, or other District-approved VOC detection device. [District Rule 1081] N

After the thermal incinerator is modified to operate in catalytic oxidizer mode, compliance with VOC emission rate and control efficiency requirements shall be demonstrated by sampling both the influent and the effluent gas streams with an FID, PID, or other District-approved VOC detection device. [District Rule 1081] N

Records of the cumulative running time and the measured influent and effluent VOC concentrations shall be maintained. [District Rule 2201] N

The Air Pollution Control Inspector shall be notified in writing when the thermal incinerator will be modified to operate in the catalytic oxidizer mode prior to the modification. [District Rule 2201] N
All records shall be retained for a minimum of five years, and shall be made available for District inspection upon request. [District Rule 2201]
Engineering Evaluation
(Carbon Adsorption)
I. Proposal

Facility Name is applying for an Authority to Construct (ATC) permit for a soil remediation operation served by an activated carbon system.

OR

Facility Name is applying for an Authority to Construct (ATC) permit to modify their soil remediation operation to (state the type of modification).

II. Applicable Rules

Rule 2201    New and Modified Stationary Source Review Rule (9/21/06)
Rule 2520    Federally Mandated Permits (06/21/01)
Rule 4101    Visible Emissions (02/17/05)
Rule 4102    Nuisance (12/17/92)
Rule 4651    Volatile Organic Compounds from Decontamination of Soil (9/20/07)
CH&SC 41700    California Health and Safety Code (Health Risk Assessment)
CH&SC 42301.6   California Health and Safety Code (School Notice)
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

The facility is located at location. The District has verified that the facility is [not] located within 1,000 feet of the outer boundary of any K-12 school. Therefore, pursuant to CH&SC 42301.6, California Health and Safety Code (School Notice), public notification is [not] required.
If located at existing stationary source then state:
Although this operation is located at [Facility Name and #], it is considered a different stationary source by virtue of it being a different process with a different SIC code.

IV. Process Description

VOC will be extracted from subsurface soil by mechanically drawing air through the soil matrix. This will be done by connecting a vacuum pump to extraction wells. When suction is applied to the wells it induces a subsurface airflow radially toward perforations in the well casings. Organic vapors are removed by adsorption as the gas stream passes through a bed of specially "activated" carbon. This material has a very large surface area for adsorption due to the presence of a large number of pores throughout the carbon. The organic vapors diffuse into these pores and are retained on the carbon surface due to both chemical and physical forces. The activated carbon system will capture at least 95% of the VOC in the process stream prior to discharge into the atmosphere.

Operating Schedule:

The operating schedule is [ ] hr/day, [ ] days/week, and [ ] weeks/year. The expected life of the project is [ ] years.

V. Equipment Listing

Activated Carbon System:

Manufacturer: [ ]
( [ ] carbon canisters @ [ ] lbs each)
Model #: [ ]
Control Efficiency: [ ] % (Per applicant, District BACT requirement: 95%)

Extraction Blower/Motor:

Power Rating: [ ] hp
Flowrate: [ ] cfm

C-xxxx-x-x: SOIL REMEDIATION PROJECT SERVED BY TWO (2) [MANUFACTURER AND MODEL #] [XXX] LB CANISTERS CONNECTED IN SERIES

VI. Emission Control Technology Evaluation

Activated Carbon System:

Carbon adsorption is a remediation technology in which pollutants are removed from air by physical adsorption onto activated carbon grains. Carbon is "activated" for this purpose by
processing the carbon to create porous particles with a large internal surface area that attracts and adsorbs organic molecules as well as certain metal and inorganic molecules.

The control equipment consists of [two (2), [100] lbs each, carbon canisters connected in series. The VOC-contaminated air from the extraction wells will be ducted through the carbon system where a minimum of 95% (by weight) of the VOC will be captured. After treatment by the carbon system the air is released to the atmosphere. To prevent potential VOC emissions from the spent carbon canisters, the canisters will be sealed gas-tight and sent to a regeneration facility or landfill for disposal.

Verification of Carbon Breakthrough:

Per District policy of carbon breakthrough in a carbon adsorption remediation project, the first or first set of canisters must be capable of operating at least 168 consecutive hours (or seven days) at the maximum influent concentration before breakthrough. The last canister is only for backup upon breakthrough of the first set of canisters. Therefore, the breakthrough period for the first set is required to be no less than seven days, calculated as follows:

\[
\begin{align*}
\text{Max influent Contaminant rate} &= [X] \text{ lb/day} \\
\text{Max effluent Contaminant rate} &= [Y] \text{ lb/day (based on a [95]% control)} \\
\text{VOC adsorbed} &= \text{Max Influent VOC – Max Effluent VOC} \\
&= [X] - [Y] \text{ lb/day} \\
\text{Mass of Breakthrough Carbon*} &= (\text{number of canisters - 1}) \times (M) \\
&= [A] \text{ lbs}
\end{align*}
\]

*The last canister is not included as it is only used for backup.

Assuming a working bed capacity of 20% for carbon (weight of solvent per weight of carbon) before breakthrough, the total mass of carbon from the canisters to adsorb solvent is:

\[
[A] \text{ lbs} \times (0.2) = [B] \text{ lbs}
\]

The number of days before breakthrough would then be:

\[
[B] \text{ lb} \div [Z] \text{ lb/day} = [#] \text{ days}
\]

Since the breakthrough period is greater than seven days, this project is approvable.

VII. Emissions Calculations

A. Assumptions

Process Weight:
• Maximum influent concentration: [ ] ppmv as methane OR mg/m³ of VOC being removed from the soil (proposed by applicant)
• Maximum influent rate: [ ] scfm
• Control efficiency: [ ]% (as proposed by the applicant) minimum BACT requirement
• Maximum effluent VOC concentration = [ ] ppmv as methane OR mg/m³ x (1 – 0.95)

B. Calculations

1. Pre-Project Potential to Emit (PE1)

Since this is a new emissions unit, the PE₁ = 0

OR

The daily, annual, and quarterly pre-project emissions are shown below:

<table>
<thead>
<tr>
<th>Pre-Project Potential to Emit (PE1)</th>
<th>Daily PE</th>
<th>Annual PE</th>
<th>Quarterly PE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOₓ</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>SOₓ</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>PM₁₀</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>CO</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>VOC</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

2. Post Project Potential to Emit PE (PE2)

VOC Emissions from the Activated Carbon System:

The only criteria pollutant emitted from this operation will be VOC removed from the soil.

VOC concentrations are measured with reference to methane. This requires that the molecular weight be adjusted to methane. Since the applicant stated that the maximum influent concentration is [ ] ppmv as [gasoline @ 100 lb/lb-mole], the adjusted concentration can be determined as follows:

\[
\text{(mass emissions)}_{\text{as methane}} = \text{mass emissions}_{\text{as gasoline}}
\]

\[
\text{(concentration} \times \text{flow rate} \times \text{molar volume} \times \text{molecular weight})_{\text{methane}} = \text{(concentration} \times \text{flow rate} \times \text{molar volume} \times \text{molecular weight})_{\text{gasoline}}
\]

\[
\text{concentration}_{\text{methane}} = \text{(concentration} \times \text{molecular weight})_{\text{methane}} / \text{(concentration} \times \text{molecular weight})_{\text{gasoline}}
\]
Maximum Influent Concentration (ppmv as methane)
= concentration\textsubscript{gasoline} \times \text{molecular weight\textsubscript{gasoline}} / \text{molecular weight\textsubscript{methane}}

= [ ] ppmv-gasoline \times 100 \text{ lb\textsubscript{gasoline}}/\text{lb-mole} / 16.043 \text{ lb-methane/lb-mole}
= [ ] ppmv as methane

| Control Efficiency: | [ ] % (Per applicant, District BACT requirement: 95\%)
| Max. Influent Conc.: | [ ] ppmv as methane
| Max. Effluent Conc. | \text{Max Influent Conc.} \times (1 - \text{Control Efficiency})
= [ ] ppmv \times (1 - 0.95) = [ ] ppmv as methane
| Influent Flow Rate: | [ ] ft\textsuperscript{3}/min (as proposed by the applicant)
| Molecular Wt. of Contaminant: | 16.043 lb/lb-mole (converted \textit{M}_{w} obtained from the applicant to methane)
| Molar Volume of Gas: | 379.5 ft\textsuperscript{3}/lb-mole

PE\textsubscript{Uncontrolled} = \text{Concentration (ppmv)} \times \text{Influent Flow Rate (ft\textsuperscript{3}/min)} \times 1 \text{ lb-mole/379.5 ft\textsuperscript{3} \times Mol. Wt. (lb/lb-mole)} \times 1440 \text{ min/day}

= ([ ] \times 10^{-6}) \times ([ ] ft\textsuperscript{3}/min) \times (1 \text{ lb-mole/379.5 ft\textsuperscript{3}}) \times (16.043 \text{ lb/lb-mole}) \times 1440 \text{ min/day}
= [ ] \text{lb-VOC/day}

\textit{If Concentration given in mg/m\textsuperscript{3} use the following equation, otherwise delete it}

PE\textsubscript{Uncontrolled} = \text{Concentration (mg/m\textsuperscript{3})} \times \text{Influent Flow Rate (ft\textsuperscript{3}/min)} \times \text{(m\textsuperscript{3}/35.31 ft\textsuperscript{3}) x (g/1000 mg) x (lb/453.6 g) x 1440 min/day}

= ([ ] mg/m\textsuperscript{3}) \times ([ ] ft\textsuperscript{3}/min) \times m\textsuperscript{3}/35.31 ft\textsuperscript{3}) x (g/1000 mg) \times (lb/453.6 g) \times 1440 \text{ min/day}
= [ ] \text{lb-VOC/day}

PE\textsubscript{Controlled} = PE\textsubscript{Uncontrolled} \times (1 - \text{Control Efficiency})

= ([ ] \text{lb/day}) \times (1 - 0.95)
= [ ] \text{lb-VOC/day}

If the daily PE (Y) above is below 2 pounds per day, add the following section; otherwise delete it.

Once effluent VOC emissions drop below 2 pounds per day, the emissions unit is no longer subject to BACT and may operate at a lower control efficiency or without any controls at all. However, since the VOC emissions calculated above are below 2.0 lb-VOC/day, the calculated VOC emission will be adjusted to 2.0 lb-VOC/day in order to show no increase in emissions from this operation once the control device is reduced or taken off-line. The effluent concentration will be recalculated as follows:
Facility Name
Facility #, Project #

Concentration (ppmv) = (2.0 lbs/day) ÷ [Influent Flow Rate (ft³/min) × 1 lb-mole/379.5 ft³ × Mol. Wt. (lb/lb-mole) × 1440 min/day]

Concentration (ppmv) = (2.0 lbs/day) ÷ [( ] ft³/min) × (1 lb-mole/379.5 ft³) × ( ] lb/lb-mole) × 1440 min/day × 10⁻⁶
= [ ] ppmv

### Post-Project Potential to Emit PE₂

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>PEcontrolled (lb/day)</th>
<th>PEannual (lb/yr)</th>
<th>PEquarterly (lb/qtr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOₓ</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>SOₓ</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>PM₁₀</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>CO</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>VOC</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

Note: PEannual (lb/yr) = PEcontrolled (lb/day) × 365 (days/yr)
Note: PEQuarterly (lb/qtr) = (PEAnnual) (lb/yr) ÷ 4 (qtr/yr)

### 3. Pre-Project Stationary Source Potential to Emit (SSPE1)

[For New Facilities]

Since this is a new facility, SSPE1 is equal to zero.

[For existing facilities]

Pursuant to Section 4.9 of District Rule 2201, the Pre-project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

Since this is an existing facility, SSPE1 is equal to the PE Total Pre-Project for all criteria pollutants.

The Pre-project Stationary Source Potential to Emit (SSPE1) is presented in the following table:

<table>
<thead>
<tr>
<th>SSPE1 (lb/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permit #</td>
</tr>
<tr>
<td>C-xxxx-x-x-x</td>
</tr>
<tr>
<td>C-xxxx-x-x-x</td>
</tr>
</tbody>
</table>
### 4. Post-Project Stationary Source Potential to Emit (SSPE2)

Pursuant to Section 4.10 of District Rule 2201, the Post-project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site. The Post-project Stationary Source Potential to Emit (SSPE2) is presented in the following table:

<table>
<thead>
<tr>
<th>SSPE2 (lb/yr)</th>
<th>Permit #</th>
<th>NO\textsubscript{x}</th>
<th>SO\textsubscript{x}</th>
<th>PM\textsubscript{10}</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-xxxx-x-x</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>C-xxxx-x-x</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### 5. Major Source Determination

Pursuant to Section 3.24 of District Rule 2201, a Major Source is a stationary source with post-project emissions or a Post Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values. However, Section 3.24.2 states, “for the purposes of determining major source status, the SSPE2 shall not include the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.”

<table>
<thead>
<tr>
<th>Major Source Determination (lb/year)</th>
<th>Pollutant</th>
<th>NO\textsubscript{x}</th>
<th>SO\textsubscript{x}</th>
<th>PM\textsubscript{10}</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSPE2 (lb/yr)</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Major Source Threshold</td>
<td>50,000</td>
<td>140,000</td>
<td>140,000</td>
<td>200,000</td>
<td>50,000</td>
<td></td>
</tr>
<tr>
<td>Major Source?</td>
<td>[Yes or No]</td>
<td>[Yes or No]</td>
<td>[Yes or No]</td>
<td>[Yes or No]</td>
<td>[Yes or No]</td>
<td></td>
</tr>
</tbody>
</table>

Since none of the threshold values in the above table are exceeded, this facility is not a Major Source.

Or

Since the annual VOC emissions are above the major source threshold values in the above table, this facility is now a Major Source for VOC. (If this is true, this project is NO LONGER A GEAR. Check with your supervisor before further processing.)
6. Baseline Emissions (BE)

a) Annual BE

BE = Pre-project Potential to Emit for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to Section 3.22

Since this is a new facility, the annual BE is equal to zero.

OR

Since this unit is not located at a major source, BE = Pre-project Potential to Emit.

<table>
<thead>
<tr>
<th>Permit Number</th>
<th>NOx</th>
<th>SOx</th>
<th>PM10</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-xxxx-xx</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>[   ]</td>
</tr>
</tbody>
</table>

b) Quarterly BE (QBE)

The QBE is required, unit by unit, pollutant by pollutant, to determine the Quarterly Net Emissions Change below.

[For New Facilities]

Since this is a new facility, the quarterly BE is equal to zero.

[For Existing Facilities]

QBE = PE_{quarterly}

<table>
<thead>
<tr>
<th>Permit Number</th>
<th>NOx</th>
<th>SOx</th>
<th>PM10</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-xxxx-xx</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>[   ]</td>
</tr>
</tbody>
</table>
7. **Quarterly Net Emissions Change (QNEC)**

The QNEC is entered into PAS database and subsequently reported to CARB. The QNEC is calculated for each pollutant, for each unit, as the difference between the post-project quarterly permitted emissions and the quarterly baseline emissions.

\[ QNEC = PE_2 \text{ (lb-VOC/qtr)} - BE \text{ (lb-VOC/qtr)} \]

<table>
<thead>
<tr>
<th>Permit Number</th>
<th>NOx</th>
<th>SOx</th>
<th>PM10</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-xxxx-xx</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

9. **Major Modification**

Major Modification is defined in 40 CFR Part 51.165 as "*any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act.*"

As discussed in Section VII.C.5 above, the facility is not a Major Source for any criteria pollutant; therefore, the project does not constitute a Major Modification.

10. **Federal Major Modification**

As shown above, this project does not constitute a Major Modification. Therefore, in accordance with District Rule 2201, Section 3.17, this project does not constitute a Federal Major Modification and no further discussion is required.

**VIII. Compliance**

**Rule 2201 - New and Modified Stationary Source Review Rule**

**A. BACT**

1. **BACT Applicability**

   BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following*:

   a. Any new emissions unit with a potential to emit exceeding two pounds per day,
   b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
   c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
d. Any new or modified emissions unit, in a stationary source project, which results in a Major Modification.

*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

The applicant is proposing to install a new emissions unit with a PE of [ ] lb/day for VOC as calculated in section VII.C.2. Since the daily VOC emissions are [greater or not greater] than 2.0 lbs/day, BACT [will or will not] be triggered. The daily emissions for [NOx, SOx, PM10, and CO] are also above 2.0 lb/day. Therefore, BACT will be triggered for [NOx, SOx, PM10, CO, and VOC].

OR

The applicant is proposing to modify its existing emissions unit with an AIPE of [ ] lb/day for VOC as calculated in the following section. Since the daily VOC emissions are [greater or less] than 2.0 lbs/day, BACT [will or will not] be triggered. The daily AIPE for [NOx, SOx, PM10, and CO] are also above 2.0 lb/day. Therefore, BACT will be triggered for [NOx, SOx, PM10, CO, and VOC].

Adjusted Increase in Permitted Emissions (AIPE)

\[
AIPE = PE2 - HAPE \text{ where,}
\]

\[
AIPE = \text{Adjusted Increase in Permitted Emissions, lb/day.}
\]

\[
PE2 = \text{the emission unit's post project Potential to Emit, lb/day.}
\]

\[
HAPE = \text{the emission unit's Historically Adjusted Potential to Emit, lb/day.}
\]

Historically Adjusted Potential to Emit (HAPE) Calculations:

\[
HAPE = PE1 \times (EF2 / EF1) \text{ where,}
\]

\[
PE1 = \text{The emission unit's Potential to Emit prior to modification or relocation.}
\]

\[
EF2 = \text{The emission unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1.}
\]

\[
EF1 = \text{The emission unit's permitted emission factor for the pollutant before the modification or relocation.}
\]

\[
EF1 = [ ] \% \text{ (Taken from project # [ ])}
\]

\[
EF2 = [ ] \% \text{ (As proposed by the applicant, 95% District BACT requirement)}
\]

\[
AIPE \text{ (lb/day)} = PE2 \text{ (lb/day)} - [PE1 \text{ (lb/day)} \times (EF2 / EF1)]
\]

\[
= PE2 \text{ (lb/day)} - [PE1 \text{ (lb/day)} \times (0.95 / 0.95)]
\]

\[
= PE2 \text{ (lb/day)} - [PE1 \text{ (lb/day)} \times 1]
\]
Facility Name
Facility #, Project #

\[ PE2 (lb/day) - PE1 (lb/day) \]

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>PE(_2) Daily Post Project (lb/day)</th>
<th>PE(_1) Daily Pre Project (lb/day)</th>
<th>AIPE (lb/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO(_x)</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>SO(_x)</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>PM(_{10})</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>CO</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>VOC</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

2. BACT Guidance

Per District Policy APR 1305, Section IX, “A top-down BACT analysis shall be performed as a part of the Application Review for each application subject to the BACT requirements pursuant to the District’s NSR Rule for source categories or classes covered in the BACT Clearinghouse, relevant information under each of the following steps may be simply cited from the Clearinghouse without further analysis.”

SJVUAPCD BACT Clearinghouse Guideline 2.1.3 specifies the achieved in practice or contained in SIP BACT and technologically feasible BACT for soil remediation operations utilizing a carbon adsorption system. Therefore, relevant information will be cited without further analysis.

See Appendix I: BACT Clearinghouse Guideline 2.1.3

3. Top-Down BACT Analysis

The applicant is proposing to use a carbon adsorption system at 95% or greater control efficiency. Per the Top-Down analysis in Appendix I of this evaluation, this proposed equipment is the achieved in practice BACT and there is not a more effective technologically feasible control. Therefore, the proposed equipment satisfies the BACT requirement.

B. Offsets

1. Offset Applicability

Pursuant to Section 4.5.3, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the Post Project Stationary Source Potential to Emit (SSPE\(_2\)) equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The following table compares the post-project facility-wide annual emissions in order to determine if offsets will be required for this project.
### Offset Determination (lb/year)

<table>
<thead>
<tr>
<th></th>
<th>NO\textsubscript{X}</th>
<th>SO\textsubscript{X}</th>
<th>PM\textsubscript{10}</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post Project SSPE (SSPE2)</td>
<td>- -</td>
<td>- -</td>
<td>- -</td>
<td>- -</td>
<td>- -</td>
</tr>
<tr>
<td>Offset Threshold</td>
<td>20,000</td>
<td>54,750</td>
<td>29,200</td>
<td>200,000</td>
<td>20,000</td>
</tr>
<tr>
<td>Offsets triggered?</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

#### 2. Quantity of Offsets Required

As shown in the table above, the SSPE2 is not greater than or equal to the offset threshold levels for any criteria pollutant. Therefore, offsets will not be required.

**OR**

As shown in the table above, the SSPE2 meets or exceeds the offset threshold levels. Therefore, offsets will be required. *(If this is true, this project is NO LONGER A GEAR. Check with your supervisor before further processing.)*

#### C. Public Notification

1. **Applicability**

   Public noticing is required for:

   a. Any new Major Source, which is a new facility that is also a Major Source,
   b. Major Modifications,
   c. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
   d. Any project which results in the offset thresholds being surpassed, and/or
   e. Any project with an SSPE of greater than 20,000 lb/year for any pollutant.

   **a) New Major Source**

   *Example (a): (For a new facility – non Major Source.)*

   New Major Sources are new facilities, which are also Major Sources. As shown in Section VII.C.5 above, the SSPE2 is not greater than the Major Source threshold for any criteria pollutant. Therefore, public noticing is not required for this project for new Major Source purposes.

   *Example (c): (For an existing facility.)*

   New Major Sources are new facilities, which are also Major Sources. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

   **b) Major Modification**
As demonstrated in VII.C.7, this project does not constitute a Major Modification; therefore, public noticing for Major Modification purposes is not required.

c) PE > 100 lb/day

**Example (a): (For a project not including a new emissions unit.)**
Applications which include a new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. There are no new emissions units associated with this project; therefore public noticing is not required for this project for Potential to Emit Purposes.

**Example (b): (For a project including a new emissions unit – PE ≤ 100 lb/day.)**
Applications which include a new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. As seen in Section VII.C.2 above, this project does not include a new emissions unit which has daily emissions greater than 100 lb/day for any pollutant, therefore public noticing for PE > 100 lb/day purposes is not required.

**Example (c): (For a project including a new emissions unit – PE > 100 lb/day.)**
The PE2 for this new unit is compared to the daily PE Public Notice thresholds in the following table:

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>PE2 (lb/day)</th>
<th>Public Notice Threshold</th>
<th>Public Notice Triggered?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{X}</td>
<td>100.5</td>
<td>100 lb/day</td>
<td>Yes</td>
</tr>
<tr>
<td>SO\textsubscript{X}</td>
<td>21.2</td>
<td>100 lb/day</td>
<td>No</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>25.6</td>
<td>100 lb/day</td>
<td>No</td>
</tr>
<tr>
<td>CO</td>
<td>124.7</td>
<td>100 lb/day</td>
<td>Yes</td>
</tr>
<tr>
<td>VOC</td>
<td>48.9</td>
<td>100 lb/day</td>
<td>No</td>
</tr>
</tbody>
</table>

Therefore, public noticing for PE > 100 lb/day purposes is required.

d) Offset Threshold

**Example (a): (For a project not surpassing the offset threshold.)**
The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.
<table>
<thead>
<tr>
<th>Pollutant</th>
<th>SSPE1 (lb/year)</th>
<th>SSPE2 (lb/year)</th>
<th>Offset Threshold</th>
<th>Public Notice Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOX</td>
<td>0</td>
<td>0</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>SOX</td>
<td>0</td>
<td>0</td>
<td>54,750 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>PM10</td>
<td>17,471</td>
<td>24,399</td>
<td>29,200 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>CO</td>
<td>0</td>
<td>0</td>
<td>200,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>VOC</td>
<td>0</td>
<td>0</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
</tbody>
</table>

As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

**Example (b): (For a project surpassing the offset threshold.)**
The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>SSPE1 (lb/year)</th>
<th>SSPE2 (lb/year)</th>
<th>Offset Threshold</th>
<th>Public Notice Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOX</td>
<td>18,361</td>
<td>21,698</td>
<td>20,000 lb/year</td>
<td>Yes</td>
</tr>
<tr>
<td>SOX</td>
<td>3,274</td>
<td>3,963</td>
<td>54,750 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>PM10</td>
<td>5,450</td>
<td>6,785</td>
<td>29,200 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>CO</td>
<td>25,680</td>
<td>27,318</td>
<td>200,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>VOC</td>
<td>17,552</td>
<td>19,035</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
</tbody>
</table>

As detailed above, offset thresholds were surpassed for NOX with this project; therefore public noticing is required for offset purposes.

(Note: Public notification is independent of whether or not Offsets are required. For example, if this project involves the installation of emergency (offset-exempt) equipment and the offset threshold is surpassed, then public notification would still be triggered. And conversely, if this project involves the installation of new equipment which required offsets; however, the SSPE1 was already greater than the offset threshold, public notification would not be triggered.)

e) SSIPE > 20,000 lb/year

An SSIPE exceeding 20,000 pounds per year for any one pollutant triggers public notice.

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project...
Stationary Source Potential to Emit (SSPE1), i.e. SSIPE = SSPE2 – SSPE1. The values for SSPE2 and SSPE1 are calculated according to Rule 2201, Sections 4.9 and 4.10, respectively. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table:

### Example (a): (For a project where the SSIPE ≤ 20,000 lb/year.)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>SSPE2 (lb/year)</th>
<th>SSPE1 (lb/year)</th>
<th>SSIPE (lb/year)</th>
<th>SSIPE Public Notice Threshold</th>
<th>Public Notice Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{x}</td>
<td>876</td>
<td>0</td>
<td>876</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>SO\textsubscript{x}</td>
<td>37</td>
<td>0</td>
<td>37</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>8,438</td>
<td>3,776</td>
<td>4,662</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>CO</td>
<td>730</td>
<td>0</td>
<td>730</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>VOC</td>
<td>19,966</td>
<td>0</td>
<td>19,966</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
</tbody>
</table>

As demonstrated above, the SSIPEs for all pollutants were less than 20,000 lb/year; therefore public noticing for SSIPE purposes is not required.

### Example (b): (For a project where the SSIPE > 20,000 lb/year.)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>SSPE2 (lb/year)</th>
<th>SSPE1 (lb/year)</th>
<th>SSIPE (lb/year)</th>
<th>SSIPE Public Notice Threshold</th>
<th>Public Notice Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{x}</td>
<td>35,453</td>
<td>11,267</td>
<td>24,186</td>
<td>20,000 lb/year</td>
<td>Yes</td>
</tr>
<tr>
<td>SO\textsubscript{x}</td>
<td>6,482</td>
<td>4,533</td>
<td>1,949</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>8,438</td>
<td>5,971</td>
<td>2,467</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>CO</td>
<td>42,080</td>
<td>21,956</td>
<td>20,124</td>
<td>20,000 lb/year</td>
<td>Yes</td>
</tr>
<tr>
<td>VOC</td>
<td>29,008</td>
<td>25,942</td>
<td>3,066</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
</tbody>
</table>

As demonstrated above, the SSIPEs for NO\textsubscript{x} and CO were greater than 20,000 lb/year; therefore public noticing for SSIPE purposes is required.

### f) Public Notice Action

**Example (a): (For a project not requiring public notification.)**

As discussed above, this project will not result in emissions, for any criteria pollutant, which would subject the project to any of the noticing requirements listed above. Therefore, public notice will not be required for this project.

**Example (b): (For a project requiring public notification – PE > 100 lb/day.)**

As discussed above, public noticing is required for this project for NO\textsubscript{x} emissions in excess of 100 lb/day. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.
D. Daily Emissions Limits (DEL)

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.15 to restrict a unit’s maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.15.1 and 3.15.2, the DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

d) The total VOC emissions from the soil remediation system shall not exceed [ ] pounds in any one day.

e) VOC concentration of the exhaust gas from the soil remediation system served by the carbon adsorption shall not exceed [ ] ppmv, as methane. [District Rule 2201]

f) The soil ventilation rate and the exhaust gas flow rate shall not exceed [ ] scfm.

E. Compliance Assurance

The following measures shall be taken to ensure continued compliance with District Rules:

1. Source Testing

VOC Source testing upon initial startup is required.

2. Monitoring

Monitoring of influent and exhaust VOC concentrations will be required weekly. If the uncontrolled VOC emission rate is below 2.0 lb/day as demonstrated by five consecutive weekly samples, the control device may be taken off-line and sampling shall be performed monthly for ongoing demonstration to show that the uncontrolled VOC emissions are below 2.0 lb/day.

3. Record Keeping

The permittee shall maintain records for all monitored data for a period of five years.

4. Reporting

The permittee shall submit initial startup test report and maintain all other monitoring records on site. Such records shall be made available for District inspection upon request.

F. Ambient Air Quality Analysis
An AAQA is conducted by the Technical Services group, for any project which has an increase in emissions and triggers public notification requirements. Discuss the AAQA results as follows.

**For example:**
Section 4.14.1 of this Rule requires that an ambient air quality analysis (AAQA) be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The Technical Services Division of the SJVAPCD conducted the required analysis. Refer to Appendix X of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NOₓ, CO, and SOₓ. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NOₓ, CO, or SOₓ.

The proposed location is in a non-attainment area for PM₁₀. The increase in the ambient PM₁₀ concentration due to the proposed equipment is shown on the table titled Calculated Contribution. The levels of significance, from 40 CFR Part 51.165 (b)(2), are shown on the table titled Significance Levels.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Significance Levels (µg/m³) - 40 CFR Part 51.165 (b)(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Annual Avg.</td>
</tr>
<tr>
<td>PM₁₀</td>
<td>1.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Calculated Contributions (µg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Annual Avg.</td>
</tr>
<tr>
<td>PM₁₀</td>
<td>0.XX</td>
</tr>
</tbody>
</table>

As shown, the calculated contribution of PM₁₀ will not exceed the EPA significance level. This project is not expected to cause or make worse a violation of an air quality standard.

**Rule 2520 Federally Mandated Operating Permits**

Since this facility’s potential emissions do not exceed any major source thresholds of Rule 2201, this facility is not a major source, and Rule 2520 does not apply.
Rule 4101 Visible Emissions

Rule 4101 states that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity.

As long as the equipment is properly maintained and operated, compliance with visible emissions limits is expected under normal operating conditions.

Rule 4102 Public Nuisance

Section 4.0 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, compliance with this rule is expected.

California Health & Safety Code 41700 (Health Risk Assessment)

Discuss whether a Health Risk Assessment is required and/or the results of the HRA, including any special conditions to consider when issuing the ATC(s).

District Policy APR 1905 – Risk Management Policy for Permitting New and Modified Sources specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

Example (a): (For a project with no increase in emissions.)
As demonstrated above, there are no increases in emissions associated with this project, therefore a health risk assessment is not necessary and no further risk analysis is required.

(Note 1: An HRA is necessary if there is a change in any HRA parameter, i.e. exhaust flow rate changes, stack changes, fuel use and type changes, receptor distances, etc.)

(Note 2: If example (a) is used, delete the following sections, since they don’t apply if an HRA was not performed.)

Example (b): (For a project with a Prioritization score ≤ 1.)
An HRA is not required for a project with a total facility prioritization score of less than or equal to one. According to the Technical Services Memo for this project (Appendix X), the total facility prioritization score including this project was less than or equal to one. Therefore, no future analysis is required to determine the impact from this project and compliance with the District’s Risk Management Policy is expected.

Example (c): (For a project with a Prioritization score > 1.)
An HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (Appendix X), the total facility prioritization score including this project was greater than one. Therefore, a health risk assessment was required to determine the short-term acute and long-term chronic exposure from this project.

The cancer risk for this project is shown below:

<table>
<thead>
<tr>
<th></th>
<th>Unit</th>
<th>Cancer Risk</th>
<th>T-BACT Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>X-XXXX-X-X</td>
<td>XX per million</td>
<td>Yes/No</td>
<td></td>
</tr>
</tbody>
</table>

**Discussion of T-BACT**

Discuss whether a T-BACT is or is not triggered and the requirements which satisfy T-BACT (if any).

*Example (a): (For a project where T-BACT not triggered.)*
BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is not required for this project because the HRA indicates that the risk is not above the District’s thresholds for triggering T-BACT requirements; therefore, compliance with the District’s Risk Management Policy is expected.

*Example (b): (For a project where T-BACT is triggered)*
BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is required for this project because the HRA indicates that the risk is above the District’s thresholds for triggering T-BACT requirements.

For this project T-BACT is triggered for VOC. T-BACT is satisfied with BACT for VOC (see Appendix X), which is the use of a carbon adsorption system with a 95% or greater control efficiency; therefore, compliance with the District’s Risk Management Policy is expected.

*(Note: List all conditions necessary to ensure that the equipment is operated in the manner assumed when the RMR was performed.)*

See Appendix II: Health Risk Assessment Summary

**Rule 4651 – Volatile Organic Compounds From Decontamination of Soil**

The applicant is not proposing to excavate, transport, handle, ex-situ decontaminate, or dispose contaminated soil. Therefore, per section 2.0, this rule is not applicable.
CH&SC 42301.6 California Health & Safety Code (School Notice)

The applicant has indicated that this facility is not within 1,000 feet of a K-12 school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

California Environmental Quality Act (CEQA)

The District performed an Engineering Evaluation (this document) for the proposed project and determined that the project qualifies for ministerial approval under the District’s Guideline for Expedited Application Review (GEAR). Section 21080 of the Public Resources Code exempts from the application of CEQA those projects over which a public agency exercises only ministerial approval. Therefore, the District finds that this project is exempt from the provisions of CEQA.

IX. Recommendations

Issue Authority to Construct C-xxxx-x-x subject to the permit conditions on the attached draft Authority to Construct.

X. Billing Information

<table>
<thead>
<tr>
<th>Permit Number</th>
<th>Fee Schedule</th>
<th>Fee Description</th>
<th>Annual Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-XXXX-X-X</td>
<td>3020-01-[ ]</td>
<td>[ ] Electric HP</td>
<td>$882.00</td>
</tr>
</tbody>
</table>

Appendices

I: BACT GUIDELINE 2.1.3 & TOP-DOWN BACT ANALYSIS
II: HRA SUMMARY
III: DRAFT AUTHORITY TO CONSTRUCT
IV: EMISSIONS PROFILE
APPENDIX I

BACT GUIDELINE 2.1.2 & TOP-DOWN BACT ANALYSIS
San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 2.1.3*
Last Update: September 15, 1993

Emissions Unit: Soil Remediation Operation - Carbon Adsorption

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Achieved in Practice or contained in SIP</th>
<th>Technologically Feasible</th>
<th>Alternate Basic Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOC</td>
<td>95% Control efficiency for uncontrolled emissions over 2 lb/day</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*This is a Summary Page for this Class of Source - Permit Specific BACT Determinations on Next Page(s)
**Top-Down BACT Analysis**

a. Step 1 - Identify All Possible VOC Control Technologies

The SJVUAPCD BACT Clearinghouse Guideline 2.1.3 identifies for this soil remediation operation:

- 95% control efficiency for uncontrolled emissions above 2 lb/day

b. Step 2 - Eliminate Technologically Infeasible Options

There are no technologically infeasible options listed.

c. Step 3 - Rank Remaining Control Technologies by Control Effectiveness

- 95% control efficiency for uncontrolled emissions above 2 lb/day

d. Step 4 - Cost Effectiveness Analysis

The applicant is already proposing the most effective control technology listed above. Therefore, per SJVUAPCD BACT policy, the cost effectiveness analysis is not required.

e. Step 5 - Select BACT

The applicant is proposing BACT with the use of a carbon adsorption system at a 95% or greater control efficiency.
APPENDIX II

HRA SUMMARY
APPENDIX III

DRAFT AUTHORITY TO CONSTRUCT
Conditions

{1420} The soil remediation system shall be maintained in proper operating condition at all times. [District Rule 2201] N

{15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] N

{98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102] N

If effluent VOC emissions are greater than 2.0 lb/day, the VOC control device shall be at least 95% efficient in controlling the VOC from the soil remediation project. [District Rule 2201] N

{2856} The total VOC emissions from the soil remediation system shall not exceed xxx pounds in any one day. [District Rule 2201] N

{1422} Neither the soil ventilation rate nor the effluent gas flow rate shall exceed xxx scfm. [District Rule 2201] N

The VOC concentration of the exhaust gas from the soil remediation system served by the carbon adsorption shall not exceed xxx ppmv, as methane. [District Rule 2201]

{1412} A minimum of two carbon canisters which are connected in series shall be utilized. [District Rule 2201] N

{1413} Sampling ports adequate for extraction of grab samples, measurement of gas flow rate, and use of an FID, PID, or other District-approved VOC detection device shall be provided for both the influent and the effluent gas streams. [District Rule 1081] N

{1414} Laboratory samples shall be taken at the initial inspection, under the supervision of the APCD Inspector. Samples shall be taken from both the influent and the effluent gas stream sampling ports. [District Rule 1081] N

{1416} Measurements to determine the influent and the effluent gas flow rates shall be taken at the initial inspection. Flow rate calculations shall be submitted to the District along with the laboratory sample analysis results. [District Rule 1081] N

{1417} Initial compliance with VOC emission rate and control efficiency requirements shall be demonstrated by the results of the laboratory sample analysis. The results shall be submitted to the District within 60 days of the test. [District Rule 1081] N

Sampling to demonstrate ongoing compliance with the VOC emission rate and control
efficiency requirements shall be performed at least once per week by sampling both the influent and the effluent gas streams with an FID, PID, or other District-approved VOC detection device. [District Rule 1081] N

Control device may be taken off-line after uncontrolled VOC emissions from the soil remediation operation does not exceed 2.0 lb/day, as demonstrated by five consecutive weekly samples using a FID, PID, or other District-approved VOC detection device. Once taken off-line, permittee shall conduct monthly sampling with a FID, PID, or other District-approved VOC detection device to ensure uncontrolled VOC emissions do not exceed 2.0 lb/day. If uncontrolled VOC emissions exceed 2.0 lb/day, the control device shall be placed back on-line as soon as possible. [District Rule 2201] N

{1421} The carbon canisters removed from the system shall be sealed vapor tight. [District Rule 2201] N

{1425} Records of the cumulative running time and the measured influent and effluent VOC concentrations shall be maintained. [District Rule 2201] N

{2780} All records shall be retained for a minimum of five years, and shall be made available for District inspection upon request. [District Rule 2201] N