



Solvent Recovery Plan Guideline Document ver. 1.0

Santa Barbara County Air Pollution Control District
PO Box 6447, Santa Barbara, CA 93160-6447

APPLICABILITY

An APCD-approved solvent recovery plan must be followed by facilities that elect to receive reactive organic compound ¹ emission credit for solvent waste sent offsite to a certified hazardous waste treatment/disposal facility. If an APCD-approved solvent recovery plan is not followed, the facility is required to report their total solvent usage as emissions, without receiving credit for any waste recycled. This *Solvent Recovery Plan Guideline Document* provides three methods for facilities to determine the amount of reactive organic compound (ROC) waste credit for recycling. Other methodologies will be considered and reviewed on a cost reimbursable basis according to the provisions of APCD Rule 210.III.C. A deposit in the amount of \$1,000 for APCD costs must be submitted if an alternative methodology is chosen. In addition, the APCD may require a reimbursable deposit for the annual review of analytical data, records and reports for any of the methodologies. If the annual report will be reviewed on a cost reimbursable basis, the APCD will request a reimbursable deposit from the applicant.

INTRODUCTION

Facilities that use solvents determine their ROC emissions from mass balance calculations based on material usage and solvent waste recycled. Material usage is determined by purchase records and inventories from the beginning and end of each year. The mass balance equation to calculate the annual emissions or net usage is shown below.

$$\begin{aligned} \text{Annual Emissions} &= \text{Net Usage} \\ &= (\text{Beginning of Year Inventory} + \text{Amount Purchased}) \\ &\quad - (\text{Amount Recycled} + \text{End of Year Inventory}) \end{aligned}$$

Once the method selected is approved by the APCD, the method's requirements must be followed exactly. If the inspection(s) or annual report review show that any of the requirements were not met or that significant discrepancies exist in the data and records, no credit will be given for any of solvents recycled during the entire calendar year.

Select the method for tracking ROC waste on the attached application. Submit the completed application to the APCD at the address listed above. Upon APCD approval, the solvent recovery plan and any APCD-approved updates thereof, shall be incorporated into the facility's permit and shall have the full force and effect of a permit condition.

METHODS FOR TRACKING RECYCLED ROC WASTE

Only liquid ROC solvent waste will receive ROC credit. ROC emission credit will not be given for waste drums that contain unsuspected solids (e.g., solvent wipes). A facility may receive ROC emission credit for solvent waste that contains suspended solids (e.g., xylene dispersion) provided that the solid content of the solvent waste is determined and not included as part of the ROC credit. The weight and contents of the liquid waste drums must be recorded or analyzed to ensure that ROC credit is not given for solids, acetone, water or other non-ROC liquids.

¹ Reactive organic compound as defined by APCD Rule 102.

Solids Content Determination Procedures: An initial assessment of the percent of solids in the waste is required. If the solvent waste includes large amounts of suspended solids (e.g., xylene dispersion), routine sampling and analyses are required to determine the solid content on an ongoing basis. The initial assessment of solid contents must be repeated any time there is a change in process ², addition of process or a change in solvent. A solids content determination must be presented regardless which of the solvent recovery methods are chosen.

Initial Assessment

- a. Sample and analyze the contents of 5 randomly chosen drums from each waste code ³ for percent solid and percent suspended solids. The sampling must be done in a way that a uniform sample from the entire drum is obtained (e.g., Sample at the bottom, middle, and top of the drum. Combine the drum's samples and analyze.).
- b. Submit the results to the APCD's *Solvent Recovery Coordinator* in writing. The APCD will notify the applicant if additional sampling and analyses are required. These records are required to be maintained for 5 years or until the initial assessment is repeated, whichever is longer, and made available to the APCD upon request.

Routine Sampling and Analyses of High Solid Content Solvent Waste

- a. Sample and analyze the contents of every waste drum that is to receive emission credit. The sampling must be done in a way that a uniform sample from the entire drum is obtained (e.g., Sample at the bottom, middle, and top of the drum. Combine the drum's samples and analyze.).
- b. Submit the data and results with annual report. These records are required to be maintained for 5 years and made available to the APCD upon request.

Method 1: ROC Solvent Waste Separated from Non-ROC Solvent Waste. This method requires that the ROC and non-ROC waste streams are stored and shipped separately. At least two drums per quarter are required to be sampled and analyzed to ensure that the waste streams are not commingled.

Requirements

- a. Determine the amount of solids in the waste stream by following the *Solids Content Determination Procedures*.
- b. ROC and non-ROC (e.g., acetone, water) waste must be stored and shipped in separate drums. ROC and non-ROC waste streams shall not be commingled.
- c. Weigh each drum onsite prior to shipment. The tare weight of the drum may be used from the manufacturer or based on previous records for the same type of drum. The tare weight of the drum shall be subtracted from the weight of the full drum to determine the net weight of the solvent shipped offsite.⁴
- d. Sample and analyze two drums per quarter of each waste code ³ to verify the waste stream does not contain non-ROC waste. The samples must be analyzed by the certified laboratory in accordance with the method specified in the attached application form.

² A change in process includes any equipment or operations that effect amount or ratio of different solvents used.

³ California waste codes as defined by California Code of Regulations, Title 22, Division 4.5, Chapter 11, Appendix XII.

⁴ Estimated volume or weight is not acceptable.

- e. The lab analyses shall identify the ROC content and the non-ROC content. If the total does not equal 100 percent, the undetermined amount shall not receive ROC credit.
- f. If the lab analyses show that any drum's ROC content is less than 90 percent, no credit shall be received for any waste recycled. The ROC and non-ROC waste streams have not been adequately separated. The facility's total usage shall be reported as emissions.
- g. If the lab analyses show that the ROC content is consistently between 90 and 100 percent, the lab analysis with the lowest ROC content shall be used to discount all waste drums in that year. For example, if the lowest ROC content for any drum in 2005 was found to be 91 percent, the amount of ROC credit received is sum of the weight of all qualified drums multiplied by 0.91. If 1,000 pounds of qualifying waste was shipped offsite, $0.91 * 1,000$ lb or 910 pounds may be claimed as ROC credit.

Recordkeeping and Reporting

- h. The following records must be kept for five years, made available to the APCD upon request and submitted with the annual report:
 - i. Purchase records for each solvent (ROC and non-ROC solvents).
 - ii. Hazardous waste manifests for any drums containing ROC or non-ROC solvent waste (not required for the annual report).
 - iii. Summary of hazardous waste manifests with date, net weight, waste code ⁵ and drum number included.
 - iv. Net weight of each drum.
 - v. Chemical analyses clearly identifying the corresponding drum number with chain of custody.
 - vi. Beginning and end of year inventory of raw materials/fresh solvents.
 - vii. Emission calculation spreadsheet (include all information used to calculate emissions).

Method 2: ROC Credit by Chemical Analyses for Commingled Waste Streams. This method allows ROC and non-ROC waste to be stored and shipped together. Every drum is required to be sampled and analyzed for the ROC content. Purchase records, hazardous waste manifests and other records are required to be maintained.

Requirements

- a. Determine the amount of solids in the waste stream by following the *Solids Content Determination Procedures*.
- b. Sample and perform a chemical analysis for every waste drum that is to receive emission credit.⁶
- c. The lab analyses shall identify the ROC content and the non-ROC content. If the total does not equal 100 percent, the undetermined amount shall not receive ROC credit.
- d. Weigh each drum onsite prior to shipment. The tare weight of the drum may be used from the manufacturer or based on previous records for the same type of drum. The tare weight of the drum shall be subtracted from the weight of the full drum to determine the net weight of the solvent shipped offsite.⁷

⁵ California waste codes as defined by California Code of Regulations, Title 22, Division 4.5, Chapter 11, Appendix XII.

⁶ Any drums not sampled and analyzed shall not receive ROC credit.

⁷ Estimated volume or weight is not acceptable.

Recordkeeping and Reporting

- e. The following records must be kept for five years, made available to the APCD upon request and submitted with the annual report:
- i. Purchase records (ROC and non-ROC solvents).
 - ii. Hazardous waste manifests for any drums containing ROC or non-ROC solvent waste (not required for the annual report).
 - iii. Summary of hazardous waste manifests with date, net weight, waste code ⁸ and drum number included.
 - iv. Net weight of each drum.
 - v. Chemical analyses clearly identifying the corresponding drum number with chain of custody.
 - vi. Emission calculation spreadsheet (include all information used to calculate emissions).
 - vii. Beginning and end of year inventory of raw materials.

Method 3: ROC Credit by Records for Commingled Waste Streams. This method allows ROC and non-ROC waste to be stored and shipped together. Detailed recordkeeping of inventory, waste generation and waste collection are required. This method also requires that the drum logs/records be compared on a monthly basis with a chemical analysis to ensure that the recordkeeping methodology is working properly. If the results do not match, more frequent chemical analyses are required.

Requirements

- a. Determine the amount of solids in the waste stream by following the *Solids Content Determination Procedures*.
- b. The contents of two drums per waste code ⁸ shall be analyzed on a monthly basis. The results of the chemical analyses shall be compared to the drums' waste logs. If the chemical analyses show the logs are not representative (greater than five percent difference), the sampling and analyses shall become weekly, until four (4) consecutive weeks of representative analysis are obtained. If the weekly sampling and analyses show greater than five percent difference, every waste drum will be sampled and analyzed until the difference can be reduced below five percent. When the difference has been reduced to five percent or below, the sampling shall return to the weekly schedule, with the increased or decreased frequency as stated in the above schedule.
- c. Weigh each drum onsite prior to shipment. The tare weight of the drum may be used from the manufacturer or based on previous records for the same type of drum. The tare weight of the drum shall be subtracted from the weight of the full drum to determine the net weight of the solvent shipped offsite.⁹

Recordkeeping

- d. The following records must be kept for five years and made available to the APCD upon request:
- i. Daily inventory of raw materials/fresh solvents.
 - ii. Beginning and end of month inventory of raw materials/fresh solvents.
 - ii. Daily usage of each solvent with monthly sum.
 - iii. Daily amount of solvent waste created (itemized by each solvent) with monthly sums.
 - iv. Drum number that daily waste was placed in.

⁸ California waste codes as defined by California Code of Regulations, Title 22, Division 4.5, Chapter 11, Appendix XII.

⁹ Estimated volume or weight is not acceptable.

- v. Hazardous waste manifests for any drums containing ROC or non-ROC solvent waste.
- vi. Summary of hazardous waste manifests with date, net weight, waste code ¹⁰ and drum number included.
- vii. Net weight of each drum.
- viii. Logs for each drum.
- ix. Chemical analyses clearly identifying the corresponding drum number with chain of custody.
- x. Purchase records (ROC and non-ROC solvents).
- xi. Comparison of each drum log to corresponding chemical analysis.

Reporting

- e. The following records must be submitted to the APCD with the annual report:
 - i. Daily inventory of raw materials/fresh solvents, summarized monthly.
 - ii. Daily usage, summarized monthly.
 - iii. Purchase records (ROC and non-ROC solvents).
 - vi. Summary of hazardous waste manifests with date, net weight, waste code ¹⁰ and drum number included.
 - v. Net weight of each drum.
 - vi. Laboratory analyses.
 - vii. Drum logs.
 - viii. Comparison of each drum log to corresponding chemical analysis.
 - ix. Emission calculation spreadsheet (include all information used to calculate emissions).

Attachment: Solvent Recovery Plan Application Form

¹⁰ California waste codes as defined by California Code of Regulations, Title 22, Division 4.5, Chapter 11, Appendix XII.



Solvent Recovery Plan Application Form -17

Santa Barbara County Air Pollution Control District
PO Box 6447, Santa Barbara, CA 93160-6447

This form is required for all facilities that elect to receive reactive organic compound (ROC) emission credit for solvent waste sent offsite to a certified hazardous waste treatment/disposal facility. If an APCD-approved solvent recovery plan is not followed, the facility is required to report their total solvent usage as emissions, without receiving credit for recycled waste. **Mail the completed form to the Air Pollution Control District (APCD) at the above address.**

FACILITY INFORMATION

Company Name			
Facility Address/Location (e.g., Fairview Ave., 55 N. / Goleta)			
Facility Identification (FID) #			
Current APCD Permit #			
Solvent Recovery Plan Contact			
Tel #		E-mail	

METHOD SELECTION

- Method 1 – ROC Solvent Waste Separated from Non-ROC Solvent Waste
 Method 2 – ROC Credit by Chemical Analyses for Commingled Waste Streams
 Method 3 – ROC Credit by Records for Commingled Waste Streams
 Request for Review of Alternative Method (submit a \$1000 reimbursable deposit with the proposed method)

SOLIDS CONTENT IN SOLVENT WASTE

- Low Solids Content – Initial Assessment (if the initial assessment shows that there is a high solid content, routine sampling and analyses for percent solid are required)
 High Solids Content – Routine Sampling and Analyses

SOLVENTS

List ROC Solvents Recycled	
List Non-ROC Solvents Recycled	
List Other Non-ROC Solvents Used at Facility	
List ROC Solvents and Non-ROC Solvents with Commingled Waste Streams	

ANALYSIS METHODS

Chemical Analysis Methods for ROC Content	
Analysis Methods for Solid Content	

DISPOSAL /TREATMENT FACILITY INFORMATION

Name of Disposal/Treatment Facility					
Contact Name					
Position/Title					
Mailing Address					
City:		State		Zip	
Tel #		Fax #		E-mail	

LABORATORY INFORMATION

Name of Certified Laboratory					
Contact Name					
Position/Title					
Mailing Address					
City:		State		Zip	
Tel #		Fax #		E-mail	

APPLICANT/PREPARER CERTIFICATION STATEMENT

I agree to the following (check each box):

- I have read and understand the requirements of the method selected on this application.
- I shall follow the method selected on this application and any APCD-approved updates thereof.
- I understand that if I do not follow all of the requirements of my APCD-approved solvent recovery plan or if there are significant discrepancies in my records or analytical data, I shall not receive any ROC emission credit for the entire calendar year and shall report my total solvent usage as ROC emissions.
- I shall perform an initial assessment of solid content and repeat the assessment any time there is a change to a process, addition of a process or a change in solvent.
- I understand that the APCD may require a reimbursable deposit to review the records and analytical data.

The person who prepares the application also must sign the permit application. The preparer may be an employee of the owner/operator or an authorized agent (contractor/consultant) working on behalf of the owner/operator.

I certify that all information contained herein and information submitted with this application is true and correct.

signature of application preparer

date

print name of application preparer

employer name

All applications are required to be signed by a responsible official of the company that owns or operates the permitted equipment (i.e., the owner/operator). Signatures by Authorized Agents will not be accepted.

I certify that all information contained herein and information submitted with this application is true and correct.

signature of owner/operator responsible official

date

print name of owner/operator responsible official

employer name