Prequalification of Contractors for Demolition, Abatement, and Remediation Services for San Mateo County Replacement Correctional Facility

San Mateo County Sheriff's Office

Issued: March 30, 2012

Statement of Qualifications due: April 16, 2012, 2:30 pm

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PART 1 – INTRODUCTION

1.01 The Contractor has been pre-qualified by the Municipality to submit a Tender for the construction of the Project described as Demolition and Removal of Existing Structures and Construction of Proposed Structures and Associated Works (the "Project"). The Contractor is invited to submit a Tender to perform the Work in accordance with the Contract Documents for the Project.

1.02 Capitalized terms used but not defined in this Instruction to Tenderers have the meanings given to them in the Contract Documents for the Project and Associated Works.

1.03 Tenders will be received and Contracts awarded by the Municipality.

PART 2–SUBMISSION OF STATEMENT OF PREQUALIFICATION'S

2.01 Tenders are required to be submitted in a sealed envelope addressed to the Municipality **no later than 2:30 PM on April 16, 2012**

The Municipality of Deborah River Regional Municipality
Attn: The Municipal Clerk
100 Civic Center Drive
Deborah River, Ontario, L0R 2T0
Email: tenders@deborahriver.ca

2.02 The Municipality shall not be responsible for any misdirected Tenders or late Tenders.

2.03 The Municipality reserves the right to disqualify any Tenderer or withdraw any Tender at any time prior to the execution of the Contract by the Municipality.

PART 3 – SHERIFF'S OFFICE BACKGROUND

3.01 The Municipality may require the Contractor to provide a Sheriff's Office Background Check Letter dated within 30 days of the date of the Tender. The Contractor acknowledges that the Municipality may disqualify the Contractor from the bidding process if the Contractor does not provide a Sheriff's Office Background Check Letter to the satisfaction of the Municipality.

3.02 The Contractor agrees to provide a Criminal Record Check and Vulnerable Sector Check for each employee, agent, subcontractor or supplier of the Contractor who will be attending the Site. The Contractor shall provide the Criminal Record Check and Vulnerable Sector Check to the Municipality prior to the Contractor attending the Site.

PART 4 – STATEMENT OF PREQUALIFICATIONS

4.01 The Contractor acknowledges that the Statement of Prequalification submitted by the Contractor to the Municipality is incorporated into the Contract Documents for the Project and Associated Works.

4.02 Prospective Tenderers should examine each page of the Statement of Prequalification carefully and ensure that all information required to be provided is accurately provided. Any omissions or inaccuracies may result in the Tender being declared informal or incomplete and may result in the Tender being rejected.

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PART 5 – BASIC SCOPE AND CHARACTER OF PROJECT AND SERVICES REQUIRED

5.01 Scope of Project

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5.02 Construction Phase Services shall include but not be limited to:

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5.02 Post-Construction Phase services shall include but not be limited to:

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PART 6 – FORMAT FOR THE STATEMENT OF QUALIFICATIONS

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PART 7 – ADMINISTRATIVE REQUIREMENTS AND POLICIES

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7.04 [illegible]

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PART 8 – REVIEW PROCESS

8.01 Review of SOQ's

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8.02 Appeal of Disqualification

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PART 9 – GENERAL CONDITIONS

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9.06 [illegible]

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PART 10 – PROJECT EXECUTIVE

10.01 [illegible] questions and requests for additional information pertaining to [illegible] Addendum [illegible] shall be directed to the [illegible] designated Project Executive:

[illegible] Debora [illegible], Project Executive
San Mateo County Sheriff's Office
[illegible]
400 County Center 3rd Floor
Redwood City, CA 94063
Telephone: [illegible]
Email: [illegible]

SAN MATEO COUNTY SHERIFF'S OFFICE
Greg Munks, Sheriff

ANTICIPATED SCHEDULE OF EVENTS FOR RFSOQ PROCESS

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Mandatory Job Walk for prequalified Prospective Bidders	**April 18, 2012**
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PART 11 – CONTENT OF STATEMENTS OF QUALIFICATIONS

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CONTACT INFORMATION

Firm Name: _____ Check One: ☐ Corporation
(as it appears on license) ☐ Partnership
☐ Sole Prop.

Contact Person: _____

Address: _____

Phone: _____ Fax: _____

If firm is a sole proprietor or partnership:

Owner(s) of Company _____

Contractor's License Number(s):

_____

_____

_____

PART 12. INFORMATION ABOUT THE PROSPECTIVE BIDDER

ORGANIZATION, HISTORY, ORGANIZATIONAL PERFORMANCE, COMPLIANCE WITH CIVIL AND CRIMINAL LAWS

A. Current Organization and Structure of the Business

For Firms That Are Corporations:

1a. Date incorporated: _____

1b. Under the laws of what state: _____

1c. Provide all the following information for each person who is either (a) an officer of the corporation (president, vice president, secretary, treasurer), or (b) the owner of at least ten per cent of the corporation's stock.

Name	Position	Years with Co.	% Ownership	Social Security #

1d. Identify every construction firm that any person listed above has been associated with (as owner, general partner, limited partner or officer) at any time during the last five years.

NOTE: For this question, "owner" and "partner" refer to ownership of ten per cent or more of the business, or 10 per cent or more of its stock, if the business is a corporation.

Person's Name	Construction Firm(s)	Dates of Person's Participation with Firm(s)

For Firms That Are Partnerships:

1a. Date of formation: _____

1b. Under the laws of what state: _____

1c. Provide all the following information for each partner who owns 10 per cent or more of the firm.

Name	Position	Years with Co.	% Ownership	Social Security #

1d. Identify every construction company that any partner has been associated with (as owner, general partner, limited partner or officer) at any time during the last five years.

NOTE: For this question, "owner" and "partner" refer to ownership of ten per cent or more of the business, or ten per cent or more of its stock, if the business is a corporation.

Person's Name	Construction Company(ies)	Dates of Person's Participation with Company(ies)

For Firms That Are Sole Proprietorships:

1a. Date of commencement of business: _____

1b. Social security number of company owner: _____

1c. Identify every construction firm that the business owner has been associated with (as owner, general partner, limited partner or officer) at any time during the last five years.

NOTE: For this question, "owner" and "partner" refer to ownership of ten per cent or more of the business, or ten per cent or more of its stock, if the business is a corporation.

Person's Name	Construction Company	Dates of Person's Participation with Company

For Firms That Intend to Make a Bid as Part of a Joint Venture:

1a. Date of commencement of joint venture. _____

1b. Provide all of the following information for each firm that is a member of the joint venture that expects to bid on one or more projects:

Name of firm	% Ownership of Joint Venture

B. History of the Business and Organizational Performance

2. Has there been any change in ownership of the firm at any time during the last three years?

NOTE: A corporation whose shares are publicly traded is not required to answer this question.

☐ Yes ☐ No

If "yes," explain on a separate signed page.

3. Is the firm a subsidiary, parent, holding company or affiliate of another construction firm?

NOTE: Include information about other firms if one firm owns 50 per cent or more of another, or if an owner, partner, or officer of your firm holds a similar position in another firm.

☐ Yes ☐ No

If "yes," explain on a separate signed page.

4. Are any corporate officers, partners or owners connected to any other construction firms?

NOTE: Include information about other firms if an owner, partner, or officer of your firm holds a similar position in another firm.

☐ Yes ☐ No

If "yes," explain on a separate signed page.

5. State your firm's gross revenues for each of the last three years:

_____ _____ _____

6. How many years has your organization been in business in California as a contractor under your present business name and license number? _____ years

7. Is your firm currently the debtor in a bankruptcy case?

☐ Yes ☐ No

If "yes," please attach a copy of the bankruptcy petition, showing the case number, and the date on which the petition was filed.

8. Was your firm in bankruptcy at any time during the last five years? (This question refers only to a bankruptcy action that was not described in answer to question 7, above)

☐ Yes ☐ No

If "yes," please attach a copy of the bankruptcy petition, showing the case number and the date on which the petition was filed, and a copy of the Bankruptcy Court's discharge order, or of any other document that ended the case, if no discharge order was issued.

Licenses

9. List all California construction license numbers, classifications and expiration dates of the California contractor licenses held by your firm:

_____

_____

10. If any of your firm's license(s) are held in the name of a corporation or partnership, list below the names of the qualifying individual(s) listed on the CSLB records who meet(s) the experience and examination requirements for each license.

_____

_____

11. Has your firm changed names or license number in the past five years?

☐ Yes ☐ No

If "yes," explain on a separate signed page, including the reason for the change.

12. Has any owner, partner or (for corporations:) officer of your firm operated a construction firm under any other name in the last five years?

☐ Yes ☐ No

If "yes," explain on a separate signed page, including the reason for the change.

13. Has any CSLB license held by your firm or its Responsible Managing Employee (RME) or Responsible Managing Officer (RMO) been suspended within the last five years?

☐ Yes ☐ No

If "yes," please explain on a separate signed sheet.

Disputes

14. At any time in the last five years has your firm been assessed and paid liquidated damages after completion of a project under a construction contract with either a public or private owner?

☐ Yes ☐ No

If yes, explain on a separate signed page, identifying all such projects by owner, owner's address, the date of completion of the project, amount of liquidated damages assessed and all other information necessary to fully explain the assessment of liquidated damages.

15. In the last five years has your firm, or any firm with which any of your company's owners, officers or partners was associated, been debarred, disqualified, removed or otherwise prevented from bidding on, or completing, any government agency or public works project for any reason?
NOTE: "Associated with" refers to another construction firm in which an owner, partner or officer of your firm held a similar position, and which is listed in response to question 1c or 1d on this form.

☐ Yes ☐ No

If "yes," explain on a separate signed page. State whether the firm involved was the firm applying for pre-qualification here or another firm. Identify by name of the company, the name of the person within your firm who was associated with that company, the year of the event, the owner of the project, the project and the basis for the action.

16. In the last five years has your firm been denied an award of a public works contract based on a finding by a public agency that your company was not a responsible bidder?

☐ Yes ☐ No

If "yes," explain on a separate signed page. Identify the year of the event, the owner, the project and the basis for the finding by the public agency.

* * * * *

NOTE: The following two questions refer only to disputes between your firm and the owner of a project. You need not include information about disputes between your firm and a supplier, another contractor, or subcontractor. You need not include information about "pass-through" disputes in which the actual dispute is between a subcontractor and a project owner. Also, you may omit reference to all disputes about amounts of less than $50,000.

17. In the past five years has any claim **against** your firm concerning your firm's work on a construction project been **filed in court or arbitration?**

☐ Yes ☐ No

If "yes," on separate signed sheets of paper identify the claim(s) by providing the project name, date of the claim, name of the claimant, a brief description of the nature of the claim, the court in which the case was filed and a brief description of the status of the claim (pending or, if resolved, a brief description of the resolution).

18. In the past five years has your firm made any claim against a project owner concerning work on a project or payment for a contract and **filed that claim in court or arbitration**?

☐ Yes ☐ No

If "yes," on separate signed sheets of paper identify the claim by providing the project name, date of the claim, name of the entity (or entities) against whom the claim was filed, a brief description of the nature of the claim, the court in which the case was filed and a brief description of the status of the claim (pending, or if resolved, a brief description of the resolution).

* * * * *

19. At any time during the past five years, has any surety company made any payments on your firm's behalf as a result of a default, to satisfy any claims made against a performance or payment bond issued on your firm's behalf, in connection with a construction project, either public or private?

☐ Yes ☐ No

If "yes," explain on a separate signed page the amount of each such claim, the name and telephone number of the claimant, the date of the claim, the grounds for the claim, the present status of the claim, the date of resolution of such claim if resolved, the method by which such was resolved if resolved, the nature of the resolution and the amount, if any, at which the claim was resolved.

20. In the last five years has any insurance carrier, for any form of insurance, refused to renew the insurance policy for your firm?

☐ Yes ☐ No

If "yes," explain on a separate signed page. Name the insurance carrier, the form of insurance and the year of the refusal.

Criminal Matters and Related Civil Suits

21. Has your firm or any of its owners, officers or partners ever been found liable in a civil suit or found guilty in a criminal action for making any false claim or material misrepresentation to any public agency or entity?

☐ Yes ☐ No

If "yes," explain on a separate signed page, including identifying who was involved, the name of the public agency, the date of the investigation and the grounds for the finding.

22. Has your firm or any of its owners, officers or partners ever been convicted of a crime involving any federal, state, or local law related to construction?

☐ Yes ☐ No

If "yes," explain on a separate signed page, including identifying who was involved, the name of the public agency, the date of the conviction and the grounds for the conviction.

23. Has your firm or any of its owners, officers or partners ever been convicted of a federal or state crime of fraud, theft, or any other act of dishonesty?

☐ Yes ☐ No

If "yes," identify on a separate signed page the person or persons convicted, the court (the county if a state court, the district or location of the federal court), the year and the criminal conduct.

Bonding

24. Bonding capacity: Provide documentation from your surety identifying the following:

Name of bonding company/surety: _____

Name of surety agent, address and telephone number:

_____

25. If your firm was required to pay a premium of more than one per cent for a performance and payment bond on any project(s) on which your firm worked at any time during the last three years, state the percentage that your firm was required to pay. You may provide an explanation for a percentage rate higher than one per cent, if you wish to do so.

_____

26. List all other sureties (name and full address) that have written bonds for your firm during the last five years, including the dates during which each wrote the bonds:

_____

_____

_____

_____

27. During the last five years, has your firm ever been denied bond coverage by a surety company, or has there ever been a period of time when your firm had no surety bond in place during a public construction project when one was required?

☐ Yes ☐ No

If yes, provide details on a separate signed sheet indicating the date when your firm was denied coverage and the name of the company or companies which denied coverage; and the period during which you had no surety bond in place.

C. Compliance with Occupational Safety and Health Laws and with Other Labor Legislation Safety

28. Has CAL OSHA cited and assessed penalties against your firm for any "serious," "willful" or "repeat" violations of its safety or health regulations in the past five years?

NOTE: If you have filed an appeal of a citation, and the Occupational Safety and Health Appeals Board has not yet ruled on your appeal, you need not include information about it.

☐ Yes ☐ No

If "yes," attached a separate signed page describing the citations, including information about the dates of the citations, the nature of the violation, the project on which the citation(s) was or were issued, the amount of penalty paid, if any. If the citation was appealed to the Occupational Safety and Health Appeals Board and a decision has been issued, state the case number and the date of the decision.

29. Has the federal Occupational Safety and Health Administration cited and assessed penalties against your firm in the past five years?
NOTE: If you have filed an appeal of a citation and the Appeals Board has not yet ruled on your appeal, or if there is a court appeal pending, you need not include information about the citation.

☐ Yes ☐ No

If "yes," attach a separate signed page describing each citation.

30. Has the EPA or any Air Quality Management District or any Regional Water Quality Control Board cited and assessed penalties against either your firm or the owner of a project on which your firm was the contractor, in the past five years?
NOTE: If you have filed an appeal of a citation and the Appeals Board has not yet ruled on your appeal, or if there is a court appeal pending, you need not include information about the citation.

☐ Yes ☐ No

If "yes," attach a separate signed page describing each citation.

31. How often do you require documented safety meetings to be held for construction employees and field supervisors during the course of a project?

_____

32. List your firm's Experience Modification Rate (EMR) (California workers' compensation insurance) for each of the past three premium years:

NOTE: An Experience Modification Rate is issued to your firm annually by your workers' compensation insurance carrier.

Current year: _____

Previous year: _____

Year prior to previous year: _____

If your EMR for any of these three years is or was 1.00 or higher you may, if you wish, attach a letter of explanation.

33. Within the last five years has there ever been a period when your firm had employees but was without workers' compensation insurance or state-approved self-insurance?

☐ Yes ☐ No

If "yes," please explain the reason for the absence of workers' compensation insurance on a separate signed page. If "No," please provide a statement by your current workers' compensation insurance carrier that verifies periods of workers' compensation insurance coverage for the last five years. (If your firm has been in the construction business for less than five years, provide a statement by your workers' compensation insurance carrier verifying continuous workers' compensation insurance coverage for the period that your firm has been in the construction business.)

Prevailing Wage and Apprenticeship Compliance Record

34. Has there been more than one occasion during the last five years in which your firm was required to pay either back wages or penalties for your own firm's failure to comply with the **state's** prevailing wage laws?
NOTE: This question refers only to your own firm's violation of prevailing wage laws, not to violations of the prevailing wage laws by a subcontractor.

☐ Yes ☐ No

If "yes," attach a separate signed page or pages, describing the nature of each violation, identifying the name of the project, the date of its completion, the public agency for which it was constructed; the number of employees who were initially underpaid and the amount of back wages and penalties that you were required to pay.

35. During the last five years, has there been more than one occasion in which your own firm has been penalized or required to pay back wages for failure to comply with the **federal** Davis-Bacon prevailing wage requirements?

☐ Yes ☐ No

If "yes," attach a separate signed page or pages describing the nature of the violation, identifying the name of the project, the date of its completion, the public agency for which it was constructed; the number of employees who were initially underpaid, the amount of back wages you were required to pay along with the amount of any penalty paid.

36. Provide the **name, address and telephone number** of the apprenticeship program (approved by the California Apprenticeship Council) from whom you intend to request the dispatch of apprentices to your company for use on any public work project for which you are awarded a contract by *[Public Entity]*.

_____

37. If your firm operates its own State-approved apprenticeship program:

(a) Identify the craft or crafts in which your firm provided apprenticeship training in the past year.

(b) State the year in which each such apprenticeship program was approved, and attach evidence of the most recent California Apprenticeship Council approval(s) of your apprenticeship program(s).

(c) State the number of individuals who were employed by your firm as apprentices at any time during the past three years in each apprenticeship and the number of persons who, during the past three years, completed apprenticeships in each craft while employed by your firm.

_____

_____

_____

38. At any time during the last five years, has your firm been found to have violated any provision of California apprenticeship laws or regulations, or the laws pertaining to use of apprentices on public works?
NOTE: You may omit reference to any incident that occurred prior to April 12, 2008 if the violation was by a subcontractor and your firm, as general contractor on a project, had no knowledge of the subcontractor's violation at the time they occurred.

☐ Yes ☐ No

If "yes," provide the date(s) of such findings, and attach copies of the Department's final decision(s).

RECENT CONSTRUCTION PROJECTS COMPLETED

39. Prospective Bidder shall provide information about its five most recently completed public works projects and its three largest completed private projects within the last three years.[1] Names and references must be current and verifiable. Use separate sheets of paper that contain all of the following information:

Project Name: _____

Location: _____

[1] If you wish, you may, using the same format, also provide information about other projects that you have completed that are similar to the project(s) for which you expect to bid.

Owner: _____

Owner Contact (name and current phone number):

_____

_____

Architect or Engineer:_____

Architect or Engineer Contact (name and current phone number):

_____

_____

Construction Manager (name and current phone number):

_____

_____

Description of Project, Scope of Work Performed:

_____

_____

Total Value of Construction (including change orders): _____

Original Scheduled Completion Date: _____

Time Extensions Granted (number of days): _____

Actual Date of Completion: _____

PART 13. SCORED QUESTIONS

The scorable questions arise in three different areas:

(I) Questions for immediate disquaification

(II) History of the business and organizational performance;

(II) Compliance with occupational safety and health laws, workers' compensation and other labor legislation; and

(III) Completion of recent projects and quality of performance.

The Scores Needed for Prequalification

To prequalify, a Prospective Bidder is required to have a passing grade within each of the three large categories referred to above.

For Section I, "Questions for immediate disqualification," immediate disqualification is determined based on responses to the questions as described therein.

For Section II, "History of the business and organizational performance," a passing score of **57** on this portion of the questionnaire (of a maximum score of 76 on this portion of the questionnaire).

For Section III, "Compliance with occupational safety and health laws, workers' compensation and other labor legislation," a passing score of **38** on this portion of the questionnaire (of a maximum score of 53 points on this portion of the questionnaire).

For Section IIV, "Completion of recent projects and quality of performance," a passing score of **20** on this portion of the questionnaire (of a maximum score of 40 points on this portion of the questionnaire).

I. Questions for immediate disqualification (nine questions)

Prospective Bidder will be immediately disqualified if the answer to any of questions 1 through 5 is "no."

Prospective Bidder will be immediately disqualified if the answer to any of questions 6, 7, 8 or 9 is "yes." If the answer to question 8 is "yes," and if debarment would be the sole reason for denial of pre-qualification, any pre-qualification issued will exclude the debarment period.

1. Prospective Bidder possesses a valid and current California Contractor's license for the project or projects for which it intends to submit a bid.

   ☐ Yes ☐ No

2. Prospective Bidder has a liability insurance policy with a policy limit of at least $1,000,000 per occurrence and $2,000,000 aggregate.

   ☐ Yes ☐ No

3. Prospective Bidder has current workers' compensation insurance policy as required by the Labor Code or is legally self-insured pursuant to Labor Code section 3700 et. seq.

   ☐ Yes ☐ No ☐ Prospective Bidder is exempt from this requirement, because it has no employees

4. Have you attached your latest copy of a reviewed or audited financial statement with accompanying notes and supplemental information.[2]

   ☐ Yes ☐ No

NOTE: A financial statement that is not either reviewed or audited is not acceptable. A letter verifying availability of a line of credit may also be attached; however, it will be considered as supplemental information only, and is not a substitute for the required financial statement.

5. Have you attached a notarized statement from an admitted surety insurer (approved by the California Department of Insurance) and authorized to issue bonds in the State of California, which states: (a) that your current bonding capacity is sufficient for the project for which you seek pre-qualification if you are seeking pre-qualification for a single project; or (if you are seeking pre-qualification valid for a year) (b) your current available bonding capacity?

   ☐ Yes ☐ No

NOTE: Notarized statement must be from the surety company, not an agent or broker.

6. Has your contractor's license been revoked at any time in the last five years?

   ☐ Yes ☐ No

[2] Public Contract Code section 20101(e) exempts from this requirement a contractor who has qualified as a small business pursuant to Government Code section 14837(d)(1), if the bid is "no more than 25 per cent of the qualifying amount provided in section 14837(d)(1)."

7. Has a surety firm completed a contract on your behalf, or paid for completion because your firm was default terminated by the project owner within the last five (5) years?

☐ Yes ☐ No

8. At the time of submitting this pre-qualification form, is your firm ineligible to bid on or be awarded a public works contract, or perform as a subcontractor on a public works contract, pursuant to either Labor Code section 1777.1 or Labor Code section 1777.7?

☐ Yes ☐ No

If the answer is "Yes," state the beginning and ending dates of the period of debarment:

_____

9. At any time during the last five years, has your firm, or any of its owners or officers been convicted of a crime involving the awarding of a contract of a government construction project, or the bidding or performance of a government contract?

☐ Yes ☐ No

II. Questions about History of the Business and Organizational Performance (16 questions)

1. How many years has your organization been in business in California as a contractor under your present business name and license number? _____ years.

3 years or more = 2 points
4 years = 3 points 5 years = 4 pts.
6 years or more = 5 points

2. Is your firm currently the debtor in a bankruptcy case?

☐ Yes ☐ No

"No" = 3 points" "Yes" = 0 points

3. Was your firm in bankruptcy any time during the last five years? (This question refers only to a bankruptcy action that was not described in answer to question 7, above).

☐ Yes ☐ No

"No" = 3 points" "Yes" = 0 points

4. Has any CSLB license held by your firm or its Responsible Managing Employee (RME) or Responsible Managing Officer (RMO) been suspended within the last five years?

☐ Yes ☐ No

No = 5 points Yes = 0 points

5. At any time in the last five years, has your firm been assessed and paid liquidated damages after completion of a project, under a construction contract with either a public or private owner?

☐ Yes ☐ No

No projects with liquidated damages of more than $50,000, or one project with liquidated damages = 5 points.

Two projects with liquidated damages of more than $50,000 = 3 points

Any other answer: no points

6. In the last five years has your firm, or any firm with which any of your company's owners, officers or partners was associated, been debarred, disqualified, removed or otherwise prevented from bidding on, or completing, any government agency or public works project for any reason?
NOTE: "Associated with" refers to another construction firm in which an owner, partner or officer of your firm held a similar position, and which is listed in response to question 1c or 1d on this form.

☐ Yes ☐ No

No = 5 points Yes = 0 points

7. In the last five years, has your firm been denied an award of a public works contract based on a finding by a public agency that your company was not a responsible bidder?

☐ Yes ☐ No

No = 5 points Yes = 0 points

* * * * *

NOTE: The following two questions refer only to disputes between your firm and the owner of a project. You need not include information about disputes between your firm and a supplier, another contractor, or subcontractor. You need not include information about "pass-through" disputes in which the actual dispute is between a subcontractor and a project owner. Also, you may omit reference to all disputes about amounts of less than $50,000.

8. In the past five years, has any claim **against** your firm concerning your firm's work on a construction project, been **filed in court or arbitration?**

☐ Yes ☐ No

If the firm's average gross revenue for the last three years was less than $50 million, scoring is as follows:

5 points for either "No" or "Yes" indicating 1 such instance.
3 points for "Yes" indicating 2 such instances.
0 points for "Yes" if more than 2 such instances.

If your firm's average gross revenue for the last three years was more than $50 million, scoring is as follows:

5 points for either "No" or "Yes" indicating 1, 2, or 3 such instances.
3 points for "Yes" indicating either 4 or 5 such instances.
0 points for "Yes" if more than 5 such instances.

9. In the past five years, has your firm made any claim against a project owner concerning work on a project or payment for a contract, and **filed that claim in court or arbitration**?

☐ Yes ☐ No

If your firm's average gross revenues for the last three years was less than $50 million scoring is as follows:

5 points for either "No" or "Yes" indicating 1 such instance.
3 points for "Yes" indicating 2 such instances.
0 points for "Yes" if more than 2 such instances.

If your firm's average gross revenues for the last three years was more than $50 million, scoring is as follows:

5 points for either "No" or "Yes" indicating 1, 2, or 3 such instances.
3 points for "Yes" indicating either 4 or 5 such instances.
0 points for "Yes" if more than 5 such instances.

10. At any time during the past five years, has any surety company made any payments on your firm's behalf as a result of a default, to satisfy any claims made against a performance or payment bond issued on your firm's behalf in connection with a construction project, either public or private?

☐ Yes ☐ No

5 points for either "No" or "Yes" indicating 1 such claim.
3 points for "Yes" indicating no more than 2 such claims
Subtract five points for "Yes" if more than 2 such claims

11. In the last five years, has any insurance carrier, for any form of insurance, refused to renew the insurance policy for your firm?

☐ Yes ☐ No

5 points for either "No" or "Yes" indicating 1 such instance.
3 points for "Yes" indicating 2 such instances.
0 points for "Yes" or if more than 2 such instances.

12. Has your firm, or any of its owners, officers, or partners ever been found liable in a civil suit, or found guilty in a criminal action, for making any false claim or material misrepresentation to any public agency or entity?

☐ Yes ☐ No

No = 5 points Yes = subtract 5 points

13. Has your firm, or any of its owners, officers or partners ever been convicted of a crime involving any federal, state, or local law related to construction?

☐ Yes ☐ No

No = 5 points Yes = subtract 5 points

14. Has your firm or any of its owners, officers or partners ever been convicted of a federal or state crime of fraud, theft, or any other act of dishonesty?

☐ Yes ☐ No

No = 5 points Yes = <u>subtract</u> 5 points

15. If your firm was required to pay a premium of more than one per cent for a performance and payment bond on any project(s) on which your firm worked at any time during the last three years, state the percentage that your firm was required to pay. You may provide an explanation for a percentage rate higher than one per cent, if you wish to do so.

_____%

5 points if the rate is no more than one per cent
3 points if the rate was no higher than 1.10 per cent.
0 points for any other answer.

16. During the last five years, has your firm ever been denied bond credit by a surety company, or has there ever been a period of time when your firm had no surety bond in place during a public construction project when one was required?

☐ Yes ☐ No

No = 5 points Yes = 0 points

III. <u>Questions about compliance with safety, workers compensation, prevailing wage and apprenticeship laws. (11 questions)</u>

1. Has CAL OSHA cited and assessed penalties against your firm for any "serious," "willful" or "repeat" violations of its safety or health regulations in the past five years?

Note: If you have filed an appeal of a citation and the Occupational Safety and Health Appeals Board has not yet ruled on your appeal, you need not include information about it.

☐ Yes ☐ No

If the firm's average gross revenues for the last three years was less than $50 million, scoring is as follows:

5 points for either "No" or "Yes" indicating 1 such instance.
3 points for "Yes" indicating 2 such instances.
0 points for "Yes" if more than 2 such instances.

If the firm's average gross revenues for the last three years was more than $50 million, scoring is as follows:

5 points for either "No" or "Yes" indicating 1, 2, or 3 such instances.
3 points for "Yes" indicating either 4 or 5 such instances.
0 points for "Yes" if more than 5 such instances.

2. Has the federal Occupational Safety and Health Administration cited and assessed penalties against your firm in the past five years?

Note: If you have filed an appeal of a citation and the appropriate appeals Board has not yet ruled on your appeal, you need not include information about it.

☐ Yes ☐ No

If yes, attach a separate signed page describing each citation.

If the firm's average gross revenues for the last three years was less than $50 million, scoring is as follows:

5 points for either "No" or "Yes" indicating 1 such instance.
3 points for "Yes" indicating 2 such instances.
0 points for "Yes" or if more than 2 such instances.

If the firm's average gross revenues for the last three years was more than $50 million, scoring is as follows:

5 points for either "No" or "Yes" indicating 1, 2, or 3 such instances.
3 points for "Yes" indicating either 4 or 5 such instances.
0 points for "Yes" if more than 5 such instances.

3. Has the EPA or any Air Quality Management District or any Regional Water Quality Control Board cited and assessed penalties against either your firm or the owner of a project on which your firm was the contractor, in the past five years? **NOTE: If you have filed an appeal of a citation and the Appeals Board has not yet ruled on your appeal, or if there is a court appeal pending, you need not include information about the citation.**

☐ Yes ☐ No

If the firm's average gross revenues for the last three years was less than $50 million, scoring is as follows:
5 points for either "No" or "Yes" indicating 1 such instance.
3 points for "Yes" indicating 2 such instances.
0 points for "Yes" or if more than 2 such instances.

If the firm's average gross revenues for the last three years was more than $50 million, scoring is as follows:

5 points for either "No" or "Yes" indicating 1, 2, or 3 such instances.
3 points for "Yes" indicating either 4 or 5 such instances.
0 points for "Yes" if more than 5 such instances.

4. How often do you require documented safety meetings to be held for construction employees and field supervisors during the course of a project?

_____

3 points for an answer of once each week or more often.
0 points for any other answer

5. List your firm's Experience Modification Rate (EMR) (California workers' compensation insurance) for each of the past three premium years:
NOTE: An Experience Modification Rate is issued to your firm annually by your workers' compensation insurance carrier.

Current year: _____
Previous year: _____
Year prior to previous year: _____
If your EMR for any of these three years is or was 1.00 or higher, you may, if you wish, attach a letter of explanation.

NOTE: An Experience Modification Rate is issued to your firm annually by your workers' compensation insurance carrier.

5 points for three-year average EMR of .95 or less
3 points for three-year average of EMR of more than .95 but no more than 1.00
0 points for any other EMR

6. Within the last five years, has there ever been a period when your firm had employees but was without workers' compensation insurance or state-approved self-insurance?

☐ Yes ☐ No

5 points for either "No" or "Yes" indicating 1 such instance.
0 points for any other answer.

7. Has there been more than one occasion during the last five years on which your firm was required to pay either back wages or penalties for your own firm's failure to comply with the **state's** prevailing wage laws?

☐ Yes ☐ No

NOTE: This question refers only to your own firm's violation of prevailing wage laws, not to violations of the prevailing wage laws by a subcontractor.

If your firm's average gross revenues for the last three years was less than $50 million, scoring is as follows:

5 points for either "No," or "Yes" indicating either 1 or 2 such instance.
3 points for "Yes" indicating 3 such instances.
0 points for "Yes" and more than 3 such instances.

If your firm's average gross revenues for the last three years was more than $50 million, scoring is as follows:

5 points for either "No" or "Yes" indicating no more than 4 such instances.
3 points for "Yes" indicating either 5 or 6 such instances.
0 points for "Yes" and more than 6 such instances.

8. During the last five years, has there been more than one occasion on which your own firm has been penalized or required to pay back wages for failure to comply with the **federal** Davis-Bacon prevailing wage requirements?

☐ Yes ☐ No

If your firm's average gross revenues for the last three years was less than $50 million, scoring is as follows:

5 points for either "No," or "Yes" indicating either 1 or 2 such instance.
3 points for "Yes" indicating 3 such instances.
0 points for "Yes" and more than 3 such instances.

If your firm's average gross revenues for the last three years was more than $50 million, scoring is as follows:

5 points for either "No" or "Yes" indicating no more than 4 such instances.
3 points for "Yes" indicating either 5 or 6 such instances.
0 points for "Yes" and more than 6 such instances.

9. Provide the **name, address and telephone number** of the apprenticeship program sponsor(s) (approved by the California Division of Apprenticeship Standards) that will provide apprentices to your company for use on any public work project for which you are awarded a contract by *[Public Entity]*.

_____

_____

5 points if at least one approved apprenticeship program is listed.
0 points for any other answer.

10. If your firm operates its own State-approved apprenticeship program:

(a) Identify the craft or crafts in which your firm provided apprenticeship training in the past year.

(b) State the year in which each such apprenticeship program was approved, and attach evidence of the most recent California Apprenticeship Council approval(s) of your apprenticeship program(s).

(c) State the number of individuals who were employed by your firm as apprentices at any time during the past three years in each apprenticeship and the number of persons who, during the past three years, completed apprenticeships in each craft while employed by your firm.

5 points if one or more persons completed an approved apprenticeship while employed by your firm.

0 points if no persons completed an approved apprenticeship while employer by your firm.

11. At any time during the last five years, has your firm been found to have violated any provision of California apprenticeship laws or regulations, or the laws pertaining to use of apprentices on public works?
NOTE: You may omit reference to any incident that occurred prior to January 1, 1998 if the violation was by a subcontractor and your firm, as general contractor on a project, had no knowledge of the subcontractor's violation at the time they occurred.

☐ Yes ☐ No.

If yes, provide the date(s) of such findings, and attach copies of the Department's final decision(s).

If your firm's average gross revenues for the last three years was less than $50 million, scoring is as follows:

5 points for either "No," or "Yes" indicating either 1 or 2 such instance.
3 points for "Yes" indicating 3 such instances.
0 points for "Yes" and more than 3 such instances.

If your firm's average gross revenues for the last three years was more than $50 million, scoring is as follows:

5 points for either "No" or "Yes" indicating no more than 4 such instances.
3 points for "Yes" indicating either 5 or 6 such instances.
0 points for "Yes" and more than 6 such instances.

IV. Questions concerning completion of recent projects and quality of performance (eight questions)

1. Of the five most recently completed projects how many included abatement, demolition, and remediation on the same project?

   1 point for each project that included all three items above to a maximum of 5 points

2. Of the five most recently completed projects how many were located within an urban area?

   1 point for each project was located in an urban area to a maximum of 5 points

3. Of the five most recently completed projects how many were phased for the completed work?

   1 point for each project that was a phased project to a maximum of 5 points

4. Of the five most recently completed projects how many were completed within the original time allocated to the project (not withstanding uncontrolled delays)?

   1 point for each project that was completed within the prescribed schedule to a maximum of 5 points

5. Of the five most recently completed projects how many were for County government entities?

   1 point for each project that was completed for County government entities to a maximum of 5 points

6. Of the five most recently completed projects how many were completed within the original budget?

   1 point for each project that was completed for County government entities to a maximum of 5 points

7. Of the five most recently completed projects how many were completed within the original budget?

   1 point for each project that was completed within the original budget to a maximum of 5 points

8. Of the five most recently completed projects how many were in excess of $1 million?

   1 point for each project that was completed in excess of $1 million to a maximum of 5 points

Certification

All firms seeking prequalification must sign the certification below and attach it to its Prequalification Questionnaire. Copy this certification form for completion by each legal entity proposed to be on the prequalified team.

I, the undersigned _____, certify and declare that I have read all the foregoing answers to this PreQualification Questionnaire; that all responses are correct and complete of my own knowledge and belief. I declare under penalty of perjury under the laws of the State of California, that the foregoing is true and correct.

_____
(Signature of Prospective Bidder)

_____
(Printed name of Prospective Bidder)

_____
(Place of Execution)

_____
(Date)

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SHERIFF'S OFFICE

A TRADITION OF SERVICE SINCE 1856

Answers to submitted questions for:
RFSOQ-Demolition, Abatement, and Remediation
San Mateo Co. Replacement Correctional Facility

April 10, 2012 | Jail Planning Unit | smcsheriff.com/jail-planning

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1. **Q.** I would like clarification, please, on the due date of submission of SOQ's for the San Mateo County Replacement Correctional Facility project. The Blue Book project lead states the SOQ's will be received until 2:30 pm on April 12, 2012. However, the RFSOQ I downloaded from the County's website states SOQ's must be submitted no later than 2:30 pm on April 16, 2012.

Can you clarify, please, which date is correct?

A. The RFSOQ as posted on the Jail Planning Unit website date and time are correct.

SOQ's must be submitted no later than 2:30 pm on April 16, 2012.

---

2. **Q.** Audited financial statement is requirement

A. PART 13. SCORED QUESTIONS
Section I. Questions for immediate disqualification
Question number 4.

---

3. **Q**. May I ask how I can receive a Pre Qual Packet for the upcoming Demolition Asbestos and Lead Abatement for the Jail project Packet due date is April 16th

A. Please go to our web site at www.smcsheriff.com and click on Jail Planning

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Prequalification of Contractors for Demolition, Abatement, and Remediation Services for San Mateo County Replacement Correctional Facility

San Mateo County Sheriff's Office

Issued: April 12, 2012

Statement of Qualifications due: April 17, 2012, 2:30 pm

Addendum Number 1

Lieutenant Deborah Bazan, Project Executive,
San Mateo County Sheriff's Office
Jail Planning Unit
400 County Center, 3rd floor
Redwood City, CA 94063

Telephone: (650) 508-6721

Email: **dbazan@smcgov.org**

ADDENDUM 1

POSTPONEMENT OF RFSOQ SUBMITTAL DATE

ANTICIPATED SCHEDULE OF EVENTS FOR RFSOQ PROCESS (Revised RFSOQ Schedule of Events and SOQ submittal Date)

Sheriff Issues SOQ	March 30, 2012
Questions via email due: 5:00 pm	April 9, 2012
Responses to Questions Posted on Sheriff's Webpage	April 12, 2012
Qualification submittals due: 2:30 pm	**April 17, 2012**
Review SOQ submittals	April 17/18, 2012
Letter of Qualification/Disqualification sent to Prospective Bidders	April 18, 2012
Request for Bids sent to pre-qualified Prospective Bidders	April 18, 2012
Mandatory Job Walk for prequalified Prospective Bidders 9:30 am	**April 19, 2012**
Bids due: 2:30 pm	May 1, 2012
Determine lowest responsible bidder (estimated date)	May 2, 2012
Board of Supervisors approves contract (estimated date)	May 8, 2012

County reserves the right to modify this schedule at any time at its sole discretion.

(Revised SOQ Submittal Date)

PART 2–SUBMISSION OF STATEMENT OF PREQUALIFICATION'S

2.01 Prospective Bidders are requested to submit an original, signed SOQ, together with seven (7) copies, and one (1) electronic copy, **no later than 2:30 PM on April 17, 2012** to:

Lieutenant Deborah Bazan, Project Executive
San Mateo County Sheriff's Office
Jail Planning Unit
400 County Center, 3rd floor
Redwood City, CA 94063
Telephone: (650) 508-6721
Email: dbazan@smcgov.org

CONTRACT SPECIFICATIONS
DEMOLITION AND CONTAMINATED SOIL REMOVAL
San Mateo County Replacement Correctional Facility
Chemical Way
Redwood City, California

April 2012

Prepared for

San Mateo County Sheriff's Office
Jail Planning Unit
400 County Center, 3rd Floor
Redwood City, California 94063

Prepared by

WEST
Environmental Services & Technology
711 Grand Avenue, Suite 220
San Rafael, California 94901
415/460-6770 Fax 415/460-6771
main@westenvironmental.com

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WEST Environmental Services & Technology

SIGNATURE PAGE

All Engineering information, conclusions and recommendations contained in this report have been prepared by a California Professional Engineer.

Peter M. Krasnoff
California Registered Civil Engineer (44031)

4/19/12
Date

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 01 10 00 – SUMMARY

PART 1 GENERAL

1.01 SUMMARY OF WORK

A. The Contractor shall provide all labor, materials, tools, equipment, transportation and services and shall perform all work required for executing the Contract in a satisfactory and workmanlike manner to provide a complete Project. A summary of the work items for the Project are described as follows:

1. Obtain permits for demolition from:
    a. City of Redwood City;
    b. Bay Area Air Quality Management District (BAAQMD) pursuant to Regulation 11, Rule 2.
        (i) Obtain "J" number for demolition.
2. Preparation and implementation of:
    a. Health and Safety Plan;
    b. Lead Hazard Control Plan;
    c. Transportation Plan;
    d. Demolition Plan:
    e. Waste Management Plan;
3. Clearing and grubbing of landscaped areas;
4. Removal of pavement;
5. Demolition of structures;
6. Abandonment and removal of aboveground and underground utilities;
7. Excavation and off-site disposal of contaminated soil;
8. Removal and treatment of water;
9. Backfill and compaction of import material;

10. Rough grading of disturbed areas;

11. Storm water pollutant control measures (allowance); and

12. Closeout submittals; including:

    a. Documentation on recycling of demolition debris;

    b. Waste manifests and bills of lading for soil.

1.02 LOCATION OF PROJECT

A. The Project is located at 20 to 80 Chemical Way in Redwood City, California. The Project location area is shown on Sheet 1.

1.03 SCHEDULE

A. Time is of the essence in completion of the Project and, if necessary, the Contractor shall schedule extra manpower or equipment or work overtime operations as required to meet the Construction Schedule.

B. The work is to be conducted in two phases and includes:

1. Phase 1 shall be started June 15, 2012. The Phase 1 work and includes all necessary work to complete:

    a. Demolition of aboveground structures at 70 Chemical Way; and

    b. Excavated of contaminated soil and backfill with clean imported fill at 70 Chemical Way.

2. Phase 2 shall not be started before September 15, 2012. The Phase 2 work includes, but is not limited to:

    a. Clearing and grubbing of the site;

    b. Removal of pavement;

    c. Removal of aboveground structures on 20, 50 and 80 Chemical Way; and

    d. Removal of all underground utilities

3. Any other items and details not mentioned above, but required by the Contract Documents and as directed by the Owner.

C. Phase 1 work shall be completed by September 15, 2012, with any approved extensions.

D. Phase 2 work shall be completed by December 31, 2012, with any approved extensions.

1.04 COORDINATION OF WORK

A. The Contractor shall maintain overall coordination for the execution of the Work. The Contractor shall notify its Subcontractors of the required schedule for the Project and shall be responsible for all parties maintaining these schedules and for coordinating required modifications.

B. The Owner, Tenants and others may be working within the Project area while the Work is in progress. If so, the Contractor shall schedule its work in conjunction with these other activities to minimize mutual interference.

1.05 SITE CLEANING

A. Throughout the period of construction, the Contractor shall keep the work site free and clean of all trash and debris, and shall promptly remove from the site, or from property adjacent to the site of the Work, all unused and rejected materials, concrete, plaster and debris.

B. The Contractor shall dispose of non-hazardous surplus materials, waste products and debris at an appropriate disposal facility and shall make necessary arrangements for such disposal at the Contractor's expense.

C. Upon completion of the Work, and prior to final acceptance, the Contractor shall remove from the vicinity of the Work all plant, waste products, debris, surplus materials and equipment belonging to him or used under his direction during construction.

1.06 CONTRACT RECORD PLANS - CLOSEOUT

A. The Contractor shall maintain at the Property, available to the Owner, one copy of the Contract Documents, Plans, Shop Plans, Change Orders and other modifications in good order and marked in red pencil to record all changes made during construction. These Record Plans shall be submitted to the Owner upon completion of the Project and final acceptance for the Project shall be subject to receipt and approval of the Record Plans. During the progress meetings, such record documents shall be reviewed to ascertain that all changes have been recorded. In addition to changes made during construction, the Contractor shall also mark-up the Record Plans in red pencil.

1.07 PERMITS

A. Contractor shall be responsible for obtaining all permits required for execution of the work, including but not limited to, permits for grading, traffic control, air quality and soil, demolition waste, and asbestos disposal. Fees for required permits shall be paid by Contractor.

1.08 UTILITY CLEARANCE

A. The Contractor is notified that the approximate locations of existing utilities shown on the Plans are based on available information and the locations have not been verified by the Owner. The Owner makes no claim as to the accuracy of the location of existing utilities or whether all existing utilities are shown on the Plans. The Contractor shall contact Underground Services Alert and other utility locator services, as appropriate, to verify the location of existing utilities in the public and private rights-of-way. The costs for the use of underground utility locator services shall be paid by the Contractor.

1. See Section 02 00 30 – Verification of Existing Utilities

1.09 WATER FOR CONSTRUCTION PURPOSES

A. Provide suitable quality water service as needed for construction operations. Connect water source, provide separate meter and pay for cost of water used. Contractor shall furnish and install all necessary piping, fittings, connections, pumps, gages, etc., required to provide approved facilities to deliver construction water into pipelines or hoses for use by Contractor. Contractor shall develop any other sources of construction water at its own expense. Contractor will be required to obtain a hydrant meter for any construction water utilized for the Project.

1. See Section 01 50 00 – Temporary Facilities and Controls

1.10 WORK HOURS

A. Contractor shall conduct all Site work and activities between the hours of 0730 and 1700, Monday through Friday.

1.11 TRAFFIC CONTROL

A. Contractor (and Subcontractor) shipments of materials or equipment shall use traffic cones, barricades, etc., as approved by Owner to maintain safe ingress and egress from the Project and work zones. In addition, Contractor shall provide flag person as required by the Owner to facilitate movement materials on/off the Project in accordance with Section 01 50 00.

1.12 BARRICADES AND SAFETY PERSONNEL

A. Contractor shall erect and maintain barricades and sufficient safeguards around all excavations, embankments and obstructions; shall provide suitable warning lights on or near work areas and keep them lighted at night or other times when visibility is limited; and shall employ such safety personnel as may be necessary for the protection of the public in accordance with Section 01 50 00

1.13 PEDESTRIAN PROTECTION

A. All work areas shall be protected by safety fence at all times during the excavation and backfill process. The Contractor should provide alternate routes of pedestrian travel, when required, which are acceptable to the Owner. Additionally, the Contractor shall provide adequate directional signage for alternate pedestrian routes.

1.14 STORM WATER

A. Contractor shall provide a Qualified Storm Water Pollution Prevention Plan Practitioner (QSP) and follow the *Storm Water Pollution Prevention Plan* (SWPPP) provided by the Owner prior to implementing work at the Site per Section 01 57 23.

END OF SECTION

SECTION 01 11 10 – DEMOLITION HAZARDOUS MATERIALS ABATEMENT

- UNDER SEPARATE COVER

SECTION 01 21 00 – ALLOWANCES

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes administrative and procedural requirements governing allowances.

1. Certain materials and equipment are specified in the Contract Documents by allowances. In some cases, these allowances include installation. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.

a. Types of allowances include the following:

(i) Contingency allowances.

(ii) Quantity allowances.

(iii) Lump sum allowances.

B. Related Sections include the following:

1. Division 01, Section 01 26 00 Payments for Changes and Extra Work " for procedures for submitting and handling Change Orders.

2. Division 01, Section "Unit Prices" for procedures for using unit prices.

1.02 SELECTION AND PURCHASE

A. At the earliest practical date after award of the Contract, advise Engineer of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.

B. At Engineer's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.

C. Purchase products and systems selected by Engineer from the designated supplier.

1.03 SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

1.04 UNUSED MATERIALS

A. Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.

1. If requested by Engineer, prepare unused material for storage by Owner when it is not economically practical to return the material for credit. If directed by Engineer, deliver unused material to Owner's storage space. Otherwise, disposal of unused material is Contractor's responsibility.

2. If allowance is not used in whole or in part, the owner shall remove an allowance from the construction con-tract by change order based on the value listed for the associated unit price.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 PREPARATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

1. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.02 SCHEDULE OF ALLOWANCES

A. Owner’s Contingency Allowance:

1. Include the sum of $30,000.00 as an Owner’s contingency amount to be used only at the direction of the Engineer for Bid Item 2 Storm Water BMPs and Bid Item 3 Management of NOA.

END OF SECTION

SECTION 01 21 13 – FIXED CASH ALLOWANCE ITEMS

PART 1 REQUIREMENTS

1.01 ALLOWANCE

A. A fixed cash allowance has been allocated to each of the following items of the Bid Breakdown (see Bid Schedule). Requirements for each Fixed Cash Allowance Item are specified in the sections referenced below. Overhead and Profit, at the rates listed below, shall be added to the actual invoiced amount.

Item Bid No.	Description	Overhead and Profit
2	Storm Water BMPs ……	10%
3	Management of NOA……..	10%

B. If these items are not executed, or are only partially executed, or the allowance for any item is not expended or partially expended, then a deductive Change Order shall be issued for the amount that is not expended. If, however, these items are over expended (with Engineer's prior approval), then an appropriate Change Order shall be executed in accordance with the provisions of the Section 01 26 00 Payment for Changes and Extra Work, except for Overhead and Profit wherein the above listed rates shall apply.

END OF SECTION

SECTION 01 22 00 – UNIT PRICES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section includes administrative and procedural requirements for unit prices.

B. Related Sections include the following:

1. Division 01 Section "Allowances" for procedures for using unit prices to adjust quantity allowances.

2. Division 01 Section "Payments for Changes and Extra Work" for procedures for submitting and handling Change Orders.

3. Division 01 Section "Payment Procedures" for measurement and payment.

1.03 DEFINITIONS

A. Unit price is an amount proposed by bidders, stated on the Bid Form, as a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if estimated quantities of Work required by the Contract Documents are increased or decreased.

1.04 PROCEDURES

A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.

B. Measurement and Payment: Refer to individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.

C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

PART 2 - PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 01 26 00 – PAYMENT FOR CHANGES AND EXTRA WORK

PART 1 REQUIREMENTS

1.01 GENERAL

A. The County may change the Plans, Specifications, character of the Work, or quantity of Work provided the total arithmetic dollar value of all such changes, both additive and deductive, does not exceed 25 percent (25%) of the Contract Price. Should it become necessary to exceed this limitation, the change shall be by written Supplemental Agreement between the Contractor and County, unless both parties agree to proceed with the change by Change Order.

1. Change Orders shall be in writing and state the dollar value of the change or established method of payment, any adjustment in contract time, and when negotiated pries are involved, shall provide for the Contractor's signature indicating acceptance.

B. Payment

1. Contract Unit Prices

a. If a change is ordered in any item covered by a Contract Unit Price, and such change does not involve a substantial change in character of the Work from that shown on the Plans or included in the Specifications, then an adjustment in payment will be made. This adjustment will be based on the increase or decrease in quantity and the Contract Unit Price. The basis for the adjustment of payment will be limited to that portion of the change, which together with all previous changes to that items, is not more than 25 percent (25%) of the total cost of the item's original quantity and Contract Price.

b. If a change is ordered in an item of Work covered by a Contract Unit Price, and such change does involve an increase or decrease greater than 25 percent (25%) of the Bid Item quantity shown on the bid sheet or a substantial change in the character of the Work from that shown on the Plans or included in the Specifications, an adjustment in payment will be made in accordance with the Agreed Prices.

c. Should any Contract item be deleted in its entirety, payment will be made only for actual costs incurred prior to notification of such deletion.

2. Stipulated Unit Prices: Stipulated unit prices are those established by the County in the Contract Documents, as distinguished from Contract Unit Prices submitted by the Contractor. Stipulated unit prices may be used for the adjustment of Contract changes.

3. Agreed Prices: Adjustments in payments for changes, other than those set forth in Stipulated Unit Prices, will be determined by agreement between Contractor and County. Agreed prices shall be negotiated before commencement of the Work. If unable to reach agreement, the County may direct the Contractor to proceed on the basis of Extra Work in accordance with the requirements listed below.

1.02 EXTRA WORK

A. General: New or unforeseen Work will be classified as "Extra Work" when the Engineer determines that it is not covered by Contract Unit Prices or Stipulated unit prices.

B. Payment

1. General: When the price for the Extra Work cannot be agreed upon, the County will pay for the Extra Work based on the accumulation of costs as provided herein.

C. Basis for Establishing Costs

1. Labor: The costs of labor will be the actual cost for wages of workers performing the Extra Work at the time the Extra Work is done, plus employer payment of payroll taxes, workers compensation insurance, liability insurance, health and welfare, pension, vacation, apprenticeship funds, and other direct costs, resulting from Federal, State, or local laws, as well as assessments or benefits required by lawful collective bargaining agreements.

a. The use of a labor classification which would increase the Extra Work cost will not be permitted unless the Contractor establishes the necessity for such additional costs. Labor costs for equipment operators and helpers shall be reported only when such costs are not included in the invoice for equipment rental. The labor cost for foreman shall be proportioned to all of their assigned work and only that applicable to Extra Work will be paid.

b. Indirect labor costs, including superintendence, shall be considered part of the Markup.

2. Materials

a. The cost of materials reported shall be at invoice or lowest current price at which such materials are locally available and delivered to the Jobsite in the quantities involved, plus sales tax, freight, and delivery.

b. The County reserves the right to approve materials and sources of supply, or to supply materials to the Contractor if necessary for the progress of the Work. No markup shall be applied to any material provided by the County.

3. Tool and Equipment Rental

   a. No payment will be made for the use of tools, which have a replacement value of $200 or less.

   b. Any Extra Work payment involving equipment, regardless of ownership, shall be based on rates established in "Labor Surcharge and Equipment Rental Rates," including miscellaneous list, of the State of California, Department of Transportation, in effect at the time of Work. The latest copy is available at cost from Caltrans Publications, 1900 Royal Oaks Drive, Sacramento, CA 95815 or Caltrans website (www.dot.ca.gov/hq/construc). Rental rates for equipment not listed in the above publication shall be determined by the Engineer.

   c. The rental rates paid shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and all incidentals. Necessary loading and transportation costs for equipment used on the Extra Work shall be included.

   d. If equipment is used intermittently and, when not in use, could be returned to its rental source at less expense to the County than holding it at the Worksite, it shall be returned, unless the Contractor elects to keep it at the Worksite, at no expense to the County.

   e. All equipment shall be acceptable to the Engineer, in good working condition, and suitable for the purpose for which it is to be used. Manufacturer's ratings and approved modifications shall be used to classify equipment and it shall be powered by a unit of at least the minimum rating recommended by the manufacturer.

   f. The reported rental time for equipment already at the Worksite shall be the duration of its use on the Extra Work. This time begins when equipment is first put into actual operation on the Extra Work, plus the time required to move it from its previous site and back, or to a closer site.

4. Other Items

   a. The County may authorize other items that may be required on the Extra Work, including labor, services, material and equipment. These items must be different in their nature from those required for the Work, and be of type not ordinarily available from the Contractor or Subcontractors.

   b. Invoices covering all such items in detail shall be submitted with the request for payment.

5. Invoices

a. Vendors' invoices for material, equipment rental and other expenditures shall be submitted with the request for payment. If the request for payment is not substantiated by invoices or other documentation, the County may establish the cost of the item involved at the lowest price which was current at the time of the report.

6. Markup

a. Work by Contractor

(i) The following percentages shall be added to the Contractor's costs and shall constitute the markup for all overhead and profits:

Labor…….. 20%

Materials…… 15%

Equipment Rental……. 15%

Other Items and Expenditures…… 15%

(ii) To the sum of the costs and markups provided for in this subsection, one percent (1%) shall be added as compensation for bonding.

b. Work by Subcontractor

(i) When all or any part of the Extra Work is preformed by a Subcontractor, of any tier, the markup established in (a), above, shall be applied to the Subcontractor's actual cost of such Work. A markup of ten percent (10%) on the first $5,000 of the subcontracted portion of the Extra Work and a markup of five percent (5%) on Work added in excess of $5,000 of the subcontracted portion of the Extra Work may be added by the Contractor.

(ii) The markups specified in parts (1) and (2), above, shall be considered as including, but not limited to, the Contractor's labor costs for personnel not working directly on the "Extra Work," including the cost of any tools, equipment, and supervisors/superintendence which they may use. Such costs shall not be reported as labor or equipment costs elsewhere except when they are actually used to physically construct the "Extra Work." Labor costs shall in that case be reported for the labor classification corresponding to the type and nature of "Extra Work" done.

D. Daily Reports by Contractor

1. The Contractor shall notify the Engineer at the beginning of each day when Extra Work is in progress.

2. When the price for the Extra Work cannot be agreed upon, the Contractor shall submit a daily report to the Engineer on forms approved by the County. Included are applicable delivery tickets, listing all labor, materials, and equipment involved for any day, and other services and expenditures when authorized. Failure to submit the daily report by the close of the next working day may waive any rights for that day. An attempt shall be made to reconcile the report daily, and it shall be signed by the Engineer and the Contractor. In the event of disagreement, pertinent notes shall be entered by each party to explain points, which cannot be resolved immediately. Each party shall retain a signed copy of the report. Reports by Subcontractors or others shall be submitted through the Contractor.

3. The report shall:

   a. Show names of workers, classifications, and hours worked;

   b. Describe the list quantities of materials used;

   c. Show type of equipment, size, identification number, and hours of operation, including lading and transportation, if applicable; and

   d. Describe other services and expenditures in such detail as the County may require.

END OF SECTION

SECTION 01 29 00 – PAYMENT PROCEDURES

SEE GENERAL CONDITIONS

SECTION 01 31 00 – PROJECT MANAGEMENT AND COORDINATION

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract,

B. Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. Administrative and supervisory personnel.

2. Project meetings.

3. Requests for Interpretation (RFIs).

B. Each Contractor shall participate in coordination requirements. Certain areas of responsibility will be assigned to a specific Contractor.

1.03 COORDINATION

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.

B. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other Contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's Construction Schedule.

2. Installation and removal of temporary facilities and controls.

3. Delivery and processing of submittals.

4. Progress meetings.

5. Project closeout activities.

C. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

1.04 SUBMITTALS

A. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

1.05 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.

1. Include special personnel required for coordination of operations with other Contractors.

1.06 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Engineer of scheduled meeting dates and times.

2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.

3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Engineer, within three days of the meeting.

4. Preconstruction Conference: Schedule a preconstruction conference before starting construction each phase of work (2 phases), at a time convenient to

Owner and Engineer, but no later than 15 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.

5. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major Subcontractors; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

6. Agenda: Discuss items of significance that could affect progress, including the following:

   a. Tentative construction schedule.

   b. Phasing.

   c. Critical work sequencing and long-lead items.

   d. Designation of key personnel and their duties.

   e. Procedures for processing field decisions and Change Orders.

   f. Procedures for RFIs.

   g. Procedures for testing and inspecting.

   h. Procedures for processing Applications for Payment.

   i. Distribution of the Contract Documents.

   j. Submittal procedures.

   k. LEED requirements.

   l. Preparation of Record Documents.

   m. Use of the premises and existing building

   n. Work restrictions.

   o. Responsibility for temporary facilities and controls.

   p. Construction waste management and recycling.

   q. First aid.

r. Security.

s. Progress cleaning.

t. Working hours.

u. Regulations of authorities having jurisdiction.

v. Testing and inspecting requirements.

w. Required performance results.

x. Protection of construction and personnel.

7. Minutes: Record and distribute meeting minutes.

a. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.

b. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.

B. Progress Meetings: Conduct progress meetings at weekly intervals. Coordinate dates of meetings with preparation of payment requests.

1.07 REQUESTS FOR INTERPRETATION (RFIS)

A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.

1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.

2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of Subcontractors.

3. Content of the RFI: Include a detailed, legible description of item needing interpretation.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 33 00 – SUBMITTALS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes.

1. Submittal procedures.
2. Product data.
3. Samples.
4. Test reports.
5. Certificates.
6. Manufacturer's instructions.
7. Construction progress schedules.
8. Proposed products list.

1.02 SHOP PLANS AND SUBMITTALS

A. General

1. In ample time for each to serve its purpose and function, the Contractor shall submit to the Owner such schedules, reports, Plans, lists, literature samples, instructions, directions, guarantees, Plans, layout diagrams, catalog data, test reports, laboratory test data and information in sufficient detail to show complete compliance with all specified requirements.

2. The Contractor, at its own expense, shall make the changes to Plans that may be necessary to conform to the Contract Documents. Prior to the Owner's review of such Plans, any work which the Contractor may do shall be at its own risk, as the Owner will not be responsible for any expense or delays incurred by the Contractor for changes to make the same conform to the Contract documents.

1.03 MATERIALS AND SUBMITTALS

A. The following is a list of materials and equipment for which submittals are required:

1. Health and Safety Plan;

2. Demolition Plan;
3. Abatement Work Plan;
4. Lead Hazard Control Plan;
5. Site Specific Hazardous Materials Management Plan;
6. Waste Management Plan;
7. Transportation Plan;
8. Soil and aggregate import material chemical and geotechnical data;
9. Import and export material weigh tickets;
10. *In situ* geotechnical test results;
11. Geotextile fabric; and
12. Demolition permit from City of Redwood City;
13. Bay Area Air Quality Management District (BAAQMD) pursuant to Regulation 11, Rule 2 "J" number for demolition.
14. Import material certification
15. Documentation on recycling of demolition debris; and
16. Waste manifests and bills of lading for soil.

B. Submittals

1. Five copies of Plans and submittals shall be submitted to the Owner. The submittals shall clearly indicate the specific area of the Contract Documents for which the submittal is made. One copy received by Owner will be returned to the Contractor's representative at the job site. The Owner's notation of the action, which has been taken, will be noted on the returned copy.

2. The above Plans, lists, prints, samples and other data shall become a part of the Contract Documents, and a copy of the same shall be kept with the job site Contract Documents. The materials furnished shall be in conformance with the specifications herein. However, the Owner's review of the above Plans, lists, prints, specifications, samples, or other data shall in no way release the Contractor from its responsibility for the proper fulfillment of the requirements of this Contract, nor from fulfilling the purpose of the installation, nor from its liability

to replace the same, should it prove defective or fail to meet the specified requirements.

3. Plans of minor or incidental materials and equipment may not be required by the Owner. The Contractor shall furnish the Owner tabulated lists of such materials, showing the names of the manufacturers and catalog numbers, together with samples or general data as may be required to permit determination as to their acceptability for incorporation in the Work.

4. The Contractor shall make submittals to the Owner in a timely manner for the work to be completed within the specified Contract Time.

    a. The Owner will endeavor to expedite submittal review of the critical material and equipment items, which may impact the schedule to aid in reducing submittal processing time.

1.04 SUBMITTAL PROCEDURES

A. Submit five copies.

B. Deliver to Engineer at business address or by email.

C. For each submittal for review, allow 15 days excluding delivery time to and from Contractor.

D. Transmit each submittal with Engineer accepted form.

E. Sequentially number transmittal forms. Mark revised submittals with original number and sequential alphabetic suffix.

F. Identify Project, Contractor, Subcontractor and supplier, pertinent drawing and detail number, and specification Section number appropriate to submittal.

G. Apply Contractor's stamp signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with requirements of the Work and Contract Documents.

H. Schedule submittals to expedite Project. Coordinate submission of related items.

I. Identify variations from Contract Documents and product or system limitations, which may be detrimental to successful performance of completed Work.

J. Allow space on submittals for Contractor and Engineer review stamps.

K. When revised for resubmission, identify changes made since previous submission.

L. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report inability to comply with requirements.

M. Submittals not requested will not be recognized or processed.

1.05 PRODUCT DATA

A. Product Data: Submit to Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

1.06 SAMPLES

A. Samples: Submit to Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. Submit number of samples specified in individual specification sections; Engineer will retain one sample.

C. Samples will not be used for testing purposes unless specifically stated in specification section.

D. After review, produce duplicates and distribute and for record documents purposes described in Section 01 70 00 Execution and Closeout Requirements.

1.07 TEST REPORTS

A. Submit for Engineer's knowledge as contract administrator or for Owner.

B. Submit test reports for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.08 CERTIFICATES

A. When specified in individual specification Sections, submit certification by manufacturer, installation/application Subcontractor, or Contractor to Engineer.

B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

C. Certificates may be recent or previous test results on material or Product but must be acceptable to Engineer.

1.09 MANUFACTURER'S INSTRUCTIONS

A. When specified in individual specification Sections, submit printed instructions for delivery, storage, assembly, installation, startup, adjusting, and finishing to Engineer for delivery to Owner.

B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.10 CONSTRUCTION PROGRESS SCHEDULES

A. Submit initial schedules within 15 days after date established in Notice to Proceed. After review, resubmit required revised data within 10 days.

B. Submit revised Progress Schedules with each Progress Meeting or Application for Payment, but not less than monthly.

C. Distribute copies of reviewed schedules to Project site file, Subcontractors, suppliers, and other concerned parties.

D. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

E. Indicate estimated percentage of completion for each item of Work at each submission.

F. Indicate delivery dates for Owner furnished products and products identified under Allowances if required.

1.11 PROPOSED PRODUCTS LIST

A. Within 15 days after date of Notice to Proceed, submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.

B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.12 CONSTRUCTION PHOTOGRAPHS

A. Provide photographs of site and construction throughout progress of Work produced by an experienced photographer, acceptable to Engineer.

B. Submit photographs monthly or to show milestones of Work.

C. Take photographs as evidence of existing project conditions.

D. Identify each print on front. Identify name of Project, date and time, orientation of view.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 35 29 – HEALTH AND SAFETY REQUIREMENTS

PART 1 GENERAL

1.01 SCOPE

A. This section specifies responsibilities for health and safety on the project.

B. In performance of the Work the Contractor shall, at a minimum, satisfy all federal, state and local statutes, regulations and ordinances, regarding health and safety, including medical record retention requirements.

1.02 REQUIREMENTS

A. The Contractor has the responsibility to develop and provide its employees and Subcontractors with a Health and Safety Plan (HASP) prior to commencement of their work on the site. Precautions shall be exercised by the Contractor and its Subcontractors at all times for the protection of persons (including employees) and property. The safety provisions of applicable laws and of building and construction codes shall be observed. Machinery, equipment and other hazards shall be guarded or eliminated. The safety of the Contractor's employees and Subcontractors shall be the Contractor's responsibility.

B. The Contractor shall develop and maintain for the duration of this Contract, a safety program that will effectively incorporate and implement all required safety provisions. The Contractor shall appoint a representative who is qualified and authorized to supervise and enforce compliance with the safety program. Additionally, all of the Contractor's employees and Subcontractors shall have received OSHA 29 CFR 1910.120 40 hour Hazardous Waste Operations and Emergency Response Training prior to working at the Site.

C. The duty of the Owner to observe the progress of the Work does not include review or approval of the adequacy of the Contractor's safety program, safety supervisor, or any safety measures taken in, on, or near the construction site.

D. The Contractor, as a part of its safety program, shall maintain at its office or other well-known place at the job site, safety equipment applicable to the Work as prescribed by the aforementioned authorities, all articles necessary for giving first-aid to the injured, and shall establish the procedure for the immediate removal to a hospital or a doctor's care of persons (including employees) who may be injured on the job site.

E. If death or serious injuries or serious damages are caused, the accident shall be reported immediately to the Owner and to others as directed in the HASP. In addition,

the Contractor must promptly report in writing to the Owner all accidents whatsoever arising out of, or in connection with, the performance of the Work whether on, or adjacent to the site, giving full details and statements of witnesses.

F. The Contractor shall make all reports as are required by any authority having jurisdiction and shall permit all safety inspections of the work being performed under this Contract. Before proceeding with any construction work, the Contractor shall take the necessary action to comply with all provisions for safety and accident prevention.

G. The Contractor shall be prepared to respond to potential injuries, illnesses or situations of imminent hazard to employees or public health or safety. Personnel from local medical facilities shall be contacted in case of a medical need, and the quickest route to these facilities shall be determined in advance.

1.03 SAFETY PROCEDURES AND WORKER PROTECTION

A. In potentially contaminated work areas, comply with the requirements of the Hazardous Waste Operations and Emergency Response Standard (8CCR 5192).

B. Provide 24- or 40-hour OSHA-HAZWOPER (29 CFR 1910.120) certified site workers in the contaminated areas, and provide an experienced field Site Safety Officer that is also 8-hour OSHA-HAZWOPER Supervisor, trained to directly oversee the contaminated waste operation. All workers in this circumstance must have their annual refresher training, medical clearance, and personal protection equipment in accordance with 8CCR Section 5192.

C. Take all precautions and measures required to protect employees, Subcontractors' personnel, inspection personnel, Engineer, and the general public from exposure to hazardous solids, liquids, and vapors.

D. Consumption of food or tobacco products shall not be permitted in any of the project's potentially contaminated soil areas at any time. Additionally, no open flames will be permitted in these same areas.

E. Prior to commencing any excavation-related work activities, provide fencing and warning signs to clearly identify and effectively guard against unauthorized entry into potentially contaminated soils area.

1. Maintain security and accessibility to the potentially contaminated soils area. Warning signs that comply with 29 CFR 1910.1200 and 8 CCR 5194 shall be attached to the perimeters of any potentially contaminated area to limit personnel access to those trained. Additional warning signs for potentially contaminated soils area shall be approximately 18-inches square with yellow background and 1 inch black letters. Signs shall read: "DANGER - KEEP OUT – AUTHORIZED PERSONNEL ONLY".

2. All equipment such as tools, containers, etc., shall be confined to the potentially contaminated soils area until work is complete, containers are sealed, and equipment properly decontaminated and safely stored for transport.

F. Workers shall wear the appropriate personal protective equipment (PPE) as specified by the HASP while inside the potentially contaminated work area perimeter fencing. Respiratory protection shall be appropriate for the type and concentration of the hazardous material(s) and atmosphere present. The Contractor shall provide protective clothing, eye protection, and breathing apparatus as required for authorized inspection personnel upon request.

G. Workers and authorized Site visitors will read, sign, and abide by the HSP which will be posted at the site at all times. The potentially contaminated soils stockpile area must be secured in a manner approved by the Engineer.

1. During excavation operations, all personnel entering the potentially contaminated work area must don appropriate protective clothing and equipment as specified in the HASP. Upon exiting the work area, all disposable protective clothing shall be placed in appropriate waste storage drums and sealed, for subsequent transportation to the on-site storage facility or disposal facility.

2. Workers with cuts or scratches shall seal these wounds sufficiently to prevent accidental contact of the hazardous materials within the potentially contaminated work area prior to entering the potentially contaminated work area. Similarly, workers who accidentally incur minor cuts or scratches in the course of work activities shall immediately leave the potentially contaminated soils area, cleanse the wound with medical grade soap, and seal the wound before returning to the work area.

1.04 PAYMENT

A. No separate payment will be made for complying with the requirements of this Section and the costs should be included in the various related bid items.

PART 2 MATERIALS

2.01 WARNING DEVICES AND BARRICADES

A. The Contractor shall adequately identify and guard all hazardous areas and conditions by visual warning devices and, where necessary, physical barriers. Such devices shall, at a minimum, conform to the requirements of Cal/OSHA, the City of Redwood City, and the County of San Mateo, California. As required, excavations from which the public is excluded shall be marked or guarded in a manner appropriate for the hazard.

2.02 PERSONAL PROTECTIVE EQUIPMENT (PPE)

A. Furnish appropriate PPE to field personnel. Safety equipment and protective clothing must be kept clean and properly maintained.

B. Provide at least a 3-day supply of Level "C" PPE available for Contractor's personnel and to Engineer or County personnel.

PART 3 EXECUTION

(Not Used)

END OF SECTION

SECTION 01 50 00 – TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary construction facilities, utilities, and controls, including:

1. Temporary electrical service, lighting and water.
2. Sanitary facilities.
3. Miscellaneous facilities.
4. Temporary enclosures and heat.
5. Traffic control and facilities.

1.02 TEMPORARY FACILITIES

A. General

1. The Contractor shall provide all temporary facilities and utilities required for execution of the Work, protection of employees and public, protection of the Work from damage by fire, weather or vandalism, and such other facilities as may be specified or required by any legally applicable law, ordinance, rule, or regulation.

1.03 UTILITIES

A. The Contractor shall provide temporary service for the Project for:

1. Electrical
   a. The Contractor shall provide electrical services for its own operations.
2. Water Supply
   a. The Contractor shall provide water for construction purposes during the construction period.
3. Lighting

a. The Contractor shall provide temporary lighting in all work areas sufficient to maintain a lighting level during work hours not less than the lighting level required by California OSHA standards.

4. Sanitary Conveniences

a. The Contractor will provide sanitary conveniences for the use of all persons at the site of the Work.

1.04 PROJECT REQUIREMENTS

A. Provide temporary services and utilities as required for continuous operation of existing facilities.

B. Comply with utility companies' recommendations and requirements. Where local utility company provides only a portion of temporary utility, provide additional capacity using matching, compatible materials and equipment.

C. Provide suitable materials and equipment for temporary services and facilities. These may be used materials and equipment, if they comply with the appropriate standards and are acceptable to the Engineer.

D. Provide each temporary service and facility ready for use at each location when service or facility is first needed.

E. Maintain, expand, and modify temporary services and facilities as needed throughout progress of the Work. Do not remove until services or facilities are no longer needed, or are replaced by the authorized use of completed permanent facilities.

F. Operate temporary services and facilities in a safe and efficient manner. Do not overload temporary services or facilities. Do not allow public nuisances or hazardous, dangerous, or unsanitary conditions to develop on-site.

1.05 QUALITY ASSURANCE

A. Comply with all applicable NEMA, NECA, NFPA 70, and UL standards and governing regulations for temporary electric service and grounding.

1. Comply with requirements of NFPA 241, ANSI A10 Series Standards, and NECA NJG-6.

a. Where local laws and regulations conflict with the requirements of NFPA, ANSI, or NECA, comply with the most stringent requirements.

1.06 PAYMENT

A. No separate payment will be made for complying with the requirements of this Section and the costs should be included in the various related bid items.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 INSTALLATION REQUIREMENTS

A. Contact utility companies prior to installing temporary service to the Site or making connections to existing service. Comply with utility company requirements and arrange with them for service interruptions when necessary.

B. Locate facilities and controls where they will serve Project and result in minimum interference with the performance of the Work. Relocate, modify, and extend facilities and controls as required during course of the Work.

3.02 TEMPORARY ELECTRICAL SERVICE, WIRING, AND LIGHTING

A. The Contractor shall make arrangements and provide for all required electrical power service at the Site.

B. Contractor shall provide its own electrical power source at no cost to the County.

C. Provide weatherproof grounded temporary electric power service and distribution system of sufficient size, capacity, and power characteristics to accommodate performance of Work. Provide meters, transformers, overload protected disconnect, and main distribution switch gear, as necessary.

D. Provide circuits of adequate size and proper characteristics with ground fault interrupters. Run wiring overhead and rise vertically where wiring will be least exposed to damage from construction operations. Provide rigid steel conduit or equivalent raceways for wiring that must be exposed on grade, floors, decks, or other areas of possible damage or abuse.

E. Provide identification warning signs at power outlets that are other than 110-120 volt power. Provide polarized outlets for plug-in type outlets, to prevent insertion of 110-120 volt plugs into higher voltage outlets.

F. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light, for use with power tools and equipment.

G. Provide only grounded extension cords and use “hard-service” cords where exposed to abrasion and traffic. Use single lengths of extension cord or waterproof connectors to connect separate lengths of extension cords.

H. Provide temporary lighting to sufficiently illuminate work areas. Protect lights with guard cages.

3.03 SANITARY FACILITIES

A. Provide self-contained toilet units or water and sewer connected temporary toilet facilities.

B. Provide potable water for washing.

C. Provide eye wash station.

D. Provide drinking water fountains where piped potable water is accessible. Otherwise, provide containerized tap-dispenser bottled-water type drinking water units.

E. Provide and maintain adequate supply of toilet tissue, paper towels, paper cups and similar disposable materials appropriate for each facility. Provide appropriate covered waste containers for used material.

F. Where shut-off nozzles are used at water hose discharge, provide heavy-duty abrasion-resistant hoses with a pressure rating greater than the maximum pressure of the water distribution system. Where non-potable water is used, provide warning signs on the discharge end of each length of hose and at the shut-off nozzle.

3.04 MISCELLANEOUS FACILITIES

A. Provide and operate environmental protection facilities and conduct construction activities to assure compliance with environmental regulations. Employ approved abatement techniques when dust nuisance or hazard occurs, and when directed by the Engineer.

B. Comply with recognized standards and code requirements for erection of substantial, structurally adequate barricades where needed to prevent accident and losses.

C. Provide warning signs with appropriate colors and graphics to inform personnel on Site and the public of hazards present.

D. Locate field offices and other support facilities in areas identified on the Drawings. When not indicated on the Drawings, locate as approved by the Engineer.

E. Install and maintain temporary fire protection facilities of types needed to protect against fire losses, consistent with applicable provisions of NFPA 10. Locate fire extinguishers where they are most convenient and effective for their intended purpose, but provide not less than one extinguisher on each floor at or near each usable stairwell.

F. Securely lock up and control the use of stored materials and tools.

3.05 TRAFFIC CONTROL AND FACILITIES

A. No hauling activities will be permitted prior to approval of a Transportation Plan.

B. Document condition of existing road surfaces that will be used as haul routes during construction by still photography in accordance with Section 01 33 00, Submittals.

C. Access to and from public roads shall be made only at existing crossing or entrances with written approval of the public authority and adjacent property owner and copy provided to Engineer.

D. Locate temporary roads, storage areas, and temporary parking in areas approved by Engineer.

E. Provide and maintain temporary traffic control facilities at junction of temporary roads with public roads, include warning signs for public traffic and "STOP" signs for access road entrance onto public roads. Comply with requirements and recommendations of local traffic authorities.

F. Construct and maintain temporary roads and paving to withstand exposure to traffic during construction period.

G. Maintain on-and-off access and haul routes and clean them at least once per day. Cleaning shall consist of removal and disposal of dust, dirt, mud, and other material associated with construction activities.

H. Provide and maintain dust control measures on all access and haul roads.

3.06 OPERATION, TERMINATION, AND REMOVAL

A. Enforce strict discipline in use of construction facilities and temporary controls. Do not permit temporary installations to be abused or endangered.

B. Maintain construction facilities and temporary controls in good operating condition and protect from damage, until removal is authorized.

C. Remove each temporary service and facility when no longer needed, unless Engineer requests that it be maintained for a longer period of time.

D. Complete or restore permanent Work that may have been delayed because of interference with temporary service or facility. Repair damaged Work, clean exposed surfaces, and replace Work that cannot be satisfactorily repaired.

END OF SECTION

SECTION 01 56 16 – TEMPORARY DUST AND VAPOR CONTROLS

PART 1 GENERAL

1.01 SCOPE

A. Work under this section includes control of dust and vapors in accordance with the requirements of the *Soil Management Plan* for 20 to 80 Chemical Way, Redwood City, California, December 2010 by West Environmental Services & Technology, Inc. (SMP).

B. Contractor shall implement dust and vapor control techniques at all times during the work to prevent the formation and migration of dust and vapors during excavation and removal of debris and soil at the Site. The following dust and vapor specific techniques in areas of known or anticipated vapors will include:

1. Thorough wetting of areas to be excavated for at least an hour before starting soil excavation and loading activities.

2. Providing and operating a sprinkler or mist system adjacent to excavation and soil loading areas and adjacent to each piece of soil excavating and soil loading equipment.

3. Designating personnel with watering hoses or other watering equipment to supplement the sprinkler misting control measures.

4. Limiting rates of excavation, as required, to meet the standards of this Section.

1.02 RELATED SECTIONS:

A. Section 01 57 23 – Temporary Storm Water Pollution Control

B. Section 01 35 29 – Health and Safety Requirements

C. Section 01 74 16 – Decontamination

D. Section 02 41 00 – Demolition

E. Section 02 60 00 – Contaminated Site Material Removal

F. Section 02 81 00 – Transportation and Disposal of Hazardous Materials

G. Section 02 82 00 – Asbestos Removal

H. Section 02 83 .13 – Lead Based Paint Removal and Disposal

I. Section 31 14 13 – Soil Stockpiling

1.03 REFERENCES

A. BAAQMD – Regulation 8, Rule 40

B. BAAQMD – Regulation 11, Rule 2

C. BAAQMD – Regulation 6, Rule 1

1.04 DUST CONTROL

A. The Contractor shall implement a dust and vapor control plan. Contractor shall execute work by methods to minimize generation of dust from construction activities. Fugitive dust control strategies shall be composed of a balance of available dust mitigation techniques applied on an as needed basis by construction site supervision to: prevent dust from exiting the Work zone; prevent visible emissions from exceeding air quality regulations; and prevent public nuisance.

B. Dust control shall include: wind breaks and barriers; frequent water applications; control of vehicle access; vehicle speed restrictions; covering of piles; use of gravel at site exit points to remove caked on dirt from tires and tracks; cleaning of equipment at the end of each work day and prior to site removal; sweeping of public thoroughfares, and work stoppage as necessary to maintain compliance with dust control requirements.

C. Prevent wind erosion and air pollution by wetting down, or applying other approved dust control measures to the Work Site. Control the generation of dust, which could violate State and local air pollution control standards, damage onsite/offsite facilities, and/or impact crops growing in adjacent properties.

D. Site-Specific Considerations

1. The time of year, length of Project, and surface area undergoing disturbance, excavation, backfilling, hauling and grading should be the primary focus for implementation of dust control measures.

2. Knowledge of soil types is important to understand the free silt content and the ability to hold moisture. Some soils are hydrophobic – repel water - and may require the addition of surfactants during water applications to facilitate penetration and achieve appropriate moisture adsorption. Surfactants may also be used to reduce the amount of water needed.

3. Activities occurring near sensitive receptors should receive a higher level of preventative planning. The Contractor shall evaluate water quality, flora and

fauna and other environmental impacts (e.g., wildlife, storm water runoff, and surface water impacts) prior to the use of water/soil additives including binders, tackifiers, surfactants, and other materials and methods. All additives at a minimum must meet Regional Water Quality Control Board (RWQCB) requirements and all applicable federal, state, and local environmental regulations regarding the use of the material.

1.05 DEFINITIONS

A. "Dust" shall mean airborne particulate matter that is associated with or results from the Contractor's activities: Of particular concern is dust associated with the Contractor's excavation activities; truck traffic onto and off of the Site; loading and decontamination of transportation vehicles; and wind traversing exposed stockpiled soil and debris.

B. "Visible dust" shall mean dust that can be detected visibly, without instrumentation.

1.06 SUBMITTALS

A. Odor and vapor control products for total petroleum hydrocarbons and volatile organic compounds.

1.07 PAYMENT

A. No separate payment will be made for complying with the requirements of this Section and the costs should be included in the various related bid items.

PART 2 PRODUCTS

A. Dust Control Fabric: Dust control fabric to be provided by Contractor shall be a woven mesh polypropylene fabric. Dust control fabric shall be California Industrial Fabrics 96% _closed black or green mesh (for purchasing contact: Margie Platero, Golden Bay Fence Plus Iron, 510-247-9200 or for product information contact manufacturer: 1-800-622-7169), or a favorably reviewed equivalent, applied in accordance with manufacturer's recommendations for dust and wind control. Contractor shall submit

B. Soil binder or stabilizer: Soil binders and stabilizers shall be a nontoxic dust palliative favorably reviewed by Client Representative prior to use

PART 3 EXECUTION

3.01 COMPLIANCE WITH DUST AND VAPOR CONTROL REQUIREMENTS

A. Contractor shall comply with the dust and vapor control requirements. The Engineer will monitor for dust and vapors.

3.02 REQUIREMENTS FOR DUST CONTROL

A. Contractor will meet the following performance standards:

1. Requirements for Dust Control

a. Contractor will meet the following performance standards:

(i) No visible dust will be permitted during site preparation, demolition, excavation, stockpiling, or loading activities.

b. Contractor/Engineer will measure and record dust and airborne chemical concentrations at the Site boundaries in accordance with the HASP. During all site work, dust and airborne chemical concentrations at the Site perimeter, measured by Engineer with an averaging period of eight hours or less, will be less than the Action Levels specified in the HASP, BAAQMD and applicable California Air Resources Control Board (CARB) standards.

c. The Contractor will temporarily stop work, re-assess Site activities, and increase vapor suppression measures until OVM readings demonstrate that the airborne Action Level are achieved by Contractor's upgraded control measures, when the following conditions are encountered:

(i) 1.0 parts per million by volume ("ppmv") of total volatile organic compounds ("VOCs") for 5-minutes above background at the Site perimeter exceeded (as recorded by organic vapor meter ("OVM"):

(ii) 0.05 mg/m^3 of total suspended particulates are measured with the Respirable Air Meter (RAM) or other device.

d. If airborne Action Levels are exceeded at any time during soil remedial activities, as indicated by laboratory chemical specific analyses of perimeter samples, the Contractor will temporarily stop work and re-assess Site activities and dust control measures until it is demonstrated that airborne Action Levels are achieved by Contractor's upgraded control measures.

e. If significant odors are observed at the Site perimeter or if the 10 or more complaints are filed with the BAAQMD within a 90-day period, then soil excavation and loading activities will be temporarily halted, and the Contractor's practices will be reviewed and modified to include upgraded odor

control activities, such as spraying additional water, odor suppressant, or binding agents on exposed soil or covering exposed soil with visqueen or imported fill when the work shift is over. If significant odors cannot be suppressed following changes in the Contractor's work methods in the active work areas on the Site or changes in meteorological conditions at the Site, then work will be halted and odor suppression techniques will be further assessed in consultation with the Engineer.

B. To control the formation of dust during general Site work, demolition, excavation, stockpiling, and loading, the Contractor shall:

1. Keep vehicle speeds on the Site below 15 miles per hour.

2. Mist or spray with water at least twice daily to prevent formation of dust while clearing the site, demolishing foundations, excavating, transferring soil on-Site, or loading or decontaminating transportation vehicles.

3. Control excavation activities to minimize the generation of dust.

4. Keep the drop heights to a minimum while loading transportation vehicles.

5. Cover all trucks and transport vehicles hauling soil, sand, and other loose materials or require all trucks and transport vehicles to maintain at least 2 feet of freeboard.

6. Conform to Section 31 14 13 - Stockpile Management.

7. Apply water at a minimum of three times a day or apply soil stabilizers, on all unpaved access roads, parking areas and staging areas at the construction site as needed to prevent dust.

8. Construct a stabilized construction entrance/exit ways for any unpaved entrance/exit way.

9. Sweep daily with brooms or a street sweeper if visible soil is on paved access routes, parking areas, or staging areas.

10. Sweep daily, or more frequently if needed, with a street sweeper if visible soil material is carried onto public streets.

11. Containerize, characterize, and dispose of soil collected from street sweeping. In the event wind speeds exceed 20 mph for more than 15 minutes causes visible dust, Contractor shall halt soil-moving activities until wind speeds decrease and no visible emissions are observed.

3.03 NOTICE TO CONTRACTOR: DUST

A. The concentrations of hazardous substances present on the Site within soil, groundwater and dust may present a potential health risk to on-site workers and off-site receptors. Engineer will conduct dust and total airborne particulate measurements (total suspended particulates) at the work area boundaries in accordance with the SMP.

B. If Engineer notifies Contractor that dust or VOC Action Levels are exceeded or odors are detected at the Site Perimeter, the Contractor will immediately cease all dust, vapor, or odor generating activities and revise and implement dust or odor control measures to the satisfaction of the Engineer before resuming work in accordance with the SMP and applicable air quality standards. Contractor may make no claims' for delays, no extension of contract time will be available and no additional compensation will be paid due to the Contractor's failure to meet dust control requirements. Notwithstanding perimeter air sampling to be performed by Engineer, Contractor is responsible for complying with Laws and Regulations, including Bay Area Air Quality Management District requirements regarding emissions of dust, metals, VOCs and other odorous substances and nuisances.

C. Acceptance of this Contract indicates that the Contractor accepts and will implement, as a minimum, the dust and vapor control measures identified in this Section. If the Contractor proposes other measures than those required in this Section, these must be noted in the Bid Proposal. If the Contractor does not anticipate the measures identified in this Section will be effective or implementable, the Contractor shall make such a statement in the Bid Proposal, and provide with the Bid a detailed description of proposed alternative dust, vapor, and odor control measures that will meet the stated dust, vapor and odor control requirements outlined in this Section. For bidding purposes, Contractor shall bid the Work as specified; however, Contractor shall provide an anticipated cost with the explanation of "the proposed alternative dust, vapor, and odor control measures."

D. If either (1) observations or measurements made by the Contractor, Engineer or regulatory agencies, or (2) complaints by air pollution control authorities or nearby residents or businesses indicate the need for more stringent dust control measures, Contractor shall promptly:

1. Increase the magnitude of dust control measures.

2. Increase the frequency of dust control measures.

3. Add dust palliative or surfactant to dust control water. Compounds added to the water must be favorably reviewed by Engineer prior to use.

E. None of the observations, measurements, or other actions of the Client Representative, Client, or others shall serve to relieve the Contractor of its complete responsibility for controlling dust.

F. Implementation of contingency measures for dust control shall be performed at no additional cost to the Owner and the Contractor shall include appropriate allowance in the Contractor's Bid to cover such contingency measures.

G. If further dust control measures are needed due to meteorological conditions, the Contractor will be consulted and one of the following measures may be required, at the sole discretion of the Engineer. If, through no fault of the Contractor, the Engineer requires further dust control measures, a Change Order will be negotiated for the following measures.

1. Suspension of certain of the Contractor's operations.

2. Use of additional dust control fabric or windscreens.

3. Enclosure of transport loading operations.

END OF SECTION

SECTION 01 57 23 – TEMPORARY STORM WATER POLLUTION CONTROL

PART 1 GENERAL

1.01 SUMMARY OF WORK:

A. The Contractor shall provide all material, labor, equipment and services required to implement, maintain, and inspect all BMPs to control pollutants in storm water runoff associated with construction activity. All BMPs implemented by the Contractor shall comply with the SWPPP and General Permit. These BMPs shall remain in operation until post-construction stabilization BMPs have been installed. The work shall include:

1. Installation, maintenance and repair of storm water BMPs pursuant to the Site SWPPP and General Permit.

2. Installation of post-construction stabilization BMPs.

B. The Contractor shall provide a QSP for the: inspection and oversight of BMP maintenance and repair; pre-and post storm inspections and reporting; and storm water sampling pursuant to the SWPPP and General Permit.

C. Disposal of retained and treated storm water.

1.02 RELATED SECTIONS

A. Coordinate the work of this Section with the Work of other Sections as required to properly execute the Work and as necessary to maintain satisfactory progress of the Work of other Sections. Other Sections containing related work include but are not limited to the following:

1. Fixed Cash Allowance – Section 01 21 13

2. Site Clearing – Section 31 10 00

3. Excavation and Fill – Section 31 20 00

4. Dewatering – Section 31 23 19

5. Excavation Support and Protection – Section 31 50 00

B. The work described in this section is applicable to any and all sections of the Contract Documents. Any and all work that would disturb the existing site conditions or present the potential for site run-off shall adhere fully to this specification section.

1.03 REFERENCES

A. California State Water Resources Control Board (SWRCB) *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ, NPDES NO. CAS000002* ("the General Permit;").

B. The Site SWPPP.

C. Meet requirements and recommendations of applicable portions of Standards listed for City of Redwood City (MS4).

1.04 DEFINITIONS

A. Contractor – Firm responsible for providing prime construction services for the project under contract with the Owner. Refers to the General Contractor, Prime Contractor, Construction Manager firm under various contract types.

B. BMP – Best Management Practices are scheduling of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

C. General Permit - California State Water Resources Control Board (SWRCB) *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ, NPDES NO. CAS000002* ("the General Permit;").

D. Likely Precipitation Event - Any weather pattern that is forecasted to have a 50% or greater chance of producing precipitation in the project area. The QSP shall obtain likely precipitation forecast information from the National Weather Service Forecast Office (e.g., by entering the zip code of the project's location at http://www.srh.noaa.gov/forecast).

E. NOI– Notice of Intent for General Permit.

F. Qualifying Rain Event - Any event that produces 0.5-inches or more precipitation with a 48-hour or greater period between rain events.

G. QSD - Qualified Storm Water Pollution Prevention Plan Developer. Individual who is authorized to develop and revise SWPPPs pursuant to the General Permit.

H. QSP - Qualified Storm Water Pollution Prevention Plan Developer. The person responsible for non-storm water and storm water visual observations, sampling and

analysis, and for ensuring full compliance with the General Permit and implementation of all elements of the SWPPP.

I. REAP – Rain Event Action Plan. The General Permit requires the QSP of Risk Level 2 and 3 sites to develop and implement REAPs that must be designed to protect all exposed portions of the site within 48-hours prior to any likely precipitation event.

J. SWPPP OR SWP3 – Storm Water Pollution Prevention Plan

K. SWRCB – State Water Resources Control Board

1.05 QUALITY ASSURANCE

A. In order to minimize the discharge of pollutants to storm water, the Contractor shall implement all temporary site controls in accordance with the site SWPPP and General Permit.

B. Implementation of site controls shall be performed under the oversight of a QSP. A qualified Contractor experienced in the proper installation of BMPs shall provide installation, maintenance and repair in accordance with: manufacturers' specifications; in keeping with recognized BMPs; and in keeping with General Permit regulations.

C. The QSP shall conduct inspections and monitoring at the frequency specified in the SWPPP for this project. Keep records of inspections current and on file, available for review by the SWRCB, MS4 operator and Owner.

1.06 SUBMITTALS

A. The QSP is responsible for ensuring full compliance with the General Permit and implementation of all elements of the SWPPP. Documented Contractor QSP qualifications shall be submitted in accordance with Section 01 31 00.

B. Submittals of products used in structural and non-structural controls shall be submitted in accordance with Conditions and Division 1 – Specifications and Sections prior to installation on the site. The Contractor shall make available physical samples and product literature on any material used in structural or non-structural controls during the course of the project prior to its implementation in the field.

1. Product data for geotextiles.

2. Product data for BMP materials;

3. Test results from monitoring;

4. Exceedance reports.

C. Exceedance Report - In the event that any effluent sample exceeds an applicable NAL, the QSP will provide the analytical data to the discharger (Owner) so that they can electronically submit all storm event sampling results to the State Water Board no later than 10 days after the conclusion of the storm event.

1. The NAL for pH is lower than 6.5 standard units (S.U.) and greater than 8.5 S.U. for a Risk 2 Site.

2. The NAL for turbidity is greater than 250 Nephelometric Turbidity Units (NTUs) for a Risk 2 Site.

D. Annual Reporting: the General Permit requires that the discharger (owner) annually submit information to certify that their site is in compliance for all projects that are enrolled for more than one continuous three-month period.

1.07 PAYMENT

A. Temporary Storm Water Pollution Control, including laboratory analytical fees for storm water samples, will be paid as a fixed cash allowance item for payment - see section 01 21 12.

PART 2 PRODUCTS

2.01 MATERIALS

A. Specific site control devices are identified in the SWPPP. Where such devices are indicated, their material composition shall comply with this section.

B. Materials to be used in structural and non-structural site controls shall include, but not be limited to the following:

1. Silt Fences: implemented to filter, and remove sediment from storm water shall be composed of the following materials:

a. Geotextile fabric – a non-woven, polypropylene, polyethylene, or polyamide fabric with non- raveling edges. It shall be non-biodegradable, inert to most soil chemicals, ultraviolet resistant, unaffected by moisture and other weather conditions, and permeable to water while retaining sediment. Fabric shall be 36 inches wide, with a minimum weight of 4.5 oz/yd.

b. Posts – metal fence posts shall be made of hot rolled steel, galvanized or painted, a minimum of 4 feet long, with a Y-bar or TEE cross-section.

c. Wire Backing – a galvanized, 2”x4”, welded wire fencing, 12 gauge minimum. Width shall be sufficient to support geotextile fabric 24 inches above adjacent grades.

d. Chain link fences located along the same lines as silt fences, may be use to support geotextile fabric. In this circumstance, the geotextile fabric shall be firmly attached to fence.

e. Geotextile rolls shall be furnished with suitable wrapping for protection against moisture and extended ultraviolet exposure prior to placement. Each roll shall be labeled or tagged to provide product identification sufficient for inventory and quality control purposes. Rolls shall be stored in a manner that protects them from the elements.

2. Prefabricated Fence: Prefabricated fence systems may be used provided they meet all of the above material requirements.

3. Triangular filter dikes: for use on surfaces or in locations where standard silt fence cannot be implemented, shall be composed of the following:

   a. Geotextile fabric - of the type described above, in a minimum width of 60 inches. b. Dike Structure - 6 gauge, 6x6 welded wire mesh, 60 inches wide, folded into a triangular form. Each side shall be 18 inches with an overlap of 6 inches.

   b. Ties – metal shoat rings or standard wire/cable ties for attachment of wire mesh to itself, and for attachment of geotextile fabric to wire mesh.

4. Stabilized construction entrance: Aggregate for Stabilized Construction Entrance will be 1 to 3 inches in size, washed, well-graded gravel or crushed rock conforming to the following quality requirements:

California Test	**Test Method**	**Requirement**
Apparent Specific Gravity	206	2.5 min.
Absorption	206	4.2 percent max.
5. Durability Index	229	52 min.

6. Rock Berms: shall be composed of the following materials:

   a. Rock – clean open graded rock, with a maximum diameter of 3 inches.

   b. Wire Mesh Support – a galvanized, woven wire sheathing having a maximum opening size of 1 (one) inch, and a minimum wire diameter of 20 gauge.

7. Fiber rolls, if used, shall consist straw or flax rolled and bound into a tube and placed on slopes at regular intervals defined in the General Permit to reduce flow velocity and minimize sediment runoff.

   a. Stakes, for the fiber rolls, shall be softwood lumber, chisel pointed.

8. Soil Retention Blanket: shall govern for providing and placing wood, straw or coconut fiber mat, synthetic mat, paper mat, jute mesh or other material as a soil retention blanket for erosion control on slopes, ditches and high traffic pedestrian areas of barren soil, for short term protection of seeded or sodded areas as shown on the plans or as specified by the Engineer.

    a. Soil Retention Blankets. Samples of all soil retention blankets must be submitted to the Engineer prior to use. Materials shall be approved by the Engineer. Examples of soil retention blankets include:

        (i) Jute Mat – a plain fabric made of jute yarn, woven in a loose and simple manner, with a minimum unit weight of 2.7 pounds per square yard. Width shall be as required for the dimensions of the area to be covered.

        (ii) Wood Fiber Mat – a mat composed of wood fibers, which are encased in nylon, cotton or other type of netting.

        (iii) Synthetic Webbing Mat – a mat manufactured from polyvinyl chloride or polypropylene monofilaments, which are bonded together into a three-dimensional web to facilitate erosion control and/or re-vegetation.

9. Geotextiles are woven or non-woven synthetic fabrics, which are designed to be used for erosion control and soil stabilization applications.

    a. Samples of all soil retention blankets must be submitted to the Engineer prior to use. Materials shall be approved by the Engineer.

    b. Fasteners. Fasteners shall conform to the manufacturer's recommendations.

10. Organic mulches: shall be used for covering bare soil, retaining moisture under existing vegetation being preserved, and for absorbing the energy of compaction caused by foot or vehicular traffic. Mulch shall be one or more of the following:

    a. Straw – from broken straw bales that are free of weed and grass seed where the grass from the seed is not desired vegetation for the area to be protected.

    b. Hay: from broken hay bales containing an approved species of grass and seed, for use where the germinated grasses from the hay bales is considered desirable vegetation in the area to be protected.

    c. Wood Chips – from chipped limbs of cleared trees on site, or delivered in chipped form, in bulk quantities of pine, cedar or cypress. Wood chips of all species shall be partially decomposed to alleviate nitrogen depletion of the soil in areas where existing vegetation is to be preserved and protected.

d. Shredded Mulches – from pine, cypress or cedar, mechanically shredded, and capable of forming an interlocking mat following placement, and after sufficient wetting and drying has taken place naturally.

11. Any other materials indicated in SWPPP.

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

3.02 SWPPP

A. The Contractor shall be provided with a Site SWPPP. The SWPPP shall be kept at the jobsite. The QSP shall be responsible for keeping the following documents at the project site, for review, with a copy of the SWPPP:

1. An accurate, chronological record of all QSP inspections revisions and additional controls.

2. Inspection Checklists.

3. REAPs.

4. Storm water analytical data.

3.03 BEST MANAGEMENT PRACTICES

A. The Contractor shall provide installation, maintenance and repair of all BMPs as indicated in the SWPPP. These BMPs must be confirmed as fully operational with the Owner before any work that disturbs the site can begin.

B. Modifications to the SWPPP by a QSD are likely to be necessary to meet changing site conditions, and to address new sources of storm water discharges, as the work progresses.

C. Structural BMPs may include, but are not limited to:

1. Silt Fences

a. Silt fences shall consist of geotextile fabric, attached to wire fabric backing to support the geotextile. The wire fabric should be galvanized 2” x 4” welded wire, 12-gauge minimum. Attach non-woven geotextile fabric to fence with shoat or standard cable/wire ties, leaving a “toe” of fabric at the bottom of the fence of not less than six-inches. Steel posts as specified shall be driven to a depth of one-foot minimum, and spaced not more than 6 (six) feet on center.

Tilt posts slightly, in an "uphill" direction for additional strength. Attach fencing to posts with standard cable/wire ties. Dig a six-inch deep by six-inch wide trench on the disturbed side of the fence, bury geotextile fabric in trench, backfill and tamp. Abutting ends of geotextile fabric shall be overlapped a minimum of 12- inches.

2. Fiber Rolls

   a. Install fiber rolls at the locations shown in the SWPPP. On the downhill or outslope sides of the fiber rolls, pound 1 inch x 2 inches x 24 inches wooden stakes on three-foot spacing through two loops of the netting, into a trench. Drive the stakes at an angle towards the uphill side of the slope. The stake should stick out one to two inches. Tamp soil on uphill side of the fiber rolls. Tightly butt the fiber rolls end-to-end. Maintain to assure proper performance.

3. Stabilized Construction Entrance/Exit

   a. Stabilized construction entrance shall be composed of consist of steel ribbed panels, or open graded aggregate on compact sub-grade on unpaved surfaces. Aggregate will be placed directly onto a paved surface to eliminate tracking and flowing of sediment. The entrances will be properly graded to prevent runoff from leaving the construction site.

   b. Maintain entrance pad in a condition that will prevent tracking or flowing of sediment onto public rights-of-way. Where aggregate is used, provide periodic top dressing of with additional material as conditions demand; and repair and clean out trapped sediment. Remove sediment spilled, dropped, washed or tracked onto public rights-of-way.

4. Storm Drain Inlet Protection

   a. Cover curb storm inlet with geotextile fabric covered wire fabric. Extend fabric two-feet beyond inlet opening at each end and 12-inches in front of opening in the gutter. Remove strip of filter fabric approximately 2 ½-inches high for the length of the protection to act as overflow. Extend fabric over the top of opening to allow placement of sandbags. Anchor fabric with 20-pound gravel bags placed three-feet on center.

   b. Maintain inlet protection daily as necessary to repair breaches in geotextile fabric. When siltation has occurred, it shall be removed when it has reached a depth of two- inches. Silt that has been removed shall be redistributed in an appropriate location on site, or legally disposed of off site.

5. Rock Berm

    a. Rock berms shall consist of riprap type rock, secured within wire sheathing as specified, and installed at the toe of slopes, or at the perimeter of developing or disturbed areas. Height of berm shall be a minimum of 18-inches from top of berm to uphill toe of berm. Top width shall be a minimum of 24-inches, with side slopes of 2:1 or flatter. Uphill toe of berm shall be buried a minimum of four-inches into existing grade. Rock berm shall have a minimum flow-through rate of 60-gallons per minute, per square foot of berm face.

    b. Maintain rock berm in a condition that allows the sediment to be removed, when the depth of sediment has reached 1/3 (one third) the height of the berm. Berm shall be reshaped as needed, and silt buildup removed, to maintain specified flow through berm.

6. Paper Mulch

    a. Apply specified mulches in areas identified on the SWPPP, will be added to a depth of three-inches or as otherwise specified in the SWPPP.

3.04 INSPECTIONS

A. The QSP shall perform inspections, maintenance repair and sampling activities. The QSP may delegate any or all of inspections, maintenance repair and sampling activities to an employee trained to do these tasks appropriately, but shall ensure adequate deployment.

    1. The QSP shall complete an inspection checklist, using a form provided by the State Water Board or Regional Water Board or in an alternative format.

    2. The QSP shall conduct inspections at the following frequency:

        a. At least once per week, or during each 24-hour period of extended storm events, to identify and record BMPs that need maintenance to operate effectively, that have failed, or that could fail to operate as intended.

        b. 48 hours after each qualifying rain event (post rain event) to identify whether BMPs are adequately designed, implemented and effective.

3.05 MAINTENANCE AND REPAIR OF BMPS

A. All erosion and sediment control measures and other protective measures required for this project, must be maintained in effective operating condition.

B. If inspections by the QSP determines that BMP's are not operating effectively, repair or changes to BMPs shall be implemented with 72 hours of identification, and completed as soon as possible

C. If maintenance prior to the next anticipated storm event is impracticable, maintenance must be scheduled and accomplished as soon as practicable. Erosion and sediment controls that have been intentionally disabled, run- over, removed or otherwise rendered ineffective must be replaced or corrected immediately upon discovery.

3.06 REAP

A. QSP shall develop a REAP 48-hours prior to any likely precipitation event.

1. A printed copy of precipitation forecast information from the National Weather Service Forecast Office (e.g., by entering the zip code of the project's location at http://www.srh.noaa.gov/forecast) should be kept with the REAP.

3.07 STORM WATER SAMPLE COLLECTION

A. The QSP shall collect storm water grab samples from locations representative of the flow and discharge.

1. Three storm water samples are to be collected for each day of the qualifying rain event.

2. Grab samples shall be collected from stored or contained storm water from discharges subsequent to a qualifying rain event (producing precipitation of 0.5-inch or more at the time of discharge).

B. Storm water samples shall be analyzed for pH, turbidity and any additional parameters required by the Regional Board.

1. pH shall be analyzed on-Site using a pH meter or test kit.

2. Turbidity shall be measured on-Site or at a California accredited laboratory. Acceptable test methods include Standard Method 2130 or USEPA Method 180.1.

3.08 RECORD KEEPING

A. Keep records of inspections current and on file, available for review by EPA, TCEQ, MS4 operator Representative and/or Owner's Representatives.

B. Contractor shall keep records of all Contractor inspections on file at project site, and make available for review by Owner's Representative/s or EPA, TCEQ or MS4

operator officials requesting review of inspection records. One copy of each inspection report shall be delivered to the CI and the Owner's office.

C. Contractor shall submit copies of all inspection records, to the Owner at project completion.

3.09 SCHEDULE

A. Construct BMPs prior to commencing earthwork related activities.

B. Stake grading areas after receiving the Notice to Proceed and before any grading operations have taken place.

END OF SECTION

SECTION 01 70 00 – CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Submittals.

B. Inspections.

C. Acceptance of the Work.

1.02 MEASUREMENT AND PAYMENT

A. Separate measurement or payment will not be made for work required under this Section. All costs in connection with the work specified herein will be considered to be included with the related item of work in the Bid Schedule of the Bid Form, or incidental to the Work.

1.03 SUBMITTALS

A. Project Record Documents:

1. Record drawings;

2. Import and export material weigh tickets;

3. Documentation on recycling of demolition debris;

4. LEED letter

5. Waste manifests and bills of lading for soil.

1.04 REQUIREMENTS PREPARATORY TO FINAL INSPECTION

A. The Contractor shall request a preliminary final inspection to determine the state of completion of the Work.

B. The request shall be made in writing, addressed to the Engineer, at least seven days in advance of the requested date of the preliminary inspection.

C. The Engineer will perform the preliminary inspection within three days of the requested date.

D. Prior to the requested date of the preliminary inspection, the Contractor shall perform or provide the following, as applicable:

1. Temporary facilities, except as may be required for punch list work, shall be removed from the site.

2. The site and all applicable appurtenances and improvements shall be cleaned as specified in Division 1.

3. Submittals required under the various items of work shall be made.

E. The Contractor shall be represented by its principal superintendent and such Subcontractors and Suppliers as may be necessary to answer the questions of the Engineer's inspection team.

F. From the information gathered from this inspection, the Engineer will prepare a punch list of work to be performed, corrected, or completed.

G. All work on the punch list shall be completed by the Contractor prior to requesting the final inspection.

1.05 FINAL INSPECTION

A. When all requirements of the above prepared punch list have been completed, the Contractor shall request the final inspection to determine eligibility for issuance of the Certificate of Substantial Completion.

B. The request shall be made in writing, addressed to the Engineer, at least seven days in advance of the requested date of the final inspection.

C. The Contractor shall be represented by its principal superintendent and such Subcontractors and Suppliers as may be necessary to verify the completion of the Work including punch list items.

D. Depending on the extensiveness of the punch list items, certain elements of the Work may be scheduled separately for final inspection at appointed times.

E. If the Work has been substantially completed in accordance with the Contract Documents, and only minor corrective measures are required, the Engineer will recommend that the District issue a Certificate of Substantial Completion, based upon the Contractor's assurance that remaining corrective measures will be completed within the shortest practicable time period. The Engineer will attach a corresponding punch list to the Certificate of Substantial Completion. A fixed schedule for such corrective measures shall be submitted to the Engineer, for approval.

F. If the Work has not been substantially completed in accordance with the Contract Documents, and corrective measures are still required, a new punch list will be prepared by the Engineer, based on the information gathered from the final inspection, and the Contractor will be required to complete this work and then call for another final inspection, following the procedure outlined above.

G. The date of the Certificate of Substantial Completion will establish the completion date of the Work, or portions thereof as specifically referenced in the Certificate, for determining liquidated damages.

1.06 ACCEPTANCE OF THE WORK

A. Upon completion of the Substantial Completion punch list items, the Engineer will recommend that the Owner formally accept the Work.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 01 71 13 – MOBILIZATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Organization and mobilization of the Contractor's forces.

B. Transporting equipment to the jobsite and setting up of same.

C. Transporting various tools, materials and equipment to the jobsite.

D. Erection of temporary facilities as required for field offices, staging, storage and construction operations.

1.02 RELATED SECTIONS

A. Section 01 51 00 - Temporary Facilities and Controls

1.03 PAYMENT

A. Measurement: The work of this Section will not be measured separately for payment.

B. Payment: Mobilization will be paid for at the Contract lump sum price, and will include accumulating tools, apparatus, equipment, materials, and personnel, and performing final removal and demobilization. The Contract lump sum price will be paid as follows:

1. 45 percent of the Contract lump sum price within 15 days of the effective date of the Notice to Proceed.

2. 45 percent of the Contract lump sum price within 45 days of the effective date of the Notice to Proceed.

3. 10 percent of the Contract lump sum price after the Engineer has determined that the Contractor has left the work site in a clean condition after the completion of all phases of work.

1.04 DESCRIPTION

A. Mobilization shall include mobilization of all construction equipment, materials, supplies, appurtenances, facilities, and the like, staffed and ready for commencing and prosecuting the Work; and the subsequent demobilization and removal from the

jobsite of said equipment, appurtenances, facilities, and the like upon completion of the Work.

B. Mobilization shall also include assembly and delivery to the jobsite of equipment, tools, materials, and supplies necessary for the prosecution of work, which are not intended to be incorporated in the Work; the clearing of and preparation of the Contractor's work area; the complete assembly, in working order, of equipment necessary to perform the required work; personnel services preparatory to commencing actual work; and all other preparatory work required to permit commencement of the actual work on construction items for which payment is provided under the Contract.

1.05 TOOLS AND SUPPLIES

A. Provide construction tools, equipment, materials, and supplies of the types and quantities necessary to facilitate the timely execution of the Work.

B. Provide personnel, products, construction materials, equipment, tools, and supplies at the jobsite at the time they are scheduled to be installed or utilized.

1.06 DEMOBILIZATION

A. Upon completion of the Work, remove construction tools, apparatus, equipment mobile units and buildings, unused materials and supplies.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 01 74 16 – DECONTAMINATION

PART 1 GENERAL

1.01 SUMMARY OF WORK

A. This Section includes:

1. Cleaning requirements during construction operations.

2. Final cleaning prior to project closeout.

1.02 DECONTAMINATION PROCEDURES

A. Track Out

1. Any equipment including trucks that are in contact with contaminated materials must be properly cleaned before leaving Site. Provide equipment for street sweeping to minimize track out of materials from the Site.

B. Personal Protective Equipment

1. Contractor must deposit all disposable clothing in containers onsite and provide offsite disposal;

2. Provide washtubs with soap and water and rinse tubs must be provided for decontamination of boots and gloves to be reused;

3. If used, respirators must be cleaned with “baby wipes” and sanitizing wipes unless gross contamination requires heavier cleaning in separate wash and rinse tubs; and

a. Contaminated PPE and other contaminated disposable equipment must be collected for appropriate disposal.

1.03 ESTABLISHMENT OF DECONTAMINATION AREA

A. Prior to beginning work, Contractor shall establish one or more areas on-Site for the decontamination of personnel, vehicles, and equipment leaving exclusion zones and/or exiting the Site. Decontamination areas shall allow the Engineer to conveniently observe the decontamination of equipment and vehicles leaving the Site.

B. The location of the decontamination pad will be determined by the Contractor based on staging of the Work. Contractor shall be responsible for re-locating decontamination pad, as necessary, based on Contractor's staging of Work.

1. The Client Representative may elect to collect soil samples beneath the footprint of the decontamination pad before installation and after demobilization.

2. Contractor's decontamination facilities shall be available for use by authorized visitors, Engineer and County.

3. Used personal protective equipment, sampling equipment, and residuals from visitors, Engineer, and County decontamination shall be combined with Contractor's wastes and handled and paid for by Contractor for disposal.

1.04 DECONTAMINATION OF EQUIPMENT, VEHICLES AND DEMOLITION DEBRIS

A. The Contractor shall decontaminate the following materials and equipment:

1. Every item of any sort to be used by the Contractor at the Site, prior to mobilization to the Site (not including new materials reasonably anticipated to be free from contamination);

2. Equipment used during demolition, excavation, dewatering, and soil handling operations;

3. Vehicles transporting wastes off-Site,

4. Demolition debris with soil and other materials adhering to demolition debris, and every item, of any sort, mobilized by the Contractor to the Site, prior to the item's demobilization from the Site.

B. Contractor shall afford Engineer the opportunity to observe each decontaminated transport vehicle prior to the vehicle's departure from the Site

C. To minimize decontamination waste, the preferred decontamination method shall be dry decontamination using brooms, brushes, shovels, plastic scrapers, or PM-l0 filterbag equipped industrial vacuum cleaners. Loose dirt shall be scraped, swept, or vacuumed off truck tires, mud flaps, fenders, and other accessible areas. Wet decontamination methods shall be used only if necessary. Mops and soapy water shall be the preferred wet weather decontamination tool. If a mop is not practicable due to the time required for cleaning, pressure washers or spray hoses with high pressure nozzles shall be used to remove surface material from trucks during wet weather conditions.

D. If tire dirt cannot be readily removed from the tire treads using dry methods, pressure washers or spray hoses with high pressure nozzles shall be used to remove it. The entire circumference of truck tires shall be inspected before the truck shall be allowed to leave the Site. The decontamination technician shall inspect all tires after the initial

decontamination. Upon completing the inspection, the truck driver shall move the truck forward such that the areas of the tires previously in contact with the decontamination pad can be inspected and decontaminated, as necessary. If observations made by the Contractor, Engineer, or regulatory agencies indicate the need for more stringent decontamination measures, Contractor shall promptly increase appropriate decontamination measures to the satisfaction of the Contractor, Engineer, County, or regulatory agencies.

E. None of the observations or other actions of the Client Representative, Client, or others shall serve to relieve the Contractor of its complete responsibility for decontamination of materials, transportation vehicles, or other equipment.

1.05 STREET SWEEPING

A. Street sweeping should be implemented, as needed at the Site, to reduce sediment tracking from undeveloped areas onto roads. Sweeping of debris into storm drains is not permitted. Water should not be used to remove deposits on roadways.

1.06 DECONTAMINATION OF WASTES

A. If decontamination wastes are to be stored on-Site, Contractor shall temporarily store wastes in a contained area on-Site satisfactory to Client Representative. Contractor shall dispose of all liquid and solid decontamination wastes in accordance with Laws and Regulations.

1.07 PAYMENT

A. Separate measurement or payment will not be made for work required under this Section. All costs in connection with the work specified herein will be considered to be included with the related item of work in the Bid Schedule of the Bid Form, or incidental to the Work.Products

PART 2 MATERIALS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 01 74 19 – CONSTRUCTION/DEMOLITION MATERIAL RECYCLING

PART 1 GENERAL

1.01 SUMMARY

A. Section includes: Requirements and procedures for ensuring optimal diversion of construction waste materials generated by the Work from landfill disposal within the limits of the Construction Schedule and Contract Sum.

1. Assembly Bill 939, California Solid Waste Management Act, requires that localities throughout the state develop source reduction, re-use, recycling, and composting programs, to reduce the tonnage of solid waste disposed in landfills 75% by the year 2010. Construction waste materials generated by the Work are targeted to achieve these diversion rates.

2. The Work of this Contract requires that a minimum of 100% by weight of the inert construction and demolition materials generated in the Work is diverted from landfill disposal through a combination of re-use and recycling activities and 75% of all other construction and demolition debris.

3. Requirements for submittal of LEED documentation in compliance with Materials and Resources Credit 2.1 and Materials and Resources Credit 2.2, Construction Waste Management.

4. Requirements for submittal of Contractor's Construction Waste Management Plan prior to the commencement of the Work to City in accordance with Ordinance No. 04099.

5. Contractor's quantitative reports for construction waste materials as a condition of approval of progress payments submitted to the Construction Manager.

1.02 DEFINITIONS

A. Class III Landfill: A landfill that accepts non-hazardous resources such as household, commercial, and industrial waste, resulting from construction, remodeling, repair, and demolition operations. A Class III landfill must have a solid waste facilities permit from the California Reuse (formerly the CIWMB) and is regulated by the Enforcement Agency (EA).

B. Construction and Demolition Debris: Building materials and solid waste resulting from construction, remodeling, repair, cleanup, or demolition operations that are not hazardous as defined in California Code of Regulations, Title 22, Section 66261.3 et seq. This term includes, but is not limited to, asphalt concrete, Portland cement

concrete, brick, lumber, gypsum wallboard, cardboard and other associated packaging, roofing material, ceramic tile, carpeting, plastic pipe, and steel. The debris may be commingled with rock, soil, tree stumps, and other vegetative matter resulting from land clearing and landscaping for construction or land development projects.

C. C&D Recycling Center: A facility that receives only C&D material that has been separated for reuse prior to receipt, in which the residual (disposed) amount of waste in the material is less than 10% of the amount separated for reuse by weight.

D. Disposal: Final deposition of construction and demolition or inert debris into land, including stockpiling onto land of construction and demolition debris that has not been sorted for further processing or resale, if such stockpiling is for a period of time greater than 30 days; and construction and demolition debris that has been sorted for further processing or resale, if such stockpiling is for a period of time greater than one year, or stockpiling onto land of inert debris that is for a period of time greater than one year.

E. Enforcement Agency (EA): Enforcement agency as defined [i.e. in Public Resources Code 40130].

F. Inert Disposal Facility or Inert Waste Landfill: A disposal facility that accepts only inert waste such as soil and rock, fully cured asphalt paving, uncontaminated concrete (including fiberglass or steel reinforcing rods embedded in the concrete), brick, glass, and ceramics, for land disposal.

G. Mixed Debris: Loads that include commingled recyclable and non-recyclable materials generated at the construction site.

H. Mixed Debris Recycling Facility: A processing facility that accepts loads of commingled construction and demolition debris for the purpose of recovering re-usable and recyclable materials and disposing the non-recyclable residual materials.

I. Recycling: The process of sorting, cleansing, treating and reconstituting materials for the purpose of using the altered form in the manufacture of a new product. Recycling does not include burning, incinerating or thermally destroying solid waste.

J. Reuse: The use, in the same or similar form as it was produced, of a material which might otherwise be discarded.

K. Separated for Reuse: Materials, including commingled recyclables, that have been separated or kept separate from the solid waste stream for the purpose of additional sorting or processing those materials for reuse or recycling in order to return them to the economic mainstream in the form of raw material for new, reused, or reconstituted products which meet the quality standards necessary to be used in the marketplace, and includes materials that have been “source separated”.

L. Solid Waste: All putrescible and nonputrescible solid, semisolid, and liquid wastes, including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, dewatered, treated, or chemically fixed sewage sludge which is not hazardous waste, manure, vegetable or animal solid and semisolid wastes, and other discarded solid and semisolid wastes. "Solid waste" does not include hazardous waste, radioactive waste, or medical waste as defined or regulated by State law.

M. Source-Separated: Materials, including commingled recyclables, that have been separated or kept separate from the solid waste stream at the point of generation, for the purpose of additional sorting or processing of those materials for reuse or recycling in order to return them to the economic mainstream in the form of raw materials for new, reused, or reconstituted products which meet the quality standards necessary to be used in the marketplace.

N. Waste Hauler: A company that possesses a valid permit from the [local waste management authority to collect and transport solid wastes from individuals or businesses for the purpose of recycling or disposal in [the locality].

1.03 SUBMITTALS

A. Contractor's Construction Waste Management Plan

1. Review Contract Documents and estimate the types and quantities of materials under the Work that are anticipated to be feasible for on-site processing, source separation for re-use or recycling. Indicate the procedures that will be implemented in this program to effect jobsite source separation, such as, identifying a convenient location where dumpsters would be located, putting signage to identify materials to be placed in dumpsters, etc.

2. Prior to commencing the Work, submit Contractor's Construction Waste Management Plan to Engineer and City using the form provided at http://www.recycleworks.org/pdf/wastemanagement_form.pdf

a. Tonnage calculations that demonstrate that Contractor will re-use and recycle a minimum 100% by weight of the inert construction waste materials generated in the work and 75% of the other construction wastes and debris.

B. Contractor's Reuse, Recycling, and Disposal Report

1. Submit Contractor's report on reuse and recycling on the form provided at http://www.recycleworks.org/pdf/wastemanagement_form.pdf with each application for progress payment. Failure to submit the form and its supporting documentation will render the application for progress payment incomplete and delay progress payments. If applicable, include manifests, weight tickets, receipts,

and invoices specifically identifying the Project for re-used and recycled materials:

a. Salvaging building materials or salvage items at on off site salvage or reuse center (e.g. lighting, fixtures).

b. Recycling source separated materials on site (e.g. crushing asphalt/concrete for base course, or grinding for mulch).

c. Recycling source separated material at an off site recycling center (e.g. scrap metal or green materials).

d. Use of material as Alternative Daily Cover (ADC) at landfills.

e. Delivery of soil or mixed inerts to an inert landfill for disposal (inert fill).

f. Disposal at a landfill or transfer station (where no recycling takes place).

2. Contractor's Reuse, Recycling, and Disposal Report must quantify all materials generated in the Work, disposed in [Class III] landfills, or diverted from disposal through recycling. Indicate zero (0) if there is no quantity to report for a type of material. As indicated on the form:

a. Report disposal or recycling either in tons or in cubic yards: if scales are available at disposal or recycling facility, report in tons; otherwise, report in cubic yards. Report in units for salvage items when no tonnage or cubic yard measurement is feasible.

b. Indicate locations to which materials are delivered for reuse, salvage, recycling, accepted as daily cover, inert backfill, or disposal in landfills or transfer stations.

c. Provide legible copies of weigh tickets, receipts, or invoices that specifically identify the project generating the material. Said documents must be from recyclers and/or disposal site operators that can legally accept the materials for the purpose of re-use, recycling, or disposal.

(i) Indicate project title, project number, progress payment number, name of the company completing the Contractor's Report and compiling backup documentation, the printed name, signature, and daytime phone number of the person completing the form, the beginning and ending dates of the period covered on the Contractor's Report, and the date that the Contractor's Report is completed.

C. LEED Letter Template: Materials and Resources Credit

1. Complete and sign LEED Letter Template in format provided under the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) program. Prepare Letter Template on company letterhead.

    a. Certify that the project has completed a waste management plan and diverted construction, demolition, and land clearing waste to uses other than landfill.

    b. Provide quantities of diverted materials and means of diversion in the table provided in the LEED Letter Template.

    c. Indicate how and where waste was diverted.

    d. Indicate quantities of waste diverted in tons [or cubic yards].

    e. Letter Template will calculate: Total quantity of diverted waste, total quantity of waste, and the percentage of waste diverted.

    f. Include name, organization, role in project, provide signature and date completed.

1.04 PAYMENT

A. Separate measurement or payment will not be made for work required under this Section. All costs in connection with the work specified herein will be considered to be included with the related item of work in the Bid Schedule of the Bid Form, or incidental to the Work.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.01 SALVAGE, RE-USE, RECYCLING AND PROCEDURES

A. Identify re-use, salvage and recycling facilities.

B. Develop and implement procedures to re-use, salvage, and recycle new construction and excavation materials, based on the Contract Documents, the Contractor's Construction Waste Management Plan, estimated quantities of available materials, and availability of recycling facilities. Procedures may include on-site recycling, source separated recycling, and/or mixed debris recycling efforts.

    1. Identify materials that are feasible for salvage, determine requirements for site storage, and transportation of materials to a salvage facility.

2. Source separate new construction, excavation and demolition materials including, but not limited to the following types:

   a. Asphalt.

   b. Concrete, concrete block, slump stone (decorative concrete block), and rocks.

   c. Drywall.

   d. Green materials (i.e. tree trimmings and land clearing debris).

   e. Metal (ferrous and non-ferrous).

   f. Miscellaneous Construction Debris.

   g. Paper or Cardboard.

   h. Red Clay Brick. Reuse of Salvage Materials.

   i. Soils.

   j. Wire and Cable.

   k. Wood.

   l. Other (describe).

3. Miscellaneous Construction Debris: Develop and implement a program to transport loads of mixed (commingled) new construction materials that cannot be feasibly source separated to a mixed materials recycling facility.

3.02 DISPOSAL OPERATION AND WASTE HAULING

A. Legally transport and dispose of materials that cannot be delivered to a source separated or mixed recycling facility to a transfer station or disposal facility that can legally accept the materials for the purpose of disposal.

B. Use a permitted waste hauler or Contractor's trucking services and personnel. To confirm valid permitted status of waste haulers, contact the local solid waste authority.

C. Become familiar with the conditions for acceptance of new construction, excavation and demolition materials at recycling facilities, prior to delivering materials.

D. Deliver to facilities that can legally accept new construction, excavation and demolition materials for purpose of re-use, recycling, composting, or disposal.

E. Do not burn, bury or otherwise dispose of solid waste on the project job-site.

3.03 RE-USE AND DONATION OPTIONS

A. Implement a re-use program to the greatest extent feasible. Options may include:

1. California Materials Exchange (CAL-MAX) Program is sponsored by the California Recycle. CAL-MAX is a free service provided by the California Recycle, designed to help businesses find markets for materials that traditionally would be discarded. The premise of the CAL-MAX Program is that material discarded by one business may be a resource for another business. To obtain a current Materials Listings Catalog, call CAL-MAX/California Recycle at (916) 255-2369 or send a FAX to (916) 255-2200. The CALMAX Catalog is available through the Internet Site at http://www.ciwmb/ca.gov/calmax.

3.04 REVENUE

A. Revenues or other savings obtained from recycled, re-used, or salvaged materials shall accrue to Contractor unless otherwise noted in the Contract Documents.

END OF SECTION

DIVISION 02 – EXISTING CONDITIONS

SECTION 02 00 30 - VERIFICATION OF EXISTING UTILITIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Refer to plans for the approximate locations of utilities and underground structures.

B. Contractor's responsibilities.

1.02 CALIFORNIA ADMINISTRATIVE CODE

A. Section 1540(a)1 of Construction Safety Orders (Title 8) California Administrative Code, section 1540 states: “Prior to opening and excavation, effort shall be made to determine whether underground installations; i.e., sewer, water, gas, electric lines, storm drain, cable TV, telephone, and fiber optics, will be encountered and, if so, where such underground installations are located.”

1.03 PUBLIC UTILITIES:

A. The work on public utilities is limited to that portion on private property, i.e., not in the public right-of-way or within public easements.

B. The list of potentially affected utilities includes, but is not limited to the following:

1. Electrical: It should be noted that where overhead service to a structure, known to receive service, does not have overhead service, then underground service shall be assumed to exist. For underground utility location call Underground Service Alert (USA) at (800) 227-2600.

2. Gas: PG&E has jurisdiction over gas lines.

3. Water Service: City of Redwood City has jurisdiction over water usage.

4. Drainage and Sanitary Sewer: The City of Redwood City and SBSA have jurisdiction over drainage, sewer mains and appurtenances.

5. Roads: The City of Redwood City has jurisdiction over roads in the area.

6. Telephone: - It should be noted that where overhead service to a structure, known to receive service, does not have overhead service, then underground service shall be assumed to exist. For assistance with location of underground telephone facilities, call USA (800-227-2600).

1.04 PAYMENT

A. Separate measurement or payment will not be made for work required under this Section. All costs in connection with the work specified herein will be considered to be included with the related item of work in the Bid Schedule of the Bid Form, or incidental to the Work.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.01 CONTRACTOR RESPONSIBILITY

A. It shall be the Contractor's responsibility to mark excavation areas and to notify the Underground Service Alert (USA), prior to beginning excavation in any area.

B. It should be understood that the various utilities are indicated on the Plans to show only the approximate location and must be verified in the field by the Contractor. The Contractor will be responsible to coordinate with the various utility agencies to become familiarized with all known underground utility obstructions, but this will not relieve the Contractor from full responsibility in anticipating and locating their actual existence.

C. If the Contractor learns of the existence or location of any utility omitted from or shown incorrectly on the Plans or not properly marked, the Contractor shall immediately notify the Engineer. Required relocation work shall be performed by the Contractor for utilities. Utilities encountered, whether shown or not shown on the plans, shall be handled as required in Section 02 24 13.23 and any effect on the project due to their presence shall not constitute a claim for additional compensation.

D. Overhead utility poles within ten feet (10') of trenching shall be adequately braced until trench is backfilled as directed by utility company representative. Overhead lines shall not be damaged. If damaged, the Contractor shall repair overhead lines, and such repair shall be considered work under this Contract and not extra work.

END OF SECTION

SECTION 02 09 00 – DEMOLITION HAZARDOUS MATERIALS ABATEMENT AND CONTROL

UNDER SEPARATE COVER

SECTION 02 41 00 – DEMOLITION

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Demolition and removal of buildings, equipment and fixtures
2. Demolition and removal of footings/foundations and structures
3. Protecting items designated to remain.
4. Removing demolished materials.

B. Related Sections

1. Section 01 57 23 – Temporary Storm Water Pollution Control
2. Section 01 35 29 – Health and Safety Requirements
3. Section 01 74 16 – Decontamination
4. Section 02 82 00 – Asbestos Removal
5. Section 02 83 .13 – Lead Based Paint Removal and Disposal

1.02 MATERIALS OWNERSHIP

A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain, demolished materials shall become the Contractor's property and shall be removed, recycled, or disposed from Project site in an appropriate and legal manner.

B. Arrange a meeting no less than ten (10) days prior to demolition with the Engineer and other designated representatives to review any salvageable items to determine if Owner wants to retain ownership, and discuss Contractor’s Waste Management Plan.

1.03 PERMITS AND REQUIREMENTS

A. All work shall comply with City and County laws and regulations. Contractor shall obtain the following permits before proceeding with demolition work.

1. City of Redwood City Demolition Permit

2. Tree Removal Permit

3. BAAQMD Permit, Regulation 11, Rule 2, "J" Number

1.04 SUBMITTALS

A. Submit under provision of Division 1.

B. Schedule of demolition activities indicating:

1. Detailed sequence of demolition and removal work, including start and end dates for each activity.

C. If hazardous materials are encountered and disposed of, landfill records indicating receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.05 CLOSEOUT SUBMITTALS

A. Record drawings: Identify and accurately locate capped utilities and other subsurface structural, electrical, or mechanical conditions.

B. LEED Letter

C. Project Record Documents: Accurately record actual locations of capped utilities, concealed utilities discovered during demolition, and subsurface obstructions.

1.06 PROJECT CONDITIONS

A. Buildings to be demolished will be vacated and their use discontinued before start of Work.

B. Storage or sale of removed items or materials on-site will not be permitted without advance written approval from Engineer.

1.07 PAYMENT

A. Demolition will be paid for at a lump sum price. The lump sum price paid for demolition shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals for completing all the work involved in demolition as shown on the Plans and as specified herein, including the removal and disposal of all resulting material.

PART 2 PRODUCTS

2.01 MATERIALS

A. Equipment, machinery and apparatus, motorized or otherwise, used to perform the demolition work may be used as chosen at the Contractor's discretion, but which will perform the work within the limits of the Contract requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Survey existing conditions and correlate with requirements indicated to determine extent of demolition and recycling required.

C. Survey condition of the building to determine whether removing any element might result in a structural deficiency or unplanned collapse of any portion of the structure or adjacent structures during demolition.

D. Retain a licensed and qualified civil or structural Engineer to provide analysis, including calculations, necessary to ensure the safe execution of the demolition work.

3.02 PREPARATION

A. Perform visual surveys as the work progresses to detect hazards resulting from demolition activities

B. Conduct demolition operations and remove construction and demolition materials to ensure minimum interference with roads, streets, walks, and other adjacent occupied and utilized facilities.

C. Do not close or obstruct streets, walks, or other adjacent occupied or utilized facilities without permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

D. Ensure safe passage of people around demolition area and the public around the site boundary.

E. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction.

3.03 EXPLOSIVES

A. Explosives: Use of explosives will not be permitted.

3.04 PERFORMANCE

A. Confine demolition work and equipment access to the construction areas shown on the Plans.

B. Conduct operations with minimum interference to public or private accesses.

C. Obtain written permission from adjacent property owners when demolition equipment will traverse, infringe upon or limit access to their property.

D. Apply demolition areas with water to minimize dust. Provide hoses and water connections for this purpose.

3.05 DEMOLISH PAVEMENT, BUILDINGS AND STRUCTURES

A. Contractor shall furnish all labor, material, and equipment necessary to remove the entire designated structures.

B. Contractor shall demolish, remove, transport and dispose of buildings, building slabs, below grade foundations, below-grade footings and columns and at- and below grade utilities at the Site as shown on the Plans.

C. Contractor shall furnish all labor, material, and equipment necessary to remove the entire designated buildings and associated structures.

D. Buildings and structures as shown on Plans, shall be removed; and

E. Building and structure foundations will be removed to four-feet below ground surface.

F. The extent of concrete foundations and footings are uncertain and not shown on the Plans.

G. All masonry and concrete material, shall be removed and disposed, keeping the debris dampened during removal.

H. Pedestrian and vehicle traffic shall be continuously maintained. If Contractor finds it necessary to close a street, a permit must be obtained from City of Redwood City Public Works Department and submitted to the Owner 14 days prior to the start of demolition. Barring a footway and/or street closing permit, the demolition area (sidewalks and street), must be clear of all demolition debris at the end of each day.

I. Demolition Site areas shall be leveled off to the adjacent grade at a slope of 3 percent. All grading shall be limited to the dimensions presented in the Grading Plan. The demolition site shall be graded in accordance with Section 31 23 00 – Excavation and Fill.

3.06 TRANSPORT REUSE AND DISPOSAL OF DEMOLITION MATERIALS

A. Contractor shall transport and dispose of all asphalt and concrete pavement, buildings, building slabs, below grade foundations, below-grade footings and columns and at- and below grade utilities at the Site.

B. Dispose of hazardous waste demolition debris off Site in accordance with Section 02 81 00 – Transportation and Disposal.

C. Recycle demolition materials in accordance with Section 01 74 19.

3.07 BACKFILLING

A. Perform backfilling in the area of excavated building and structure foundations with native soil to provide positive drainage.

B. Compaction of backfill will not be required.

3.08 PERMITS AND LICENSES

A. Contractor shall obtain and pay for all licenses, fees and other charges required by the State, City or County and/or utility companies' regulations.

3.09 PROTECTION

A. Exercise care during demolition work to confine demolition operations to the Site. The physical means and methods used for protection are at the Contractor's option.

B. If public safety is endangered during the progress of the demolition work, provide adequate protective measures to protect public pedestrian and vehicular traffic on streets and walkways.

C. Signs, signals and barricades used shall conform to requirements of Federal, State and local laws, rules, regulations, precautions, orders and decrees.

END OF SECTION

SECTION 02 41 13.13 – PAVING REMOVAL

PART 1 GENERAL

1.01 SCOPE

A. This work includes removal of an existing pavement, including streets, driveways, sidewalks, curb and/or gutter, and parking areas. For purposes of the work "pavement removal," pavement may include bituminous, concrete, or brick.

1.02 LIMITS OF REMOVAL

A. Pavement shall be removed to the limits shown on the plans, or as directed by the Engineer in the field. Remove pavement from property line to property line, unless otherwise noted on the drawings.

1.03 PAYMENT

A. Payment for pavement removal shall be a lump sum for all labor, equipment, tools and materials necessary to perform the work scope in accordance with the requirements herein, no extra payment will be allowed. Progress payments will be based on an approved schedule of values.

PART 2 MATERIALS

Not Applicable

PART 3 EXECUTION

3.01 PAVEMENT REMOVAL

A. Pavement shall be removed to an existing joint or to a sawed joint. An existing crack is not suitable for the limit of removal. Sawed joints for pavement removal are to be either parallel or perpendicular to the longitudinal centerline. Sawed joints shall extend substantially through the full thickness of the pavement so that a "clean break" is made and that the adjacent pavement or structures that are to remain are not damaged. If adjacent pavement or structures that are to remain are damaged as a result of the Contractor's removal operations, they shall be replaced to the Owner's satisfaction at the Contractor's expense.

B. Broken concrete, bituminous, brick, and other debris resulting from pavement removal operations shall become the Contractor's property and managed in accordance with the Contractor’s Waste Management Plan.

C. Where pavements are encountered that are composed of more than one material or multiple courses of the same material. The pavement shall be removed in its entirety and all components shall be considered part of the same pavement area.

D. The Contractor shall provide sufficient barricades and fences to protect pedestrians and vehicles from hazardous areas.

END OF SECTION

SECTION 02 41 13.23 – UTILITY LINE ABANDONMENT AND REMOVAL

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Utility Removal/Abandonment
2. Valve Abandonment
3. Manhole Removal/Abandonment

B. References

1. Drawings and general provisions of the Contract, including general and supplementary conditions and Division 1 specification sections apply to this section

C. Work included

1. The Contractor shall furnish all labor, equipment and materials necessary to cap, abandon and remove existing underground utilities lines and related appurtenances to within 5-feet below grade.
2. Submittals
   a. The Contractor shall submit to the Engineer for approval details of:
      (i) Details of all caps or plugs to be installed on abandoned piping.
      (ii) Dates for shutoff, capping, and abandonment of utilities.
      (iii) Details for restraining all existing water mains to remain in services where a portion of the main has been abandoned.
      (iv) Location of disposal site for all material removed.

1.02 PAYMENT

A. Utility removal will be paid for at a lump sum price. The lump sum price paid for utility removal shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals for completing all the work involved in demolition as

shown on the Plans and as specified herein, including the removal and disposal of all resulting material.

PART 2 PART 2 – PRODUCTS (NOT USED)

PART 3 PART 3 – EXECUTION

3.01 UTILITY ABANDONMENT

A. The Contractor shall be responsible for removal of all utilities to 5-feet below grade, as shown on the Project plans

B. The ends of the piping to remain in the ground shall be suitably capped or plugged to percent water or soil from entering the pipe

C. Any existing pipeline that have a portion of the pipe removed and are to remain in service shall be properly restrained with thrust block to prevent movement of the remaining pipe.

D. The Contractor shall follow all applicable codes and regulations for removal of hazardous materials, such as asbestos cement pipe, and dispose in a legal and proper manner.

E. The Contractor shall load, haul away, and dispose of in a satisfactory location any debris, trash, structures, piping, etc removed from the worksite.

3.02 VALVE ABANDONMENT

A. Buried valves that are to be abandoned shall be removed.

3.03 BACKFILL

A. All utilities to be abandoned shall be excavated to at least 5-feet below grade and backfilled with suitable fill material. Compact of the backfill is not required.

B. Contractor shall furnish all labor, material, and equipment necessary to remove the

C. Contractor must notify the various utility companies when work is to begin so that all utilities and equipment can be disconnected in accordance with the rules and regulations of the utility companies. Contractor shall contact USA-Northern California (800-227-2600) pursuant to California Assembly Bill AB 73 to request clearance of subsurface utilities.

END OF SECTION

SECTION 02 60 00 – CONTAMINATED SITE MATERIAL REMOVAL

PART 1 GENERAL

1.01 SUMMARY OF WORK

A. This specification section includes excavating, handling and disposal of contaminated soil from the areas designated on Sheet 4.

1. Groundwater is expected to be encountered during excavation. Contractor shall implement water control measures as described in Section 31 23 19 – Dewatering.

B. Criteria for Bidding: The Base Bid shall be based on the understanding that materials are contaminated and shall include all required submittals, permits, safety procedures, storage, characterization and disposal.

C. Contaminants of concern include petroleum hydrocarbons, polycyclic aromatic hydrocarbons, pentachlorophenol at expected non-hazardous levels and volatile organic compounds potentially characterized as hazardous waste.

1.02 RELATED SECTIONS

A. Section 01 57 23 – Temporary Storm Water Pollution Control

B. Section 01 35 29 – Health and Safety Requirements

C. Section 01 74 16 – Decontamination

D. Section 02 41 00 – Demolition

E. Section 02 81 00 – Transportation and Disposal of Hazardous Materials

F. Section 31 14 13 – Soil Stockpiling

G. Section 31 23 19 – Dewatering

1.03 PERMITS AND NOTIFICATIONS

A. Contractor shall provide notification and comply with Bay Area Air Quality Management District's Regulation 8, Rule 40.

1.04 REFERENCES

A. *Soil Management Plan, 20 to 80 Chemical Way, Redwood City, California*, December 2010" prepared by WEST. Hereinafter referred to as the "SMP."

1.05 DEFINITIONS

A. For the purpose of this project, three types of materials may be encountered during excavation, as defined below:

1. Non-contaminated: Soil that does not contain levels of chemicals above background levels and do not exhibit an odor or visual discrepancy (such as discoloration or debris, etc.) to indicate otherwise.

2. Contaminated: Soil that contains laboratory quantified non- hazardous concentrations of toxic compounds above background levels as defined in the California Code of Regulations 14 CCR 17361, but below hazardous waste levels, e.g., soil containing xylenes at less than 50 milligrams per kilogram (mg/kg).

3. California Hazardous Waste: Soil that contains laboratory quantified California regulated hazardous concentrations of toxic compounds as defined in Title 22, Chapter 11, Section 66261.1 et seq. of the California Code of Regulations will be removed from the Site, e.g. soil containing greater than 17 milligrams per kilogram (mg/kg) of pentachlorophenol.

4. Federal Hazardous Waste: Soil that meets the definition of hazardous or extremely hazardous waste, as defined in 40 CFR, Section 261 et seq. is expected to be encountered on this project, e.g., extractable concentrations of pentachlorophenol by the Toxic Characteristic Leaching Procedure (TCLP) greater than 100 milligrams per liter (mg/l).

1.06 QUALITY ASSURANCE

A. Qualifications of Workers: Provide 24- or 40-hour OSHA HAZWOPER-certified site workers, and provide a field Site Safety Officer that is also an 8-hour OSHA HAZWOPER supervisor trained to directly oversee potentially contaminated soil and groundwater operations. All workers in this circumstance must have their annual refresher training, medical clearance and personal protection equipment in accordance with 8 CCR, Section 5192.

B. Contractor's Responsibility for Safety: When contamination is present, or suspected to be present, comply with the requirements of the Hazardous Waste Operations and Emergency Response Standard (8 CCR 5192).

C. If any of these are in conflict, the more stringent requirement shall be followed.

1.07 SUBMITTALS

A. Soil Work Plan: Submit a Work Plan providing details of how the soil and groundwater will be managed in accordance with the SMP. Submit Work Plan to Engineer for approval, prior to excavating. The Work Plan shall include, but not be limited to, the following:

1. Schedule for the work.

2. Field sampling and laboratory analysis plan addressing sampling for waste characterization.

3. Identification of any necessary permits, notifications and agreements.

B. Results of all soil laboratory analyses used for waste characterization.

C. Profiles of soil for waste disposal.

D. Submit copies of all workers 24- or 40-hour OSHA HAZWOPER (29 CFR 1910.120) trained and 8-hour refresher certification (cards or completion certificates) that will be involved with the excavation, stockpiling and loading of potentially contaminated soils and/or groundwater. Include respirator fit testing certification and medical surveillance certification.

E. Notices of Non-Compliance and Notices of Violation: Immediately provide copies of any notices of non-compliance or notices of violation by any federal, state, or local regulatory agency issued to Contractor in relation to any work performed under this contract to Engineer. Furnish all relevant documents regarding the incident and any information requested, and coordinate the response to the notice with the Engineer prior to submission to the regulatory agencies, including the final reply to the notice, and all other responses, until the matter is resolved.

F. Quantity Survey: Prepare a Quantity Survey of materials excavated using the dimensions of the area excavated or by a method approved by Engineer. Prepare a Quantity Survey of contaminated soils transported and disposed of based on actual weight receipts from disposal facility. Submit Quantity Surveys with each payment application.

G. Final Summary Report on Contaminated Soil: Submit a Final Summary Report documenting the quantities, and the disposal activities completed on the project no later than 45 days after the completion of the project.

1.08 PAYMENT

A. Measurement and Payment, Contaminated Soil: Measurement for excavation of contaminated soils shall be based on the actual cubic yards of material excavated. The final extent of excavation will be determined by confirmation sampling. The unit cost for

excavation shall include any other items incidental to the proper and safe excavation of the contaminated soil.

B. Quantity Survey: Prepare a Quantity Survey of materials excavated using the dimensions of the area excavated or by a method approved by Engineer. Prepare a Quantity Survey of contaminated soils transported and disposed of based on actual weight receipts from disposal facility.

PART 2 PRODUCTS

2.01 SOIL AND BACKFILL

A. Non-contaminated soil excavated during construction may be used as backfill if deemed acceptable by Engineer.

2.02 MATERIALS FOR HANDLING CONTAMINATED SOIL

A. Plastic shall conform to ASTM D4397, be a minimum of 6-mil thick below and on top of potentially contaminated soil piles, and UV resistant. Hay bales (or similar) as necessary to secure the edges of the stockpile area.

B. Markings: Provide markings for each hazardous material/waste package, freight container, and transport vehicle consistent with the requirements of 49 CFR 172, Subpart D and 40 CFR 262, Section 3.2 (for hazardous waste). Markings must be capable of withstanding, without deterioration or substantial color change, a 60-day exposure to expected conditions during container storage and transportation.

C. Labeling: Provide primary and subsidiary labels for hazardous materials/wastes consistent with the requirements in the Hazardous Materials Table in 49 CFR 172, Section 1.1, Column 6. Labels shall meet design specifications required by 49 CFR 172, Subpart E, including size, shape, color, printing, and symbol requirements. Labels shall be durable, weather resistant, and capable of withstanding, without deterioration or substantial color change, a 60-day exposure to conditions reasonably expected to be encountered during container storage and transportation.

D. Supply necessary field-testing equipment or supplies to identify any possible contaminants of concern.

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

A. Excavate soil in accordance with the SMP and from the area designated on Sheet 4 of the Plans.

B. Manage groundwater as potentially contaminated until verified not to be contaminated. Containerize groundwater for chemical analysis prior to discharge per Section 31 23 19.

3.02 PERMITTING AND NOTIFICATION

A. Obtain all necessary excavation and grading permits

B. Notify the Engineer and all necessary agencies including but not limited to Underground Service Alert (1-800-227-2600) two working days prior to any excavation activities.

C. Obtain EPA Hazardous Waste identification number from the County prior to excavation. Use the assigned number when transporting any hazardous waste.

3.03 CHARACTERIZATION OF SOIL AND DEBRIS

A. Contractor shall sample, analyze and characterize materials for off-site disposal. The Contractor shall collect and analyze samples as needed to obtain pre-approval for re-use at the site and/or for disposal.

B. Contractor shall submit samples under chain-of custody for laboratory analysis by a California-certified laboratory.

1. Submit results to County for selection of appropriate waste disposal facility prior to hauling.

C. Contractor shall provide profile of waste based on laboratory analysis and landfill acceptance criteria.

D. Contractor shall segregate wastes of different character.

3.04 WASTE MINIMIZATION

A. Minimize the generation of contaminated waste. Take all necessary precautions to avoid mixing contaminated wastes of different characteristics.

END OF SECTION

SECTION 02 61 26 – MANAGEMENT OF SOIL WITH NATURALLY OCCURRING ASBESTOS

PART 1 GENERAL

1.01 INCLUDES

A. This section includes specifications for managing Naturally Occurring Asbestos (NOA), serpentine and ultramafic rock. One or more of these materials might be present within the job site. NOA is used as defined under 17 CA Code of Regs § 93105.

B. Comply with the Airborne Toxic Control Measures (ATCM) during all earthwork activities on the job site.

C. The site investigation report will be provided when available.

1.02 NOTIFICATIONS

A. Air Pollution Control District or Air Quality Management District notification

1. Notify the Bay Area Air Quality Management District (BAAQMD) in writing at least 15 days before starting work that disturbs NOA. Submit proof of notification and any exemption. Keep a copy at the job site.

1.03 SUBMITTALS

A. Daily ambient air monitoring report

1. When required by local APCD or AQMD, perform daily ambient air monitoring on the job site. If daily ambient monitoring is required, submit a written air monitoring report to the Engineer every month. The report must include:

a. Air monitoring results

b. Analysis of results from the prior month

c. Name and location of the laboratory where the analysis was performed

d. Assessment of exposures of workers or the public

e. Descriptions of the type of air monitoring equipment

f. Sampling frequency

B. Dust control plan

1. The BAAQMD may require review and approval of the Dust Control Plan (DCP) and fee payment. If required, submit DCP approved by APCD or AQMD. Otherwise submit DCP.

   a. On job sites that require blasting, the DCP must include the use of blasting mats or cover material not containing NOA.

C. Asbestos compliance plan (ACP)

1. Submit the ACP to prevent or minimize worker exposure to asbestos. The ACP must be signed by a properly qualified professional.

   a. The ACP must comply with the following regulations:

      (i) CA Code of Regs, § 1529, (Asbestos) and § 5192, (Hazardous Waste Operations and Emergency Response)

      (ii) Occupational Safety and Health Guidance Manual published by the National Institute of Occupational Safety and Health (NIOSH)

      (iii) Occupational Safety and Health Administration (OSHA), including addenda issued up to and including the date of advertisement of the Contract

   b. Include the following information in the ACP:

      (i) Identification of personnel designated to be on site

      (ii) Job hazard analysis for work assignments

      (iii) Summary of potential risks

      (iv) Worker exposure air monitoring plan

      (v) Description of personal protective equipment

      (vi) Delineation of work zones on the job site

      (vii) Decontamination procedures

      (viii) General safe work practices

      (ix) Site security measures

      (x) Emergency response plans

(xi) Description of worker training

D. Sampling and Analysis Plan

1. Prepare a written, job site specific sampling and analysis plan (SAP) establishing the procedures to be used to conduct soil or rock sampling and analysis for transporting, placing, and disposing of material containing NOA, including material in stockpiles, material remaining after removal of stockpiles, and cover material after blasting. Include laboratory analysis of NOA samples by CARB Method 435, "Determination of Asbestos Content of Serpentine Aggregate." The SAP must also meet the requirements for the design and development of the sampling plan, statistical analysis, and reporting of test results contained in US EPA, SW 846, "Test Methods for Evaluating Solid Waste," Volume II Field Manual Physical/Chemical, Chapter Nine, Section 9.1. The SAP must comply with the requirements of the disposal facility. Sample and analyze surplus material for NOA before off-site disposal.

2. Include the following elements in the SAP:

   a. Sampling schedule including location and date of sampling and number of samples

   b. Name of the laboratory certified by California Department of Public Health and the method used to analyze the samples from the job site

3. Submit 3 copies of the SAP to the Engineer for review. If revisions are required, resubmit the SAP within 5 days of receipt of the Engineer's comments. Upon authorization of the SAP, submit 3 additional copies. The Engineer may allow excavation to proceed while minor revisions to the SAP are being completed.

E. Fill Material Documentation

1. Submit documentation that fill material to be used as cover is asbestos free as defined by ATCM.

F. NOA Burial Location Report

1. Within 5 business days of completing placement of NOA at the burial location, submit a report for that burial location, the top and bottom perimeters of the burial location to the Engineer.

2. The Engineer will notify you within 5 business days of receipt if accepted. If the report is rejected, you have 5 business days to submit a corrected report.

G. Disposal documentation

1. Submit 1 copy each as an information submittal:

a. Bill of Lading

b. Acknowledgement of receipt of material containing NOA from receiving party or landfill facility

2. For surplus NOA sent a landfill facility also submit 1 copy each as an information submittal:

a. Landfill receipts showing the concentration of asbestos

b. Certified weight tickets showing the amount of disposal material containing NOA that was sent to the facility

c. If additional test results are required by the owner of the landfill facility, submit them as an information submittal.

1.04 QUALITY CONTROL AND ASSURANCE

A. Manage NOA under State laws and regulations and City and municipal ordinances and regulations. Laws and regulations that govern this work include:

1. 8 CA Code of Regs § 1529 (Asbestos) and § 5192 (Hazardous Waste Operations and Emergency Response)

2. 17 CA Code of Regs § 93105 and § 93106

3. 22 CA Code of Regs, Div 4,5, Chp 10

4. Health & Safety Code, Division 20, Chp 6.5 (Hazardous Waste Control)

B. Manage NOA under the rules and regulations of the following agencies:

1. US EPA

2. Department of Toxic Substances Control (DTSC)

3. California Department of Public Health (CDPH)

4. Cal/OSHA

5. CARB

6. BAAQMD

1.05 TRAINING

A. Before performing work in areas with material containing NOA, personnel who have not had the worker training must complete a safety training program that meets the requirements of the ACP. The safety training program must meet the requirements of 8 CA Code of Regs §1529, (Asbestos), and § 5192 (b)(4)(B), (Hazardous Waste Operations and Emergency Response). Provide the Engineer written certification of completion of safety training for each trainee before performing work in areas containing NOA.

B. Provide training, personal protective equipment, and washing facilities for employees.

PART 2 MATERIALS

Not Used

PART 3 EXECUTION

3.01 GENERAL

A. Prevent visible dust emission during excavation, stockpiling, transportation, or placement of NOA pursuant to the Specifications and 17 CA Code of Regs § 93105(d)(1)(B).

B. Control dust in areas with NOA using measures that include the following:

1. Stabilize unpaved areas subject to vehicular traffic by keeping adequately wetted, treated with a chemical dust palliative, or covered with material that contains less than 0.25 percent asbestos.

2. The speed of vehicles and equipment traveling across unpaved areas must not be more than 15 mph unless the road surface and surrounding area is sufficiently stabilized to prevent vehicles and equipment going faster from causing dust that is visible from crossing job site limits.

3. Stockpiles and disturbed areas not subject to vehicular traffic must be located in the plan and stabilized by being kept adequately wetted, treated with a chemical dust palliative, or covered with material that contains less than 0.25 percent asbestos.

4. Conduct activities so that no dirt or mud tracking is visible on any paved roadway open to the public.

5. Do not leave NOA with asbestos content of 0.25 percent or higher exposed on the surface if disturbed during construction activities. Stabilize these areas by keeping them wetted or by treating them with a chemical dust palliative. Cover disturbed

NOA permanently placed during construction activities with a 3-inch minimum layer of asbestos-free material.

C. Survey the location of the bottom and top perimeters of each area where you bury NOA. The survey must be performed by or under the direction of either:

1. Land surveyor licensed under the Bus & Prof Code, Chp 15 (commencing with § 8700)

2. Civil Engineer licensed before January 1, 1982 under the Bus & Prof Code, Chp 7 (commencing with § 6700)

a. Survey 10 points to determine each burial location horizontally and vertically within the specified accuracies and to create closed polygons of the perimeters of the bottom and top of the burial location. If 10 points are not sufficient to define the polygon, add additional points until the polygon is defined. Establish the position of the bottom and top perimeters before placing subsequent layers of material that obstruct the location.

b. Report each burial location in California State Plane Coordinates in US Survey feet within the appropriate zone of the California Coordinate System of 1983 (CCS83) and in latitude and longitude. Horizontal positions must be referenced to CCS83 (epoch 2007.00 or later National Geodetic Survey [NGS] or California Spatial Reference Center [CSRC] published epoch) to an accuracy of 3 feet horizontally. Identify the points to an accuracy of 1 foot vertically. Reference elevations of the bottom and top of the burial locations to North American Vertical Datum of 1988 (NAVD88) . Report accuracy of spatial data in US Survey feet under Federal Geographic Data Committee (FGDC)-STD-007.1-1998.

D. Surplus NOA may be temporarily stockpiled until it is transported and disposed of or used on site. Limit stockpile locations to areas that contain NOA within the job site. Cover temporary stockpiles with polyethylene sheeting of 10 mil minimum thickness or stabilize stockpiles by other methods permitted under 17 CA Code of Regs § 93105(d)(1)(3).

E. On job sites that require blasting, minimize the emission of material containing NOA with the use of blasting mats or cover material not containing NOA. Sample and analyze cover material after blasting to determine if it contains NOA. Cover material not containing NOA after blasting is your property. Dispose of cover material containing NOA as specified.

3.02 MATERIAL TRANSPORTATION AND DISPOSAL

A. Do not dispose of excess NOA in a surfacing application as defined in 17 CA Code of Regs § 93106, Asbestos Airborne Toxic Control Measure for Surfacing Applications.

B. Transport surplus NOA containing greater than or equal to 1.0 percent asbestos to an appropriately permitted landfill facility. You are responsible for identifying the appropriately permitted landfill to receive the NOA. Surplus material containing less than 1.0 percent NOA may be disposed under Section 7□1.13, <Disposal of Material Outside the Highway Right of Way>. In all cases of transporting and disposing of excess NOA:

1. Use warning signs that the surplus material contains NOA.

2. Provide written notification of asbestos content to the party receiving the material, as defined in 17 CA Code of Regs § 93105(d)(3).

3. Obtain written acknowledgement, from the property owner or the landfill facility, that the surplus contains NOA.

4. Material containing NOA excavated from outside the limits of payment for verified bid items is the property of the Contractor and must be disposed of at an approved facility.

3.03 CLOSE-OUT

A. After you have completed managing NOA you have no further responsibility for the NOA in place within the job site. You will not be considered a generator of the hazardous material and no further action is required.

3.04 PAYMENT

A. Excavation (including naturally occurring asbestos) is measured and paid for as specified in related items in the Specifications and Bid Schedule and no separate payment will be made for such work.

B. Sampling of cover material after blasting for NOA is allowance work to be paid as such.

C. Air monitoring and reporting results are allowance work.

D. Soil sampling, analyzing and reporting results for stockpiled material containing NOA is allowance work.

SECTION 02 81 00 – TRANSPORTATION AND DISPOSAL OF HAZARDOUS MATERIALS

PART 1 GENERAL

1.01 SCOPE

A. Work under this section includes the loading, transportation, and recycle or disposal of concrete, asphalt, liquids, stockpiles, and excavated soil and debris. Contractor shall dispose of wastes in least costly manner to Client in accordance with Laws and Regulations.

1.02 SUBMITTALS

A. Contractor shall submit a list of proposed recycling and disposal facilities.

B. Contractor shall submit an audit package for each proposed disposal facility within 20 working days of Notice to Proceed. At a minimum, each audit package shall include waste acceptance criteria, insurance certificates, EPA ID number, and permit numbers for all necessary permits.

C. No material from the Site may be disposed at a facility not favorably reviewed in advance by the County.

D. Transportation Plan: Develop a transportation plan depicting proposed transportation routes and describing spill response procedures. Submit to the Engineer prior to commencing any transportation-related work. Include a separate section to describe the hauler's spill contingency plan and avoidance procedures.

1. The Spill Plan will conform to the San Francisco Bay Regional Water Quality Control Board's (SFBRWQCB's) Contingency Planning and Notification Requirements for Accidental Spills and Discharges.

2. Have spill response materials available in the event of a spill. Contractor's employees with HAZWOPER training shall also be trained in spill response procedures.

3. In the event of a spill, or release of a hazardous substance (as designated in 22 CCR, Chapter 11, 66261 et. seq.), pollutant, or contaminant, notify Engineer immediately. If the spill exceeds a reporting threshold, immediately report it to the SFBRWQCB, the City of Redwood City Fire Department, 911, and the National Response Center.

E. Submit all chains-of-custody, maps, and laboratory reports to the Engineer within 48 hours of laboratory issuance. When field samples are collected, assign a field sample station number and sample number and locate it on a map when the sample is collected.

1.03 EXEMPTION FROM HAZARDOUS WASTE LAND DISPOSAL FEES

A. In accordance with California Health and Safety Code Section 25174.7, Client is exempt from California land disposal fees for hazardous waste soil and debris generated as a result of this project. These fees are typically collected by the disposal facility on behalf of the State of California. If requested, Client can provide Contractor with a letter to the disposal facility explaining this exemption.

1.04 PAYMENT

A. Measurement and Payment, Transportation and Disposal: Measurement for transportation and disposal of contaminated soils shall be based on the actual tons of material transported and disposes for each category of waste, i.e., non-hazardous, California Hazardous and RCRA Hazardous. Compensation for disposal shall be paid as a unit cost. The unit cost shall include any other items incidental to the property disposal of contaminated soil.

B. Quantity Survey: Prepare a Quantity Survey of materials transported and disposed or by a method approved by Engineer. Prepare a Quantity Survey of contaminated soils transported and disposed of based on actual weight receipts from disposal facilities.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.01 LOADING AND TRANSPORTATION OF WASTES

A. Contractor shall load and transport concrete; asphalt, removed tanks, creosote-coated wood; liquids, and excavated soil and debris to the recycle/disposal facilities in accordance with applicable Laws and Regulations and as specified below.

B. Safety Measures: Contractor shall provide safety measures for transportation vehicles entering and exiting the Site as necessary for safe and efficient operation. These safety measures may include a flagger, signs, and other means appropriate for conditions or required by the City of Redwood City or by traffic and encroachment permits. If necessary, Contractor shall provide the same measures at other points along the transportation route.

C. Containment During Transportation: Contractor shall provide all necessary tarps, receptacles and disposable liners for proper containment of waste being transported. All trucks used for transporting soils off-Site shall be covered with a well-secured tarp before transportation on public roads. Contractor shall take such steps as necessary to prevent spillage, wind blown deposits on the roads, and damage to other vehicles.

D. Transportation: Transport concrete, asphalt, treated wood waste, liquids, and any other wastes in accordance with Laws and Regulations based on the waste classification. A copy of the Traffic Control and Waste Transportation Plan and Plan Addendum will be provided to each driver hauling waste from the. Site.

E. Site Access: All construction vehicles including transportation vehicles shall access the Site through gates as shown on the Drawings.

F. Staging and Parking: Contractor shall stage equipment, materials, and parking at the site. No vehicle parking or staging shall be permitted on Chemical Way.

G. Profiling and Manifests: The SMP includes available soil sample data from previous Site investigations. Contractor shall prepare all profiles required for acceptance of wastes at disposal or recycling facilities by property. Profiles shall be submitted to Engineer for review and signature by County, and returned to Contractor for submission to disposal facilities. Contractor shall prepare all manifests required for the transportation and disposal of wastes. Manifests will be signed by County upon decontamination of transportation vehicles and prior to their departure from the Site.

1. Technical Contact: Name, address, California ZIP, phone

2. Administration: EPA I.D. Nos. (these will be furnished by County)

3. Contractor shall submit to Client Representative weekly disposal and recycling tonnage reports during the course of the work. Contractor shall provide bi-weekly disposal and recycling tonnage reports to the Client Representative that include daily summaries, by Generator property and Excavation Area ID, of loads hauled to and received by disposal facilities with dates, manifest numbers, tare and load weights, and disposal classifications. The bi-weekly disposal and recycling tonnage report shall be provided to the Client Representative in hardcopy and electronic format.

H. Other Documentation: Contractor shall track transportation closely to ensure no releases of wastes have occurred in transit and to ensure that all necessary documentation is filed and made available for inspection. Provide bill of lading, load ticket, or other appropriate documentation for transport of all waste streams shipped off-Site for recycling or disposal, both non-hazardous and hazardous.

I. Provide the Engineer with a compliance certificate verifying that all waste soils were received by the approved landfill has been properly disposed.

J. Transportation of Wet and Saturated Soils: Transport soils and excavated materials such that no free liquid is present, either leaving the Site or at the disposal facility.' Contractor shall bear all costs, including but not limited to costs for treating the free liquid/soil so that it can be accepted at the disposal facility, or fines associated with the presence of free liquids with disposed materials.

K. As the waste generator, the Owner shall furnish completed State of California Hazardous Waste Manifests (or the Uniform Manifest - 40 CFR Parts 260, 262, 271 - if effective at time of preparation) for all contaminated soils to be removed from the project area for transportation to an appropriate disposal facility. These manifests shall accompany the waste loads to disposal and be properly completed by the hauler and disposal agent as required by federal and state hazardous waste management law. The final manifest shall then be returned by registered mail to the Owner within the designated time period specified by federal law.

L. The contract work will not be considered complete nor will the County make final payment until the Engineer receives certifications of treatment and/or disposal.

3.02 DISPOSAL OF EXCAVATED SOIL AND DEBRIS

A. Coordinate loading, transportation, and disposal of wastes with the facilities favorably reviewed by Client. Contractor is notified that some hazardous wastes require scheduling and lead time prior to disposal. Soil requiting stabilization prior to disposal may have facility-specific requirements and limitations.

B. All materials shall be disposed in accordance with Laws and Regulations.

C. No additional payment shall be made for any vehicle or driver standby time at the Site or at the disposal facility. Any vehicle or driver standby time shall be included in the unit prices in Contractor's proposal.

3.03 TRAFFIC CONTROL

A. Contractor shall maintain public vehicular access to adjacent properties at all-times throughout the work.

B. Minimize impairment to public traffic. Provide flaggers, cones, flashing lights, or other traffic control when necessary.

END OF SECTION

DIVISION 31 – EARTHWORK

SECTION 31 10 00 – CLEARING

PART 1 GENERAL

1.01 SCOPE

A. The work under this section shall consist of providing all work, materials, labor, equipment, and supervision necessary to clear and grub the site of existing vegetation as required in these specifications and on the drawings. Included are the following topics:

1.02 CLEARING LIMITS

A. Confine clearing and grubbing operations to the limits as indicated on the drawings. In the absence of such a designation on the drawings, confine work to the minimum area reasonably necessary to undertake the work as determined by the Engineer.

1.03 PAYMENT

A. Payment for Site clearing and grubbing will be paid for at the Contract Lump Sum price, as indicated in the Bid Schedule. All costs in connection with the work specified herein will be considered to be included with the related item of work in the Bid Schedule or incidental to the Work.

PART 2 MATERIALS

Not Used

PART 3 EXECUTION

3.01 GENERAL

A. Limits of clearing and grubbing shall be as shown on plans.

B. Remove trees, stumps, roots, brush, other vegetation, debris, and other items that interfere with new construction. Roots greater than 2-inch in diameter shall be removed.

C. To minimize erosion, limit heavy equipment travel only to that necessary to complete clearing and grubbing.

D. Repair damaged erosion control features immediately.

3.02 CUTTING

A. Fell and prune trees in manner so as not to damage adjacent structures, site features or other plants not scheduled for removal. Use tag lines and other devices as necessary to control falling tree and limbs.

B. When pruning, limit removal only to those limbs shown on plans or that which is necessary to complete other site work.

C. When pruning, make cuts near trunk, but beyond branch collar. If no branch collar is present, make a vertical cut near where the limb meets the trunk. Do not cut branch collar.

D. Use sharp tools and make clean cuts.

E. Application of wound paint is not necessary.

3.03 CHIPPING

A. Chippings shall be hauled offsite for disposal unless approved by Engineer.

3.04 OFFSITE DISPOSAL OF MATERIALS

A. Clearing and grubbing debris shall be disposed of at facilities designed to accept the material that is being disposed. Follow all local, state and federal regulations and the Contractors Waste Management Plan.

3.05 GRUBBING

A. Grubbing operations may be completed by removal of stump section or by grinding.

B. Remove stumps, logs, roots (greater than 2-inch diameter), and other organic matter completely.

C. Depressions resulting from grubbing operations shall be backfilled but do not need to be compacted.

END OF SECTION

SECTION 31 14 13 – SOIL STOCKPILING

PART 1 GENERAL

1.01 SCOPE

A. Work in this Section includes management and tracking of stockpiled materials at the Site during generation, storage, sampling, and loading until stockpiled materials are removed from the Site or reused.

1.02 PAYMENT

A. Separate measurement or payment will not be made for work required under this Section. All costs in connection with the work specified herein will be considered to be included with the related item of work in the Bid Schedule of the Bid Form, or incidental to the Work.

PART 2 PRODUCTS

Plastic sheeting: 6-mil thickness

PART 3 EXECUTION

3.01 STOCK PILE MANAGEMENT

A. To the extent that Contractor chooses to stockpile soil, the following shall be implemented.

1. Each stockpile will be placed on, at minimum, 6-mil plastic sheeting and, at a minimum, the sides and top will be covered by one layer of 6-mil plastic sheeting at all times except when the material is being handled. Contractor will cover each stockpile segment at the end of the workday.

2. Materials excavated containing free water will be stockpiled within a contained drainage area. Contractor will control and manage water in accordance with Section 31 23 19 Dewatering.

B. Contractor will adequately secure the top covering of each stockpile so that all surface areas of the stockpile are covered. See Section 01 56 16 – Temporary Dust and Vapor Control.

C. Provide berms around the stockpile area to contain precipitation runoff and to prevent run-on.

3.02 STORAGE OF SOIL

A. Segregate stockpiles for asphalt, concrete, rock, and soil generated during construction. To the extent possible, separate saturated soil from unsaturated soil.

B. Provide stockpiles with liner, cover, and perimeter berm to prevent rupture and release or infiltration of liquids. Use a minimum 6-mil polyethylene sheeting for liners and covers. Construct a perimeter berm, typically hay bales placed beneath the liner, to allow for collection of any free liquids draining from the stockpile. Pump accumulated free liquids (or otherwise removed) to a container. Secure covers and perimeter berms in-place when not in use and at the end of each work day, or as necessary to prevent wind dispersion or runoff from major precipitation events.

C. Wet or Saturated Soil. For saturated soil, stockpile so as to minimize runoff and facilitate drainage and drying. Place saturated soil on plastic that is bermed at the perimeter to prevent liquid runoff. Contain water leakage using berms, pumps, and portable tanks as appropriate depending on the extent of the leakage. Once saturated soil has sufficiently dried, handle as unsaturated soil.

D. Clearly label each stockpile and maintain a log of waste storage activities. Include a description of the activities that resulted in the generation of soil, location where the soil was generated, accumulation start date, and "analysis pending".

END OF SECTION

SECTION 31 23 00 – EXCAVATION AND FILL

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Characterizing import soil for review and approval by Engineer.
2. Filling and compacting import soil to fill the excavated area depicted on Sheet 4.
    a. The filling the excavation will include providing and installing drain rock and geotextile fabrics to bridge the saturated soil conditions.
3. Site rough grading.
    a. The excavation is to be filled to provide positive drainage.

B. Related Sections:

1. Section 01 57 23 – Temporary Storm Water Pollution Control
2. Section 01 35 29 – Health and Safety Requirements
3. Section 01 74 16 – Decontamination
4. Section 02 41 00 – Demolition
5. Section 02 81 00 – Transportation and Disposal of Hazardous Materials
6. Section 31 14 13 – Soil Stockpiling

1.02 REFERENCES

A. CalEPA, *Use of Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties*, January 2005 (CalEPA, 2005).

B. California Regional Water Quality Control Board – San Francisco Bay Region, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater* (Regional Board, 2008).

C. California Environmental Protection Agency – Department of Toxic Substances Control, *Information Advisory: Clean Imported Fill Material*, October 2001 (DTSC, 2001).

1.03 DEFINITIONS

A. Excavation: Consists of satisfactory loosening, removing, loading, transporting, depositing and compacting in final location, wet and dry materials, necessary to be removed as indicated on the Plans.

B. Fill: placement of material in an excavation to final grade.

C. Backfill: refill of an excavation, previously removed.

D. Backfill Adjacent to Structure: backfill within a volume bounded by the exterior surface of a structure or finish grade around a structure.

E. In-Place Density of Compacted Backfill: density determined in accordance with ASTM D 6938 and ASTM D 3017.

F. Optimum Moisture Content: As referred to in these Specifications, optimum moisture content is the moisture content, expressed in percent (by dry weight), corresponding to the maximum dry density of the same material as determined by ASTM test method D1557-78.

G. Maximum Density: density obtained in laboratory when testing in accordance with ASTM D 1557.

H. Percent Relative Compaction: As referred to in these Specifications, percent relative compaction is the required in-place dry density of the material, expressed as a percentage of the maximum dry density of the same material determined by ASTM test method D1557-78.

I. Definitions Related to Compaction of Coarse Fill:

1. One Pass: one movement of roller over area being compacted.

2. Measurement of Pass Width: measure of width of pass between centers of outside tires or outside edge of roller wheels.

1.04 PERFORMANCE REQUIREMENTS:

A. Import Soil Quality

1. Concentrations of chemicals present in import soil shall not exceed either the California Human Health Screening Levels (CHHSLs) or the Environmental Screening Levels (ESLs), with the exception of arsenic, which shall not be present above 8.0 milligrams per kilogram.

2. Where surface water or groundwater is encountered or depicted on the Plans within the designated fill area, refill space with drain rock and compact until no perceptible movement under roller.

B. Compacted Fills:

1. Provide the specified compaction for backfill, fill and other earthwork.

2. Perform confirmation tests to verify that work has complied, and is complying at all times, with requirements specified in this Section concerning initial compaction demonstration and field quality control testing.

C. Groundwater

1. Where surface water or groundwater is encountered or depicted on the Plans within the designated fill area, refill space with Engineered fill or gravel, which can be compacted with no perceptible movement under roller.

1.05 SUBMITTALS

A. Submit under provisions of Division 1.

B. Submit material source information and geotechnical test reports for particle size analysis and laboratory compaction testing for all imported and reused on-site materials, including:

1. Drain rock;

2. Class 2 Aggregate Base

3. Imported soil.

C. Submit analytical test for the import material, including laboratory data sheets, chain-of-custody documentation, description of sample collection methods, and any additional information pertinent to assessing the potential for the import material to be contaminated by chemicals of concern.

D. The Contractor shall submit an original, signed copy of the Import Material Certification Form (31 23 00.A) to the Owner at least 15 working days prior to delivering import material to the site. A separate form shall be submitted for each separate import material and source area.

E. Submit chemical test analysis reports for all soils from approved soil-testing laboratories.

1.06 QUALITY ASSURANCE

A. As described in California Code of Regulations, Title 24, Part 2, Section 2-2903(a).

B. Initial Compaction Demonstration:

1. Adequacy of Compaction Equipment and Procedures: demonstrate adequacy of compaction equipment and produces before exceeding the following amount of earthwork quantities:

2. 1,000 cubic yards of Engineered fill.

C. Compaction Sequence Requirements: until specified degree of compaction on previously specified amounts of earthwork is achieved, do not perform additional earthwork or the same kind.

D. After satisfactory conclusion of initial compaction demonstrated at any time during construction, provide confirmation tests as specified under "Field Quality Control."

1.07 QUALITY CONTROL

A. The Contractor is responsible for verifying that Plans are representative of field conditions.

B. The Contractor is responsible for calculating the fill required and for the cost of obtaining fill required, and for the cost of disposal of excess soil.

C. All excavated materials, which are not required for fill and backfill, or which are unsuitable for fill or backfill, shall be disposed by the Contractor, at their own expense and responsibility, and in a manner acceptable to the Owner.

D. If the Contractor uses import material that is, or is found to be, not in accordance with the specifications, the Contractor shall promptly remove all out-of-specification import material. The Contractor shall verify, to the satisfaction of the Owner, that all out-of-specification import material has been removed and any effects from its placement at the site have been mitigated sufficiently. The subsequent disposal of the out-of-specification import material shall be the sole responsibility and at the sole expense of the Contractor. The Owner shall not be liable for, nor will it pay, any additional costs incurred by the Contractor for the characterization, removal, disposal or replacement of the out-of-specification import material.

1.08 SEQUENCING AND SCHEDULING

A. Schedule earthwork operations to meet requirements as provided in this Section for excavation and uses of excavated material.

B. If necessary, stockpile excavated material.

1.09 EXCAVATION AND FILLING

A. Perform excavation and filling, during construction, in a manner and sequence that provides drainage at all times.

1.10 STORAGE AND HANDLING

A. Cover and protect earth materials stockpiled for use on the Site from erosion and contamination in accordance with applicable sections of the Specifications.

1.11 WEATHER CONDITIONS

A. No fill material shall be placed, spread, or rolled if weather conditions increase the moisture content above permissible limits.

1.12 PAYMENT

A. Quantities of excavation and backfill will be paid for at the contract price per cubic yard. Such price shall include for furnishing all labor, materials, tools, equipment and incidentals for completing all the work involved in earthwork as shown on the Plans and as specified herein, including the excavation, hauling, compacting and testing, preparing final grade and removal and disposal of all unsuitable materials. No extra compensation will be made for water required to compact fills.

B. Use of imported borrow shall be included as a cost with the contract and no additional payment will be made thereto.

PART 2 PRODUCTS

2.01 MATERIALS

A. Earth Fill Materials:

1. Representative samples of materials to be used for Engineered fill shall be tested to determine the soil classification, potential contaminants (for imported soil fill) maximum density, optimum moisture content and particle size. The plasticity index of the material shall be less than 20.

B. Water for Compacting Fill:

1. Use water from a source acceptable to the Owner.

2.02 GENERAL

A. Provide drain rock, select material and native material where required for fill and backfill.

B. Provide materials that are free of trash, lumber, debris, leaves, grass, roots, stumps and other vegetable matter.

C. Materials derived from processing demolished or removed concrete may be reused as backfill in conformance with California State Assembly Bill (AB) 939.

D. Materials derived from processing demolished or removed asphalt concrete are not acceptable.

2.03 DRAIN ROCK:

A. Consists of hard, durable particles of stone, screened or crushed to specified size and gradation.

B. Should be angular with minimum 85 percent of surface consisting of fractured faces.

C. Free from vegetation matter, lumps or balls of clay, or other deleterious matter.

D. Crush or waste coarse material and waste fine materials as required to meet gradation requirements.

E. Conform to size and grade within the limits as flows when tested in accordance with ASTM C 136:

U.S. Standard Sieve Size	Percent By Weight By Weight Passing Sieve
3 inches	100
2 inches	95 - 100
1 inch	50 - 100
3/4 inch	15 - 55
3/8 inch	0 - 20

2.04 EARTH FILL:

A. The fill material shall be free of organic topsoil, leaves, grass, roots, stumps and other vegetable matter.

2.05 AGGREGATE BASEROCK:

A. Aggregate base shall meet the requirements of Caltrans Section 26-1.02B Class 2 Aggregate Base.

2.06 GEOTEXTILE FABRIC:

A. The Contractor shall provide and install geotextile fabric as shown on the Plans and described in Section 31 05 19.3 – Geotextiles for Earthwork.

PART 3 PART 3 – EXECUTION

3.01 EXAMINATION

A. Prior to commencing work:

1. Verify existing grades and conditions are as indicated on the Plans.

2. Verify volume of soil to be filled.

3. Should indicated conditions conflict with actual conditions, notify the Engineer and await their directions before proceeding.

3.02 PREPARATION

A. Surface Preparation:

1. Preparing Ground Surfaces for Fill.

2. After removal or clearing is complete, scarify entire areas that underlie fill sections to a depth of 6-inches and until the surface is free of ruts, hummocks, and other features that would prevent uniform compaction by equipment to be used.

3.03 APPLICATION

3.04 GENERAL

A. Obtain drain rock and import fill subject to the fill material requirements specified herein.

B. Rocks, broken concrete, or other solid materials larger than 3-inches in greatest dimension shall not be placed in fill areas, but removed from the Site at no additional cost.

C. Dispose of surplus material on private property only when written permission agreements furnished by the owner of the property. Submit copies of such agreements.

D. Contractor shall excavate and dispose of unsuitable or low-density subgrade material not readily capable of compaction, including oversized metal debris.

3.05 DRAIN ROCK FILL

A. Drain rock is to be placed in saturated soil to approximately one-foot above anticipated groundwater elevations as shown on Sheet 4.

B. Place drain rock fill in lifts, before compaction, not to exceed 6-inches for hand operated mechanical compactors and not to exceed 8-inches for heavy equipment compactors.

C. Geotextile fabrics shall be placed beneath and over drain rock as shown in the Plans in accordance with Section 31 05 19.13 – Geotextiles for Earthwork.

3.06 EARTHFILL

A. Earthfill shall consist of placing and compacting earthfill material in excavations to the pre-excavation grades. Do not backfill until each specific location is approved by the Engineer.

B. Place earthfill in lifts, before compaction, not to exceed 6-inches for hand operated mechanical compactors and not to exceed 8-inches for heavy equipment compactors.

C. Each layer shall be brought to within 3-percent of optimum moisture content for maximum density before compaction.

D. If any material is placed that does not have correct moisture content, it shall be aerated if too wet or wetted if too dry. "Puddling" or "soaking" is not permitted. Soft, spongy or springy material causing areas that "pump" when heavy loads pass over them shall be removed and replaced with suitable material. This condition shall be considered as sufficient evidence without further testing that the moisture content is not correct and the material shall be removed.

E. Spread each layer evenly; thoroughly mix each layer during spreading to insure uniformity of materials and moisture in each layer.

3.07 COMPACTION

A. It shall be the responsibility of the Contractor to control their operation and to verify and confirm that they have complied, and are complying at all times, with the requirements of the Specifications concerning compaction, control and testing.

B. Compaction testing will be performed and be paid for by the Contractor.

C. Compaction testing shall be performed simultaneously with installation of the backfill. The Contractor's tests shall be performed by a soils testing laboratory acceptable to the Owner. Field-testing shall be performed under the supervision of the Owner and shall be scheduled to accommodate the Owner.

D. Compact earthfill to 95 percent of the maximum dry density obtained by the ASTM D1557 test method.

E. Compact open areas by the use of an accepted device and rolled with an accepted compactor, heavy pneumatic roller, or 3-wheeled power roller.

F. Compact areas not accessible to heavy equipment with pneumatic hand tampers.

3.08 FIELD QUALITY CONTROL

A. Perform field testing under provisions of Division 1.

B. Perform testing and analyses of fill materials in accordance with ASTM D1557, D2661, D422, D2488.

C. In-place density of compacted backfill will be determined in the field by ASTM D 1556, or by nuclear density test procedures per ASTM D 3017 and ASTM D6938.

D. If compaction fails to meet the requirements set forth above, the Contractor shall remove and replace the fill material at proper density or shall bring the density up to specified level by other means acceptable to the Owner. Subsequent testing required to confirm that the reconstructed material has been brought up to specified density shall be paid for by the Contractor.

3.09 FREQUENCY OF TESTS:

A. Laboratory compaction testing (ASTM D1557) at one representative test for type of fill material.

B. Particle size (ASTM D442) to be conducted at one test per 5,000 cubic yards.

C. Field description (ASTM D2488) to be conducted at one test per 5,000 cubic yards, and continually observed as material is imported to the Site.

D. Moisture testing (ASTM D2216) to be conducted at one test per 5,000 cubic yards.

E. In-situ density (D 1556 or D6938) and moisture (D3017) to be conducted at one test per 500 cubic yards.

3.10 GRADING AND SURVEY:

A. Contractor shall perform final grading at locations and to lines and grades indicated on the Plans. Surfaces shall be graded at a relatively uniform slope so that no areas of ponded water or localized depressions exist.

END OF SECTION

SECTION 31 23 00.A – IMPORT MATERIALS CERTIFICATION

Imported Materials Certification Form

PROJECT INFORMATION:

Name: _____

Location or Street Address: _____

CONTRACTOR/SUBCONTRACTOR IMPORTING MATERIAL:

Name:_____ Street Address: _____

City: _____ State: ___ Zip Code: _____Phone No.:_____

Fax No. _____Email: _____

SOURCE AREA OWNER:

Name:_____ Street Address: _____

City: _____ State: ___ Zip Code: _____Phone No.:_____

Fax No. _____Email: _____

IMPORT MATERIAL TYPE (Select One):

___ Soil

___ Aggregate - Not Recycled (*Specify Type)*: _____

___ Recycled Aggregate (*Specify Type and Past Uses)*: _____

___ Other (Specify Type and Past Uses): _____

SOURCE AREA LAND USE HISTORY (Check all current and past uses):

___ Residential ___ Agricultural ___ Commercial/Industrial ___ None (i.e., virgin undeveloped)

SPECIFICS:

Quantity (in cubic yards): _____

Placement and Use: _____

I hereby certify that the Import Material identified above meets the specifications of Section 2.6 Import Fill Material. I further certify that if the Import Material is determined not to be in compliance with these specifications that I will immediately and diligently remove all out-of-specifications Import Material and dispose of it in accordance with all applicable laws and regulations, conduct necessary sampling to verify that all out-of-specification Import Material has been removed, and verify to the satisfaction of the Property Owner and appropriate regulatory agencies that any adverse impacts to surrounding soils, waters or other materials have been mitigated sufficiently. I agree to conduct these activities at my sole expense with no cost to the Property Owner.

I declare under penalty of perjury that I am authorized to execute this certification and that the foregoing information is correct.

Signature: _____Date: _____

Printed Name: _____ Title: _____

SECTION 31 05 19.13 – GEOTEXTILES FOR EARTHWORK

PART 1 GENERAL

1.01 SCOPE

A.

1.02 RELATED SECTIONS

1. Section 31 23 00 – Excavation and Fill
2. Section 31 23 19 – Dewatering
3. Section 31 50 00 – Excavation Support and Protection

1.03 REFERENCES

A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

1. ASTM D 4354 (1999; R 2004) Sampling of Geosynthetics for Testing
2. ASTM D 4759 (2002) Determining the Specification Conformance of Geosynthetics
3. ASTM D 4873 (2002) Identification, Storage, and Handling of Geosynthetic Rolls and Samples

1.04 SUBMITTALS

A. The following shall be submitted to the Engineer for approval:

1. Product Data
2. Manufacturing Quality Control Sampling and Testing
3. A minimum of seven days prior to scheduled use, manufacturer's quality control manual.
4. Certificates

B. Geotextile

1. A minimum of seven (7) days prior to scheduled use, manufacturer's certificate of compliance stating that the geotextile meets the requirements of this section. For needle punched geotextiles, the manufacturer shall also certify that the geotextile has been continuously inspected using permanent on-line full-width metal detectors and does not contain any needles which could damage other geosynthetic layers. The certificate of compliance shall be attested to by a person having legal authority to bind the geotextile manufacturer.

1.05 DELIVERY, STORAGE AND HANDLING

A. Delivery, storage, and handling of geotextile shall be in accordance with ASTM D 4873.

B. Storage

1. Rolls of geotextile shall be protected from construction equipment, chemicals, sparks and flames, temperatures in excess of 160 degrees F, or any other environmental condition that may damage the physical properties of the geotextile. To protect geotextile from becoming saturated, rolls shall either be elevated off the ground or placed on a sacrificial sheet of plastic in an area where water will not accumulate.

2. Handling

a. Geotextile rolls shall be handled and unloaded with load carrying straps, a fork lift with a stinger bar, or an axial bar assembly. Rolls shall not be dragged along the ground, lifted by one end, or dropped to the ground.

1.06 PAYMENT

A. Separate measurement or payment will not be made for work required under this Section. All costs in connection with the work specified herein will be considered to be included with the related item of work in the Bid Schedule of the Bid Form, or incidental to the Work.

PART 2 PRODUCTS

2.01 RAW MATERIALS

A. WOVEN AND NON WOVEN – ON BOTTOM OVER THE ROCK The geotextile shall be nonwoven fabric and consist of long-chain polymeric filaments or fibers composed of polypropylene, polyethylene or polyamides.

B. Fabric shall be non-biodegradable woven and non-woven geotextile fabrics.

1. The geotextile fabric to be placed over the drain rock shall be Mirafi 140 NC non-woven geotextile, or approved equal.

2. The second layer of geotextile shall be Mirafi Filterweave 404, or approved equal.

2.02 MANUFACTURING QUALITY CONTROL SAMPLING AND TESTING

A. The Manufacturer shall be responsible for establishing and maintaining a quality control program to assure compliance with the requirements of the specification. Documentation describing the quality control program shall be made available upon request. Manufacturing quality control sampling and testing shall be performed in accordance with the manufacturer's approved quality control manual. As a minimum, geotextiles shall be randomly sampled for testing in accordance with ASTM D 4354, Procedure A. Acceptance of geotextile shall be in accordance with ASTM D 4759. Tests not meeting the specified requirements shall result in the rejection of applicable rolls.

PART 3 EXECUTION

3.01 INSTALLATION

A. Geotextile shall be placed at the locations identified on the Plans.

B. The graded surface shall be smooth and free of debris prior to placement of geotextile fabric.

C. The geotextile shall be placed loosely with no wrinkles or folds, and with no void spaces between the geotextile and the ground surface. Successive sheets of geotextiles shall be overlapped a minimum of 300 mm (12 in), with the upstream sheet overlapping the downstream sheet. All seams shall be subject to the approval of the Owner. Placement of drain rock or earth fill should proceed immediately following placement of the geotextile.

D. The upper layer of geotextile should be spread in an orientation perpendicular to the lower layer of geotextile.

E. Subgrade Preparation

1. The surface underlying the geotextile shall be smooth and free of ruts or protrusions which could damage the geotextile. Compaction requirements shall be in accordance with Section 31 23 00 – Excavation and Fill.

F. Placement

1. Geotextile rolls which are damaged or contain imperfections shall be repaired or replaced as directed. The geotextile shall be laid flat and smooth so that it is in direct contact with the subgrade. The geotextile shall also be free of tensile stresses, folds, and wrinkles. On slopes steeper than 10 horizontal on 1 vertical, the geotextile shall be laid with the machine direction of the fabric parallel to the slope direction.

3.02 SEAMS

A. Overlap Seams

1. Geotextile panels shall be continuously overlapped a minimum of 12 inches at all longitudinal and transverse joints. Where seams must be oriented across the slope, the upper panel shall be lapped over the lower panel.

3.03 PROTECTION

A. The geotextile shall be protected during installation from clogging, tears, and other damage. Damaged geotextile shall be repaired or replaced as directed. Adequate ballast (e.g. sand bags) shall be used to prevent uplift by wind. The geotextile shall not be left uncovered for more than 14 days after installation.

3.04 REPAIRS

A. Torn or damaged geotextile shall be repaired. Clogged areas of geotextile shall be removed. Repairs shall be performed by placing a patch of the same type of geotextile over the damaged area. The patch shall extend a minimum of 12 inches beyond the edge of the damaged area. Patches shall be continuously fastened using approved methods. The machine direction of the patch shall be aligned with the machine direction of the geotextile being repaired. Geotextile rolls which cannot be repaired shall be removed and replaced. Repairs shall be performed at no additional cost to the Government

3.05 PENETRATIONS

A. Engineered penetrations of the geotextile shall be constructed as shown on the drawings and by methods recommended by the geotextile manufacturer.

3.06 COVERING

A. Cover soil shall be placed in a manner that prevents soil from entering the geotextile overlap zone, prevents tensile stress from being mobilized in the geotextile, and

prevents wrinkles from folding over onto themselves. On side slopes, soil backfill shall be placed from the bottom of the slope upward. Cover soil shall not be dropped onto the geotextile from a height greater than 3 feet. No equipment shall be operated directly on top of the geotextile without approval of the Contracting Officer. Equipment with ground pressures less than 7 psi shall be used to place the first lift over the geotextile. Equipment placing cover soil shall not stop abruptly, make sharp turns, spin their wheels, or travel at speeds exceeding 5 mph.

END OF SECTION

SECTION 31 23 19 – DEWATERING

PART 1 GENERAL

1.01 SECTION INCLUDES:

A. Dewatering excavations.

B. Related Requirement

1. Section 02 60 00 - Contaminated Materials Handling and Disposal

1.02 REFERENCES

A. Groundwater Discharge Permit – South Bayside System Authority discharge permit for extracted groundwater from 70 Chemical Way in Redwood City, California.

1.03 SUBMITTALS

A. Submittals shall be in accordance with Section 01 33 00 - Submittals.

B. Equipment manufacturer's information for filters, granular activated carbon (GAC) and flow meter.

1.04 PAYMENT

A. Payment will be made based on lump sum to cover all dewatering, storage, treatment and monitoring costs. Payment for Site will made at the Contract Lump Sum price, as indicated in the Bid Schedule. All costs in connection with the work specified herein will be considered to be included with the related item of work in the Bid Schedule or incidental to the Work.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.01 GENERAL

A. During construction, efforts should be diligently pursued to minimize the flow of groundwater and surface runoff from entering the excavation including, but not limited to: footing excavations; excavations for retaining walls; wing walls; abutment

walls; storm drainage systems; and sanitary sewer systems and their appurtenances. Well points for dewatering should not be allowed.

B. Pumping of excavations for dewatering purposes shall only be used as needed.

C. The maximum extraction rate from the excavation shall not exceed 0.54 gallons per square foot (22 liters per square meter) per day.

D. The maximum discharge rate of treated groundwater shall not exceed 10 gallons per minute.

E. Contractor shall provide adequate storage tanks to contain water and test prior to discharge.

3.02 DEWATERING SYSTEMS

A. Treat water collected by dewatering operations, as required by regulatory agencies, prior to discharge.

B. Onsite storage should be used to contain extracted groundwater and allow for settling.

C. The system to treat groundwater removed during dewatering at the Site should consist of sedimentation, sand filtration and carbon adsorption and other applicable Best Management Practices (BMPs).

1. Sedimentation

   a. Extracted groundwater should be placed in onsite storage tanks to allow for gravity settling of suspended sediments. The treatment system should be plumbed so that additional influent storage can be added as needed.

2. Filtration

   a. A multi-media pressure filter should be used for additional treatment to reduce suspended solids concentrations. Water should be pumped from the onsite storage tanks through the filters. The filters should be operated in line between the onsite storage tanks and the carbon adsorption units. The filters should be routinely backwashed to maintain filter efficiency.

   b. Solids from the filters should be combined with solids settled at the bottom of the onsite storage tanks. As necessary, the solids should be slurried (pumped) to sediment drying bins or a plate and frame filter press for dewatering. When the solids are dried sufficiently, to less than 50 percent moisture, the dried sludge should be placed in a soil storage bin for testing and disposal.

3. Activated Carbon Adsorption

   a. Following removal of solids, the groundwater should be treated for removal of dissolved organics. Granular activated carbon (GAC), a common form of activated carbon for water treatment, should be used during treatment to adsorb dissolved organics, including petroleum hydrocarbons. The adsorption rate is a function of influent water quality, the specific contaminant's adsorption kinetics (isotherms) and the degree of removal efficiency required to achieve the discharge standard. GAC is manufactured in size ranges of 20 to 40 mesh. The carbon is installed in a vessel and raw water is passed through the activated carbon bed. Vessels are sized based upon the contaminant, concentration and flow. To avoid the problem of "breakthrough" due to exhausting the adsorption capacity of the carbon, two GAC units should be plumbed in series. Water samples should be routinely collected from a sample port between the carbon vessels. The samples should be analyzed for TPH, VOCs and SVOCs to monitor breakthrough.

D. Remove solids from treatment facilities and perform other maintenance of treatment facilities as necessary to maintain their efficiency

E. The dewatering equipment should be inspected daily, when in use, to ensure that all components are functional and routinely maintained to prevent leakage. Should any component of the dewatering equipment be damaged or affect the performance of the equipment, the dewatering operation should be discontinued and the component should be repaired or replaced with substitute equipment.

3.03 CONSTRUCTION DEWATERING DISCHARGE

A. Representative samples of discharge water should be collected from the onsite storage structures at the frequency as required by the permitting agency and tested to comply with applicable effluent limitations of the South Bayside System Authority.

   1. Effluent standards include:

      a. Total Petroleum Hydrocarbons as gasoline (TPHg) at 20 milligrams per liter (mg/l);

      b. Benzene at 0.002 mg/l;

      c. Chloroform at 0.03 mg/l;

      d. Polycyclic aromatic hydrocarbons at 0.2 mg/l;

      e. Phenolic compounds at 2.6 mg/l; and

      f. Perchloroethylene at 0.03 mg/l.

B. The treatment of extracted groundwater should be conducted prior to discharge to the sewer system.

C. Discharge water as required by discharge permit and in manner that will not cause erosion or flooding, or otherwise damage existing facilities, completed Work, or adjacent property.

END OF SECTION

SECTION 31 50 00 – EXCAVATION SUPPORT AND PROTECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Shoring required for general safety, worker protection, and protection of adjacent property from the hazards of caving ground.

B. Shoring for trench excavations.

C. Shoring for structural excavations.

D. Shoring for work pits.

E. Contractor's responsibilities.

F. Contractor's trench safety plan.

G. Contractor's supervisor.

1.02 CONTRACTOR'S RESPONSIBILITIES FOR SAFETY

A. The Contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons (including employees) and property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours.

B. Safety provisions shall conform to U.S. Department of Labor (OSHA), the California Occupational Safety and Health Act, and all other applicable Federal, State, City, and local laws, ordinances, codes, the requirements set forth below, and any regulations that may be detailed in other parts of these Specifications.

C. Contractor shall follow regulations of Part 1926 of 29 CFR, including latest revisions. This regulation governs excavations, trenching and protective systems, sloping, benching, wood, and aluminum shoring for various types of soils, and depths of excavations.

D. Where any cited requirements are in conflict, the more stringent requirement shall be followed.

E. The services of the Engineer or design consultants, or any public agency representative in conducting construction review of the Contractor's performance is not intended to include review of the adequacy of the Contractor's work methods, equipment, bracing or scaffolding or safety measures, in, or near the construction site,

and shall not be construed as supervision of the actual construction nor make the County, Engineer or design consultants, or any Public Agency Representative responsible for providing a safe place for the performance of the work by the Contractor, Subcontractors or suppliers; or for access, visits, use work, travel or occupancy by any person.

F. Engineer's or any design consultant's review of the Contractor's performance is not intended to include a review or approval of the adequacy of the Contractor's safety supervisor, the safety program or any safety measures taken in, on or near the construction site.

G. The Engineer will review the safety related submittals of the Contractor's to verify the general scope of the work, to determine that appropriate professional services are used and to determine the construction techniques proposed for use. This review shall not in any way be construed to relieve the Contractor from sole responsibility for the design and safety of such shoring.

H. The Contractor shall carefully instruct all personnel working in potentially hazardous work areas as to potential dangers and shall provide such necessary safety equipment and instruction as is necessary to prevent injury to personnel and damage to property. Special care shall be exercised relative to electrical work, work involving excavation and in pump sump work.

I. All work and materials shall be in strict accordance with all applicable State, Federal and local laws, rules, regulations and codes.

J. Nothing in the Contract is to be construed to permit work not conforming to governing law. When Contract Documents differ from governing law, the Contractor shall furnish and install the higher standards called for without extra charge. All equipment furnished shall be grounded and provided with guards and protection as required by safety codes. Where vapor-tight or explosion-proof electrical installation is required by law, this shall be provided.

K. Shoring and Trench Safety Plan - Attention is directed to Section 832 of the Civil Code of the State of California relating to lateral and subjacent support, and the Contractor shall comply with this law. The submittal of this Plan does not constitute approval of such Plan or waiver of liability thereof.

L. In accordance with Section 6705 of the State Labor Code, the Contractor shall submit to the Engineer specific plans to show details of provisions for worker protection from caving ground. Not less than fourteen (14) days before beginning excavation for any trench or trenches five feet (5') or more in depth required under this Contract, the Contractor shall furnish to the Engineer working drawings of his trench safety plan. The trench safety plan working drawing shall be detailed plans showing the design of shoring, bracing, sloping or other provisions to be made for worker protection from the hazard of caving ground. If such plan varies from the shoring system standards

established by the Construction Safety Orders of the California Department of Industrial Relations or the Federal Safety and Health Regulations for Construction of the Occupational Safety and Health Administration, Department of Labor, the plan shall be prepared by a registered civil or structural Engineer. The Contractor shall provide qualified supervision as required by applicable laws, regulations and the Contract Documents. In no event shall the Contractor use a shoring, sloping or protective system less than that required by said Construction Safety Orders, or less effective than that required by said Federal Safety and Health Regulations for Construction. Submission of this plan in no way relieves the Contractor from the requirements to maintain safety in all operations performed by him or his Subcontractors.

M. Potentially Contaminated Materials: Manage soil and groundwater as specified in Section 02 60 00 Contaminated Materials Removal, Section 31 23 19 - Dewatering and site specific Work Plans.

N. The Contractor shall have in place and implemented an Injury/Illness Prevention Program (IIPP) in accordance with SB-198. The IIPP, Hazardous Communication Policy (along with copies of the Material Safety Data Sheets (MSDS) shall be immediately available to the District Manager upon written or verbal request. Neither the District nor the District Manager will be responsible for reviewing these policies for their compliance with Federal, State and local laws, ordinances and codes and to the rules and regulations established by the California Division of Industry Safety.

1.03 PERMIT

A. For trenches or excavations of depth five feet or deeper, the Contractor shall obtain from the State Division of Industrial Safety a permit for such excavation; submit a copy of the permit to the Engineer, prior to initiating any work requiring said permit. For purposes of such permit, the Contractor shall assume, unless determined by the Contractor otherwise, that all laterals are at some point within the area of excavation five feet (5') or deeper.

1.04 SAFETY ORDERS

A. The Contractor shall have at the work site, copies or suitable extracts of the Construction Safety Orders of Cal-OSHA, and Part 1926 of 29 CFR, Subpart P.

B. All work shall comply with the provisions of these and all other applicable laws, ordinances and regulations.

1.05 CONTRACTOR'S SUPERVISOR

A. The Contractor shall appoint a qualified supervisory employee who shall be on-site full time during the work and shall be responsible to determine the sloping or shoring

system which shall be used depending on local soil type, water table, stratification, depth, etc.

B. This supervisor shall have a minimum of three (3) years' experience in the directing of such excavation and shoring work. A resume of this experience shall be provided at the Pre- construction Meeting.

C. The Contractors Supervisor shall meet the requirements for a "competent" person as described in Sections 1504(a) and 1541(k) (1) of the Cal-OSHA excavation regulations.

1. As such, the Contractor assures that this competent person has:

   a. The ability to recognize all possible hazards associated with excavation work and to test for hazardous atmospheres.

   b. The knowledge of the current safety orders pertaining to excavation and trenching.

   c. The ability to analyze and classify soils.

   d. Knowledge of the design and use of protective systems.

   e. The authority and ability to take prompt correct action when conditions change.

2. Furthermore, the Contractor assures that this competent person shall satisfactorily fill his responsibilities to:

   a. Conduct inspections of the excavations adjacent areas, and protective systems before the start of work; as needed throughout the shift; and daily for potential cave-ins, failures, hazardous atmospheres, or other hazards.

   b. Take prompt, corrective action or remove employees from the hazard.

PART 2 PRODUCTS

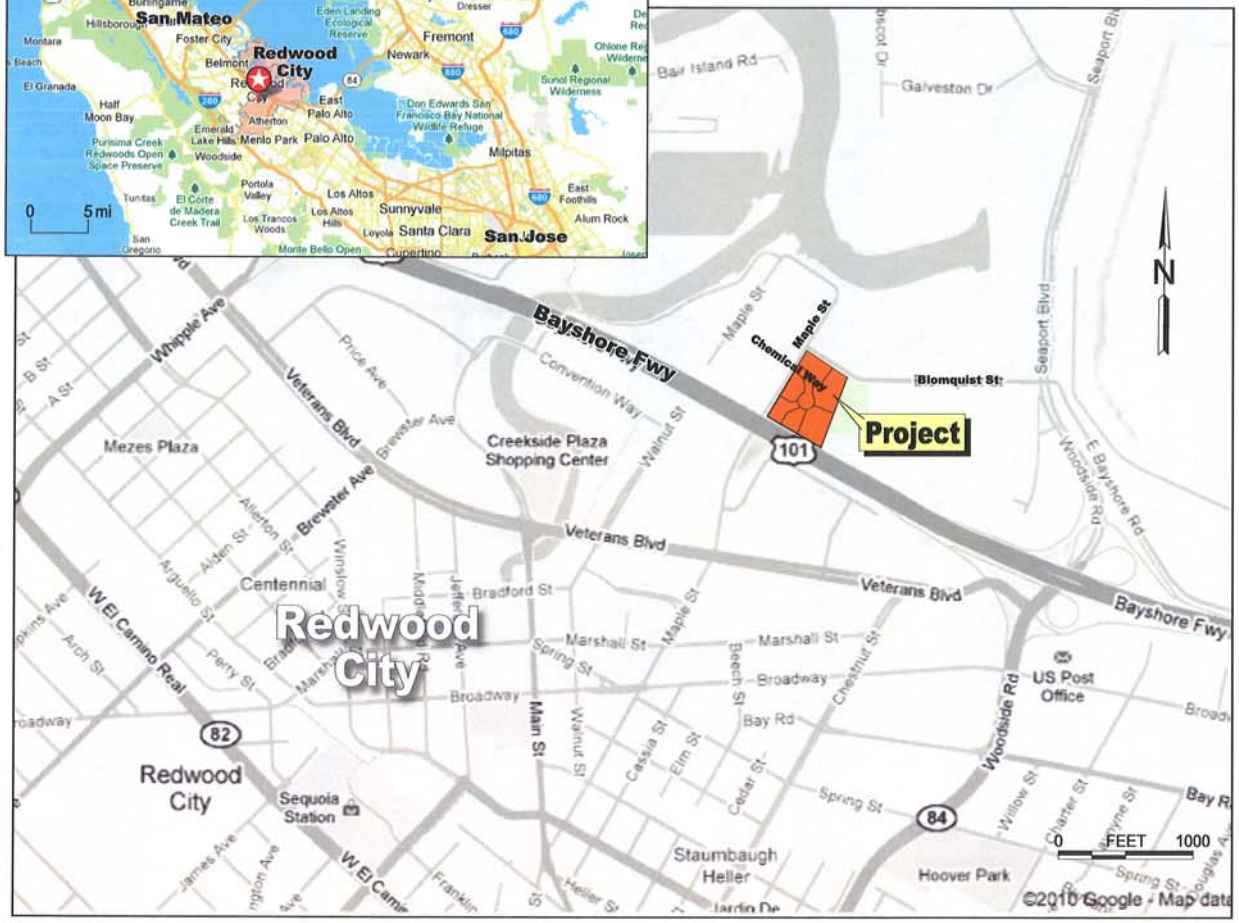
Not Used.

PART 3 EXECUTION

Not Used

END OF SECTION

CONSTRUCTION DRAWINGS



SAN MATEO COUNTY
REPLACEMENT CORRECTIONAL FACILITY
Redwood City, California

SHEET NO.	TITLE
1	TITLE PAGE AND SITE LOCATION
2	PLAN NOTES
3	DEMOLITION PLAN
4	EXCAVATION PLAN
5	BACKFILL SECTION

REGISTERED PROFESSIONAL ENGINEER
PETER KRASNOFF
C44031
EXP. 6/30/13
CIVIL
STATE OF CALIFORNIA

TITLE PAGE AND SITE LOCATION

San Mateo Co. Replacement Correctional Facility
Redwood City, California

WEST Environmental Services & Technology

DESIGNED BY	PM
APPROVED BY	PK
DATE	APR 2012

SHEET 1

GENERAL NOTES:

1. THE PLAN SHEETS ARE TO BE USED IN CONJUNCTION WITH THE FOLLOWING:
   A. CONTRACTOR'S INFORMATION PACKAGE
   B. REQUIREMENTS OF ALL PERMITS ISSUED BY AGENCIES WITH JURISDICTION FOR THIS PROJECT.
   C. SPECIFICATIONS FOR THIS PROJECT.

2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM THE' GROUND ELEVATIONS AND OVERALL TOPOGRAPHY OF THE SITE PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING IMMEDIATELY OF ANY DIFFERENCES IN TOPOGRAPHY FROM THAT SHOWN ON THIS PLAN WHICH MAY REQUIRE DIFFERENCES IN DESIGN AND/OR AFFECT THE WORK.

3. THE CONTRACTOR AND/OR SUBCONTRACTORS SHALL PREVENT THE FORMATION OF AN AIRBORNE DUST NUISANCE AT ALL TIMES.. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE DONE BY DUST FROM WORK ACTIVITIES PERFORMED FOR THIS CONTRACT. THE PRICES FOR THE VARIOUS ITEMS OF WORK SHALL INCLUDE PROVIDING ADEQUATE DUST CONTROL AS REQUIRED BY THE LOCAL AGENCY AND BAY AREA AIR QUALITY MANAGEMENT DISTRICT AND AS INCLUDED IN THE SPECIFICATIONS.

4. CAUTION: IMPROVEMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATIONS BASED ON INFORMATION AVAILABLE TO THE ENGINEER AT THE TIME OF PREPARATION OF THESE PLANS. THEIR LOCATIONS HAVE NOT BEEN VERIFIED IN THE FIELD AND NO GUARANTEE IS MADE TO THE ACCURACY OF THE INFORMATION SHOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXTENT AND LOCATION OF ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL NOTIFY UTILITY COMPANIES AT LEAST 48 HOURS IN ADVANCE OF CONSTRUCTION TO FIELD LOCATE UTILITIES. THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT 48 HOURS PRIOR TO ANY EXCAVATION TO DETERMINE THE FIELD LOCATIONS OF EXISTING UNDERGROUND UTILITIES. PHONE 1-800-642-7444. ANY ADDED COST ON THE PART OF THE CONTRACTOR AS A RESULT OF THE ACTUAL LOCATIONS OF EXISTING UTILITIES BEING DIFFERENTFROM THOSE SHOWN ON THE PLANS SHALL BE BORNE BY THE CONTRACTOR.

5. THE CONTRACTOR SHALL NOT LET ANY PROJECT RELATED MATERIAL ENTER THE SURFACE DRAINAGE SYSTEM

6. COORDINATES ARE BASED ON CALIFORNIA STATE PLANE COORDINATE SYSTEM NORTH AMERICAN VERTICAL DATUM 1988, ZONE 3.

7. ANY RELOCATION OF PUBLIC UTILTIES SHALL BE CONDUCTED IN ACCORDAINCE WITH ANY AND ALL REQUIREMENTS OF THE UTILITY COMPANY AFFECTED, INCLUDING FEES. BONDS, PERMITS ANO WORKING CONDITIONS, ETC. THIS WORK SHALL BE DONE AT NO EXPENSE TO THE LOCAL AGENCIES. THE CONTRACTOR SHALL PAY THE COST OF ALL FEES. BONDS, PERMITS, ETC.

8. EXCAVATION SHALL BE ADEQUATELY SHORED, BRACED AND SHEETED SO THAT THE EARTH WILL NOT SLIDE OR SETTLE AND SO THAT ALL EXISTING IMPROVEMENTS OF ANY KIND WILL BE FULLY PROTECTED FROM DAMAGE.' ANY DAMAGE RESULTING FROM A. LACK OF ADEQUATE SHORING, BRACING OR SHEETING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND HE SHALL EFFECT NECESSARY REPAIRS FOR RECONSTRUCTION AT HIS OWN EXPENSE. WHERE THE EXCAVATION FOR A CONDUIT TRENCH STRUCTURE IS 5 FEET OR MORE IN DEPTHTHE CONTRACTOR SHALL PROVIDE ADEQUATE SHEETING, SHORING AND BRACING OR EQUIVALENT METHOD FOR THE PROTECTION OF THE WORKERS. SAID PROTECTION SHALL CONFORM TO THE APPLICABLE CONSTRUCTION SAFETY ORDERS OF THE PROVISIONS FOR INDUSTRIAL SAFETY OF THE STATE OF CAUFORNIA. THE CONTRACTOR SHALL ALWAYS COMPLY WITH OSHA REQUIREMENTS.

9. THE CONTRACTOR SHALL PROVIDE ALL LIGHTS FLAGMAN OR OTHER DEVICES NECESSARY TO PROVIDE FOR SAFETY. B. THE CONTRACTOR SHALLPROVIDE ALL WEATHER VEHICULAR INGRESS AND EGRESS FOR PROPERTY ADJACENT TO WORK THROUGHOUT THE DURATION OF WORK.

10. ALL MATERIALS AND WORKMANSHIP SHALL FULLY CONFORM WITH THE SPECIFICATIONS, STANDARDS AND ORDINANCE OF SAN MATEO COUNTY AND THE CITY OF REDWOOD CITY. IF THE SPECIFICATIONS DO NOT ADDRESS AND ITEM, THE WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST STANDARD SPECIFICATIONS AND CONSTRUCTION DETAILS FROM STANDARD DRAWINGS OF THE CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS), UNLESS OTHERWISE NOTED IN THE PLANS OR SPECIFICATIONS.

11. THE CONTRACTOR SHALL VISIT THE SITE AND INSPECT THE PROJECT AREA AND THOROUGHLY FAMILIARIZE THEMSELVES WITH THE ACTUAL JOB CONDITONS PRIOR TO BIDDING AND THE START OF ANY WORK. FAILURE TO VISIT THE SITE SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING THE WORK IN ACCORDANCE WITH THESE DRAWINGS.

12. THE CONTRACTOR SHALL VERIFY AT THE SITE, ALL DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWINGS AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES, OMISSION, AND/OR CONFLICTS PRIOR TO PROCEEDING WITH THE WORK.

13. THE CONTRACTOR SHALL NOT SCALE DRAWINGS, DIMENSIONS SHALL GOVERN. LARGE SCALE DRAWINGS SHALL GOVERN OVER SMALL SCALE DRAWINGS. NOTE AND DETAILS ON THE DRAWINGS SHALL APPLY TO SIMILAR CONDITIONS WHETHER THEY ARE REPEATED OR NOT.

14. IN THE EVENT OF A CONFLICT BETWEEN THE PLANS AND SPECIFICATIONS, THE SPECIFICATIONS WILL TAKE PRECEDENCE.

SYMBOLS:

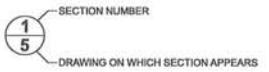
- SOIL SAMPLE LOCATION (WEST, 2010)
- SOIL GAS SAMPLE LOCATION (WEST, 2010)
- GROUNDWATER SAMPLE LOCATION (WEST, 2010)
- PROPERTY LINE / PARCEL BOUNDARIES
- SOIL AND GROUNDWATER LOCATION (EMCON, 1983)
- SOIL BORING LOCATION (CANONIE, 1984 & 1985
- SOIL BORING LOCATION (SEMCO/HK2S, 1996)
- TEST PIT (SEMCO/HK2S, 1996)
- SOIL AND GROUNDWATER SAMPLE (LAW/CRANDALL, 1996/1997)
- TEST PIT (RRM, 2004)
- SOIL BORING LOCATION (RRM, 2002 & 2006)
- MONITORING WELL (ABANDONED)
- SOIL SAMPLE (BALCH, 2006)
- SOIL BORING LOCATION (ARS, 2006)
- SOIL AND GROUNDWATER BORING LOCATION (ARS, 2006)
- NORTHINGS / EASTINGS
- EXCAVATION DEPTH IN FEET
- SANITARY SEWER
- STORM DRAIN
- WATER
- PROPERTY LINE
- MANHOLES
- DROP INLETS
- FH
- PG&E TRANSFORMER
- BUILDING
- GRAVEL OR DIRT ROAD (EXISTING)
- POWER POLES
- DEPRESSION
- TREE
- NEW ROADWAY
- A.C. PAVING
- FIRE HYDRANT
- PIPE CAP
- CLEANOUT
- FENCE
- ORIGINAL GROUND
- CONCRETE CHANNEL
- CUT/FILL SLOPE
- EXISTING UTILITY LINE
- EXISTING MANHOLE
- EXISTING CATCH BASIN
- FINAL CONTOURS
- EXISTING CONTOURS
- EXISTING UTILITY TO BE REMOVED
- FIRE WATER LINE
- NATURAL GAS
- WATER LINE
- ELECTRIC CONDUIT
- TELEPHONE CABLE
- POWER LINE
- RAILROAD TRACKS

ABBREVIATIONS:

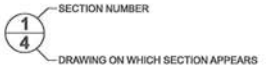
AB	AGGREGATE BASE
BLDG	BUILDING
BGS	BELOW GROUND SURFACE
BW	BOTTOM WIDTH
C	CENTER LINE
CB	CATCH BASIN
C-C	CENTER TO CENTER
CHNL	CHANNEL
CI	CHANNEL INVERT
CL	CLASS
CO	CLEAN OUT
CONC.	CONCRETE
CONST	CONSTRUCTION
CY	CUBIC YARDS
DIA	DIAMETER
DIST	DISTANCE
DWG	DRAWING
EA	EACH
EASE	EASEMENT
EDGE PAVG	EDGE OF PAVING
ELEV	ELEVATION
EMB	EMBANKMENT
EXC	EXCAVATION
EXIST	EXISTING
EJ	EXPANSION JOINT
FC	FENCE
FG	FINISHED GRADE
FL	FLOW LINE
FM	FORCE MAIN
FT	FOOT
HORIZ	HORIZONTAL
IB	IMPORTED BORROW
JT	JOINT
L	LEFT
LF	LINEAR FEET
LOC	LOCATION
LOL	LAYOUT LINE
LN	LINE
LP	LIGHT POLE
MAX	MAXIMUM
MIN	MINIMUM
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
P & A	PLUG AND ABANDON
PI	POINT OF INTERSECTION
PP	POWER POLE
PVMT	PAVEMENT
PVC	POLYVINYL CHLORIDE
R	RADIUS
REL	RELOCATE
RSP	ROCK SLOPE PROTECTION
RT	RIGHT
RW	RETAINING WALL
R/W	RIGHT OF WAY
ROW	RIGHT OF WAY
SD	STORM DRAIN
SEC	SECTION
SG	SUBGRADE
SHT	SHEET
SM	SELECTED MATERIAL
SS	SLOPE STAKE
STA	STATION
STD	STANDARD
SWPP	STORM WATER POLLUTION PREVENTION PLAN
TEMP	TEMPORARY WALL
TYP	TYPICAL
VAR	VARIES
W	WATER
X-SEC	CROSS SECTION

SECTION AND DETAIL NUMBERING SYSTEM

1. SECTION CUT REFERENCE



2. SECTION CUT SHOWN



3. DETAIL REFERENCE

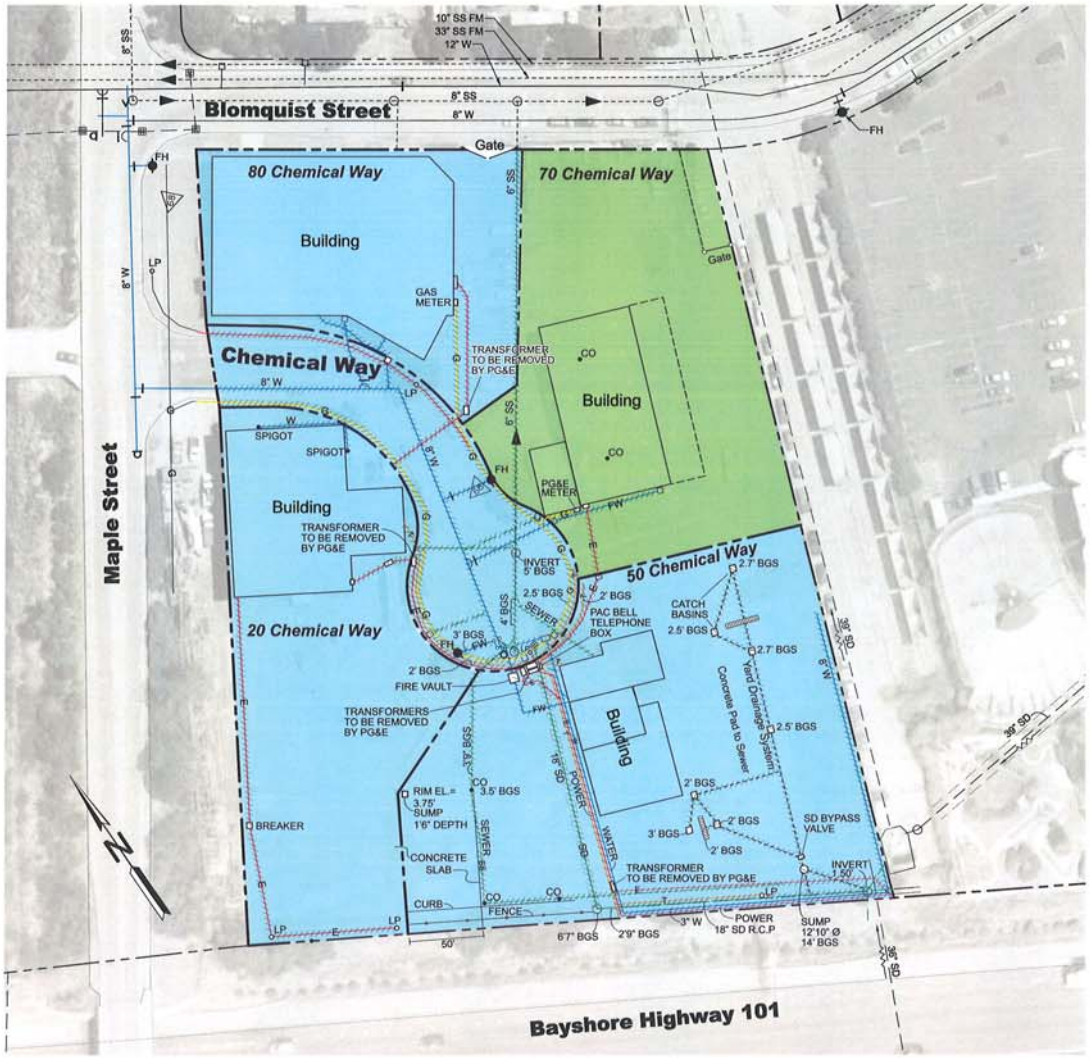
PLAN NOTES

San Mateo Co. Replacement Correctional Facility
Redwood City, California

WEST Environmental Services & Technology

DESIGNED BY	PM
APPROVED BY	PK
DATE	APR 2012

SHEET **2**



DEMOLITION NOTES:

1. ALL DEMOLITION WORK WILL BE WITHIN THE PROPOSED REPLACEMENT CORRECTIONAL FACILITY AREA, UNLESS OTHERWISE DIRECTED BY THE OWNER.
2. THIS PLAN SHOWS ONLY THE NECESSARY DEMOLITION WORK FOR UNDERGROUND SANITARY SEWERS, STORM DRAINS, AND WATER LINES IN THE PUBLIC ROW. ALL EXISTING SANITARY SEWERS, STORM DRAIN, AND WATER LINES WITHIN THE PROPOSED REPLACEMENT CORRECTIONAL FACILITY AREA WILL BE REMOVED, UNLESS OTHERWISE NOTED.
3. ALL UTILITIES ARE TO BE REMOVED TO THE BOUNDARY LINES, UNLESS OTHERWISE DIRECTED BY THE OWNER.
4. ALL UTILITIES ARE TO BE FIELD VERIFIED, IF REQUIRED, BY THE CONTRACTOR PRIOR TO DEMOLITION.
5. ALL DEBRIS WILL BECOME PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE DIRECTED BY THE OWNER. DEBRIS SHOULD BE OFF HAULED IN A SAFE AND LEGAL MANNER BY THE CONTRACTOR IN ACCORDANCE WITH AB939.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY AND OTHER AGENCIES HAVING JURISDICTION OVER PROPOSED WORK PRIOR TO STARTING THE DEMOLITION WORK.
7. CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO THE HOURS OF 7:00 AM TO 7:00 PM MONDAY THRU FRIDAY.
8. ALL TRENCHES OVER FIVE FEET IN DEPTH SHALL BE SHORED IN ACCORDANCE WITH CAL-OSHA "CONSTRUCTION SAFETY ORDERS" CURRENT EDITION. CONTRACTOR MUST HAVE VALID TRENCH SHORING PERMIT ISSUED BY CAL-OSHA.
8. CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL NECESSARY TRAFFIC CONTROL FOR INGRESS AND EGRESS TO AND FROM THE PROJECT SITE AS REQUIRED BY THE CITY AT ALL TIME DURING THIS WORK.
10. ALL HEAVY CONSTRUCTION TRAFFIC AND OFF-HAUL TRUCKS SHALL FOLLOW A DESIGNATED OFF-HAUL ROUTE APPROVED BY THE CITY ENGINEER.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE OWNER TO PROTECT OR REMOVE ALL OTHER OVERHEAD OR UNDERGROUND UTILITIES TO THE SATISFACTION OF THE OWNER.
12. PROPOSED DEMOLITION WILL BE PERFORMED IN PHASES.
13. MEASURE TO REDUCE ENERGY CONSUMPTION DURING DEMOLITION: THE PROJECT SHALL HAVE A WASTE MANAGEMENT PLAN FOR RECYCLING OF CONSTRUCTION AND DEMOLITION MATERIALS IN PLACE AND OPERATING AT THE BEGINNING OF THE PROJECT. THE PROJECT SHALL RECYCLE OR SALVAGE A MINIMUM OF 75 PERCENT (BY WEIGHT) OF CONSTRUCTION, DEMOLITION, AND LAND CLEARING WASTE.
14. FIRE HYDRANTS IN DEMOLITION AREA WILL NOT BE OPERATIONAL DURING PHASE 2 DEMOLITION.

EXPLANATION

- PHASE 1 DEMOLITION AREA
- PHASE 2 DEMOLITION AREA
- Building — BUILDING TO BE DEMOLISHED

REGISTERED PROFESSIONAL ENGINEER
PETER KRASNOFF
C44031
EXP. 6/30/13
CIVIL
STATE OF CALIFORNIA

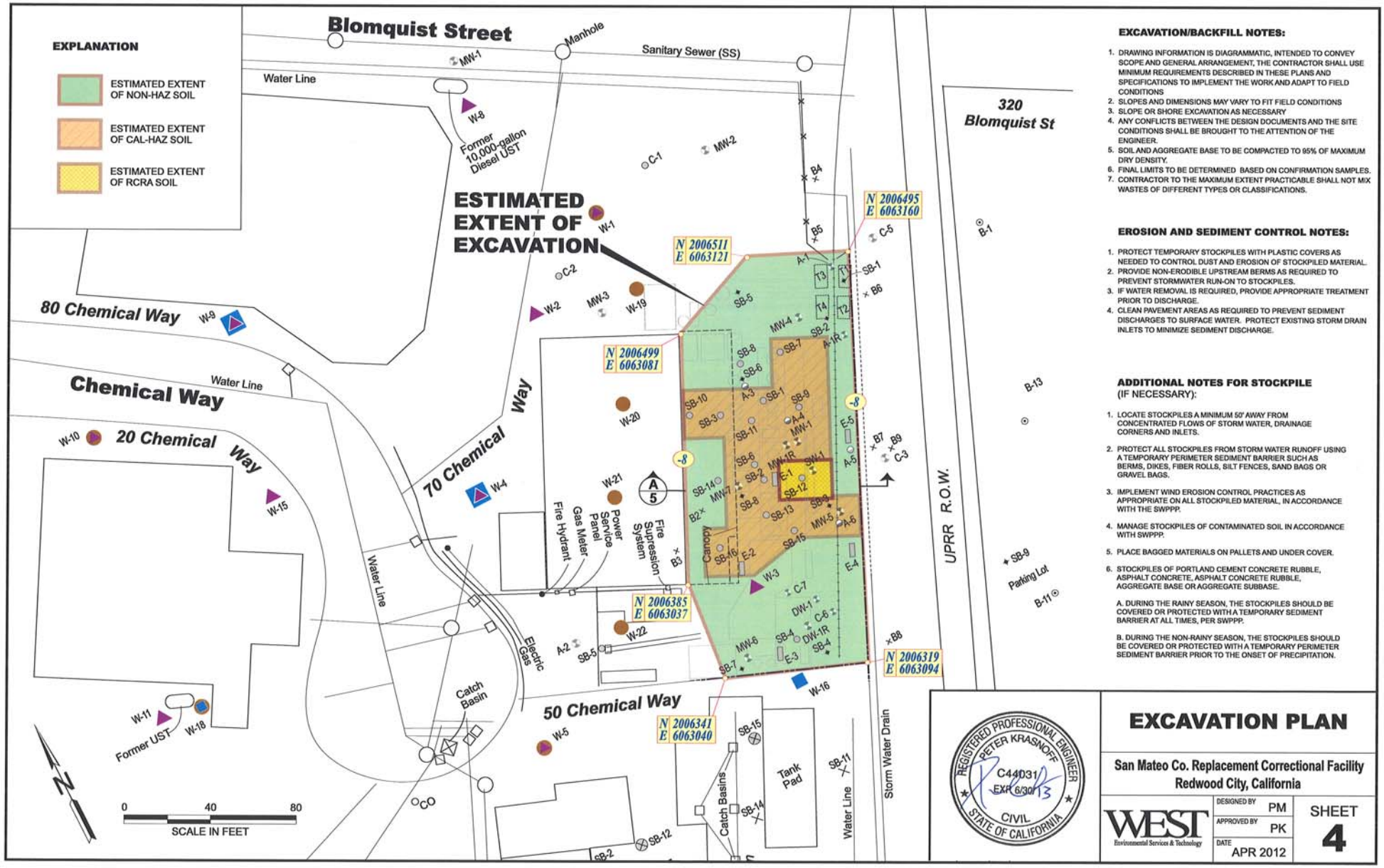
DEMOLITION PLAN

San Mateo Co. Replacement Correctional Facility
Redwood City, California

WEST Environmental Services & Technology

DESIGNED BY	PM
APPROVED BY	PK
DATE	APR 2012

SHEET 3



EXCAVATION/BACKFILL NOTES:

1. DRAWING INFORMATION IS DIAGRAMMATIC, INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT, THE CONTRACTOR SHALL USE MINIMUM REQUIREMENTS DESCRIBED IN THESE PLANS AND SPECIFICATIONS TO IMPLEMENT THE WORK AND ADAPT TO FIELD CONDITIONS
2. SLOPES AND DIMENSIONS MAY VARY TO FIT FIELD CONDITIONS
3. SLOPE OR SHORE EXCAVATION AS NECESSARY
4. ANY CONFLICTS BETWEEN THE DESIGN DOCUMENTS AND THE SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
5. SOIL AND AGGREGATE BASE TO BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY.
6. FINAL LIMITS TO BE DETERMINED BASED ON CONFIRMATION SAMPLES.
7. CONTRACTOR TO THE MAXIMUM EXTENT PRACTICABLE SHALL NOT MIX WASTES OF DIFFERENT TYPES OR CLASSIFICATIONS.

EROSION AND SEDIMENT CONTROL NOTES:

1. PROTECT TEMPORARY STOCKPILES WITH PLASTIC COVERS AS NEEDED TO CONTROL DUST AND EROSION OF STOCKPILED MATERIAL.
2. PROVIDE NON-ERODIBLE UPSTREAM BERMS AS REQUIRED TO PREVENT STORMWATER RUN-ON TO STOCKPILES.
3. IF WATER REMOVAL IS REQUIRED, PROVIDE APPROPRIATE TREATMENT PRIOR TO DISCHARGE.
4. CLEAN PAVEMENT AREAS AS REQUIRED TO PREVENT SEDIMENT DISCHARGES TO SURFACE WATER. PROTECT EXISTING STORM DRAIN INLETS TO MINIMIZE SEDIMENT DISCHARGE.

ADDITIONAL NOTES FOR STOCKPILE
(IF NECESSARY):

1. LOCATE STOCKPILES A MINIMUM 50' AWAY FROM CONCENTRATED FLOWS OF STORM WATER, DRAINAGE CORNERS AND INLETS.
2. PROTECT ALL STOCKPILES FROM STORM WATER RUNOFF USING A TEMPORARY PERIMETER SEDIMENT BARRIER SUCH AS BERMS, DIKES, FIBER ROLLS, SILT FENCES, SAND BAGS OR GRAVEL BAGS.
3. IMPLEMENT WIND EROSION CONTROL PRACTICES AS APPROPRIATE ON ALL STOCKPILED MATERIAL, IN ACCORDANCE WITH THE SWPPP.
4. MANAGE STOCKPILES OF CONTAMINATED SOIL IN ACCORDANCE WITH SWPPP.
5. PLACE BAGGED MATERIALS ON PALLETS AND UNDER COVER.
6. STOCKPILES OF PORTLAND CEMENT CONCRETE RUBBLE, ASPHALT CONCRETE, ASPHALT CONCRETE RUBBLE, AGGREGATE BASE OR AGGREGATE SUBBASE.

   A. DURING THE RAINY SEASON, THE STOCKPILES SHOULD BE COVERED OR PROTECTED WITH A TEMPORARY SEDIMENT BARRIER AT ALL TIMES, PER SWPPP.

   B. DURING THE NON-RAINY SEASON, THE STOCKPILES SHOULD BE COVERED OR PROTECTED WITH A TEMPORARY PERIMETER SEDIMENT BARRIER PRIOR TO THE ONSET OF PRECIPITATION.

REGISTERED PROFESSIONAL ENGINEER
PETER KRASNOFF
C44031
EXP 6/30/13
CIVIL
STATE OF CALIFORNIA

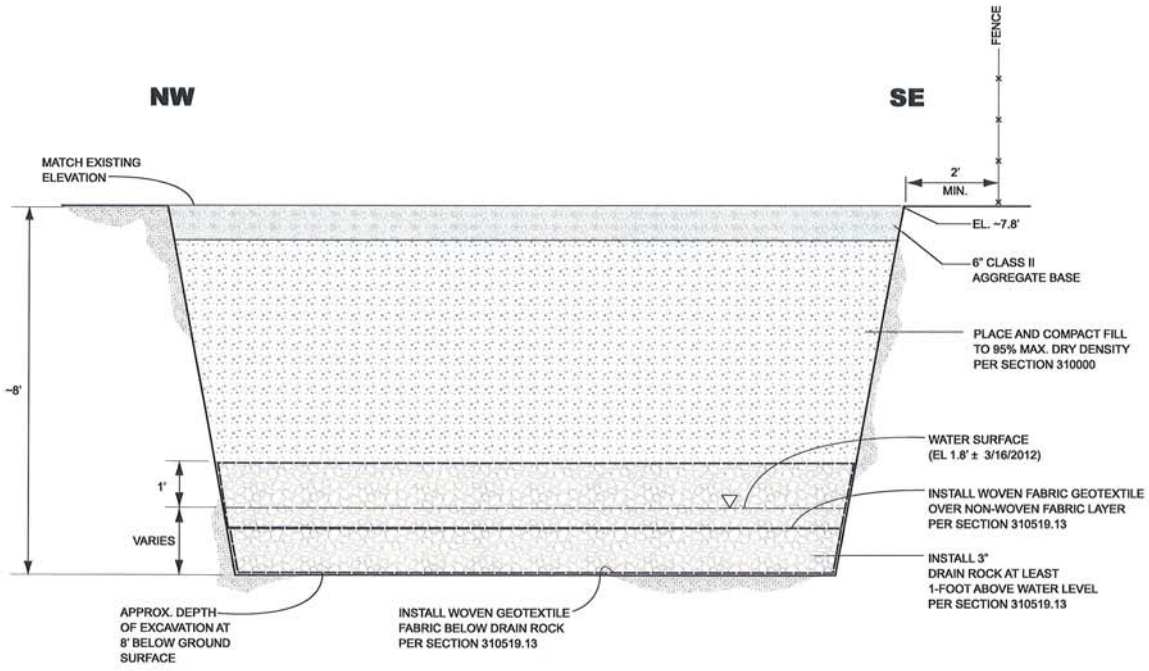
EXCAVATION PLAN

San Mateo Co. Replacement Correctional Facility
Redwood City, California

WEST Environmental Services & Technology

DESIGNED BY	PM
APPROVED BY	PK
DATE	APR 2012

SHEET 4



A -- **BACKFILL DETAILS**

N.T.S.

EXCAVATION/BACKFILL NOTES:

1. DRAWING INFORMATION IS DIAGRAMMATIC, INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT, THE CONTRACTOR SHALL USE MINIMUM REQUIREMENTS DESCRIBED IN THESE PLANS AND SPECIFICATIONS TO IMPLEMENT THE WORK AND ADAPT TO FIELD CONDITIONS
2. SLOPES AND DIMENSIONS MAY VARY TO FIT FIELD CONDITIONS
3. SLOPE OR SHORE EXCAVATION AS NECESSARY
4. ANY CONFLICTS BETWEEN THE DESIGN DOCUMENTS AND THE SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
5. SOIL AND AGGREGATE BASE TO BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY.

EROSION AND SEDIMENT CONTROL NOTES:

1. PROTECT TEMPORARY STOCKPILES WITH PLASTIC COVERS AS NEEDED TO CONTROL DUST AND EROSION OF STOCKPILED MATERIAL.
2. PROVIDE NON-ERODIBLE UPSTREAM BERMS AS REQUIRED TO PREVENT STORMWATER RUN-ON TO STOCKPILES.
3. IF WATER REMOVAL IS REQUIRED, PROVIDE APPROPRIATE TREATMENT PRIOR TO DISCHARGE.
4. CLEAN PAVEMENT AREAS AS REQUIRED TO PREVENT SEDIMENT DISCHARGES TO SURFACE WATER. PROTECT EXISTING STORM DRAIN INLETS TO MINIMIZE SEDIMENT DISCHARGE.

REGISTERED PROFESSIONAL ENGINEER
PETER KRASNOFF
C44031
EXP. 6/30/13
CIVIL
STATE OF CALIFORNIA

BACKFILL SECTION

San Mateo Co. Replacement Correctional Facility
Redwood City, California

WEST Environmental Services & Technology

DESIGNED BY	PM
APPROVED BY	PK
DATE	APR 2012

SHEET 5

SITE MANAGEMENT PLAN
20 to 80 Chemical Way
Redwood City, California

December 2010

Prepared for

City of Redwood City
1017 Middlefield Road
Redwood City, California

Prepared by

WEST
Environmental Services & Technology
711 Grand Avenue, Suite 220
San Rafael, California 94901
415/460-6770 Fax 415/460-6771
main@westenvironmental.com

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All engineering information, conclusions and recommendations contained in this report have been prepared by a California Professional Engineer. All hydrogeologic and geologic information, conclusions and recommendations contained in this report have been prepared by a California Professional Geologist.

Peter M. Krasnoff
California Registered Civil Engineer (44031)

REGISTERED PROFESSIONAL ENGINEER
PETER KRASNOFF
C44031
EXP. 6/30/11
CIVIL
STATE OF CALIFORNIA

12/9/10
Date

Peter E. Morris
California Professional Geologist (7084)

PROFESSIONAL GEOLOGIST
PETER E. MORRIS
7084
Exp. 4/30/11
STATE OF CALIFORNIA

12/9/10
Date

1.0 INTRODUCTION

This *Site Management Plan* ("*SMP*") has been prepared by West Environmental Services & Technology, Inc., (WEST) on behalf of the City of Redwood City for the proposed San Mateo County correctional facility to be located on the assemblage of properties at 20 to 80 Chemical Way in Redwood City, California ("Site;" Figure 1-1). This *SMP* details procedures and protocols to be implemented during Site development activities to address residual petroleum hydrocarbons, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) and metals in soil, soil gas and groundwater. The *SMP* includes: Site description; summary of investigations; a Conceptual Site Model (CSM); risk assessment; and a description of soil, soil gas and groundwater management measures to be implemented during and after Site development.

1.1 BACKGROUND

The San Mateo County's Sheriff's Office is considering relocating existing correctional facilities to a replacement jail facility at 20 to 80 Chemical Way in Redwood City, California ("the Site"). The new facilities would include a 768-bed jail with administrative and support services (e.g., food service, laundry, etc.).

The approximately 4.5-acre Site is at an elevation of approximately 10-feet above Mean Sea Level. Prior to the 1950s, the Site was marshlands associated with the San Francisco Bay. A review of historical aerial photographs and topographic maps indicated that beginning in the 1950s, the Site and surrounding marshlands were filled and a wastewater treatment plant was constructed adjacent to the west-northwest. In the 1960s, US Highway 101 was constructed along the southern edge of the Site.

Beginning in 1967, the Site was developed as an industrial park including: steel fabrication and truck repair (20 Chemical Way); chemical storage, mixing and/or distribution (50 and 70 Chemical Way); and truck parts distribution (80 Chemical Way).

Investigations of environmental conditions on the properties comprising the Site began in the early-1980s. Previous investigations on 20, 50 and 80 Chemical Way have focused primarily on the characterization of potential releases from fueling underground storage tanks (USTs). Investigations at 50 Chemical Way were also conducted as part of the closure of hazardous material storage permits issued by San Mateo County. Investigations and remedial actions at 70 Chemical Way have focused on documented releases from historical chemical mixing and distribution operations. In 2010, WEST performed Site-wide Phase I and Phase II Environmental Site Assessments to identify and address data gaps in previous characterizations of Site conditions.

The evaluation of the Site investigation findings revealed that 20, 50 and 80 Chemical Way did not contain chemicals in soil, soil gas or groundwater above health-based screening levels, indicating that no remedial actions are necessary prior to development of the new jail facility. Sampling did reveal the presence of methane on 20, 50 and 70 Chemical Way above action levels that indicate mitigation measures are appropriate. The methane has been attributed to the natural decay of organic matter in the subsurface. Evaluations of the investigation findings on 70 Chemical Way confirmed that soil removal, continued use of hardscape covering and vapor mitigation measures are appropriate to address residual chemicals present in shallow soil, soil gas and groundwater on a limited portion of the property.

The anticipated future Site development activities include: Site grading and excavation of trenches in preparation for installation of utilities prior to aboveground construction. This *SMP* includes: a summary of the soil, soil gas and groundwater conditions; and procedures for the management of soil encountered during construction activities or other activities that might disturb soil; and institutional and engineering controls, including land-use restrictions that will be used to reduce potential risks from exposures associated with residual chemicals in the subsurface.

1.2 SMP ORGANIZATION

This *SMP* is organized as follows:

- Site Description (Section 2.0);
- Summary of Investigations (Section 3.0);
- Data Evaluation (Section 4.0);
- Soil Management (Section 5.0);
- Vapor Management (Section 6.0);
- Groundwater Management (Section 7.0);
- Notification Procedures (Section 8.0); and
- Monitoring and Maintenance Program (Section 9.0).

2.0 SITE DESCRIPTION

The approximately 4.5-acre Site includes 20 to 80 Chemical Way in Redwood City, California with an elevation of approximately 10-feet above Mean Sea Level (Figure 2-1). The Site is comprised of six parcels with Assessors Parcel Numbers (APNs): 052-0392-240 and 052-392-270 (20 Chemical Way); 052-392-260 and 052-392-210 (50 Chemical Way); 052-392-220 (70 Chemical Way); and 052-392-190 (80 Chemical Way). Site features include: warehouse and steel fabrication buildings; compressed gas aboveground storage tanks (ASTs); paved parking areas; and underground utilities. The Site is bounded by: Maple Street to the west; Blomquist Street to the north; Union Pacific Railroad (UPRR) right-of-way and the Malibu Family Fun Center to the east and Highway 101 to the south.

2.1 SITE DEVELOPMENT PLAN

The Site is being developed for the San Mateo County Sheriff's detention facility or the Maple Street Replacement Facility (MSRF). The MSRF as proposed would be a 270,000 square-foot multi-story facility with a footprint of approximately 90,000-square-feet and contain facilities for 768 male and female inmates. The buildings for the proposed facility will include: a six-story building with alternating mezzanine levels and secure inmate areas; and a two-story building for non-secure inmates, administrative, support services and food services. The two buildings will be connected by a two-story corridor divided into non-secure and secure areas. Copies of preliminary Site development plans are included in Appendix A.

At this time, there are conceptual drawings that show the two-story food and support services portion of the facility constructed on portions of 70 and 80 Chemical Way. The six-story secure inmate building is shown constructed on portions of 70 and 50 Chemical Way. A paved surface parking area is currently planned for 20 Chemical Way providing 164 parking spaces for both visitors and San Mateo County Sheriff's Office employees. In addition, a paved service entrance area is shown on a portion of 70 Chemical Way adjacent to the support and food services building to facilitate deliveries.

2.2 GEOLOGICAL AND HYDROGEOLOGICAL SETTING

2.2.1 Geology

The Site is located near the San Francisco Bay within the Coast Ranges Geomorphic Province and is underlain by fill material, marine sediments and alluvial deposits. The Site geology consists of fill composed of silts and silty clays to a depth ranging between approximately 2-feet to 9.5-feet below ground surface. The fill is underlain by soft to stiff low permeable clays, e.g., Bay Mud to a depth of approximately 19.5-feet below ground surface (Canonie, 1989). Unconsolidated alluvial deposits of interbedded silty sands, gravelly sands, and sandy silts have been encountered in borings advanced at the Site underlying the Bay Mud to a depth of approximately 30-feet below ground surface (Canonie, 1989).

2.2.2 Hydrogeology

The Site has been characterized as being underlain by two water-bearing zones. The shallow water-bearing zone is located within the interface between the fill and Bay Mud at approximately 6-feet to 10-feet below ground surface. The deeper water-bearing zone is present within the unconsolidated and interbedded silty sands and sandy silts between approximately 20-feet to 30-feet below ground surface (Canonie, 1989).

In March 2009, the depth to groundwater measured within shallow groundwater monitoring wells constructed at 70 Chemical Way ranged between 3.87-feet to 9.21-feet below ground surface. The depth to groundwater measured within deeper groundwater monitoring wells ranged between 7.20-feet to 7.82-feet below ground surface (RRM, 2009). The groundwater flow direction within the shallow groundwater varies between the southeast, west and northwest beneath portions of the Site. The groundwater gradient in the shallow zone ranges between approximately 0.02-feet per foot to 0.09-feet per foot (RRM, 2009a). In the deeper water-bearing zone, the groundwater flow direction was calculated to the southeast at an approximate gradient of 0.004-feet per foot (RRM, 2009a).

2.3 SURFACE WATER

Storm water runoff is drained to catch basins, which are connected to the Oddstad Pump Station located adjacent to the southeast corner of the Site and discharges storm water to Redwood Creek. Redwood Creek is located approximately 800-feet north-northwest of the Site. Redwood Creek flows into the San Francisco Bay, which is located approximately 1.5-miles to the north.

2.4 HISTORICAL SITE USES

Prior to the 1950s, the Site was marshlands associated with the San Francisco Bay. A review of historical aerial photographs and topographic maps indicated that beginning in the 1950s, the Site and surrounding marshlands were filled and a wastewater treatment plant was constructed to the west-northwest of the Site (EDR, 2010; Appendix B). In the 1960s, US Highway 101 was constructed along the southern edge of the Site. Beginning in 1967, the Site was developed as an industrial park for uses including: steel fabrication and truck repair (20 Chemical Way); chemical storage, mixing and distribution (50 and 70 Chemical Way); and truck parts distribution (80 Chemical Way).

2.4.1 20 Chemical Way

Between 1968 and 1996, the Ray Wright Steel Company/Welding Shop conducted steel fabrication and truck repair operations on 20 Chemical Way. The facilities at 20 Chemical Way consisted of: an office; fabrication/welding shop; gantry crane; and a laydown yard (CRC, 2010). In addition, an underground storage tank (UST) was also used at 20 Chemical Way. Hazardous wastes generated as part of the Ray Wright Steel Company operations included: waste oils; paints; and thinners. Diesel fuel was also reportedly stored onsite in an AST (SMCHD, 2010). In 1986, the UST was reportedly removed from 20 Chemical Way.

From approximately 1990 to the present, Continental Tool Company operated a subsurface drilling services company at 20 Chemical Way (EDR, 2010). Operations associated with

Continental Tool Company include: equipment maintenance; equipment repair and steel fabrication of drilling tools. Continental Tool maintains a permit with San Mateo County to store and generate hazardous wastes (SMCHD, 2010). In 2006, San Mateo Count Health Department (SMCHD) inspectors noted that gasoline cans were stored on the ground and that equipment was washed down on the pavement at 20 Chemical Way. In 2008, a diesel spill from a forklift owned and operated by Continental Tool occurred within Chemical Way (SMCHD, 2010).

2.4.2 50 Chemical Way

Between 1968 and 1996, Pressure Vessel Services (PVS) operated a chemical distribution business at 50 Chemical Way (PVS, 1985). PVS stored and distributed acids and caustics, manufactured bleach from liquid chlorine and bottled chlorine solution for swimming pool use (SMCHD, 1970). PVS' operations included: office and warehouse building; 1,000-gallon diesel UST; chemical ASTs; and a loading area. Chemicals stored in the ASTs at 50 Chemical Way included: hydrochloric acid (HCl); sulfuric acid (H_2SO_4); nitric acid (HNO_3); and sodium hydroxide (NaOH). The ASTs were filled in a loading area by delivery trucks. The loading area included a concrete gutter that ran beneath the ASTs.

In March 1970, a SMCHD inspection at 50 Chemical Way, as part of the investigation of the Oddstad Pump Station (located adjacent to 50 Chemical Way) revealed that while housekeeping is "excellent...spillage and wash down water from trucks after [acid] loading runs into this gutter and is drained to the storm sewer" and that staining from chemical spills was present (SMCHD, 1970). The SMCHD recommended a cease and desist order to PVS regarding "clean-up or processing chemicals, overflow and drainage from washdown." In 1986, PVS upgraded its washdown and storm water collection system, installed additional chemical ASTs; and gasoline and diesel fuel ASTs. In addition, PVS abandoned in-place the 1,000-gallon diesel UST. In September 1992, approximately 70 gallons of phosphoric acid, nitric acid and water were spilled at 50 Chemical Way (PVS, 1992).

In 1996, PVS ceased operations and leased 50 Chemical Way to B&R Welding for steel fabrication and truck repair operations. In 2006, the previously abandoned in-place 1,000-gallon diesel UST was removed with oversight from the SMCHD (Balch, 2006). The SMCHD granted case closure for the 1,000-gallon diesel UST in January 2007 (SMCHD, 2007). Since approximately 2008, Airgas has operated a compressed gases distribution facility at 50 Chemical Way.

2.4.3 70 Chemical Way

Between 1967 and 1993, Willard Products operated a chemical storage, mixing and distribution business at 70 Chemical Way. Chemicals were stored in ASTs and drums. The chemicals included: petroleum naphtha; xylenes; lacquer thinner; gasoline; alcohols; pentachlorophenol (PCP); formaldehyde; germicides; acids; solvent-based water proofing; iodine; and ammonia. In 1982, the California Environmental Protection Agency's Department of Toxic Substances Control (DTSC, formerly the Department of Health Services), required investigations of potential releases to soil and groundwater from operations at 70 Chemical Way.

Investigations conducted between 1983 and 1985 revealed that soil and groundwater had been impacted. Subsequently, a Remedial Action Plan (RAP) was developed in 1988, which recommended: groundwater extraction and treatment; capping with asphalt; and installation of a slurry wall around 70 Chemical Way. The slurry wall was reportedly never installed. In 1990, DTSC issued Corrective Action Order HWCA 90/91-014, requiring land use covenants be recorded and implementation of the RAP. In August 1990, Land Use Controls (LUCs) in the form of a *Covenant to Restrict Use of the Property* (CRUP) were recorded, which restricts development of single-family residential dwellings, hospitals, day care centers, senior living facilities or schools at 70 Chemical Way (CRUP, 1990).

In April 1993, Willard Products discontinued operations at 70 Chemical Way. In October 1993, DTSC transferred regulatory oversight to the California Regional Water Quality Control Board – San Francisco Bay Region (Regional Board). Between 1993 and 1996, the Regional Board

required additional groundwater investigations to define the lateral and vertical extent of groundwater impacts. In 1996, Semco/H2K on behalf of Chem-Away, prepared an Interim RAP for: free-product removal near the railroad spur; and treatability studies for remediation of PCP and xylenes in soil.

Between 2002 and 2009, Kona Ventures conducted additional groundwater investigations and proposed soil excavation within the former chemical storage areas. In addition, DTSC has conducted Site inspections, which have noted that the asphalt cap was in need of repair (DTSC, 2009).

2.4.4 80 Chemical Way

Between approximately the 1960s and 1990, Crown Truck Parts operated a truck part distribution warehouse at 80 Chemical Way (EDR, 2010; City of Redwood City, 2010). In 1979, a 10,000-gallon fiberglass diesel UST was installed at 80 Chemical Way for truck fueling. In 1989, the diesel UST was removed from 80 Chemical Way. Laboratory analysis of a soil sample collected from the base of the UST excavation did not reveal total petroleum hydrocarbons (TPH) or volatile organic compounds (VOCs).

Laboratory analysis of a water sample collected from the UST excavation revealed TPHd at 12,000 micrograms per liter (µg/l) and benzene at 11 µg/l. In 1989, a groundwater monitoring well was installed near the former UST. Shallow groundwater has been encountered beneath the Site between 5-feet and 10-feet below ground surface (RRM, 2009). Laboratory analysis of groundwater samples collected from the monitoring well did not reveal TPH or VOCs above laboratory reporting limits. In 1991, the SMCHD granted case closure of the 10,000-gallon UST (SMCHD, 1991).

2.5 CURRENT USES OF NEIGHBORING PROPERTIES

Operations conducted on properties surrounding the Site have included: Malibu Grand Prix/Family Fun Center at 320 and 340 Blomquist Street; South Bayside System Authority (SBSA) Redwood City Pump Station at 1581 Maple Street; City of Redwood City Police Department at 1301 Maple Street; and the Granite Rock asphalt and concrete plant at 355 and 365 Blomquist Street.

3.0 SUMMARY OF INVESTIGATIONS

Soil and groundwater investigations and remedial actions have been conducted at the Site between 1983 and 2009. In 2010, WEST performed Site-wide Phase I and Phase II Environmental Site Assessments. Summaries of the investigations and remedial actions are presented chronologically below by property. The soil, soil gas and groundwater analytical results are summarized in Tables 3-1 to 3-16. The sample locations are depicted on Figure 3-1 with identification of the year conducted and associated consulting firm.

3.1 PREVIOUS INVESTIGATIONS

Previous investigations on 20, 50 and 80 Chemical Way have focused primarily on the characterization of potential releases from fueling USTs. Investigations at 50 Chemical Way were also conducted as part of the closure of hazardous material storage permits issued by San Mateo County. Investigations and remedial actions at 70 Chemical Way have focused on documented releases from historical operations. A summary of the previous investigation and remediation activities is presented below.

3.1.1 20 Chemical Way

In 1986, SMCHD records indicated that a petroleum UST was removed from 20 Chemical Way (SMCHS, 2010). Information regarding the size, UST contents or environmental sampling data was not available from the SMCHD.

3.1.2 50 Chemical Way

3.1.2.1 UST ABANDONMENT – 1986

In June 1986, PVS abandoned in-place a 1,000-gallon diesel UST at 50 Chemical Way under a permit from SMCHD (SMCHD, 1986). Prior to abandonment, the UST tested tight (PVS,

1994). The empty tank, pump lines and vents were packed with a sand-concrete slurry mix (PVS, 1986).

3.1.2.2 PVS Surface Closure – 1996

In 1996, PVS ceased operations at 50 Chemical Way and conducted surface closure of its hazardous waste and hazardous materials storage areas under permit with the SMCHD (PVS, 1996). The closure activities included equipment decontamination, removal and relocation offsite of aboveground acid holding tanks and disposal of associated plastic piping. The storage tanks and piping were rinsed and the wastewater discharged to the onsite neutralization sump where wastewater was treated and discharged to the sewer. The neutralization sump was not decommissioned and remains in-place at 50 Chemical Way.

3.1.2.3 ARS Phase I ESA – 2006

In April 2006, Applied Remedial Services, Inc. (ARS) conducted an environmental site assessment (ESA) at 50 Chemical Way in Redwood City, California. The ESA included a review of the property's history, a site visit and a records search. The ESA reported that a 1,200-gallon diesel UST and a 5,000-gallon neutralization sump were present at the property. In addition, the ESA identified that two spills occurred at 50 Chemical Way in 1992 including: 2,500-gallons of nitric acid; and diesel sheen on water in the storage area (ARS, 2006a).

3.1.2.4 ARS Phase II Sampling – 2006

In June 2006, ARS collected soil and groundwater samples at 50 Chemical Way. Analysis of soil samples collected from 4.5-feet below ground surface in the area of the former 1,000-gallon diesel UST revealed TPH as motor oil (TPHmo) at 750 milligrams per kilogram (mg/kg) and 620 mg/kg adjacent to the former diesel AST. Soil samples were also collected for metals analysis and revealed the presence of copper, nickel, lead and zinc (ARS, 2006b). Lead was also detected at 450 mg/kg in a sediment sample SB-7 collected from a catch basin (ARS, 2006b).

3.1.2.5 BALCH UST REMOVAL – 2006

In November 2006, Balch Petroleum Contractors and Builders, Inc. (Balch) removed the previously abandoned in-place 1,000-gallon diesel UST. No holes or damage was observed in the UST. Laboratory analysis of soil samples collected from the base of the excavation revealed total petroleum hydrocarbons as diesel (TPHd) at 4.7 mg/kg and 9.0 mg/kg (Balch, 2006). In January 2007, the SMCHD granted case closure for the 1,000-gallon diesel UST (SMCHD, 2007).

3.1.3 70 Chemical Way

3.1.3.1 EMCON INVESTIGATION – 1983

In 1983, Emcon Associates (Emcon) conducted preliminary investigations to characterize the soil and groundwater conditions on 70 Chemical Way (Canonie, 1989). Emcon advanced borings: along the east side of the property; beneath the railway tracks; and near the mixing and holding tanks.

3.1.3.2 CANONIE SUPPLEMENTAL INVESTIGATIONS - 1984

In 1984, Canonie Engineers (Canonie) submitted its *Summary Report* to DTSC detailing the findings from the supplemental soil and groundwater investigations conducted at 70 Chemical Way (Canonie, 1984). The supplemental investigations were conducted to further characterize the subsurface conditions at and adjacent to 70 Chemical Way. The investigations conducted by Canonie included: advancing borings for soil sampling; installation of groundwater monitoring wells; and groundwater monitoring well sampling.

3.1.3.3 CANONIE FEASIBILITY STUDY – 1985

In January 1985, Canonie submitted its *Feasibility Study* (*FS*) to the California Department of Health Services (currently DTSC). The *FS* summarized the investigations and evaluated

remedial alternatives to address the Site conditions (Canonie, 1985). The remedial alternatives included: continued groundwater monitoring; installation of a pavement cap; removal of the neutralization sump; soil removal in the mixing tank area; soil removal along the railroad spur; and installation of a groundwater interceptor trench. In addition, Willard Products recommended that deed restrictions limiting the property to commercial/industrial use be adopted. Based on the lack of offsite chemical migration in groundwater, Canonie recommended that the final remedial alternative include: removal of the neutralization sump; installation of a paved cap; and additional sampling in the mixing tank area.

3.1.3.4 CANONIE SURFACE INVESTIGATION OF MIXING TANK AREA REPORT – 1985

In May 1985, Canonie conducted supplemental investigations in the mixing tank area at 70 Chemical Way (Canonie, 1985). The investigation was conducted to characterize the nature and extent of chemicals in soil within the mixing tank area. The findings from the soil investigation indicated that approximately 650 cubic yards of soil containing pentachlorophenol (PCP) above 100 mg/kg were present within the mixing tank area. A separate-phase liquid was also observed in one boring, SB-12, which was characterized to contain wood preservative chemicals including PCP. Canonie also conducted a groundwater study, which concluded that measurable offsite groundwater migration was not occurring.

In addition, Canonie presented the recommended remedial alternative, which reflected DTSC's policy change for reducing the disposal volume of soil containing PCP in landfills. The recommended remedial alternative presented by Canonie included: removal of the neutralization sump; installation of a slurry wall; and groundwater extraction and treatment.

3.1.3.5 KLEINFELDER PRE-FEASIBILITY STUDY – 1987

In 1987, Kleinfelder conducted a pre-feasibility study to evaluate biodegradation as a potential remedial technology to address PCP in soil and groundwater at 70 Chemical Way. Based on its evaluation, Kleinfelder concluded that biodegradation had the potential to be effective in

reducing PCP concentrations in soil. However, Kleinfelder recommended that field studies be conducted to obtain Site-specific data on the efficacy of biodegradation of PCP (Kleinfelder, 1987).

3.1.3.6 CANONIE REMEDIAL ACTION PLAN – 1988

In 1988, Canonie prepared its *Remedial Action Plan* (*RAP*), which presented a summary of the investigations conducted and the recommended remedial alternative to address chemicals in soil and groundwater at 70 Chemical Way (Canonie, 1988). The recommended remedial alternative developed by Canonie included two phases: Phase 1 - capping and groundwater extraction and treatment; and Phase 2 - installation of a slurry wall. In February 1989, DTSC approved the *RAP*.

In June 1989, DTSC certified the completion of remedial actions stating, "groundwater extraction and treatment system and a cap have been installed (DHS, 1989c). The system is not yet operational due to problems obtaining the necessary discharge permit. If necessary, a slurry wall may be installed at a later date." In addition, deed restrictions were proposed for 70 Chemical Way.

In 1990, DTSC issued *Corrective Action Order HCWA 90/91-014*, which required the adoption of deed restrictions and the performance of quarterly groundwater monitoring (DHS - TSCP, 1990). In August 1990, a Covenant to Restrict Use of Property (CRUP) was recorded with the San Mateo County Assessors Office for the parcel comprising 70 Chemical Way. The CRUP restricted development or use of the property to activities that would limit potential exposure to chemicals of concern. In addition, the CRUP required "[n]o production wells shall be drilled without the express written approval of DTSC and any other agency with jurisdiction."

In October 1993, following completion of remedial actions, regulatory oversight was transferred from DTSC to the California Regional Water Quality Control Board – San Francisco Bay Region

(Regional Board), as the releases at 70 Chemical Way primarily affected groundwater (Regional Board, 1993).

3.1.3.7 SURFACE CLOSURE PLAN – 1993

In 1993, in response to the SMCHD and during the interim between DTSC and Regional Board oversight, ERM EnviroClean-West, Inc. (ERM), conducted activities to closeout the aboveground hazardous waste and hazardous material storage areas. The closure activities performed at the property included: decontamination and removal of hazardous materials, equipment and building materials; pumping and cleaning of sumps; verification sampling; and covering the property with an asphalt "chip seal" (ERM, 1994). The asphalt "chip seal" consisted of a bituminous slurry material, containing no gravel or rock aggregate, which was applied to the outdoor portions of the property. Prior to application of the surface seal, surface drains were grouted.

3.1.3.8 SEMCO REMEDIAL INVESTIGATION REPORT – 1996

In June 1996, Semco on behalf of Chem-Away, Inc., conducted additional investigations at 70 Chemical Way, to comply with the requirements in the CRUP (Semco, 1996a). The investigations included: soil sampling; exploratory trenching; and groundwater sampling. Semco summarized the findings of the June 1996 investigations in its July 1996 *Remedial Investigation Report.* Semco concluded that: the upper and lower water-bearing zones have been impacted; however, the upper zone more than the lower zone as the water bearing zones are separated by low-permeable Bay Mud; and that "very little migration of contaminants has occurred."

3.1.3.9 SEMCO INTERIM REMEDIAL ACTION PLAN – 1996

In 1996, Semco, on behalf of Chem-Away, Inc., prepared an *Interim Remedial Action Plan* (*IRAP*) to develop a phased approach for remediating the affected portions of 70 Chemical Way (Semco, 1996b). Based on evaluation of the soil and ground water conditions, Semco concluded

that the "primary chemicals detected…in the subsurface were limited to the repackaging areas, the railroad track area, and the mixing and holding tanks area."

Semco presented interim measures in the *IRAP*, which included: free product removal near the railroad track; and treatability studies for addressing PCP in soil within the mixing tank area, due to the restriction for disposal of PCP-laden soil in California. In December 1996, the Regional Board provided comments on the Semco *RI Report* and granted conditional approval of the *IRAP* (Regional Board, 1996).

3.1.3.10 SEMCO – SITE CHARACTERIZATION WORK PLAN – 1998

In 1998, Semco prepared a work plan to conduct additional soil and groundwater investigations. Semco indicated in the work plan that the interim remedial actions outlined in the *IRAP* had not been implemented.

3.1.3.11 RRM FIRST QUARTER 2001 -GROUNDWATER MONITORING REPORT – 2001

In February 2001, RRM submitted its *First Quarter 2001 – Groundwater Monitoring Report* to the SMCHD (RRM, 2001). The report included the analytical results of the groundwater monitoring well sampling conducted at 70 Chemical Way and included recommendations for interim remedial measures. The findings from the groundwater monitoring well sampling revealed that a light non-aqueous phase liquid (LNAPL) was observed in monitoring well A-1. Laboratory analysis of the LNAPL sample revealed: TPHg at 240,000 mg/kg; benzene at 600 mg/kg; TPHd at 700,000 mg/kg; and total SVOCs at 22,797 mg/kg. Based on the findings, RRM recommended: removing the LNAPL through soil excavation; and then routine groundwater monitoring to develop concentration trends for closure evaluation.

3.1.3.12 RRM CORRECTIVE ACTION WORK PLAN – 2002

In November 2002, RRM submitted to the Regional Board on behalf of Kona Ventures its *Soil and Grab Groundwater Sampling Results and Corrective Action Work Plan*. The report presented the findings from the soil and groundwater investigation as well as the scope-of-work for soil excavation (RRM, 2002b). The soil and groundwater sampling was detailed in RRM's June 2002 *Soil and Grab Groundwater Sampling Work Plan* submitted to and approved by the Regional Board to: characterize soil for excavation and disposal; and characterize soil and groundwater near the southeast corner of the site (RRM, 2002a). Based on the investigation findings, RRM proposed to excavate approximately 300-cubic yards of petroleum hydrocarbon impacted soil and LNAPL near monitoring wells A-1 and A-1R.

3.1.3.13 RRM SITE INVESTIGATION REPORT AND REVISED SOIL EXCAVATION WORK PLAN – 2003

In March 2003, RRM at the request of the Regional Board, submitted a revision to the proposed soil excavation activities previously detailed in the November 2002 *Soil and Grab Groundwater Sampling Results and Corrective Action Work Plan.* In addition, at the request of DTSC, the report included a work plan to repair the asphalt cap. The revisions to the soil excavation plan included deepening the excavation depths near monitoring wells A-1 and A-1R to approximately 12-feet deep to allow LNAPL to enter the excavations for removal using vacuum trucks (RRM, 2003a).

In September 2003, RRM submitted an addendum to the March 2003 *Site Investigation Report and Revised Soil Excavation Work Plan*, which proposed to install four trench pits for groundwater and LNAPL recovery in lieu of soil excavation. In October 2003, the Regional Board approved the addendum provided the excavations do not remain open for more than 30 days without Regional Board approval. If more than 30 days is required for LNAPL recovery, then other collection methods should be proposed that do not require the trenches to remain open (Regional Board, 2003).

3.1.3.14 RRM WELL ABANDONMENT – 2003

In October 2003, monitoring wells A-1, A-1R, C-7, DW-1, C-6, MW-1 were abandoned (RRM, 2003b). The monitoring wells were drilled out using hollow-stem auger drilling equipment; except for monitoring well A-1 which was pressure grouted.

3.1.3.15 RRM LNAPL RECOVERY - 2004

In May 2004, RRM excavated four trenches between 9-feet and 11-feet below ground surface along the railroad track (RRM, 2005). RRM removed approximately 70 gallons of groundwater during May. A viscous LNAPL was observed within the sidewalls of the excavations at approximately 5-feet below ground surface and a slight sheen was observed in one of the trenches. Approximately 5-ounces of LNAPL were removed.

RRM also recommended the following investigations to address data gaps: additional soil data collected from borings on a grid system to characterize the source areas; expansion of the groundwater monitoring well network to characterize the dissolved plume spatial distribution; and generate groundwater flow direction and hydraulic gradient data.

3.1.3.16 RRM SOIL BORING AND GROUNDWATER MONITORING WELL INSTALLATION – 2006

In January and February 2006, RRM conducted additional investigations to address the data gaps identified in the September 2005 *Groundwater Monitoring Investigation Work Plan* (RRM, 2006a). The investigations included: collection of samples to characterize the current soil and groundwater conditions; installation and sampling of four monitoring wells (MW-2 to MW-5); and subsurface utility survey.

The utility survey identified a 39-inch storm drain located approximately 6-feet east of the eastern property boundary within the railroad right-of-way. The storm drain conveys surface water runoff from the Oddstad pump station to Redwood Creek.

Based on the investigation findings, RRM recommended: continued groundwater monitoring to document trends in chemicals; and preparation of an interim remedial action plan to evaluate remedial alternatives to address petroleum hydrocarbons, polycyclic aromatic hydrocarbons (PAHs) and PCP in soil and groundwater.

3.1.3.17 RRM Investigation and Interim Remediation Work Plan – 2006

In July 2006, RRM submitted to the Regional Board its *Soil and Groundwater Investigation and Interim Remediation Work Plan* (RRM, 2006b). The work plan proposed additional investigations to address comments provided in the Regional Board's May 16, 2006 comment letter. Based on the review of RRM's March 2006 *Soil Boring and Groundwater Monitoring Well Installation* report, the Regional Board indicated that the dissolved plume in shallow and deeper groundwater was not fully defined and recommended installation of a deeper groundwater monitoring well onsite and a shallow monitoring well along the southern property boundary.

In addition, RRM proposed interim remedial measures including: continued semi-annual groundwater monitoring; and bench-scale testing of in situ oxidation using persulfate to reduce PCP concentrations in soil and groundwater.

3.1.3.18 RRM Investigation and Interim Remediation Report – 2009

In April 2009, RRM submitted to the Regional Board its findings from implementation of the July 2006 work plan (RRM, 2009). Due to access issues, RRM advanced the eastern lateral delineation boring (SB-9) within the parking lot at 320 Blomquist rather than within the railroad right-of-way. RRM installed one shallow monitoring well, MW-6, one deeper monitoring well, MW-7 and soil boring SB-9. In addition, RRM conducted the bench-scale testing using persulfate.

The findings of the bench-scale testing indicated that the presence of Bay Mud inhibited the effectiveness of persulfate and thus would limit full-scale effectiveness. RRM concluded that in

situ chemical oxidation would not be recommended, but that concentrations of chemicals in soil and groundwater would attenuate naturally. RRM also concluded that the groundwater results from boring SB-9 advanced at 320 Blomquist defined the dissolved plume to the east.

3.1.4 80 Chemical Way

In February 1989, a 10,000-gallon diesel UST was removed from 80 Chemical Way (EBS, 1989). One soil sample was collected from the UST excavation did not reveal the presence of petroleum hydrocarbons. Water was observed within the UST excavation and laboratory analysis of the water revealed TPHd at 12,000 µg/l. Subsequently, groundwater- monitoring well MW-1 was installed in May 1989 north of the UST excavation and monitored for three quarters. In July 1991, the SMCHD granted case closure for the 10,000-gallon UST and monitoring well MW-1 was abandoned (SMCHD, 1991).

3.2 PHASE II ENVIRONMENTAL SITE ASSESSMENT – 2010

In October 2010, WEST conducted Phase II ESA sampling to characterize known and suspect recognized environmental conditions that were identified during the Phase I Environmental Site Assessment. The Phase II ESA included the collection of soil, soil gas and groundwater samples. Summaries of the sample collection methodologies and analytical results are presented below. Copies of the laboratory data certificates, chain-of-custody forms and field data forms are included in Appendix B.

3.2.1 Sample Collection Methodologies

3.2.1.1 SOIL SAMPLE COLLECTION

Soil samples were collected from borings advanced using hydraulic direct-push drilling equipment operated by a California C-57 licensed well drilling contractor. Soil cores were collected continuously for lithologic characterization and described on boring logs using the

Unified Soil Classification System. The soil samples were collected using a 2-inch diameter 4-foot long continuous core barrel outfitted with an acetate liner. The down-hole reusable sampling equipment was decontaminated prior to reuse at each sampling location.

The soil samples were field screened for total organic vapors using a photo-ionization detector (PID) equipped with a 10.6 eV lamp and calibrated with isobutylene gas for organic vapors using closed headspace techniques. The results of the field screening were recorded on the boring logs. The soil samples were collected at the target depths between 1-foot and 3-feet below ground surface by cutting the acetate liners. The ends of the acetate liner sample were then covered with Teflon sheets and plastic end caps.

The soil samples were then labeled, placed in a chilled cooler and transported to K Prime, Inc., of Santa Rosa, California, a California Department of Public Health (CDPH) Environmental Laboratory Accreditation Program (ELAP) certified laboratory for chemical analysis following the chain-of-custody procedures outlined in ASTM D 4840. The soil samples were analyzed for SVOCs and lead.

Soil cuttings generated during boring advancement were placed in United States Department of Transportation (USDOT) approved 55-gallon steel drums. The 55-gallon drums were labeled and temporarily stored at the Site. The soil cuttings will be disposed following acceptance by an appropriately licensed disposal facility. Following completion of soil sampling, the boreholes were backfilled to the ground surface using a bentonite/Portland Type II cement grout. The borings were then completed to match the existing ground surface.

3.2.1.2 SOIL GAS SAMPLE COLLECTION

Soil gas samples were collected following the procedures outlined in ASTM D 5314 and the California Environmental Protection Agency's Advisory – *Active Soil Gas Investigation* (CalEPA, 2003). A two-inch diameter steel push rod outfitted with a disposable perforated tip was driven into the subsurface to approximately five feet below ground surface using hydraulic

direct-push equipment operated by a California-licensed C-57 well drilling contractor. A length of disposable 0.25-inch diameter polyethylene tubing was then attached to a retractable tip within the push rods and connected to a peristaltic pump at the ground surface. The steel rod was then retracted approximately three inches to expose the perforated tip, allowing soil gas to enter the tubing. A bentonite seal was also placed around the contact between the ground surface and the steel rod and at the top of the steel rod.

Prior to soil gas sample collection and following a minimum of 20-minutes for subsurface conditions to equilibrate, a purge volume test was performed for each unique geologic stratum, which consisted of removing approximately one, three and seven tubing volumes of soil gas using the peristaltic pump, while field screening the purge effluent. The purge effluent was field screened for organic vapors using a PID calibrated with isobutylene gas. The appropriate tubing purge volume to be removed prior to soil gas sample collection was selected based on the maximum organic vapor concentration measured with the PID at each purge volume interval.

Following purging activities, the tubing was attached to an analytical laboratory prepared one-liter Summa canister. The Summa canisters were delivered by the analytical laboratory with a vacuum of approximately 30 inches of mercury and outfitted with 0.2-liter per minute flow control valve. The tubing was connected to the Summa canister using airtight stainless-steel fittings. The flow control valve was then opened slowly to draw the vapor sample from the target depth. Leak detection monitoring was also conducted during soil gas sampling by applying a compressed tetrafluoroethane gas to the bentonite seal and connection fittings. Following sample collection, the Summa canister atmosphere was measured with a pressure gauge and recorded on field data forms.

The active soil gas samples were then be labeled and transported to K Prime, Inc. of Santa Rosa, California, a CDPH ELAP certified laboratory pursuant to ASTM D 4840 chain-of-custody protocols. Following completion of soil gas sampling, the boreholes were backfilled to the ground surface using a bentonite/Portland Type II cement grout. The borings were then patched at the surface to match the existing ground conditions.

3.2.1.3 GROUNDWATER SAMPLE COLLECTION

Groundwater samples were collected by advancing select borings to a depth of approximately four-feet below first encountered groundwater. Temporary well casings were then placed in the boreholes to facilitate sample collection. The base of the temporary well casing was outfitted with a 0.75-inch diameter 5-foot long Schedule 40 polyvinyl chloride (PVC) pre-pack slotted well screen. The pre-pack slotted well screens were constructed of 0.010-inch slots and a #2/16 sand filter pack enclosed with a stainless-steel wire mesh. The top of the pre-pack slotted well screens were outfitted with 0.75-inch diameter Schedule 40 PVC blank well casing to the ground surface.

Groundwater samples were then collected from the temporary well casing using peristaltic pump. The groundwater samples were collected into laboratory-supplied sample containers, labeled and placed in an insulated cooler chilled with ice and transported to K Prime, Inc. of Santa Rosa, California, a CDPH ELAP certified laboratory pursuant to ASTM D 4840 chain-of-custody protocols. Groundwater samples for VOC analysis were collected into laboratory-supplied 40-milliliter vials containing a hydrochloric acid preservative and capped with zero headspace.

Following completion of groundwater sampling, the boreholes were backfilled to the ground surface using a tremie pipe and a bentonite/Portland Type II cement grout. The borings were then completed to match the existing ground surface.

3.2.2 Laboratory Analytical Results

3.2.2.1 20 CHEMICAL WAY

Samples were collected at 20 Chemical Way to characterize suspect conditions including potential releases from: the former UST; use of solvents; and aerially deposited lead. Analysis of soil samples collected on 20 Chemical Way revealed lead ranging from 12.9 mg/kg to 28.4 mg/kg. VOCs were detected in soil gas samples including: tetrachloroethene (PCE) up to 685

micrograms per cubic meter ($\mu g/m^3$); trichloroethene (TCE) up to 459 $\mu g/m^3$; chloroethene (CE) up to 4.27 $\mu g/m^3$; and benzene up to 113 $\mu g/m^3$. Methane was also detected in the soil gas samples up to 168,000 parts per million by volume (ppm_v; or 16.8 percent). Laboratory analysis of the groundwater sample collected on 20 Chemical Way did not reveal TPH or VOCs above the laboratory-reporting limits.

3.2.2.2 50 CHEMICAL WAY

Samples were collected at 50 Chemical Way to characterize suspect conditions including potential releases from: the former UST and ASTs; former use of solvents; acid and diesel spills; and aerially deposited lead. In addition, a groundwater sample was collected to delineate the groundwater releases at 70 Chemical Way. Analysis of soil samples collected on 50 Chemical Way revealed lead ranging from 3.16 mg/kg to 31.5 mg/kg. VOCs were reported in soil gas samples including PCE up to 33.1 $\mu g/m^3$ and benzene up to 61.8 $\mu g/m^3$. Methane was also detected in the soil gas samples up to 294,000 ppmv (29.4 percent). Laboratory analysis of the groundwater samples collected at 50 Chemical Way revealed VOCs including: 1,1-dichloroethane (1,1-DCA) up to 1.74 µg/l; benzene up to 1.07 µg/l; and toluene up to 0.510 µg/l. Petroleum hydrocarbons including TPHd and SVOCs were not detected in the groundwater samples above the laboratory-reporting limit of 50 µg/l.

3.2.2.3 70 CHEMICAL WAY

Samples were collected at 70 Chemical Way to further characterize the known conditions associated with the former chemical handling operations. Soil samples were collected to delineate the extent of TPH and SVOCs in soil west of the mixing tank areas. Laboratory analysis of the soil samples did not reveal TPH or SVOCs including PCP above the laboratory-reporting limits; except for TPHd at 213 mg/kg and TPHmo at 307 mg/kg in one soil sample (W-22).

Soil gas samples collected at 70 Chemical Way revealed VOCs including: cis-1,2-dichloroethene (c-1,2-DCE) up to 4,090 µg/m^3; CE up to 18,700 µg/m^3; chloroethane up to 8,600 µg/m^3; 1,1-DCA up to 24,400 µg/m^3; benzene up to 36,400 µg/m^3; toluene up to 625,000 µg/m^3; ethyl benzene up to 742,000 µg/m^3; xylenes up to 2,410,000 µg/m^3; and trimethylbenzene up to 33,000 µg/m^3. Methane was also detected in the soil gas samples up to 332,000 ppmv (33.2 percent). Laboratory analysis of a groundwater sample collected at 70 Chemical Way to delineate chemicals in groundwater west of the building did not reveal TPH, VOCs or SVOCs above the laboratory-reporting limits.

3.2.2.4 80 CHEMICAL WAY

Samples were collected at 80 Chemical Way to characterize residual petroleum hydrocarbons associated with the former UST release and to further characterize the Site-wide soil gas and groundwater conditions. Analysis of soil samples collected on 80 Chemical Way revealed lead up to 21.8 mg/kg. VOCs were also detected in soil gas samples including benzene up to 88.6 µg/m^3 and toluene up to 23.1 µg/m^3. Laboratory analysis of the groundwater sample collected at 80 Chemical Way did not reveal TPH or VOCs above the laboratory-reporting limits.

4.0 DATA EVALUATION

Investigations have revealed the presence of chemicals in soil, soil gas and groundwater associated with the historical operations at the Site. An assessment of the potential risks to human health and environment associated with the presence of the chemicals in the subsurface at the Site requires an accurate conceptual site model (CSM) and comparison with appropriate evaluation criteria. The CSM presents a narrative and graphical description of Site characteristics to provide a foundation for understanding the Site. The CSM was used in identifying potential receptors to allow for selection of appropriate evaluation criteria.

Through a comparison of Site data to the applicable criteria, the CSM has been used to assess the adequacy of the Site characterization and identify whether response actions are necessary to address threats to human health and the environment. The CSM and the evaluation of the Site are presented below.

4.1 CONCEPTUAL SITE MODEL

Pursuant to State Water Resources Control Board guidelines (Executive Order D-5-99 and Senate Bill 989) and guidance (SWRCB, 2009), a CSM was developed to aid in evaluating the Site data. The CSM was developed based on: known historical operations at the Site; investigation data; chemical properties; suspected release and transport mechanisms; and potential exposure scenarios.

The CSM identifies the general physical conditions at the Site that influence contaminant transport. The CSM incorporates: the geology and hydrogeology; properties of the chemicals; and transport mechanisms to explain the distribution of chemicals found at and near the Site. The CSM explains the distribution of the chemicals as being attributable to historic releases from USTs; and spills, leaks and releases during hazardous substance storage, handling and/or disposal. The presence of methane appears to originate from the anaerobic decomposition of both naturally occurring and anthropogenically derived organic matter in the subsurface.

The groundwater flow direction within the shallow groundwater beneath portions of 70 Chemical Way varies between the southeast, west and northwest. In the deeper water-bearing zone, the groundwater flow direction was calculated to the southeast at an approximate gradient of 0.004-feet per foot (RRM, 2009a). The evaluation of the potential risk to human health and the environment associated with the chemicals found in the subsurface was performed using a combination of Tier 1 and Tier 2 assessments. The Tier 1 assessment is a screening level assessment, whereby a comparative analysis between the exposure point concentrations and identified screening levels was performed. The Tier 2 assessment is a Site-specific risk evaluation of the risks to current and potential receptors posed by multiple chemicals present in the soil gas at 70 Chemical Way. Details of the Tier 1 and Tier 2 assessments are presented below.

4.2 TIER 1 - SCREENING LEVEL ASSESSMENT

Using the CSM and the Site chemical data, a Tier 1 screening level assessment has been prepared. The Tier 1 screening level assessment consisted of the following steps: (1) exposure assessment; (2) estimate exposure point concentrations; (3) select applicable screening levels; and (4) compare Site data to screening levels.

4.2.1 Exposure Assessment

Exposure pathways to chemicals in soil, soil gas and groundwater have been evaluated to assess the potential impacts to human health and environment. Based on the current Site use for commercial/light industrial and the anticipated future use, potential receptors to chemicals of potential concern at the Site were identified as: (1) humans through contact with soil including ingestion and/or inhalation of dust particles; and (2) humans through inhalation of soil gas vapors that migrate to indoor air (Figure 4-1). As explained further, the direct exposure to chemical residuals in soil (and groundwater) is not a complete pathway for occupants of 70 Chemical Way due to the existing LUCs.

The Regional Board concluded groundwater beneath the Site "does not meet the criteria for drinking water per State Board Resolution 88-63 and therefore is not considered a drinking water source" (Regional Board, 1996). In addition, groundwater at the Site is not used for potable supply. Therefore, exposure to groundwater is not considered a complete pathway. Using the CSM, the following potential receptor scenarios were identified to evaluate Site conditions.

4.2.1.1 RESIDENTIAL

While the Site is not reasonably anticipated to be used for single-family residential, comparison of Site data with unrestricted use was deemed appropriate to determine whether use restrictions should be included as a component of the institutional controls for Site use. As advised by the Regional Board, consideration of ESLs for commercial/industrial land use will "in most cases require covenant to the deed be prepared that restricts use of the property" (Regional Board, 2008). Due to the Site use restrictions on 70 Chemical Way, the screening level assessment only considered potential single-family residential use on 20, 50 and 80 Chemical Way.

The residential receptors is assumed to be a long-term receptor occupying a dwelling within the Site boundaries 24 hours per day, and is assumed to live at the Site for 30-years for 350-days per year. Exposure to soil is expected to occur during home maintenance activities, yard work and landscaping and outdoor play activities (Regional Board, 2008). As the residential exposure is the most conservative, concentrations below residential screening levels were deemed protective of other exposure scenarios, e.g., commercial.

4.2.1.2 COMMERCIAL/INDUSTRIAL WORKER

The commercial/industrial scenario uses the conservative assumption that on-Site workers spend all or most their workday outdoors. The exposure for commercial/industrial workers is presumed to include: (1) a full time employee of a company operating on-site who spends most of the work day conducting maintenance or manual labor activities outdoors or (2) a worker who is assumed

to regularly perform grounds-keeping activities as part of his/her daily responsibilities (Regional Board, 2008).

The commercial/industrial worker scenario is based on a worker that is exposed to chemicals at the Site for 24-hours per day during 250-days per year for 25-years, i.e., lifetime exposure duration of 150,000 hours.

4.2.1.3 MAINTENANCE WORKER

As noted above, the commercial/industrial exposure scenario includes a worker who is assumed to regularly perform grounds-keeping activities as part of his/her daily responsibilities. Exposure to surface and shallow subsurface soils (i.e., at depths of zero to two feet below ground surface) is expected to occur during moderate digging associated with routine maintenance and grounds-keeping activities. Therefore, ESLs for the commercial/industrial worker exposure scenario will be protective of maintenance worker exposure.

4.2.1.4 CORRECTIONAL FACILITY STAFF

Future Site workers are anticipated to include: Correctional Officers; Deputy Sheriffs; Sergeants; and support staff. The San Mateo County User Fee Study uses 1,800 hours as the annual available hours for all classifications of workers (San Mateo County, 2010a). Based on a 25-year work tenure, the total exposure is 45,000 hours, or 30 percent of the default commercial worker scenario. Therefore, ESLs for the commercial/industrial worker exposure scenario will be protective of the correctional facility staff exposure.

4.2.1.5 INMATES

The future correctional facility is planned to be a Type II jail, i.e., a jail that includes both pre-trial and sentenced inmates (San Mateo County, 2010b). Ninety six percent of the pre-trial incarcerations are less than one-year (DMJM, 2008). Based on the average of five convictions,

three misdemeanors with a maximum sentence of one-year and two felonies with a maximum three-year sentence, a total of nine years of 24-hour per day exposure was used in the inmate exposure assessment. The total inmate exposure was calculated at approximately 80,000 hours, or approximately 50 percent of the default commercial worker scenario. Therefore, ESLs for the commercial/industrial worker exposure scenario will be protective of the inmate exposure.

4.2.1.6 VISITORS

The inmate visitor exposure scenario was developed based on six years of a child and 25 years of an adult visitor for eight hours per day for 250-days per year. The total exposure was calculated at approximately 50,000 hours, or one-third of the default commercial worker scenario hours. Therefore, ESLs for the commercial/industrial worker exposure scenario will be protective of the inmate visitors exposure.

4.2.1.7 CONSTRUCTION WORKERS

Based on the anticipated development of the Site, the evaluation also included consideration of the potential exposure for construction workers. The construction worker exposure scenario is based on exposure to soil for the workday for a one-year construction project. If multiple construction projects are anticipated, it is expected that different workers will be employed for each project (Regional Board, 2008). The scenario includes substantial exposures to surface and subsurface soil via ingestion, dermal contact, inhalation of VOCs and particulates. Therefore, ESLs for the construction worker exposure were used in evaluating Site conditions, including those at 70 Chemical Way.

4.2.2 Exposure Concentrations

Where sample data were limited, the maximum-detected concentration of the chemicals in the exposure area was used to compare with the screening levels. Where an adequate number of data points were available, the 95 percent upper confidence level (UCL) of the mean concentration for

the exposure area was used to compare with the screening levels, pursuant to CalEPA and USEPA guidance (CalEPA, 1996; USEPA, 1992).

4.2.3 Identification of Screening Levels

Screening levels are not necessarily cleanup goals, but have been selected to evaluate Site conditions and identify the necessity for additional characterization and/or actions. The screening levels are conservatively calculated threshold values below which particular chemicals are believed to "be below thresholds of concern for risks to human health." The presence of a chemical at concentrations in excess of a screening level does not indicate that adverse impacts to human health are occurring or will occur but suggests that further evaluation of potential human health concerns is warranted.

4.2.3.1 REGIONAL BOARD - ENVIRONMENTAL SCREENING LEVELS

The Regional Water Quality Control Board (Regional Board) has identified environmental screening levels (ESLs) for chemicals of potential environmental concern (Regional Board, 2008). The ESLs are presented in the Regional Board's *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater* (Regional Board, 2008). The Regional Board ESLs "are considered to be conservative [and] the presence of a chemical in soil, soil gas or groundwater at concentrations below the corresponding ESL can be assumed to not pose a significant long-term (chronic) threat to human health and the environment." While a chemical may be measured at concentrations above the Regional Board ESL, it "does not necessarily indicate that adverse impacts to human health or the environment are occurring, [it] simply indicates that a potential for adverse risk may exist and that additional evaluation is warranted."

In developing the ESLs, the Regional Board has considered exposure pathways to humans, such as dermal contact and inhalation, migration of soil leachate to groundwater and urban area eco-toxicity criteria. The Regional Board used a depth of 3 meters (10 feet) to delineate between surface soil and subsurface soil. The Regional Board ESLs also address soil gas concentrations

that can pose an unacceptable threat to human health through migration to indoor air (Regional Board, 2008). The thresholds of concern used to develop the ESLs are an incremental lifetime cancer risk (ILCR) of one-in-a-million (1E-6) and a hazard index (HI) of 1.0 for non-cancer health effects.

4.2.3.2 State Water Resources Control Board Resolution 92-49

Pursuant to State Water Resources Control Board (SWRCB) Resolution No. 92-49, groundwater containing concentrations above applicable numerical water quality objectives must obtain the requisite level of water quality within a reasonable timeframe. In general, target cleanup levels for groundwater are based on the numerical water quality objectives as designated in the *Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin*.

4.2.3.3 CalEPA School Site Guidance

The California Environmental Protection Agency's (CalEPA) Department of Toxic Substances Control (DTSC) has published advisories to assist in the evaluation of potential school sites. While not directly applicable to commercial developments, the advisories provide conservative screening criteria to aid in evaluating potential threats to human health and environment. Due to the presence of methane in soil gas beneath the Site, the screening level evaluation also considers the recommended action levels for methane in soil gas as presented in the 2005 CalEPA *Advisory on Methane Assessment and Common Remedies at School Sites*.

4.3 Tier 2 - Site Specific Risk Evaluation

Due to the multiple chemicals in soil gas at 70 Chemical Way portion of the Site, the Tier 1 soil gas evaluation has been supplemented with a Tier 2 evaluation for potential receptors on 70 Chemical Way. The Tier 2 evaluation included a Site-specific risk evaluation for the potentially complete exposure to soil gas vapors through vapor intrusion. The Tier 2 assessment was prepared which estimated potential risks posed by chemicals under the following exposure

scenarios: commercial/industrial workers. Site correctional officers, inmates and Site visitors are exposed for less hours, therefore, conditions protective of commercial workers will be protective of these potential receptors. The HHRA consisted of the following components: (1) selection of COCs; (2) exposure assessment; (3) estimate of exposure concentrations; (4) toxicity assessment; and (5) risk evaluation.

4.3.1 Selection of Chemicals of Concern

The chemical of concern (COCs) for the Site-specific evaluation were based on the laboratory analytical data from samples collected at 70 Chemical Way. The COCs include: petroleum hydrocarbon-related VOCs and chlorinated VOCs.

4.3.2 Exposure Assessment

Based on the greater exposure, the exposure assessment was prepared using the default commercial/industrial worker exposure as a surrogate for the other potential receptors. Details of the exposure parameters are presented in Appendix C.

4.3.3 Exposure Concentrations

Due to the limited sample data, the maximum-detected concentrations of the chemicals in the exposure area were used to assess the threat posed by soil gas beneath 70 Chemical Way (CalEPA, 1996; USEPA, 1992).

4.3.4 Toxicity Assessment

The toxicity assessment evaluates available information regarding the potential for a chemical to cause adverse health effects in exposed individuals (hazard identification) and estimate the relation between the exposure and increased likelihood of adverse effects (dose-response). The results of the dose-response assessment are toxicity criteria used to characterize risk. Standard procedures were used to identify toxicity values for carcinogenic and non-carcinogenic effects.

The following section describes the sources of toxicity values for carcinogenic and non-carcinogenic COPCs. Because toxicity values are updated and revised periodically, the most recent cancer slope factors (CSFs), unit risk factors (URFs), reference doses (RfDs) and reference concentrations (RfCs) were obtained from the following sources in order of preference:

- CalEPA Cancer Slope Factors (CSFs) from online database http://www.oehha.ca.gov/;
- USEPA IRIS online database: http://www.epa.gov/iris;
- USEPA Provisional Peer-Reviewed Toxicity Values (PPRTV);
- USEPA National Center for Environmental Assessment (NCEA); and
- USEPA Health Effects Assessment Summary Tables (HEAST).

Additional USEPA documents were also referenced that compile human health risk information obtained from several literature sources. The toxicity values used are presented in Appendix C (Table C-2).

4.4 EVALUATION OF FINDINGS

4.4.1 20, 50 and 80 Chemical Way

4.4.1.1 SOIL CONDITIONS

4.4.1.1.1 Petroleum Hydrocarbons and VOCs

Laboratory analysis of soil samples collected from 20, 50 and 80 Chemical Way revealed TPHd up to 9 mg/kg within the former UST excavation at 50 Chemical Way, below its residential Regional Board ESL of 100 mg/kg. TPHmo was detected in soil up to 750 mg/kg adjacent to the former UST at 50 Chemical Way; however, the soil near of the former UST was excavated and

disposed offsite. TPHmo was also detected in soil at 620 mg/kg adjacent to the former gasoline and diesel ASTs at 50 Chemical Way, above its residential ESL of 370 mg/kg, but below its commercial Regional Board ESL of 2,500 mg/kg (Table 3-1).

VOCs including benzene, toluene, ethyl benzene, xylenes, naphthalene and tetrachloroethene were not reported in the soil samples collected on 20, 50 and 80 Chemical Way above the their respective laboratory-reporting limits (Table 3-1 and 3-2).

4.4.1.1.2 Metals

Soil samples collected from 20, 50 and 80 Chemical Way revealed the presence of metals. Laboratory analysis of the soil samples revealed cadmium up to 4.9 mg/kg, above its residential Regional Board ESL of 2.7 mg/kg but below is commercial Regional Board ESL of 7.4 mg/kg. Copper was detected in soil up to 92 mg/kg, below its residential Regional Board ESL of 230 mg/kg. Lead was detected in the soil samples up to 310 mg/kg, above its residential Regional Board ESL of 200 mg/kg, but below the commercial ESL of 750 mg/kg.

Nickel was detected in only two sample of the seven soil samples analyzed for metal on 50 Chemical Way above the residential and commercial ESL of 150 mg/kg, but below the construction worker ESL of 260 mg/kg, in one soil sample. The nickel ESL represents an eco-toxicity screening level and measured concentrations do not exceed the ESL for the protection of human health under either residential (300 mg/kg) or commercial exposures (3,400 mg/kg; Tables K-1 and K-2; Regional Board, 2008). Zinc was detected up to 530 mg/kg, below its residential ESL of 600 mg/kg (Table 3-4).

4.4.1.2 SOIL GAS CONDITIONS

Laboratory analysis of the soil gas samples collected on 20, 50 and 80 Chemical Way revealed benzene up to 113 $\mu g/m^3$, above its residential vapor intrusion ESL of 84 $\mu g/m^3$, but below its commercial ESL of 280 $\mu g/m^3$. Toluene, ethyl benzene and xylenes were also detected in soil

gas up to 83.8 µg/m^3, 26.5 µg/m^3 and 83.5 µg/m^3, below their respective residential vapor intrusion ESLs of 63,000 µg/m^3, 980 µg/m^3 and 21,000 µg/m^3 (Table 3-15).

Chlorinated VOCs were detected in soil gas samples collected on 20, 50 and 80 Chemical Way. PCE was detected up to 685 µg/m^3, above its residential vapor intrusion ESL of 410 µg/m^3, but below its commercial ESL of 1,400 µg/m^3. TCE was detected up to 459 µg/m^3, below its residential vapor intrusion ESL of 1,200 µg/m^3. Cis-1,2-DCE was detected up to 136 µg/m^3, below its residential vapor intrusion ESL of 7,300 µg/m^3. 1,1-DCE and CE were detected up to 15.3 µg/m^3 and 4.27 µg/m^3, below their respective residential vapor intrusion ESLs of 42,000 µg/m^3 and 31 µg/m^3.

Laboratory analysis of the soil gas samples revealed TCM, CM and chlorobenzene up to 104 µg/m^3, 13.9 µg/m^3 and 27.9 µg/m^3, below their respective residential vapor intrusion ESLs of 460 µg/m^3, 19,000 µg/m^3 and 210,000 µg/m^3 (Table 3-16).

Methane was also found in soil gas samples on 20 Chemical Way (168,000 ppm$_v$) and 50 Chemical Way (294,000 ppm$_v$) above the CalEPA screening threshold for mitigation measures of 5,000 ppm$_v$.

4.4.1.3 GROUNDWATER CONDITIONS

4.4.1.3.1 Petroleum Hydrocarbons

Laboratory analysis of groundwater samples collected from 20, 50 and 80 Chemical Way did not reveal TPHg, TPHd or TPHmo above the laboratory-reporting limits; except for TPHg at 440 µg/l and TPHd at 12,000 µg/l in the sample of water collected from the former UST excavation on 80 Chemical Way. The water from the UST excavation was removed and subsequent groundwater monitoring data collected from monitoring well MW-1 on 80 Chemical Way did not reveal TPHg or TPHd above the laboratory-reporting limits.

4.4.1.3.2 Petroleum-related VOCs

Petroleum-related VOCs were not detected in groundwater samples collected from 20, 50 and 80 Chemical Way above the laboratory-reporting limit; except in one sample, W-13, collected on 50 Chemical Way. Laboratory analysis of the groundwater sample collected from 50 Chemical Way revealed benzene at 1.07 µg/ belowthe Regional Board ESL of 46 µg/l for groundwater that is not a current or potential drinking water source. Toluene was also detected at 0.51 µg/l in the groundwater sample collected from 50 Chemical Way, below the Regional Board ESL of 130 µg/l.

4.4.1.3.3 Chlorinated VOCs

Chlorinated VOCs were not detected in groundwater samples collected from 20, 50 and 80 Chemical Way above the laboratory-reporting limit; except in one sample, W-13, collected on 50 Chemical Way. Laboratory analysis of the groundwater sample collected from 50 Chemical Way revealed cis-1,2-DCE at 0.69 µg/l, below the Regional board ESL of 590 µg/l. 1,1-DCA was also detected at 1.74 µg/l in the groundwater sample collected from 50 Chemical Way, below the Regional Board ESL of 47 µg/l.

4.4.1.3.4 PAHs

Laboratory-analysis of the groundwater sample W-16 collected from 50 Chemical Way did not reveal PAHs including PCP above the laboratory-reporting limits.

4.4.2 70 Chemical Way

4.4.2.1 SOIL CONDITIONS

TPHg in samples from A1 (960,000 mg/kg), B6 (46,000 mg/kg) and B7 (180,000 mg/kg) exceeded the ESLs for the residential (100 mg/kg), commercial (180 mg/kg) and construction worker (370 mg/kg) exposure scenarios. However, soil was removed from the area near A1; and B6 and B7 are located in offsite areas, where onsite workers will not be exposed. Similarly,

benzene, toluene, xylenes and naphthalene were reported in soil samples from boring A1 above applicable ESLs, but have subsequently have been removed.

Benzene has also been found in samples from borings SB-2 (1.2 mg/kg); MW-4 (0.37 mg/kg); MW-5 (3.3 mg/kg); above ESLs for residential and commercial exposure; but below the construction worker ESL for 12 mg/kg.

While xylenes in samples from B6 and B7 are above residential and commercial ESLs of 2.3 mg/kg and 4.7 mg/kg, respectively, the reported concentrations do not exceed the construction worker ESL of 420 mg/kg. In addition, as noted above, borings B6 and B7 are located in areas that onsite workers will not be exposed. However, samples collected near the former mixing tank area (SB-1 up to 250 mg/kg, SB-10 up to 31 mg/kg, SB-12 up to 120 mg/kg, SB-13 up to 44 mg/kg, etc.) have been reported to contain xylenes above the residential and commercial ESL of 11 mg/kg, but below the construction worker ESL of 420 mg/kg.

The petroleum-related VOCs ethyl benzene (e.g., SB-6 at 50 mg/kg) and naphthalene (e.g., SB-8 at 130 mg/kg) have also been found in soil near the former mixing tank area above their ESLs for residential and commercial exposure, but below their respective construction worker exposure ESLs (Table 3-1).

Similarly, SVOCs, including acenaphthene (SB-8 at 120 mg/kg), have been found near the former mixing tank area at concentrations above residential and commercial ESLs, but below construction worker ESLs (e.g. acenaphthene ESL for construction worker of 17,000 mg/kg). A review of the soil data for 70 Chemical Way indicates only PCP (up to 1,500 mg/kg) is present above its construction worker ESL of 99 mg/kg.

Separate-phase hydrocarbons were also observed in soil samples collected during installation of monitoring well MW-7 within the former mixing tank area. The separate-phase hydrocarbons were encountered at a depth of approximately 8-feet to 9-feet below ground surface (RRM, 2009).

Based on the comparative analysis, the LUCs restricting access to chemicals of concern should continue to be implemented in those areas containing concentrations above residential and commercial ESLs. In addition, the comparative analysis indicates that measures are only needed to control exposure to future construction workers in the area with soil containing pentachlorophenol above 99 mg/kg. Coincident with PCP, petroleum hydrocarbons are also found in soil (with separate-phase hydrocarbons) near the former mixing tank area.

4.4.2.2 SOIL GAS CONDITIONS

The Tier 2 Site-specific risk evaluation of soil gas conditions indicates that the presence of VOCs in soil gas poses an incremental lifetime cancer risk (ILCR) of 3.8E-4 through vapor intrusion and subsequent inhalation for a commercial work. The primary contributors to the risk are CE (vinyl chloride; 1E-4), benzene (9E-5) and ethyl benzene (2E-4). However, the USEPA does not classify ethyl benzene as a human carcinogen. The California Office of Environmental Health Hazard Assessment (OEHHA) assigns a cancer slope factor based on the International Agency for Research on Cancer (IARC) identification of ethyl benzene as a Class 2B, i.e., possibly carcinogenic to humans.

The non-carcinogenic health risk posed to vapor intrusion of soil gas was calculated at 2.3. This non-carcinogenic health risk is primarily attributable to the xylenes (HQ=0.8) and 1,2,4-trimethylbenzene (HQ=1.0). In addition, methane was found in soil gas beneath 70 Chemical Way up to 332,000 ppm_v, above the CalEPA screening threshold for requiring mitigation measures of 5,000 ppm_v.

4.4.2.3 GROUNDWATER CONDITIONS

Groundwater sampling has defined the extent of the dissolved plume to the east (SB-9), south (W-16), north (C-5) and west (MW-3). Based on this delineation, chemicals in groundwater do not appear to be migrating. Concentrations of dissolved chemicals in shallow groundwater have remained relatively stable or have decreased during the past five-years. Concentrations of

dissolved chemicals have increased in groundwater in samples from recently installed deeper monitoring well MW-7, but the increase has been attributed to cross-contamination during installation.

4.4.2.4 PETROLEUM RELATED HYDROCARBONS, VOCS AND PAHS

Concentrations of petroleum hydrocarbons (TPHg and TPHd) in shallow groundwater have remained relatively stable for the past five years, e.g., TPHg in samples from MW-6 has varied from 14,000 µg/l in 2007 to 13,600 µg/l in 2009 with benzene varying from 120 µg/l in 2007 to 83.2 in 2009. Similar patterns of concentrations are found in samples from monitoring wells MW-4 and MW-5. Lower concentrations are found to the south with samples from DW-1R less than 100 µg/l for TPHg and less than 1.0 µg/l for benzene.

Following recent installation of deeper monitoring well MW-7, concentrations of TPHd increased in the deeper zone from less than 50 µg/l in 2007 to 9,330 µg/l in 2009. Similar patterns are seen in PAH samples from MW-7, e.g., acenaphthalene has increased from 350 µg/l in 2007 to 1,440 µg/l in 2009. Based on a review of the well boring log, it appears that contaminants from the shallow zone migrated to the deeper zone during well construction.

The occurrence of increasing trends in MW-7 following well installation and the lack of decreasing concentrations of dissolved petroleum hydrocarbons in groundwater in samples from monitoring wells, MW-4, MW-5 and MW-6 indicate that a source remains in the former mixing tank area. Separate phase hydrocarbons, noted during installation of MW-7, confirm that source material remains in the area near the former mixing tank area. While groundwater concentrations appear stable and/or decreasing, removal of source material appears appropriate to expedite the natural attenuation of residual petroleum hydrocarbon related contaminants in groundwater.

4.4.2.5 CVOCs, ALCOHOLS, KETONES AND 1,4-DIOXANE

Samples from monitoring wells collected during the past five-years have not revealed the presence of CVOCs over 50 µg/l. Similarly, alcohols, with the exception of samples from monitoring MW-4, have been below laboratory-reporting limits during the preceding five-years in samples from monitoring wells. Samples from MW-4 have revealed generally stable concentrations of TBA varying from 540 µg/l in 2006 to 670 µg/l in 2007 and 657 µg/l in 2009 and below the ESL of 18,000 µg/l for groundwater that is not a potable source of water.

Similarly, concentrations of 1,4-dioxane have remained relatively stable in groundwater samples with concentrations below 100 µg/l in monitoring wells, with the exception of MW-4. The concentrations of 1,4-dioxane has been relative stable in MW-4, varying from 12,000 µg/l in 2006 to 22,000 µg/l in 2007 to 14,000 µg/l in 2009. While concentrations of 1,4-dioxane are elevated relative to concentrations in other monitoring wells, the concentrations have been consistently been below the ESL of 50,000 µg/l for groundwater that is not a potential source of drinking water (Regional Board, 2008).

4.4.2.6 SVOCs

Groundwater monitoring has also confirmed that in general concentrations of dissolved SVOCs, e.g., PCP in samples from MW-1R, have been stable and decreasing (Table 3-13). Based on these trends, there does not appear to be a threat of migration to surface water from residual SVOCs, which are attenuating over time.

4.5 DATA GAP ANALYSIS

The assessment revealed that the CSM describes the distribution of contaminants at the Site. Therefore, the Site has been adequately characterized, i.e., no data gaps were identified.

5.0 SOIL MANAGEMENT

This section presents the procedures for the management of soil during and after Site development activities. The data evaluation revealed that soil on 20, 50 and 80 Chemical Way does not contain chemical concentrations above health based screening levels for existing or future commercial workers. The analysis also confirmed that chemical residuals remain in soil at 70 Chemical Way that do not pose an unacceptable threat to commercial workers with the existing LUCs. However, measures will be needed to control exposures to future construction workers, if excavation is conducted near the former mixing tank area due to the presence of PCP in soil.

Evaluation of groundwater conditions also confirmed that source material (i.e., separate phase hydrocarbons) remain in soil near the mixing tank area that could be contributing to groundwater contamination. Therefore, measures to remove source area soil near the mixing tank area are recommended. Based on the Site investigation findings, an area for proposed excavation has been delineated near the former mixing tank area that encompasses the PCP in soil above construction worker protection levels and the materials sourcing groundwater contamination. The extent of the soil excavation is depicted on Figure 5-1.

As the extent of the excavation will not remove all chemicals in soil above commercial ESLs, continued use of institutional and engineering controls, i.e., LUCs, is recommended to address potential exposure to Site workers. The extent of the area requiring LUCs is also depicted on Figure 5-1. A description of the soil management procedures that include a combination of institutional and engineering controls, excavation and maintenance of hardscape is presented below.

5.1 INSTITUTIONAL CONTROLS

Institutional controls along with engineering controls will be used to minimize potential exposure to chemicals in subsurface at the Site. The LUCs will be updated to reflect the intended use of

the Site as a jail. In addition, the LUCs will be updated to identify the specific area requiring hardscape covering (Figure 5-1). The LUCs will also reflect that the Site is required to be developed in a manner that maintains and preserves the integrity of the hardscape surface. The updated LUCs will prohibit the disturbance of the hardscape, excavation, grading, removal, trenching, filling, earth movement, mining, or drilling without notice to the Regional Board and work being conducted in accordance with the approved *SMP*.

5.2 ENGINEERING CONTROLS

Upon completion of Site development activities, this *SMP* requires installing and maintaining engineering controls including asphalt pavement or Portland cement concrete, aboveground planters, building foundations (collectively referred herein as the "cap"), to isolate remaining contaminated soil from human or environmental exposure. The extent of the area requiring the cap has been determined by soil analytical results and is depicted on Figure 5-1. Future owners, occupants, managers and contractors who are delegated or authorized to perform property maintenance or construction will be required to comply with the measures identified in the *SMP* for long-term maintenance of hardscape at the Site.

5.3 SOIL EXCAVATION AND MANAGEMENT

Soil removal will be conducted at and near the former chemical mixing tank area at 70 Chemical Way. The lateral extent of the source removal excavation is depicted on Figure 5-1. The lateral extent represents the area with identified separate-phase hydrocarbons and PCP greater than 100 mg/kg. The excavation will be advanced into groundwater to remove chemicals in the capillary fringe, which is anticipated to be approximately 4-feet to 8-feet below ground surface. Details of the procedures to be implemented during soil excavation and management are provided below.

5.3.1 Worker Health and Safety

Due to the potential exposure to residual chemicals in soil, soil gas and groundwater, prior to Site development activities, a *Health and Safety Plan* (HASP) should be prepared and followed by onsite personnel. The HASP should be prepared to address the requirements of the Occupational Health and Safety Administration (OSHA) 29 CFR 1910.120 guidelines and Title 8 CCR Section 5192. The HASP should be read by Site workers and visitors to apprise them of the Site conditions and provide instructions for implementing proper safety training and procedures during development activities.

As phases of work proceed, the HASP should be updated to reflect: Site organizational structure; names of key personnel; personnel training requirements; medical surveillance program; summary of risk assessment; a task-specific hazard analysis; Site control program; personal protective equipment use; air monitoring plan; decontamination procedures; emergency response plan; spill containment; Site sanitation facilities; and standard operating procedures. The contractor conducting the development activities should also use their Injury and Illness Prevention Program (IIPP) in conjunction with the HASP.

5.3.2 Notifications

Prior to excavating soil, proper notification will be provided to the Bay Area Air Quality Management District (BAAQMD) in accordance with Regulation 8, Organic Compounds, Rule 40. The notification will advise the: name and address of persons performing and responsible for excavation; location of the Site; date of excavation; quantity of soil to be excavated; estimated average organic content of contaminated soil; and procedures to be employed to meet the requirements of Section 8-40-301 through 306.

5.3.3 Contractor Qualifications

Pursuant to Business & Profession Code, contractors performing excavation of the contaminated soil will be required to have a Class A license with a Hazardous Substances Removal Certification. In addition, the contractor's work force will be required to have 40-hours of Occupation Safety Health Administration (OSHA) Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) training and use appropriate personal protection equipment (PPE) to control exposure to COCs. As appropriate, the contractor's personnel will also have current 8-hours of supervisory training prior to work at the Site.

5.3.4 Site Control

Access to the Site will be controlled by the contractor to prevent unauthorized entry. Fencing and other barricades should be maintained by the contractor, and the construction entrance should be closed and locked during non-working hours to prevent entrance to the Site by unauthorized personnel.

5.3.5 Excavation Procedures

Ground cover including pavement and concrete will be removed and recycled in accordance with California Assembly Bill AB 939. To the extent practicable, the excavations will be advanced to remove soil from the area depicted on Figure 5-1.

5.3.5.1 FIELD SCREENING

The evaluation of soil conditions will include the use of handheld field instruments to provide real-time measurements of total organic vapors and methane (LEL). Soil samples will be collected of the visibly stained or odorous soil for headspace field screening. The samples will be collected from a minimum depth of 0.5-feet below the exposed soil surface and the locations marked on field data sheets. The soil sample will be placed into a unused sealable plastic bag

and left to sit under direct sunlight, if possible, for approximately five to 10 minutes. A handheld photoionization detector will then be inserted into the headspace of the bag and reading recorded. If based on the readings, the soil appears impacted, it will be managed for offsite disposal as described below.

5.3.5.2 SHORING

Where necessary, excavations will be shored and braced to furnish safe and acceptable working conditions and maintain existing slopes, fills and open excavations pursuant to CalOSHA requirements. The bracing will be arranged so as not to place any stress on portions of the completed work until the general construction thereof has proceeded far enough to provide ample strength.

In advance of all excavations deeper than five-feet or more, a detailed plan showing the design of sheeting, shoring, bracing, sloping or other provisions to be made for worker protection from the hazard of caving ground and protection of structures during the excavation will be prepared. The shoring plans will be designed to comply with the requirements of OSHA, CalOSHA and the California Business and Professions Code and will provide adequate ingress and egress from the excavations.

5.3.6 Soil Handling

It is anticipated that the excavated soil will be directly loaded into trucks for offsite disposal. The soil will be handled in a manner to minimize the potential for airborne dust and odors to be generated. During soil handling, air monitoring will be conducted and used to confirm the efficacy of soil management procedures. As appropriate, procedures will be modified to control emissions of dust and odors. Disturbed areas that are inactive for seven days or more will also be wetted to minimize potential airborne entrainment and generation of dust. In addition, trucks transporting soil offsite will not be loaded above the side or rear of the truck bed. The truckload

will be covered with a tarp prior to leaving the Site to prevent particulate emissions to the atmosphere.

5.3.6.1 AIR MONITORING

Real-time air monitoring for TPH, VOCs and respirable dust will be performed during excavation and soil handling activities to minimize the potential migration of airborne contaminants. The objective of the air-monitoring program is to protect the health and safety of the nearby community and onsite workers.

During normal working hours, organic vapor monitoring will be conducted during excavation activities. The Site Health and Safety Officer (SHSO) will determine the air monitoring locations based on Site operations and the location of areas that could be adversely impacted by air emissions. In general, real-time monitoring will be conducted downwind and around the perimeter of excavation activities. Monitoring locations will be documented on a monitoring log, along with any concentrations detected.

Instrumentation used during real-time monitoring for TPH and VOCs will include a PID, such as a Mini-Rae Model 2000 vapor monitor or equivalent. This instrument is capable of measuring organic vapors at a concentration of 0.1 ppm_v as isobutylene, with a range of 0 to 10,000 ppm_v, and is equipped with an adjustable internal alarm. The instrument can detect a wide range of VOCs; however, it cannot identify the specific compounds detected.

Real-time monitoring will consist of the following activities:

- Determine the predominant wind direction;
- Place the instrument downwind of Site operations, staying close to the immediate area to be excavated;

- Position the instrument probe near the normal breathing zone and monitor for approximately 5 minutes after instrument readings have stabilized; and
- Record the following observations and readings in real-time:
    - Location;
    - Time;
    - Site activity;
    - Readings;
    - Visual observations of dust; and
    - Site conditions, including current weather conditions; and
    - Odors and/or other miscellaneous observations.

The perimeter of the work area will be monitored while excavation activities are being conducted. If any readings exceed action levels identified in the Site-specific Health and Safety Plan, work will be stopped, engineering controls will be implemented and the work and monitoring schedule will be adjusted until background levels are reached.

5.3.6.2 DUST AND VAPOR CONTROL

Dust and vapor control will be performed by applying water with a low-pressure spray system. Low volumes of potable water should be routinely spread in areas where dust may be generated because of excavation activities. If monitoring indicates that the dust control measures are not adequate, then additional engineering control measures should be implemented. These additional measures will include, but are not limited to: 1) change of work procedures; 2) soil wetting during and excavation and loading; 3) tarping of trucks; and 4) covering of exposed excavations with plastic sheeting; 5) use of dust palliatives; and 6) use of odor suppressing foams.

5.3.7 Equipment Decontamination

Equipment used for excavation and loading of soils should be dry brushed before leaving the Site. Trucks exiting the Site should be inspected and logged for compliance with the Site decontamination requirements. To minimize the spread of soil, equipment should be cleaned prior to movement out of active work zones. The equipment should be dry-brushed for removal of material from the truck body and tires prior to exiting work zones.

5.3.8 Storm Water Control Measures

The excavation activities should be performed in compliance with California State Water Resources Control Board (SWRCB) Water Quality Order 2009-0009-DWQ, the *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, NPDES No. CAS000002* ("the General Permit;" SWRCB, 2009). Storm water pollution control procedures should be implemented in accordance with the Best Management Practices (BMPs) as outlined by the *Stormwater Best Management Practice Handbook; Construction* (CSQA, 2003) and Caltrans *Construction Site Best Management Practices (BMPs) Manual* (Caltrans, 2003).

5.4 SOIL DISPOSAL

It is planned to have the excavated soil pre-profiled for direct loading into trucks for offsite transportation and disposal. Procedures for handling the excavated soil are presented below.

5.4.1 Disposal Characterization

Samples will be collected to properly characterize the soil prior to disposal. The final destination of excavated soil will be selected based on the waste analytical results and acceptance criteria provided by the waste management facilities. The soil samples results will be evaluated using the procedures outlined in *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*

(SW-846; USEPA, 2007). USEPA's SW-846 identifies that the statistically representative concentration should be used when characterizing solid wastes with potentially variable concentrations, i.e., the 90 percent upper confidence level (UCL) concentration. The 90 percent UCL concentration represents the concentration that it is expected that 90 out of 100 samples will have concentrations equal to or less than. The number of samples and suite of analytes will be determined based on the nature and source of the contamination and waste facility requirements.

A statistical analysis using a Student's "t-test" will be performed using the sample results to determine the 90 percent UCL concentration of the regulated constituents in the samples. The results of the sampling will also be evaluated to determine whether an appropriate number of samples have been collected to characterize the waste using methodologies as outlined in USEPA's SW-846.

The results of the excavated soil sampling and statistical analysis will be forwarded to landfills or other appropriate facilities for profiling and acceptance.

5.4.2 Soil Stockpile Management

While it is not anticipated that excavated soil will be stockpiled, in the case where stockpiling is required, the following procedures will be used. The soil stockpiles will not exceed 500 cubic yards each, with a total volume of less than 2,000 cubic yards, and will not be greater than 10-feet in height. The soil stockpiles will be covered with plastic sheeting to control emissions. Stockpiled areas will also be bermed to prevent storm water erosion and/or runoff. Uncovered stockpiles will be watered pursuant to dust control requirements to minimize airborne particulate emissions. The berms surrounding the stockpiled area will be inspected and maintained when the stockpiles are uncovered and water is applied for dust control.

Any portions of the stockpile not being actively worked on during a given day will remain covered with plastic sheeting. Plastic sheeting will be held in place by tires, concrete or other

appropriate weighted material. Excavations, stockpiles and inactive work areas will be inspected regularly to assess the potential for dust and odor generation. Stockpiles will be inspected daily for proper cover as required by BAAQMD Rule 8 Regulation 40.

5.4.3 Offsite Soil Transport

The excavated soil will be direct loaded for offsite disposal. Non-hazardous soils will be transported offsite using licensed transporters and appropriate bills of lading. Hazardous wastes will be manifested offsite on Uniform Hazardous Waste Manifests in accordance with regulatory requirements. It is expected that the excavated soil will be segregated and disposed at Class I and/or Class II waste management facilities. Appropriately, designated and licensed trucks will be used to convey the soil from the Site to the disposal facilities.

5.4.3.1 RECORDKEEPING

A log sheet will be maintained that documents the date, time, estimated volume, waste/material, trucking company, driver and vehicles used for the trip. The log will also document the decontamination procedures of the trucks. Log sheets will be kept at the Site. In addition, copies of bills-of-lading, analytical results representing the load, hazardous waste manifests (as appropriate), route maps and directions, emergency instructions and contacts will be carried with each load leaving the Site.

5.5 IMPORT MATERIAL CHARACTERIZATION

To the extent that soil is imported for Site use, it will be characterized prior to delivery. Soil samples should be collected from Site borrow areas for characterization prior to import and placement at the Site in accordance with DTSC's October 2001 *Information Advisory – Clean Imported Fill Material* guidance. The laboratory analytical results of the soil samples collected from the proposed imported fill material borrow areas should be compared to appropriate screening levels, such as the ESLs.

6.0 VAPOR MANAGEMENT

Based on the presence of VOCs and methane in soil gas, a vapor management plan has been developed that includes engineering controls. Engineering controls have been designed to address the threat posed by subsurface vapors by controlling their migration. Subslab venting systems (SSVS) will be used to control methane beneath new buildings in those areas of the Site where subsurface VOCs are below applicable health based screening levels, i.e., 20, 50 and 80 Chemical Way but where methane is present above 5,000 ppm_v.

SSVS uses buried perforated pipes to intercept upward migrating methane and convey it to discharge points or vents located well away from any possible receptors or sources of ignition. Wind-driven turbines are used to induce the vacuum to evacuate subsurface vapors. Additional ventilation assistance is provided by diurnal changes in temperature and barometric pressure. If monitoring indicates the need, a blower can be installed in the vacuum pipe to induce vacuum.

Where soil gas conditions indicate a potential threat to indoor air from migration of subsurface VOCs, i.e., 70 Chemical Way, subslab depressurization systems (SSDS) will be used. SSDS are effective in addressing soil gas containing VOCs migrating to indoor air (Folkes and Kurz, 2002). Migration of VOCs in soil gas to indoor air is controlled by pressure differentials between indoor spaces and soil underlying the building's foundation. A stack effect can be created as indoor air is heated by furnaces, appliances and sunlight. The upward movement of indoor air from the stack effect creates a lower pressure zone above the foundation relative to the pressure beneath the building. Due to the pressure differential, soil gas can be drawn indoors through cracks and openings in the foundation. Factors such as rising groundwater levels and decreasing atmospheric pressure increase soil vapor pressure under the foundation slab of a building. Therefore, these factors also influence the potential migration of soil vapor to indoor air (McAlary, 2003).

The objective of the SSDS is to create a negative pressure zone under the foundation slab of the proposed buildings to capture soil gas containing VOCs prior to entering indoor air spaces. The

captured soil gas is then vented to the atmosphere at a level and location such that potential exposure to chemicals above health based protective levels can be reduced. The SSVS and SSDS will be separated by cutoff trenches to minimize air flow between the two systems.

The following sections present the details of the design and construction specifications for the vapor control measures.

6.1 VAPOR SYSTEM PERMITTING

An Authority to Construct/Permit to Operate (ATC/PTO) will be obtained from the Bay Area Air Quality Management District (BAAQMD) for the ventilation systems. The ATC/PTO will outline the process equipment details, emission flow rates and the estimated mass per day of VOCs and methane. Pursuant to regulations, the discharge piping will be outfitted with sample ports to monitor emissions for compliance with BAAQMD requirements.

6.2 SSVS DESIGN AND OPERATION

A dispersion layer and perforated pipes will be installed to provide a higher permeability zone, i.e., preferential pathway, for the gas to migrate and vent to atmosphere. The overlying building foundation in conjunction with membranes or other barriers, as needed, will be used to retard upward migration of methane.

6.2.1 Ventilation Trenches and Piping

Ventilation trenches shall be placed such that no portion of the foundation is more than 25 feet from a ventilation trench. Trench cross-section dimensions shall not be less than 12 inches by 12 inches. Ventilation trenches shall be backfilled with pea gravel (approximately 3/8-inch in diameter) or other material of similar size and porosity. Schematics of ventilation trenches and piping are depicted on Figures 6-1 and 6-2.

Ventilation trenches shall be provided with perforated pipe of not less than 4-inches in diameter. The total pipe perforation area shall be at least equal to 5 percent of the total surface area of the pipe. Perforated pipe shall be located a minimum of 4-inches beneath the foundation. Where piping transitions through building footings, the penetration shall be accomplished in compliance with the Uniform Building Code and with the approval of the local Building Official.

Perforated pipe shall be connected to vertical ventilation pipe. Vertical ventilation pipe shall be not less than 3-inches in diameter and shall be constructed of materials specified by the Uniform Plumbing and Mechanical Codes. All joints shall be tightly sealed with approved materials. Ventilation pipe may be located within walls/chases or shall be similarly protected from physical damage. Ventilation pipe shall be constructed in a manner that will allow it to be connected to an active venting system, if necessary, without modification or damage to the structure.

Ventilation pipes shall terminate at a height determined acceptable by the building design engineer but not less than 18-inches above the adjacent level. Ventilation pipes shall be located at least three feet from a parapet wall. Ventilation pipes shall terminate at a distance of at least 10 feet from any building opening or air intake and at least four feet from any property line. Any ventilation pipe located within an open yard shall terminate at a height of not less than 10 feet above adjacent grade. The piping shall be installed to allow additions of fans or blowers, if monitoring indicates the need.

The termination of all ventilation pipes shall be provided with a "T" connection or other approved rain cap to prevent the intrusion of rainwater. Ventilation piping shall be clearly marked to indicate that the pipe may contain combustible gas. This may be accomplished through stencils, labels or other methods. Pipes shall be marked near their termination point and at five-foot intervals along the remainder of the ventilation pipe. This includes sections encased within walls or other enclosures. An acceptable identifier would be the words "METHANE GAS" printed in two-inch letters.

All underground electrical conduits penetrating the slab or foundation of the building shall be provided with a seal-off device as normally found on classified electrical installations. This device is intended to prevent the travel of gas into the occupied portion of the structure through conduit runs. Any device installed shall meet the applicable requirements of the California Electrical Code.

6.3 SSDS DESIGN AND OPERATION

The SSDS has been designed consistent with USEPA guidelines for active gas control systems for new construction (USEPA, 1993; 1995). Originally developed as a means to control radon migration to indoor air, recent research has shown that SSDS can be an effective tool to address potential migration of soil gas containing VOCs to indoor air. The SSDS consists of a sub-slab negative pressure zone, a capture zone, foundation seals and an active ventilation system. A schematic of the sub-slab depressurization system is depicted on Figure 6-2.

6.3.1 Sub-Slab Negative Pressure Zone

The design of the SSDS is based on creating a negative pressure zone between indoor air and soil gas. The negative pressure zone is designed to produce a lower air pressure beneath the foundation than within the buildings, thus creating airflow from indoor air to beneath the building. The sub-slab negative pressure zone design includes a concrete foundation slab, with one or more openings for suction and a permeable sub-slab layer. Crushed rock, gravel or other coarse-grained permeable materials are installed as part of the sub-slab media that also provide drainage and a base for the foundation slab (USEPA, 1995).

6.3.2 Capture zone

The design of the SSDS is predicated on applying a vacuum within the permeable sub-slab layer beneath the building to create suction points, i.e. capture zones, for soil gas and indoor air. The vacuum applied to the sub-slab is generated by fans that draw soil vapors and indoor air to the

sub-slab depressurization ventilation system. The fans are to be installed inline of the ventilation system exhaust stack. The number and location of suction points is determined by the permeability of the materials under the foundation slab and size of the building (USEPA, 1993).

6.3.3 Ventilation

The ventilation component of the SSDS exhausts soil gas and indoor air extracted from the negative pressure zone to the atmosphere. The ventilation system exhaust is installed away from living spaces, gas re-entry points i.e. open windows or doors and building ventilation system intakes.

6.3.4 Foundation Seals

The design also requires sealing of foundation penetrations. Penetrations of the foundation include plumbing, electrical conduits and expansion joints installed during construction. Improper sealing may also increase operational costs due to excessive indoor air flow relative to soil gas capture (USEPA, 1993).

6.3.5 Sub-Slab Depressurization System Operational Specifications

The SSDS is designed to maintain a negative pressure of at least minus 0.5 Pascals (minus 0.000027 pounds per square inch) beneath the foundation slab (USEPA, 1993). The following specifications should create a negative pressure zone under the foundation slab in excess of that value and control migration of VOCs to indoor air.

6.3.5.1 SUB-SLAB NEGATIVE PRESSURE ZONE

A minimum of four to six inches of permeable material, i.e. aggregate, should be placed between soil and the foundation slab to facilitate lateral flow of soil vapors into the capture zone. Crushed aggregate that meets size #5 specifications (pass through a 2-inch sieve and be retained by a 0.25-inch sieve) as specified in ASTM C-33-90, “Standard Specification for Concrete

Aggregates" or clean sand should be used (USEPA, 1993; 1995). A vapor retarder, such as 6-millimeter thick polyethylene or equivalent flexible material should be placed above and below the gas permeable layer to prevent the introduction of fines from the underlying soil or the filling of void spaces by wet concrete during foundation placement (USEPA, 1994).

Interior sub-slab walls should be kept to a minimum to facilitate the lateral extension of the sub-slab negative pressure zone under the footprint of the building (USEPA, 1993). If using post-and-beam construction with no internal sub-slab walls, at least one capture zone should be placed under a foundation of approximately 100,000 square feet (USEPA, 1993).

6.3.5.2 CAPTURE ZONE

The capture zone or suction pit should be installed in a void or equivalent exposed aggregate surface area in the sub-slab gas permeable material. Placement of the suction points should be near the center of the slab and as far as possible from internal sub-slab walls for an even pressure field in all directions. The capture zone should have an exposed aggregate surface area 30 times the cross-sectional area of the venting pipe. For a 6-inch diameter pipe, the capture zone should be a void approximately 4 feet by 4 feet and 8 inches deep. Pressure-treated plywood or concrete blocks should be installed to prevent collapse of the capture zone. One capture zone or suction pit should be installed for each 100,000- square feet of floor area. The capture zones should be separated by internal sub-slab walls (USEPA, 1993).

6.3.5.3 FOUNDATION SEALS

Acrylic latex caulk seal or polyurethane seals should be applied to all possible foundation penetrations (USEPA, 1993; 1995). Seals should be applied to clean and dry surfaces that are free of grit. Foundation penetrations include:

- The area around the opening for the suction pit and capture zone as well as the ventilation pipe.

- The surface of the foundation slab.

- Masonry basement walls.

- Cracks and expansion joints between the foundation and substructure walls. If code permits poured joints and/or control joints, they should be used in lieu of expansion joints to create a better seal.

- Areas around all piping systems that penetrate the foundation slab or substructure walls.

6.3.5.4 VENTILATION

Ventilation of soil vapors collected from the capture zone should be achieved by a single, vertical 3-inch to 6-inch Schedule 40 polyvinyl chloride (PVC) pipe fitted with an inline centrifugal fan running from the capture zone to an exhaust above the roof. All piping joints as well as pipe penetrations through the foundation slab, the floors and the roof should be sealed (USEPA, 1993).

Inline centrifugal fans rated from 500 cubic feet per minute to 600 cubic feet per minute at zero static pressure should be used for the buildings. The ventilation fan should run continuously and be equipped with a pressure monitoring and warning device (USEPA, 1993). The exhaust stack should be located above the eave line of the roof a minimum of 0.3 meters (1 foot) above the roof (USEPA, 1993; 1995). The location of the exhaust stack should be a minimum distance of 3 meters (10 feet) from any air re-entry points including chimneys, windows or open doors and building ventilation system intakes.

6.3.5.5 CONDENSATION REMOVAL

The SSDS should include means to remove soil moisture condensation. The condensate in elbows or other low points can reduce the effectiveness of the SSDS. A vertical ventilation pipe

design with no bends can assist draining of condensation along the pipe runs back to the sub-slab aggregate and minimize static pressure losses that could reduce the effectiveness of the SSDS (USEPA, 1995). In the event that horizontal piping is installed, a pitch of approximately 1/8-inch per foot of pipe run should be used to drain condensate back to the suction pit. The ventilation pipe should be insulated to minimize the accumulation of condensation in the ventilation system (USEPA, 1993).

6.3.5.6 SYSTEM TESTING

Testing of the SSDS should be conducted by drilling at least 10 holes approximately 0.25 to 0.5 inches in diameter through the foundation slab prior to building completion (USEPA, 1993). A micromanometer should be used to measure pressure beneath the slab before and during SSDS operation. A threshold of at least minus 0.5 Pascal (minus 0.000027 pounds per square inch) should be used to evaluate the effectiveness of the SSDS in addressing potential migration of soil gas containing VOCs to indoor air. Following completion of pressure testing, the holes should be sealed with concrete patching and polyurethane or acrylic latex caulk.

7.0 GROUNDWATER MANAGEMENT

The laboratory analysis of groundwater samples revealed the presence of TPH, VOCs and SVOCs on a portion of 70 Chemical Way (Figure 5-1). Groundwater is first encountered at approximately 7-feet below ground at the Site. The depth to groundwater fluctuates seasonally. Because the removal of soil may require excavation in areas to depths of the shallow groundwater, removal, treatment and disposal of the extracted groundwater, may be necessary. However, efforts should be made to control the amount of dewatering by limiting allowable seepage rates. In the event that groundwater is removed from subsurface excavations near the former mixing tank area, the groundwater will be treated and disposed in accordance with applicable requirements, as described below.

Once the soil containing source material is removed (Section 5), it is anticipated that natural attenuation processes will continue to reduce the concentrations of chemicals in groundwater, i.e., passive bioremediation. Passive bioremediation when combined with source removal has been demonstrated to be effective in reducing concentrations of chemicals to numerical water quality objectives within a reasonable time (SWRCB, 1995). To address the presence of TPH, VOCs and SVOCs in groundwater, institutional controls should also continued be implemented in the area demarcated on Figure 5-1. To facilitate groundwater monitoring following Site development, existing monitoring wells that will be disturbed by Site development activities will be abandoned and replaced as described below. Details of the post-development groundwater-monitoring program are presented in Section 9.

7.1 GROUNDWATER INSTITUTIONAL CONTROLS

The groundwater conditions due to the onsite contributions of chemicals to groundwater beneath a portion of 70 Chemical Way require measures to limit use or contact until such time that numerical water quality objectives have been reached. Therefore, the updated LUCs will continue to limit direct contact with the groundwater in the designated area unless permitted in writing by the Regional Board.

7.2 MONITORING WELL ABANDONMENT AND REPLACEMENT

Activities may disturb the existing groundwater monitoring wells during Site development. Therefore, monitoring wells will need to be abandoned and replaced following development activities. The proposed final locations for the replacement wells will be submitted to the Regional Board for their concurrence, prior to reinstallation.

7.2.1 Monitoring Well Abandonment

The monitoring wells MW-4, MW-5, MW-6 and MW-7 will be abandoned under the supervision of a C-57 licensed well drilling contractor and the oversight of a California Registered Geologist. A well abandonment permit will be obtained from the SMCHD and documentation of the well abandonment will be forwarded to the regulatory agencies following completion.

7.2.2 Monitoring Well Replacement

The monitoring wells will be installed in borings drilled using hollow-stem auger equipment operated by a California C-57 licensed well drilling contractor. Soil samples will be collected for lithologic characterization between the ground surface and the proposed target depth of the monitoring wells. Descriptions of the subsurface lithology will be recorded on boring logs using the Unified Soil Classification System.

The soil samples will be field screened using a Thermo Environmental, Inc. 580B PID calibrated to 100 parts per million by volume (ppm_v) with isobutylene gas for organic vapors using closed headspace techniques. The results of the field screening will be recorded on the boring logs. Upon completion of the well borings, the groundwater-monitoring wells will be constructed within the boring annulus.

The base of the groundwater-monitoring wells will be constructed of approximately 5-foot long, 2-inch diameter, Schedule 40 PVC slotted pre-pack well screens with 0.010-inch slots. Based on

the geologic materials encountered during the previous Site investigations, the sand filter pack will consist of #2/16 Monterey sand. In addition, #2/16 Monterey sand will be placed within the annulus between the pre-pack well screen and the borehole wall. The top of the slotted screen well casing will be outfitted with 2-inch diameter Schedule 40 PVC blank well casing to the ground surface. A minimum two-foot seal consisting of bentonite pellets will be placed above the pre-pack well screen. A Portland cement grout sanitary seal will be placed above the bentonite seal to the ground surface. The top of the well casing will be completed with a traffic-rated flush-mount steel protective box and locking cap for security.

7.3 CONTROL OF CONSTRUCTION WATER

During construction, efforts should be diligently pursued to minimize the flow of groundwater and surface runoff from entering the excavation including, but not limited to: footing excavations; excavations for retaining walls; wing walls; abutment walls; storm drainage systems; and sanitary sewer systems and their appurtenances. Well points for dewatering should not be allowed. Continuous pumping of excavations for dewatering purposes should only be used as needed. The maximum seepage rate of the excavation following placement of the concrete is recommended not to exceed 0.54 gallons per square foot (22 liters per square meter) of the excavation area per eight-hour period.

The dewatering equipment should be inspected daily, when in use, to ensure that all components are functional and routinely maintained to prevent leakage. Should any component of the dewatering equipment be damaged or affect the performance of the equipment, the dewatering operation should be discontinued and the component should be repaired or replaced with substitute equipment.

7.4 CONSTRUCTION DEWATERING DISCHARGE

If necessary, groundwater resulting from dewatering activities should be permitted for disposal to the storm water drainage system or sanitary sewer. Onsite storage should be used to contain

extracted groundwater and allow for settling of sediments. Representative samples of discharge water should be collected from the onsite storage structures at the frequency as required by the permitting agency and tested to comply with applicable effluent limitations, including SBSA or the Regional Board General Waste Discharge Requirements Order No. R2-2006-0075/NPDES No. CAG912002 and/or Order No. 2009-0009-DWQ/NPDES No. CAS000002. The treatment of extracted groundwater should be conducted prior to discharge to the storm water drainage system. The system to treat groundwater removed during dewatering at the Site should consist of sedimentation, sand filtration and carbon adsorption and other applicable Best Management Practices (BMPs).

7.4.1 Sedimentation

Extracted groundwater should be placed in onsite storage tanks to allow for gravity settling of suspended sediments. The treatment system should be plumbed so that additional influent storage can be added as needed.

7.4.2 Filtration

A multi-media pressure filter should be used for additional treatment to reduce suspended solids concentrations. Water should be pumped from the onsite storage tanks through the filters. The filters should be operated in line between the onsite storage tanks and the carbon adsorption units. The filters should be routinely backwashed to maintain filter efficiency.

Solids from the filters should be combined with solids settled at the bottom of the onsite storage tanks. As necessary, the solids should be slurried (pumped) to sediment drying bins or a plate and frame filter press for dewatering. When the solids are dried sufficiently, to less than 50 percent moisture, the dried sludge should be placed in a soil storage bin for testing and disposal.

7.4.3 Activated Carbon Adsorption

Following removal of solids, the groundwater should be treated for removal of dissolved organics. Granular activated carbon (GAC), a common form of activated carbon for water treatment, should be used during treatment to adsorb dissolved organics, including petroleum hydrocarbons. The adsorption rate is a function of influent water quality, the specific contaminant's adsorption kinetics (isotherms) and the degree of removal efficiency required to achieve the discharge standard. GAC is manufactured in size ranges of 20 to 40 mesh. The carbon is installed in a vessel and raw water is passed through the activated carbon bed. Vessels are sized based upon the contaminant, concentration and flow. To avoid the problem of "breakthrough" due to exhausting the adsorption capacity of the carbon, two GAC units should be plumbed in series. Water samples should be routinely collected from a sample port between the carbon vessels. The samples should be analyzed for TPH, VOCs and SVOCs to monitor breakthrough.

8.0 NOTIFICATION PROCEDURES

As identified above, soil, soil gas and groundwater containing TPH, VOCs and SVOCs are anticipated to be encountered during Site development, and will be managed in accordance with Sections 5.0, 6.0 and 7.0. In the event that uncharacterized, contaminated material is encountered during excavation activities, and it is unrelated to known sources (i.e., it does not fit the contaminant and risk profiles presented in this SMP), the contractor will follow the procedures presented below.

Notices are required to be submitted to the Regional Board: prior to activities that could alter or disturb the hardscape cover; when conditions do not conform with the *LUC*; and when ownership of the property is transferred.

8.1 PRE-ACTIVITY NOTIFICATION

The *LUC* limits activity on the Site that could alter the hardscape cover, e.g., excavation, drilling, trenching, etc., without prior notice and approval from the Regional Board. The *LUC* requires that such activities follow the *SMP*, unless otherwise approved in writing.

8.2 NON-CONFORMANCE NOTIFICATION

If the Site owner identifies any conditions that are not in conformance with the *LUC* during the annual inspections or at any other time, the Site owner must within 10 days of identifying the violation: determine the identity of the party in violation, send a letter advising the party of the violation of the *LUC*, and demand that the violation ceases immediately. Additionally, copies of any correspondence related to the violation of this *LUC* are required to be sent to the Regional Board within 10 days of its original transmission.

8.3 SUBSEQUENT OWNER NOTIFICATION

The Site owner is required to provide written notice to the Regional Board not later than thirty (30) days after any conveyance of any ownership interest in the Site. The written notice should include the name and mailing address of the new owner of the Site and shall reference the Site name and Site code. The notice is also required to include the Assessor's Parcel Number (APN). Disclosure of Site investigation reports to a future buyer and/or developer should be conducted to provide appropriate information on the conditions at the Site.

8.4 DISCOVERY

During construction, a variety of hazardous materials may be encountered, including suspected or confirmed contamination identified during the previous investigations. The affected media may include soil, soil gas and groundwater, as well as materials associated with structures such as USTs, sumps and sewers.

Upon the discovery of newly found contamination during Site development activities, operations within 20-feet of the boundary of the discovery will cease and the area will be enclosed by the contractor using suitable barriers, i.e., chain link fence, fabric fence, etc. Known contaminants that are found to have affected a larger area are not to be considered as "newly found contamination" as this term is reserved for contaminants not reasonably anticipated given the known sources, or for which a risk management analysis has not been presented by this SMP. An appropriately qualified environmental professional should then make an initial determination of the nature of the discovered condition in the field using observations and field equipment for TPH and VOCs.

8.4.1 Notification Requirements

Initial identification of hazardous substances is often based on visual or olfactory observations by the contractor. However, to protect worker health and safety and to ensure accurate results, after

proper notification, an appropriately qualified environmental professional should be contacted to conduct or oversee the field screening activities using direct reading equipment such as a photoionization detector (PID) or soil gas probe. If the field tests and visual observations indicate contamination, the Site owner will notify the Regional Board of the initial discovery of newly found contamination.

Samples will be collected for laboratory analysis and grading operations will stop in the immediate area pending review of the laboratory analytical results and approval from the Regional Board that operations may continue. Based on the results of the laboratory analysis, one of two scenarios could occur:

- No Action Required: If the results of the analytical testing reveal concentrations of constituents that are less than applicable screening levels, the Regional Board will be notified via email of the event including confirmation test results. After review and concurrence of the sample results by the Regional Board that operations may continue, Site development work in this area will proceed.

- Action Required: If the results of the analytical testing reveal concentrations of constituents that exceed applicable screening levels, the Project Manager shall notify via email the Regional Board of the analytical testing results. The notification shall include a report that identifies the location of the contamination, applicable regulatory comments, remedy and duration of work plan.

8.4.2 Conditions Posing an Immediate Threat

For life-threatening or serious hazardous materials incidents, local police, fire and rescue services shall also be contacted by calling 9-1-1.

In addition, the Regional Board will be notified immediately upon the discovery of any condition posing an immediate threat to public health or safety or the environment. Within seven days of

the onset of such a condition, a report will be submitted to the Regional Board, setting forth the events that occurred and the measures taken in response thereto.

8.4.3 Releases to Water

For any quantity of spill or release of hazardous substances or petroleum hydrocarbons to water, the following numbers shall be contacted immediately upon discovery:

- National Spill Response Center: 1-800-424-8802;
- California Office of Emergency Services: (916) 845-8510; and
- California Regional Water Quality Control Board-San Francisco Bay Region: (510) 622-2300.

8.4.4 Releases to Soil

For spills or releases of hazardous substances or petroleum hydrocarbons to soil that are considered, based on best professional judgment and/or physical evidence (including but not limited to olfactory, visual, field instrument, and lab data), to be an immediate threat to human health and the environment, the Regional Board shall be contacted immediately upon discovery. Spills or releases not considered an immediate threat to human health and the environment will be reported to the Regional Board within 24-hours.

8.4.5 Underground Storage Tank (UST) Notification

Special consideration is necessary when USTs are encountered. The decommissioning of USTs is regulated the Regional Board. The owner/operator must notify Regional Board within 24 hours of discovering a leak or release from a UST. Once the agencies are notified, subsequent Site assessment activities will be conducted.

8.5 INITIAL SITE-MANAGEMENT PROCEDURES

After the notification procedures have been initiated, an appropriately qualified environmental professional will assess the health and safety situation to determine whether workers can safely continue working within the affected area. If continuation of Site development within the affected area is deemed to not pose an unacceptable threat to human health and the environment, appropriate initial Site-management procedures will be implemented, as described below.

The initial Site-management includes handling, excavation, dewatering, disposal and transportation of hazardous substances necessary to allow Site development to continue. Throughout the initial Site-management process, the Site owner, working with the Regional Board should review the project and determine whether immediate corrective actions may be necessary and how to prevent an offsite release of the material. The Site owner, or its designee, will oversee the implementation of the applicable sampling program necessary to characterize the material and facilitate laboratory analysis of samples.

8.5.1 Segregating Contaminated Material

The first step in initial site-management of potentially contaminated media is segregating the material from clean material. If Site conditions allow, a stockpile area should be established to segregate potentially contaminated soil, incorporating Best Management Practices (BMPs) such as a lining, silt fences, straw bales and cover material and in compliance with BAAQMD requirements. To limit the volume of affected media, clean material should not be added to existing contaminated material.

Alternatively, roll-off boxes, aboveground storage tanks (ASTs) or 55-gallon drums may be used to contain materials. Soil or sediment suspected of being contaminated through olfactory or visual evidence should be segregated and placed in a lined and covered stockpile until it can be characterized (sampled and analyzed) by qualified personnel.

Potentially contaminated groundwater or sludge should likewise be segregated through methods such as AST, drums, or similar methods. These materials should be characterized by sampling and analysis under the direction of appropriately qualified and trained personnel. Airborne contaminants such as dust laden with heavy metals should be controlled using dust suppression methods, such as water trucks and mulch.

In the event that contaminated material is to be stockpiled, soil samples will be collected from the stockpile for characterization prior to disposition. Baseline soil samples will also be collected to characterize the soil conditions within the designated stockpile area. The stockpiles will then be covered with plastic, weighed down with sand bags to minimize the potential for the contaminated material to become airborne and inspected daily. Following removal of the stockpiles, soil samples will be collected from the stockpile area to verify that the underlying soil has not been impacted.

9.0 MONITORING AND MAINTENANCE PROGRAM

This section summarizes the post-development monitoring and maintenance activities. The monitoring and maintenance program addresses the long-term management of the: hardscape cover; vapor mitigation systems; and groundwater with associated monitoring wells. Maintenance and monitoring will begin once Site development is complete. The frequency and parameters for the monitoring and maintenance program are included in Table 9-1. Qualified technicians will conduct the monitoring and inspections and record the findings on reporting forms. The technicians will be supervised by a qualified California Civil Engineer.

9.1 HARDSCAPE MONITORING AND MAINTENANCE

9.1.1 Hardscape Monitoring

Maintenance of the hardscape cover in the area depicted on Figure 5-1 will require periodic inspections. Differential settling or loading stresses can be caused by changes in temperature or moisture content, traffic, or by small movements in underlying or adjacent materials. Cracks, holes, depressions or other types of distress are the visible evidence of hardscape deterioration. Early detection and repair of minor defects is necessary to maintain the integrity of the cover. Cracks and other surface breaks, which in their initial stages are almost unnoticeable, can lead to serious defects if not addressed. Therefore, the hardscape surface cover will be inspected on a periodic basis by qualified technicians, and annually per requirements of the LUC.

Potential problems with the hardscape generally appear within the first two years, therefore, inspections should be more frequent at the beginning of the post-development period, i.e., semi-annually. After two years, the inspection frequency should be reduced, i.e., annually. During each inspection, a *Site Inspection Field Data Sheet* will be completed, which will be used to record the condition of the hardscape and, as appropriate, areas that require repair. The inspections will continue, unless otherwise modified by the Regional Board.

A qualified, California Civil Engineer will inspect the Site annually. The engineer will: evaluate and document the condition of the hardscape, surface improvements, drainage facilities and the security system; and review the adequacy of semi-annual inspections. The inspection frequency is detailed in the Table 9-1.

9.1.2 Hardscape Maintenance Procedures

Determination of the cause of hardscape cover stresses will be performed prior to efforts to remedy the distress or failure. The cause of the defect as well as the defect itself must be addressed to provide a cost-effective solution for long-term maintenance. In some cases, the cause of the defect may be such that correction is not feasible at that time and only remedial measures are possible. Regardless, the cause and effect will be established and documented.

9.1.3 Repair Procedures

Procedures for correcting distresses include patching, crack and surface sealing, and in some cases resurfacing. Patching may be either a temporary or a permanent repair. Crack sealing will be accomplished using emulsified or cutback asphalt, special asphalt compounds, concrete epoxy, specialty crack and joint sealers, or possibly by sealing the entire surface area. Surface treatments, with or without aggregate and thin overlays may also be used as part of the repair procedures.

9.1.3.1 PATCHING

Deep patches (deeper than 4-inches) will be used for making permanent repairs. The material in the area will be compacted to the depth necessary to achieve firm support, which may require moving some of the subgrade. The granular base in the hole will be primed and the hole will be backfilled with a dense-graded hot-asphalt plant mix or Portland cement concrete. If the hole is more than 6-inches deep, the backfill will be placed in layers and each layer will be thoroughly compacted. Finally, a surface layer will be completed flush with the surrounding grade.

9.1.3.2 SURFACE PATCHES

If there are small hairline cracks, minor surface distortion or raveling, then a surface patch will be used. Typically, this does not require excavation, and only a layer of hot-mix asphalt, chip seal cover or epoxy coating will be required. The cracked area first will be broomed or blown with high pressure air, prior to patching to assure a good bond.

9.1.3.3 SEALING CRACKS

Cracks will be sealed with modified asphalts (e.g., rubber-asphalt sealer), or specially prepared crack and joint sealers. Prior to the crack being sealed, all incompressible material will be removed by high pressure air or routing. If grass is growing through the crack, it might be necessary to inject an approved herbicide. Modified asphalts require highly controlled handling techniques and preparation; however, they do maintain an effective seal, which should last for several years.

9.2 VAPOR MITIGATION SYSTEM MONITORING AND MAINTENANCE

Inspections and maintenance of the vapor mitigation systems will be conducted to confirm that the systems are working effectively. Initial and continuing inspections will occur as follows:

- Quarterly inspections during the first year of operation; and
- Annual inspections during the remainder of operation.

9.2.1 Vapor Mitigation Systems Monitoring

System emissions monitoring in accordance with permit requirements, will be conducted within 60 days of the ventilation system start-up, quarterly for the first year and then annually thereafter to document compliance with BAAQMD emission limitations.

Written documentation verifying that such tests were accomplished shall be retained for a period of not less than five years and made available to the Regional Board upon request. The Regional Board may require additional tests when there is reason to believe that the concentration of gas within or near the structure is elevated above the levels recorded at the time of the original soil gas investigation.

9.2.2 Vapor Mitigation Systems Maintenance

All systems shall be maintained as installed and as recommended by the manufacturer and/or system designer. Maintenance will include inspections of the fan, ventilation piping and seals, as appropriate. The foundation slab and substructure walls should also be inspected for cracks or structural defects. During each inspection, a *Site Inspection Field Data Sheet* will be completed, which will be used to record the condition of the vapor mitigation systems and, as appropriate, areas that require repair. The inspections will continue, unless otherwise modified by the Regional Board.

9.3 GROUNDWATER MONITORING AND WELL MAINTENANCE

As part of the Site development, the existing shallow groundwater monitoring wells will be replaced by four shallow groundwater-monitoring wells: MW-101, MW-102, MW-103 and MW-104 for the groundwater monitoring program. In addition, the deeper monitoring well MW-7 will be replaced with MW-7R. In addition, the two existing deeper monitoring wells C-3 and C-5 will be retained for use in the groundwater-monitoring program.

9.3.1 Groundwater Monitoring

In the event that a well is damaged, repair or replacement of the protective covers and locking well caps should be performed. During each sampling event, a *Groundwater Quality Sample Collection Field Data Sheet* will be completed, which will be used to record the condition of the

monitoring wells and identify items in need of repair. The frequency of groundwater monitoring activities is presented in Table 9-1.

9.3.1.1 GROUNDWATER SAMPLING

Prior to sampling, the depth to groundwater will be measured from the top of the well casing using an electronic sounding device to the nearest 0.01-foot. Following depth to water measurements, the monitoring wells will be purged and sampled using low flow sampling techniques (USEPA, 1998). During purging, groundwater parameters including pH, dissolved oxygen (DO), temperature, electrical conductivity and turbidity will be measured to monitor stability of parameters indicating the presence of formation water. The wells will be purged for a minimum of 15 minutes prior to sample collection. A steady flow rate should be maintained to limit the drawdown to 0.33 feet (USEPA, 1998). Depth to water will be monitored during purging activities and flow rates adjusted accordingly to minimize drawdown within the well.

Once groundwater parameters have stabilized, groundwater samples will be collected. The groundwater is considered stabilized and ready for sample collection when indicator parameters have stabilized for three consecutive readings as follows: +/- 0.1 Standard Units (S.U.) for pH, +/- 3 percent for specific conductance and +/- 10 percent for turbidity and DO (USEPA, 1998).

The samples for laboratory analysis should be collected in appropriate sample containers (Table 3-1), labeled and then placed in an insulated chilled cooler for transport to a CDPH ELAP certified analytical laboratory pursuant to ASTM D 4840 chain-of-custody protocols.

9.3.1.2 LABORATORY ANALYSIS

The groundwater samples will be submitted to CDPH ELAP certified analytical laboratories for chemical analysis for the analytes presented in Table 9-1. Duplicate groundwater samples will be collected for quality assurance and quality control (QA/QC).

9.4 REPORTING

An Annual Report will be prepared in combination that compiles the information collected during each year of operations and maintenance, along with the groundwater data collected. This data will be interpreted and recommendations will be made for modifications to the monitoring program, as appropriate.

The reports will be prepared under the supervision of California Civil Engineer and/or Professional Geologist. The reports should be submitted within one month following the end of the calendar year (i.e., January 31). The reports will summarize the findings of the analytical testing from the vapor mitigation systems and groundwater monitoring well sampling,. The reports will contain: Site description; groundwater flow direction and gradient maps; laboratory analytical data; interpretation of the analytical data; field sampling data sheets, chain-of-custody forms and laboratory data certificates; summary of activities conducted during the monitoring period; and summary of activities to be conducted during the following period.

The Annual Reports will also present the date and type of inspections undertaken during the preceding calendar year. The Annual Report will: summarize the cap inspections; and maintenance activities implemented and provide any recommendations for improvements.

9.5 RECORD KEEPING

The Site owner will maintain a central repository of the data, reports and other documents associated with Site environmental conditions. All such data, reports and other documents should be preserved for a minimum of six (6) years after the conclusion of all activities referenced in such documents. If the Regional Board requests that some or all of these documents be preserved for a longer period of time, the party should either comply with that request, deliver the documents to the Regional Board, or permit the Regional Board to copy the documents prior to destruction.

The Site owner should notify Regional Board in writing at least ninety (90) days prior to the expiration of the six-year minimum retention period before destroying any documents related to the Site. If any litigation, claim, negotiation, audit or other action involving the records has been started before the expiration of the six-year period, the related records should be retained until the completion and resolution of all issues arising therefrom or until the end of the six-year period, whichever is later.

9.5.1 Record Availability

When requested by the Regional Board, the owner is required to make available to the Regional Board, and provide copies of, all data and information concerning contamination at the Site, including technical records and contractual documents, sampling and monitoring information and photographs and maps.

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TABLE 3-1
SUMMARY OF SOIL ANALYTICAL RESULTS - TPHS & PVOCS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Date	Sample Depth	Petroleum Hydrocarbons			Petroleum-Related Volatile Organic Compounds														
			TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl benzene	Xylenes	MTBE	1,2,4-TMB	1,3,5-TMB	Styrene	n-Butyl-benzene	s-Butyl benzene	t-Butyl benzene	n-Propyl-benzene	Isopropyl benzene	p-Isopropyl-toulene	Naphthalene
		(feet)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
50 Chemical Way																				
ARS																				
SB-1	6/15/06	4.5	--	< 10	750	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-2	6/15/06	5.0	--	< 10	< 10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		7.0	--	< 10	< 10	< 0.002	< 0.002	< 0.002	< 0.004	--	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
SB-3	6/15/06	4.5	--	< 10	620	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-6	6/15/06	2.0	--	--	--	< 0.002	< 0.002	< 0.002	< 0.004	--	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
SB-8	6/15/06	10.5	--	--	--	< 0.002	< 0.002	< 0.002	< 0.004	--	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
SB-12	6/15/06	4.5	--	< 10	< 10	< 0.002	< 0.002	< 0.002	< 0.004	--	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
SB-13	6/15/06	3.0	--	< 10	< 10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-15	6/15/06	3.0	--	< 10	< 10	< 0.002	< 0.002	< 0.002	< 0.004	--	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Balch																				
TI-NE	11/1/06	11	--	4.7	--	< 5.0	< 5.0	< 5.0	< 10.0	< 0.005	--	--	--	--	--	--	--	--	--	< 0.001
TI-SW	11/1/06	11	--	9.0	--	< 5.0	< 5.0	< 5.0	< 10.0	< 0.005	--	--	--	--	--	--	--	--	--	< 0.001
70 Chemical Way																				
EMCON																				
A-1	6/17/83	1.3	--	--	--	--	--	--	180	--	--	--	--	--	--	--	--	--	--	--
		4.7	--	--	--	--	--	--	71	--	--	--	--	--	--	--	--	--	--	--
		6.7	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--
Canonie																				
C-1	10/15/84	0.5-5	--	--	--	< 0.2	< 0.2	< 0.5	< 0.5	--	--	--	< 0.2	--	--	--	--	--	--	--
C-2	10/12/84	0.5-5	--	--	--	ND	ND	ND	< 5	--	--	--	--	--	--	--	--	--	--	--
C-3	10/11/84	0.5-5	--	--	--	ND	ND	ND	< 5	--	--	--	--	--	--	--	--	--	--	--
C-6	10/11/84	0.5-5	--	--	--	--	--	--	60	--	--	--	--	--	--	--	--	--	--	186
SB-1	10/15/84	1-5.5	--	--	--	--	--	--	250	--	--	--	--	--	--	--	--	--	--	--
SB-2	10/15/84	1-5.5	--	--	--	< 0.2	1.2	2.2	37	--	--	--	< 0.2	--	--	--	--	--	--	--
SB-3	10/12/84	1-3.5	--	--	--	--	--	--	< 5	--	--	--	--	--	--	--	--	--	--	--
SB-5	10/12/84	4-4.5	--	--	--	ND	ND	ND	< 0.5	--	--	--	--	--	--	--	--	--	--	--
SB-6	5/30/85	1.8	--	--	--	--	--	--	3	--	--	--	--	--	--	--	--	--	--	--
		3	--	--	--	--	--	--	33	--	--	--	--	--	--	--	--	--	--	--
		4	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--
		5	--	--	--	--	--	--	33	--	--	--	--	--	--	--	--	--	--	--
		6	--	--	--	--	--	--	15	--	--	--	--	--	--	--	--	--	--	--
		7	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--
SB-7	8/12/85	3	--	--	--	--	--	--	57	--	--	--	--	--	--	--	--	--	--	--
		6	--	--	--	--	--	--	170	--	--	--	--	--	--	--	--	--	--	--
SB-8	8/13/85	3	--	--	--	--	--	--	< 1	--	--	--	--	--	--	--	--	--	--	--
		6	--	--	--	--	--	--	14	--	--	--	--	--	--	--	--	--	--	--
SB-9	8/12/85	3	--	--	--	--	--	--	7.2	--	--	--	--	--	--	--	--	--	--	--
		6	--	--	--	--	--	--	< 1	--	--	--	--	--	--	--	--	--	--	--
SB-10	8/13/85	3	--	--	--	--	--	--	130	--	--	--	--	--	--	--	--	--	--	--
		4.5	--	--	--	--	--	--	170	--	--	--	--	--	--	--	--	--	--	--
SB-11	8/12/85	3	--	--	--	--	--	--	< 1	--	--	--	--	--	--	--	--	--	--	--
		6	--	--	--	--	--	--	31	--	--	--	--	--	--	--	--	--	--	--
SB-12	8/13/85	3	--	--	--	--	--	--	< 1	--	--	--	--	--	--	--	--	--	--	--
		6	--	--	--	--	--	--	120	--	--	--	--	--	--	--	--	--	--	--

TABLE 3-1
SUMMARY OF SOIL ANALYTICAL RESULTS - TPHS & PVOCS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Date	Sample Depth	Petroleum Hydrocarbons			Petroleum-Related Volatile Organic Compounds														
			TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl benzene	Xylenes	MTBE	1,2,4-TMB	1,3,5-TMB	Styrene	n-Butyl-benzene	s-Butyl benzene	t-Butyl benzene	n-Propyl-benzene	Isopropyl benzene	p-Isopropyl-toulene	Naphthalene
		(feet)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
SB-13	8/12/85	3	--	--	--	--	--	--	24	--	--	--	--	--	--	--	--	--	--	--
		6	--	--	--	--	--	--	44	--	--	--	--	--	--	--	--	--	--	--
SB-14	8/12/85	3	--	--	--	--	--	--	1.2	--	--	--	--	--	--	--	--	--	--	--
		6	--	--	--	--	--	--	32	--	--	--	--	--	--	--	--	--	--	--
SB-15	8/13/85	3	--	--	--	--	--	--	< 1	--	--	--	--	--	--	--	--	--	--	--
		6	--	--	--	--	--	--	< 1	--	--	--	--	--	--	--	--	--	--	--
SB-16	8/12/85	3	--	--	--	--	--	--	25	--	--	--	--	--	--	--	--	--	--	--
		4.1	--	--	--	--	--	--	12	--	--	--	--	--	--	--	--	--	--	--
SEMCO/HK2																				
A-1	6/20/96	--	960,000	230,000	--	500	480	< 50	110,000	--	--	--	--	--	--	--	--	--	--	490
B1	6/25/96	8	--	--	--	< 0.005	< 0.005	< 0.005	< 0.005	--	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
B2	6/25/96	6	--	--	--	< 0.005	0.17	26	72	--	38	20	< 0.005	< 0.005	0.22	< 0.005	< 0.005	0.28	0.26	< 0.005
B3	6/26/96	8	--	--	--	< 0.005	0.16	3	17.2	--	16	7	< 0.005	< 0.005	1.6	< 0.005	2.5	0.39	1.4	< 0.005
B6	7/10/96	5.5	46,000	460	--	0.02	0.053	< 0.005	0.46	--	--	--	--	--	--	--	--	--	--	--
B7	7/10/96	5.5	180,000	970	--	0.009	0.013	0.65	1.1	--	--	--	--	--	--	--	--	--	--	--
E-1	6/24/96	2.8	140	600	--	0.029	0.22	0.76	0.95	--	--	--	--	--	--	--	--	--	--	--
		5	15	610	--	0.14	0.35	0.34	1.67	--	2.7	0.85	0.17	--	0.085	0.007	0.39	0.17	0.12	< 0.005
E-2	6/24/96	3	< 0.5	< 1	--	< 0.005	0.017	0.009	0.034	--	--	--	--	--	--	--	--	--	--	--
		5	8	110	--	0.01	0.036	0.1	0.53	--	--	--	--	--	--	--	--	--	--	--
		5.4	5	7	--	0.006	0.028	0.13	0.83	--	--	--	--	--	--	--	--	--	--	--
E-3	6/24/96	5	1	5	--	< 0.005	< 0.005	< 0.005	0.032	--	--	--	--	--	--	--	--	--	--	--
RRM																				
SB-1	10/7/02	3-10	--	37	--	0.078	< 0.025	0.33	0.52	--	--	--	--	--	--	--	--	--	--	--
SB-2	10/7/02	3-10	--	3.7	--	0.065	0.036	0.074	0.51	--	--	--	--	--	--	--	--	--	--	--
SB-2	10/7/02	10	25	160	--	1.2	< 0.500	< 0.500	< 0.500	--	--	--	--	--	--	--	--	--	--	11
SB-4	10/7/02	12	< 2.5	4.3	--	< 0.005	< 0.005	< 0.005	< 0.005	--	--	--	--	--	--	--	--	--	--	--
SB-5	1/23/06	6	1,600	< 500	--	< 25	< 25	< 25	< 50	< 25	< 25	< 25	--	< 25	--	--	< 25	--	< 25	4.7
		8	1,200	3,200	--	< 25	< 25	< 25	< 50	< 25	< 25	< 25	--	< 25	--	--	< 25	--	< 25	4.5
		10	0.19	< 2.5	--	< 0.0050	< 0.0050	< 0.0050	< 0.010	< 0.0050	< 0.0050	< 0.005	--	< 0.0050	--	--	< 0.0050	--	< 0.0050	< 0.50
		15	0.23	< 12	--	< 0.0050	< 0.0050	< 0.0050	< 0.010	< 0.0050	0.0086	< 0.005	--	< 0.0050	--	--	< 0.0050	--	< 0.0050	< 0.50
SB-6	1/23/06	5	0.98	< 2.5	--	< 0.0050	< 0.0050	0.067	1.2	< 0.0050	0.074	0.023	--	< 0.0050	--	--	0.0090	--	0.0051	< 0.50
		7	4,800	< 120	--	< 25	< 25	50	190	< 25	58	27	--	< 25	--	--	< 25	--	< 25	9.6
		8.5	3.100	< 50	--	< 25	< 25	< 25	87	< 25	< 25	< 25	--	< 25	--	--	< 25	--	< 25	2.0
SB-7	1/23/06	4	0.98	< 25	--	< 0.0050	0.013	0.063	0.032	< 0.0050	< 0.0050	< 0.005	--	< 0.0050	--	--	< 0.0050	--	< 0.0050	< 2.5
		6	1,300	< 25	--	< 25	< 25	< 25	< 50	< 25	< 25	< 25	--	< 25	--	--	< 25	--	< 25	0.68
		8	680	480	--	< 2.5	< 2.5	21	110	< 2.5	4.5	< 25	--	< 25	--	--	< 25	--	< 25	3.8
SB-8	1/23/06	6	100	22	--	< 0.25	< 0.25	< 0.25	< 0.50	< 0.25	0.36	< 25	--	< 0.25	--	--	< 0.25	--	< 0.25	< 1.0
		8	6,000	5,600	--	< 25	< 25	< 25	< 50	< 25	44	< 25	--	< 25	--	--	< 25	--	< 25	130
		10	1,300	1,400	--	< 25	< 25	< 25	< 50	< 25	< 25	< 25	--	< 25	--	--	< 25	--	< 25	46
MW-2	1/24/06	2	0.12	< 12	--	< 0.0050	< 0.0050	< 0.0050	0.010	< 0.0050	< 0.0050	< 0.005	--	< 0.0050	--	--	< 0.0050	--	< 0.0050	< 0.50
		6	0.059	< 25	--	< 0.0050	< 0.0050	< 0.0050	< 0.010	< 0.0050	< 0.0050	< 0.005	--	< 0.0050	--	--	< 0.0050	--	< 0.0050	< 1.0
MW-3	1/24/06	6	0.081	< 2.5	--	< 0.0050	< 0.0050	< 0.0050	< 0.010	< 0.0050	< 0.0050	< 0.005	--	< 0.0050	--	--	< 0.0050	--	< 0.0050	< 0.50
MW-4	1/24/06	4	0.68	< 12	--	0.0063	0.0081	0.0060	0.083	< 0.0050	0.0082	< 0.005	--	< 0.0050	--	--	< 0.0050	--	< 0.0050	< 0.50
		6	11	< 12	--	< 0.25	< 0.25	0.65	4.9	< 0.25	< 0.25	< 0.25	--	< 0.25	--	--	< 0.25	--	< 0.25	< 0.50
		8	4.8	< 2.5	--	0.37	0.27	0.25	1.6	< 0.025	0.027	< 0.025	--	< 0.025	--	--	< 0.025	--	< 0.025	< 0.50

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20 to 80 Chemical Way
Redwood City, California

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		(feet)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
MW-5	1/23/06	2	6.2	< 1500	--	3.3	0.18	0.17	0.68	< 0.025	0.14	0.080	--	< 0.025	--	--	< 0.025	--	< 0.025	< 5
		4	1.8	< 25	--	0.041	< 0.025	< 0.025	< 0.050	< 0.025	< 0.025	< 0.025	--	< 0.025	--	--	< 0.025	--	< 0.025	2.8
		6	19	< 1,500	--	< 0.25	< 0.25	< 0.25	< 0.50	< 0.25	0.27	< 0.25	--	< 0.25	--	--	< 0.25	--	< 0.25	19
		8	1,400	< 12	--	< 25	< 25	< 25	< 50	< 25	< 25	< 25	--	< 25	--	--	< 25	--	< 25	15
		10	78	210	--	0.47	< 0.25	< 0.25	< 0.50	< 0.25	1.1	0.58	--	0.48	--	--	< 0.25	--	< 0.25	3.3
MW-7	3/20/07	15	< 5.0	< 2.5	--	< 0.25	< 0.25	< 0.25	< 0.50	< 0.25	< 0.25	< 0.25	--	< 0.25	--	--	< 0.25	--	< 0.25	3.8
		20	0.11	< 2.5	--	< 0.0050	< 0.0050	< 0.0050	< 0.010	< 0.0050	< 0.0050	< 0.005	--	< 0.0050	--	--	< 0.0050	--	< 0.0050	0.052
	3/22/07	23.5	< 0.10	< 2.5	--	< 0.0050	< 0.0050	< 0.0050	< 0.010	< 0.0050	< 0.0050	< 0.005	--	< 0.0050	--	--	< 0.0050	--	< 0.0050	0.0091
		25.5	0.13	< 2.5	--	< 0.0050	< 0.0050	< 0.0050	< 0.010	< 0.0050	< 0.0050	< 0.005	--	< 0.0050	--	--	< 0.0050	--	< 0.0050	0.014
		27.5	< 0.10	< 2.5	--	< 0.0050	< 0.0050	< 0.0050	< 0.010	< 0.0050	< 0.0050	< 0.005	--	< 0.0050	--	--	< 0.0050	--	< 0.0050	< 0.0050
		30	200	< 50	--	< 1.2	< 1.2	< 1.2	< 2.5	< 1.2	1.9	< 1.2	--	< 1.2	--	--	< 1.2	--	< 1.2	7.2
SB-9	3/22/07	6.5	0.37	< 25	--	< 0.0050	< 0.0050	< 0.0050	< 0.010	< 0.0050	< 0.0050	< 0.0050	--	< 0.0050	--	--	< 0.0050	--	< 0.0050	< 0.0050
		8.5	< 0.010	< 2.5	--	< 0.0050	< 0.0050	< 0.0050	< 0.010	< 0.0050	< 0.0050	< 0.0050	--	< 0.0050	--	--	< 0.0050	--	< 0.0050	< 0.0050
		10.5	< 0.010	< 5.0	--	< 0.0050	< 0.0050	< 0.0050	< 0.010	< 0.0050	< 0.0050	< 0.0050	--	< 0.0050	--	--	< 0.0050	--	< 0.0050	< 0.0050
80 Chemical Way																				
Environmental Bio-Systems																				
2	2/21/89	7.4	--	< 1.0	--	< 0.1	< 0.1	< 0.1	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	4/24/89	5	--	110	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/24/89	10	--	< 10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ESLs- Residential			100	100	370	0.12	9.3	2.3	11	8.4	--	--	15	--	--	--	--	--	--	1.3
ESLs- Commercial			180	180	2,500	0.27	9.3	4.7	11	8.4	--	--	15	--	--	--	--	--	--	2.8
Construction Worker Exposure			4,200	4,200	12,000	12	650	210	420	2,800	--	--	1,500	--	--	--	--	--	--	130

Notes:

TPHg: Total Petroleum Hydrocarbons as gasoline
TPHd: Total Petroleum Hydrocarbons as diesel
TPHmo: Total Petroleum Hydrocarbons as motor oil
MTBE: Methyl tert butyl ether
TMB: Trimethylbenzene
mg/kg: milligrams per kilogram
<500: concentration below the laboratory-reporting limit of 500
--: Not sampled/not analyzed
ND: less than laboratory-reporting limit; reporting limit not provided

TABLE 3-2
SUMMARY OF SOIL ANALYTICAL RESULTS - CVOCS, ALCOHOLS, KETONES & OTHER CHEMICALS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Date	Sample Depth	Chlorinated Volatile Organic Compounds					Alcohols				Ketones		1,4-Dioxane	Carbon Disulfide
			PCE	TCE	cis_1,2-DCE	1,1,2,2-TCA	1,1-DCA	TBA	Iso propanol	Isopropyl alcohol	Methanol	Methyl ethyl ketone	Acetone		
		(feet)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
50 Chemical Way															
ARS															
SB-2	6/15/06	7.0	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--	--	--	--	--	--	--	--
SB-6	6/15/06	2.0	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--	--	--	--	--	--	--	--
SB-8	6/15/06	10.5	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--	--	--	--	--	--	--	--
SB-12	6/15/06	4.5	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--	--	--	--	--	--	--	--
SB-15	6/15/06	3.0	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--	--	--	--	--	--	--	--
70 Chemical Way															
EMCON															
A-1	6/17/83	1.3	--	--	--	--	--	--	--	27	23	11	50	--	--
		4.7	--	--	--	--	--	--	--	120	130	80	300	--	--
		6.7	--	--	--	--	--	--	--	ND	ND	ND	1.1	--	--
Canonie															
C-1	10/15/84	0.5-5	< 0.2	< 0.2	--	< 0.2	< 0.2	--	--	< 5	< 2	< 7	< 5	--	--
C-2	10/12/84	0.5-5	--	--	--	--	--	--	--	< 5	< 2	< 5	< 5	--	--
C-3	10/11/84	0.5-5	--	--	--	--	--	--	--	< 5	< 2	< 5	< 5	--	--
C-6	10/11/84	0.5-5	--	--	--	--	--	--	--	< 10	8.5	< 10	< 10	--	--
SB-1	10/15/84	1-5.5	--	--	--	--	--	--	--	< 10	< 6	< 10	47	--	--
SB-2	10/15/84	1-5.5	< 0.2	< 0.2	--	< 0.2	< 0.2	--	--	< 10	< 2	< 10	< 10	--	--
SB-3	10/12/84	1-3.5	--	--	--	--	--	--	--	< 10	< 5	< 10	28	--	--
SB-5	10/12/84	4-4.5	--	--	--	--	--	--	--	< 5	< 2	< 5	< 5	--	--
SEMCO/HK2															
B1	6/25/96	8	< 0.005	< 0.005	< 0.005	< 0.010	< 0.005	--	--	--	--	--	< 0.250	--	--
B2	6/25/96	6	< 0.005	< 0.005	< 0.005	0.24	< 0.005	--	--	--	--	--	11	--	--
B3	6/26/96	8	< 0.005	< 0.005	< 0.005	< 0.010	< 0.005	--	--	--	--	--	< 0.25	--	--
E-1	6/24/96	2.8	--	--	--	--	--	--	--	--	--	--	--	--	--
		5	0.02	24	0.17	0.11	< 5	--	--	--	--	--	6.8	--	--

TABLE 3-2
SUMMARY OF SOIL ANALYTICAL RESULTS - CVOCS, ALCOHOLS, KETONES & OTHER CHEMICALS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Date	Sample Depth	Chlorinated Volatile Organic Compounds					Alcohols				Ketones		1,4-Dioxane	Carbon Disulfide
			PCE	TCE	cis_1,2-DCE	1,1,2,2-TCA	1,1-DCA	TBA	Iso propanol	Isopropyl alcohol	Methanol	Methyl ethyl ketone	Acetone		
		(feet)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
RRM															
SB-4	10/7/02	12	--	--	--	--	--	--	--	--	--	--	--	--	0.024
SB-5	1/23/06	6	--	< 25	--	--	< 25	< 200	< 500	--	--	--	< 500	< 1,000	< 25
		8	--	< 25	--	--	< 25	< 200	< 500	--	--	--	< 500	< 1,000	< 25
		10	--	< 0.0050	--	--	< 0.0050	< 0.040	< 0.10	--	--	--	0.20	< 0.20	< 0.005
		15	--	< 0.0050	--	--	< 0.0050	< 0.040	< 0.10	--	--	--	< 0.10	< 0.20	0.055
SB-6	1/23/06	5	--	< 0.005	--	--	< 0.0050	0.046	1.1	--	--	--	2.3	< 0.20	0.0097
		7	--	< 25	--	--	< 25	< 200	< 500	--	--	--	< 500	< 1,000	< 25
		8.5	--	< 25	--	--	< 25	< 200	< 500	--	--	--	< 500	< 1,000	< 25
SB-7	1/23/06	4	--	< 0.0050	--	--	< 0.0050	< 0.040	0.11	--	--	--	0.30	< 0.20	< 0.005
		6	--	< 25	--	--	< 25	< 200	< 500	--	--	--	< 500	< 1,000	< 25
		8	--	< 25	--	--	< 25	< 20	< 50	--	--	--	< <50	< 100	< 25
SB-8	1/23/06	6	--	< 0.25	--	--	< 25	< 2.0	< 5.0	--	--	--	< 5.0	< 10	< 0.25
		8	--	< 25	--	--	< 25	< 200	< 500	--	--	--	< 500	< 1,000	< 25
		10	--	< 25	--	--	< 25	< 200	< 500	--	--	--	< 500	< 1,000	< 25
MW-2	1/24/06	2	--	< 0.0050	--	--	< 0.0050	< 0.040	< 0.10	--	--	--	0.12	0.52	0.0090
		6	--	< 0.0050	--	--	< 0.0050	< 0.040	< 0.10	--	--	--	0.26	< 0.20	< 0.0050
MW-3	1/24/06	6	--	< 0.0050	--	--	< 0.0050	< 0.040	< 0.10	--	--	--	< 0.10	< 0.20	< 0.0050
MW-4	1/24/06	4	--	0.0072	--	--	0.012	< 0.040	< 0.10	--	--	--	0.12	< 0.20	0.044
		6	--	< 0.25	--	--	< 0.25	< 2.0	< 5	--	--	--	< 5	< 10	< 0.25
		8	--	< 0.025	--	--	0.075	0.25	3.6	--	--	--	< 0.5	4.0	< 0.025
MW-5	1/23/06	2	--	< 0.025	--	--	< 0.025	< 0.20	< 0.50	--	--	--	< 0.50	< 1.0	< 0.025
		4	--	< 0.025	--	--	< 0.025	< 0.20	< 0.50	--	--	--	< 0.50	< 1.0	< 0.025
		6	--	< 0.25	--	--	< 0.25	< 2.0	< 5.0	--	--	--	< 5.0	< 10	< 0.25
		8	--	< 25	--	--	< 25	< 200	< 500	--	--	--	< 500	< 1,000	< 25
		10	--	< 0.25	--	--	< 0.25	< 2.0	< 5.0	--	--	--	< 5.0	< 1.0	< 0.25

TABLE 3-2
SUMMARY OF SOIL ANALYTICAL RESULTS - CVOCS, ALCOHOLS, KETONES & OTHER CHEMICALS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Date	Sample Depth	Chlorinated Volatile Organic Compounds					Alcohols				Ketones		1,4-Dioxane	Carbon Disulfide
			PCE	TCE	cis_1,2-DCE	1,1,2,2-TCA	1,1-DCA	TBA	Iso propanol	Isopropyl alcohol	Methanol	Methyl ethyl ketone	Acetone		
		(feet)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
MW-7	3/20/07	15	--	< 0.25	--	--	< 0.25	< 2.0	< 5.0	--	--	--	< 5.0	< 10	< 0.25
		20	--	< 0.0050	--	--	< 0.0050	< 0.040	< 0.10	--	--	--	< 0.10	< 0.20	< 0.0050
	3/22/07	23.5	--	< 0.0050	--	--	< 0.0050	< 0.040	< 0.10	--	--	--	< 0.10	< 0.20	< 0.0050
		25.5	--	< 0.0050	--	--	< 0.0050	< 0.040	< 0.10	--	--	--	< 0.10	< 0.20	< 0.0050
		27.5	--	< 0.0050	--	--	< 0.0050	< 0.040	< 0.10	--	--	--	< 0.10	< 0.20	< 0.0050
		30	--	< 1.2	--	--	< 1.2	< 10	< 25	--	--	--	< 25	< 50	< 1.2
SB-9	3/22/07	6.5	--	< 0.0050	--	--	< 0.0050	< 0.040	< 0.10	--	--	--	< 0.10	< 0.20	< 0.0050
		8.5	--	< 0.0050	--	--	< 0.0050	< 0.040	< 0.10	--	--	--	< 0.10	< 0.20	< 0.0050
		10.5	--	< 0.0050	--	--	< 0.0050	< 0.040	< 0.10	--	--	--	< 0.10	< 0.20	< 0.0050
ESLs- Residential			0.37	1.9	6.5	--	1.9	100	--	--	--	13	0.5	24	--
ESLs- Commercial			0.95	4.1	18	--	1.9	110	--	--	--	13	0.5	30	--
Construction Worker Exposure			30	170	270	--	200	320,000	--	--	--	34,000	100,000	1,400	--

Notes:

mg/kg: milligrams per kilogram

<2,000: concentration below the laboratory-reporting limit of 2,000

PCE: Tetrachloroethene

TCE: Trichloroethene

DCE: Dichloroethene

TCA: Trichloroethane

DCA: Dichloroethane

TBA: Tertiary butyl alcohol

--: Not sampled/not analyzed

ND: less than laboratory-reporting limit; reporting limit not provided

TABLE 3-3
SUMMARY OF SOIL ANALYTICAL RESULTS - PAHS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Date	Sample Depth	Acenaphthene	Anthracene	Benzo (a) anthracene	Benzo (a) pyrene	Benzo (b) fluoranthene	Benzo (g,h,i) perylene	Benzo (k) fluoranthene	Carbazole	Chrysene	Dibenzo(a,h)- anthracene	Dibenzofuran	bis(2-Ethylhexyl)pthalate	Fluoroethene	Fluorene	Indeno (1,2,3-cd) pyrene	1-methylnaphthalene	2-methylnaphthalene	Pentachlorophenol	Phenanthrene	Phenol	Pyrene	2,3,4,6_tetrachlorophenol
		(feet)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
70 Chemical Way																								
EMCON																								
A-3	6/17/83	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	41	--	--	--	--
		3.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.2	--	--	--	--
A-4	6/17/83	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.11	--	--	--	--
		4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3	--	--	--	--
		7.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.75	--	--	--	--
A-5	6/17/83	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.2	--	--	--	--
		1.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6	--	--	--	--
		3.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.8	--	--	--	--
A-6	6/17/83	1.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	40	--	--	--	--
		4.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	110	--	--	--	--
Canonie																								
C-1	10/15/84	0.5-5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 1	--	--	--	--
C-5	10/12/84	0.5-5	< 2	< 2	< 2	< 4	< 4	< 4	< 4	--	< 4	< 4	--	< 2	< 2	< 2	< 4	--	--	< 2	< 2	< 2	< 2	--
C-6	10/11/84	0.5-5	150	75	50	< 12	24	< 12	24	--	70	< 12	--	< 6	165	155	< 12	--	--	< 6	245	< 6	105	--
SB-1	10/15/84	1-5.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	48	--	< 1	--	--
SB-2	10/15/84	1-5.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	180	--	< 1	--	--
SB-3	10/12/84	1-3.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100	--	< 1	--	--
SB-5	10/12/84	4-4.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 1	--	< 1	--	--
SB-6	5/30/85	1.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	110	--	--	--	--
		3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	150	--	--	--	--
		4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	280	--	--	--	--
		5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	330	--	--	--	--
		6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	410	--	--	--	--
		7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--
SB-7	8/12/85	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 10	--	--	--	--
		6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	36	--	--	--	--
SB-8	8/13/85	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 10	--	--	--	--
		6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 10	--	--	--	--
SB-9	8/12/85	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 10	--	--	--	--
		6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 10	--	--	--	--
SB-10	8/13/85	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20	--	--	--	--
		4.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 20	--	--	--	--
SB-11	8/12/85	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 10	--	--	--	--
		6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	170	--	--	--	--
SB-12	8/13/85	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15	--	--	--	--
		6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1,500	--	--	--	--
SB-13	8/12/85	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	360	--	--	--	--
		6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	410	--	--	--	--
SB-14	8/12/85	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 10	--	--	--	--
		6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10	--	--	--	--
SB-15	8/13/85	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 10	--	--	--	--
		6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 10	--	--	--	--

TABLE 3-3
SUMMARY OF SOIL ANALYTICAL RESULTS - PAHS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Date	Sample Depth	Acenaphthene	Anthracene	Benzo (a) anthracene	Benzo (a) pyrene	Benzo (b) fluoranthene	Benzo (g,h,i) perylene	Benzo (k) fluoranthene	Carbazole	Chrysene	Dibenzo(a,h)- anthracene	Dibenzofuran	bis(2-Ethylhexyl)pthalate	Fluoroethene	Fluorene	Indeno (1,2,3-cd) pyrene	1-methylnaphthalene	2-methylnaphthalene	Pentachlorophenol	Phenanthrene	Phenol	Pyrene	2,3,4,6_tetrachlorophenol
		(feet)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
SB-16	8/12/85	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	76	--	--	--	--
		4.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	110	--	--	--	--
SEMCO/HK2																								
E-1	6/24/96	5	6.2	--	1.3	0.400	0.540	--		--	1.1	--	4.9	--	--	--	--	--	--	27	14	--	5.7	--
RRM																								
SB-3	10/7/02	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.41	--	--	--	0.47	--
SB-5	1/23/06	6	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	5	8.5	< 0.50	0.57	< 0.50	< 0.50	< 0.50
		8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	7.4	6.4	<1.0	1.1	< 1.0	< 1.0	< 1.0
		10	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.20	< 0.50	< 0.50	< 0.50
		15	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
SB-6	1/23/06	5	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.8	< 1.0	< 1.0	< 1.0	< 1.0
		8.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	9.9	< 1.0	< 1.0	< 1.0	< 1.0
SB-7	1/23/06	4	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
		6	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		8	3.4	1.2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.1	< 1.0	2.1	3.4	3.3	2.2	< 1.0	1.9	3.4	3.1	6.8	< 1.0	4.4	1.2
SB-8	1/23/06	6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	16	< 1.0	< 1.0	< 1.0	1.2
		8	120	30	< 20	< 20	< 20	< 20	< 20	< 20	74	< 20	91	78	< 20	46	82	57	220	< 20	87	< 20		
		10	65	16	9.6	< 5.0	< 5.0	< 5.0	< 5.0	6.7	11	< 5.0	40	< 5.0	59	45	< 5.0	16	24	27	140	< 5.0	51	< 5.0
SB-9	3/22/07	6.5	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.050
		8.5	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.050	< 0.050	< 0.050
		10.5	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.050	0.93	< 0.050
MW-2	1/24/06	2	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.1	< 1.0	1.2	< 1.0
MW-3	1/24/06	6	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
MW-4	1/24/06	4	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		6	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		8	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.58	< 0.50
MW-5	1/23/06	2	< 5.0	5.7	13	61	91	31	30	< 5.0	45	9.7	< 5.0	< 5.0	16	< 5.0	42	< 5.0	< 5.0	110	< 5.0	< 5.0	24	< 5.0
		4	3.7	< 0.50	< 0.50	0.51	0.72	< 0.50	< 0.50	0.79	0.66	< 0.50	3.0	< 0.50	1.3	2.8	< 0.50	1.4	2.5	0.73	2.9	<0.50	1.3	< 0.50
		6	7.3	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	4.9	< 2.5	< 2.5	< 0.50	< 2.5	4.8	9	< 2.5	5.4	< 2.5	2.8	< 2.5
		8	46	12	6.7	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	5.2	< 5.0	29	< 5.0	33	< 0.50	< 5.0	13	24	26	77	< 5.0	30	< 5.0
		10	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.72	30	< 0.50	0.72	0.86	< 0.50	1.4	< 0.50	0.84	< 0.50
MW-7	3/20/07	15	0.96	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.66	< 0.50	< 0.50	0.57	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.94	1.0	< 0.50	< 0.50	< 0.50
		20	4.5	1.6	1.6	< 0.50	0.61	< 0.50	< 0.50	0.78	1.1	< 0.50	2.2	< 0.50	6.7	2.8	< 0.50	1.8	< 0.50	< 0.50	13	< 0.50	7.2	< 0.50
	3/22/07	23.5	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		25.5	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		27.5	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		30	41	<0.50	12	< 5.0	< 5.0	< 5.0	< 5.0	5.1	10	< 5.0	27	< 5.0	64	30	< 5.0	15	< 5.0	< 5.0	120	< 5.0	53	< 5.0
WEST																								
W-19	10/7/10	3	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	--	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	--	< 0.33	< 1.6	< 0.33	< 0.66	< 0.33	--
		6	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	--	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	--	< 0.33	< 1.6	< 0.33	< 0.66	< 0.33	--
W-20	10/7/10	3	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	--	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	--	< 0.33	< 1.6	< 0.33	< 0.66	< 0.33	--
		6	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	--	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	--	< 0.33	< 1.6	< 0.33	< 0.66	< 0.33	--

TABLE 3-3
SUMMARY OF SOIL ANALYTICAL RESULTS - PAHS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Date	Sample Depth	Acenaphthene	Anthracene	Benzo (a) anthracene	Benzo (a) pyrene	Benzo (b) fluoranthene	Benzo (g,h,i) perylene	Benzo (k) fluoranthene	Carbazole	Chrysene	Dibenzo(a,h)- anthracene	Dibenzofuran	bis(2-Ethylhexyl)pthalate	Fluoroethene	Fluorene	Indeno (1,2,3-cd) pyrene	1-methylnaphthalene	2-methylnaphthalene	Pentachlorophenol	Phenanthrene	Phenol	Pyrene	2,3,4,6_tetrachlorophenol
		(feet)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
W-21	10/7/10	3	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	--	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	--	< 0.33	< 1.6	< 0.33	< 0.66	< 0.33	--
		6	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	--	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	--	< 0.33	< 1.6	< 0.33	< 0.66	< 0.33	--
W-22	10/7/10	3	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	--	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	--	< 0.33	< 1.6	< 0.33	< 0.66	< 0.33	--
		6	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	--	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	--	< 0.33	< 1.6	< 0.33	< 0.66	< 0.33	--
ESLs- Residential			19	2.8	0.38	0.038	0.38	27	0.38	--	23	0.062	--	35	40	8.9	0.62	--	0.25	3.0	11	3.9	85	--
ESLs- Commercial			19	2.8	1.3	0.13	1.3	27	1.3	--	23	0.21	--	120	40	8.9	2.1	--	0.25	5.0	11	3.9	85	--
Construction Worker Exposure			17,000	100,000	15	1.5	15	11,000	15	--	2,400	2.4	--	1,400	14,000	12,000	24	--	1,400	99	11,000	230,000	21,000	--

Notes:
mg/kg: milligrams per kilogram
<0.005: concentration below the laboratory-reporting limit of 0.005
--: Not sampled/not analyzed
ND: less than laboratory-reporting limit; reporting limit not provided

TABLE 3-4
SUMMARY OF SOIL ANALYTICAL RESULTS - METALS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Date	Sample Depth	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		(feet)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
20 Chemical Way																			
WEST																			
W-10	10/8/10	1	--	--	--	--	--	--	--	--	14	--	--	--	--	--	--	--	--
		3	--	--	--	--	--	--	--	--	17	--	--	--	--	--	--	--	--
W-18	10/8/10	1	--	--	--	--	--	--	--	--	13	--	--	--	--	--	--	--	--
		3	--	--	--	--	--	--	--	--	28	--	--	--	--	--	--	--	--
W-23	10/8/10	1	--	--	--	--	--	--	--	--	11	--	--	--	--	--	--	--	--
		3	--	--	--	--	--	--	--	--	28	--	--	--	--	--	--	--	--
50 Chemical Way																			
ARS																			
SB-7	6/15/06	Catch basin	< 50	< 25	260	< 0.5	27	220	22	520	450	0.3	30	160	< 12	< 12	< 50	27	840
SB-9		1	--	--	--	--	4.9	--	--	92	310	--	--	45	--	--	--	--	530
SB-10		1	--	--	--	--	4.7	--	--	59	230	--	--	30	--	--	--	--	250
SB-11		1	--	--	--	--	3.1	--	--	70	110	--	--	100	--	--	--	--	210
SB-13		3	--	--	--	--	2.7	--	--	16	23	--	--	190	--	--	--	--	57
SB-14		3	--	--	--	--	4.7	--	--	48	15	--	--	110	--	--	--	--	72
SB-15		3	--	--	--	--	2.3	--	--	20	6.5	--	--	160	--	--	--	--	43
WEST																			
W-5	10/6/10	1	--	--	--	--	--	--	--	--	9.6	--	--	--	--	--	--	--	--
		3	--	--	--	--	--	--	--	--	5.3	--	--	--	--	--	--	--	--
W-6	10/6/10	1	--	--	--	--	--	--	--	--	5.2	--	--	--	--	--	--	--	--
		3	--	--	--	--	--	--	--	--	22	--	--	--	--	--	--	--	--
W-7	10/6/10	1	--	--	--	--	--	--	--	--	3.2	--	--	--	--	--	--	--	--
		3	--	--	--	--	--	--	--	--	14	--	--	--	--	--	--	--	--
W-17	10/6/10	1	--	--	--	--	--	--	--	--	7.6	--	--	--	--	--	--	--	--
		3	--	--	--	--	--	--	--	--	8.8	--	--	--	--	--	--	--	--
W-12	10/6/10	1	--	--	--	--	--	--	--	--	11	--	--	--	--	--	--	--	--
		3	--	--	--	--	--	--	--	--	32	--	--	--	--	--	--	--	--
W-13	10/6/10	1	--	--	--	--	--	--	--	--	15	--	--	--	--	--	--	--	--
		3	--	--	--	--	--	--	--	--	13	--	--	--	--	--	--	--	--

TABLE 3-4
SUMMARY OF SOIL ANALYTICAL RESULTS - METALS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Date	Sample Depth	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		(feet)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
70 Chemical Way																			
EMCON																			
A-3	6/17/83	0	--	--	--	--	--	--	--	46	--	--	--	--	--	--	--	--	--
		3.5	--	--	--	--	--	--	--	20	--	--	--	--	--	--	--	--	--
A-4	6/17/83	2	--	--	--	--	--	--	--	46	--	--	--	--	--	--	--	--	--
		4	--	--	--	--	--	--	--	280	--	--	--	--	--	--	--	--	--
		7.5	--	--	--	--	--	--	--	32	--	--	--	--	--	--	--	--	--
A-5	6/17/83	1	--	--	--	--	--	--	--	60	--	--	--	--	--	--	--	--	--
		1.5	--	--	--	--	--	--	--	44	--	--	--	--	--	--	--	--	--
		3.5	--	--	--	--	--	--	--	32	--	--	--	--	--	--	--	--	--
A-6	6/17/83	1.5	--	--	--	--	--	--	--	60	--	--	--	--	--	--	--	--	--
		4.2	--	--	--	--	--	--	--	46	--	--	--	--	--	--	--	--	--
Canonie																			
C-1	10/15/84	0.5-5	--	--	--	--	--	--	--	26	--	--	--	--	--	--	--	--	--
C-2	10/12/84	0.5-5	--	--	--	--	--	--	--	24	--	--	--	--	--	--	--	--	--
C-3	10/11/84	0.5-5	--	--	--	--	--	--	--	43	--	--	--	--	--	--	--	--	--
C-5	10/12/84	0.5-5	--	--	--	--	--	--	--	44	--	--	--	--	--	--	--	--	--
C-6	10/11/84	0.5-5	--	--	--	--	--	--	--	56	--	--	--	--	--	--	--	--	--
SB-1	10/15/84	1-5.5	--	--	--	--	--	--	--	54	--	--	--	--	--	--	--	--	--
SB-2	10/15/84	1-5.5	--	--	--	--	--	--	--	77	--	--	--	--	--	--	--	--	--
SB-3	10/12/84	1-3.5	--	--	--	--	--	--	--	38	--	--	--	--	--	--	--	--	--
SB-5	10/12/84	4-4.5	--	--	--	--	--	--	--	23	--	--	--	--	--	--	--	--	--
RRM																			
SB-1	10/7/02	Composite	--	--	--	--	--	33	--	--	12	--	--	38	--	--	--	--	70
SB-2	10/7/02	Composite	--	--	--	--	--	95	--	--	10	--	--	180	--	--	--	--	85
SB-3	10/7/02	10	--	--	--	--	--	95	--	--	10	--	--	180	--	--	--	--	85
SB-4	10/7/02	12	--	--	--	--	--	95	--	--	10	--	--	180	--	--	--	--	85
MW-5	1/23/06	8.0	< 1.0	4.9	--	< 1.0	< 1.0	92	--	30	47	0.3	--	140	< 2.0	< 1.0	2.3	--	71
SB-5	1/23/06	6.0	< 1.0	5.1	--	< 1.0	< 1.0	110	--	33	19	0.3	--	170	< 2.0	< 1.0	< 2.0	--	57
SB-6	1/23/06	8.5	< 1.0	3.9	--	< 1.0	< 1.0	65	--	51	66	0.1	--	83	< 2.0	< 1.0	< 2.0	--	110

TABLE 3-4
SUMMARY OF SOIL ANALYTICAL RESULTS - METALS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Date	Sample Depth	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		(feet)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
WEST																			
W-1	10/7/10	1	--	--	--	--	--	--	--	--	27	--	--	--	--	--	--	--	--
		3	--	--	--	--	--	--	--	--	27.0	--	--	--	--	--	--	--	--
80 Chemical Way																			
WEST																			
W-14	10/7/10	1	--	--	--	--	--	--	--	--	16	--	--	--	--	--	--	--	--
		3	--	--	--	--	--	--	--	--	23.8	--	--	--	--	--	--	--	--
ESLs- Residential			6.3	0.4	750	4.0	1.7	750*	40	230	200	1.3	40	150	10	20	1.3	16	600
ESLs- Commercial			40	1.6	1,500	8.0	7.4	750*	80	230	750	10	40	150	10	40	16	200	600
Construction Worker Exposure			310	15	2,600	98	39	1,200,000*	94	310,000	750	58	3,900	260	3,900	3,900	62	770	230,000

Notes:
mg/kg: milligrams per kilogram
<1.0: concentration below the laboratory-reporting limit of 1.0
omposite: Samples collected at 3-, 6-, and 10-feet below ground surface and combined at the laboratory
* Chromium III

TABLE 3-5
SUMMARY OF GROUNDWATER ELEVATIONS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Screen Interval	Top of Casing Elevation	Date	Depth to Groundwater	Groundwater Elevation
	(ft bgs)	(ft MSL)		(ft bgs)	(ft MSL)
70 Chemical Way					
MW-1	5 to 10	7.97	7/24/90	8.30	-0.33
			10/17/90	5.83	2.14
			12/11/90	7.78	0.19
			6/24/96	4.35	3.62
			2/1/01	7.72	0.25
MW-1R	5 to 15	7.23	9/20/04	8.72	-1.49
			1/4/05	6.30	0.93
			3/9/05	7.59	-0.36
			10/6/05	8.57	-1.34
			2/6/06	8.00	-0.77
			11/3/06	8.65	-1.42
		6.69	3/27/07	8.02	-1.33
			10/25/07	8.10	-1.41
			3/25/08	7.69	-1.00
			10/28/08	13.54	-6.85
			3/19/09	7.26	-0.57
MW-2	4 to 12	7.69	2/6/06	4.56	3.13
			11/3/06	5.85	1.84
			3/27/07	5.25	2.44
			10/25/07	5.85	1.84
			3/25/08	4.52	3.17
			10/28/08	5.75	1.94
MW-3	4 to 12	7.35	2/6/06	4.16	3.19
			11/3/06	5.50	1.85
			3/27/07	4.90	2.45
			10/25/07	5.60	1.75
			3/25/08	4.10	3.25
			10/28/08	5.55	1.80
			3/19/09	4.86	2.49
MW-4	4 to 12	7.18	2/6/06	10.16	-2.98
			11/3/06	6.58	0.60
		6.91	3/27/07	8.00	-1.09
			10/25/07	6.53	0.38
			3/25/08	8.44	-1.53
			10/28/08	10.04	-3.13
			3/19/09	9.21	-2.30

TABLE 3-5
SUMMARY OF GROUNDWATER ELEVATIONS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Screen Interval	Top of Casing Elevation	Date	Depth to Groundwater	Groundwater Elevation
	(ft bgs)	(ft MSL)		(ft bgs)	(ft MSL)
MW-5	4 to 10	8.04	2/6/06	8.65	-0.61
			11/3/06	6.06	1.98
		7.68	3/27/07	5.97	1.71
			10/25/07	5.11	2.57
			3/25/08	3.87	3.81
			10/28/08	6.05	1.63
			3/19/09	3.87	3.81
MW-6	4 to 10	6.57	3/27/07	3.04	3.53
			10/25/07	4.30	2.27
			3/25/08	3.86	2.71
			10/28/08	5.01	1.56
			3/19/09	4.63	1.94
MW-7	20 to 30	7.04	3/27/07	8.42	-1.38
			10/25/07	8.35	-1.31
			3/25/08	8.05	-1.01
			10/28/08	13.85	-6.81
			3/19/09	7.63	-0.59
A-1	5 to 25	8.25	5/29/90	8.54	-0.29
		8.24	6/20/96	9.58	-1.34
			2/1/01	11.10	-11.10
A-1R	5 to 15	8.22	7/24/90	9.54	-1.32
			10/17/90	8.94	-0.72
			12/11/90	11.00	-2.78
			6/24/96	9.51	-1.29
			2/1/01	10.99	-2.77
A-2	5 to 25	6.29	12/11/90	6.46	-0.17
			6/24/96	7.62	-1.33
			2/1/01	6.93	-0.64
		5.59	9/20/04	7.60	-2.01
			1/4/05	6.10	-0.51
			3/9/05	6.39	-0.80
			10/6/05	7.44	-1.85
			2/6/06	6.88	-1.29
			11/3/06	7.53	-1.94
		6.01	3/27/07	7.40	-1.39
			10/25/07	7.52	-1.51
			3/25/08	7.03	-1.02
			10/28/08	10.80	-4.79
			3/19/09	6.64	-0.63

TABLE 3-5
SUMMARY OF GROUNDWATER ELEVATIONS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Screen Interval	Top of Casing Elevation	Date	Depth to Groundwater	Groundwater Elevation
	(ft bgs)	(ft MSL)		(ft bgs)	(ft MSL)
C-3	20 to 30	7.90	9/29/89	8.27	-0.37
			5/29/90	9.23	-1.33
			7/24/90	9.51	-1.61
			10/17/90	8.95	-1.05
			12/11/90	10.00	-2.10
			6/24/96	8.82	-0.92
			2/1/01	8.11	-0.21
		7.20	9/20/04	8.72	-1.52
			1/4/05	7.28	-0.08
			3/9/05	7.64	-0.44
			10/6/05	8.58	-1.38
			2/6/06	7.97	-0.77
			11/3/06	8.64	-1.44
			3/27/07	8.59	-1.39
			10/25/07	8.65	-1.45
			3/25/08	8.27	-1.07
			10/28/08	13.74	-6.54
			3/19/09	7.82	-0.62
C-5	20 to 30	7.61	9/29/89	7.72	-0.11
			5/29/90	8.77	-1.16
			7/24/90	8.89	-1.28
			10/17/90	8.48	-0.87
			12/11/90	9.88	-2.27
			6/24/96	8.19	-0.58
			2/1/01	7.53	0.08
		6.91	9/20/04	8.10	-1.19
			1/4/05	6.66	0.25
			3/9/05	7.00	-0.09
			10/6/05	7.98	-1.07
			2/6/06	7.47	-0.56
			11/3/06	8.15	-1.24
			3/27/07	8.18	-1.27
			10/25/07	8.22	-1.31
			3/25/08	7.64	-0.73
			10/28/08	14.10	-7.19
			3/19/09	7.20	-0.29

TABLE 3-5
SUMMARY OF GROUNDWATER ELEVATIONS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Screen Interval	Top of Casing Elevation	Date	Depth to Groundwater	Groundwater Elevation
	(ft bgs)	(ft MSL)		(ft bgs)	(ft MSL)
C-6	20 to 30	8.31	9/29/89	8.88	-0.57
			5/29/90	9.44	-1.13
			7/24/90	9.73	-1.42
			10/17/90	9.10	-0.79
			12/11/90	10.84	-2.53
		8.52	6/20/96	9.32	-0.80
			2/1/01	8.59	-0.07
C-7	--	7.75	9/29/89	5.14	2.61
			5/29/90	3.05	4.70
			7/24/90	4.08	3.67
			10/17/90	4.24	3.51
			12/11/90	3.85	3.90
		7.74	6/20/96	4.41	3.34
DW-1	20 to 30	8.29	12/11/90	12.14	-3.85
			6/24/96	8.98	-0.69
			2/1/01	8.49	-0.20
DW-1R	5 to 15	7.44	9/20/04	8.98	-1.54
			1/4/05	8.28	-0.84
			3/9/05	7.78	-0.34
			10/6/05	9.27	-1.83
			2/6/06	8.24	-0.80
			11/3/06	10.10	-2.66
		6.82	3/27/07	8.15	-1.33
			10/25/07	8.36	-1.54
			3/25/08	7.67	-0.85
			10/28/08	12.72	-5.90
			3/19/09	7.39	-0.57
SW-1	5 to 15	7.71	5/29/90	8.79	-1.08
			10/17/90	9.37	-1.66
			12/11/90	6.61	1.10
		7.69	6/20/96	8.04	-0.35
			2/1/01	7.83	-0.14
80 Chemcial Way					
MW-1	8 to 24	--	8/4/89	9.00	--

Notes:

ft: feet

bgs: below ground surface

MSL: mean sea level

TABLE 3-6
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - TPHS & PVOCS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Screened Interval	Date	Petroleum Hydrocarbons			Petroleum-Related Volatile Organic Compounds							
			TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	1,2,4-TMB	Isopropyl benzene	Naphthalene
	(feet)		(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
20 Chemical Way													
WEST													
W-18	10 to 15	10/8/10	< 50.0	< 50.0	< 50.0	< 0.500	< 0.500	< 0.500	< 0.500	--	< 0.500	< 0.500	< 1.00
50 Chemical Way													
ARS													
SB-2	--	6/15/06	< 50	< 50	< 50	< 0.50	< 0.50	< 0.50	< 1.0	< 1.0	--	--	--
SB-12	--	6/15/06	--	< 50	< 50	< 0.50	< 0.50	< 0.50	< 1.0	--	< 1.0	< 1.0	< 1.0
SB-15	--	6/15/06	--	--	--	< 0.50	< 0.50	< 0.50	< 1.0	--	< 1.0	< 1.0	< 1.0
WEST													
W-13	10 to 15	10/6/10	< 50.0	< 50.0	< 50.00	1.07	0.51	< 0.500	< 0.500	--	< 0.500	< 0.500	< 1.00
W-16	10 to 15	10/6/10	< 50.0	< 50.0	< 50.00	< 0.500	< 0.500	< 0.500	< 0.500	--	< 0.500	< 0.500	< 1.00
W-17	10 to 15	10/6/10	< 50.0	< 50.0	< 50.00	< 0.500	< 0.500	< 0.500	< 0.500	--	< 0.500	< 0.500	< 1.00
70 Chemical Way													
Canonie													
SB-12	5.5	8/13/85	--	--	--	390	1,200	1,200	6,200	--	--	--	--
SEMCO/HK2													
E-2	--	6/24/96	29,000	68,000	--	27	1,400	1,400	3,600	--	--	--	--
E-3	--	6/24/96	5,000	5,000	--	46	890	280	1,390	--	29	--	<5
RRM													
SB-6	5 to 10	1/23/06	50,000	< 5,600	--	< 200	1,300	6,200	42,000	< 400	< 2,000	< 400	< 2,000
SB-7	5 to 10	1/23/06	5,400	2,900	--	54	360	790	4,200	60	< 250	< 50	< 250
SB-8D	24 to 28	1/23/06	670	< 2,500	--	2.4	11	36	42	< 2.0	42	4	51
SB-9	--	3/22/07	< 25	< 56	--	1.4	< 0.50	< 0.50	< 0.50	< 1.0	< 5.0	< 1.0	< 5.0
Pit	--	3/27/07	62,000	< 50	--	< 200	1,000	6,100	40,000	< 400	< 2,000	< 400	< 2,000
Sump	--	3/27/07	1,900	--	--	200	83	17	580	20	< 50	< 10	240
WEST													
W-4	10 to 15	10/7/10	< 50	< 50.0	< 50.0	< 0.500	< 0.500	< 0.500	0.500	--	< 0.500	< 0.500	< 1.00
80 Chemical Way													
Environmental Bio-Systems													
1	--	2/21/89	440	12,000	--	11	16	11	44	--	--	--	--
MW-1	8 to 24	4/15/89	< 50	< 50	--	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--
		8/4/89	< 50	< 50	--	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--
		10/3/89	--	< 50		< 0.5	< 0.5	< 0.5	< 1.0	--	--	--	--
		1/22/90	--	< 50		< 0.5	< 0.5	< 0.5	< 1.0	--	--	--	--

TABLE 3-6
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - TPHS & PVOCS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Screened Interval	Date	Petroleum Hydrocarbons			Petroleum-Related Volatile Organic Compounds							
			TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	1,2,4-TMB	Isopropyl benzene	Naphthalene
	(feet)		(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
WEST													
W-9	10 to 15	10/7/10	< 50	< 50.0	< 50.0	< 0.500	< 0.500	< 0.500	< 0.500	--	< 0.500	< 0.500	< 1.00
320 &340 Blomquist Street													
AEN													
B-12	--	2/6/97	< 50	290	< 200	< 5	< 5	< 5	< 10	--	< 5	< 5	< 5
B-13	--	2/6/97	50	8,400	4,900	< 5	< 5	< 5	< 10	--	< 5	< 5	20
ESLs			210	210	210	46	130	43	100	1,800	--	--	24

Notes:

TPHg: Total Petroleum Hydrocarbons as gasoline
TPHd: Total Petroleum Hydrocarbons as diesel
TPHmo: Total Petroleum Hydrocarbons as motor oil
MTBE: Methyl tert butyl ether
TMB: Trimethylbenzene
µg/l: micrograms per liter
--: Not sampled/not analyzed
<50: concentration below the laboratory-reporting limit of 50

TABLE 3-7
SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS - TPHS & PVOCS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Screened Interval	Date	Petroleum Hydrocarbons			Petroleum-Related Volatile Organic Compounds							
			TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	1,2,4-TMB	Isopropyl benzene	Naphthalene
	(feet)		(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
70 Chemical Way													
MW-1	5 to 10	12/12/90	--	--	--	3,200	310	79	390	--	--	--	--
		6/24/96	5,000	40,000	--	600	190	94	550	--	--	--	--
		2/1/01	9,600	46,000	--	1,700	280	150	830	950	--	--	--
MW-1R	5 to 15	9/20/04	170	< 50	--	9.6	1.6	1.5	8.2	12	--	--	--
		1/4/05	990	330	--	180	34	24	120	130	13	ND	23
		3/9/05	2,700	450	--	270	55	37	200	250	< 100	ND	31
		10/6/05	170	690	--	20	2.6	3	13	14	< 5.0	ND	< 5.0
		2/6/06	93	< 53	--	14	2.4	1.8	9.4	11	< 5.0	< 1.0	< 5.0
		11/3/06	130	550	--	33	0.82	2.7	3.4	24	< 5.0	< 1.0	< 5.0
		3/27/07	360	< 50	--	47	5.8	5.3	32	28	< 5.0	3.9	7.4
		10/25/07	270	94	--	36	3.8	4.3	20	23	< 5.0	< 1.0	< 5.0
		3/25/08	68	130	--	3.7	< 0.50	< 0.50	0.81	4.4	< 5.0	< 1.0	< 5.0
		10/28/08	594	54.9	--	111	10.3	11	43.1	35.8	3.8	0.51	2.7
		3/19/09	248	70.8	--	16.9	1.0	1.8	3.9	13.1	< 10	< 2.0	4.4
MW-2	4 to 12	2/6/06	< 25	< 50	--	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 5.0	< 1.0	7.5
		11/3/06	< 25	< 68	--	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 5.0	< 1.0	< 5.0
		3/27/07	< 25	< 48	--	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 5.0	< 1.0	< 5.0
		10/25/07	< 25	< 62	--	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 5.0	< 1.0	< 5.0
		3/25/08	< 25	< 49	--	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 5.0	< 1.0	< 5.0
MW-3	4 to 12	2/6/06	< 25	< 50	--	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 5.0	< 1.0	< 5.0
		11/3/06	< 25	< 55	--	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 5.0	< 1.0	< 5.0
		3/27/07	< 26	< 51	--	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 5.0	< 1.0	< 5.0
		10/25/07	< 25	< 52	--	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 5.0	< 1.0	< 5.0
		3/25/08	< 25	< 48	--	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 5.0	< 1.0	< 5.0
MW-4	4 to 12	2/6/06	2,500	< 50	--	110	< 10	< 10	17	< 20	< 100	< 20	< 100
		11/3/06	1,900	1,700	--	690	50	17	44	< 20	< 100	< 20	< 100
		3/27/07	3,700	<50	--	440	< 25	< 25	< 25	< 50	< 250	< 50	< 250
		10/25/07	2,400	230	--	670	35	17	20	< 10	< 50	< 10	< 50
		3/25/08	2,000	190	--	480	11	< 10	< 10	< 20	< 100	< 20	< 100
		10/28/08	2,030	190	--	407	13.7	6.9	< 40	< 20	< 100	< 20	< 100
		3/19/09	1,150	185	--	421	10.2	9.2	7.6	<5.0	< 25	< 5	7.0

TABLE 3-7
SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS - TPHS & PVOCS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Screened Interval	Date	Petroleum Hydrocarbons			Petroleum-Related Volatile Organic Compounds							
			TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	1,2,4-TMB	Isopropyl benzene	Naphthalene
	(feet)		(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
MW-5	4 to10	2/6/06	14,000	9,700	--	6,100	370	230	790	<100	< 500	< 100	4,800
		11/3/06	9,200	4,400	--	6,200	130	140	210	<100	< 500	< 100	1,200
		3/27/07	21,000	<94	--	8,100	270	260	520	<100	< 500	< 100	2,000
		10/25/07	11,000	10,000	--	5,700	140	140	340	<100	< 500	< 100	1,700
		3/25/08	8,300	62,000	--	6,800	130	110	230	<100	< 500	< 100	2,600
		10/28/08	13,900	19,200	--	5,980	281	192	612	<130	82.7	< 130	3,400
		3/19/09	17,000	19,000	--	7,410	391	269	894	<100	146	< 100	4,220
MW-6	4 to 10	3/27/07	14,000	100	--	120	590	1,200	6,200	< 100	< 500	< 100	< 500
		10/25/07	13,000	1,000	--	83	370	1,100	5,700	42	< 100	< 20	< 100
		3/25/08	13,000	470	--	<25	290	1,100	7,200	< 50	< 250	< 50	< 250
		10/28/08	14,500	884	--	121	423	1,120	5,980	38.2	38.1	< 67	102
		3/19/09	13,600	998	--	83.2	155	955	5,250	51.5	42.4	< 40	95.8
MW-7	20 to 30	3/27/07	2,700	<50	--	< 2.5	13	53	61	< 5	47	< 5	150
		10/25/07	820	3,300	--	< 1	5.4	26	33	< 5	22	4.2	110
		3/25/08	560	6,800	--	< 1.2	3.9	22	23	< 2.5	13	< 2.5	74
		10/28/08	496	8,300	--	3.3	6.9	23.1	21.9	0.83	4.0	2.8	26.8
		3/19/09	178	9,330	--	2.8	6.5	25.9	22.8	1.1	3.0	3.1	30.1
A-1	5 to 25	4/2/90	--	--	--	2,500	1,100	< 500	20,000	--	--	--	--
		6/20/96	960,000,000	230,000,000	--	500	480	0.5	11,000	--	--	--	--
A-1R	5 to 15	9/14/90	--	--	--	< 10	23	18	140	--	--	--	--
		10/17/90	--	--	--	< 25	27	< 25	130	--	--	--	--
		12/11/90	--	--	--	8	20	27	140	--	--	--	--
		2/1/01	180	2,200	--	14	1.3	1.2	5.6	< 5	--	--	--
A-2	5 to 25	12/11/90	--	--	--	< 5	< 5	< 5	< 5	--	--	--	--
		6/24/96	< 50	< 50	--	0.9	0.7	1	5	--	--	--	--
		2/1/01	< 50	850	--	< 0.5	< 0.5	< 0.5	< 0.5	< 5	--	--	--
		9/20/04	< 50	< 50	--	< 0.5	< 0.5	< 0.5	< 1	< 1	--	--	--
		1/4/05	36	< 50	--	< 0.5	< 0.5	< 0.5	< 0.50	< 5	< 5	ND	30
		3/9/05	27	< 50	--	< 0.5	< 0.5	< 0.5	< 0.50	< 5	< 5	ND	< 10
		10/6/05	< 50	< 50	--	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	ND	< 50
		2/6/06	< 25	< 55	--	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 5.0	< 1.0	< 10
		11/3/06	< 25	< 52	--	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 5.0	< 1.0	< 5.0
		3/27/07	< 25	--	--	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 5.0	< 1.0	< 5.0
		10/25/07	< 25	< 49	--	< 0.50	< 0.50	< 0.50	0.95	< 1.0	< 5.0	< 1.0	< 5.0
		3/25/08	< 25	< 50	--	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 5.0	< 1.0	< 5.0

TABLE 3-7
SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS - TPHS & PVOCS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Screened Interval	Date	Petroleum Hydrocarbons			Petroleum-Related Volatile Organic Compounds							
			TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	1,2,4-TMB	Isopropyl benzene	Naphthalene
	(feet)		(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
C-3	20 to 30	10/26/84	--	--	--	--	--	--	< 20	--	--	--	--
		8/12/85	--	--	--	--	--	--	< 1	--	--	--	--
		12/6/89	--	--	--	< 2	< 2	< 2.0	< 2	--	--	--	--
		4/2/90	--	--	--	< 5	< 5	< 5	<5	--	--	--	--
		6/26/90	--	--	--	< 5	< 5	< 5	< 5	--	--	--	--
		9/13/90	--	--	--	< 5	< 5	< 5	< 5	--	--	--	--
		12/11/90	--	--	--	< 5	< 5	< 5	< 5	--	--	--	--
		6/24/96	< 50	< 50	--	2	2	< 0.5	1	--	--	--	--
		2/1/01	77	--	--	< 0.5	< 0.5	< 0.5	< 0.5	< 5	--	--	--
		9/20/04	61	< 50	--	< 0.5	< 0.5	< 0.5	< 1.0	4.0	--	--	--
		1/4/05	66	< 50	--	< 0.5	< 0.5	< 0.5	< 0.5	2.6	< 5	ND	< 5
		3/9/05	92	< 50	--	< 0.5	< 0.5	< 0.5	< 0.5	2.7	< 5	ND	< 5
		10/6/05	50	< 50	--	< 0.50	< 0.50	< 0.50	< 0.50	2	< 5.0	ND	< 5.0
		2/6/06	50	< 50	--	< 0.50	< 0.50	< 0.50	< 0.50	3.0	< 5.0	< 1.0	< 10
		11/3/06	61	< 52	--	< 0.50	< 0.50	< 0.50	< 0.50	2.1	< 5.0	< 1.0	< 5.0
		3/27/07	120	< 50	--	< 0.50	< 0.50	< 0.50	< 0.50	3.0	< 5.0	< 1.0	< 5.0
		10/25/07	84	< 48	--	< 0.50	< 0.50	< 0.50	< 0.50	3.3	< 5.0	< 1.0	< 5.0
		3/25/08	64	< 50	--	< 0.50	< 0.50	< 0.50	< 0.50	1.8	< 5.0	< 1.0	< 5.0
		10/28/08	142	< 110	--	1.2	< 2.5	< 2.5	< 5.0	2.2	< 13	< 2.5	< 13
		3/19/09	137	< 98	--	< 1.0	< 1.0	< 1.0	< 2.0	2.8	< 5.0	< 1.0	< 5.0
C-5	20 to 30	10/26/84	--	--	--	--	--	--	<20	--	--	--	--
		8/12/85	--	--	--	--	--	--	<1	--	--	--	--
		12/6/89	--	--	--	< 2.0	< 2.0	< 2.0	< 2.0	--	--	--	--
		4/2/90	--	--	--	< 5	< 5	< 5	< 5	--	--	--	--
		6/26/90	--	--	--	< 50	< 50	< 50	< 50	--	--	--	--
		9/13/90	--	--	--	< 10	< 10	< 10	< 10	--	--	--	--
		12/11/90	--	--	--	< 5	< 5	< 5	< 5	--	--	--	--
		6/24/96	< 50	< 50	--	< 2	< 2	< 2	< 2	--	--	--	--
		2/1/01	< 50	--	--	< 0.5	< 0.5	< 0.5	< 0.5	< 5	--	--	--
		9/20/04	< 50	< 50	--	< 0.5	< 0.5	< 0.5	< 1.0	5.8	--	--	--
		1/4/05	32	< 50	--	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 5	ND	< 5
		3/9/05	59	< 50	--	< 0.5	< 0.5	< 0.5	< 0.5	4.6	< 5	ND	< 5
		10/6/05	< 50	< 50	--	< 0.50	< 0.50	< 0.50	< 0.50	3.6	< 5.0	ND	< 5.0

TABLE 3-7
SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS - TPHS & PVOCS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Screened Interval	Date	Petroleum Hydrocarbons			Petroleum-Related Volatile Organic Compounds							
			TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	1,2,4-TMB	Isopropyl benzene	Naphthalene
	(feet)		(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
C-5	20 to 30	2/6/06	51	< 50	--	< 0.50	< 0.50	< 0.50	< 0.50	5.4	< 5.0	< 1.0	< 10
		11/3/06	< 25	< 50	--	< 0.50	< 0.50	< 0.50	< 0.50	3.6	< 5.0	< 1.0	< 5.0
		3/27/07	60	< 50	--	< 0.50	< 0.50	< 0.50	< 0.50	4.6	< 5.0	< 1.0	< 5.0
		10/25/07	45	< 50	--	< 0.50	< 0.50	< 0.50	< 0.50	5.1	< 5.0	< 1.0	< 5.0
		3/25/08	< 25	< 52	--	< 0.50	< 0.50	< 0.50	< 0.50	3.2	< 5.0	< 1.0	< 5.0
		10/28/08	50.1	< 100	--	< 1.0	< 1.0	< 1.0	< 2.0	4.8	< 5.0	< 1.0	< 5.0
		3/19/09	47.7	< 97	--	< 1.0	< 1.0	< 1.0	< 2.0	6.6	< 5.0	< 1.0	< 5.0
C-6	20 to 30	10/26/84	--	--	--	--	--	--	130	--	--	--	--
		8/12/85	--	--	--	--	--	--	11	--	--	--	--
		12/6/89	--	--	--	< 2.0	< 2.0	3.2	7.9	--	--	--	--
		4/2/90	--	--	--	< 5	< 5	< 5	< 5	--	--	--	--
		6/26/90	--	--	--	< 5	7	< 5	21	--	--	--	--
		9/13/90	--	--	--	< 5	8	12	27	--	--	--	--
		12/11/90	--	--	--	< 5	16	28	110	--	--	--	--
		6/24/96	< 50	100	--	< 0.5	2	< 0.5	< 1	--	--	--	--
		2/1/01	140	--	--	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--
C-7	--	12/6/89	--	--	--	16	41	260	480	--	--	--	--
		4/2/90	--	--	--	< 50	75	180	320	--	--	--	--
		6/28/90	--	--	--	16	41	250	470	--	--	--	--
		9/14/90	--	--	--	15	100	190	380	--	--	--	--
		12/11/90	--	--	--	24	200	300	940	--	--	--	--
		6/24/96	1,000	5,000	--	21	13	290	120	--	--	--	--
DW-1	20 to 30	5/31/89	--	--	--	1	1	<0.5	4	--	--	--	--
		12/6/89	--	--	--	< 2.0	< 2.0	< 2.0	< 2.0	--	--	--	--
		4/2/90	--	--	--	< 5	< 5	< 5	< 5	--	--	--	--
		6/26/90	--	--	--	< 5	< 5	< 5	< 5	--	--	--	--
		9/18/90	--	--	--	< 5	< 5	< 5	< 5	--	--	--	--
		12/17/90	--	--	--	6	< 5	< 5	< 5	--	--	--	--
		6/24/96	5,000	23,000	--	45	90	320	1,500	--	--	--	--
		2/1/01	2,100	2,800	--	53	63	130	770	< 100	--	--	--

TABLE 3-7
SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS - TPHS & PVOCS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Screened Interval	Date	Petroleum Hydrocarbons			Petroleum-Related Volatile Organic Compounds							
			TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	1,2,4-TMB	Isopropyl benzene	Naphthalene
	(feet)		(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
DW-1R	5 to 15	9/20/04	73	< 50	--	< 0.5	< 0.5	< 0.5	< 1.0	11	--	--	--
		1/4/05	71	< 50	--	< 0.5	< 0.5	< 0.5	< 0.5	14	< 5	ND	< 5
		3/9/05	96	140	--	0.61	< 0.5	0.74	1.8	17	< 5	ND	< 5
		10/6/05	53	100	--	0.52	< 0.50	< 0.50	< 0.50	9.3	< 5.0	ND	< 5.0
		2/6/06	93	< 50	--	< 0.50	< 0.50	< 0.50	< 0.50	8.7	< 5.0	< 1.0	< 10
		11/3/06	65	210	--	< 0.50	< 0.50	< 0.50	< 0.50	6.7	< 5.0	< 1.0	< 5.0
		3/27/07	110	< 50	--	0.70	< 0.50	< 0.50	< 0.50	12	< 5.0	< 1.0	< 5.0
		10/25/07	75	< 51	--	0.60	< 0.50	< 0.50	< 0.50	9.6	< 5.0	< 1.0	< 5.0
		3/25/08	58	< 50	--	< 0.50	< 0.50	< 0.50	< 0.50	6.4	< 5.0	< 1.0	< 5.0
		10/28/08	64.4	< 110	--	0.87	< 1.0	< 1.0	< 2.0	8.8	< 5.0	< 1.0	< 5.0
		3/19/09	59.8	< 97	--	0.37	< 1.0	< 1.0	< 2.0	10.7	< 5.0	< 1.0	< 5.0
SW-1	5 to 15	5/31/89	--	--	--	2,700	280	63	170	--	--	--	--
		12/6/89	--	--	--	570	140	28	290	--	--	--	--
		6/26/90	--	--	--	2,600	< 500	< 500	4	--	--	--	--
		10/17/90	--	--	--	2,700	220	< 100	190	--	--	--	--
		12/11/90	--	--	--	3,900	250	63	300	--	--	--	--
		6/24/96	6,000	140,000	--	470	67	23	88	--	--	--	--
		2/1/01	1,000	--	--	160	47	36	120	< 25	--	--	--
80 Chemical Way													
MW-1	8 to 24	4/15/89	< 50	< 50	--	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--
		8/4/89	< 50	< 50	--	< 0.5	< 0.5	< 0.5	< 0.5	--	--	--	--
		10/3/89	--	< 50	--	< 0.5	< 0.5	< 0.5	< 1	--	--	--	--
		1/22/90	--	< 50	--	< 0.5	< 0.5	< 0.5	< 1	--	--	--	--
ESLs			210	210	210	46	130	43	100	1,800	--	--	24

Notes:
TPHg: Total Petroleum Hydrocarbons as gasoline
TPHd: Total Petroleum Hydrocarbons as diesel
TPHmo: Total Petroleum Hydrocarbons as motor oil
MTBE: Methyl tert butyl ether
TMB: Trimethylbenzene
µg/l: micrograms per liter
<50: concentration below the laboratory-reporting limit of 50
--: Not sampled/not analyzed
ND: less than laboratory-reporting limit; reporting limit not provided

TABLE 3-8
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - VOCS, ALCOHOLS, KETONES & OTHER CHEMICALS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Screened Interval	Date	Chlorinated Volatile Organic Compounds												Alcohols		Ketones		1,4 Dioxane	4-Methyl-2-pentanone	Tetra hydrofuran
			PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	TCA	1,1-DCA	1,2-DCA	CA	1,1-DCE	CE	TCM	DCM	TBA	Isopropanol	Acetone	MEK			
	(feet)		(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
20 Chemical Way																					
WEST																					
W-18	10 to 15	10/8/10	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 2.50	--	--	--	--	< 50.0	--	--
50 Chemical Way																					
ARS																					
SB-12	--	6/15/06	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.50	< 1.0	< 1.0	< 0.50	< 1.0	< 1.0	--	--	--	--	--	--	--
SB-15	--	6/15/06	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.50	< 1.0	< 1.0	< 0.50	< 1.0	< 1.0	--	--	--	--	--	--	--
WEST																					
W-13	10 to 15	10/6/10	< 0.500	< 0.500	0.69	< 0.500	< 0.500	1.74	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 2.50	--	--	--	--	< 50.0	--	--
W-16	10 to 15	10/6/10	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	0.660	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 2.50	--	--	--	--	< 50.0	--	--
W-17	10 to 15	10/6/10	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 2.50	--	--	--	--	< 50.0	--	--
70 Chemical Way																					
Canonie																					
SB-12	5.5	8/13/85	--	780	--	550	--	--	--	--	--	300	--	750	--	--	260,000	15,000	--	4,100	--
SEMCO/HK2																					
E-3	--	6/24/96	< 5	19	18	< 5	< 5	110	< 5	< 50	< 5	< 50	< 5	< 5	--	--	4,000	< 50	--	900	--
RRM																					
SB-6	5 to 10	1/23/06	< 200	< 200	< 200	< 200	< 200	< 200	< 200	< 200	< 200	< 200	< 200	< 400	< 4,000	< 8,000	< 8,000	< 8,000	< 20,000	< 8,000	< 8,000
SB-7	5 to 10	1/23/06	< 25	< 25	< 25	< 25	< 25	76	< 25	< 25	< 25	< 25	< 25	< 1,000	< 500	< 1,000	1,900	< 1,000	< 2,500	< 1,000	< 1,000
SB-8D	24 to 28	1/23/06	< 1.0	2.4	6.2	1.2	< 1.0	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 40	22	< 40	57	< 40	< 100	< 40	< 40
SB-9	--	3/22/07	< 0.50	< 0.50	1.1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	< 50	< 20	< 20
Pit	--	3/27/07	< 200	< 200	< 200	< 200	< 200	< 200	< 200	< 200	< 200	< 200	< 200	< 8,000	< 4,000	< 8,000	< 8,000	< 8,000	< 20,000	< 8,000	< 8,000
Sump	--	3/27/07	5.7	15	8.8	< 5.0	9.3	560	< 5.0	< 5.0	< 5.0	6.7	< 5.0	< 200	< 100	< 200	< 200	< 200	< 500	< 200	< 200
WEST																					
W-4	10 to 15	10/7/10	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 2.50	--	--	--	--	< 50.0	--	--
80 Chemical Way																					
WEST																					
W-9	10 to 15	10/7/10	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 2.50	--	--	--	--	< 50.0	--	--
320 &340 Blomquist Street																					
AEN																					
B-12	--	2/6/97	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 20	< --	< --	< 100	< 100	< --	< 50	< --
B-13	--	2/6/97	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10	< 5	< 10	< 5	< 20	< --	< --	< 100	< 100	< --	< 50	< --
ESLs			120	360	590	590	62	47	200	12	25	3.8	330	2,200	18,000	--	1,500	14,000	50,000	--	--

Notes:

PCE: Tetrachloroethene
TCE: Trichloroethene
DCE: Dichloroethene
TCA: Trichloroethane
DCA: Dichloroethane
CA: Chloroethane
CE: Vinyl Chloride
TCM: Trichloromethane
DCM: Dichloromethane
TBA: tert butyl alcohol
MEK: 2-butanone
µg/l: micrograms per liter
<40: concentration below the laboratory-reporting limit of 40
--: not sampled/not analyzed

TABLE 3-9
SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS - VOCS, ALCOHOLS, KETONES & OTHER CHEMICALS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Screened Interval	Date	Chlorinated Volatile Organic Compounds												Alcohols		Ketones		1,4 Dioxane	4-Methyl-2-pentanone	Tetra hydrofuran
			PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	TCA	1,1-DCA	1,2-DCA	CA	1,1-DCE	CE	TCM	DCM	TBA	Isopropanol	Acetone	MEK			
	(feet)		(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
70 Chemical Way																					
MW-1	5 to 10	12/12/90	--	--	--	--	--	--	--	--	--	--	--	17,696	--	--	21,000	7,800	--	4,100	--
MW-1R	5 to 15	1/4/05	ND	43	78	3.3	4.7	110	1.6	2.3	6.2	24	1.9	66	46	330	< 40	54	230	110	< 2
		3/9/05	< 10	56	80	< 10	< 10	150	< 10	< 10	< 10	21	< 10	160	< 200	6,100	9,200	< 400	< 1,000	< 400	< 400
		10/6/05	< 0.50	27	33	0.71	< 0.50	15	< 0.50	< 0.50	0.76	1.3	< 0.50	< 20	< 10	< 20	37	< 20	77	< 20	< 20
		2/6/06	< 0.50	28	42	0.59	< 0.50	19	< 0.50	< 0.50	0.72	1.3	< 0.50	< 20	< 10	< 20	140	< 20	96	< 20	< 20
		11/3/06	< 0.50	23	30	0.68	< 0.50	28	< 0.50	< 0.50	< 0.50	0.95	< 0.50	< 20	11	< 20	< 20	< 20	62	< 20	< 20
		3/27/07	< 0.50	33	39	1.2	< 0.50	41	< 0.50	< 0.50	0.90	4.0	< 0.50	< 20	10	< 20	23	< 20	130	< 20	< 20
		10/25/07	< 0.50	26	33	1.3	< 0.50	28	< 0.50	< 0.50	0.83	3.9	< 0.50	< 20	< 10	< 20	< 20	< 20	97	< 20	< 20
		3/25/08	< 0.50	18	23	< 0.50	< 0.50	13	< 0.50	< 0.50	< 0.50	1.2	< 0.50	< 20	< 10	< 20	< 20	< 20	90	< 20	< 20
		10/28/08	< 2.0	22.5	77.0	3.5	< 2.0	122	< 2.0	< 2.0	0.67	7.2	< 2.0	< 40	< 20	--	22.7	< 40	< 100	< 40	< 40
		3/19/09	< 2.0	48.1	95.4	2.7	< 2.0	55.8	< 2.0	< 2.0	1.3	1.2	< 2.0	< 40	< 20	--	<40	< 40	< 100	< 40	--
MW-2	4 to 12	2/6/06	< 0.50	< 0.50	1.8	< 0.50	< 0.50	2.2	< 0.50	< 0.50	< 0.50	1.5	< 0.50	< 20	< 10	< 20	< 20	< 20	67	< 20	< 20
		11/3/06	< 0.50	< 0.50	0.63	< 0.50	< 0.50	0.92	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	81	< 20	< 20
		3/27/07	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	120	< 20	< 20
		10/25/07	< 0.50	< 0.50	0.52	< 0.50	< 0.50	1.3	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	97	< 20	< 20
		3/25/08	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.3	< 0.50	< 20	< 10	< 20	< 20	< 20	78	< 20	< 20
MW-3	4 to 12	2/6/06	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	< 0.50	< 20	< 20
		11/3/06	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	< 0.50	< 20	< 20
		3/27/07	< 0.50	< 0.50	0.58	< 0.50	< 0.50	2.0	< 0.50	< 0.50	< 0.50	0.81	< 0.50	< 20	< 10	< 20	< 20	< 20	140	< 20	< 20
		10/25/07	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	54	< 20	< 20
		3/25/08	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	68	< 20	< 20
MW-4	4 to 12	2/6/06	< 10	< 10	< 10	< 10	< 10	1,500	< 10	130	< 10	< 10	< 10	< 400	540	< 400	< 400	< 400	12,000	510	< 400
		11/3/06	< 10	< 10	< 10	< 10	< 10	89	< 10	580	< 10	< 10	< 10	< 400	330	< 400	< 400	< 400	9,500	< 400	< 400
		3/27/07	< 25	< 25	< 25	< 25	< 25	370	< 25	820	< 25	< 25	< 25	< 1,000	670	< 1,000	< 1,000	< 1,000	22,000	< 1,000	< 1,000
		10/25/07	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	120	< 5.0	460	< 5.0	< 5.0	< 5.0	< 200	550	< 200	< 200	< 200	13,000	< 200	< 200
		3/25/08	< 10	< 10	< 10	< 10	< 10	170	< 10	260	< 10	< 10	< 10	< 400	< 200	< 400	< 400	< 400	9,700	< 400	< 400
		10/28/08	< 20	< 20	< 20	< 20	< 20	188	< 20	255	< 20	< 20	< 20	< 400	405	--	< 400	< 400	9,990	< 400	< 400
		3/19/09	<5.0	<5.0	3.5	2.2	<5.0	219	<5.0	287	<5.0	1..7	<5.0	< 100	657	--	< 100	< 100	14,000	< 100	--
MW-5	4 to10	2/6/06	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 2,000	< 1,000	< 2,000	< 2,000	< 2,000	< 5,000	< 2,000	< 2,000
		11/3/06	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 2,000	< 1,000	< 2,000	< 2,000	< 2,000	< 5,000	< 2,000	< 2,000
		3/27/07	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 2,000	< 1,000	< 2,000	< 2,000	< 2,000	< 5,000	< 2,000	< 2,000
		10/25/07	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 2,000	< 1,000	< 2,000	< 2,000	< 2,000	< 5,000	< 2,000	< 2,000
		3/25/08	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 2,000	< 1,000	< 2,000	< 2,000	< 2,000	< 5,000	< 2,000	< 2,000
		10/28/08	< 130	< 130	< 130	< 130	< 130	< 130	< 130	< 130	< 130	< 130	< 130	< 2,000	< 1,300	--	< 2,000	< 2,500	< 6,300	< 2,500	< 2,500
		3/19/09	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 2,000	< 1,000	--	< 2,000	< 2,000	< 5,000	< 2,000	--
MW-6	4 to 10	3/27/07	< 1,000	< 50	< 50	< 50	< 50	220	< 50	< 50	< 50	< 50	< 50	< 2,000	< 1,000	< 2,000	< 2,000	< 2,000	<5,000	< 2,000	< 2,000
		10/25/07	< 10	< 10	11	< 10	< 10	130	< 10	< 10	< 50	< 10	< 10	< 400	< 200	< 400	< 400	< 400	< 1,000	< 400	< 400
		3/25/08	< 25	< 25	< 25	< 25	< 25	81	< 25	< 25	< 25	< 25	< 25	< 1,000	< 500	< 1,000	< 1,000	< 1,000	< 2,500	< 1,000	< 1,000
		10/28/08	< 67	< 67	< 67	< 67	< 67	127	< 67	< 67	< 67	< 67	< 67	< 1,300	< 670	--	676	< 1,300	< 1,300	< 1,300	< 1,300
		3/19/09	< 40	< 40	< 40	< 40	< 40	70.1	< 40	12.8	< 40	< 40	< 40	< 800	< 400	--	519	< 800	< 2,000	<800	--
MW-7	20 to 30	3/27/07	< 50	< 2.5	6.7	< 2.5	< 2.5	3.8	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 100	< 50	< 100	< 100	< 100	< 250	< 100	< 100
		10/25/07	< 50	1.3	5.0	< 1.0	< 1.0	2.2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 100	< 50	< 100	< 40	< 40	< 100	< 100	< 100
		3/25/08	< 1.2	< 1.2	1.3	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 50	< 25	< 50	< 50	< 50	< 120	< 50	< 50
		10/28/08	< 1.0	0.76	2.5	1.1	< 1.0	4.2	< 1.0	< 1.0	< 1.0	0.82	< 1.0	< 20	< 10	--	< 20	< 20	< 50	< 20	< 20
		3/19/09	< 1.0	1.2	3.6	1.2	< 1.0	5.6	< 1.0	< 1.0	< 1.0	0.92	< 1.0	< 20	< 10	--	< 20	< 20	32.2	< 20	--
A-1	5 to 25	4/2/90	--	2,800	34,000	--	--	25,000	--	--	1,600	18,000	<500	22,000	--	--	300,000	230,000	--	58,000	--

TABLE 3-9
SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS - VOCS, ALCOHOLS, KETONES & OTHER CHEMICALS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Screened Interval	Date	Chlorinated Volatile Organic Compounds												Alcohols		Ketones		1,4 Dioxane	4-Methyl-2-pentanone	Tetra hydrofuran
			PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	TCA	1,1-DCA	1,2-DCA	CA	1,1-DCE	CE	TCM	DCM	TBA	Isopropanol	Acetone	MEK			
	(feet)		(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
A-1R	5 to 15	9/14/90	--	34	23	--	--	110	--	--	< 5	140	< 5	43	--	--	390	160	--	130	--
		10/17/90	--	31	< 25	--	--	94	--	--	< 25	620	< 25	33	--	--	< 50	< 50	--	72	--
		12/11/90	--	29	15	--	--	63	--	--	< 5	100	< 5	< 5	--	--	< 10	< 10	--	20	--
A-2	5 to 25	12/11/90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	38	< 10	--	15	--
		1/4/05	0.50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 20	< 10	< 20	< 20	< 20	< 50	< 20	< 20
		3/9/05	0.50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 20	< 10	< 20	< 20	< 20	< 50	< 20	< 20
		10/6/05	0.50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 200	< 100	< 200	< 200	< 200	< 200	< 200	< 200
		2/6/06	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	< 50	< 20	< 20
		11/3/06	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	< 50	< 20	< 20
		3/27/07	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	< 50	< 20	< 20
		10/25/07	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	< 50	< 20	< 20
		3/25/08	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	< 50	< 20	< 20
C-3	20 to 30	10/26/84	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 30	< 20	--	--	--
		8/12/85	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	< 1	--	--	--
		12/6/89	< 2.0	48	130	--	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	--	--	< 10.0	< 10.0	--	< 10.0	--
		4/2/90	--	17	88	--	--	< 5.0	--	--	< 5.0	< 10.0	< 5.0	< 5.0	--	--	< 10	< 10	--	< 10.0	--
		6/26/90	--	90	140	--	--	< 5.0	--	--	< 5.0	< 10.0	< 5.0	< 5.0	--	--	< 10	< 10	--	< 10.0	--
		9/13/90	--	120	150	--	--	< 5.0	--	--	< 5.0	< 10.0	< 5.0	7	--	--	< 10	< 10	--	< 10.0	--
		12/11/90	--	73	130	--	--	< 5.0	--	--	< 5.0	< 10.0	< 5.0	< 5.0	--	--	2,200	< 10	--	< 10.0	--
		1/4/05	0.50	41	63	0.5	< 0.5	16	< 0.5	< 0.5	0.97	< 0.5	< 0.5	< 20	< 10	< 20	< 20	< 20	< 50	< 20	< 20
		3/9/05	0.50	39	50	< 0.5	< 0.5	12	< 0.5	< 0.5	0.79	< 0.5	< 0.5	< 20	< 10	< 20	< 20	< 20	< 50	< 20	< 20
		10/6/05	0.50	33	44	< 0.50	< 0.50	6.7	< 0.50	< 0.50	0.69	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	< 50	< 20	< 20
		2/6/06	0.50	38	55	< 0.50	< 0.50	13	< 0.50	< 0.50	0.7	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	< 50	< 20	< 20
		11/3/06	0.50	33	44	< 0.50	< 0.50	7.2	< 0.50	< 0.50	0.59	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	< 50	< 20	< 20
		3/27/07	< 0.50	45	57	0.64	< 0.50	16	< 0.50	< 0.50	0.93	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	< 50	< 20	< 20
		10/25/07	< 0.50	37	51	0.52	< 0.50	10	< 0.50	< 0.50	0.86	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	< 50	< 20	< 20
		3/25/08	< 0.50	29	42	< 0.50	< 0.50	13	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	< 50	< 20	< 20
		10/28/08	< 2.5	97.7	29.9	< 2.5	< 2.5	1.3	< 2.5	< 2.5	1.0	< 2.5	< 2.5	< 50	< 25	--	< 50	< 50	< 130	< 50	< 50
		3/19/09	< 1.0	90.9	42.3	0.65	< 1.0	2.6	< 1.0	< 1.0	1.2	< 1.0	< 1.0	< 20	< 10	--	< 20	< 20	< 50	< 20	--
C-5	20 to 30	10/26/84	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 20	< 20	--	--	--
		8/12/85	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6	< 1	--	--	--
		12/6/89	< 2.0	150	93	--	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	--	--	< 10.0	< 10.0	--	< 10.0	--
		4/2/90	--	87	39	--	--	< 5	--	--	< 5	< 10	< 5	7	--	--	< 10	< 10	--	< 10	--
		6/26/90	--	430	150	--	--	< 5	--	--	< 5	< 10	< 5	120	--	--	< 10	< 10	--	< 10	--
		9/13/90	--	270	130	--	--	< 10	--	--	< 5	< 20	< 10	19	--	--	< 20	< 20	--	< 20	--
		12/11/90	--	190	130	--	--	< 5	--	--	< 5	< 10	< 5	< 5	--	--	< 10	< 10	--	< 5	--
		6/24/96	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 10	< 10	--	--	--
		1/4/05	< 0.50	29	17	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 20	< 10	< 20	< 20	< 20	<50	< 20	< 20
		3/9/05	< 0.50	36	16	0.51	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 20	< 10	< 20	< 20	< 20	<50	< 20	< 20
		10/6/05	< 0.50	26	11	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	<50	< 20	< 20
		2/6/06	< 0.50	29	13	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	<50	< 20	< 20
		11/3/06	< 0.50	24	10	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	<50	< 20	< 20
		3/27/07	< 0.50	29	12	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	<50	< 20	< 20
		10/25/07	< 0.50	26	11	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	<50	< 20	< 20
		3/25/08	< 0.50	19	8.7	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	<50	< 20	< 20

TABLE 3-9
SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS - VOCS, ALCOHOLS, KETONES & OTHER CHEMICALS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Screened Interval	Date	Chlorinated Volatile Organic Compounds												Alcohols		Ketones		1,4 Dioxane	4-Methyl-2-pentanone	Tetra hydrofuran
			PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	TCA	1,1-DCA	1,2-DCA	CA	1,1-DCE	CE	TCM	DCM	TBA	Isopropanol	Acetone	MEK			
	(feet)		(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
C-5	20 to 30	10/28/08	< 1.0	30.2	12.3	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.44	< 1.0	< 1.0	< 20	< 10	--	< 20	< 20	< 50	< 20	< 20
		3/19/09	< 1.0	29.2	13.0	0.76	< 1.0	< 1.0	< 1.0	< 1.0	0.43	< 1.0	< 1.0	< 20	< 10	--	< 20	< 20	< 50	< 20	--
C-6	20 to 30	10/26/84	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2,600	120	--	--	--
		8/12/85	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17	< 1	--	--	--
		12/6/89	< 2.0	150	93	--	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	--	--	< 10.0	< 10.0	--	< 10.0	--
		4/2/90	--	18	47	--	--	< 5	--	--	< 5	< 10	< 5	< 5	--	--	100	< 10	--	< 10	--
		6/26/90	--	15	26	--	--	< 5	--	--	< 5	< 10	< 5	< 5	--	--	< 10	< 10	--	< 10	--
		9/13/90	--	38	71	--	--	< 5	--	--	< 5	< 10	< 5	9	--	--	84	< 10	--	< 10	--
		12/11/90	--	18	35	--	--	8	--	--	< 5	< 10	< 5	< 5	--	--	150,000	500	--	20	--
		6/24/96	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15	--	--	--	--
C-7	--	12/6/89	--	14	<4	--	--	170	--	--	<4	17	<4	22	--	--	1,200	160	--	150	--
		4/2/90	--	< 50	< 50	--	--	150	--	--	< 50	< 100	< 50	61	--	--	5,400	740	--	320	--
		6/28/90	--	< 50	< 50	--	--	180	--	--	< 50	< 100	< 50	22	--	--	1,200	160	--	150	--
		9/14/90	--	13	6	--	--	160	--	--	< 5	13	<5	50	--	--	12,000	390	--	290	--
		12/11/90	--	53	20	--	--	200	--	--	< 5	32	<5	97	--	--	24,000	810	--	1700	--
DW-1	20 to 30	5/31/89	--	< 1	< 1	--	--	1	--	--	< 1	< 2	1	< 2	--	--	--	--	--	--	--
		12/6/89	< 2.0	< 2.0	3	--	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2	--	--	< 10.0	< 10.0	--	< 10.0	--
		4/2/90	--	<5	21	--	--	< 5	--	--	< 5	< 10	< 5	< 5	--	--	26	< 10	--	< 10	--
		6/26/90	--	12	34	--	--	< 5	--	--	< 5	< 10	< 5	< 5	--	--	< 10	< 10	--	< 10	--
		9/18/90	--	22	57	--	--	< 5	--	--	< 5	< 10	< 5	9	--	--	< 10	< 10	--	< 10	--
		12/17/90	--	31	62	--	--	< 5	--	--	< 5	< 10	< 5	< 5	--	--	< 10	< 10	--	< 10	--
DW-1R	5 to 15	1/4/05	0.50	11	16	0.88	< 0.5	74	< 0.5	< 0.5	< 0.5	0.65	< 0.5	< 20	32	< 20	< 20	< 20	130	< 20	22
		3/9/05	0.50	9	12	0.85	< 0.5	52	< 0.5	< 0.5	< 0.5	0.75	< 0.5	< 5	40	< 20	< 20	< 20	< 50	< 20	25
		10/6/05	0.50	12	13	0.95	< 0.50	37	< 0.50	< 0.50	< 0.50	0.6	< 0.50	< 20	18	< 20	< 20	< 20	100	< 20	< 20
		2/6/06	0.50	25	23	1.5	< 0.50	64	< 0.50	< 0.50	< 0.50	0.52	< 0.50	< 20	< 10	150	< 20	< 20	< 50	< 20	< 20
		11/3/06	0.50	9.2	11	1.0	< 0.50	51	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 20	< 10	< 20	< 20	< 20	< 50	< 20	< 20
		3/27/07	< 0.50	17	18	1.5	< 0.50	61	< 0.50	< 0.50	< 0.50	1.3	< 0.50	< 20	19	< 20	< 20	< 20	< 50	< 20	< 20
		10/25/07	< 0.50	9.8	13	1.4	< 0.50	44	< 0.50	< 0.50	< 0.50	0.69	< 0.50	< 20	16	< 20	< 20	< 20	97	< 20	< 20
		3/25/08	< 0.50	10	11	< 0.50	< 0.50	33	< 0.50	< 0.50	< 0.50	0.53	< 0.50	< 20	< 10	< 20	< 20	< 20	100	< 20	< 20
		10/28/08	<1.0	9.7	15.6	1.6	< 1.0	23.9	< 1.0	< 1.0	0.25	0.54	< 1.0	< 20	11.0	--	< 20	< 20	78.5	< 20	12
		3/19/09	<1.0	10	13.3	1.4	< 1.0	26.6	< 1.0	< 1.0	< 1.0	0.62	< 1.0	< 20	16.9	--	< 20	< 20	124	< 20	--
SW-1	5 to 15	5/31/89	--	500	690	--	--	630	--	--	< 100	360	< 50	< 200	--	--	--	--	--	--	--
		12/6/89	< 2.0	170	110	--	< 2.0	140	< 2.0	< 2.0	< 10	13	< 10	14	--	--	97	<50	--	<5	--
		6/26/90	--	< 500	1,200	--	--	2,400	--	--	< 500	< 1,000	< 500	3,000	--	--	7,000	< 1,000	--	< 1,000	--
		10/17/90	--	< 100	870	--	--	2,800	--	--	< 100	1,200	< 100	< 100	--	--	3,200	2,800	--	1,400	--
		12/11/90	--	29	560	--	--	31	--	--	<5	920	<5	< 5	--	--	2,400	1,800	--	850	--
ESLs			120	360	590	590	62	47	200	12	25	3.8	330	2,200	18,000	--	1,500	14,000	50,000	--	--

Notes:

PCE: Tetrachloroethene
TCE: Trichloroethene
DCE: Dichloroethene
TCA: Trichloroethane
DCA: Dichloroethane
CA: Chloroethane
CE: Vinyl Chloride
TCM: Trichloromethane
DCM: Dichloromethane
TBA: tert butyl alcohol
MEK: 2-butanone
µg/l: micrograms per liter
<40: concentration below the laboratory-reporting limit of 40
--: not sampled/not analyzed
ND: less than laboratory-reporting limit; reporting limit not provided

TABLE 3-10
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - PAHS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Screened Interval	Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)-anthracene	Benzo(b)Fluoranthene	Benzo(k)fluoranthene	Benzoic Acid	Benzo(a)Pyrene	Benzo(g,h,I)Perylene	Carbazole	Chrysene	Dibenzo(a,h) anthracene	Dibenzofuran	bis(2-Ethylhexyl)phthalate	Fluoranthene	Fluorene	Indeno(1,2,3-cd) pyrene	Naphthalene	1-methyl-Naphthalene	2-methyl-Naphthlene	Nitrobenzene	Phenanthrene	Pyrene
	(feet)		(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
50 Chemical Way																									
WEST																									
W-16	5 to 15	10/6/10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	--	< 10.0	< 10.0	--	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	--	< 10.0	< 10.0	< 10.0	< 10.0
70 Chemical Way																									
Canonie																									
SB-12	5.5	8/13/85	30,000	1,200	6,600	3,900	2,600	--	--	1,300	--	--	3,900	--	17,000	--	20,000	16,000	--	35,000	12,000	18,000	--	42,000	20,000
SEMCO/HK2																									
SB-3	--	6/24/96	ND	--	--	--	--	--	--	--	--	--	ND	--	ND	--	ND	ND	--	ND	--	ND	--	ND	ND
RRM																									
SB-6	5 to 10	1/23/06	< 500	--	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500
SB-7	5 to 10	1/23/06	< 13	--	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13
SB-8D	24 to 28	1/23/06	850	--	< 100	< 100	< 100	< 100	< 100	< 100	< 100	180	< 100	< 100	< 100	550	< 100	290	440	< 100	< 100	460	< 100	920	300
SB-9	--	3/22/07	< 15	--	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15
Pit	--	3/27/07	< 500	--	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500
Sump	--	3/27/07	< 50	--	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	65	< 50	< 50	< 50	< 50	< 50
WEST																									
W-4	5 to 15	10/7/10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	--	< 10.0	< 10.0	--	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	--	< 10.0	< 10.0	< 10.0	< 10.0
320 &340 Blomquist Street																									
AEN																									
B-12	--	2/6/97	< 10	< 10	< 10	< 10	< 10	< 10	< 50	< 10	< 10	--	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	--	< 10	< 10	< 10	< 10
B-13	--	2/6/97	< 10	< 10	< 10	< 10	< 10	< 10	< 50	< 10	< 10	--	< 10	< 10	< 10	73	< 10	< 10	< 10	12	--	13	< 10	< 10	< 10
ESLs			23	30	0.73	0.027	0.03	0.4	--	0.01	0.1	--	0.35	0.25	--	32	8.0	3.9	0.048	24	--	2.1	--	4.6	2.0

Notes:
µg/l: micrograms per liter
<10: concentration below the laboratory-reporting limit of 10
--: not sampled not analyzed
ND: less than laboratory-reporting limit; reporting limit not provided

TABLE 3-11
SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS - PAHS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Screened Interval	Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)-anthracene	Benzo(b)Fluoranthene	Benzo(k)fluoranthene	Benzoic Acid	Benzo(a)Pyrene	Benzo(g,h,I)Perylene	Carbazole	Chrysene	Dibenzo(a,h) anthracene	Dibenzofuran	bis(2-Ethylhexyl)phthalate	Fluoranthene	Fluorene	Indeno(1,2,3-cd) pyrene	Naphthalene	1-methyl-Naphthalene	2-methyl-Naphthlene	Nitrobenzene	Phenanthrene	Pyrene
	(feet)		(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
70 Chemical Way																									
MW-1	5 to 10	12/12/90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1R	5 to15	1/4/05	< 10	--	< 10	< 10	< 10	< 10	40	< 10	< 10	< 10	< 10	< 10	< 10	17	<10	< 10	< 10	23	< 10	< 10	< 10	< 10	< 10
		3/9/05	< 20	--	< 20	< 20	< 20	< 20	36	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	31	< 20	< 20	< 20	< 20	< 20
		10/6/05	< 50	--	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
		2/6/06	< 20	--	< 20	< 20	< 20	< 20	35	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	85	< 20	< 20	< 20	< 20	< 20
		11/3/06	< 20	--	< 20	< 20	< 20	< 20	38	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	57	< 20	< 20	< 20	< 20	< 20
		3/27/07	< 10	--	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
		10/25/07	< 11	--	< 11	< 22	< 11	< 11	< 17	< 33	< 11	< 11	< 22	< 11	< 17	< 11	< 22	< 11	< 17	< 28	< 28	< 28	< 11	< 11	< 22
		3/25/08	< 9.7	--	< 9.7	< 9.7	< 9.7	< 9.7	< 9.7	< 9.7	< 9.7	< 9.7	< 9.7	< 9.7	< 15	< 9.7	< 9.7	< 115	< 9.7	< 9.7	< 9.7	< 9.7	< 9.7	< 9.7	< 9.7
		10/28/08	< 11	--	< 11	< 11	< 11	< 11	22	< 11	< 11	< 11	< 11	< 11	< 17	< 11	< 11	< 17	< 11	< 11	< 11	< 11	< 11	< 11	< 11
		3/19/09	< 19	--	< 19	< 19	< 19	< 19	< 38	< 19	< 19	< 19	< 19	< 19	< 28	< 19	< 19	< 28	< 19	18.7	< 19	< 19	< 19	< 19	< 19
MW-2	4 to 12	2/6/06	10	--	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
		11/3/06	26	--	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11
		3/27/07	< 10	--	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
		10/25/07	20	--	< 12	< 25	< 12	< 12	< 19	< 38	< 12	< 12	< 25	< 12	< 19	< 12	< 25	< 12	< 19	< 31	< 31	< 31	< 12	< 12	< 25
		3/25/08	< 9.8	--	< 9.8	< 9.8	< 9.8	< 9.8	< 20	< 9.8	< 9.8	< 9.8	< 9.8	< 9.8	< 15	< 9.8	< 9.8	< 15	< 9.8	< 9.8	< 9.8	< 9.8	< 9.8	< 9.8	< 9.8
MW-3	4 to 12	2/6/06	< 10	--	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
		11/3/06	< 10	--	< 10	< 10	< 10	< 10	13	< 10	< 10	< 10	< 10	< 10	< 10	12	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
		3/27/07	< 10	--	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
		10/25/07	< 10	--	< 10	< 21	< 10	< 10	< 16	< 32	< 10	< 10	< 21	< 10	< 16	< 10	< 21	< 10	< 16	< 26	< 26	< 26	< 10	< 10	< 21
		3/25/08	< 9.4	--	< 9.4	< 9.4	< 9.4	< 9.4	< 19	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	< 14	< 9.4	< 9.4	< 14	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4
MW-4	4 to 12	2/6/06	< 10	--	< 10	< 10	< 10	< 10	17	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
		11/3/06	< 56	--	< 56	< 56	< 56	< 56	< 56	< 56	< 56	< 56	< 56	< 56	< 56	< 56	< 56	< 56	< 56	< 56	< 56	< 56	< 56	< 56	< 56
		3/27/07	< 11	--	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11
		10/25/07	< 10	--	< 10	< 21	< 10	< 10	< 16	< 32	< 10	< 10	< 21	< 10	< 16	< 10	< 21	< 10	< 16	< 26	< 26	< 26	< 10	< 10	< 21
		3/25/08	< 9.9	--	< 9.9	< 9.9	< 9.9	< 9.9	< 20	< 9.9	< 9.9	< 9.9	< 9.9	< 9.9	< 15	< 9.9	< 9.9	< 15	< 9.9	< 9.9	< 9.9	< 9.9	< 9.9	10	< 9.9
		10/25/08	9.3	--	< 13	< 13	< 13	< 13	< 25	< 13	< 13	< 13	< 13	< 13	< 19	< 13	3.9	< 19	< 13	< 13	< 13	< 13	< 13	12.3	< 13
		3/19/09	26.4	--	< 9.4	< 9.4	< 9.4	< 9.4	< 19	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	14.4	< 9.4	7.4	11.9	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	23.3	5.1
MW-5	4 to 10	2/6/06	430	--	< 200	< 200	< 200	< 200	< 200	< 200	< 200	< 200	< 200	< 200	230	< 200	< 200	< 200	< 200	2,700	340	420	< 200	< 200	< 200
		11/3/06	300	--	< 55	< 55	< 55	< 55	< 55	< 55	< 55	< 55	< 55	< 55	150	< 55	65	140	< 55	680	140	< 55	< 55	200	< 55
		3/27/07	440	--	< 100	< 100	< 100	< 100	< 100	< 100	< 100	120	< 100	< 100	210	< 100	110	190	< 100	1,300	230	< 100	< 100	340	< 100
		10/25/07	410	--	< 59	< 120	< 59	< 59	< 88	< 180	< 59	88	< 120	< 59	220	< 59	170	220	< 88	900	190	< 150	< 59	390	120
		3/25/08	9,100	--	2,000	1,600	< 1,000	< 1,000	< 2,000	< 1,000	< 1,000	< 1,000	1,100	< 1,000	5,100	< 1,000	6,900	5,300	< 1,000	10,000	3,900	7,600	< 1,000	12,000	5,900
		10/25/08	1,050	--	141	142	103	27.3	< 220	51.1	< 110	111	99.6	< 110	522	< 110	611	560	< 110	1,890	401	296	< 110	1,320	665
		3/19/09	2,440	--	473	435	165	187	< 470	175	< 240	132	316	< 240	1,400	< 240	1,970	1,430	55.0	4,520	1,060	1,600	< 240	3,650	1,410
MW-6	4 to 10	3/27/07	< 11	--	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	< 11	20	< 11	< 11	< 11	< 11	< 11
		10/25/07	< 11	--	< 11	< 22	< 11	< 11	< 11	< 33	< 11	< 11	< 22	< 11	< 17	< 11	< 22	< 11	< 17	< 28	< 28	< 28	< 11	< 11	< 22
		3/25/08	10	--	< 10	< 10	< 10	< 10	< 20	< 10	< 100	< 10	< 10	< 10	< 15	< 10	< 10	< 15	< 10	59	< 10	< 10	< 10	40	< 10
		10/25/08	< 11	--	< 11	< 11	< 11	< 11	26.5	< 11	< 11	< 11	< 11	< 11	< 17	< 11	< 11	< 17	< 11	53.3	6.6	9.2	< 11	< 11	< 11
		3/19/09	< 19	--	< 19	< 19	< 19	< 19	< 38	< 19	< 19	< 19	< 19	< 19	< 28	< 19	< 19	< 28	< 19	79.1	< 19	< 19	< 19	< 19	< 19

TABLE 3-11
SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS - PAHS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Screened Interval (feet)	Date	Acenaphthene (µg/l)	Acenaphthylene (µg/l)	Anthracene (µg/l)	Benzo(a)-anthracene (µg/l)	Benzo(b)Fluoranthene (µg/l)	Benzo(k)fluoranthene (µg/l)	Benzoic Acid (µg/l)	Benzo(a)Pyrene (µg/l)	Benzo(g,h,I)Perylene (µg/l)	Carbazole (µg/l)	Chrysene (µg/l)	Dibenzo(a,h) anthracene (µg/l)	Dibenzofuran (µg/l)	bis(2-Ethylhexyl)phthalate (µg/l)	Fluoranthene (µg/l)	Fluorene (µg/l)	Indeno(1,2,3-cd) pyrene (µg/l)	Naphthalene (µg/l)	1-methyl-Naphthalene (µg/l)	2-methyl-Naphthlene (µg/l)	Nitrobenzene (µg/l)	Phenanthrene (µg/l)	Pyrene (µg/l)
MW-7	20 to 30	3/27/07	350	--	< 50	< 50	< 50	< 50	< 50	< 50	< 50	170	< 50	< 50	180	< 50	< 50	150	< 50	< 50	160	< 50	< 50	190	< 50
		10/25/07	640	--	< 56	< 110	< 56	< 56	< 83	< 170	< 56	140	< 110	< 56	320	< 56	< 110	230	< 83	< 140	240	< 140	< 56	360	< 110
		3/25/08	920	--	< 100	< 100	< 100	< 100	< 200	< 100	< 100	480	< 100	< 100	460	< 100	160	330	< 100	< 100	330	< 100	< 100	490	120
		10/25/08	798	--	16.8	9.7	6.3	< 10	< 20	2.1	< 10	109	8.0	< 10	389	< 10	68.7	213	< 10	16.8	127	< 10	< 10	321	63.1
		3/19/09	1,440	--	103	113	37.6	43.5	< 190	39.3	< 95	119	88.5	< 95	666	< 95	630	517	< 95	< 95	139	< 95	< 95	1,420	410
DW-1	20 to 30	12/6/89	< 10.0	< 10.0	< 20.0	< 10.0	< 20.0	< 20.0	--	< 10.0	< 10.0	--	< 10.0	< 20.0	--	--	< 10.0	< 10.0	< 20.0	< 10.0	--	--	--	< 10.0	< 10.0
		6/26/90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		9/18/90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		12/17/90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DW-1R	5 to 15	1/4/05	< 10	--	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
		3/9/05	< 10	--	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
		10/6/05	< 10	--	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
		2/6/06	< 10	--	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
		11/3/06	< 10	--	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
		3/27/07	< 10	--	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
		10/25/07	< 10	--	< 10	< 20	< 10	< 10	< 15	< 30	< 10	< 10	< 20	< 10	< 15	< 10	< 20	< 10	< 10	< 25	< 25	< 25	< 10	< 10	< 20
		3/25/08	< 9.6	--	< 9.6	< 9.6	< 9.6	< 9.6	< 19	< 9.6	< 9.6	< 9.6	< 9.6	< 9.6	< 14	< 9.6	< 9.6	< 14	< 9.6	< 9.6	< 9.6	< 9.6	< 9.6	< 9.6	< 9.6
		10/28/08	< 11	--	< 11	< 11	< 11	< 11	< 22	< 11	< 11	< 11	< 11	< 11	< 17	< 11	< 11	< 17	< 11	< 11	< 11	< 11	< 11	< 11	< 11
		3/19/09	< 9.4	--	< 9.4	< 9.4	< 9.4	< 9.4	< 19	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	< 14	< 9.4	< 9.4	< 14	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4	< 9.4
A-1R	5 to 15	10/17/90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		12/11/90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
A-2	5 to 25	12/11/90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		1/4/05	13	--	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 16	< 10	< 10	< 10	< 10	< 10
		3/9/05	< 10	--	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
		10/6/05	< 10	--	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
		2/6/06	11	--	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
		11/3/06	< 10	--	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
		3/27/07	< 10	--	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
		10/25/07	< 11	--	< 11	< 22	< 11	< 11	< 17	< 33	< 11	< 11	< 22	< 11	< 17	< 11	< 22	< 11	< 17	< 28	< 28	< 28	< 11	< 11	< 22
		3/25/08	< 9.8	--	< 9.8	< 9.8	< 9.8	< 9.8	< 20	< 9.8	< 9.8	< 9.8	< 9.8	< 9.8	< 15	< 9.8	< 9.8	< 15	< 9.8	< 9.8	< 9.8	< 9.8	< 9.8	< 9.8	< 9.8
C-3	20 to 30	10/26/84	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		12/6/89	< 10.0	< 10.0	< 20.0	< 10.0	< 20.0	< 20.0	--	< 10.0	< 10.0	--	< 10.0	< 20.0	--	--	< 10.0	< 10.0	< 20.0	< 10.0	--	--	--	< 10.0	< 10.0
		6/26/90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		9/13/90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		12/11/90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C-5	20 to 30	10/26/84	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		12/6/89	< 10.0	< 10.0	< 20.0	< 10.0	< 20.0	< 20.0	--	< 10.0	< 10.0	--	< 10.0	< 20.0	--	--	< 10.0	< 10.0	< 20.0	< 10.0	--	--	--	< 10.0	< 10.0
		6/26/90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		9/13/90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		12/11/90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 3-11
SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS - PAHS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Screened Interval	Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)-anthracene	Benzo(b)Fluoranthene	Benzo(k)fluoranthene	Benzoic Acid	Benzo(a)Pyrene	Benzo(g,h,I)Perylene	Carbazole	Chrysene	Dibenzo(a,h) anthracene	Dibenzofuran	bis(2-Ethylhexyl)phthalate	Fluoranthene	Fluorene	Indeno(1,2,3-cd) pyrene	Naphthalene	1-methyl-Naphthalene	2-methyl-Naphthlene	Nitrobenzene	Phenanthrene	Pyrene
	(feet)		(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
C-6	20 to 30	10/26/84	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		12/6/89	17	< 10.0	< 20.0	< 10.0	< 20.0	< 20.0	--	< 10.0	< 10.0	--	< 10.0	< 20.0	--	--	< 10.0	10	< 20.0	10	--	--	--	10	< 10.0
		6/26/90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		9/13/90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		12/11/90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C-7	--	12/6/89	19	14	< 20.0	< 10.0	< 20.0	< 20.0	--	< 10.0	< 10.0	--	< 10.0	< 20.0	--	--	< 10.0	< 10.0	< 20.0	210	--	--	--	< 10.0	< 10.0
		6/26/90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		9/13/90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		12/11/90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SW-1	5 to 15	12/6/89	2,400	150	360	290	< 200.0	< 200.0	--	< 100.0	< 100.0	--	250	< 200.0	--	--	1,400	1,400	< 200.0	860	--	--	--	3,000	1,400
		6/26/90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		10/17/90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		12/11/90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		6/24/96	670	< 250	< 250	< 250	< 250	< 250	--	< 250	< 250	< 250	< 250	< 250	300	< 250	460	350	< 250	1,100	< 250	340	< 250	730	360
		2/1/01	140	--	< 10	< 10	< 10	< 10	--	< 10	< 10	< 10	< 10	< 10	59	--	11	54	< 10	< 10	< 10	18	< 10	50	< 10
LNAPL (mg/kg)																									
A-1	5 to 25	6/20/96	850	--	< 90	< 90	< 0.3	< 0.3	--	< 90	< 90	< 90	100	< 90	440	--	340	420	< 90	490	--	860	< 90	750	390
		2/1/01	4,100	--	420	290	230	140	--	140	97	ND	510	68	1,900	--	1,600	1,900	92	2,000	ND	4,100	310	3,500	1400
ESLs			23	30	0.73	0.027	0.03	0.4	--	0.01	0.1	--	0.35	0.25	--	32	8.0	3.9	0.048	24	--	2.1	--	4.6	2.0

Notes:
µg/l: micrograms per liter
mg/kg: milligrams per kilogram
<10: concentration below the laboratory-reporting limit of 10
--: not sampled not analyzed
ND: less than laboratory-reporting limit; reporting limit not provided

TABLE 3-12
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - PHENOLS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Screened Interval	Date	3&4-Methyl-phenol	4-Nitrophenol	Pentachlorophenol	2,3,4,6-Tetrachlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol
	(feet)		(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
50 Chemical Way										
WEST										
W-16	5 to 15	10/6/10	--	< 50.0	< 50.0	--	< 50.0	< 50.0	< 20.0	< 50.0
70 Chemical Way										
RRM										
SB-6	5 to 10	1/23/06	< 500	< 500	6,000	< 500	< 500	< 500	< 500	< 500
SB-7	5 to 10	1/23/06	16	< 13	58	< 13	< 13	< 13	< 13	< 13
SB-8D	24 to 28	1/23/06	< 100	< 100	< 120	< 100	< 100	< 100	< 100	< 100
SB-9	NA	3/22/07	< 15	< 15	< 18	< 15	< 15	< 15	< 15	< 15
SB-12	5.5	8/13/85	--	--	8,500	--	--	--	--	--
Pit	NA	3/27/07	< 500	< 500	7,000	< 500	< 500	< 500	< 500	< 500
Sump	NA	3/27/07	< 50	< 50	700	< 50	< 50	< 50	< 50	< 50
WEST										
W-4	5 to 15	10/7/10	--	< 50.0	< 50.0	--	< 50.0	< 50.0	< 20.0	< 20.0
320 &340 Blomquist Street										
AEN										
B-12	--	2/6/97	--	< 50	< 50	--	< 10	< 10	< 10	< 10
B-13	--	2/6/97	--	< 50	< 50	--	< 10	< 10	< 10	< 10
ESLs			--	--	7.9	--	11	97	3.0	110

Notes:

µg/l: micrograms per liter

<25: concentration below the laboratory-reporting limit of 25

--: not sampled not analyzed

TABLE 3-13
SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS - PHENOLS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Screened Interval (feet)	Date	3&4-Methyl-phenol (µg/l)	4-Nitrophenol (µg/l)	Pentachlorophenol (µg/l)	2,3,4,6-Tetrachlorophenol (µg/l)	2,4,5-Trichlorophenol (µg/l)	2,4,6-Trichlorophenol (µg/l)	2,4-Dichlorophenol (µg/l)	2,4-Dimethylphenol (µg/l)
70 Chemical Way										
MW-1	5 to 10	12/12/90	--	--	< 25	--	--	--	--	--
MW-1R	5 to15	1/4/05	44	< 10	160	< 10	< 10	< 10	< 10	< 10
		3/9/05	41	< 20	210	< 20	< 20	< 20	< 20	< 20
		10/6/05	< 50	< 50	360	< 50	< 50	< 50	< 50	< 50
		2/6/06	76	< 20	270	36	< 20	< 20	< 20	< 20
		11/3/06	33	< 20	300	20	< 20	< 20	< 20	< 20
		3/27/07	12	< 10	80	< 10	< 10	< 10	< 10	< 10
		10/25/07	< 17	< 11	99	< 11	< 11	< 11	< 28	< 28
		3/25/08	< 9.7	< 9.7	38	< 15	< 15	< 15	< 15	< 9.7
		10/28/08	< 11	< 11	< 11	< 17	< 17	< 17	< 17	< 11
		3/19/09	< 19	< 19	55.1	--	< 28	< 28	< 28	< 19
MW-2	4 to 12	2/6/06	< 10	< 10	< 12	< 10	< 10	< 10	< 10	< 10
		11/3/06	< 11	< 11	< 12	< 11	< 11	< 11	< 11	< 11
		3/27/07	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
		10/25/07	< 19	< 12	< 12	< 12	< 12	< 12	< 31	< 31
		3/25/08	< 9.8	< 9.8	< 9.8	< 15	< 15	< 15	< 15	< 9.8
MW-3	4 to 12	2/6/06	< 10	< 10	< 12	< 10	< 10	< 10	< 10	< 10
		11/3/06	< 10	< 10	< 12	< 10	< 10	< 10	< 10	< 10
		3/27/07	< 10	< 10	< 12	< 10	< 10	< 10	< 10	< 10
		10/25/07	< 16	< 10	< 12	< 10	< 10	< 10	< 10	< 26
		3/25/08	< 9.4	< 9.4	< 9.4	< 14	< 14	< 14	< 14	< 9.4
MW-4	4 to 12	2/6/06	< 10	< 10	< 12	< 10	< 10	< 10	< 10	< 10
		11/3/06	< 56	< 56	< 67	< 56	< 56	< 56	< 56	< 56
		3/27/07	< 11	< 11	< 13	< 11	< 11	< 11	< 11	< 11
		10/25/07	< 16	< 10	< 10	< 10	< 10	< 10	< 26	< 26
		3/25/08	< 9.9	< 9.9	< 9.9	< 15	< 15	< 15	< 20	< 9.9
		10/25/08	< 13	< 13	< 13	< 19	< 19	< 19	< 19	< 13
		3/19/09	< 9.4	< 9.4	< 9.4	--	< 14	< 14	< 14	< 9.4
MW-5	4 to 10	2/6/06	< 200	< 200	400	< 200	< 200	< 200	< 200	< 200
		11/3/06	< 55	< 55	< 66	< 55	< 55	430	130	< 55
		3/27/07	< 100	< 100	< 120	< 100	< 100	150	< 100	< 100
		10/25/07	< <88	< 59	< 59	< 59	< 59	< 59	< 150	< 150
		3/25/08	< 1,000	< 1,000	< 1,000	< 1,500	< 1,500	< 1,500	< 1,500	< 1,000
		10/25/08	80.4	< 110	< 110	< 170	< 170	< 170	< 170	139
		3/19/09	112	< 240	79.9	--	< 350	< 350	< 350	123
MW-6	4 to 10	3/27/07	32	< 11	80	< 11	16	< 11	< 11	< 11
		10/25/07	< 17	< 11	11	< 11	< 11	< 11	< 28	< 28
		3/25/08	< 50	< 10	46	< 15	28	< 15	< 15	24
		10/25/08	66.4	< 11	27.2	6.2	19.2	< 17	7.9	30.1
		3/19/09	43.5	< 19	21.0	--	13.8	<28	<28	26.9

TABLE 3-13
SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS - PHENOLS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Screened Interval (feet)	Date	3&4-Methyl-phenol (µg/l)	4-Nitrophenol (µg/l)	Pentachlorophenol (µg/l)	2,3,4,6-Tetrachlorophenol (µg/l)	2,4,5-Trichlorophenol (µg/l)	2,4,6-Trichlorophenol (µg/l)	2,4-Dichlorophenol (µg/l)	2,4-Dimethylphenol (µg/l)
MW-7	20 to 30	3/27/07	< 50	< 50	< 60	< 50	< 50	< 50	< 50	< 50
		10/25/07	< 83	< 56	60	< 56	< 56	< 56	< 140	< 140
		3/25/08	< 100	< 100	< 100	< 150	< 150	< 150	< 150	< 100
		10/25/08	< 10	13.1	< 10	< 15	< 15	< 15	< 15	< 10
		3/19/09	< 95	< 95	< 95	--	< 140	< 140	< 140	< 95
A-1R	5 to 15	10/17/90	--	--	35	--	--	--	--	--
		12/11/90	--	--	< 5	--	--	--	--	--
A-2	5 to 25	12/11/90	--	--	< 5	--	--	--	--	--
		1/4/05	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
		3/9/05	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
		10/6/05	< 10	< 10	< 12	< 10	< 10	< 10	< 10	< 10
		2/6/06	< 10	< 10	< 12	< 10	< 10	< 10	< 10	< 10
		11/3/06	< 10	< 10	< 12	< 10	< 10	< 10	< 10	< 10
		3/27/07	< 10	< 10	< 12	< 10	< 10	< 10	< 10	< 10
		10/25/07	< 17	< 11	< 11	< 11	< 11	< 11	< 11	< 28
		3/25/08	< 9.8	< 9.8	< 9.8	< 15	< 15	< 15	< 15	< 9.8
C-3	20 to 30	10/26/84	--	--	< 100	--	--	< 100	--	--
		6/26/90	--	--	< 50	--	--	--	--	--
		9/13/90	--	--	< 5	--	--	--	--	--
		12/11/90	--	--	< 5	--	--	--	--	--
C-5	20 to 30	10/26/84	--	--	< 100	--	--	< 100	--	--
		6/26/90	--	--	< 20	--	--	--	--	--
		9/13/90	--	--	< 5	--	--	--	--	--
		12/11/90	--	--	< 5	--	--	--	--	--
C-6	20 to 30	10/26/84	--	--	< 3,800	--	--	< 600	--	--
		6/26/90	--	--	< 20	--	--	--	--	--
		9/13/90	--	--	< 5	--	--	--	--	--
		12/11/90	--	--	< 5	--	--	--	--	--
C-7	--	6/26/90	--	--	< 100	--	--	--	--	--
		9/13/90	--	--	< 50	--	--	--	--	--
		12/11/90	--	--	< 50	--	--	--	--	--
DW-1	20 to 30	6/26/90	--	--	< 50	--	--	--	--	--
		9/18/90	--	--	< 5	--	--	--	--	--
		12/17/90	--	--	< 5	--	--	--	--	--
DW-1R	5 to 15	1/4/05	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
		3/9/05	< 10	< 10	110	< 10	< 10	< 10	< 10	< 10
		10/6/05	< 10	< 10	43	< 10	< 10	< 10	< 10	< 10
		2/6/06	< 10	< 10	35	< 10	< 10	< 10	< 10	< 10
		11/3/06	< 10	< 10	17	< 10	< 10	< 10	< 10	< 10
		3/27/07	< 10	< 10	< 12	< 10	< 10	< 10	< 10	< 10
		10/25/07	< 15	< 10	< 10	< 10	< 10	< 10	< 25	< 25
		3/25/08	< 9.6	< 9.6	< 9.6	< 14	< 14	< 14	< 14	< 9.6
		10/28/08	< 11	< 11	< 11	< 17	< 17	< 17	< 17	< 11
		3/19/09	< 9.4	< 9.4	< 9.4	--	< 14	< 14	< 14	< 9.4

TABLE 3-13
SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL RESULTS - PHENOLS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Screened Interval	Date	3&4-Methyl-phenol	4-Nitrophenol	Pentachlorophenol	2,3,4,6-Tetrachlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol
	(feet)		(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
SW-1	5 to 15	6/26/90	--	--	360	--	--	--	--	--
		10/17/90	--	--	510	--	--	--	--	--
		12/11/90	--	--	< 250	--	--	--	--	--
		6/24/96	--	--	< 1,300	< 250	--	--	--	--
		2/1/01	--	--	--	< 10	--	--	--	--
LNAPL (mg/kg)										
A-1	5 to 25	6/20/96	--	--	--	< 90	--	--	--	--
		2/1/01	--	--	--	ND	--	--	--	--
ESLs			--	--	7.9	--	11	97	3.0	110

Notes:

µg/l: micrograms per liter
mg/kg: milligrams per kilogram
<25: concentration below the laboratory-reporting limit of 25
--: not sampled not analyzed
ND: less than laboratory-reporting limit; reporting limit not provided

TABLE 3-14
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - METALS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Sample Depth	Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Zinc
	(feet)		(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
50 Chemical Way																	
ARS																	
SB-15	3	6/15/06	< 0.20	< 10	0.12	< 0.01	< 0.05	< 10	< 0.05	< 0.05	< 0.001	0.04	< 0.05	< 0.05	< 0.05	< 4.0	< 0.20
320 &340 Blomquist Street																	
AEN																	
B-12	--	2/6/97	< 0.02	0.006	0.12	< 0.002	< 0.005	0.02	< 0.01	< 0.04	< 0.0002	0.03	0.02	< 0.004	< 0.05	< 0.05	0.24
B-13	--	2/6/97	< 0.02	0.010	0.47	< 0.002	< 0.005	0.02	< 0.01	< 0.04	< 0.0002	0.01	< 0.01	0.005	< 0.05	< 0.05	0.01
ESLs-			0.03	0.036	1.0	0.00053	0.00025	0.18	0.0031	0.0025	0.000025	0.24	0.0082	0.005	0.00019	0.004	0.081

Notes:
mg/l: milligrams per liter
<1.0: concentration below the laboratory-reporting limit of 1.0

TABLE 3-15
SUMMARY OF SOIL GAS ANALYTICAL RESULTS - PVOCS & OTHER CHEMICALS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Depth	Date	Petroleum-Related Volatile Organic Compounds					Methane	Styrene
			Benzene	Toluene	Ethyl benzene	Xylenes	TMB		
	(feet)		($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	(ppmv)	($\mu g/m^3$)
20 Chemical Way									
WEST									
W-10	5	10/8/10	43.9	21.4	< 21.7	< 21.7	< 24.6	168,000	< 21.3
W-11	5	10/8/10	113	83.8	26.5	116	83.5	586	5.71
W-15	5	10/7/10	15.7	10.9	< 4.34	6.25	< 4.92	--	< 4.26
50 Chemical Way									
WEST									
W-5	5	10/6/10	24.2	17.3	< 4.34	5.43	< 4.92	--	< 4.26
W-6	5	10/6/10	61.8	10.1	< 4.34	4.73	< 4.92	6,580	< 4.26
W-7	5	10/6/10	< 16	< 18.8	< 21.7	< 21.7	< 24.6	294,000	< 21.3
W-12	5	10/6/10	< 16	< 18.8	< 21.7	< 21.7	< 24.6	--	< 21.3
W-13	5	10/6/10	27.0	12.8	< 4.34	5.30	< 4.92	--	< 4.26
70 Chemical Way									
WEST									
W-1	5	10/7/10	7.28	10.8	< 4.34	4.69	< 4.92	--	< 4.26
W-2	5	10/7/10	30.0	29.7	5.30	22.11	8.50	1,570	< 4.26
W-3	5	10/7/10	36,400	625,000	742,000	2,410,000	33,000	332,000	< 4,260
W-4	5	10/7/10	5.81	9.04	< 4.34	5.12	< 4.92	--	< 4.26
80 Chemical Way									
WEST									
W-8	5	10/8/10	< 16	< 18.8	< 21.7	< 21.7	< 24.6	--	< 21.3
W-9	5	10/8/10	88.6	23.1	< 21.7	< 21.7	< 24.6	--	< 21.3
W-14	5	10/7/10	< 16	< 18.8	< 21.7	< 21.7	< 24.6	--	< 21.3
ESLs - Residential			84	63,000	980	21,000	--	5,000[a]	190,000
ESLs - Commercial			280	180,000	3,300	58,000	--	5,000[a]	530,000

Notes:
TMB: Trimethylbenzene
$\mu g/m^3$: micrograms per cubic meter
ppmv: parts per million by volume
<21.7: concentration below the laboratory-reporting limit of 21.7
--: not sampled not analyzed
[a]: DTSC Action Level

TABLE 3-16
SUMMARY OF SOIL GAS ANALYTICAL RESULTS - CVOCS
20 to 80 Chemical Way
Redwood City, California

Sample ID	Depth	Date	Chlorinated Volatile Organic Compounds										
			PCE	TCE	cis-1,2-DCE	1,1-DCA	CA	1,1-DCE	CE	TCM	CM	Freon 113	Chloro-benzene
	(ft)		($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)
20 Chemical Way													
WEST													
W-10	5	10/8/10	< 33.9	< 26.9	< 19.8	< 20.2	< 13.2	< 19.8	< 12.8	< 24.4	< 10.3	< 38.3	27.9
W-11	5	10/8/10	685	459	136	< 4.05	< 2.64	15.3	4.27	6.3	13.9	< 7.66	< 4.6
W-15	5	10/7/10	< 6.78	< 5.37	< 3.97	< 4.05	< 2.64	< 3.97	3.81	< 4.88	2.19	< 7.66	< 4.6
50 Chemical Way													
WEST													
W-5	5	10/6/10	10.9	< 5.37	< 3.97	< 4.05	< 2.64	< 3.97	< 2.56	< 4.88	< 2.07	< 7.66	< 4.6
W-6	5	10/6/10	< 6.78	< 5.37	< 3.97	6.96	< 2.64	< 3.97	< 2.56	< 4.88	< 2.07	< 7.66	< 4.6
W-7	5	10/6/10	< 33.9	< 26.9	< 19.8	< 20.2	< 13.2	< 19.8	< 12.8	< 24.4	< 10.3	< 38.3	< 23
W-12	5	10/6/10	< 33.9	< 26.9	< 19.8	< 20.2	< 13.2	< 19.8	< 12.8	104	< 10.3	< 38.3	< 23
W-13	5	10/6/10	33.1	< 5.37	< 3.97	< 4.05	< 2.64	< 3.97	< 2.56	11.5	< 2.07	9.27	< 4.6
70 Chemical Way													
WEST													
W-1	5	10/7/10	< 6.78	< 5.37	< 3.97	< 4.05	< 2.64	< 3.97	< 2.56	< 4.88	< 2.07	< 7.66	< 4.6
W-2	5	10/7/10	< 6.78	< 5.37	< 3.97	< 4.05	< 2.64	< 3.97	< 2.56	< 4.88	2.37	< 7.66	< 4.6
W-3	5	10/7/10	< 6,780	< 5,370	4,090	24,400	8,600	< 3,970	18,700	< 4,880	< 2,070	< 7,660	< 5
W-4	5	10/7/10	< 6.78	< 5.37	< 3.97	< 4.05	< 2.64	< 3.97	< 2.56	< 4.88	2.07	< 7.66	< 4.6
80 Chemical Way													
WEST													
W-8	5	10/8/10	< 33.9	< 26.9	< 19.8	< 20.2	< 13.2	< 19.8	< 12.8	< 24.4	< 10.3	< 38.3	< 23
W-9	5	10/8/10	< 33.9	< 26.9	< 19.8	< 20.2	< 13.2	< 19.8	< 12.8	< 24.4	< 10.3	< 38.3	< 23
W-14	5	10/7/10	< 33.8	< 26.9	< 19.8	< 20.2	< 13.2	< 19.8	< 12.8	< 24.4	< 10.3	< 38.3	< 23
ESLs - Residential			410	1,200	7,300	1,500	21,000	42,000	31	460	19,000	--	210,000
ESLs - Commercial			1,400	4,100	20,000	5,100	58,000	120,000	100	1,500	53,000	--	580,000

Notes:

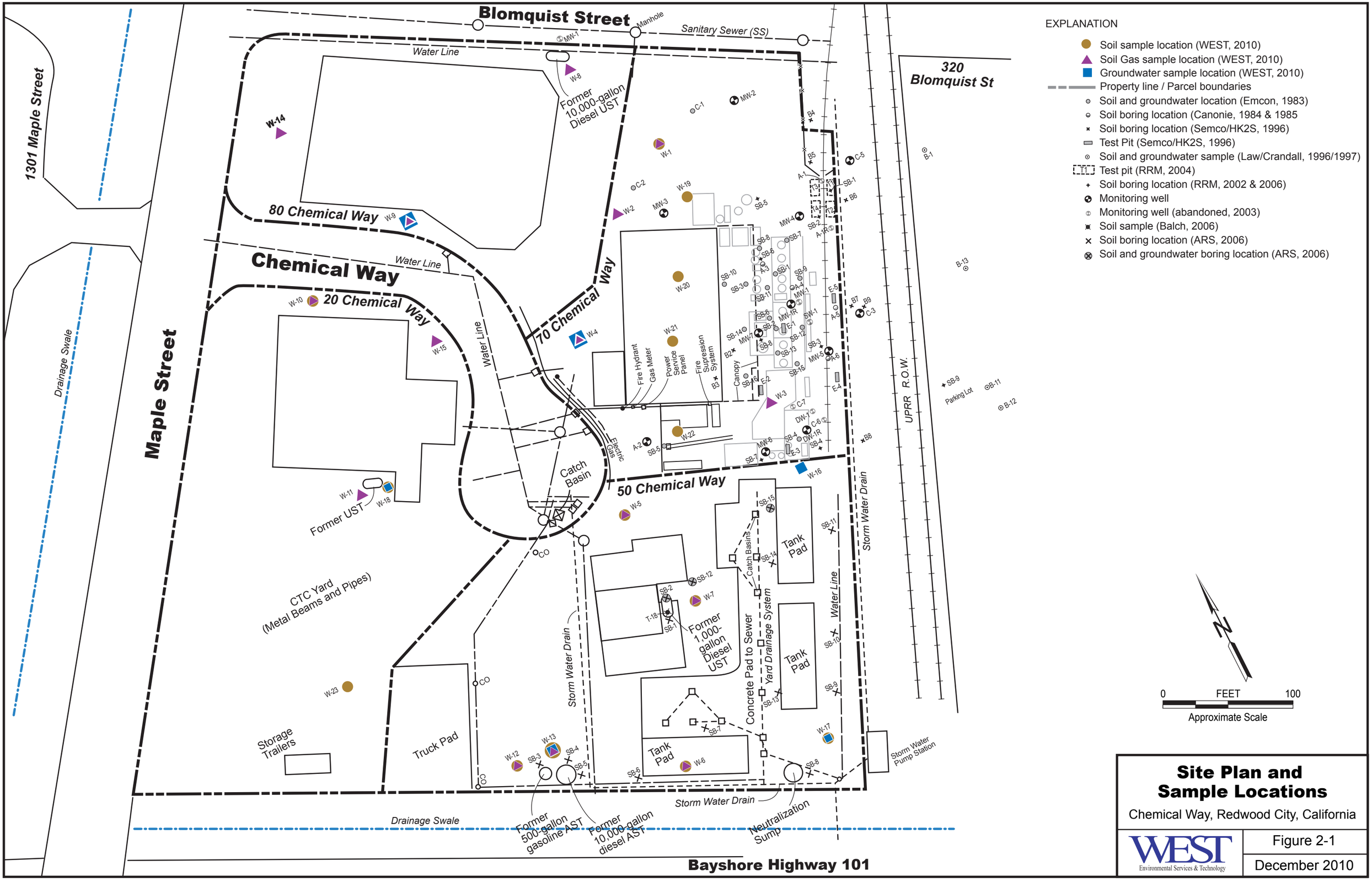
$\mu g/m^3$: micrograms per cubic meter
PCE: Tetrachloroethene
TCE: Trichloroethene
DCE: Dichloroethene
DCA: Dichloroethane
CA: Chloroethane
CE: Vinyl Chloride
TCM: Trichloromethane
CM: Chloromethane
Freon 113: Trichlorotrifluoroethane
<33.9: Less than the laboratory-reporting limit
--: not analyzed/not available

TABLE 9-1
PROPOSED MONITORING AND REPORTING PROGRAM
20 to 80 Chemical Way
Redwood City, California

Sample ID		Screen Interval/ System	Proposed Laboratory Analysis						Proposed Field Parameters							
			TPHg/TPHd (8015M)	VOCs (8260B)	PAHs (8270C-SIM)	Phenols (8270C)	VOCs (TO-15)	Methane (TO-3)	DTW	Temp.	pH	DO	ORP	Turbidity	PID	Flow Rate
Groundwater Monitoring																
Proposed Shallow Monitoring Wells	MW-101	5 to 10	S/A	S/A	S/A	S/A	--	--	S/A	S/A	S/A	S/A	S/A	S/A	--	--
	MW-102	5 to 10	S/A	S/A	S/A	S/A	--	--	S/A	S/A	S/A	S/A	S/A	S/A	--	--
	MW-103	5 to 10	S/A	S/A	S/A	S/A	--	--	S/A	S/A	S/A	S/A	S/A	S/A	--	--
	MW-104	5 to 10	S/A	S/A	S/A	S/A	--	--	S/A	S/A	S/A	S/A	S/A	S/A	--	--
Proposed Deeper Monitoring Wells	C-3	20 to 30	S/A	S/A	S/A	S/A	--	--	S/A	S/A	S/A	S/A	S/A	S/A	--	--
	C-5	20 to 30	S/A	S/A	S/A	S/A	--	--	S/A	S/A	S/A	S/A	S/A	S/A	--	--
	MW-7R	20 to 30	S/A	S/A	S/A	S/A	--	--	S/A	S/A	S/A	S/A	S/A	S/A	--	--
Vapor Mitigation System																
SSDS-1		SSDS	--	--	--	--	2D/M/S	2D/M/S	--	--	--	--	--	--	2D/M/S	2D/M/S
SSDS-2			--	--	--	--	2D/M/S	2D/M/S	--	--	--	--	--	--	2D/M/S	2D/M/S
SSVS-1		SSVS	--	--	--	--	--	--	--	--	--	--	--	--	M/S	--
SSVS-2			--	--	--	--	--	--	--	--	--	--	--	--	M/S	--
SSVS-3			--	--	--	--	--	--	--	--	--	--	--	--	M/S	--
SSVS-4			--	--	--	--	--	--	--	--	--	--	--	--	M/S	--

Notes:
S/A: Semi-annual sampling for the first three years; then annual thereafter
M/S: Monthly for the first six months; then semi-annual thereafter
2D/M/S: Two sampling events during the first week of start-up; then monthly for the first 6 months; then semi-annual thereafter
TPHg: Total petroleum hydrocarbons as gasoline
TPHd: Total petroleum hydrocarbons as diesel
VOCs: Volatile organic compounds
PAHs: Polycyclic aromatic hydrocarbons
DTW: Depth to Water
DO: Dissolved oxygen
ORP: Oxidation/Reduction Potential
PID: Photoionization detector

Figure 1-1	**SITE LOCATION MAP**	WEST Environmental Services & Technology
December 2010	Chemical Way, Redwood City, California	



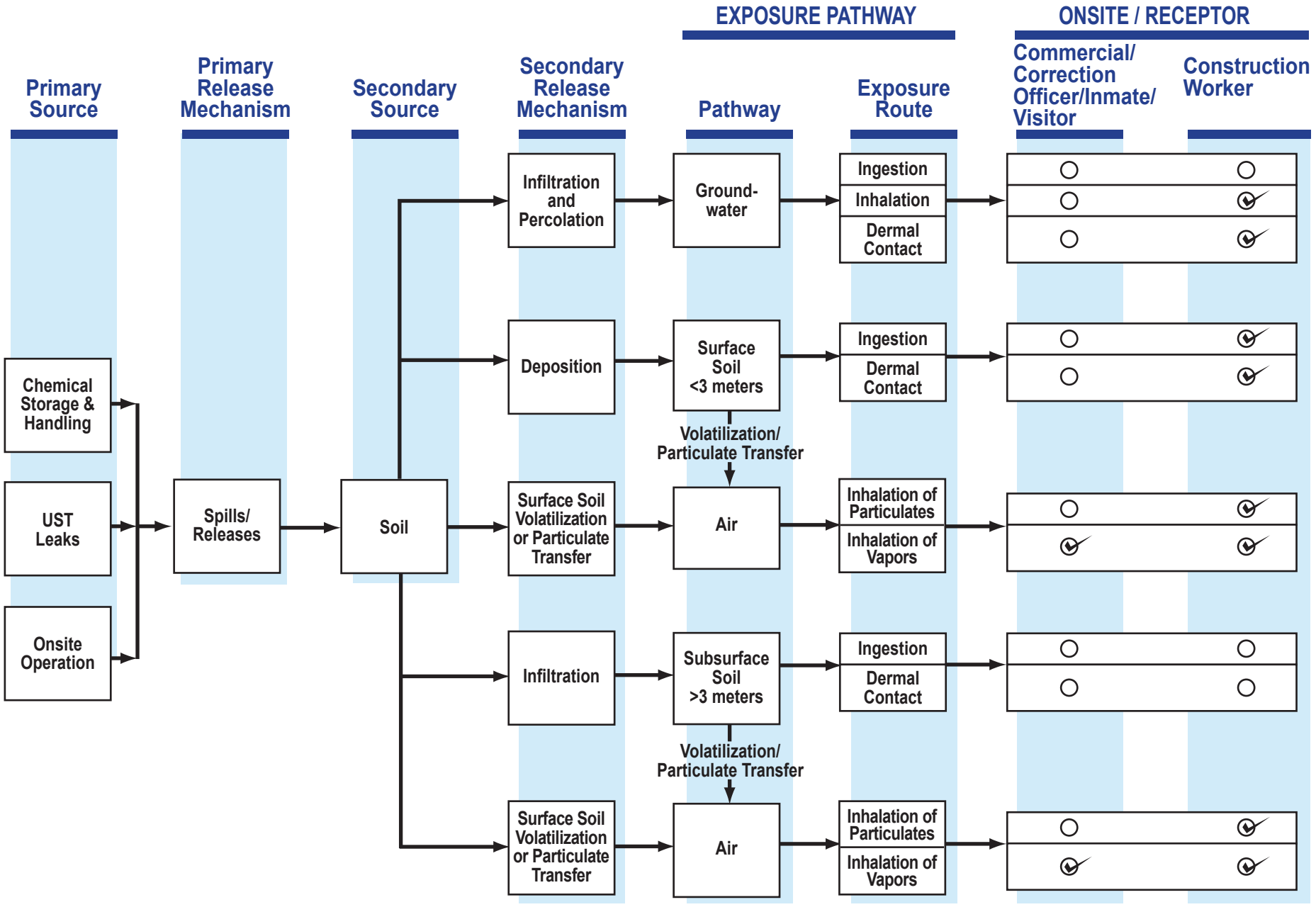
Site Plan and Sample Locations

Chemical Way, Redwood City, California

WEST Environmental Services & Technology

Figure 2-1

December 2010



○ Incomplete exposure pathway

✓ Complete exposure pathway

Figure 4-1	**CONCEPTUAL SITE MODEL CHART**	WEST Environmental Services & Technology
December 2010	Chemical Way, Redwood City, California	

Blomquist Street
Manhole
Sanitary Sewer (SS)
Water Line
MW-1
W-8
Former 10,000-gallon Diesel UST
1301 Maple Street
W-14
C-1
MW-2
B4
B5
C-5
W-1
C-2
W-19
A-1
T3
T1
SB-1
B6
W-2
MW-3
SB-5
T4
T2
MW-4
SB-2
A-1R
80 Chemical Way
W-9
SB-8
SB-7
SB-6
A-3
SB-1
SB-9
A-4
Chemical Way
Water Line
SB-10
SB-3
MW-1
E-5
B7
B9
C-3
W-10
20 Chemical Way
W-15
SB-11
MW-1R
SW-1
A-5
SB-6
SB-2
E-1
SB-12
W-20
W-4
70 Chemical Way
Water Line
W-21
SB-14
MW-4
SB-8
SB-13
SB-3
MW-5
A-6
B2
Fire Hydrant
Gas Meter
Power Service Panel
Fire Supression System
Canopy
SB-16
E-2
SB-15
E-4
B3
W-3
C-7
DW-1
C-6
DW-1R
MW-6
SB-4
SB-4
E-3
SB-7
W-16
B8
W-22
A-2
SB-5
Electric Gate
Catch Basin
50 Chemical Way
W-11
Former UST
W-18
W-5
CO
SB-15
Tank Pad
SB-11
Storm Water Drain
Catch Basin
SB-14
CTC Yard
(Metal Beams and Pipes)
SB-12
SB-2
W-7
T-18
SB-1
Former 1,000-gallon Diesel UST
Concrete Pad to Sewer
Yard Drainage System
Tank Pad
Water Line
SB-12
W-23
CO
Storm Water Drain
SB-13
SB-9
SB-7
W-17
Storage Trailers
Truck Pad
W-12
W-13
SB-4
SB-3
SB-5
Tank Pad
W-6
SB-6
SB-8
Storm Water Pump Station
Drainage Swale
Former 500-gallon gasoline AST
Former 10,000-gallon diesel AST
Storm Water Drain
Neutralization Sump
Bayshore Highway 101
Drainage Swale
320 Blomquist St
B-1
B-13
Excavation Area
UPRR R.O.W.
SB-9
Parking Lot
B-11
B-12
Limits of Hardscaped Area

EXPLANATION

- Soil sample location (WEST, 2010)
- Soil Gas sample location (WEST, 2010)
- Groundwater sample location (WEST, 2010)
- Property line / Parcel boundaries
- Soil and groundwater location (Emcon, 1983)
- Soil boring location (Canonie, 1984 & 1985
- Soil boring location (Semco/HK2S, 1996)
- Test Pit (Semco/HK2S, 1996)
- Soil and groundwater sample (Law/Crandall, 1996/1997)
- Test pit (RRM, 2004)
- Soil boring location (RRM, 2002 & 2006)
- Monitoring well
- Monitoring well (abandoned, 2003)
- Soil sample (Balch, 2006)
- Soil boring location (ARS, 2006)
- Soil and groundwater boring location (ARS, 2006)

N

0 FEET 100

Approximate Scale

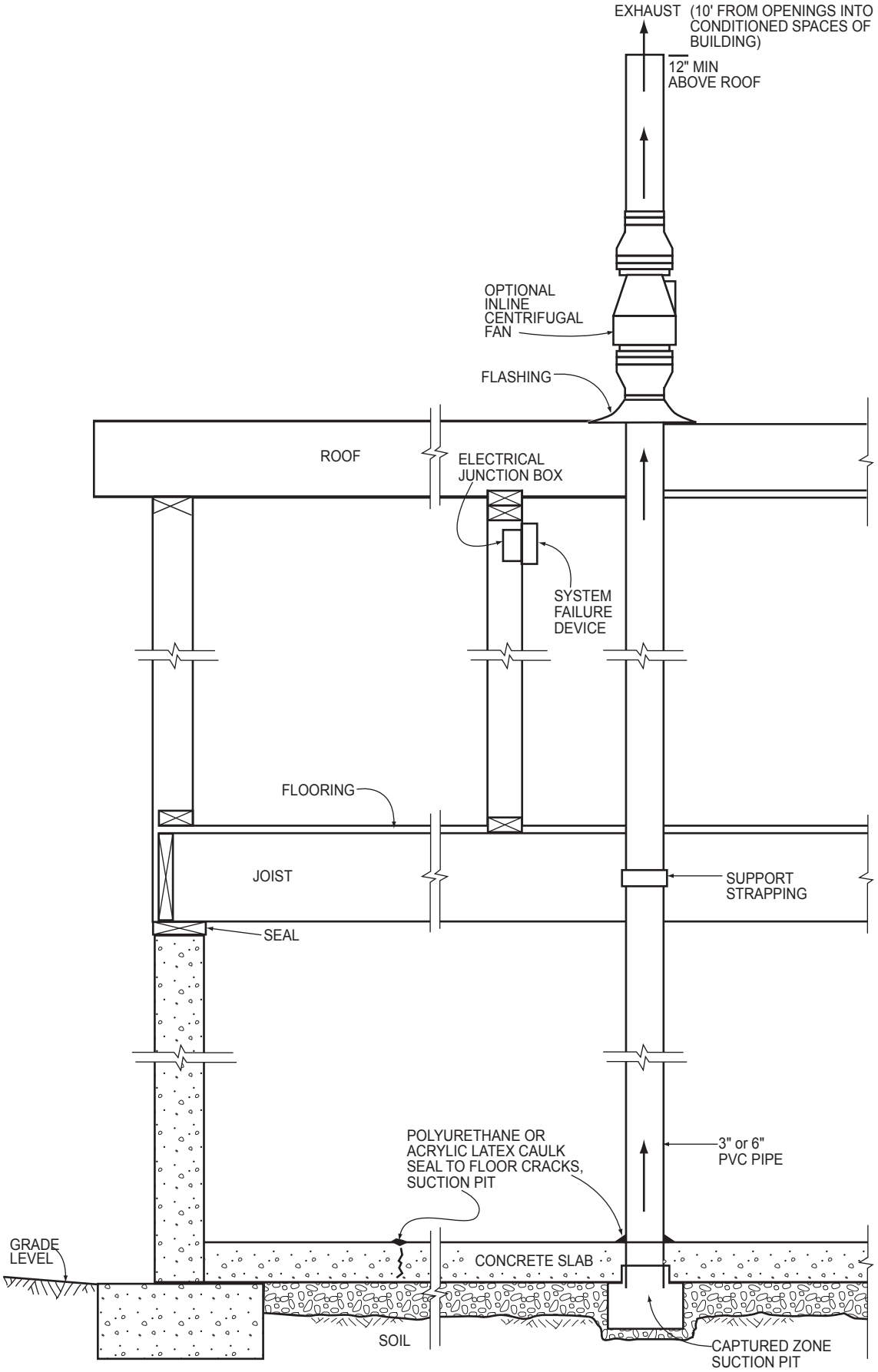
LIMITS OF SOIL MANAGEMENT AREA

Chemical Way, Redwood City, California

WEST Environmental Services & Technology

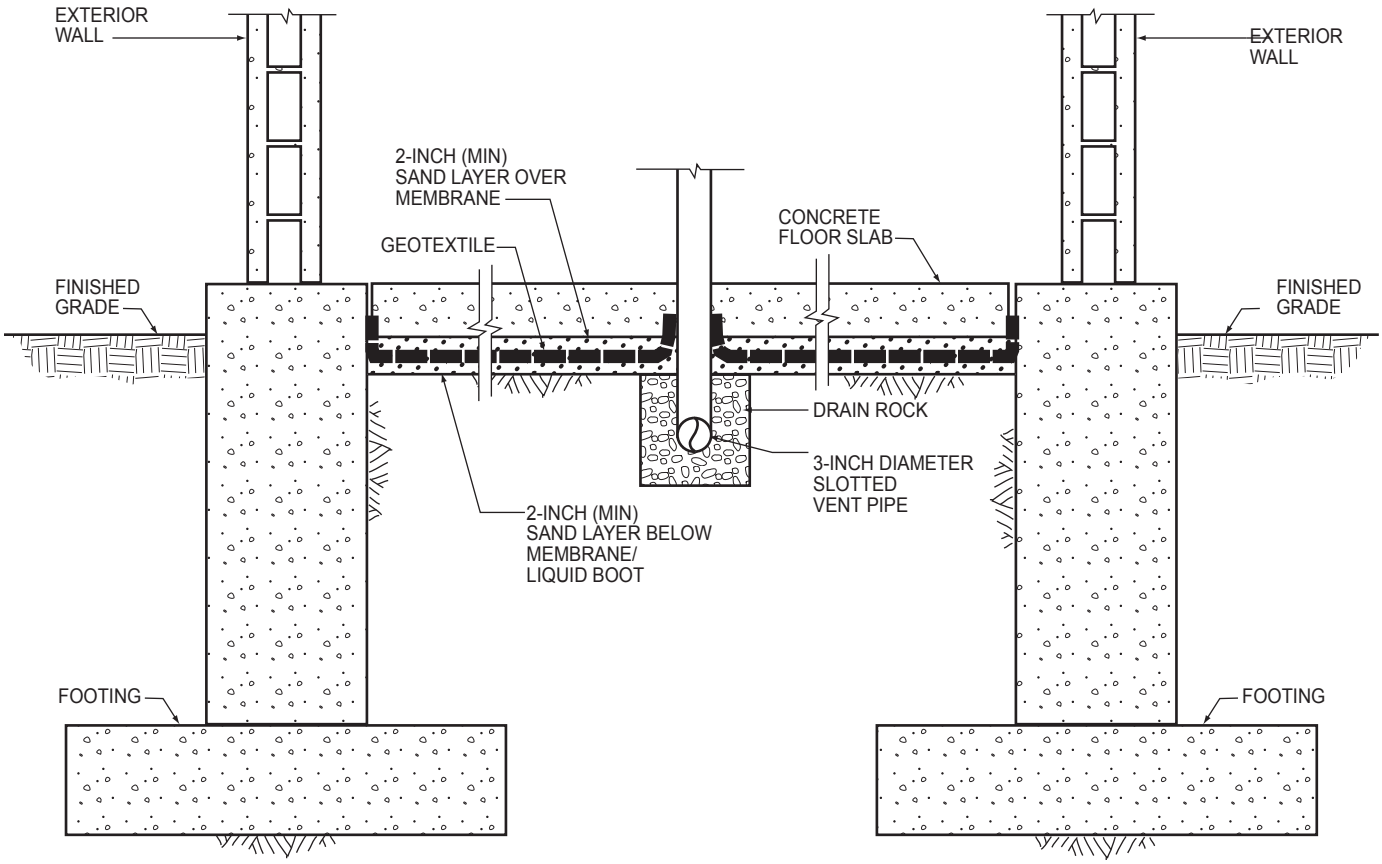
Figure 5-1

December 2010



Drawing Not To Scale

Figure 6-1	**SSVS/SSDS *SCHEMATIC***	WEST Environmental Services & Technology
December 2010	20-80 Chemical Way, Redwood City, California	



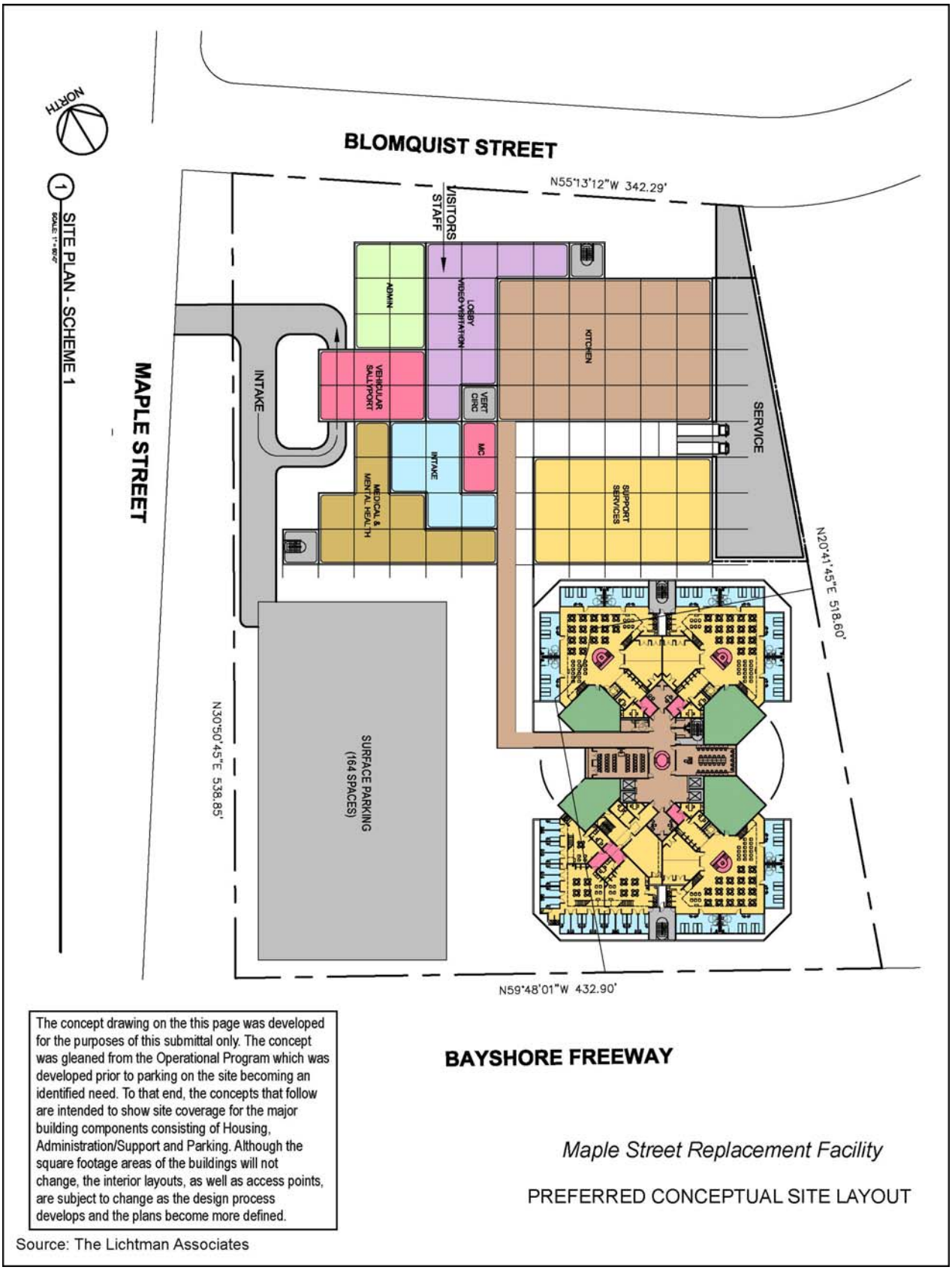
Drawing Not To Scale

Figure 6-2	***VENT PIPING TRENCH DETAIL***	WEST Environmental Services & Technology
December 2010	20-80 Chemical Way, Redwood City, California	

APPENDIX A

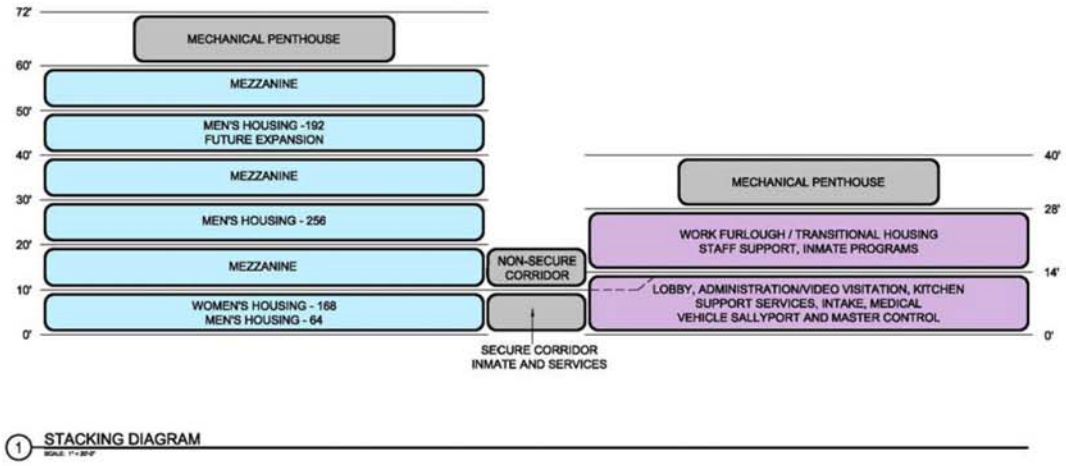
CONCEPTUAL SITE DEVELOPMENT PLAN

Figure 2-6a: Preferred Conceptual Site Layout



Source: The Lichtman Associates

Figure 2-7: Conceptual Jail Stacking Diagram



Maple Street Replacement Facility

CONCEPTUAL JAIL STACKING DIAGRAM

Source: The Lichtman Associates

APPENDIX B

LABORATORY DATA CERTIFICATES

CHAIN OF CUSTODY AND FIELD DATA FORMS

K PRIME, Inc.

CONSULTING ANALYTICAL CHEMISTS

3621 Westwind Blvd.
Santa Rosa CA 95403
Phone: 707 527 7574
FAX: 707 527 7879

TRANSMITTAL

DATE: 10/15/2010

TO: MR. PETER KRASNOFF
WEST ENVIRONMENTAL S&T
711 GRAND AVENUE, SUITE 220
SAN RAFAEL, CA 94901

Phone: 415-460-6770
Fax: 415-460-6771
Email: main@westenvironmental.com

ACCT: 9946
PROJ: RC.CHEMICAL

Project

NOV 02 2010

File

FROM: Richard A. Kagel, Ph.D.
Laboratory Director RAK by ca 10/15/2010

SUBJECT: LABORATORY RESULTS FOR YOUR PROJECT RC.CHEMICAL

Enclosed please find K Prime's laboratory reports for the following samples:

SAMPLE ID	TYPE	DATE	TIME	KPI LAB #
W-4	AIR	10/07/10	11:23	85701
W-4	WATER	10/07/10	12:10	85702
W-13	WATER	10/07/10	13:00	85703
W-1-1	SOIL	10/07/10	13:55	85704
W-1-3	SOIL	10/07/10	13:57	85705
W-2	AIR	10/07/10	14:23	85706
W-19-3	SOIL	10/07/10	14:20	85707
W-19-6	SOIL	10/07/10	14:25	85708
W-14	AIR	10/07/10	15:55	85709
W-9	AIR	10/07/10	16:13	85710
W-22-3	SOIL	10/07/10	16:10	85711
W-22-6	SOIL	10/07/10	16:15	85712
W-14-1	SOIL	10/07/10	16:30	85713
W-14-3	SOIL	10/07/10	16:33	85714
W-15	AIR	10/07/10	16:45	85715
W-18-1	SOIL	10/08/10	8:15	85716
W-18-3	SOIL	10/08/10	8:18	85717
W-18	WATER	10/08/10	9:00	85718
W-11	AIR	10/08/10	9:07	85719
W-23-1	SOIL	10/08/10	9:35	85720
W-23-3	SOIL	10/08/10	9:37	85721
W-10	AIR	10/08/10	10:38	85722
W-8	AIR	10/08/10	10:54	85723
W-9	WATER	10/08/10	11:05	85724
W-10-1	SOIL	10/08/10	11:35	85725
W-10-3	SOIL	10/08/10	11:38	85726
TRIP BLANK	WATER	NA	NA	85727

The above listed sample group was received on 10/08/10 and tested as requested on the chain of custody document.

Please call me if you have any questions or need further information.
Thank you for this opportunity to be of service.

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

BATCH ID: 101410A01

METHOD: METHANE
REFERENCE: EPA METHOD 18

UNITS: PPMV

SAMPLE ID	LAB NO.	SAMPLE TYPE	DATE SAMPLED	TIME SAMPLED	DATE ANALYZED	MRL	SAMPLE CONC
W-2	85706	AIR	10/7/10	14:23	10/14/10	20.0	1570
W-11	85719	AIR	10/8/10	9:07	10/14/10	20.0	586
W-10	85722	AIR	10/8/10	10:38	10/14/10	20.0	168000

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
MRL - METHOD REPORTING LIMIT

APPROVED BY: _____
DATE: 10/15/10

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

METHOD: DRO
REFERENCE: EPA 8015B

SAMPLE TYPE: WATER
UNITS: mg/L

SAMPLE ID	LAB NO.	DATE SAMPLED	BATCH ID	EXTRACT DATE	DATE ANALYZED	MRL	SAMPLE CONC	DRO PATTERN
W-4	85702	10/07/10	100510W01	10/11/10	10/11/10	0.050	ND	
W-13	85703	10/07/10	100510W01	10/11/10	10/11/10	0.050	ND	
W-18	85718	10/08/10	100510W01	10/11/10	10/11/10	0.050	ND	
W-9	85724	10/08/10	100510W01	10/11/10	10/11/10	0.050	ND	

NOTES:

DRO	Diesel Range Organics (C12-C23) with Silica Gel Cleanup
ND	Not Detected at or above the stated MRL
NA	Not Applicable or Available
MRL	Method Reporting Limit
AD	Typical Pattern for Diesel
AM	Hydrocarbon response is in the C12-C22 range
AC	Heavier hydrocarbons contributing to diesel range quantitation
AJ	Heavier hydrocarbon than diesel
AK	Lighter hydrocarbon than diesel
AE	Unknown hydrocarbon with a single peak
AN	Unknown hydrocarbon with several peaks

APPROVED BY: AW
DATE: 10/15/2010

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

METHOD: HRO
REFERENCE: EPA 8015B

SAMPLE TYPE: WATER
UNITS: mg/L

SAMPLE ID	LAB NO.	DATE SAMPLED	BATCH ID	EXTRACT DATE	DATE ANALYZED	MRL	SAMPLE CONC	HRO PATTERN
W-4	85702	10/07/10	100510W01	10/11/10	10/11/10	0.050	ND	
W-13	85703	10/07/10	100510W01	10/11/10	10/11/10	0.050	ND	
W-18	85718	10/08/10	100510W01	10/11/10	10/11/10	0.050	ND	
W-9	85724	10/08/10	100510W01	10/11/10	10/11/10	0.050	ND	

NOTES:

HRO	Heavy Range Organics (C24-C34) with Silica Gel Cleanup
ND	Not Detected at or above the stated MRL
NA	Not Applicable or Available
MRL	Method Reporting Limit
AE	Unknown hydrocarbon with a single peak
AN	Unknown hydrocarbon with several peaks

APPROVED BY: CW
DATE: 10/15/2010

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

METHOD: DRO
REFERENCE: EPA 8015B

SAMPLE TYPE: SOIL
UNITS: mg/Kg

SAMPLE ID	LAB NO.	DATE SAMPLED	BATCH ID	EXTRACT DATE	DATE ANALYZED	MRL	SAMPLE CONC	DRO PATTERN
W-19-3	85707	10/07/10	100910S1	10/12/2010	10/12/10	10.0	ND	
W-19-6	85708	10/07/10	100910S1	10/12/2010	10/12/10	10.0	ND	
W-22-3	85711	10/07/10	100910S1	10/12/2010	10/12/10	10.0	ND	
W-22-6	85712	10/07/10	100910S1	10/12/2010	10/12/10	10.0	ND	

NOTES:

DRO	Diesel Range Organics (C12-C23) with Silica Gel Cleanup
ND	Not Detected at or above the stated MRL
NA	Not Applicable or Available
MRL	Method Reporting Limit
AD	Typical Pattern for Diesel
AM	Hydrocarbon response is in the C12-C22 range
AC	Heavier hydrocarbons contributing to diesel range quantitation
AJ	Heavier hydrocarbon than diesel
AK	Lighter hydrocarbon than diesel
AE	Unknown hydrocarbon with a single peak
AN	Unknown hydrocarbon with several peaks

APPROVED BY: CW
DATE: 10/15/2010

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

METHOD: HRO
REFERENCE: EPA 8015B

SAMPLE TYPE: SOIL
UNITS: mg/Kg

SAMPLE ID	LAB NO.	DATE SAMPLED	BATCH ID	EXTRACT DATE	DATE ANALYZED	MRL	SAMPLE CONC	HRO PATTERN
W-19-3	85707	10/07/10	100910S1	10/12/2010	10/12/10	10.0	ND	
W-19-6	85708	10/07/10	100910S1	10/12/2010	10/12/10	10.0	ND	
W-22-3	85711	10/07/10	100910S1	10/12/2010	10/12/10	10.0	ND	
W-22-6	85712	10/07/10	100910S1	10/12/2010	10/12/10	10.0	ND	

NOTES:

HRO	Heavy Range Organics (C24-C34) with Silica Gel Cleanup
ND	Not Detected at or above the stated MRL
NA	Not Applicable or Available
MRL	Method Reporting Limit
AE	Unknown hydrocarbon with a single peak
AN	Unknown hydrocarbon with several peaks

APPROVED BY: [signature]
DATE: 10/15/2010

K PRIME, INC.
LABORATORY REPORT

SAMPLE ID: W-4
LAB NO: 85702
DATE SAMPLED: 10/07/10
TIME SAMPLED: 12:10
BATCH #: 101210W01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/13/10

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3510/8270C

SAMPLE TYPE: WATER
UNITS: ug/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
ACENAPHTHENE	83-32-9	10.0	ND
ACENAPHTHYLENE	208-96-8	10.0	ND
ANTHRACENE	120-12-7	10.0	ND
BENZO (A) ANTHRACENE	56-55-3	10.0	ND
BENZO (B) FLUORANTHENE	205-99-2	10.0	ND
BENZO (K) FLUORANTHENE	207-08-9	10.0	ND
BENZO (A) PYRENE	50-32-8	10.0	ND
BENZO (G,H,I) PERYLENE	191-24-2	10.0	ND
BENZYL ALCOHOL	100-51-6	20.0	ND
BUTYL BENZYL PHTHALATE	85-68-7	10.0	ND
BIS (2-CHLOROETHYL) ETHER	111-44-4	10.0	ND
BIS (2-CHLOROETHOXY) METHANE	111-91-1	10.0	ND
BIS (2-CHLOROISOPROPYL) ETHER	108-60-1	10.0	ND
BIS (2-ETHYLHEXYL) PHTHALATE	117-81-7	10.0	ND
4-BROMOPHENYL PHENYL ETHER	101-55-3	10.0	ND
4-CHLOROANILINE	106-47-8	10.0	ND
2-CHLORONAPHTHALENE	91-58-7	10.0	ND
4-CHLOROPHENYL PHENYL ETHER	7005-72-3	10.0	ND
CHRYSENE	218-01-9	10.0	ND
DIBENZO (A,H) ANTHRACENE	53-70-3	10.0	ND
DIBENZOFURAN	132-64-9	10.0	ND
DI-N-BUTYLPHTHALATE	84-74-2	10.0	ND
1,2-DICHLOROBENZENE	95-50-1	10.0	ND
1,3-DICHLOROBENZENE	541-73-1	10.0	ND
1,4-DICHLOROBENZENE	106-46-7	10.0	ND
3,3'-DICHLOROBENZIDINE	91-94-1	20.0	ND
DIETHYLPHTHALATE	84-66-2	10.0	ND
DIMETHYL PHTHALATE	131-11-3	10.0	ND
2,4-DINITROTOLUENE	121-14-2	10.0	ND
2,6-DINITROTOLUENE	606-20-2	10.0	ND
DI-N-OCTYL PHTHALATE	117-84-0	10.0	ND
FLUORANTHENE	206-44-0	10.0	ND
FLUORENE	86-73-7	10.0	ND
HEXACHLOROBENZENE	118-74-1	10.0	ND
HEXACHLOROBUTADIENE	87-68-3	10.0	ND
HEXACHLOROCYCLOPENTADIENE	77-47-4	10.0	ND
HEXACHLOROETHANE	67-72-1	10.0	ND
INDENO (1,2,3-CD) PYRENE	193-39-5	10.0	ND
ISOPHORONE	78-59-1	10.0	ND

K PRIME, INC.
LABORATORY REPORT

SAMPLE ID: W-4
LAB NO: 85702
DATE SAMPLED: 10/07/10
TIME SAMPLED: 12:10
BATCH #: 101210W01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/13/10

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3510/8270C

SAMPLE TYPE: WATER
UNITS: ug/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
2-METHYLNAPHTHALENE	91-57-6	10.0	ND
NAPHTHALENE	91-20-3	10.0	ND
2-NITROANILINE	88-74-4	50.0	ND
3-NITROANILINE	99-09-2	50.0	ND
4-NITROANILINE	100-01-6	50.0	ND
NITROBENZENE	98-95-3	10.0	ND
N-NITROSO-DI-N-PROPYLAMINE	621-64-7	10.0	ND
N-NITROSODIPHENYLAMINE	86-30-6	10.0	ND
PHENANTHRENE	85-01-8	10.0	ND
PYRENE	129-00-0	10.0	ND
1,2,4-TRICHLOROBENZENE	120-82-1	10.0	ND
ACID EXTRACTABLES			
4-CHLORO-3-METHYLPHENOL	59-50-7	20.0	ND
2-CHLOROPHENOL	95-57-8	20.0	ND
2,4-DICHLOROPHENOL	120-83-2	20.0	ND
2,4-DIMETHYLPHENOL	105-67-9	20.0	ND
2,4-DINITROPHENOL	51-28-5	50.0	ND
4,6-DINITRO-2-METHYLPHENOL	534-52-1	50.0	ND
2-NITROPHENOL	88-75-5	50.0	ND
4-NITROPHENOL	100-02-7	50.0	ND
PENTACHLOROPHENOL	87-86-5	50.0	ND
PHENOL	108-95-2	20.0	ND
2-METHYLPHENOL	95-48-7	20.0	ND
4-METHYLPHENOL	106-44-5	20.0	ND
2,4,5-TRICHLOROPHENOL	95-95-4	50.0	ND
2,4,6-TRICHLOROPHENOL	88-06-2	50.0	ND

SURROGATE RECOVERY	%
NITROBENZENE-D5	95
2-FLUOROBIPHENYL	96
P-TERPHENYL-D14	89
PHENOL-D5	99
2-FLUOROPHENOL	97
2,4,6-TRIBROMOPHENOL	97

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

APPROVED BY: MW
DATE: 10/15/2010

K PRIME, INC.
LABORATORY REPORT

SAMPLE ID: W-19-3
LAB NO: 85707
DATE SAMPLED: 10/07/10
TIME SAMPLED: 14:20
BATCH #: 100510S01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/12/10

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3550/8270

SAMPLE TYPE: SOIL
UNITS: ug/Kg

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
ACENAPHTHENE	83-32-9	330	ND
ACENAPHTHYLENE	208-96-8	330	ND
ANTHRACENE	120-12-7	330	ND
BENZO (A) ANTHRACENE	56-55-3	330	ND
BENZO (B) FLUORANTHENE	205-99-2	330	ND
BENZO (K) FLUORANTHENE	207-08-9	330	ND
BENZO (A) PYRENE	50-32-8	330	ND
BENZO (G,H,I) PERYLENE	191-24-2	330	ND
BENZYL ALCOHOL	100-51-6	330	ND
BUTYL BENZYL PHTHALATE	85-68-7	330	ND
BIS (2-CHLOROETHYL) ETHER	111-44-4	330	ND
BIS (2-CHLOROETHOXY) METHANE	111-91-1	330	ND
BIS (2-CHLOROISOPROPYL) ETHER	108-60-1	330	ND
BIS (2-ETHYLHEXYL) PHTHALATE	117-81-7	330	ND
4-BROMOPHENYL PHENYL ETHER	101-55-3	330	ND
4-CHLOROANILINE	106-47-8	330	ND
2-CHLORONAPHTHALENE	91-58-7	330	ND
4-CHLOROPHENYL PHENYL ETHER	7005-72-3	330	ND
CHRYSENE	218-01-9	330	ND
DIBENZO (A,H) ANTHRACENE	53-70-3	330	ND
DIBENZOFURAN	132-64-9	330	ND
DI-N-BUTYLPHTHALATE	84-74-2	330	ND
1,2-DICHLOROBENZENE	95-50-1	330	ND
1,3-DICHLOROBENZENE	541-73-1	330	ND
1,4-DICHLOROBENZENE	106-46-7	330	ND
3,3'-DICHLOROBENZIDINE	91-94-1	660	ND
DIETHYLPHTHALATE	84-66-2	330	ND
DIMETHYL PHTHALATE	131-11-3	330	ND
2,4-DINITROTOLUENE	121-14-2	330	ND
2,6-DINITROTOLUENE	606-20-2	330	ND
DI-N-OCTYL PHTHALATE	117-84-0	330	ND
FLUORANTHENE	206-44-0	330	ND
FLUORENE	86-73-7	330	ND
HEXACHLOROBENZENE	118-74-1	330	ND
HEXACHLOROBUTADIENE	87-68-3	330	ND
HEXACHLOROCYCLOPENTADIENE	77-47-4	330	ND
HEXACHLOROETHANE	67-72-1	330	ND
INDENO (1,2,3-CD) PYRENE	193-39-5	330	ND
ISOPHORONE	78-59-1	330	ND

K PRIME, INC.
LABORATORY REPORT

SAMPLE ID: W-19-3
LAB NO: 85707
DATE SAMPLED: 10/07/10
TIME SAMPLED: 14:20
BATCH #: 100510S01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/12/10

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3550/8270

SAMPLE TYPE: SOIL
UNITS: ug/Kg

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
2-METHYLNAPHTHALENE	91-57-6	330	ND
NAPHTHALENE	91-20-3	330	ND
2-NITROANILINE	88-74-4	1600	ND
3-NITROANILINE	99-09-2	1600	ND
4-NITROANILINE	100-01-6	1600	ND
NITROBENZENE	98-95-3	330	ND
N-NITROSO-DI-N-PROPYLAMINE	621-64-7	330	ND
N-NITROSODIPHENYLAMINE	86-30-6	330	ND
PHENANTHRENE	85-01-8	330	ND
PYRENE	129-00-0	330	ND
1,2,4-TRICHLOROBENZENE	120-82-1	330	ND
ACID EXTRACTABLES			
4-CHLORO-3-METHYLPHENOL	59-50-7	660	ND
2-CHLOROPHENOL	95-57-8	660	ND
2,4-DICHLOROPHENOL	120-83-2	660	ND
2,4-DIMETHYLPHENOL	105-67-9	660	ND
2,4-DINITROPHENOL	51-28-5	1600	ND
4,6-DINITRO-2-METHYLPHENOL	534-52-1	1600	ND
2-NITROPHENOL	88-75-5	1600	ND
4-NITROPHENOL	100-02-7	1600	ND
PENTACHLOROPHENOL	87-86-5	1600	ND
PHENOL	108-95-2	660	ND
2-METHYLPHENOL	95-48-7	660	ND
4-METHYLPHENOL	106-44-5	660	ND
2,4,5-TRICHLOROPHENOL	95-95-4	1600	ND
2,4,6-TRICHLOROPHENOL	88-06-2	1600	ND

SURROGATE RECOVERY	%
NITROBENZENE-D5	95
2-FLUOROBIPHENYL	95
P-TERPHENYL-D14	63
PHENOL-D5	88
2-FLUOROPHENOL	97
2,4,6-TRIBROMOPHENOL	108

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

APPROVED BY: CH
DATE: 10/15/2010

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

SAMPLE ID: W-19-6
LAB NO: 85708
DATE SAMPLED: 10/07/10
TIME SAMPLED: 14:25
BATCH #: 100510S01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/12/10

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3550/8270

SAMPLE TYPE: SOIL
UNITS: ug/Kg

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
ACENAPHTHENE	83-32-9	330	ND
ACENAPHTHYLENE	208-96-8	330	ND
ANTHRACENE	120-12-7	330	ND
BENZO (A) ANTHRACENE	56-55-3	330	ND
BENZO (B) FLUORANTHENE	205-99-2	330	ND
BENZO (K) FLUORANTHENE	207-08-9	330	ND
BENZO (A) PYRENE	50-32-8	330	ND
BENZO (G,H,I) PERYLENE	191-24-2	330	ND
BENZYL ALCOHOL	100-51-6	330	ND
BUTYL BENZYL PHTHALATE	85-68-7	330	ND
BIS (2-CHLOROETHYL) ETHER	111-44-4	330	ND
BIS (2-CHLOROETHOXY) METHANE	111-91-1	330	ND
BIS (2-CHLOROISOPROPYL) ETHER	108-60-1	330	ND
BIS (2-ETHYLHEXYL) PHTHALATE	117-81-7	330	ND
4-BROMOPHENYL PHENYL ETHER	101-55-3	330	ND
4-CHLOROANILINE	106-47-8	330	ND
2-CHLORONAPHTHALENE	91-58-7	330	ND
4-CHLOROPHENYL PHENYL ETHER	7005-72-3	330	ND
CHRYSENE	218-01-9	330	ND
DIBENZO (A,H) ANTHRACENE	53-70-3	330	ND
DIBENZOFURAN	132-64-9	330	ND
DI-N-BUTYLPHTHALATE	84-74-2	330	ND
1,2-DICHLOROBENZENE	95-50-1	330	ND
1,3-DICHLOROBENZENE	541-73-1	330	ND
1,4-DICHLOROBENZENE	106-46-7	330	ND
3,3'-DICHLOROBENZIDINE	91-94-1	660	ND
DIETHYLPHTHALATE	84-66-2	330	ND
DIMETHYL PHTHALATE	131-11-3	330	ND
2,4-DINITROTOLUENE	121-14-2	330	ND
2,6-DINITROTOLUENE	606-20-2	330	ND
DI-N-OCTYL PHTHALATE	117-84-0	330	ND
FLUORANTHENE	206-44-0	330	ND
FLUORENE	86-73-7	330	ND
HEXACHLOROBENZENE	118-74-1	330	ND
HEXACHLOROBUTADIENE	87-68-3	330	ND
HEXACHLOROCYCLOPENTADIENE	77-47-4	330	ND
HEXACHLOROETHANE	67-72-1	330	ND
INDENO (1,2,3-CD) PYRENE	193-39-5	330	ND
ISOPHORONE	78-59-1	330	ND

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

SAMPLE ID: W-19-6
LAB NO: 85708
DATE SAMPLED: 10/07/10
TIME SAMPLED: 14:25
BATCH #: 100510S01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/12/10

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3550/8270

SAMPLE TYPE: SOIL
UNITS: ug/Kg

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
2-METHYLNAPHTHALENE	91-57-6	330	ND
NAPHTHALENE	91-20-3	330	ND
2-NITROANILINE	88-74-4	1600	ND
3-NITROANILINE	99-09-2	1600	ND
4-NITROANILINE	100-01-6	1600	ND
NITROBENZENE	98-95-3	330	ND
N-NITROSO-DI-N-PROPYLAMINE	621-64-7	330	ND
N-NITROSODIPHENYLAMINE	86-30-6	330	ND
PHENANTHRENE	85-01-8	330	ND
PYRENE	129-00-0	330	ND
1,2,4-TRICHLOROBENZENE	120-82-1	330	ND
ACID EXTRACTABLES			
4-CHLORO-3-METHYLPHENOL	59-50-7	660	ND
2-CHLOROPHENOL	95-57-8	660	ND
2,4-DICHLOROPHENOL	120-83-2	660	ND
2,4-DIMETHYLPHENOL	105-67-9	660	ND
2,4-DINITROPHENOL	51-28-5	1600	ND
4,6-DINITRO-2-METHYLPHENOL	534-52-1	1600	ND
2-NITROPHENOL	88-75-5	1600	ND
4-NITROPHENOL	100-02-7	1600	ND
PENTACHLOROPHENOL	87-86-5	1600	ND
PHENOL	108-95-2	660	ND
2-METHYLPHENOL	95-48-7	660	ND
4-METHYLPHENOL	106-44-5	660	ND
2,4,5-TRICHLOROPHENOL	95-95-4	1600	ND
2,4,6-TRICHLOROPHENOL	88-06-2	1600	ND

SURROGATE RECOVERY	%
NITROBENZENE-D5	93
2-FLUOROBIPHENYL	99
P-TERPHENYL-D14	51
PHENOL-D5	94
2-FLUOROPHENOL	110
2,4,6-TRIBROMOPHENOL	109

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

APPROVED BY: CW
DATE: 10/15/2010

K PRIME, INC.
LABORATORY REPORT

SAMPLE ID: W-22-3
LAB NO: 85711
DATE SAMPLED: 10/07/10
TIME SAMPLED: 16:10
BATCH #: 100510S01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/12/10

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3550/8270

SAMPLE TYPE: SOIL
UNITS: ug/Kg

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
ACENAPHTHENE	83-32-9	330	ND
ACENAPHTHYLENE	208-96-8	330	ND
ANTHRACENE	120-12-7	330	ND
BENZO (A) ANTHRACENE	56-55-3	330	ND
BENZO (B) FLUORANTHENE	205-99-2	330	ND
BENZO (K) FLUORANTHENE	207-08-9	330	ND
BENZO (A) PYRENE	50-32-8	330	ND
BENZO (G,H,I) PERYLENE	191-24-2	330	ND
BENZYL ALCOHOL	100-51-6	330	ND
BUTYL BENZYL PHTHALATE	85-68-7	330	ND
BIS (2-CHLOROETHYL) ETHER	111-44-4	330	ND
BIS (2-CHLOROETHOXY) METHANE	111-91-1	330	ND
BIS (2-CHLOROISOPROPYL) ETHER	108-60-1	330	ND
BIS (2-ETHYLHEXYL) PHTHALATE	117-81-7	330	ND
4-BROMOPHENYL PHENYL ETHER	101-55-3	330	ND
4-CHLOROANILINE	106-47-8	330	ND
2-CHLORONAPHTHALENE	91-58-7	330	ND
4-CHLOROPHENYL PHENYL ETHER	7005-72-3	330	ND
CHRYSENE	218-01-9	330	ND
DIBENZO (A,H) ANTHRACENE	53-70-3	330	ND
DIBENZOFURAN	132-64-9	330	ND
DI-N-BUTYLPHTHALATE	84-74-2	330	ND
1,2-DICHLOROBENZENE	95-50-1	330	ND
1,3-DICHLOROBENZENE	541-73-1	330	ND
1,4-DICHLOROBENZENE	106-46-7	330	ND
3,3'-DICHLOROBENZIDINE	91-94-1	660	ND
DIETHYLPHTHALATE	84-66-2	330	ND
DIMETHYL PHTHALATE	131-11-3	330	ND
2,4-DINITROTOLUENE	121-14-2	330	ND
2,6-DINITROTOLUENE	606-20-2	330	ND
DI-N-OCTYL PHTHALATE	117-84-0	330	ND
FLUORANTHENE	206-44-0	330	ND
FLUORENE	86-73-7	330	ND
HEXACHLOROBENZENE	118-74-1	330	ND
HEXACHLOROBUTADIENE	87-68-3	330	ND
HEXACHLOROCYCLOPENTADIENE	77-47-4	330	ND
HEXACHLOROETHANE	67-72-1	330	ND
INDENO (1,2,3-CD) PYRENE	193-39-5	330	ND
ISOPHORONE	78-59-1	330	ND

K PRIME, INC.
LABORATORY REPORT

SAMPLE ID: W-22-3
LAB NO: 85711
DATE SAMPLED: 10/07/10
TIME SAMPLED: 16:10
BATCH #: 100510S01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/12/10

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3550/8270

SAMPLE TYPE: SOIL
UNITS: ug/Kg

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
2-METHYLNAPHTHALENE	91-57-6	330	ND
NAPHTHALENE	91-20-3	330	ND
2-NITROANILINE	88-74-4	1600	ND
3-NITROANILINE	99-09-2	1600	ND
4-NITROANILINE	100-01-6	1600	ND
NITROBENZENE	98-95-3	330	ND
N-NITROSO-DI-N-PROPYLAMINE	621-64-7	330	ND
N-NITROSODIPHENYLAMINE	86-30-6	330	ND
PHENANTHRENE	85-01-8	330	ND
PYRENE	129-00-0	330	ND
1,2,4-TRICHLOROBENZENE	120-82-1	330	ND
ACID EXTRACTABLES			
4-CHLORO-3-METHYLPHENOL	59-50-7	660	ND
2-CHLOROPHENOL	95-57-8	660	ND
2,4-DICHLOROPHENOL	120-83-2	660	ND
2,4-DIMETHYLPHENOL	105-67-9	660	ND
2,4-DINITROPHENOL	51-28-5	1600	ND
4,6-DINITRO-2-METHYLPHENOL	534-52-1	1600	ND
2-NITROPHENOL	88-75-5	1600	ND
4-NITROPHENOL	100-02-7	1600	ND
PENTACHLOROPHENOL	87-86-5	1600	ND
PHENOL	108-95-2	660	ND
2-METHYLPHENOL	95-48-7	660	ND
4-METHYLPHENOL	106-44-5	660	ND
2,4,5-TRICHLOROPHENOL	95-95-4	1600	ND
2,4,6-TRICHLOROPHENOL	88-06-2	1600	ND

SURROGATE RECOVERY	%
NITROBENZENE-D5	106
2-FLUOROBIPHENYL	109
P-TERPHENYL-D14	64
PHENOL-D5	84
2-FLUOROPHENOL	96
2,4,6-TRIBROMOPHENOL	114

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

APPROVED BY: AW
DATE: 10/15/2010

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

SAMPLE ID: W-22-6
LAB NO: 85712
DATE SAMPLED: 10/07/10
TIME SAMPLED: 16:15
BATCH #: 100510S01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/12/10

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3550/8270

SAMPLE TYPE: SOIL
UNITS: ug/Kg

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
ACENAPHTHENE	83-32-9	330	ND
ACENAPHTHYLENE	208-96-8	330	ND
ANTHRACENE	120-12-7	330	ND
BENZO (A) ANTHRACENE	56-55-3	330	ND
BENZO (B) FLUORANTHENE	205-99-2	330	ND
BENZO (K) FLUORANTHENE	207-08-9	330	ND
BENZO (A) PYRENE	50-32-8	330	ND
BENZO (G,H,I) PERYLENE	191-24-2	330	ND
BENZYL ALCOHOL	100-51-6	330	ND
BUTYL BENZYL PHTHALATE	85-68-7	330	ND
BIS (2-CHLOROETHYL) ETHER	111-44-4	330	ND
BIS (2-CHLOROETHOXY) METHANE	111-91-1	330	ND
BIS (2-CHLOROISOPROPYL) ETHER	108-60-1	330	ND
BIS (2-ETHYLHEXYL) PHTHALATE	117-81-7	330	ND
4-BROMOPHENYL PHENYL ETHER	101-55-3	330	ND
4-CHLOROANILINE	106-47-8	330	ND
2-CHLORONAPHTHALENE	91-58-7	330	ND
4-CHLOROPHENYL PHENYL ETHER	7005-72-3	330	ND
CHRYSENE	218-01-9	330	ND
DIBENZO (A,H) ANTHRACENE	53-70-3	330	ND
DIBENZOFURAN	132-64-9	330	ND
DI-N-BUTYLPHTHALATE	84-74-2	330	ND
1,2-DICHLOROBENZENE	95-50-1	330	ND
1,3-DICHLOROBENZENE	541-73-1	330	ND
1,4-DICHLOROBENZENE	106-46-7	330	ND
3,3'-DICHLOROBENZIDINE	91-94-1	660	ND
DIETHYLPHTHALATE	84-66-2	330	ND
DIMETHYL PHTHALATE	131-11-3	330	ND
2,4-DINITROTOLUENE	121-14-2	330	ND
2,6-DINITROTOLUENE	606-20-2	330	ND
DI-N-OCTYL PHTHALATE	117-84-0	330	ND
FLUORANTHENE	206-44-0	330	ND
FLUORENE	86-73-7	330	ND
HEXACHLOROBENZENE	118-74-1	330	ND
HEXACHLOROBUTADIENE	87-68-3	330	ND
HEXACHLOROCYCLOPENTADIENE	77-47-4	330	ND
HEXACHLOROETHANE	67-72-1	330	ND
INDENO (1,2,3-CD) PYRENE	193-39-5	330	ND
ISOPHORONE	78-59-1	330	ND

K PRIME, INC.
LABORATORY REPORT

SAMPLE ID: W-22-6
LAB NO: 85712
DATE SAMPLED: 10/07/10
TIME SAMPLED: 16:15
BATCH #: 100510S01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/12/10

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3550/8270

SAMPLE TYPE: SOIL
UNITS: ug/Kg

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
2-METHYLNAPHTHALENE	91-57-6	330	ND
NAPHTHALENE	91-20-3	330	ND
2-NITROANILINE	88-74-4	1600	ND
3-NITROANILINE	99-09-2	1600	ND
4-NITROANILINE	100-01-6	1600	ND
NITROBENZENE	98-95-3	330	ND
N-NITROSO-DI-N-PROPYLAMINE	621-64-7	330	ND
N-NITROSODIPHENYLAMINE	86-30-6	330	ND
PHENANTHRENE	85-01-8	330	ND
PYRENE	129-00-0	330	ND
1,2,4-TRICHLOROBENZENE	120-82-1	330	ND
ACID EXTRACTABLES			
4-CHLORO-3-METHYLPHENOL	59-50-7	660	ND
2-CHLOROPHENOL	95-57-8	660	ND
2,4-DICHLOROPHENOL	120-83-2	660	ND
2,4-DIMETHYLPHENOL	105-67-9	660	ND
2,4-DINITROPHENOL	51-28-5	1600	ND
4,6-DINITRO-2-METHYLPHENOL	534-52-1	1600	ND
2-NITROPHENOL	88-75-5	1600	ND
4-NITROPHENOL	100-02-7	1600	ND
PENTACHLOROPHENOL	87-86-5	1600	ND
PHENOL	108-95-2	660	ND
2-METHYLPHENOL	95-48-7	660	ND
4-METHYLPHENOL	106-44-5	660	ND
2,4,5-TRICHLOROPHENOL	95-95-4	1600	ND
2,4,6-TRICHLOROPHENOL	88-06-2	1600	ND

SURROGATE RECOVERY	%
NITROBENZENE-D5	102
2-FLUOROBIPHENYL	104
P-TERPHENYL-D14	75
PHENOL-D5	98
2-FLUOROPHENOL	90
2,4,6-TRIBROMOPHENOL	114

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

APPROVED BY: MW
DATE: 10/15/2010

K PRIME, INC.
LABORATORY QC REPORT

METHOD BLANK ID: B10141001
LAB CONTROL SAMPLE ID: L10141001
LAB CONTROL DUPLICATE ID: D10141001
BATCH ID: 101410A01

METHOD: METHANE
REFERENCE: EPA METHOD 18

SAMPLE TYPE: AIR
UNITS: PPM -V/V

METHOD BLANK

COMPOUND NAME	REPORTING LIMIT	SAMPLE CONC
METHANE	10.0	ND

ACCURACY (LAB CONTROL SAMPLE)

COMPOUND NAME	EXPECTED CONC	MEASURED CONC	PERCENT RECOVERY	LIMITS (PERCENT)
METHANE	1000	1020	102	60-140

PRECISION (LAB CONTROL DUPLICATE)

COMPOUND NAME	SAMPLE RESULT	DUPLICATE RESULT	RPD (PERCENT)	LIMITS (PERCENT)
METHANE	1020	1040	1.94	±30

K PRIME, INC.

LABORATORY QUALITY CONTROL REPORT

BATCH ID: 100510W01
DATE EXTRACTED: 10/5/2010
DATE ANALYZED: 10/6/2010

METHOD: DRO
REFERENCE: EPA 8015B

SAMPLE TYPE: WATER
UNITS: mg/L

METHOD BLANK ID: B100510W01

COMPOUND NAME	REPORTING LIMIT	SAMPLE CONC
DRO	0.050	ND

SAMPLE ID: L100510W01
DUPLICATE ID: D100510W01

ACCURACY (MATRIX SPIKE)

PARAMETER	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
DRO	2.50	ND	2.10	84	60-140

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
DRO	0.050	2.10	2.28	8.2	±20

NOTES:
DRO - DIESEL RANGE ORGANICS (C12-C34)
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

K PRIME, INC.
LABORATORY QUALITY CONTROL REPORT

BATCH ID: 100910S1
DATE EXTRACTED: 10/9/2010
DATE ANALYZED: 10/9/2010

METHOD: DRO
REFERENCE: EPA 8015B

SAMPLE TYPE: SOIL
UNITS: mg/Kg

METHOD BLANK ID: B100910S1

COMPOUND NAME	REPORTING LIMIT	SAMPLE CONC
DRO	10.0	ND

SAMPLE ID: L100910S1
DUPLICATE ID: D100910S1

ACCURACY (MATRIX SPIKE)

PARAMETER	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
DRO	500	ND	415	83	60-140

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
DRO	10.0	415	467	12	±20

NOTES:
DRO - DIESEL RANGE ORGANICS (C12-C34)
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

K PRIME, INC.
LABORATORY QC REPORT

METHOD BLANK ID: B10121001-W
BATCH #: 101210W01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/13/10

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3510/8270

SAMPLE TYPE: WATER
UNITS: ug/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
ACENAPHTHENE	83-32-9	10.0	ND
ACENAPHTHYLENE	208-96-8	10.0	ND
ANTHRACENE	120-12-7	10.0	ND
BENZO (A) ANTHRACENE	56-55-3	10.0	ND
BENZO (B) FLUORANTHENE	205-99-2	10.0	ND
BENZO (K) FLUORANTHENE	207-08-9	10.0	ND
BENZO (A) PYRENE	50-32-8	10.0	ND
BENZO (G,H,I) PERYLENE	191-24-2	10.0	ND
BENZYL ALCOHOL	100-51-6	20.0	ND
BUTYL BENZYL PHTHALATE	85-68-7	10.0	ND
BIS (2-CHLOROETHYL) ETHER	111-44-4	10.0	ND
BIS (2-CHLOROETHOXY) METHANE	111-91-1	10.0	ND
BIS (2-CHLOROISOPROPYL) ETHER	108-60-1	10.0	ND
BIS (2-ETHYLHEXYL) PHTHALATE	117-81-7	10.0	ND
4-BROMOPHENYL PHENYL ETHER	101-55-3	10.0	ND
4-CHLOROANILINE	106-47-8	10.0	ND
2-CHLORONAPHTHALENE	91-58-7	10.0	ND
4-CHLOROPHENYL PHENYL ETHER	7005-72-3	10.0	ND
CHRYSENE	218-01-9	10.0	ND
DIBENZO (A,H) ANTHRACENE	53-70-3	10.0	ND
DIBENZOFURAN	132-64-9	10.0	ND
DI-N-BUTYLPHTHALATE	84-74-2	10.0	ND
1,2-DICHLOROBENZENE	95-50-1	10.0	ND
1,3-DICHLOROBENZENE	541-73-1	10.0	ND
1,4-DICHLOROBENZENE	106-46-7	10.0	ND
3,3'-DICHLOROBENZIDINE	91-94-1	20.0	ND
DIETHYLPHTHALATE	84-66-2	10.0	ND
DIMETHYL PHTHALATE	131-11-3	10.0	ND
2,4-DINITROTOLUENE	121-14-2	10.0	ND
2,6-DINITROTOLUENE	606-20-2	10.0	ND
DI-N-OCTYL PHTHALATE	117-84-0	10.0	ND
FLUORANTHENE	206-44-0	10.0	ND
FLUORENE	86-73-7	10.0	ND
HEXACHLOROBENZENE	118-74-1	10.0	ND
HEXACHLOROBUTADIENE	87-68-3	10.0	ND
HEXACHLOROCYCLOPENTADIENE	77-47-4	10.0	ND
HEXACHLOROETHANE	67-72-1	10.0	ND
INDENO (1,2,3-CD) PYRENE	193-39-5	10.0	ND
ISOPHORONE	78-59-1	10.0	ND

K PRIME, INC.
LABORATORY QC REPORT

METHOD BLANK ID: B10121001-W
BATCH #: 101210W01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/13/10

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3510/8270

SAMPLE TYPE: WATER
UNITS: ug/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
2-METHYLNAPHTHALENE	91-57-6	10.0	ND
NAPHTHALENE	91-20-3	10.0	ND
2-NITROANILINE	88-74-4	50.0	ND
3-NITROANILINE	99-09-2	50.0	ND
4-NITROANILINE	100-01-6	50.0	ND
NITROBENZENE	98-95-3	10.0	ND
N-NITROSO-DI-N-PROPYLAMINE	621-64-7	10.0	ND
N-NITROSODIPHENYLAMINE	86-30-6	10.0	ND
PHENANTHRENE	85-01-8	10.0	ND
PYRENE	129-00-0	10.0	ND
1,2,4-TRICHLOROBENZENE	120-82-1	10.0	ND
1,4-DIOXANE	123-91-1	3.00	ND
ACID EXTRACTABLES			
4-CHLORO-3-METHYLPHENOL	59-50-7	20.0	ND
2-CHLOROPHENOL	95-57-8	20.0	ND
2,4-DICHLOROPHENOL	120-83-2	20.0	ND
2,4-DIMETHYLPHENOL	105-67-9	20.0	ND
2,4-DINITROPHENOL	51-28-5	50.0	ND
4,6-DINITRO-2-METHYLPHENOL	534-52-1	50.0	ND
2-NITROPHENOL	88-75-5	50.0	ND
4-NITROPHENOL	100-02-7	50.0	ND
PENTACHLOROPHENOL	87-86-5	50.0	ND
PHENOL	108-95-2	20.0	ND
2-METHYLPHENOL	95-48-7	20.0	ND
4-METHYLPHENOL	106-44-5	20.0	ND
2,4,5-TRICHLOROPHENOL	95-95-4	50.0	ND
2,4,6-TRICHLOROPHENOL	88-06-2	50.0	ND

SURROGATE RECOVERY	%
NITROBENZENE-D5	97
2-FLUOROBIPHENYL	92
P-TERPHENYL-D14	89
PHENOL-D5	82
2-FLUOROPHENOL	89
2,4,6-TRIBROMOPHENOL	110

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

K PRIME, INC.
LABORATORY QC REPORT

SAMPLE ID: L10121001-W
DUPLICATE ID: D10121001-W
BATCH #: 101210W01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/13/10

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3510/8270

SAMPLE TYPE: WATER
UNITS: ug/L

ACCURACY (MATRIX SPIKE)

PARAMETER	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
ACENAPHTHENE	12.5	ND	12.9	103	40-140
1,4-DICHLOROBENZENE	12.5	ND	11.0	88	20-120
2,4-DINITROTOLUENE	12.5	ND	11.9	95	20-120
N-NITROSO-DI-N-PROPYLAMINE	12.5	ND	13.5	108	40-140
PYRENE	12.5	ND	13.0	104	40-140
1,2,4-TRICHLOROBENZENE	12.5	ND	12.6	101	20-120
4-CHLORO-3-METHYLPHENOL	25.0	ND	26.7	107	20-120
2-CHLOROPHENOL	25.0	ND	25.8	103	D-120
4-NITROPHENOL	25.0	ND	25.2	101	D-120
PENTACHLOROPHENOL	25.0	ND	28.2	113	D-120
PHENOL	25.0	ND	21.5	86	10-120

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
ACENAPHTHENE	2.00	12.9	13.0	0.8	±30
1,4-DICHLOROBENZENE	2.00	11.0	11.6	5.3	±30
2,4-DINITROTOLUENE	2.00	11.9	12.8	7.3	±30
N-NITROSO-DI-N-PROPYLAMINE	2.00	13.5	12.8	5.3	±30
PYRENE	2.00	13.0	13.1	0.8	±30
1,2,4-TRICHLOROBENZENE	2.00	12.6	12.7	0.8	±30
4-CHLORO-3-METHYLPHENOL	4.00	26.7	27.4	2.6	±30
2-CHLOROPHENOL	2.00	25.8	30.0	15	±40
4-NITROPHENOL	10.0	25.2	23.9	5.3	±40
PENTACHLOROPHENOL	10.0	28.2	25.9	8.5	±40
PHENOL	4.00	21.5	22.4	4.1	±40

NOTES:
ND = NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
D = DETECTED

K PRIME, INC.
LABORATORY QC REPORT

METHOD BLANK ID: B10051001
BATCH #: 100510S01
DATE EXTRACTED: 10/05/10
DATE ANALYZED: 10/05/10

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3550/8270

SAMPLE TYPE: SOIL
UNITS: ug/Kg

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
ACENAPHTHENE	83-32-9	330	ND
ACENAPHTHYLENE	208-96-8	330	ND
ANTHRACENE	120-12-7	330	ND
BENZO (A) ANTHRACENE	56-55-3	330	ND
BENZO (B) FLUORANTHENE	205-99-2	330	ND
BENZO (K) FLUORANTHENE	207-08-9	330	ND
BENZO (A) PYRENE	50-32-8	330	ND
BENZO (G,H,I) PERYLENE	191-24-2	330	ND
BENZYL ALCOHOL	100-51-6	330	ND
BUTYL BENZYL PHTHALATE	85-68-7	330	ND
BIS (2-CHLOROETHYL) ETHER	111-44-4	330	ND
BIS (2-CHLOROETHOXY) METHANE	111-91-1	330	ND
BIS (2-CHLOROISOPROPYL) ETHER	108-60-1	330	ND
BIS (2-ETHYLHEXYL) PHTHALATE	117-81-7	330	ND
4-BROMOPHENYL PHENYL ETHER	101-55-3	330	ND
4-CHLOROANILINE	106-47-8	330	ND
2-CHLORONAPHTHALENE	91-58-7	330	ND
4-CHLOROPHENYL PHENYL ETHER	7005-72-3	330	ND
CHRYSENE	218-01-9	330	ND
DIBENZO (A,H) ANTHRACENE	53-70-3	330	ND
DIBENZOFURAN	132-64-9	330	ND
DI-N-BUTYLPHTHALATE	84-74-2	330	ND
1,2-DICHLOROBENZENE	95-50-1	330	ND
1,3-DICHLOROBENZENE	541-73-1	330	ND
1,4-DICHLOROBENZENE	106-46-7	330	ND
3,3'-DICHLOROBENZIDINE	91-94-1	660	ND
DIETHYLPHTHALATE	84-66-2	330	ND
DIMETHYL PHTHALATE	131-11-3	330	ND
2,4-DINITROTOLUENE	121-14-2	330	ND
2,6-DINITROTOLUENE	606-20-2	330	ND
DI-N-OCTYL PHTHALATE	117-84-0	330	ND
FLUORANTHENE	206-44-0	330	ND
FLUORENE	86-73-7	330	ND
HEXACHLOROBENZENE	118-74-1	330	ND
HEXACHLOROBUTADIENE	87-68-3	330	ND
HEXACHLOROCYCLOPENTADIENE	77-47-4	330	ND
HEXACHLOROETHANE	67-72-1	330	ND
INDENO (1,2,3-CD) PYRENE	193-39-5	330	ND
ISOPHORONE	78-59-1	330	ND

K PRIME, INC.
LABORATORY QC REPORT

METHOD BLANK ID: B10051001
BATCH #: 100510S01
DATE EXTRACTED: 10/05/10
DATE ANALYZED: 10/05/10

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3550/8270

SAMPLE TYPE: SOIL
UNITS: ug/Kg

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
2-METHYLNAPHTHALENE	91-57-6	330	ND
NAPHTHALENE	91-20-3	330	ND
2-NITROANILINE	88-74-4	1600	ND
3-NITROANILINE	99-09-2	1600	ND
4-NITROANILINE	100-01-6	1600	ND
NITROBENZENE	98-95-3	330	ND
N-NITROSO-DI-N-PROPYLAMINE	621-64-7	330	ND
N-NITROSODIPHENYLAMINE	86-30-6	330	ND
PHENANTHRENE	85-01-8	330	ND
PYRENE	129-00-0	330	ND
1,2,4-TRICHLOROBENZENE	120-82-1	330	ND
ACID EXTRACTABLES			
4-CHLORO-3-METHYLPHENOL	59-50-7	660	ND
2-CHLOROPHENOL	95-57-8	660	ND
2,4-DICHLOROPHENOL	120-83-2	660	ND
2,4-DIMETHYLPHENOL	105-67-9	660	ND
2,4-DINITROPHENOL	51-28-5	1600	ND
4,6-DINITRO-2-METHYLPHENOL	534-52-1	1600	ND
2-NITROPHENOL	88-75-5	1600	ND
4-NITROPHENOL	100-02-7	1600	ND
PENTACHLOROPHENOL	87-86-5	1600	ND
PHENOL	108-95-2	660	ND
2-METHYLPHENOL	95-48-7	660	ND
4-METHYLPHENOL	106-44-5	660	ND
2,4,5-TRICHLOROPHENOL	95-95-4	1600	ND
2,4,6-TRICHLOROPHENOL	88-06-2	1600	ND

SURROGATE RECOVERY	%
NITROBENZENE-D5	99
2-FLUOROBIPHENYL	98
P-TERPHENYL-D14	67
PHENOL-D5	96
2-FLUOROPHENOL	95
2,4,6-TRIBROMOPHENOL	96

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

K PRIME, INC.
LABORATORY QC REPORT

SAMPLE ID: L10051001
DUPLICATE ID: D10051001
BATCH #: 100510S01
DATE EXTRACTED: 10/05/10
DATE ANALYZED: 10/05/10

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3550/8270

SAMPLE TYPE: SOIL
UNITS: ug/Kg

ACCURACY (MATRIX SPIKE)

PARAMETER	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
ACENAPHTHENE	5000	ND	4410	88	47-145
1,4-DICHLOROBENZENE	5000	ND	5400	108	20-124
2,4-DINITROTOLUENE	5000	ND	4800	96	60-140
N-NITROSO-DI-N-PROPYLAMINE	5000	ND	4750	95	60-140
PYRENE	5000	ND	4400	88	60-140
1,2,4-TRICHLOROBENZENE	5000	ND	5130	103	60-140
4-CHLORO-3-METHYLPHENOL	10000	ND	10300	103	20-140
2-CHLOROPHENOL	10000	ND	10300	103	D-140
4-NITROPHENOL	10000	ND	9670	97	D-140
PENTACHLOROPHENOL	10000	ND	10100	101	D-140
PHENOL	10000	ND	10300	103	30-140

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
ACENAPHTHENE	330	4410	4130	6.6	±20
1,4-DICHLOROBENZENE	330	5400	4770	12	±20
2,4-DINITROTOLUENE	330	4800	4570	4.9	±20
N-NITROSO-DI-N-PROPYLAMINE	330	4750	4840	1.9	±20
PYRENE	330	4400	4440	0.9	±20
1,2,4-TRICHLOROBENZENE	330	5130	5220	1.7	±20
4-CHLORO-3-METHYLPHENOL	330	10300	10100	2.0	±20
2-CHLOROPHENOL	660	10300	10500	1.9	±20
4-NITROPHENOL	1600	9700	9730	0.3	±20
PENTACHLOROPHENOL	1600	10100	10200	1.0	±20
PHENOL	660	10300	10000	3.0	±20

NOTES:
ND = NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
D = DETECTED

K PRIME, Inc.

CONSULTING ANALYTICAL CHEMISTS

3621 Westwind Blvd.
Santa Rosa CA 95403
Phone: 707 527 7574
FAX: 707 527 7879

TRANSMITTAL

DATE: 10/14/2010

TO: MR. PETER KRASNOFF
WEST ENVIRONMENTAL S&T
711 GRAND AVENUE, SUITE 220
SAN RAFAEL, CA 94901

Phone: 415-460-6770
Fax: 415-460-6771
Email: main@westenvironmental.com

ACCT: 9946
PROJ: RC.CHEMICAL

FROM: Richard A. Kagel, Ph.D.
Laboratory Director RAK 10/14/2010

SUBJECT: LABORATORY RESULTS FOR YOUR PROJECT RC.CHEMICAL

Enclosed please find K Prime's laboratory reports for the following samples:

SAMPLE ID	TYPE	DATE	TIME	KPI LAB #
W-4	AIR	10/07/10	11:23	85701
W-4	WATER	10/07/10	12:10	85702
W-13	WATER	10/07/10	13:00	85703
W-1-1	SOIL	10/07/10	13:55	85704
W-1-3	SOIL	10/07/10	13:57	85705
W-2	AIR	10/07/10	14:23	85706
W-19-3	SOIL	10/07/10	14:20	85707
W-19-6	SOIL	10/07/10	14:25	85708
W-14	AIR	10/07/10	15:55	85709
W-9	AIR	10/07/10	16:13	85710
W-22-3	SOIL	10/07/10	16:10	85711
W-22-6	SOIL	10/07/10	16:15	85712
W-14-1	SOIL	10/07/10	16:30	85713
W-14-3	SOIL	10/07/10	16:33	85714
W-15	AIR	10/07/10	16:45	85715
W-18-1	SOIL	10/08/10	8:15	85716
W-18-3	SOIL	10/08/10	8:18	85717
W-18	WATER	10/08/10	9:00	85718
W-11	AIR	10/08/10	9:07	85719
W-23-1	SOIL	10/08/10	9:35	85720
W-23-3	SOIL	10/08/10	9:37	85721
W-10	AIR	10/08/10	10:38	85722
W-8	AIR	10/08/10	10:54	85723
W-9	WATER	10/08/10	11:05	85724
W-10-1	SOIL	10/08/10	11:35	85725
W-10-3	SOIL	10/08/10	11:38	85726
TRIP BLANK	WATER	NA	NA	85727

The above listed sample group was received on 10/08/10 and tested as requested on the chain of custody document.

Please call me if you have any questions or need further information.
Thank you for this opportunity to be of service.

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

SAMPLE ID:	W-4
LAB NO:	85701
SAMPLE TYPE:	AIR
DATE SAMPLED:	10/7/10
TIME SAMPLED:	11:23
BATCH ID:	101310A01
DATE ANALYZED:	10/13/10

		PPB (V/V)		µg/cu. m	
COMPOUND NAME	**CAS NO.**	**MRL**	**SAMPLE CONC**	**MRL**	**SAMPLE CONC**
DICHLORODIFLUOROMETHANE	75-71-8	1.00	ND	4.95	ND
DICHLOROTETRAFLUOROETHANE	76-14-2	1.00	ND	6.99	ND
CHLOROMETHANE	74-87-3	1.00	1.00	2.07	2.07
VINYL CHLORIDE	75-01-4	1.00	ND	2.56	ND
BROMOMETHANE	74-83-9	1.00	ND	3.88	ND
CHLOROETHANE	75-00-3	1.00	ND	2.64	ND
TRICHLOROFLUOROMETHANE	75-69-4	1.00	ND	5.62	ND
1,1-DICHLOROETHENE	75-35-4	1.00	ND	3.97	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	1.00	ND	7.66	ND
METHYLENE CHLORIDE	75-09-2	1.00	ND	3.47	ND
1,1-DICHLOROETHANE	75-34-3	1.00	ND	4.05	ND
CIS-1,2-DICHLOROETHENE	156-59-2	1.00	ND	3.97	ND
CHLOROFORM	67-66-3	1.00	ND	4.88	ND
1,1,1-TRICHLOROETHANE	71-55-6	1.00	ND	5.46	ND
CARBON TETRACHLORIDE	56-23-5	1.00	ND	6.29	ND
1,2-DICHLOROETHANE	107-06-2	1.00	ND	4.05	ND
BENZENE	71-43-2	1.00	1.82	3.19	5.81
TRICHLOROETHENE	79-01-6	1.00	ND	5.37	ND
1,2-DICHLOROPROPANE	78-87-5	1.00	ND	4.62	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	1.00	ND	4.54	ND
TOLUENE	108-88-3	1.00	2.40	3.77	9.04
CIS-1,3-DICHLOROPROPENE	10061-01-5	1.00	ND	4.54	ND
1,1,2-TRICHLOROETHANE	79-00-5	1.00	ND	5.46	ND
TETRACHLOROETHENE	127-18-4	1.00	ND	6.78	ND
1,2-DIBROMOETHANE	106-93-4	1.00	ND	7.68	ND
CHLOROBENZENE	108-90-7	1.00	ND	4.60	ND
ETHYLBENZENE	100-41-4	1.00	ND	4.34	ND
XYLENE (M+P)	1330-20-7	1.00	1.18	4.34	5.12
XYLENE (O)	95-47-6	1.00	ND	4.34	ND
STYRENE	100-42-5	1.00	ND	4.26	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	1.00	ND	6.87	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	1.00	ND	4.92	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	1.00	ND	4.92	ND
1,3-DICHLOROBENZENE	541-73-1	1.00	ND	6.01	ND
1,4-DICHLOROBENZENE	106-46-7	1.00	ND	6.01	ND
1,2-DICHLOROBENZENE	95-50-1	1.00	ND	6.01	ND
1,2,4-TRICHLOROBENZENE	120-82-1	2.00	ND	14.8	ND
HEXACHLOROBUTADIENE	87-68-3	1.00	ND	10.7	ND

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
MRL - METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
µg/cu. m VALUES ARE CALCULATED FROM PPB RESULTS USING NORMAL TEMPERATURE AND PRESSURE (NPT).

APPROVED BY: MC
DATE: 10/14/10

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

SAMPLE ID:	W-2
LAB NO:	85706
SAMPLE TYPE:	AIR
DATE SAMPLED:	10/7/10
TIME SAMPLED:	14:23
BATCH ID:	101310A01
DATE ANALYZED:	10/14/10

		PPB (V/V)		µg/cu. m	
COMPOUND NAME	**CAS NO.**	**MRL**	**SAMPLE CONC**	**MRL**	**SAMPLE CONC**
DICHLORODIFLUOROMETHANE	75-71-8	1.00	ND	4.95	ND
DICHLOROTETRAFLUOROETHANE	76-14-2	1.00	ND	6.99	ND
CHLOROMETHANE	74-87-3	1.00	1.15	2.07	2.37
VINYL CHLORIDE	75-01-4	1.00	ND	2.56	ND
BROMOMETHANE	74-83-9	1.00	ND	3.88	ND
CHLOROETHANE	75-00-3	1.00	ND	2.64	ND
TRICHLOROFLUOROMETHANE	75-69-4	1.00	ND	5.62	ND
1,1-DICHLOROETHENE	75-35-4	1.00	ND	3.97	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	1.00	ND	7.66	ND
METHYLENE CHLORIDE	75-09-2	1.00	ND	3.47	ND
1,1-DICHLOROETHANE	75-34-3	1.00	ND	4.05	ND
CIS-1,2-DICHLOROETHENE	156-59-2	1.00	ND	3.97	ND
CHLOROFORM	67-66-3	1.00	ND	4.88	ND
1,1,1-TRICHLOROETHANE	71-55-6	1.00	ND	5.46	ND
CARBON TETRACHLORIDE	56-23-5	1.00	ND	6.29	ND
1,2-DICHLOROETHANE	107-06-2	1.00	ND	4.05	ND
BENZENE	71-43-2	1.00	9.39	3.19	30.0
TRICHLOROETHENE	79-01-6	1.00	ND	5.37	ND
1,2-DICHLOROPROPANE	78-87-5	1.00	ND	4.62	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	1.00	ND	4.54	ND
TOLUENE	108-88-3	1.00	7.87	3.77	29.7
CIS-1,3-DICHLOROPROPENE	10061-01-5	1.00	ND	4.54	ND
1,1,2-TRICHLOROETHANE	79-00-5	1.00	ND	5.46	ND
TETRACHLOROETHENE	127-18-4	1.00	ND	6.78	ND
1,2-DIBROMOETHANE	106-93-4	1.00	ND	7.68	ND
CHLOROBENZENE	108-90-7	1.00	ND	4.60	ND
ETHYLBENZENE	100-41-4	1.00	1.22	4.34	5.30
XYLENE (M+P)	1330-20-7	1.00	3.36	4.34	14.6
XYLENE (O)	95-47-6	1.00	1.73	4.34	7.51
STYRENE	100-42-5	1.00	ND	4.26	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	1.00	ND	6.87	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	1.00	ND	4.92	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	1.00	1.73	4.92	8.50
1,3-DICHLOROBENZENE	541-73-1	1.00	ND	6.01	ND
1,4-DICHLOROBENZENE	106-46-7	1.00	ND	6.01	ND
1,2-DICHLOROBENZENE	95-50-1	1.00	ND	6.01	ND
1,2,4-TRICHLOROBENZENE	120-82-1	2.00	ND	14.8	ND
HEXACHLOROBUTADIENE	87-68-3	1.00	ND	10.7	ND

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
MRL - METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
µg/cu. m VALUES ARE CALCULATED FROM PPB RESULTS USING NORMAL TEMPERATURE AND PRESSURE (NPT).

APPROVED BY: MRC
DATE: 10/14/10

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

SAMPLE ID:	W-14
LAB NO:	85709
SAMPLE TYPE:	AIR
DATE SAMPLED:	10/7/10
TIME SAMPLED:	15:55
BATCH ID:	101310A01
DATE ANALYZED:	10/14/10

		PPB (V/V)		µg/cu. m	
COMPOUND NAME	**CAS NO.**	**MRL**	**SAMPLE CONC**	**MRL**	**SAMPLE CONC**
DICHLORODIFLUOROMETHANE	75-71-8	5.00	ND	24.7	ND
DICHLOROTETRAFLUOROETHANE	76-14-2	5.00	ND	35.0	ND
CHLOROMETHANE	74-87-3	5.00	ND	10.3	ND
VINYL CHLORIDE	75-01-4	5.00	ND	12.8	ND
BROMOMETHANE	74-83-9	5.00	ND	19.4	ND
CHLOROETHANE	75-00-3	5.00	ND	13.2	ND
TRICHLOROFLUOROMETHANE	75-69-4	5.00	ND	28.1	ND
1,1-DICHLOROETHENE	75-35-4	5.00	ND	19.8	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	5.00	ND	38.3	ND
METHYLENE CHLORIDE	75-09-2	5.00	ND	17.4	ND
1,1-DICHLOROETHANE	75-34-3	5.00	ND	20.2	ND
CIS-1,2-DICHLOROETHENE	156-59-2	5.00	ND	19.8	ND
CHLOROFORM	67-66-3	5.00	ND	24.4	ND
1,1,1-TRICHLOROETHANE	71-55-6	5.00	ND	27.3	ND
CARBON TETRACHLORIDE	56-23-5	5.00	ND	31.5	ND
1,2-DICHLOROETHANE	107-06-2	5.00	ND	20.2	ND
BENZENE	71-43-2	5.00	ND	16.0	ND
TRICHLOROETHENE	79-01-6	5.00	ND	26.9	ND
1,2-DICHLOROPROPANE	78-87-5	5.00	ND	23.1	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	5.00	ND	22.7	ND
TOLUENE	108-88-3	5.00	ND	18.8	ND
CIS-1,3-DICHLOROPROPENE	10061-01-5	5.00	ND	22.7	ND
1,1,2-TRICHLOROETHANE	79-00-5	5.00	ND	27.3	ND
TETRACHLOROETHENE	127-18-4	5.00	ND	33.9	ND
1,2-DIBROMOETHANE	106-93-4	5.00	ND	38.4	ND
CHLOROBENZENE	108-90-7	5.00	ND	23.0	ND
ETHYLBENZENE	100-41-4	5.00	ND	21.7	ND
XYLENE (M+P)	1330-20-7	5.00	ND	21.7	ND
XYLENE (O)	95-47-6	5.00	ND	21.7	ND
STYRENE	100-42-5	5.00	ND	21.3	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	5.00	ND	34.3	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	5.00	ND	24.6	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	5.00	ND	24.6	ND
1,3-DICHLOROBENZENE	541-73-1	5.00	ND	30.1	ND
1,4-DICHLOROBENZENE	106-46-7	5.00	ND	30.1	ND
1,2-DICHLOROBENZENE	95-50-1	5.00	ND	30.1	ND
1,2,4-TRICHLOROBENZENE	120-82-1	10.0	ND	74.2	ND
HEXACHLOROBUTADIENE	87-68-3	5.00	ND	53.3	ND

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
MRL - METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
µg/cu. m VALUES ARE CALCULATED FROM PPB RESULTS USING NORMAL TEMPERATURE AND PRESSURE (NPT).

APPROVED BY: _____
DATE: 10/19/10

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

SAMPLE ID:	W-9
LAB NO:	85710
SAMPLE TYPE:	AIR
DATE SAMPLED:	10/7/10
TIME SAMPLED:	16:13
BATCH ID:	101310A01
DATE ANALYZED:	10/14/10

		PPB (V/V)		µg/cu. m	
COMPOUND NAME	**CAS NO.**	**MRL**	**SAMPLE CONC**	**MRL**	**SAMPLE CONC**
DICHLORODIFLUOROMETHANE	75-71-8	5.00	ND	24.7	ND
DICHLOROTETRAFLUOROETHANE	76-14-2	5.00	ND	35.0	ND
CHLOROMETHANE	74-87-3	5.00	ND	10.3	ND
VINYL CHLORIDE	75-01-4	5.00	ND	12.8	ND
BROMOMETHANE	74-83-9	5.00	ND	19.4	ND
CHLOROETHANE	75-00-3	5.00	ND	13.2	ND
TRICHLOROFLUOROMETHANE	75-69-4	5.00	ND	28.1	ND
1,1-DICHLOROETHENE	75-35-4	5.00	ND	19.8	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	5.00	ND	38.3	ND
METHYLENE CHLORIDE	75-09-2	5.00	ND	17.4	ND
1,1-DICHLOROETHANE	75-34-3	5.00	ND	20.2	ND
CIS-1,2-DICHLOROETHENE	156-59-2	5.00	ND	19.8	ND
CHLOROFORM	67-66-3	5.00	ND	24.4	ND
1,1,1-TRICHLOROETHANE	71-55-6	5.00	ND	27.3	ND
CARBON TETRACHLORIDE	56-23-5	5.00	ND	31.5	ND
1,2-DICHLOROETHANE	107-06-2	5.00	ND	20.2	ND
BENZENE	71-43-2	5.00	27.7	16.0	88.6
TRICHLOROETHENE	79-01-6	5.00	ND	26.9	ND
1,2-DICHLOROPROPANE	78-87-5	5.00	ND	23.1	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	5.00	ND	22.7	ND
TOLUENE	108-88-3	5.00	6.13	18.8	23.1
CIS-1,3-DICHLOROPROPENE	10061-01-5	5.00	ND	22.7	ND
1,1,2-TRICHLOROETHANE	79-00-5	5.00	ND	27.3	ND
TETRACHLOROETHENE	127-18-4	5.00	ND	33.9	ND
1,2-DIBROMOETHANE	106-93-4	5.00	ND	38.4	ND
CHLOROBENZENE	108-90-7	5.00	ND	23.0	ND
ETHYLBENZENE	100-41-4	5.00	ND	21.7	ND
XYLENE (M+P)	1330-20-7	5.00	ND	21.7	ND
XYLENE (O)	95-47-6	5.00	ND	21.7	ND
STYRENE	100-42-5	5.00	ND	21.3	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	5.00	ND	34.3	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	5.00	ND	24.6	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	5.00	ND	24.6	ND
1,3-DICHLOROBENZENE	541-73-1	5.00	ND	30.1	ND
1,4-DICHLOROBENZENE	106-46-7	5.00	ND	30.1	ND
1,2-DICHLOROBENZENE	95-50-1	5.00	ND	30.1	ND
1,2,4-TRICHLOROBENZENE	120-82-1	10.0	ND	74.2	ND
HEXACHLOROBUTADIENE	87-68-3	5.00	ND	53.3	ND

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
MRL - METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
µg/cu. m VALUES ARE CALCULATED FROM PPB RESULTS USING NORMAL TEMPERATURE AND PRESSURE (NPT).

APPROVED BY: MM
DATE: 10/14/10

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

SAMPLE ID:	W-15
LAB NO:	85715
SAMPLE TYPE:	AIR
DATE SAMPLED:	10/7/10
TIME SAMPLED:	16:45
BATCH ID:	101310A01
DATE ANALYZED:	10/13/10

		PPB (V/V)		µg/cu. m	
COMPOUND NAME	**CAS NO.**	**MRL**	**SAMPLE CONC**	**MRL**	**SAMPLE CONC**
DICHLORODIFLUOROMETHANE	75-71-8	1.00	ND	4.95	ND
DICHLOROTETRAFLUOROETHANE	76-14-2	1.00	ND	6.99	ND
CHLOROMETHANE	74-87-3	1.00	1.06	2.07	2.19
VINYL CHLORIDE	75-01-4	1.00	1.49	2.56	3.81
BROMOMETHANE	74-83-9	1.00	ND	3.88	ND
CHLOROETHANE	75-00-3	1.00	ND	2.64	ND
TRICHLOROFLUOROMETHANE	75-69-4	1.00	ND	5.62	ND
1,1-DICHLOROETHENE	75-35-4	1.00	ND	3.97	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	1.00	ND	7.66	ND
METHYLENE CHLORIDE	75-09-2	1.00	ND	3.47	ND
1,1-DICHLOROETHANE	75-34-3	1.00	ND	4.05	ND
CIS-1,2-DICHLOROETHENE	156-59-2	1.00	ND	3.97	ND
CHLOROFORM	67-66-3	1.00	ND	4.88	ND
1,1,1-TRICHLOROETHANE	71-55-6	1.00	ND	5.46	ND
CARBON TETRACHLORIDE	56-23-5	1.00	ND	6.29	ND
1,2-DICHLOROETHANE	107-06-2	1.00	ND	4.05	ND
BENZENE	71-43-2	1.00	4.92	3.19	15.7
TRICHLOROETHENE	79-01-6	1.00	ND	5.37	ND
1,2-DICHLOROPROPANE	78-87-5	1.00	ND	4.62	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	1.00	ND	4.54	ND
TOLUENE	108-88-3	1.00	2.88	3.77	10.9
CIS-1,3-DICHLOROPROPENE	10061-01-5	1.00	ND	4.54	ND
1,1,2-TRICHLOROETHANE	79-00-5	1.00	ND	5.46	ND
TETRACHLOROETHENE	127-18-4	1.00	ND	6.78	ND
1,2-DIBROMOETHANE	106-93-4	1.00	ND	7.68	ND
CHLOROBENZENE	108-90-7	1.00	ND	4.60	ND
ETHYLBENZENE	100-41-4	1.00	ND	4.34	ND
XYLENE (M+P)	1330-20-7	1.00	1.44	4.34	6.25
XYLENE (O)	95-47-6	1.00	ND	4.34	ND
STYRENE	100-42-5	1.00	ND	4.26	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	1.00	ND	6.87	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	1.00	ND	4.92	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	1.00	ND	4.92	ND
1,3-DICHLOROBENZENE	541-73-1	1.00	ND	6.01	ND
1,4-DICHLOROBENZENE	106-46-7	1.00	ND	6.01	ND
1,2-DICHLOROBENZENE	95-50-1	1.00	ND	6.01	ND
1,2,4-TRICHLOROBENZENE	120-82-1	2.00	ND	14.8	ND
HEXACHLOROBUTADIENE	87-68-3	1.00	ND	10.7	ND

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
MRL - METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
µg/cu. m VALUES ARE CALCULATED FROM PPB RESULTS USING NORMAL TEMPERATURE AND PRESSURE (NPT).

APPROVED BY: _____
DATE: 10/14/10

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

SAMPLE ID:	W-11
LAB NO:	85719
SAMPLE TYPE:	AIR
DATE SAMPLED:	10/8/10
TIME SAMPLED:	9:07
BATCH ID:	101310A01
DATE ANALYZED:	10/14/10

		PPB (V/V)		µg/cu. m	
COMPOUND NAME	**CAS NO.**	**MRL**	**SAMPLE CONC**	**MRL**	**SAMPLE CONC**
DICHLORODIFLUOROMETHANE	75-71-8	1.00	ND	4.95	ND
DICHLOROTETRAFLUOROETHANE	76-14-2	1.00	ND	6.99	ND
CHLOROMETHANE	74-87-3	1.00	6.74	2.07	13.9
VINYL CHLORIDE	75-01-4	1.00	1.67	2.56	4.27
BROMOMETHANE	74-83-9	1.00	ND	3.88	ND
CHLOROETHANE	75-00-3	1.00	ND	2.64	ND
TRICHLOROFLUOROMETHANE	75-69-4	1.00	ND	5.62	ND
1,1-DICHLOROETHENE	75-35-4	1.00	3.86	3.97	15.3
TRICHLOROTRIFLUOROETHANE	76-13-1	1.00	ND	7.66	ND
METHYLENE CHLORIDE	75-09-2	1.00	ND	3.47	ND
1,1-DICHLOROETHANE	75-34-3	1.00	ND	4.05	ND
CIS-1,2-DICHLOROETHENE	156-59-2	1.00	34.3	3.97	136
CHLOROFORM	67-66-3	1.00	1.29	4.88	6.30
1,1,1-TRICHLOROETHANE	71-55-6	1.00	ND	5.46	ND
CARBON TETRACHLORIDE	56-23-5	1.00	ND	6.29	ND
1,2-DICHLOROETHANE	107-06-2	1.00	ND	4.05	ND
BENZENE	71-43-2	1.00	35.4	3.19	113
TRICHLOROETHENE	79-01-6	1.00	85.4	5.37	459
1,2-DICHLOROPROPANE	78-87-5	1.00	ND	4.62	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	1.00	ND	4.54	ND
TOLUENE	108-88-3	1.00	22.3	3.77	83.8
CIS-1,3-DICHLOROPROPENE	10061-01-5	1.00	ND	4.54	ND
1,1,2-TRICHLOROETHANE	79-00-5	1.00	ND	5.46	ND
TETRACHLOROETHENE	127-18-4	1.00	101	6.78	685
1,2-DIBROMOETHANE	106-93-4	1.00	ND	7.68	ND
CHLOROBENZENE	108-90-7	1.00	ND	4.60	ND
ETHYLBENZENE	100-41-4	1.00	6.10	4.34	26.5
XYLENE (M+P)	1330-20-7	1.00	20.1	4.34	87.3
XYLENE (O)	95-47-6	1.00	6.62	4.34	28.7
STYRENE	100-42-5	1.00	1.34	4.26	5.71
1,1,2,2-TETRACHLOROETHANE	79-34-5	1.00	ND	6.87	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	1.00	6.07	4.92	29.8
1,2,4-TRIMETHYLBENZENE	95-63-6	1.00	10.9	4.92	53.7
1,3-DICHLOROBENZENE	541-73-1	1.00	ND	6.01	ND
1,4-DICHLOROBENZENE	106-46-7	1.00	ND	6.01	ND
1,2-DICHLOROBENZENE	95-50-1	1.00	ND	6.01	ND
1,2,4-TRICHLOROBENZENE	120-82-1	2.00	ND	14.8	ND
HEXACHLOROBUTADIENE	87-68-3	1.00	ND	10.7	ND

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
MRL - METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
µg/cu. m VALUES ARE CALCULATED FROM PPB RESULTS USING NORMAL TEMPERATURE AND PRESSURE (NPT).

APPROVED BY: _____
DATE: 10/14/10

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

SAMPLE ID:	W-10
LAB NO:	85722
SAMPLE TYPE:	AIR
DATE SAMPLED:	10/8/10
TIME SAMPLED:	10:38
BATCH ID:	101310A01
DATE ANALYZED:	10/14/10

		PPB (V/V)		µg/cu. m	
COMPOUND NAME	**CAS NO.**	**MRL**	**SAMPLE CONC**	**MRL**	**SAMPLE CONC**
DICHLORODIFLUOROMETHANE	75-71-8	5.00	ND	24.7	ND
DICHLOROTETRAFLUOROETHANE	76-14-2	5.00	ND	35.0	ND
CHLOROMETHANE	74-87-3	5.00	ND	10.3	ND
VINYL CHLORIDE	75-01-4	5.00	ND	12.8	ND
BROMOMETHANE	74-83-9	5.00	ND	19.4	ND
CHLOROETHANE	75-00-3	5.00	ND	13.2	ND
TRICHLOROFLUOROMETHANE	75-69-4	5.00	ND	28.1	ND
1,1-DICHLOROETHENE	75-35-4	5.00	ND	19.8	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	5.00	ND	38.3	ND
METHYLENE CHLORIDE	75-09-2	5.00	ND	17.4	ND
1,1-DICHLOROETHANE	75-34-3	5.00	ND	20.2	ND
CIS-1,2-DICHLOROETHENE	156-59-2	5.00	ND	19.8	ND
CHLOROFORM	67-66-3	5.00	ND	24.4	ND
1,1,1-TRICHLOROETHANE	71-55-6	5.00	ND	27.3	ND
CARBON TETRACHLORIDE	56-23-5	5.00	ND	31.5	ND
1,2-DICHLOROETHANE	107-06-2	5.00	ND	20.2	ND
BENZENE	71-43-2	5.00	13.7	16.0	43.9
TRICHLOROETHENE	79-01-6	5.00	ND	26.9	ND
1,2-DICHLOROPROPANE	78-87-5	5.00	ND	23.1	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	5.00	ND	22.7	ND
TOLUENE	108-88-3	5.00	5.67	18.8	21.4
CIS-1,3-DICHLOROPROPENE	10061-01-5	5.00	ND	22.7	ND
1,1,2-TRICHLOROETHANE	79-00-5	5.00	ND	27.3	ND
TETRACHLOROETHENE	127-18-4	5.00	ND	33.9	ND
1,2-DIBROMOETHANE	106-93-4	5.00	ND	38.4	ND
CHLOROBENZENE	108-90-7	5.00	6.07	23.0	27.9
ETHYLBENZENE	100-41-4	5.00	ND	21.7	ND
XYLENE (M+P)	1330-20-7	5.00	ND	21.7	ND
XYLENE (O)	95-47-6	5.00	ND	21.7	ND
STYRENE	100-42-5	5.00	ND	21.3	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	5.00	ND	34.3	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	5.00	ND	24.6	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	5.00	ND	24.6	ND
1,3-DICHLOROBENZENE	541-73-1	5.00	ND	30.1	ND
1,4-DICHLOROBENZENE	106-46-7	5.00	ND	30.1	ND
1,2-DICHLOROBENZENE	95-50-1	5.00	ND	30.1	ND
1,2,4-TRICHLOROBENZENE	120-82-1	10.0	ND	74.2	ND
HEXACHLOROBUTADIENE	87-68-3	5.00	ND	53.3	ND

NOTES:
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MRL - METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
µg/cu. m VALUES ARE CALCULATED FROM PPB RESULTS USING NORMAL TEMPERATURE AND PRESSURE (NPT).

APPROVED BY: MMC
DATE: 10/14/10

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

SAMPLE ID:	W-8
LAB NO:	85723
SAMPLE TYPE:	AIR
DATE SAMPLED:	10/8/10
TIME SAMPLED:	10:54
BATCH ID:	101310A01
DATE ANALYZED:	10/14/10

		PPB (V/V)		µg/cu. m	
COMPOUND NAME	**CAS NO.**	**MRL**	**SAMPLE CONC**	**MRL**	**SAMPLE CONC**
DICHLORODIFLUOROMETHANE	75-71-8	5.00	ND	24.7	ND
DICHLOROTETRAFLUOROETHANE	76-14-2	5.00	ND	35.0	ND
CHLOROMETHANE	74-87-3	5.00	ND	10.3	ND
VINYL CHLORIDE	75-01-4	5.00	ND	12.8	ND
BROMOMETHANE	74-83-9	5.00	ND	19.4	ND
CHLOROETHANE	75-00-3	5.00	ND	13.2	ND
TRICHLOROFLUOROMETHANE	75-69-4	5.00	ND	28.1	ND
1,1-DICHLOROETHENE	75-35-4	5.00	ND	19.8	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	5.00	ND	38.3	ND
METHYLENE CHLORIDE	75-09-2	5.00	ND	17.4	ND
1,1-DICHLOROETHANE	75-34-3	5.00	ND	20.2	ND
CIS-1,2-DICHLOROETHENE	156-59-2	5.00	ND	19.8	ND
CHLOROFORM	67-66-3	5.00	ND	24.4	ND
1,1,1-TRICHLOROETHANE	71-55-6	5.00	ND	27.3	ND
CARBON TETRACHLORIDE	56-23-5	5.00	ND	31.5	ND
1,2-DICHLOROETHANE	107-06-2	5.00	ND	20.2	ND
BENZENE	71-43-2	5.00	ND	16.0	ND
TRICHLOROETHENE	79-01-6	5.00	ND	26.9	ND
1,2-DICHLOROPROPANE	78-87-5	5.00	ND	23.1	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	5.00	ND	22.7	ND
TOLUENE	108-88-3	5.00	ND	18.8	ND
CIS-1,3-DICHLOROPROPENE	10061-01-5	5.00	ND	22.7	ND
1,1,2-TRICHLOROETHANE	79-00-5	5.00	ND	27.3	ND
TETRACHLOROETHENE	127-18-4	5.00	ND	33.9	ND
1,2-DIBROMOETHANE	106-93-4	5.00	ND	38.4	ND
CHLOROBENZENE	108-90-7	5.00	ND	23.0	ND
ETHYLBENZENE	100-41-4	5.00	ND	21.7	ND
XYLENE (M+P)	1330-20-7	5.00	ND	21.7	ND
XYLENE (O)	95-47-6	5.00	ND	21.7	ND
STYRENE	100-42-5	5.00	ND	21.3	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	5.00	ND	34.3	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	5.00	ND	24.6	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	5.00	ND	24.6	ND
1,3-DICHLOROBENZENE	541-73-1	5.00	ND	30.1	ND
1,4-DICHLOROBENZENE	106-46-7	5.00	ND	30.1	ND
1,2-DICHLOROBENZENE	95-50-1	5.00	ND	30.1	ND
1,2,4-TRICHLOROBENZENE	120-82-1	10.0	ND	74.2	ND
HEXACHLOROBUTADIENE	87-68-3	5.00	ND	53.3	ND

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
MRL - METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
µg/cu. m VALUES ARE CALCULATED FROM PPB RESULTS USING NORMAL TEMPERATURE AND PRESSURE (NPT).

APPROVED BY: MK
DATE: 10/14/10

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

METHOD: GRO-GASOLINE RANGE ORGANICS
REFERENCE: EPA 8015B

SAMPLE TYPE: WATER
UNITS: mg/L

SAMPLE ID	LAB NO.	DATE SAMPLED	TIME SAMPLED	BATCH ID	DATE ANALYZED	MRL	SAMPLE CONC	GRO PATTERN
W-4	85702	10/7/2010	12:10	092710W1	10/9/2010	0.050	ND	
W-13	85703	10/7/2010	13:00	092710W1	10/9/2010	0.050	ND	
W-18	85718	10/8/2010	09:00	092710W1	10/9/2010	0.050	ND	
W-9	85724	10/8/2010	11:05	092710W1	10/9/2010	0.050	ND	

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
MRL - METHOD REPORTING LIMIT
AE - UNKNOWN HYDROCARBON WITH A SINGLE PEAK
AN - UNKNOWN HYDROCARBON WITH SEVERAL PEAKS
AS - HEAVIER HYDROCARBON THAN GASOLINE CONTRIBUTING TO GRO VALUE
CO - HYDROCARBON RESPONSE IN GASOLINE RANGE BUT DOES NOT RESEMBLE GASOLINE

APPROVED BY: ch
DATE: 10/14/2010

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

METHOD: GRO-GASOLINE RANGE ORGANICS
REFERENCE: EPA 8015B

SAMPLE TYPE: SOIL
UNITS: mg/Kg

SAMPLE ID	LAB NO.	DATE SAMPLED	TIME SAMPLED	BATCH ID	DATE ANALYZED	MRL	SAMPLE CONC	GRO PATTERN
W-19-3	85707	10/7/2010	14:20	100710S1	10/11/2010	1.00	ND	
W-19-6	85708	10/7/2010	14:25	100710S1	10/11/2010	1.00	ND	
W-22-3	85711	10/7/2010	16:10	100710S1	10/11/2010	1.00	ND	
W-22-6	85712	10/7/2010	16:15	100710S1	10/11/2010	1.00	ND	

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
MRL - METHOD REPORTING LIMIT
AE - UNKNOWN HYDROCARBON WITH A SINGLE PEAK
AN - UNKNOWN HYDROCARBON WITH SEVERAL PEAKS
AS - HEAVIER HYDROCARBON THAN GASOLINE CONTRIBUTING TO GRO VALUE
CO - HYDROCARBON RESPONSE IN GASOLINE RANGE BUT DOES NOT RESEMBLE GASOLINE

APPROVED BY: ch
DATE: 10/14/2010

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

SAMPLE ID: W-4
LAB NO: 85702
DATE SAMPLED: 10/7/2010
TIME SAMPLED: 12:10
BATCH #: 100810W1
DATE ANALYZED: 10/12/2010

METHOD: VOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 5030/8260

SAMPLE TYPE: WATER
UNITS: ug/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
DICHLORODIFLUOROMETHANE	75-71-8	0.500	ND
CHLOROMETHANE	74-87-3	0.500	ND
VINYL CHLORIDE	75-01-4	0.500	ND
BROMOMETHANE	74-83-9	0.500	ND
CHLOROETHANE	75-00-3	0.500	ND
TRICHLOROFLUOROMETHANE	75-69-4	0.500	ND
1,1-DICHLOROETHENE	75-35-4	0.500	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	0.500	ND
METHYLENE CHLORIDE	75-09-2	2.50	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	0.500	ND
1,1-DICHLOROETHANE	75-34-3	0.500	ND
CIS-1,2-DICHLOROETHENE	156-59-2	0.500	ND
2,2-DICHLOROPROPANE	594-20-7	0.500	ND
BROMOCHLOROMETHANE	74-97-5	0.500	ND
CHLOROFORM	67-66-3	0.500	ND
1,1,1-TRICHLOROETHANE	71-55-6	0.500	ND
CARBON TETRACHLORIDE	56-23-5	0.500	ND
1,1-DICHLOROPROPENE	563-58-6	0.500	ND
BENZENE	71-43-2	0.500	ND
1,2-DICHLOROETHANE	107-06-2	0.500	ND
TRICHLOROETHENE	79-01-6	0.500	ND
1,2-DICHLOROPROPANE	78-87-5	0.500	ND
DIBROMOMETHANE	74-95-3	0.500	ND
BROMODICHLOROMETHANE	75-27-4	0.500	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	0.500	ND
TOLUENE	108-88-3	0.500	ND
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.500	ND
1,1,2-TRICHLOROETHANE	79-00-5	0.500	ND
TETRACHLOROETHENE	127-18-4	0.500	ND
1,3-DICHLOROPROPANE	142-28-9	0.500	ND
DIBROMOCHLOROMETHANE	124-48-1	0.500	ND
1,2-DIBROMOETHANE	106-93-4	0.500	ND
CHLOROBENZENE	108-90-7	0.500	ND
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.500	ND
ETHYLBENZENE	100-41-4	0.500	ND
XYLENE (M+P)	1330-20-7	0.500	ND
XYLENE (O)	1330-20-7	0.500	ND
STYRENE	100-42-5	0.500	ND
BROMOFORM	75-25-2	0.500	ND
ISOPROPYLBENZENE	98-82-8	0.500	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.500	ND
BROMOBENZENE	108-86-1	0.500	ND
1,2,3-TRICHLOROPROPANE	96-18-4	0.500	ND
N-PROPYLBENZENE	103-65-1	0.500	ND
2-CHLOROTOLUENE	95-49-8	0.500	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	0.500	ND

K PRIME, INC.
LABORATORY REPORT

SAMPLE ID: W-4
LAB NO: 85702
DATE SAMPLED: 10/7/2010
TIME SAMPLED: 12:10
BATCH #: 100810W1
DATE ANALYZED: 10/12/2010

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

METHOD: VOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 5030/8260

SAMPLE TYPE: WATER
UNITS: ug/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
4-CHLOROTOLUENE	106-43-4	0.500	ND
TERT-BUTYLBENZENE	98-06-6	0.500	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	0.500	ND
SEC-BUTYLBENZENE	135-98-8	0.500	ND
1,3-DICHLOROBENZENE	541-73-1	0.500	ND
4-ISOPROPYLTOLUENE	99-87-6	0.500	ND
1,4-DICHLOROBENZENE	106-46-7	0.500	ND
N-BUTYLBENZENE	104-51-8	0.500	ND
1,2-DICHLOROBENZENE	95-50-1	0.500	ND
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	0.500	ND
1,2,4-TRICHLOROBENZENE	120-82-1	1.00	ND
HEXACHLOROBUTADIENE	87-68-3	1.00	ND
NAPHTHALENE	91-20-3	1.00	ND
1,2,3-TRICHLOROBENZENE	87-61-6	1.00	ND
1,4-DIOXANE	123-91-1	50.0	ND

SURROGATE RECOVERY	%
DIBROMOFLUOROMETHANE	102
TOLUENE-D8	102
4-BROMOFLUOROBENZENE	95

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA -NOT APPLICABLE OR AVAILABLE

APPROVED BY: ch
DATE: 10/14/2010

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

SAMPLE ID: W-13
LAB NO: 85703
DATE SAMPLED: 10/7/2010
TIME SAMPLED: 13:00
BATCH #: 100810W1
DATE ANALYZED: 10/12/2010

METHOD: VOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 5030/8260

SAMPLE TYPE: WATER
UNITS: ug/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
DICHLORODIFLUOROMETHANE	75-71-8	0.500	ND
CHLOROMETHANE	74-87-3	0.500	ND
VINYL CHLORIDE	75-01-4	0.500	ND
BROMOMETHANE	74-83-9	0.500	ND
CHLOROETHANE	75-00-3	0.500	ND
TRICHLOROFLUOROMETHANE	75-69-4	0.500	ND
1,1-DICHLOROETHENE	75-35-4	0.500	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	0.500	ND
METHYLENE CHLORIDE	75-09-2	2.50	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	0.500	ND
1,1-DICHLOROETHANE	75-34-3	0.500	ND
CIS-1,2-DICHLOROETHENE	156-59-2	0.500	ND
2,2-DICHLOROPROPANE	594-20-7	0.500	ND
BROMOCHLOROMETHANE	74-97-5	0.500	ND
CHLOROFORM	67-66-3	0.500	ND
1,1,1-TRICHLOROETHANE	71-55-6	0.500	ND
CARBON TETRACHLORIDE	56-23-5	0.500	ND
1,1-DICHLOROPROPENE	563-58-6	0.500	ND
BENZENE	71-43-2	0.500	ND
1,2-DICHLOROETHANE	107-06-2	0.500	ND
TRICHLOROETHENE	79-01-6	0.500	ND
1,2-DICHLOROPROPANE	78-87-5	0.500	ND
DIBROMOMETHANE	74-95-3	0.500	ND
BROMODICHLOROMETHANE	75-27-4	0.500	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	0.500	ND
TOLUENE	108-88-3	0.500	ND
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.500	ND
1,1,2-TRICHLOROETHANE	79-00-5	0.500	ND
TETRACHLOROETHENE	127-18-4	0.500	ND
1,3-DICHLOROPROPANE	142-28-9	0.500	ND
DIBROMOCHLOROMETHANE	124-48-1	0.500	ND
1,2-DIBROMOETHANE	106-93-4	0.500	ND
CHLOROBENZENE	108-90-7	0.500	ND
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.500	ND
ETHYLBENZENE	100-41-4	0.500	ND
XYLENE (M+P)	1330-20-7	0.500	ND
XYLENE (O)	1330-20-7	0.500	ND
STYRENE	100-42-5	0.500	ND
BROMOFORM	75-25-2	0.500	ND
ISOPROPYLBENZENE	98-82-8	0.500	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.500	ND
BROMOBENZENE	108-86-1	0.500	ND
1,2,3-TRICHLOROPROPANE	96-18-4	0.500	ND
N-PROPYLBENZENE	103-65-1	0.500	ND
2-CHLOROTOLUENE	95-49-8	0.500	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	0.500	ND

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

SAMPLE ID: W-13
LAB NO: 85703
DATE SAMPLED: 10/7/2010
TIME SAMPLED: 13:00
BATCH #: 100810W1
DATE ANALYZED: 10/12/2010

METHOD: VOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 5030/8260

SAMPLE TYPE: WATER
UNITS: ug/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
4-CHLOROTOLUENE	106-43-4	0.500	ND
TERT-BUTYLBENZENE	98-06-6	0.500	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	0.500	ND
SEC-BUTYLBENZENE	135-98-8	0.500	ND
1,3-DICHLOROBENZENE	541-73-1	0.500	ND
4-ISOPROPYLTOLUENE	99-87-6	0.500	ND
1,4-DICHLOROBENZENE	106-46-7	0.500	ND
N-BUTYLBENZENE	104-51-8	0.500	ND
1,2-DICHLOROBENZENE	95-50-1	0.500	ND
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	0.500	ND
1,2,4-TRICHLOROBENZENE	120-82-1	1.00	ND
HEXACHLOROBUTADIENE	87-68-3	1.00	ND
NAPHTHALENE	91-20-3	1.00	ND
1,2,3-TRICHLOROBENZENE	87-61-6	1.00	ND
1,4-DIOXANE	123-91-1	50.0	ND

SURROGATE RECOVERY	%
DIBROMOFLUOROMETHANE	105
TOLUENE-D8	100
4-BROMOFLUOROBENZENE	92

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA -NOT APPLICABLE OR AVAILABLE

APPROVED BY: ch
DATE: 10/14/2010

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

SAMPLE ID: W-18
LAB NO: 85718
DATE SAMPLED: 10/8/2010
TIME SAMPLED: 09:00
BATCH #: 100810W1
DATE ANALYZED: 10/12/2010

METHOD: VOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 5030/8260

SAMPLE TYPE: WATER
UNITS: ug/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
DICHLORODIFLUOROMETHANE	75-71-8	0.500	ND
CHLOROMETHANE	74-87-3	0.500	ND
VINYL CHLORIDE	75-01-4	0.500	ND
BROMOMETHANE	74-83-9	0.500	ND
CHLOROETHANE	75-00-3	0.500	ND
TRICHLOROFLUOROMETHANE	75-69-4	0.500	ND
1,1-DICHLOROETHENE	75-35-4	0.500	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	0.500	ND
METHYLENE CHLORIDE	75-09-2	2.50	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	0.500	ND
1,1-DICHLOROETHANE	75-34-3	0.500	ND
CIS-1,2-DICHLOROETHENE	156-59-2	0.500	ND
2,2-DICHLOROPROPANE	594-20-7	0.500	ND
BROMOCHLOROMETHANE	74-97-5	0.500	ND
CHLOROFORM	67-66-3	0.500	ND
1,1,1-TRICHLOROETHANE	71-55-6	0.500	ND
CARBON TETRACHLORIDE	56-23-5	0.500	ND
1,1-DICHLOROPROPENE	563-58-6	0.500	ND
BENZENE	71-43-2	0.500	ND
1,2-DICHLOROETHANE	107-06-2	0.500	ND
TRICHLOROETHENE	79-01-6	0.500	ND
1,2-DICHLOROPROPANE	78-87-5	0.500	ND
DIBROMOMETHANE	74-95-3	0.500	ND
BROMODICHLOROMETHANE	75-27-4	0.500	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	0.500	ND
TOLUENE	108-88-3	0.500	ND
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.500	ND
1,1,2-TRICHLOROETHANE	79-00-5	0.500	ND
TETRACHLOROETHENE	127-18-4	0.500	ND
1,3-DICHLOROPROPANE	142-28-9	0.500	ND
DIBROMOCHLOROMETHANE	124-48-1	0.500	ND
1,2-DIBROMOETHANE	106-93-4	0.500	ND
CHLOROBENZENE	108-90-7	0.500	ND
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.500	ND
ETHYLBENZENE	100-41-4	0.500	ND
XYLENE (M+P)	1330-20-7	0.500	ND
XYLENE (O)	1330-20-7	0.500	ND
STYRENE	100-42-5	0.500	ND
BROMOFORM	75-25-2	0.500	ND
ISOPROPYLBENZENE	98-82-8	0.500	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.500	ND
BROMOBENZENE	108-86-1	0.500	ND
1,2,3-TRICHLOROPROPANE	96-18-4	0.500	ND
N-PROPYLBENZENE	103-65-1	0.500	ND
2-CHLOROTOLUENE	95-49-8	0.500	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	0.500	ND

K PRIME, INC.
LABORATORY REPORT

SAMPLE ID: W-18
LAB NO: 85718
DATE SAMPLED: 10/8/2010
TIME SAMPLED: 09:00
BATCH #: 100810W1
DATE ANALYZED: 10/12/2010

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

METHOD: VOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 5030/8260

SAMPLE TYPE: WATER
UNITS: ug/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
4-CHLOROTOLUENE	106-43-4	0.500	ND
TERT-BUTYLBENZENE	98-06-6	0.500	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	0.500	ND
SEC-BUTYLBENZENE	135-98-8	0.500	ND
1,3-DICHLOROBENZENE	541-73-1	0.500	ND
4-ISOPROPYLTOLUENE	99-87-6	0.500	ND
1,4-DICHLOROBENZENE	106-46-7	0.500	ND
N-BUTYLBENZENE	104-51-8	0.500	ND
1,2-DICHLOROBENZENE	95-50-1	0.500	ND
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	0.500	ND
1,2,4-TRICHLOROBENZENE	120-82-1	1.00	ND
HEXACHLOROBUTADIENE	87-68-3	1.00	ND
NAPHTHALENE	91-20-3	1.00	ND
1,2,3-TRICHLOROBENZENE	87-61-6	1.00	ND
1,4-DIOXANE	123-91-1	50.0	ND

SURROGATE RECOVERY	%
DIBROMOFLUOROMETHANE	104
TOLUENE-D8	101
4-BROMOFLUOROBENZENE	93

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA -NOT APPLICABLE OR AVAILABLE

APPROVED BY: _____
DATE: 10/14/2010

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

SAMPLE ID: W-9
LAB NO: 85724
DATE SAMPLED: 10/8/2010
TIME SAMPLED: 11:05
BATCH #: 100810W1
DATE ANALYZED: 10/12/2010

METHOD: VOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 5030/8260

SAMPLE TYPE: WATER
UNITS: ug/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
DICHLORODIFLUOROMETHANE	75-71-8	0.500	ND
CHLOROMETHANE	74-87-3	0.500	ND
VINYL CHLORIDE	75-01-4	0.500	ND
BROMOMETHANE	74-83-9	0.500	ND
CHLOROETHANE	75-00-3	0.500	ND
TRICHLOROFLUOROMETHANE	75-69-4	0.500	ND
1,1-DICHLOROETHENE	75-35-4	0.500	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	0.500	ND
METHYLENE CHLORIDE	75-09-2	2.50	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	0.500	ND
1,1-DICHLOROETHANE	75-34-3	0.500	ND
CIS-1,2-DICHLOROETHENE	156-59-2	0.500	ND
2,2-DICHLOROPROPANE	594-20-7	0.500	ND
BROMOCHLOROMETHANE	74-97-5	0.500	ND
CHLOROFORM	67-66-3	0.500	ND
1,1,1-TRICHLOROETHANE	71-55-6	0.500	ND
CARBON TETRACHLORIDE	56-23-5	0.500	ND
1,1-DICHLOROPROPENE	563-58-6	0.500	ND
BENZENE	71-43-2	0.500	ND
1,2-DICHLOROETHANE	107-06-2	0.500	ND
TRICHLOROETHENE	79-01-6	0.500	ND
1,2-DICHLOROPROPANE	78-87-5	0.500	ND
DIBROMOMETHANE	74-95-3	0.500	ND
BROMODICHLOROMETHANE	75-27-4	0.500	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	0.500	ND
TOLUENE	108-88-3	0.500	ND
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.500	ND
1,1,2-TRICHLOROETHANE	79-00-5	0.500	ND
TETRACHLOROETHENE	127-18-4	0.500	ND
1,3-DICHLOROPROPANE	142-28-9	0.500	ND
DIBROMOCHLOROMETHANE	124-48-1	0.500	ND
1,2-DIBROMOETHANE	106-93-4	0.500	ND
CHLOROBENZENE	108-90-7	0.500	ND
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.500	ND
ETHYLBENZENE	100-41-4	0.500	ND
XYLENE (M+P)	1330-20-7	0.500	ND
XYLENE (O)	1330-20-7	0.500	ND
STYRENE	100-42-5	0.500	ND
BROMOFORM	75-25-2	0.500	ND
ISOPROPYLBENZENE	98-82-8	0.500	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.500	ND
BROMOBENZENE	108-86-1	0.500	ND
1,2,3-TRICHLOROPROPANE	96-18-4	0.500	ND
N-PROPYLBENZENE	103-65-1	0.500	ND
2-CHLOROTOLUENE	95-49-8	0.500	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	0.500	ND

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

SAMPLE ID: W-9
LAB NO: 85724
DATE SAMPLED: 10/8/2010
TIME SAMPLED: 11:05
BATCH #: 100810W1
DATE ANALYZED: 10/12/2010

METHOD: VOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 5030/8260

SAMPLE TYPE: WATER
UNITS: ug/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
4-CHLOROTOLUENE	106-43-4	0.500	ND
TERT-BUTYLBENZENE	98-06-6	0.500	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	0.500	ND
SEC-BUTYLBENZENE	135-98-8	0.500	ND
1,3-DICHLOROBENZENE	541-73-1	0.500	ND
4-ISOPROPYLTOLUENE	99-87-6	0.500	ND
1,4-DICHLOROBENZENE	106-46-7	0.500	ND
N-BUTYLBENZENE	104-51-8	0.500	ND
1,2-DICHLOROBENZENE	95-50-1	0.500	ND
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	0.500	ND
1,2,4-TRICHLOROBENZENE	120-82-1	1.00	ND
HEXACHLOROBUTADIENE	87-68-3	1.00	ND
NAPHTHALENE	91-20-3	1.00	ND
1,2,3-TRICHLOROBENZENE	87-61-6	1.00	ND
1,4-DIOXANE	123-91-1	50.0	ND

SURROGATE RECOVERY	%
DIBROMOFLUOROMETHANE	101
TOLUENE-D8	103
4-BROMOFLUOROBENZENE	95

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA -NOT APPLICABLE OR AVAILABLE

APPROVED BY: ch
DATE: 10/14/2010

K PRIME, INC.
LABORATORY REPORT

METHOD: TOTAL LEAD
REFERENCE: EPA 3050B/6020A

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL

SAMPLE TYPE: SOLID
UNITS: mg/Kg

SAMPLE ID	LAB ID	BATCH #	DATE SAMPLED	DATE ANALYZED	REPORTING LIMIT	SAMPLE CONC
W-1-1	85704	101012S01	10/07/10	10/13/10	2.50	27.1
W-1-3	85705	101012S01	10/07/10	10/13/10	2.50	27.0
W-14-1	85713	101012S01	10/07/10	10/13/10	2.50	16.3
W-14-3	85714	101012S01	10/07/10	10/13/10	2.50	23.8
W-18-1	85716	101012S01	10/08/10	10/13/10	2.50	12.9
W-18-3	85717	101012S01	10/08/10	10/13/10	2.50	27.9
W-23-1	85720	101012S01	10/08/10	10/13/10	2.50	11.4
W-23-3	85721	101012S01	10/08/10	10/13/10	2.50	28.4
W-10-1	85725	101012S01	10/08/10	10/13/10	2.50	13.8
W-10-3	85726	101012S01	10/08/10	10/13/10	2.50	17.1

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT AVAILABLE OR APPLICABLE

APPROVED BY: _____

DATE: 10/14/2010

K PRIME, INC.

LABORATORY METHOD BLANK REPORT

METHOD BLANK ID: B10131001
SAMPLE TYPE: AIR

BATCH ID: 101310A01
DATE ANALYZED: 10/13/10

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

		PPB (V/V)		µg/cu. m	
COMPOUND NAME	**CAS NO.**	**MRL**	**SAMPLE CONC**	**MRL**	**SAMPLE CONC**
DICHLORODIFLUOROMETHANE	75-71-8	0.500	ND	2.47	ND
DICHLOROTETRAFLUOROETHANE	76-14-2	0.500	ND	3.50	ND
CHLOROMETHANE	74-87-3	0.500	ND	1.03	ND
VINYL CHLORIDE	75-01-4	0.500	ND	1.28	ND
BROMOMETHANE	74-83-9	0.500	ND	1.94	ND
CHLOROETHANE	75-00-3	0.500	ND	1.32	ND
TRICHLOROFLUOROMETHANE	75-69-4	0.500	ND	2.81	ND
1,1-DICHLOROETHENE	75-35-4	0.500	ND	1.98	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	0.500	ND	3.83	ND
METHYLENE CHLORIDE	75-09-2	0.500	ND	1.74	ND
1,1-DICHLOROETHANE	75-34-3	0.500	ND	2.02	ND
CIS-1,2-DICHLOROETHENE	156-59-2	0.500	ND	1.98	ND
CHLOROFORM	67-66-3	0.500	ND	2.44	ND
1,1,1-TRICHLOROETHANE	71-55-6	0.500	ND	2.73	ND
CARBON TETRACHLORIDE	56-23-5	0.500	ND	3.15	ND
1,2-DICHLOROETHANE	107-06-2	0.500	ND	2.02	ND
BENZENE	71-43-2	0.500	ND	1.60	ND
TRICHLOROETHENE	79-01-6	0.500	ND	2.69	ND
1,2-DICHLOROPROPANE	78-87-5	0.500	ND	2.31	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	0.500	ND	2.27	ND
TOLUENE	108-88-3	0.500	ND	1.88	ND
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.500	ND	2.27	ND
1,1,2-TRICHLOROETHANE	79-00-5	0.500	ND	2.73	ND
TETRACHLOROETHENE	127-18-4	0.500	ND	3.39	ND
1,2-DIBROMOETHANE	106-93-4	0.500	ND	3.84	ND
CHLOROBENZENE	108-90-7	0.500	ND	2.30	ND
ETHYLBENZENE	100-41-4	0.500	ND	2.17	ND
XYLENE (M+P)	1330-20-7	0.500	ND	2.17	ND
XYLENE (O)	95-47-6	0.500	ND	2.17	ND
STYRENE	100-42-5	0.500	ND	2.13	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.500	ND	3.43	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	0.500	ND	2.46	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	0.500	ND	2.46	ND
1,3-DICHLOROBENZENE	541-73-1	0.500	ND	3.01	ND
1,4-DICHLOROBENZENE	106-46-7	0.500	ND	3.01	ND
1,2-DICHLOROBENZENE	95-50-1	0.500	ND	3.01	ND
1,2,4-TRICHLOROBENZENE	120-82-1	1.00	ND	7.42	ND
HEXACHLOROBUTADIENE	87-68-3	0.500	ND	5.33	ND

NOTES:

ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
MRL - METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
µg/cu. m VALUES ARE CALCULATED FROM PPB RESULTS USING NORMAL TEMPERATURE AND PRESSURE (NPT).

K PRIME, INC.
LABORATORY QUALITY CONTROL REPORT

LAB CONTROL ID: L10131001
LAB CONTROL DUPLICATE ID: D10131001

SAMPLE TYPE: AIR
BATCH ID: 101310A01
DATE ANALYZED: 10/14/10

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

COMPOUND NAME	SPIKE ADDED (PPB)	REPORTING LIMIT (PPB)	SAMPLE CONC (PPB)	SPIKE CONC (PPB)	SPIKE REC (%)	REC LIMITS (%)
1,1-DICHLOROETHENE	10.0	0.500	ND	10.4	104	60 - 140
TRICHLOROETHENE	10.0	0.500	ND	10.7	107	60 - 140
BENZENE	10.0	0.500	ND	10.9	109	60 - 140
TOLUENE	10.0	0.500	ND	10.8	108	60 - 140
TETRACHLOROETHENE	10.0	0.500	ND	8.71	87.1	60 - 140

COMPOUND NAME	SPIKE ADDED (PPB)	SPIKE DUP CONC (PPB)	SPIKE DUP REC (%)	RPD (%)	QC LIMITS RPD (%)	QC LIMITS REC (%)
1,1-DICHLOROETHENE	10.0	10.1	101	3.62	25	60 - 140
TRICHLOROETHENE	10.0	10.5	105	2.55	25	60 - 140
BENZENE	10.0	11.3	113	3.79	25	60 - 140
TOLUENE	10.0	11.0	110	1.74	25	60 - 140
TETRACHLOROETHENE	10.0	8.64	86.4	0.807	25	60 - 140

NOTES:
NA - NOT APPLICABLE OR AVAILABLE
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT

K PRIME, INC.
LABORATORY QUALITY CONTROL REPORT

METHOD BLANK ID: B092710W1
SAMPLE TYPE: WATER

METHOD: GRO-GASOLINE RANGE ORGANICS
REFERENCE: EPA 8015B

BATCH #: 092710W1
DATE EXTRACTED: 9/27/2010
DATE ANALYZED: 9/27/2010

UNITS: mg/L

COMPOUND NAME	REPORTING LIMIT	SAMPLE CONC
TPH-G	0.050	ND

SAMPLE ID: L092710W1
DUPLICATE ID: D092710W1
BATCH #: 092710W1
SAMPLE TYPE: WATER
UNITS: mg/L

DATE EXTRACTED: 9/27/2010
DATE ANALYZED: 9/27/2010

ACCURACY (MATRIX SPIKE)

PARAMETER	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
TPH-G	0.250	ND	0.235	94	60-140

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
TPH-G	0.050	0.235	0.227	3.5	±20

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE

K PRIME, INC.

LABORATORY METHOD BLANK REPORT **METHOD BLANK ID:** B100810W1

BATCH #: 100810W1
DATE ANALYZED: 10/8/2010

METHOD: VOLATILE ORGANIC COMPOUNDS **SAMPLE TYPE:** WATER
REFERENCE: EPA 5030/8260 **UNITS:** ug/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
DICHLORODIFLUOROMETHANE	75-71-8	0.500	ND
CHLOROMETHANE	74-87-3	0.500	ND
VINYL CHLORIDE	75-01-4	0.500	ND
BROMOMETHANE	74-83-9	0.500	ND
CHLOROETHANE	75-00-3	0.500	ND
TRICHLOROFLUOROMETHANE	75-69-4	0.500	ND
1,1-DICHLOROETHENE	75-35-4	0.500	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	0.500	ND
METHYLENE CHLORIDE	75-09-2	2.50	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	0.500	ND
1,1-DICHLOROETHANE	75-34-3	0.500	ND
CIS-1,2-DICHLOROETHENE	156-59-2	0.500	ND
2,2-DICHLOROPROPANE	594-20-7	0.500	ND
BROMOCHLOROMETHANE	74-97-5	0.500	ND
CHLOROFORM	67-66-3	0.500	ND
1,1,1-TRICHLOROETHANE	71-55-6	0.500	ND
CARBON TETRACHLORIDE	56-23-5	0.500	ND
1,1-DICHLOROPROPENE	563-58-6	0.500	ND
BENZENE	71-43-2	0.500	ND
1,2-DICHLOROETHANE	107-06-2	0.500	ND
TRICHLOROETHENE	79-01-6	0.500	ND
1,2-DICHLOROPROPANE	78-87-5	0.500	ND
DIBROMOMETHANE	74-95-3	0.500	ND
BROMODICHLOROMETHANE	75-27-4	0.500	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	0.500	ND
TOLUENE	108-88-3	0.500	ND
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.500	ND
1,1,2-TRICHLOROETHANE	79-00-5	0.500	ND
TETRACHLOROETHENE	127-18-4	0.500	ND
1,3-DICHLOROPROPANE	142-28-9	0.500	ND
DIBROMOCHLOROMETHANE	124-48-1	0.500	ND
1,2-DIBROMOETHANE	106-93-4	0.500	ND
CHLOROBENZENE	108-90-7	0.500	ND
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.500	ND
ETHYLBENZENE	100-41-4	0.500	ND
XYLENE (M+P)	1330-20-7	0.500	ND
XYLENE (O)	1330-20-7	0.500	ND
STYRENE	100-42-5	0.500	ND
BROMOFORM	75-25-2	0.500	ND
ISOPROPYLBENZENE	98-82-8	0.500	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.500	ND
BROMOBENZENE	108-86-1	0.500	ND
1,2,3-TRICHLOROPROPANE	96-18-4	0.500	ND
N-PROPYLBENZENE	103-65-1	0.500	ND
2-CHLOROTOLUENE	95-49-8	0.500	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	0.500	ND

K PRIME, INC.
LABORATORY METHOD BLANK REPORT

METHOD BLANK ID: B100810W1

BATCH #: 100810W1
DATE ANALYZED: 10/8/2010

METHOD: VOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 5030/8260

SAMPLE TYPE: WATER
UNITS: ug/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
4-CHLOROTOLUENE	106-43-4	0.500	ND
TERT-BUTYLBENZENE	98-06-6	0.500	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	0.500	ND
SEC-BUTYLBENZENE	135-98-8	0.500	ND
1,3-DICHLOROBENZENE	541-73-1	0.500	ND
4-ISOPROPYLTOLUENE	99-87-6	0.500	ND
1,4-DICHLOROBENZENE	106-46-7	0.500	ND
N-BUTYLBENZENE	104-51-8	0.500	ND
1,2-DICHLOROBENZENE	95-50-1	0.500	ND
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	0.500	ND
1,2,4-TRICHLOROBENZENE	120-82-1	1.00	ND
HEXACHLOROBUTADIENE	87-68-3	1.00	ND
NAPHTHALENE	91-20-3	1.00	ND
1,2,3-TRICHLOROBENZENE	87-61-6	1.00	ND
1,4-DIOXANE	123-91-1	50.0	ND

SURROGATE RECOVERY	%
DIBROMOFLUOROMETHANE	103
TOLUENE-D8	94
4-BROMOFLUOROBENZENE	95

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA -NOT APPLICABLE OR AVAILABLE

K PRIME, INC.
LABORATORY QC REPORT

METHOD: VOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 5030/8260

SAMPLE ID: B100810W1
SPIKE ID: L100810W1
DUPLICATE ID: D100810W1
BATCH #: 100810W1
SAMPLE TYPE: WATER
UNITS: µg/L

ACCURACY (MATRIX SPIKE)

PARAMETER	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
1,1 DICHLOROETHENE	10.0	ND	8.84	88	60-140
BENZENE	10.0	ND	8.95	90	60-140
TRICHLOROETHENE	10.0	ND	9.37	94	60-140
TOLUENE	10.0	ND	9.98	100	60-140
CHLOROBENZENE	10.0	ND	11.0	110	60-140

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
1,1 DICHLOROETHENE	0.500	8.84	8.44	4.6	±20
BENZENE	0.500	8.95	8.59	4.1	±20
TRICHLOROETHENE	0.500	9.37	9.01	3.9	±20
TOLUENE	0.500	9.98	9.64	3.5	±20
CHLOROBENZENE	0.500	11.0	10.5	4.3	±20

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT AVAILABLE OR APPLICABLE

WEST
Environmental Services & Technology
711 Grand Avenue, Suite 220
San Rafael, California 94901
415.460.6770 • Fax 415.460.6771
main@westenvironmental.com

SAMPLE ANALYSIS/COMPOSITE REQUEST FORM

CHAIN-OF-CUSTODY

Invoice to: WEST, Inc. | Date: 10-8-10 | Page 1 of 3

Project: RC.Chemical Way | Location: Redwood City

Project Manager: Peter Krasnoff, WEST, Inc. | Phone: 415/460-6770 | Fax: 415/460-6771

Laboratory: KPrime, Inc, Santa Rosa, CA | Turnaround time (days): 1 | 2 | 3 | 5 | 7 | 10 | Std. X

Sampler Signature:

KPI #	Sample ID	Date	Time	Type	# Containers	Composite	TPHg/TPHd/TPHmo (8015M)*	VOCs + 1,4-Dioxane (8260B)	SVOCs (8270C-SIM)	Total Nitrate and Nitrite (USEPA 300.0)	Lead (6020)	VOCs (TO-14A/TO-15)	Methane **	Summa ID			HOLD
							Analyses Requested										
85701	W-4	10.7.10	11:10 11:23	SG	1							X		S-353			
85702	W-4	"	12:10	W	7		X	X	X								
85703	W-13	"	13:00	W	5		X	X									
85704	W-1-1	"	13:55	W	1						X						
85705	W-1-3	"	13:57	W	1						X						
85706	W-2	"	9:23 14:23	SG	1							X	X	S-655			
85707	W-19-3	"	14:20	S	1		X		X								
85708	W-19-6	"	14:25	S	1		X		X								
85709	W-14	"	15:41 15:55	SG	1							X		S-231			
85710	W-9	"	15:53 16:13	SG	1							X		S-435			
85711	W-22-3	"	16:10	S	1		X		X								
85712	W-22-6	"	16:15	S	1		X		X								

NOTES: (*) Silica Gel Cleanup ♯ W-4, W-13, W-1-3 no HCl in VOAs preserved

** 24HR TAT on Methane per Deborah 10/14/10 ph TW-9

Results by oct. 15, '10

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	2:05 pm 10/8/10	L-S Works	10-8-10 2:05
L-S Works	10-8-10 4:22		10-8-10 16:31

WEST
Environmental Services & Technology
711 Grand Avenue, Suite 220
San Rafael, California 94901
415.460.6770 - Fax 415.460.6771
main@westenvironmental.com

SAMPLE ANALYSIS/COMPOSITE REQUEST FORM

CHAIN-OF-CUSTODY

Invoice to: WEST, Inc.
Project: RC.Chemical Way
Project Manager: Peter Krasnoff, WEST, Inc.
Laboratory: KPrime, Inc, Santa Rosa, CA
Sampler Signature:

Date: 10·8·10 Page 2 of 3
Location: Redwood City
Phone: 415/460-6770 Fax: 415/460-6771

Turnaround time (days)	1	2	3	5	7	10	Std.
							X

Analyses Requested

KPI #	Sample ID	Date	Time	Type	# Containers	Composite	TPHg/TPHd/TPHmo (8015M)*	VOCs + 1,4-Dioxane (8260B)	SVOCs (8270C-SIM)	Total Nitrate and Nitrite (USEPA 300.0)	Lead (6020)	VOCs (TO-14A/TO-15)	Methane ISC	Summa ID			HOLD
857123	W-14-1	10.7.10	16:30	S	7						X						
857124	W-14-3	"	16:33	S	1						X						
857125	W-15	"	16:06 16:45	SG	1							X		S-236			
857126	W-18-1	10.8.10	8:15	S	1						X						
857127	W-18-3	"	8:18	S	1						X						
857128	W-18	"	9:00	W	5		X	X									
857129	W-11	"	8:55 9:07	SG	1							X	X	S-433			
857130	W-23-1	"	9:35	S	1						X						
857131	W-23-3	"	9:37	S	1						X		X				
857132	W-10	"	10:29 10:38	SG	1						X	X		S-234			
857133	W-8	"	10:36 10:54	SG	1						X	X		S-267			
857134	W-9	"	11:05	W	5		X	X									

NOTES: (*) Silica Gel Cleanup * W-9, W-18 no TCLP VOCs
24 HR TAT on Methane per Peter on 10/14/10 ph
Results by Oct. 15'10

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	2:05pm 10/8/10	L. Simons	10-8-10 2:05
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
L. Simons	10-8-10 4:20		10-8-10 16:21

WEST
Environmental Services & Technology
711 Grand Avenue, Suite 220
San Rafael, California 94901
415.460.6770 • Fax 415.460.6771
main@westenvironmental.com

SAMPLE ANALYSIS/COMPOSITE REQUEST FORM

CHAIN-OF-CUSTODY

Invoice to: WEST, Inc. | Date: 10-8-10 | Page 3 of 3

Project: RC Chemical Way | Location: Redwood City

Project Manager: Peter Krasnoff, WEST, Inc. | Phone: 415/460-6770 | Fax: 415/460-6771

Laboratory: KPrime, Inc, Santa Rosa, CA | Turnaround time (days): 1 | 2 | 3 | 5 | 7 | 10 | Std. X

Sampler Signature:

Sample ID	Date	Time	Type	# Containers	Composite	TPHg/TPHd/TPHmo (8015M)*	VOCs + 1,4-Dioxane (8260B)	SVOCs (8270C-SIM)	Total Nitrate and Nitrite (USEPA 300.0)	Lead (6020)	VOCs (TO-14A/TO-15)		Summa ID			HOLD
KP1H						Analyses Requested										
85725	W-10-1	10-8-10	11:35	S	1					X						
85726	W-10-3	"	11:38	S	1					X						
85727	Trip Blank															X

NOTES: (*) Silica Gel Cleanup

Results by Oct. 15 '10

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	2:05 PM 10/8/10	L Sellers	2:05
Relinquished by: (Signature) L Sellers	Date/Time 10-9-10 4:20	Received by: (Signature)	Date/Time 10-9-10 16:21

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Environmental Services & Technology
711 Grand Avenue, Suite 220
San Rafael, California 94901
415.460.6770 • Fax 415.460.6771
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SAMPLE ANALYSIS/COMPOSITE REQUEST FORM

CHAIN-OF-CUSTODY

Invoice to: WEST, Inc.
Project: RC.Chemical Way
Project Manager: Peter Krasnoff, WEST, Inc.
Laboratory: KPrime, Inc, Santa Rosa, CA
Sampler Signature:

Date: 10·8·10 Page 1 of 3
Location: Redwood City
Phone: 415/460-6770 Fax: 415/460-6771

Turnaround time (days)	1	2	3	5	7	10	Std.
							X

KPI #	Sample ID	Date	Time	Type	# Containers	Composite	TPHg/TPHd/TPHmo (8015M)*	VOCs + 1,4-Dioxane (8260B)	SVOCs (8270C-SIM)	Total Nitrate and Nitrite (USEPA 300.0)	Lead (6020)	VOCs (TO-14A/TO-15)		Summa ID			HOLD
85701	W-4	10.7.10	11:10 / 11:23	SG	1							X		S-353			
85702	W-4	"	12:10	W	7		X	X	X								
85703	W-13	"	13:00	W	5		X	X									
85704	W-1-1	"	13:55	W	1						X						
85705	W-1-3	"	13:57	W	1						X						
85706	W-2	"	9:23 / 14:23	SG	1							X		S-655			
85707	W-19-3	"	14:20	S	1		X		X								
85708	W-19-6	"	14:25	S	1		X		X								
85709	W-14	"	15:41 / 15:55	SG	1							X		S-231			
85710	W-9	"	15:53 / 16:13	SG	1							X		S-435			
85711	W-22-3	"	16:10	S	1		X		X								
85712	W-22-6	"	16:15	S	1		X		X								

NOTES: (*) Silica Gel Cleanup * W-4, W-13, W-19 no HCl in VOAs / preserved
+W-9

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	2:05pm 10/8/10	L. Sweus	10-8-10 2:05
L. Sweus	10-8-10 14:20	Pam Haworth	10-8-10 16:21

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Environmental Services & Technology
711 Grand Avenue, Suite 220
San Rafael, California 94901
415.460.6770 • Fax 415.460.6771
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SAMPLE ANALYSIS/COMPOSITE REQUEST FORM

CHAIN-OF-CUSTODY

Invoice to: WEST, Inc.	Date: 10·8·10 Page 2 of 3
Project: RC.Chemical Way	Location: Redwood City
Project Manager: Peter Krasnoff, WEST, Inc.	Phone: 415/460-6770 Fax: 415/460-6771
Laboratory: KPrime, Inc, Santa Rosa, CA	Turnaround time (days): 1 / 2 / 3 / 5 / 7 / 10 / Std. (X)
Sampler Signature:	Analyses Requested

KP1H	Sample ID	Date	Time	Type	# Containers	Composite	TPHg/TPHd/TPHmo (8015M)*	VOCs + 1,4-Dioxane (8260B)	SVOCs (8270C-SIM)	Total Nitrate and Nitrite (USEPA 300.0)	Lead (6020)	VOCs (TO-14A/TO-15)		Summa ID			HOLD
85713	W-14-1	10.7.10	16:30	S	1						X						
85714	W-14-3	"	16:33	S	1						X						
85715	W-15	"	16:06 / 16:45	SG	1							X		S-236			
85716	W-18-1	10.8.10	8:15	S	1						X						
85717	W-18-3	"	8:18	S	1						X						
85718	W-18	"	9:00	W	5		X	X									
85719	W-11	"	8:55 / 9:07	SG	1							X		S-433			
85720	W-23-1	"	9:35	S	1						X						
85721	W-23-1	"	9:37	S	1						X						
85722	W-10	"	10:24 / 10:38	SG	1						X			S-234			
85723	W-8	"	10:36 / 10:54	SG	1						X			S-267			
85724	W-9	"	11:05	W	5		X	X									

NOTES: (*) Silica Gel Cleanup * W-9, W-18 no chlein VOCs

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	2:05PM 10/8/10	L. Swaus	10-8-10 2:05
L. Swaus	10-8-10 4:20	Pam Haworth	10-8-10 16:21

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Environmental Services & Technology
711 Grand Avenue, Suite 220
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SAMPLE ANALYSIS/COMPOSITE REQUEST FORM

CHAIN-OF-CUSTODY

Invoice to: WEST, Inc.
Project: RC.Chemical Way
Project Manager: Peter Krasnoff, WEST, Inc.
Laboratory: KPrime, Inc, Santa Rosa, CA
Sampler Signature:

Date: 10·8·10 **Page** 3 of 3
Location: Redwood City
Phone: 415/460-6770 **Fax:** 415/460-6771

Turnaround time (days)	1	2	3	5	7	10	Std.
							X

KPI #	Sample ID	Date	Time	Type	# Containers	Composite	TPHg/TPHd/TPHmo (8015M)*	VOCs + 1,4-Dioxane (8260B)	SVOCs (8270C-SIM)	Total Nitrate and Nitrite (USEPA 300.0)	Lead (6020)	VOCs (TO-14A/TO-15)		Summa ID			HOLD
							Analyses Requested										
85725	W-10-1	10.8.10	11:35	S	1						X						
85726	W-10-3	"	11:38	S	1						X						
85727	Trip Blank																X

NOTES: (*) Silica Gel Cleanup

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	2:05 PM 10/8/10	L Swens	10-8-10 2:05
L. Swens	10-8-10 4:20	Pam Haworth	10-8-10 16:21

K PRIME, Inc.

CONSULTING ANALYTICAL CHEMISTS

3621 Westwind Blvd.
Santa Rosa CA 95403
Phone: 707 527 7574
FAX: 707 527 7879

TRANSMITTAL

DATE: 10/15/2010

TO: MR. PETER KRASNOFF
WEST ENVIRONMENTAL S&T
711 GRAND AVENUE, SUITE 220
SAN RAFAEL, CA 94901

Phone: 415-460-6770
Fax: 415-460-6771
Email: main@westenvironmental.com

ACCT: 9946
PROJ: RC.CHEMICAL WAY

Project
NOV 1 2010
File

FROM: Richard A. Kagel, Ph.D.
Laboratory Director RAKmw 10/15/2010

SUBJECT: LABORATORY RESULTS FOR YOUR PROJECT RC.CHEMICAL WAY

Enclosed please find K Prime's laboratory reports for the following samples:

SAMPLE ID	TYPE	DATE	TIME	KPI LAB #
W-5	AIR	10/06/10	15:23	85642
W-6	AIR	10/06/10	14:12	85643
W-7	AIR	10/06/10	15:22	85644
W-12	AIR	10/06/10	14:37	85645
W-13	AIR	10/06/10	14:42	85646
W-16	WATER	10/06/10	10:30	85647
W-17	WATER	10/06/10	12:35	85648
W-13-1	SOIL	10/06/10	13:17	85649
W-13-3	SOIL	10/06/10	13:18	85650
W-17-1	SOIL	10/06/10	11:30	85651
W-17-3	SOIL	10/06/10	11:32	85652
W-5-1	SOIL	10/06/10	16:00	85653
W-5-3	SOIL	10/06/10	16:03	85654
W-6-1	SOIL	10/06/10	15:00	85655
W-6-3	SOIL	10/06/10	15:03	85656
W-7-1	SOIL	10/06/10	15:50	85657
W-7-3	SOIL	10/06/10	15:53	85658
W-12-1	SOIL	10/06/10	15:25	85659
W-12-3	SOIL	10/06/10	15:27	85660
W-1	AIR	10/07/10	9:56	85661
W-3	AIR	10/07/10	10:10	85662
W-20-3	SOIL	10/07/10	10:25	85663
W-20-6	SOIL	10/07/10	10:28	85664
W-21-3	SOIL	10/07/10	10:44	85665
W-21-6	SOIL	10/07/10	10:47	85666

The above listed sample group was received on 10/07/10 and tested as requested on the chain of custody document.

Please call me if you have any questions or need further information.
Thank you for this opportunity to be of service.

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

BATCH ID: 101410A01

METHOD: METHANE
REFERENCE: EPA METHOD 18

UNITS: PPMV

SAMPLE ID	LAB NO.	SAMPLE TYPE	DATE SAMPLED	TIME SAMPLED	DATE ANALYZED	MRL	SAMPLE CONC
W-6	85643	AIR	10/6/10	14:12	10/14/10	20.0	6580
W-7	85644	AIR	10/6/10	15:22	10/14/10	20.0	294000
W-3	85662	AIR	10/7/10	10:10	10/14/10	20.0	332000

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
MRL - METHOD REPORTING LIMIT

APPROVED BY: MK
DATE: 10/15/10

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

METHOD: DRO
REFERENCE: EPA 8015B

SAMPLE TYPE: WATER
UNITS: mg/L

SAMPLE ID	LAB NO.	DATE SAMPLED	BATCH ID	EXTRACT DATE	DATE ANALYZED	MRL	SAMPLE CONC	DRO PATTERN
W-16	85647	10/06/10	100510W01	10/11/10	10/11/10	0.050	ND	
W-17	85648	10/06/10	100510W01	10/11/10	10/11/10	0.050	ND	

NOTES:

DRO	Diesel Range Organics (C12-C23) with Silica Gel Cleanup
ND	Not Detected at or above the stated MRL
NA	Not Applicable or Available
MRL	Method Reporting Limit
AD	Typical Pattern for Diesel
AM	Hydrocarbon response is in the C12-C22 range
AC	Heavier hydrocarbons contributing to diesel range quantitation
AJ	Heavier hydrocarbon than diesel
AK	Lighter hydrocarbon than diesel
AE	Unknown hydrocarbon with a single peak
AN	Unknown hydrocarbon with several peaks

APPROVED BY: VCW
DATE: 10/15/2010

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

METHOD: HRO
REFERENCE: EPA 8015B

SAMPLE TYPE: WATER
UNITS: mg/L

SAMPLE ID	LAB NO.	DATE SAMPLED	BATCH ID	EXTRACT DATE	DATE ANALYZED	MRL	SAMPLE CONC	HRO PATTERN
W-16	85647	10/06/10	100510W01	10/11/10	10/11/10	0.050	ND	
W-17	85648	10/06/10	100510W01	10/11/10	10/11/10	0.050	ND	

NOTES:

HRO	Heavy Range Organics (C24-C34) with Silica Gel Cleanup
ND	Not Detected at or above the stated MRL
NA	Not Applicable or Available
MRL	Method Reporting Limit
AE	Unknown hydrocarbon with a single peak
AN	Unknown hydrocarbon with several peaks

APPROVED BY: MN
DATE: 10/15/2010

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

METHOD: DRO
REFERENCE: EPA 8015B

SAMPLE TYPE: SOIL
UNITS: mg/Kg

SAMPLE ID	LAB NO.	DATE SAMPLED	BATCH ID	EXTRACT DATE	DATE ANALYZED	MRL	SAMPLE CONC	DRO PATTERN
W-20-3	85663	10/07/10	100710S1	10/8/2010	10/08/10	10.0	ND	
W-20-6	85664	10/07/10	100710S1	10/8/2010	10/08/10	25.0	213	AC
W-21-3	85665	10/07/10	100710S1	10/8/2010	10/09/10	10.0	ND	
W-21-6	85666	10/07/10	100710S1	10/8/2010	10/09/10	10.0	ND	

NOTES:

DRO	Diesel Range Organics (C12-C23) with Silica Gel Cleanup
ND	Not Detected at or above the stated MRL
NA	Not Applicable or Available
MRL	Method Reporting Limit
AD	Typical Pattern for Diesel
AM	Hydrocarbon response is in the C12-C22 range
AC	Heavier hydrocarbons contributing to diesel range quantitation
AJ	Heavier hydrocarbon than diesel
AK	Lighter hydrocarbon than diesel
AE	Unknown hydrocarbon with a single peak
AN	Unknown hydrocarbon with several peaks

APPROVED BY: CW
DATE: 10/15/2010

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

METHOD: HRO
REFERENCE: EPA 8015B

SAMPLE TYPE: SOIL
UNITS: mg/Kg

SAMPLE ID	LAB NO.	DATE SAMPLED	BATCH ID	EXTRACT DATE	DATE ANALYZED	MRL	SAMPLE CONC	HRO PATTERN
W-20-3	85663	10/07/10	100710S1	10/8/2010	10/08/10	10.0	ND	
W-20-6	85664	10/07/10	100710S1	10/8/2010	10/08/10	25.0	307	
W-21-3	85665	10/07/10	100710S1	10/8/2010	10/09/10	10.0	ND	
W-21-6	85666	10/07/10	100710S1	10/8/2010	10/09/10	10.0	ND	

NOTES:

HRO	Heavy Range Organics (C24-C34) with Silica Gel Cleanup
ND	Not Detected at or above the stated MRL
NA	Not Applicable or Available
MRL	Method Reporting Limit
AE	Unknown hydrocarbon with a single peak
AN	Unknown hydrocarbon with several peaks

APPROVED BY: CW
DATE: 10/15/2010

K PRIME, INC.
LABORATORY REPORT

SAMPLE ID: W-16
LAB NO: 85647
DATE SAMPLED: 10/06/10
TIME SAMPLED: 10:30
BATCH #: 101210W01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/13/10

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3510/8270C

SAMPLE TYPE: WATER
UNITS: ug/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
ACENAPHTHENE	83-32-9	10.0	ND
ACENAPHTHYLENE	208-96-8	10.0	ND
ANTHRACENE	120-12-7	10.0	ND
BENZO (A) ANTHRACENE	56-55-3	10.0	ND
BENZO (B) FLUORANTHENE	205-99-2	10.0	ND
BENZO (K) FLUORANTHENE	207-08-9	10.0	ND
BENZO (A) PYRENE	50-32-8	10.0	ND
BENZO (G,H,I) PERYLENE	191-24-2	10.0	ND
BENZYL ALCOHOL	100-51-6	20.0	ND
BUTYL BENZYL PHTHALATE	85-68-7	10.0	ND
BIS (2-CHLOROETHYL) ETHER	111-44-4	10.0	ND
BIS (2-CHLOROETHOXY) METHANE	111-91-1	10.0	ND
BIS (2-CHLOROISOPROPYL) ETHER	108-60-1	10.0	ND
BIS (2-ETHYLHEXYL) PHTHALATE	117-81-7	10.0	ND
4-BROMOPHENYL PHENYL ETHER	101-55-3	10.0	ND
4-CHLOROANILINE	106-47-8	10.0	ND
2-CHLORONAPHTHALENE	91-58-7	10.0	ND
4-CHLOROPHENYL PHENYL ETHER	7005-72-3	10.0	ND
CHRYSENE	218-01-9	10.0	ND
DIBENZO (A,H) ANTHRACENE	53-70-3	10.0	ND
DIBENZOFURAN	132-64-9	10.0	ND
DI-N-BUTYLPHTHALATE	84-74-2	10.0	ND
1,2-DICHLOROBENZENE	95-50-1	10.0	ND
1,3-DICHLOROBENZENE	541-73-1	10.0	ND
1,4-DICHLOROBENZENE	106-46-7	10.0	ND
3,3'-DICHLOROBENZIDINE	91-94-1	20.0	ND
DIETHYLPHTHALATE	84-66-2	10.0	ND
DIMETHYL PHTHALATE	131-11-3	10.0	ND
2,4-DINITROTOLUENE	121-14-2	10.0	ND
2,6-DINITROTOLUENE	606-20-2	10.0	ND
DI-N-OCTYL PHTHALATE	117-84-0	10.0	ND
FLUORANTHENE	206-44-0	10.0	ND
FLUORENE	86-73-7	10.0	ND
HEXACHLOROBENZENE	118-74-1	10.0	ND
HEXACHLOROBUTADIENE	87-68-3	10.0	ND
HEXACHLOROCYCLOPENTADIENE	77-47-4	10.0	ND
HEXACHLOROETHANE	67-72-1	10.0	ND
INDENO (1,2,3-CD) PYRENE	193-39-5	10.0	ND
ISOPHORONE	78-59-1	10.0	ND

K PRIME, INC.
LABORATORY REPORT

SAMPLE ID: W-16
LAB NO: 85647
DATE SAMPLED: 10/06/10
TIME SAMPLED: 10:30
BATCH #: 101210W01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/13/10

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3510/8270C

SAMPLE TYPE: WATER
UNITS: ug/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
2-METHYLNAPHTHALENE	91-57-6	10.0	ND
NAPHTHALENE	91-20-3	10.0	ND
2-NITROANILINE	88-74-4	50.0	ND
3-NITROANILINE	99-09-2	50.0	ND
4-NITROANILINE	100-01-6	50.0	ND
NITROBENZENE	98-95-3	10.0	ND
N-NITROSO-DI-N-PROPYLAMINE	621-64-7	10.0	ND
N-NITROSODIPHENYLAMINE	86-30-6	10.0	ND
PHENANTHRENE	85-01-8	10.0	ND
PYRENE	129-00-0	10.0	ND
1,2,4-TRICHLOROBENZENE	120-82-1	10.0	ND
ACID EXTRACTABLES			
4-CHLORO-3-METHYLPHENOL	59-50-7	20.0	ND
2-CHLOROPHENOL	95-57-8	20.0	ND
2,4-DICHLOROPHENOL	120-83-2	20.0	ND
2,4-DIMETHYLPHENOL	105-67-9	20.0	ND
2,4-DINITROPHENOL	51-28-5	50.0	ND
4,6-DINITRO-2-METHYLPHENOL	534-52-1	50.0	ND
2-NITROPHENOL	88-75-5	50.0	ND
4-NITROPHENOL	100-02-7	50.0	ND
PENTACHLOROPHENOL	87-86-5	50.0	ND
PHENOL	108-95-2	20.0	ND
2-METHYLPHENOL	95-48-7	20.0	ND
4-METHYLPHENOL	106-44-5	20.0	ND
2,4,5-TRICHLOROPHENOL	95-95-4	50.0	ND
2,4,6-TRICHLOROPHENOL	88-06-2	50.0	ND

SURROGATE RECOVERY	%
NITROBENZENE-D5	109
2-FLUOROBIPHENYL	102
P-TERPHENYL-D14	82
PHENOL-D5	103
2-FLUOROPHENOL	91
2,4,6-TRIBROMOPHENOL	86

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

APPROVED BY: JW
DATE: 10/15/2010

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

SAMPLE ID: W-20-3
LAB NO: 85663
DATE SAMPLED: 10/07/10
TIME SAMPLED: 10:25
BATCH #: 100510S01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/12/10

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3550/8270

SAMPLE TYPE: SOIL
UNITS: ug/Kg

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
ACENAPHTHENE	83-32-9	330	ND
ACENAPHTHYLENE	208-96-8	330	ND
ANTHRACENE	120-12-7	330	ND
BENZO (A) ANTHRACENE	56-55-3	330	ND
BENZO (B) FLUORANTHENE	205-99-2	330	ND
BENZO (K) FLUORANTHENE	207-08-9	330	ND
BENZO (A) PYRENE	50-32-8	330	ND
BENZO (G,H,I) PERYLENE	191-24-2	330	ND
BENZYL ALCOHOL	100-51-6	330	ND
BUTYL BENZYL PHTHALATE	85-68-7	330	ND
BIS (2-CHLOROETHYL) ETHER	111-44-4	330	ND
BIS (2-CHLOROETHOXY) METHANE	111-91-1	330	ND
BIS (2-CHLOROISOPROPYL) ETHER	108-60-1	330	ND
BIS (2-ETHYLHEXYL) PHTHALATE	117-81-7	330	ND
4-BROMOPHENYL PHENYL ETHER	101-55-3	330	ND
4-CHLOROANILINE	106-47-8	330	ND
2-CHLORONAPHTHALENE	91-58-7	330	ND
4-CHLOROPHENYL PHENYL ETHER	7005-72-3	330	ND
CHRYSENE	218-01-9	330	ND
DIBENZO (A,H) ANTHRACENE	53-70-3	330	ND
DIBENZOFURAN	132-64-9	330	ND
DI-N-BUTYLPHTHALATE	84-74-2	330	ND
1,2-DICHLOROBENZENE	95-50-1	330	ND
1,3-DICHLOROBENZENE	541-73-1	330	ND
1,4-DICHLOROBENZENE	106-46-7	330	ND
3,3'-DICHLOROBENZIDINE	91-94-1	660	ND
DIETHYLPHTHALATE	84-66-2	330	ND
DIMETHYL PHTHALATE	131-11-3	330	ND
2,4-DINITROTOLUENE	121-14-2	330	ND
2,6-DINITROTOLUENE	606-20-2	330	ND
DI-N-OCTYL PHTHALATE	117-84-0	330	ND
FLUORANTHENE	206-44-0	330	ND
FLUORENE	86-73-7	330	ND
HEXACHLOROBENZENE	118-74-1	330	ND
HEXACHLOROBUTADIENE	87-68-3	330	ND
HEXACHLOROCYCLOPENTADIENE	77-47-4	330	ND
HEXACHLOROETHANE	67-72-1	330	ND
INDENO (1,2,3-CD) PYRENE	193-39-5	330	ND
ISOPHORONE	78-59-1	330	ND

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

SAMPLE ID: W-20-3
LAB NO: 85663
DATE SAMPLED: 10/07/10
TIME SAMPLED: 10:25
BATCH #: 100510S01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/12/10

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3550/8270

SAMPLE TYPE: SOIL
UNITS: ug/Kg

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
2-METHYLNAPHTHALENE	91-57-6	330	ND
NAPHTHALENE	91-20-3	330	ND
2-NITROANILINE	88-74-4	1600	ND
3-NITROANILINE	99-09-2	1600	ND
4-NITROANILINE	100-01-6	1600	ND
NITROBENZENE	98-95-3	330	ND
N-NITROSO-DI-N-PROPYLAMINE	621-64-7	330	ND
N-NITROSODIPHENYLAMINE	86-30-6	330	ND
PHENANTHRENE	85-01-8	330	ND
PYRENE	129-00-0	330	ND
1,2,4-TRICHLOROBENZENE	120-82-1	330	ND
ACID EXTRACTABLES			
4-CHLORO-3-METHYLPHENOL	59-50-7	660	ND
2-CHLOROPHENOL	95-57-8	660	ND
2,4-DICHLOROPHENOL	120-83-2	660	ND
2,4-DIMETHYLPHENOL	105-67-9	660	ND
2,4-DINITROPHENOL	51-28-5	1600	ND
4,6-DINITRO-2-METHYLPHENOL	534-52-1	1600	ND
2-NITROPHENOL	88-75-5	1600	ND
4-NITROPHENOL	100-02-7	1600	ND
PENTACHLOROPHENOL	87-86-5	1600	ND
PHENOL	108-95-2	660	ND
2-METHYLPHENOL	95-48-7	660	ND
4-METHYLPHENOL	106-44-5	660	ND
2,4,5-TRICHLOROPHENOL	95-95-4	1600	ND
2,4,6-TRICHLOROPHENOL	88-06-2	1600	ND

SURROGATE RECOVERY	%
NITROBENZENE-D5	109
2-FLUOROBIPHENYL	107
P-TERPHENYL-D14	66
PHENOL-D5	112
2-FLUOROPHENOL	112
2,4,6-TRIBROMOPHENOL	105

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

APPROVED BY: MW
DATE: 10/15/2010

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

SAMPLE ID: W-20-6
LAB NO: 85664
DATE SAMPLED: 10/07/10
TIME SAMPLED: 10:28
BATCH #: 100510S01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/12/10

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3550/8270

SAMPLE TYPE: SOIL
UNITS: ug/Kg

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
ACENAPHTHENE	83-32-9	330	ND
ACENAPHTHYLENE	208-96-8	330	ND
ANTHRACENE	120-12-7	330	ND
BENZO (A) ANTHRACENE	56-55-3	330	ND
BENZO (B) FLUORANTHENE	205-99-2	330	ND
BENZO (K) FLUORANTHENE	207-08-9	330	ND
BENZO (A) PYRENE	50-32-8	330	ND
BENZO (G,H,I) PERYLENE	191-24-2	330	ND
BENZYL ALCOHOL	100-51-6	330	ND
BUTYL BENZYL PHTHALATE	85-68-7	330	ND
BIS (2-CHLOROETHYL) ETHER	111-44-4	330	ND
BIS (2-CHLOROETHOXY) METHANE	111-91-1	330	ND
BIS (2-CHLOROISOPROPYL) ETHER	108-60-1	330	ND
BIS (2-ETHYLHEXYL) PHTHALATE	117-81-7	330	ND
4-BROMOPHENYL PHENYL ETHER	101-55-3	330	ND
4-CHLOROANILINE	106-47-8	330	ND
2-CHLORONAPHTHALENE	91-58-7	330	ND
4-CHLOROPHENYL PHENYL ETHER	7005-72-3	330	ND
CHRYSENE	218-01-9	330	ND
DIBENZO (A,H) ANTHRACENE	53-70-3	330	ND
DIBENZOFURAN	132-64-9	330	ND
DI-N-BUTYLPHTHALATE	84-74-2	330	ND
1,2-DICHLOROBENZENE	95-50-1	330	ND
1,3-DICHLOROBENZENE	541-73-1	330	ND
1,4-DICHLOROBENZENE	106-46-7	330	ND
3,3'-DICHLOROBENZIDINE	91-94-1	660	ND
DIETHYLPHTHALATE	84-66-2	330	ND
DIMETHYL PHTHALATE	131-11-3	330	ND
2,4-DINITROTOLUENE	121-14-2	330	ND
2,6-DINITROTOLUENE	606-20-2	330	ND
DI-N-OCTYL PHTHALATE	117-84-0	330	ND
FLUORANTHENE	206-44-0	330	ND
FLUORENE	86-73-7	330	ND
HEXACHLOROBENZENE	118-74-1	330	ND
HEXACHLOROBUTADIENE	87-68-3	330	ND
HEXACHLOROCYCLOPENTADIENE	77-47-4	330	ND
HEXACHLOROETHANE	67-72-1	330	ND
INDENO (1,2,3-CD) PYRENE	193-39-5	330	ND
ISOPHORONE	78-59-1	330	ND

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

SAMPLE ID: W-20-6
LAB NO: 85664
DATE SAMPLED: 10/07/10
TIME SAMPLED: 10:28
BATCH #: 100510S01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/12/10

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3550/8270

SAMPLE TYPE: SOIL
UNITS: ug/Kg

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
2-METHYLNAPHTHALENE	91-57-6	330	ND
NAPHTHALENE	91-20-3	330	ND
2-NITROANILINE	88-74-4	1600	ND
3-NITROANILINE	99-09-2	1600	ND
4-NITROANILINE	100-01-6	1600	ND
NITROBENZENE	98-95-3	330	ND
N-NITROSO-DI-N-PROPYLAMINE	621-64-7	330	ND
N-NITROSODIPHENYLAMINE	86-30-6	330	ND
PHENANTHRENE	85-01-8	330	ND
PYRENE	129-00-0	330	ND
1,2,4-TRICHLOROBENZENE	120-82-1	330	ND
ACID EXTRACTABLES			
4-CHLORO-3-METHYLPHENOL	59-50-7	660	ND
2-CHLOROPHENOL	95-57-8	660	ND
2,4-DICHLOROPHENOL	120-83-2	660	ND
2,4-DIMETHYLPHENOL	105-67-9	660	ND
2,4-DINITROPHENOL	51-28-5	1600	ND
4,6-DINITRO-2-METHYLPHENOL	534-52-1	1600	ND
2-NITROPHENOL	88-75-5	1600	ND
4-NITROPHENOL	100-02-7	1600	ND
PENTACHLOROPHENOL	87-86-5	1600	ND
PHENOL	108-95-2	660	ND
2-METHYLPHENOL	95-48-7	660	ND
4-METHYLPHENOL	106-44-5	660	ND
2,4,5-TRICHLOROPHENOL	95-95-4	1600	ND
2,4,6-TRICHLOROPHENOL	88-06-2	1600	ND

SURROGATE RECOVERY	%
NITROBENZENE-D5	102
2-FLUOROBIPHENYL	108
P-TERPHENYL-D14	92
PHENOL-D5	81
2-FLUOROPHENOL	81
2,4,6-TRIBROMOPHENOL	115

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

APPROVED BY: CW
DATE: 10/15/2010

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

SAMPLE ID: W-21-3
LAB NO: 85665
DATE SAMPLED: 10/07/10
TIME SAMPLED: 10:44
BATCH #: 100510S01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/12/10

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3550/8270

SAMPLE TYPE: SOIL
UNITS: ug/Kg

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
ACENAPHTHENE	83-32-9	330	ND
ACENAPHTHYLENE	208-96-8	330	ND
ANTHRACENE	120-12-7	330	ND
BENZO (A) ANTHRACENE	56-55-3	330	ND
BENZO (B) FLUORANTHENE	205-99-2	330	ND
BENZO (K) FLUORANTHENE	207-08-9	330	ND
BENZO (A) PYRENE	50-32-8	330	ND
BENZO (G,H,I) PERYLENE	191-24-2	330	ND
BENZYL ALCOHOL	100-51-6	330	ND
BUTYL BENZYL PHTHALATE	85-68-7	330	ND
BIS (2-CHLOROETHYL) ETHER	111-44-4	330	ND
BIS (2-CHLOROETHOXY) METHANE	111-91-1	330	ND
BIS (2-CHLOROISOPROPYL) ETHER	108-60-1	330	ND
BIS (2-ETHYLHEXYL) PHTHALATE	117-81-7	330	ND
4-BROMOPHENYL PHENYL ETHER	101-55-3	330	ND
4-CHLOROANILINE	106-47-8	330	ND
2-CHLORONAPHTHALENE	91-58-7	330	ND
4-CHLOROPHENYL PHENYL ETHER	7005-72-3	330	ND
CHRYSENE	218-01-9	330	ND
DIBENZO (A,H) ANTHRACENE	53-70-3	330	ND
DIBENZOFURAN	132-64-9	330	ND
DI-N-BUTYLPHTHALATE	84-74-2	330	ND
1,2-DICHLOROBENZENE	95-50-1	330	ND
1,3-DICHLOROBENZENE	541-73-1	330	ND
1,4-DICHLOROBENZENE	106-46-7	330	ND
3,3'-DICHLOROBENZIDINE	91-94-1	660	ND
DIETHYLPHTHALATE	84-66-2	330	ND
DIMETHYL PHTHALATE	131-11-3	330	ND
2,4-DINITROTOLUENE	121-14-2	330	ND
2,6-DINITROTOLUENE	606-20-2	330	ND
DI-N-OCTYL PHTHALATE	117-84-0	330	ND
FLUORANTHENE	206-44-0	330	ND
FLUORENE	86-73-7	330	ND
HEXACHLOROBENZENE	118-74-1	330	ND
HEXACHLOROBUTADIENE	87-68-3	330	ND
HEXACHLOROCYCLOPENTADIENE	77-47-4	330	ND
HEXACHLOROETHANE	67-72-1	330	ND
INDENO (1,2,3-CD) PYRENE	193-39-5	330	ND
ISOPHORONE	78-59-1	330	ND

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

SAMPLE ID: W-21-3
LAB NO: 85665
DATE SAMPLED: 10/07/10
TIME SAMPLED: 10:44
BATCH #: 100510S01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/12/10

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3550/8270

SAMPLE TYPE: SOIL
UNITS: ug/Kg

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
2-METHYLNAPHTHALENE	91-57-6	330	ND
NAPHTHALENE	91-20-3	330	ND
2-NITROANILINE	88-74-4	1600	ND
3-NITROANILINE	99-09-2	1600	ND
4-NITROANILINE	100-01-6	1600	ND
NITROBENZENE	98-95-3	330	ND
N-NITROSO-DI-N-PROPYLAMINE	621-64-7	330	ND
N-NITROSODIPHENYLAMINE	86-30-6	330	ND
PHENANTHRENE	85-01-8	330	ND
PYRENE	129-00-0	330	ND
1,2,4-TRICHLOROBENZENE	120-82-1	330	ND
ACID EXTRACTABLES			
4-CHLORO-3-METHYLPHENOL	59-50-7	660	ND
2-CHLOROPHENOL	95-57-8	660	ND
2,4-DICHLOROPHENOL	120-83-2	660	ND
2,4-DIMETHYLPHENOL	105-67-9	660	ND
2,4-DINITROPHENOL	51-28-5	1600	ND
4,6-DINITRO-2-METHYLPHENOL	534-52-1	1600	ND
2-NITROPHENOL	88-75-5	1600	ND
4-NITROPHENOL	100-02-7	1600	ND
PENTACHLOROPHENOL	87-86-5	1600	ND
PHENOL	108-95-2	660	ND
2-METHYLPHENOL	95-48-7	660	ND
4-METHYLPHENOL	106-44-5	660	ND
2,4,5-TRICHLOROPHENOL	95-95-4	1600	ND
2,4,6-TRICHLOROPHENOL	88-06-2	1600	ND

SURROGATE RECOVERY	%
NITROBENZENE-D5	97
2-FLUOROBIPHENYL	92
P-TERPHENYL-D14	63
PHENOL-D5	108
2-FLUOROPHENOL	94
2,4,6-TRIBROMOPHENOL	96

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

APPROVED BY: CW
DATE: 10/15/2010

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

SAMPLE ID: W-21-6
LAB NO: 85666
DATE SAMPLED: 10/07/10
TIME SAMPLED: 10:47
BATCH #: 100510S01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/12/10

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3550/8270

SAMPLE TYPE: SOIL
UNITS: ug/Kg

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
ACENAPHTHENE	83-32-9	330	ND
ACENAPHTHYLENE	208-96-8	330	ND
ANTHRACENE	120-12-7	330	ND
BENZO (A) ANTHRACENE	56-55-3	330	ND
BENZO (B) FLUORANTHENE	205-99-2	330	ND
BENZO (K) FLUORANTHENE	207-08-9	330	ND
BENZO (A) PYRENE	50-32-8	330	ND
BENZO (G,H,I) PERYLENE	191-24-2	330	ND
BENZYL ALCOHOL	100-51-6	330	ND
BUTYL BENZYL PHTHALATE	85-68-7	330	ND
BIS (2-CHLOROETHYL) ETHER	111-44-4	330	ND
BIS (2-CHLOROETHOXY) METHANE	111-91-1	330	ND
BIS (2-CHLOROISOPROPYL) ETHER	108-60-1	330	ND
BIS (2-ETHYLHEXYL) PHTHALATE	117-81-7	330	ND
4-BROMOPHENYL PHENYL ETHER	101-55-3	330	ND
4-CHLOROANILINE	106-47-8	330	ND
2-CHLORONAPHTHALENE	91-58-7	330	ND
4-CHLOROPHENYL PHENYL ETHER	7005-72-3	330	ND
CHRYSENE	218-01-9	330	ND
DIBENZO (A,H) ANTHRACENE	53-70-3	330	ND
DIBENZOFURAN	132-64-9	330	ND
DI-N-BUTYLPHTHALATE	84-74-2	330	ND
1,2-DICHLOROBENZENE	95-50-1	330	ND
1,3-DICHLOROBENZENE	541-73-1	330	ND
1,4-DICHLOROBENZENE	106-46-7	330	ND
3,3'-DICHLOROBENZIDINE	91-94-1	660	ND
DIETHYLPHTHALATE	84-66-2	330	ND
DIMETHYL PHTHALATE	131-11-3	330	ND
2,4-DINITROTOLUENE	121-14-2	330	ND
2,6-DINITROTOLUENE	606-20-2	330	ND
DI-N-OCTYL PHTHALATE	117-84-0	330	ND
FLUORANTHENE	206-44-0	330	ND
FLUORENE	86-73-7	330	ND
HEXACHLOROBENZENE	118-74-1	330	ND
HEXACHLOROBUTADIENE	87-68-3	330	ND
HEXACHLOROCYCLOPENTADIENE	77-47-4	330	ND
HEXACHLOROETHANE	67-72-1	330	ND
INDENO (1,2,3-CD) PYRENE	193-39-5	330	ND
ISOPHORONE	78-59-1	330	ND

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

SAMPLE ID: W-21-6
LAB NO: 85666
DATE SAMPLED: 10/07/10
TIME SAMPLED: 10:47
BATCH #: 100510S01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/12/10

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3550/8270

SAMPLE TYPE: SOIL
UNITS: ug/Kg

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
2-METHYLNAPHTHALENE	91-57-6	330	ND
NAPHTHALENE	91-20-3	330	ND
2-NITROANILINE	88-74-4	1600	ND
3-NITROANILINE	99-09-2	1600	ND
4-NITROANILINE	100-01-6	1600	ND
NITROBENZENE	98-95-3	330	ND
N-NITROSO-DI-N-PROPYLAMINE	621-64-7	330	ND
N-NITROSODIPHENYLAMINE	86-30-6	330	ND
PHENANTHRENE	85-01-8	330	ND
PYRENE	129-00-0	330	ND
1,2,4-TRICHLOROBENZENE	120-82-1	330	ND
ACID EXTRACTABLES			
4-CHLORO-3-METHYLPHENOL	59-50-7	660	ND
2-CHLOROPHENOL	95-57-8	660	ND
2,4-DICHLOROPHENOL	120-83-2	660	ND
2,4-DIMETHYLPHENOL	105-67-9	660	ND
2,4-DINITROPHENOL	51-28-5	1600	ND
4,6-DINITRO-2-METHYLPHENOL	534-52-1	1600	ND
2-NITROPHENOL	88-75-5	1600	ND
4-NITROPHENOL	100-02-7	1600	ND
PENTACHLOROPHENOL	87-86-5	1600	ND
PHENOL	108-95-2	660	ND
2-METHYLPHENOL	95-48-7	660	ND
4-METHYLPHENOL	106-44-5	660	ND
2,4,5-TRICHLOROPHENOL	95-95-4	1600	ND
2,4,6-TRICHLOROPHENOL	88-06-2	1600	ND

SURROGATE RECOVERY	%
NITROBENZENE-D5	92
2-FLUOROBIPHENYL	94
P-TERPHENYL-D14	77
PHENOL-D5	84
2-FLUOROPHENOL	100
2,4,6-TRIBROMOPHENOL	105

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

APPROVED BY: CW
DATE: 10/15/2010

K PRIME, INC.
LABORATORY QC REPORT

METHOD BLANK ID: B10141001
LAB CONTROL SAMPLE ID: L10141001
LAB CONTROL DUPLICATE ID: D10141001
BATCH ID: 101410A01

METHOD: METHANE
REFERENCE: EPA METHOD 18

SAMPLE TYPE: AIR
UNITS: PPM -V/V

METHOD BLANK

COMPOUND NAME	REPORTING LIMIT	SAMPLE CONC
METHANE	10.0	ND

ACCURACY (LAB CONTROL SAMPLE)

COMPOUND NAME	EXPECTED CONC	MEASURED CONC	PERCENT RECOVERY	LIMITS (PERCENT)
METHANE	1000	1020	102	60-140

PRECISION (LAB CONTROL DUPLICATE)

COMPOUND NAME	SAMPLE RESULT	DUPLICATE RESULT	RPD (PERCENT)	LIMITS (PERCENT)
METHANE	1020	1040	1.94	±30

K PRIME, INC.
LABORATORY QUALITY CONTROL REPORT

BATCH ID: 100510W01
DATE EXTRACTED: 10/5/2010
DATE ANALYZED: 10/6/2010

METHOD: DRO
REFERENCE: EPA 8015B

SAMPLE TYPE: WATER
UNITS: mg/L

METHOD BLANK ID: B100510W01

COMPOUND NAME	REPORTING LIMIT	SAMPLE CONC
DRO	0.050	ND

SAMPLE ID: L100510W01
DUPLICATE ID: D100510W01

ACCURACY (MATRIX SPIKE)

PARAMETER	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
DRO	2.50	ND	2.10	84	60-140

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
DRO	0.050	2.10	2.28	8.2	±20

NOTES:
DRO - DIESEL RANGE ORGANICS (C12-C34)
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

K PRIME, INC.
LABORATORY QUALITY CONTROL REPORT

BATCH ID: 100710S1
DATE EXTRACTED: 10/7/2010
DATE ANALYZED: 10/7/2010

METHOD: DRO
REFERENCE: EPA 8015B

SAMPLE TYPE: SOIL
UNITS: mg/Kg

METHOD BLANK ID: B100710S1

COMPOUND NAME	REPORTING LIMIT	SAMPLE CONC
DRO	10.0	ND

SAMPLE ID: L100710S1
DUPLICATE ID: D100710S1

ACCURACY (MATRIX SPIKE)

PARAMETER	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
DRO	500	ND	480	96	60-140

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
DRO	10.0	480	415	15	±20

NOTES:
DRO - DIESEL RANGE ORGANICS (C12-C34)
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

K PRIME, INC.
LABORATORY QC REPORT

METHOD BLANK ID: B10121001-W
BATCH #: 101210W01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/13/10

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3510/8270

SAMPLE TYPE: WATER
UNITS: ug/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
ACENAPHTHENE	83-32-9	10.0	ND
ACENAPHTHYLENE	208-96-8	10.0	ND
ANTHRACENE	120-12-7	10.0	ND
BENZO (A) ANTHRACENE	56-55-3	10.0	ND
BENZO (B) FLUORANTHENE	205-99-2	10.0	ND
BENZO (K) FLUORANTHENE	207-08-9	10.0	ND
BENZO (A) PYRENE	50-32-8	10.0	ND
BENZO (G,H,I) PERYLENE	191-24-2	10.0	ND
BENZYL ALCOHOL	100-51-6	20.0	ND
BUTYL BENZYL PHTHALATE	85-68-7	10.0	ND
BIS (2-CHLOROETHYL) ETHER	111-44-4	10.0	ND
BIS (2-CHLOROETHOXY) METHANE	111-91-1	10.0	ND
BIS (2-CHLOROISOPROPYL) ETHER	108-60-1	10.0	ND
BIS (2-ETHYLHEXYL) PHTHALATE	117-81-7	10.0	ND
4-BROMOPHENYL PHENYL ETHER	101-55-3	10.0	ND
4-CHLOROANILINE	106-47-8	10.0	ND
2-CHLORONAPHTHALENE	91-58-7	10.0	ND
4-CHLOROPHENYL PHENYL ETHER	7005-72-3	10.0	ND
CHRYSENE	218-01-9	10.0	ND
DIBENZO (A,H) ANTHRACENE	53-70-3	10.0	ND
DIBENZOFURAN	132-64-9	10.0	ND
DI-N-BUTYLPHTHALATE	84-74-2	10.0	ND
1,2-DICHLOROBENZENE	95-50-1	10.0	ND
1,3-DICHLOROBENZENE	541-73-1	10.0	ND
1,4-DICHLOROBENZENE	106-46-7	10.0	ND
3,3'-DICHLOROBENZIDINE	91-94-1	20.0	ND
DIETHYLPHTHALATE	84-66-2	10.0	ND
DIMETHYL PHTHALATE	131-11-3	10.0	ND
2,4-DINITROTOLUENE	121-14-2	10.0	ND
2,6-DINITROTOLUENE	606-20-2	10.0	ND
DI-N-OCTYL PHTHALATE	117-84-0	10.0	ND
FLUORANTHENE	206-44-0	10.0	ND
FLUORENE	86-73-7	10.0	ND
HEXACHLOROBENZENE	118-74-1	10.0	ND
HEXACHLOROBUTADIENE	87-68-3	10.0	ND
HEXACHLOROCYCLOPENTADIENE	77-47-4	10.0	ND
HEXACHLOROETHANE	67-72-1	10.0	ND
INDENO (1,2,3-CD) PYRENE	193-39-5	10.0	ND
ISOPHORONE	78-59-1	10.0	ND

K PRIME, INC.
LABORATORY QC REPORT

METHOD BLANK ID: B10121001-W
BATCH #: 101210W01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/13/10

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3510/8270

SAMPLE TYPE: WATER
UNITS: ug/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
2-METHYLNAPHTHALENE	91-57-6	10.0	ND
NAPHTHALENE	91-20-3	10.0	ND
2-NITROANILINE	88-74-4	50.0	ND
3-NITROANILINE	99-09-2	50.0	ND
4-NITROANILINE	100-01-6	50.0	ND
NITROBENZENE	98-95-3	10.0	ND
N-NITROSO-DI-N-PROPYLAMINE	621-64-7	10.0	ND
N-NITROSODIPHENYLAMINE	86-30-6	10.0	ND
PHENANTHRENE	85-01-8	10.0	ND
PYRENE	129-00-0	10.0	ND
1,2,4-TRICHLOROBENZENE	120-82-1	10.0	ND
1,4-DIOXANE	123-91-1	3.00	ND
ACID EXTRACTABLES			
4-CHLORO-3-METHYLPHENOL	59-50-7	20.0	ND
2-CHLOROPHENOL	95-57-8	20.0	ND
2,4-DICHLOROPHENOL	120-83-2	20.0	ND
2,4-DIMETHYLPHENOL	105-67-9	20.0	ND
2,4-DINITROPHENOL	51-28-5	50.0	ND
4,6-DINITRO-2-METHYLPHENOL	534-52-1	50.0	ND
2-NITROPHENOL	88-75-5	50.0	ND
4-NITROPHENOL	100-02-7	50.0	ND
PENTACHLOROPHENOL	87-86-5	50.0	ND
PHENOL	108-95-2	20.0	ND
2-METHYLPHENOL	95-48-7	20.0	ND
4-METHYLPHENOL	106-44-5	20.0	ND
2,4,5-TRICHLOROPHENOL	95-95-4	50.0	ND
2,4,6-TRICHLOROPHENOL	88-06-2	50.0	ND

SURROGATE RECOVERY	%
NITROBENZENE-D5	97
2-FLUOROBIPHENYL	92
P-TERPHENYL-D14	89
PHENOL-D5	82
2-FLUOROPHENOL	89
2,4,6-TRIBROMOPHENOL	110

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

K PRIME, INC.
LABORATORY QC REPORT

SAMPLE ID: L10121001-W
DUPLICATE ID: D10121001-W
BATCH #: 101210W01
DATE EXTRACTED: 10/12/10
DATE ANALYZED: 10/13/10

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3510/8270

SAMPLE TYPE: WATER
UNITS: ug/L

ACCURACY (MATRIX SPIKE)

PARAMETER	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
ACENAPHTHENE	12.5	ND	12.9	103	40-140
1,4-DICHLOROBENZENE	12.5	ND	11.0	88	20-120
2,4-DINITROTOLUENE	12.5	ND	11.9	95	20-120
N-NITROSO-DI-N-PROPYLAMINE	12.5	ND	13.5	108	40-140
PYRENE	12.5	ND	13.0	104	40-140
1,2,4-TRICHLOROBENZENE	12.5	ND	12.6	101	20-120
4-CHLORO-3-METHYLPHENOL	25.0	ND	26.7	107	20-120
2-CHLOROPHENOL	25.0	ND	25.8	103	D-120
4-NITROPHENOL	25.0	ND	25.2	101	D-120
PENTACHLOROPHENOL	25.0	ND	28.2	113	D-120
PHENOL	25.0	ND	21.5	86	10-120

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
ACENAPHTHENE	2.00	12.9	13.0	0.8	±30
1,4-DICHLOROBENZENE	2.00	11.0	11.6	5.3	±30
2,4-DINITROTOLUENE	2.00	11.9	12.8	7.3	±30
N-NITROSO-DI-N-PROPYLAMINE	2.00	13.5	12.8	5.3	±30
PYRENE	2.00	13.0	13.1	0.8	±30
1,2,4-TRICHLOROBENZENE	2.00	12.6	12.7	0.8	±30
4-CHLORO-3-METHYLPHENOL	4.00	26.7	27.4	2.6	±30
2-CHLOROPHENOL	2.00	25.8	30.0	15	±40
4-NITROPHENOL	10.0	25.2	23.9	5.3	±40
PENTACHLOROPHENOL	10.0	28.2	25.9	8.5	±40
PHENOL	4.00	21.5	22.4	4.1	±40

NOTES:
ND = NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
D = DETECTED

K PRIME, INC.
LABORATORY QC REPORT

METHOD BLANK ID: B10051001
BATCH #: 100510S01
DATE EXTRACTED: 10/05/10
DATE ANALYZED: 10/05/10

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3550/8270

SAMPLE TYPE: SOIL
UNITS: ug/Kg

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
ACENAPHTHENE	83-32-9	330	ND
ACENAPHTHYLENE	208-96-8	330	ND
ANTHRACENE	120-12-7	330	ND
BENZO (A) ANTHRACENE	56-55-3	330	ND
BENZO (B) FLUORANTHENE	205-99-2	330	ND
BENZO (K) FLUORANTHENE	207-08-9	330	ND
BENZO (A) PYRENE	50-32-8	330	ND
BENZO (G,H,I) PERYLENE	191-24-2	330	ND
BENZYL ALCOHOL	100-51-6	330	ND
BUTYL BENZYL PHTHALATE	85-68-7	330	ND
BIS (2-CHLOROETHYL) ETHER	111-44-4	330	ND
BIS (2-CHLOROETHOXY) METHANE	111-91-1	330	ND
BIS (2-CHLOROISOPROPYL) ETHER	108-60-1	330	ND
BIS (2-ETHYLHEXYL) PHTHALATE	117-81-7	330	ND
4-BROMOPHENYL PHENYL ETHER	101-55-3	330	ND
4-CHLOROANILINE	106-47-8	330	ND
[illegible]	91-58-7	330	ND

K PRIME, INC.
LABORATORY QC REPORT

METHOD BLANK ID: B10051001
BATCH #: 100510S01
DATE EXTRACTED: 10/05/10
DATE ANALYZED: 10/05/10

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3550/8270

SAMPLE TYPE: SOIL
UNITS: ug/Kg

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
2-METHYLNAPHTHALENE	91-57-6	330	ND
NAPHTHALENE	91-20-3	330	ND
2-NITROANILINE	88-74-4	1600	ND
3-NITROANILINE	99-09-2	1600	ND
4-NITROANILINE	100-01-6	1600	ND
NITROBENZENE	98-95-3	330	ND
N-NITROSO-DI-N-PROPYLAMINE	621-64-7	330	ND
N-NITROSODIPHENYLAMINE	86-30-6	330	ND
PHENANTHRENE	85-01-8	330	ND
PYRENE	129-00-0	330	ND
1,2,4-TRICHLOROBENZENE	120-82-1	330	ND
ACID EXTRACTABLES			
4-CHLORO-3-METHYLPHENOL	59-50-7	660	ND
2-CHLOROPHENOL	95-57-8	660	ND
2,4-DICHLOROPHENOL	120-83-2	660	ND
2,4-DIMETHYLPHENOL	105-67-9	660	ND
2,4-DINITROPHENOL	51-28-5	1600	ND
4,6-DINITRO-2-METHYLPHENOL	534-52-1	1600	ND
2-NITROPHENOL	88-75-5	1600	ND
4-NITROPHENOL	100-02-7	1600	ND
PENTACHLOROPHENOL	87-86-5	1600	ND
PHENOL	108-95-2	660	ND
2-METHYLPHENOL	95-48-7	660	ND
4-METHYLPHENOL	106-44-5	660	ND
2,4,5-TRICHLOROPHENOL	95-95-4	1600	ND
2,4,6-TRICHLOROPHENOL	88-06-2	1600	ND

SURROGATE RECOVERY	%
NITROBENZENE-D5	99
2-FLUOROBIPHENYL	98
P-TERPHENYL-D14	67
PHENOL-D5	96
2-FLUOROPHENOL	95
2,4,6-TRIBROMOPHENOL	96

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

K PRIME, INC.
LABORATORY QC REPORT

SAMPLE ID: L10051001
DUPLICATE ID: D10051001
BATCH #: 100510S01
DATE EXTRACTED: 10/05/10
DATE ANALYZED: 10/05/10

METHOD: SEMIVOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 3550/8270

SAMPLE TYPE: SOIL
UNITS: ug/Kg

ACCURACY (MATRIX SPIKE)

PARAMETER	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
ACENAPHTHENE	5000	ND	4410	88	47-145
1,4-DICHLOROBENZENE	5000	ND	5400	108	20-124
2,4-DINITROTOLUENE	5000	ND	4800	96	60-140
N-NITROSO-DI-N-PROPYLAMINE	5000	ND	4750	95	60-140
PYRENE	5000	ND	4400	88	60-140
1,2,4-TRICHLOROBENZENE	5000	ND	5130	103	60-140
4-CHLORO-3-METHYLPHENOL	10000	ND	10300	103	20-140
2-CHLOROPHENOL	10000	ND	10300	103	D-140
4-NITROPHENOL	10000	ND	9670	97	D-140
PENTACHLOROPHENOL	10000	ND	10100	101	D-140
PHENOL	10000	ND	10300	103	30-140

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
ACENAPHTHENE	330	4410	4130	6.6	±20
1,4-DICHLOROBENZENE	330	5400	4770	12	±20
2,4-DINITROTOLUENE	330	4800	4570	4.9	±20
N-NITROSO-DI-N-PROPYLAMINE	330	4750	4840	1.9	±20
PYRENE	330	4400	4440	0.9	±20
1,2,4-TRICHLOROBENZENE	330	5130	5220	1.7	±20
4-CHLORO-3-METHYLPHENOL	330	10300	10100	2.0	±20
2-CHLOROPHENOL	660	10300	10500	1.9	±20
4-NITROPHENOL	1600	9700	9730	0.3	±20
PENTACHLOROPHENOL	1600	10100	10200	1.0	±20
PHENOL	660	10300	10000	3.0	±20

NOTES:
ND = NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
D = DETECTED

K PRIME, Inc.

CONSULTING ANALYTICAL CHEMISTS

3621 Westwind Blvd.
Santa Rosa CA 95403
Phone: 707 527 7574
FAX: 707 527 7879

TRANSMITTAL

DATE: 10/14/2010

TO: MR. PETER KRASNOFF
WEST ENVIRONMENTAL S&T
711 GRAND AVENUE, SUITE 220
SAN RAFAEL, CA 94901

Phone: 415-460-6770
Fax: 415-460-6771
Email: main@westenvironmental.com

ACCT: 9946
PROJ: RC.CHEMICAL WAY

FROM: Richard A. Kagel, Ph.D.
Laboratory Director RAK/MA 10/14/2010

SUBJECT: LABORATORY RESULTS FOR YOUR PROJECT RC.CHEMICAL WAY

Enclosed please find K Prime's laboratory reports for the following samples:

SAMPLE ID	TYPE	DATE	TIME	KPI LAB #
W-5	AIR	10/06/10	15:23	85642
W-6	AIR	10/06/10	14:12	85643
W-7	AIR	10/06/10	15:22	85644
W-12	AIR	10/06/10	14:37	85645
W-13	AIR	10/06/10	14:42	85646
W-16	WATER	10/06/10	10:30	85647
W-17	WATER	10/06/10	12:35	85648
W-13-1	SOIL	10/06/10	13:17	85649
W-13-3	SOIL	10/06/10	13:18	85650
W-17-1	SOIL	10/06/10	11:30	85651
W-17-3	SOIL	10/06/10	11:32	85652
W-5-1	SOIL	10/06/10	16:00	85653
W-5-3	SOIL	10/06/10	16:03	85654
W-6-1	SOIL	10/06/10	15:00	85655
W-6-3	SOIL	10/06/10	15:03	85656
W-7-1	SOIL	10/06/10	15:50	85657
W-7-3	SOIL	10/06/10	15:53	85658
W-12-1	SOIL	10/06/10	15:25	85659
W-12-3	SOIL	10/06/10	15:27	85660
W-1	AIR	10/07/10	9:56	85661
W-3	AIR	10/07/10	10:10	85662
W-20-3	SOIL	10/07/10	10:25	85663
W-20-6	SOIL	10/07/10	10:28	85664
W-21-3	SOIL	10/07/10	10:44	85665
W-21-6	SOIL	10/07/10	10:47	85666

The above listed sample group was received on 10/07/10 and tested as requested on the chain of custody document.

Please call me if you have any questions or need further information.
Thank you for this opportunity to be of service.

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

SAMPLE ID:	W-5
LAB NO:	85642
SAMPLE TYPE:	AIR
DATE SAMPLED:	10/6/10
TIME SAMPLED:	15:23
BATCH ID:	101310A01
DATE ANALYZED:	10/13/10

		PPB (V/V)		µg/cu. m	
COMPOUND NAME	**CAS NO.**	**MRL**	**SAMPLE CONC**	**MRL**	**SAMPLE CONC**
DICHLORODIFLUOROMETHANE	75-71-8	1.00	ND	4.95	ND
DICHLOROTETRAFLUOROETHANE	76-14-2	1.00	ND	6.99	ND
CHLOROMETHANE	74-87-3	1.00	ND	2.07	ND
VINYL CHLORIDE	75-01-4	1.00	ND	2.56	ND
BROMOMETHANE	74-83-9	1.00	ND	3.88	ND
CHLOROETHANE	75-00-3	1.00	ND	2.64	ND
TRICHLOROFLUOROMETHANE	75-69-4	1.00	ND	5.62	ND
1,1-DICHLOROETHENE	75-35-4	1.00	ND	3.97	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	1.00	ND	7.66	ND
METHYLENE CHLORIDE	75-09-2	1.00	ND	3.47	ND
1,1-DICHLOROETHANE	75-34-3	1.00	ND	4.05	ND
CIS-1,2-DICHLOROETHENE	156-59-2	1.00	ND	3.97	ND
CHLOROFORM	67-66-3	1.00	ND	4.88	ND
1,1,1-TRICHLOROETHANE	71-55-6	1.00	ND	5.46	ND
CARBON TETRACHLORIDE	56-23-5	1.00	ND	6.29	ND
1,2-DICHLOROETHANE	107-06-2	1.00	ND	4.05	ND
BENZENE	71-43-2	1.00	7.59	3.19	24.2
TRICHLOROETHENE	79-01-6	1.00	ND	5.37	ND
1,2-DICHLOROPROPANE	78-87-5	1.00	ND	4.62	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	1.00	ND	4.54	ND
TOLUENE	108-88-3	1.00	4.59	3.77	17.3
CIS-1,3-DICHLOROPROPENE	10061-01-5	1.00	ND	4.54	ND
1,1,2-TRICHLOROETHANE	79-00-5	1.00	ND	5.46	ND
TETRACHLOROETHENE	127-18-4	1.00	1.60	6.78	10.9
1,2-DIBROMOETHANE	106-93-4	1.00	ND	7.68	ND
CHLOROBENZENE	108-90-7	1.00	ND	4.60	ND
ETHYLBENZENE	100-41-4	1.00	ND	4.34	ND
XYLENE (M+P)	1330-20-7	1.00	1.25	4.34	5.43
XYLENE (O)	95-47-6	1.00	ND	4.34	ND
STYRENE	100-42-5	1.00	ND	4.26	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	1.00	ND	6.87	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	1.00	ND	4.92	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	1.00	ND	4.92	ND
1,3-DICHLOROBENZENE	541-73-1	1.00	ND	6.01	ND
1,4-DICHLOROBENZENE	106-46-7	1.00	ND	6.01	ND
1,2-DICHLOROBENZENE	95-50-1	1.00	ND	6.01	ND
1,2,4-TRICHLOROBENZENE	120-82-1	2.00	ND	14.8	ND
HEXACHLOROBUTADIENE	87-68-3	1.00	ND	10.7	ND

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
MRL - METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
µg/cu. m VALUES ARE CALCULATED FROM PPB RESULTS USING NORMAL TEMPERATURE AND PRESSURE (NPT).

APPROVED BY: MC
DATE: 10/14/10

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

SAMPLE ID:	W-6
LAB NO:	85643
SAMPLE TYPE:	AIR
DATE SAMPLED:	10/6/10
TIME SAMPLED:	14:12
BATCH ID:	101310A01
DATE ANALYZED:	10/14/10

COMPOUND NAME	CAS NO.	PPB (V/V)		µg/cu. m	
		MRL	SAMPLE CONC	MRL	SAMPLE CONC
DICHLORODIFLUOROMETHANE	75-71-8	1.00	ND	4.95	ND
DICHLOROTETRAFLUOROETHANE	76-14-2	1.00	ND	6.99	ND
CHLOROMETHANE	74-87-3	1.00	ND	2.07	ND
VINYL CHLORIDE	75-01-4	1.00	ND	2.56	ND
BROMOMETHANE	74-83-9	1.00	ND	3.88	ND
CHLOROETHANE	75-00-3	1.00	ND	2.64	ND
TRICHLOROFLUOROMETHANE	75-69-4	1.00	ND	5.62	ND
1,1-DICHLOROETHENE	75-35-4	1.00	ND	3.97	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	1.00	ND	7.66	ND
METHYLENE CHLORIDE	75-09-2	1.00	ND	3.47	ND
1,1-DICHLOROETHANE	75-34-3	1.00	1.72	4.05	6.96
CIS-1,2-DICHLOROETHENE	156-59-2	1.00	ND	3.97	ND
CHLOROFORM	67-66-3	1.00	ND	4.88	ND
1,1,1-TRICHLOROETHANE	71-55-6	1.00	ND	5.46	ND
CARBON TETRACHLORIDE	56-23-5	1.00	ND	6.29	ND
1,2-DICHLOROETHANE	107-06-2	1.00	ND	4.05	ND
BENZENE	71-43-2	1.00	19.3	3.19	61.8
TRICHLOROETHENE	79-01-6	1.00	ND	5.37	ND
1,2-DICHLOROPROPANE	78-87-5	1.00	ND	4.62	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	1.00	ND	4.54	ND
TOLUENE	108-88-3	1.00	2.67	3.77	10.1
CIS-1,3-DICHLOROPROPENE	10061-01-5	1.00	ND	4.54	ND
1,1,2-TRICHLOROETHANE	79-00-5	1.00	ND	5.46	ND
TETRACHLOROETHENE	127-18-4	1.00	ND	6.78	ND
1,2-DIBROMOETHANE	106-93-4	1.00	ND	7.68	ND
CHLOROBENZENE	108-90-7	1.00	ND	4.60	ND
ETHYLBENZENE	100-41-4	1.00	ND	4.34	ND
XYLENE (M+P)	1330-20-7	1.00	1.09	4.34	4.73
XYLENE (O)	95-47-6	1.00	ND	4.34	ND
STYRENE	100-42-5	1.00	ND	4.26	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	1.00	ND	6.87	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	1.00	ND	4.92	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	1.00	ND	4.92	ND
1,3-DICHLOROBENZENE	541-73-1	1.00	ND	6.01	ND
1,4-DICHLOROBENZENE	106-46-7	1.00	ND	6.01	ND
1,2-DICHLOROBENZENE	95-50-1	1.00	ND	6.01	ND
1,2,4-TRICHLOROBENZENE	120-82-1	2.00	ND	14.8	ND
HEXACHLOROBUTADIENE	87-68-3	1.00	ND	10.7	ND

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
MRL - METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
µg/cu. m VALUES ARE CALCULATED FROM PPB RESULTS USING NORMAL TEMPERATURE AND PRESSURE (NPT).

APPROVED BY: MK
DATE: 10/14/10

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

SAMPLE ID:	W-7
LAB NO:	85644
SAMPLE TYPE:	AIR
DATE SAMPLED:	10/6/10
TIME SAMPLED:	15:22
BATCH ID:	101310A01
DATE ANALYZED:	10/14/10

		PPB (V/V)		µg/cu. m	
COMPOUND NAME	**CAS NO.**	**MRL**	**SAMPLE CONC**	**MRL**	**SAMPLE CONC**
DICHLORODIFLUOROMETHANE	75-71-8	5.00	ND	24.7	ND
DICHLOROTETRAFLUOROETHANE	76-14-2	5.00	ND	35.0	ND
CHLOROMETHANE	74-87-3	5.00	ND	10.3	ND
VINYL CHLORIDE	75-01-4	5.00	ND	12.8	ND
BROMOMETHANE	74-83-9	5.00	ND	19.4	ND
CHLOROETHANE	75-00-3	5.00	ND	13.2	ND
TRICHLOROFLUOROMETHANE	75-69-4	5.00	ND	28.1	ND
1,1-DICHLOROETHENE	75-35-4	5.00	ND	19.8	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	5.00	ND	38.3	ND
METHYLENE CHLORIDE	75-09-2	5.00	ND	17.4	ND
1,1-DICHLOROETHANE	75-34-3	5.00	ND	20.2	ND
CIS-1,2-DICHLOROETHENE	156-59-2	5.00	ND	19.8	ND
CHLOROFORM	67-66-3	5.00	ND	24.4	ND
1,1,1-TRICHLOROETHANE	71-55-6	5.00	ND	27.3	ND
CARBON TETRACHLORIDE	56-23-5	5.00	ND	31.5	ND
1,2-DICHLOROETHANE	107-06-2	5.00	ND	20.2	ND
BENZENE	71-43-2	5.00	ND	16.0	ND
TRICHLOROETHENE	79-01-6	5.00	ND	26.9	ND
1,2-DICHLOROPROPANE	78-87-5	5.00	ND	23.1	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	5.00	ND	22.7	ND
TOLUENE	108-88-3	5.00	ND	18.8	ND
CIS-1,3-DICHLOROPROPENE	10061-01-5	5.00	ND	22.7	ND
1,1,2-TRICHLOROETHANE	79-00-5	5.00	ND	27.3	ND
TETRACHLOROETHENE	127-18-4	5.00	ND	33.9	ND
1,2-DIBROMOETHANE	106-93-4	5.00	ND	38.4	ND
CHLOROBENZENE	108-90-7	5.00	ND	23.0	ND
ETHYLBENZENE	100-41-4	5.00	ND	21.7	ND
XYLENE (M+P)	1330-20-7	5.00	ND	21.7	ND
XYLENE (O)	95-47-6	5.00	ND	21.7	ND
STYRENE	100-42-5	5.00	ND	21.3	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	5.00	ND	34.3	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	5.00	ND	24.6	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	5.00	ND	24.6	ND
1,3-DICHLOROBENZENE	541-73-1	5.00	ND	30.1	ND
1,4-DICHLOROBENZENE	106-46-7	5.00	ND	30.1	ND
1,2-DICHLOROBENZENE	95-50-1	5.00	ND	30.1	ND
1,2,4-TRICHLOROBENZENE	120-82-1	10.0	ND	74.2	ND
HEXACHLOROBUTADIENE	87-68-3	5.00	ND	53.3	ND

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
MRL - METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
µg/cu. m VALUES ARE CALCULATED FROM PPB RESULTS USING NORMAL TEMPERATURE AND PRESSURE (NPT).

APPROVED BY: _____
DATE: 10/14/10

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

SAMPLE ID:	W-12
LAB NO:	85645
SAMPLE TYPE:	AIR
DATE SAMPLED:	10/6/10
TIME SAMPLED:	14:37
BATCH ID:	101310A01
DATE ANALYZED:	10/14/10

COMPOUND NAME	CAS NO.	PPB (V/V)		µg/cu. m	
		MRL	SAMPLE CONC	MRL	SAMPLE CONC
DICHLORODIFLUOROMETHANE	75-71-8	5.00	ND	24.7	ND
DICHLOROTETRAFLUOROETHANE	76-14-2	5.00	ND	35.0	ND
CHLOROMETHANE	74-87-3	5.00	ND	10.3	ND
VINYL CHLORIDE	75-01-4	5.00	ND	12.8	ND
BROMOMETHANE	74-83-9	5.00	ND	19.4	ND
CHLOROETHANE	75-00-3	5.00	ND	13.2	ND
TRICHLOROFLUOROMETHANE	75-69-4	5.00	ND	28.1	ND
1,1-DICHLOROETHENE	75-35-4	5.00	ND	19.8	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	5.00	ND	38.3	ND
METHYLENE CHLORIDE	75-09-2	5.00	ND	17.4	ND
1,1-DICHLOROETHANE	75-34-3	5.00	ND	20.2	ND
CIS-1,2-DICHLOROETHENE	156-59-2	5.00	ND	19.8	ND
CHLOROFORM	67-66-3	5.00	21.3	24.4	104
1,1,1-TRICHLOROETHANE	71-55-6	5.00	ND	27.3	ND
CARBON TETRACHLORIDE	56-23-5	5.00	ND	31.5	ND
1,2-DICHLOROETHANE	107-06-2	5.00	ND	20.2	ND
BENZENE	71-43-2	5.00	ND	16.0	ND
TRICHLOROETHENE	79-01-6	5.00	ND	26.9	ND
1,2-DICHLOROPROPANE	78-87-5	5.00	ND	23.1	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	5.00	ND	22.7	ND
TOLUENE	108-88-3	5.00	ND	18.8	ND
CIS-1,3-DICHLOROPROPENE	10061-01-5	5.00	ND	22.7	ND
1,1,2-TRICHLOROETHANE	79-00-5	5.00	ND	27.3	ND
TETRACHLOROETHENE	127-18-4	5.00	ND	33.9	ND
1,2-DIBROMOETHANE	106-93-4	5.00	ND	38.4	ND
CHLOROBENZENE	108-90-7	5.00	ND	23.0	ND
ETHYLBENZENE	100-41-4	5.00	ND	21.7	ND
XYLENE (M+P)	1330-20-7	5.00	ND	21.7	ND
XYLENE (O)	95-47-6	5.00	ND	21.7	ND
STYRENE	100-42-5	5.00	ND	21.3	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	5.00	ND	34.3	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	5.00	ND	24.6	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	5.00	ND	24.6	ND
1,3-DICHLOROBENZENE	541-73-1	5.00	ND	30.1	ND
1,4-DICHLOROBENZENE	106-46-7	5.00	ND	30.1	ND
1,2-DICHLOROBENZENE	95-50-1	5.00	ND	30.1	ND
1,2,4-TRICHLOROBENZENE	120-82-1	10.0	ND	74.2	ND
HEXACHLOROBUTADIENE	87-68-3	5.00	ND	53.3	ND

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
MRL - METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
µg/cu. m VALUES ARE CALCULATED FROM PPB RESULTS USING NORMAL TEMPERATURE AND PRESSURE (NPT).

APPROVED BY: MMC
DATE: 10/14/10

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

SAMPLE ID:	W-13
LAB NO:	85646
SAMPLE TYPE:	AIR
DATE SAMPLED:	10/6/10
TIME SAMPLED:	14:42
BATCH ID:	101310A01
DATE ANALYZED:	10/13/10

		PPB (V/V)		µg/cu. m	
COMPOUND NAME	**CAS NO.**	**MRL**	**SAMPLE CONC**	**MRL**	**SAMPLE CONC**
DICHLORODIFLUOROMETHANE	75-71-8	1.00	ND	4.95	ND
DICHLOROTETRAFLUOROETHANE	76-14-2	1.00	ND	6.99	ND
CHLOROMETHANE	74-87-3	1.00	ND	2.07	ND
VINYL CHLORIDE	75-01-4	1.00	ND	2.56	ND
BROMOMETHANE	74-83-9	1.00	ND	3.88	ND
CHLOROETHANE	75-00-3	1.00	ND	2.64	ND
TRICHLOROFLUOROMETHANE	75-69-4	1.00	ND	5.62	ND
1,1-DICHLOROETHENE	75-35-4	1.00	ND	3.97	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	1.00	1.21	7.66	9.27
METHYLENE CHLORIDE	75-09-2	1.00	ND	3.47	ND
1,1-DICHLOROETHANE	75-34-3	1.00	ND	4.05	ND
CIS-1,2-DICHLOROETHENE	156-59-2	1.00	ND	3.97	ND
CHLOROFORM	67-66-3	1.00	2.36	4.88	11.5
1,1,1-TRICHLOROETHANE	71-55-6	1.00	ND	5.46	ND
CARBON TETRACHLORIDE	56-23-5	1.00	ND	6.29	ND
1,2-DICHLOROETHANE	107-06-2	1.00	ND	4.05	ND
BENZENE	71-43-2	1.00	8.46	3.19	27.0
TRICHLOROETHENE	79-01-6	1.00	ND	5.37	ND
1,2-DICHLOROPROPANE	78-87-5	1.00	ND	4.62	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	1.00	ND	4.54	ND
TOLUENE	108-88-3	1.00	3.41	3.77	12.8
CIS-1,3-DICHLOROPROPENE	10061-01-5	1.00	ND	4.54	ND
1,1,2-TRICHLOROETHANE	79-00-5	1.00	ND	5.46	ND
TETRACHLOROETHENE	127-18-4	1.00	4.88	6.78	33.1
1,2-DIBROMOETHANE	106-93-4	1.00	ND	7.68	ND
CHLOROBENZENE	108-90-7	1.00	ND	4.60	ND
ETHYLBENZENE	100-41-4	1.00	ND	4.34	ND
XYLENE (M+P)	1330-20-7	1.00	1.22	4.34	5.30
XYLENE (O)	95-47-6	1.00	ND	4.34	ND
STYRENE	100-42-5	1.00	ND	4.26	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	1.00	ND	6.87	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	1.00	ND	4.92	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	1.00	ND	4.92	ND
1,3-DICHLOROBENZENE	541-73-1	1.00	ND	6.01	ND
1,4-DICHLOROBENZENE	106-46-7	1.00	ND	6.01	ND
1,2-DICHLOROBENZENE	95-50-1	1.00	ND	6.01	ND
1,2,4-TRICHLOROBENZENE	120-82-1	2.00	ND	14.8	ND
HEXACHLOROBUTADIENE	87-68-3	1.00	ND	10.7	ND

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
MRL - METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
µg/cu. m VALUES ARE CALCULATED FROM PPB RESULTS USING NORMAL TEMPERATURE AND PRESSURE (NPT).

APPROVED BY: PMC
DATE: 10/14/10

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

SAMPLE ID:	W-1
LAB NO:	85661
SAMPLE TYPE:	AIR
DATE SAMPLED:	10/7/10
TIME SAMPLED:	9:56
BATCH ID:	101310A01
DATE ANALYZED:	10/13/10

		PPB (V/V)		µg/cu. m	
COMPOUND NAME	**CAS NO.**	**MRL**	**SAMPLE CONC**	**MRL**	**SAMPLE CONC**
DICHLORODIFLUOROMETHANE	75-71-8	1.00	ND	4.95	ND
DICHLOROTETRAFLUOROETHANE	76-14-2	1.00	ND	6.99	ND
CHLOROMETHANE	74-87-3	1.00	ND	2.07	ND
VINYL CHLORIDE	75-01-4	1.00	ND	2.56	ND
BROMOMETHANE	74-83-9	1.00	ND	3.88	ND
CHLOROETHANE	75-00-3	1.00	ND	2.64	ND
TRICHLOROFLUOROMETHANE	75-69-4	1.00	ND	5.62	ND
1,1-DICHLOROETHENE	75-35-4	1.00	ND	3.97	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	1.00	ND	7.66	ND
METHYLENE CHLORIDE	75-09-2	1.00	ND	3.47	ND
1,1-DICHLOROETHANE	75-34-3	1.00	ND	4.05	ND
CIS-1,2-DICHLOROETHENE	156-59-2	1.00	ND	3.97	ND
CHLOROFORM	67-66-3	1.00	ND	4.88	ND
1,1,1-TRICHLOROETHANE	71-55-6	1.00	ND	5.46	ND
CARBON TETRACHLORIDE	56-23-5	1.00	ND	6.29	ND
1,2-DICHLOROETHANE	107-06-2	1.00	ND	4.05	ND
BENZENE	71-43-2	1.00	2.28	3.19	7.28
TRICHLOROETHENE	79-01-6	1.00	ND	5.37	ND
1,2-DICHLOROPROPANE	78-87-5	1.00	ND	4.62	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	1.00	ND	4.54	ND
TOLUENE	108-88-3	1.00	2.86	3.77	10.8
CIS-1,3-DICHLOROPROPENE	10061-01-5	1.00	ND	4.54	ND
1,1,2-TRICHLOROETHANE	79-00-5	1.00	ND	5.46	ND
TETRACHLOROETHENE	127-18-4	1.00	ND	6.78	ND
1,2-DIBROMOETHANE	106-93-4	1.00	ND	7.68	ND
CHLOROBENZENE	108-90-7	1.00	ND	4.60	ND
ETHYLBENZENE	100-41-4	1.00	ND	4.34	ND
XYLENE (M+P)	1330-20-7	1.00	1.08	4.34	4.69
XYLENE (O)	95-47-6	1.00	ND	4.34	ND
STYRENE	100-42-5	1.00	ND	4.26	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	1.00	ND	6.87	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	1.00	ND	4.92	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	1.00	ND	4.92	ND
1,3-DICHLOROBENZENE	541-73-1	1.00	ND	6.01	ND
1,4-DICHLOROBENZENE	106-46-7	1.00	ND	6.01	ND
1,2-DICHLOROBENZENE	95-50-1	1.00	ND	6.01	ND
1,2,4-TRICHLOROBENZENE	120-82-1	2.00	ND	14.8	ND
HEXACHLOROBUTADIENE	87-68-3	1.00	ND	10.7	ND

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
MRL - METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
µg/cu. m VALUES ARE CALCULATED FROM PPB RESULTS USING NORMAL TEMPERATURE AND PRESSURE (NPT).

APPROVED BY: MM
DATE: 10/14/10

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

SAMPLE ID:	W-3
LAB NO:	85662
SAMPLE TYPE:	AIR
DATE SAMPLED:	10/7/10
TIME SAMPLED:	10:10
BATCH ID:	101310A01
DATE ANALYZED:	10/14/10

COMPOUND NAME	CAS NO.	PPB (V/V)		µg/cu. m	
		MRL	SAMPLE CONC	MRL	SAMPLE CONC
DICHLORODIFLUOROMETHANE	75-71-8	1000	ND	4950	ND
DICHLOROTETRAFLUOROETHANE	76-14-2	1000	ND	6990	ND
CHLOROMETHANE	74-87-3	1000	ND	2070	ND
VINYL CHLORIDE	75-01-4	1000	7310	2560	18700
BROMOMETHANE	74-83-9	1000	ND	3880	ND
CHLOROETHANE	75-00-3	1000	3260	2640	8600
TRICHLOROFLUOROMETHANE	75-69-4	1000	ND	5620	ND
1,1-DICHLOROETHENE	75-35-4	1000	ND	3970	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	1000	ND	7660	ND
METHYLENE CHLORIDE	75-09-2	1000	ND	3470	ND
1,1-DICHLOROETHANE	75-34-3	1000	6030	4050	24400
CIS-1,2-DICHLOROETHENE	156-59-2	1000	1030	3970	4090
CHLOROFORM	67-66-3	1000	ND	4880	ND
1,1,1-TRICHLOROETHANE	71-55-6	1000	ND	5460	ND
CARBON TETRACHLORIDE	56-23-5	1000	ND	6290	ND
1,2-DICHLOROETHANE	107-06-2	1000	ND	4050	ND
BENZENE	71-43-2	1000	11400	3190	36400
TRICHLOROETHENE	79-01-6	1000	ND	5370	ND
1,2-DICHLOROPROPANE	78-87-5	1000	ND	4620	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	1000	ND	4540	ND
TOLUENE	108-88-3	1000	166000	3770	625000
CIS-1,3-DICHLOROPROPENE	10061-01-5	1000	ND	4540	ND
1,1,2-TRICHLOROETHANE	79-00-5	1000	ND	5460	ND
TETRACHLOROETHENE	127-18-4	1000	ND	6780	ND
1,2-DIBROMOETHANE	106-93-4	1000	ND	7680	ND
CHLOROBENZENE	108-90-7	1000	ND	4600	ND
ETHYLBENZENE	100-41-4	1000	171000	4340	742000
XYLENE (M+P)	1330-20-7	1000	437000	4340	1900000
XYLENE (O)	95-47-6	1000	117000	4340	510000
STYRENE	100-42-5	1000	ND	4260	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	1000	ND	6870	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	1000	2240	4920	11000
1,2,4-TRIMETHYLBENZENE	95-63-6	1000	4480	4920	22000
1,3-DICHLOROBENZENE	541-73-1	1000	ND	6010	ND
1,4-DICHLOROBENZENE	106-46-7	1000	ND	6010	ND
1,2-DICHLOROBENZENE	95-50-1	1000	ND	6010	ND
1,2,4-TRICHLOROBENZENE	120-82-1	2000	ND	14800	ND
HEXACHLOROBUTADIENE	87-68-3	1000	ND	10700	ND

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
MRL - METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
µg/cu. m VALUES ARE CALCULATED FROM PPB RESULTS USING NORMAL TEMPERATURE AND PRESSURE (NPT).

APPROVED BY: _____
DATE: 10/14/10

K PRIME, INC.

LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

METHOD: GRO-GASOLINE RANGE ORGANICS
REFERENCE: EPA 8015B

SAMPLE TYPE: WATER
UNITS: mg/L

SAMPLE ID	LAB NO.	DATE SAMPLED	TIME SAMPLED	BATCH ID	DATE ANALYZED	MRL	SAMPLE CONC	GRO PATTERN
W-16	85647	10/6/2010	10:30	092710W1	10/9/2010	0.050	ND	
W-17	85648	10/6/2010	12:35	092710W1	10/9/2010	0.050	ND	

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
MRL - METHOD REPORTING LIMIT
AE - UNKNOWN HYDROCARBON WITH A SINGLE PEAK
AN - UNKNOWN HYDROCARBON WITH SEVERAL PEAKS
AS - HEAVIER HYDROCARBON THAN GASOLINE CONTRIBUTING TO GRO VALUE
CO - HYDROCARBON RESPONSE IN GASOLINE RANGE BUT DOES NOT RESEMBLE GASOLINE

APPROVED BY: ch
DATE: 10/14/2010

K PRIME, INC.

LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

METHOD: GRO-GASOLINE RANGE ORGANICS
REFERENCE: EPA 8015B

SAMPLE TYPE: SOIL
UNITS: mg/Kg

SAMPLE ID	LAB NO.	DATE SAMPLED	TIME SAMPLED	BATCH ID	DATE ANALYZED	MRL	SAMPLE CONC	GRO PATTERN
W-20-3	85663	10/7/2010	10:25	100710S1	10/11/2010	1.00	ND	
W-20-6	85664	10/7/2010	10:28	100710S1	10/11/2010	1.00	ND	
W-21-3	85665	10/7/2010	10:44	100710S1	10/11/2010	1.00	ND	
W-21-6	85666	10/7/2010	10:47	100710S1	10/11/2010	1.00	ND	

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
MRL - METHOD REPORTING LIMIT
AE - UNKNOWN HYDROCARBON WITH A SINGLE PEAK
AN - UNKNOWN HYDROCARBON WITH SEVERAL PEAKS
AS - HEAVIER HYDROCARBON THAN GASOLINE CONTRIBUTING TO GRO VALUE
CO - HYDROCARBON RESPONSE IN GASOLINE RANGE BUT DOES NOT RESEMBLE GASOLINE

APPROVED BY: _____
DATE: 10/14/2010

K PRIME, INC.
LABORATORY REPORT

SAMPLE ID: W-16
LAB NO: 85647
DATE SAMPLED: 10/6/2010
TIME SAMPLED: 10:30
BATCH #: 100510W1
DATE ANALYZED: 10/12/2010

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

METHOD: VOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 5030/8260

SAMPLE TYPE: WATER
UNITS: ug/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
DICHLORODIFLUOROMETHANE	75-71-8	0.500	ND
CHLOROMETHANE	74-87-3	0.500	ND
VINYL CHLORIDE	75-01-4	0.500	ND
BROMOMETHANE	74-83-9	0.500	ND
CHLOROETHANE	75-00-3	0.500	ND
TRICHLOROFLUOROMETHANE	75-69-4	0.500	ND
1,1-DICHLOROETHENE	75-35-4	0.500	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	0.500	ND
METHYLENE CHLORIDE	75-09-2	2.50	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	0.500	ND
1,1-DICHLOROETHANE	75-34-3	0.500	1.74
CIS-1,2-DICHLOROETHENE	156-59-2	0.500	0.690
2,2-DICHLOROPROPANE	594-20-7	0.500	ND
BROMOCHLOROMETHANE	74-97-5	0.500	ND
CHLOROFORM	67-66-3	0.500	ND
1,1,1-TRICHLOROETHANE	71-55-6	0.500	ND
CARBON TETRACHLORIDE	56-23-5	0.500	ND
1,1-DICHLOROPROPENE	563-58-6	0.500	ND
BENZENE	71-43-2	0.500	1.07
1,2-DICHLOROETHANE	107-06-2	0.500	ND
TRICHLOROETHENE	79-01-6	0.500	ND
1,2-DICHLOROPROPANE	78-87-5	0.500	ND
DIBROMOMETHANE	74-95-3	0.500	ND
BROMODICHLOROMETHANE	75-27-4	0.500	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	0.500	ND
TOLUENE	108-88-3	0.500	0.510
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.500	ND
1,1,2-TRICHLOROETHANE	79-00-5	0.500	ND
TETRACHLOROETHENE	127-18-4	0.500	ND
1,3-DICHLOROPROPANE	142-28-9	0.500	ND
DIBROMOCHLOROMETHANE	124-48-1	0.500	ND
1,2-DIBROMOETHANE	106-93-4	0.500	ND
CHLOROBENZENE	108-90-7	0.500	ND
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.500	ND
ETHYLBENZENE	100-41-4	0.500	ND
XYLENE (M+P)	1330-20-7	0.500	ND
XYLENE (O)	1330-20-7	0.500	ND
STYRENE	100-42-5	0.500	ND
BROMOFORM	75-25-2	0.500	ND
ISOPROPYLBENZENE	98-82-8	0.500	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.500	ND
BROMOBENZENE	108-86-1	0.500	ND
1,2,3-TRICHLOROPROPANE	96-18-4	0.500	ND
N-PROPYLBENZENE	103-65-1	0.500	ND
2-CHLOROTOLUENE	95-49-8	0.500	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	0.500	ND

K PRIME, INC.
LABORATORY REPORT

SAMPLE ID: W-16
LAB NO: 85647
DATE SAMPLED: 10/6/2010
TIME SAMPLED: 10:30
BATCH #: 100510W1
DATE ANALYZED: 10/12/2010

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

METHOD: VOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 5030/8260

SAMPLE TYPE: WATER
UNITS: ug/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
4-CHLOROTOLUENE	106-43-4	0.500	ND
TERT-BUTYLBENZENE	98-06-6	0.500	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	0.500	ND
SEC-BUTYLBENZENE	135-98-8	0.500	ND
1,3-DICHLOROBENZENE	541-73-1	0.500	ND
4-ISOPROPYLTOLUENE	99-87-6	0.500	ND
1,4-DICHLOROBENZENE	106-46-7	0.500	ND
N-BUTYLBENZENE	104-51-8	0.500	ND
1,2-DICHLOROBENZENE	95-50-1	0.500	ND
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	0.500	ND
1,2,4-TRICHLOROBENZENE	120-82-1	1.00	ND
HEXACHLOROBUTADIENE	87-68-3	1.00	ND
NAPHTHALENE	91-20-3	1.00	ND
1,2,3-TRICHLOROBENZENE	87-61-6	1.00	ND
1,4-DIOXANE	123-91-1	50.0	ND

SURROGATE RECOVERY	%
DIBROMOFLUOROMETHANE	99
TOLUENE-D8	102
4-BROMOFLUOROBENZENE	99

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA -NOT APPLICABLE OR AVAILABLE

APPROVED BY: _____
DATE: 10/14/2010

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

SAMPLE ID: W-17
LAB NO: 85648
DATE SAMPLED: 10/6/2010
TIME SAMPLED: 12:35
BATCH #: 100510W1
DATE ANALYZED: 10/12/2010

METHOD: VOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 5030/8260

SAMPLE TYPE: WATER
UNITS: ug/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
DICHLORODIFLUOROMETHANE	75-71-8	0.500	ND
CHLOROMETHANE	74-87-3	0.500	ND
VINYL CHLORIDE	75-01-4	0.500	ND
BROMOMETHANE	74-83-9	0.500	ND
CHLOROETHANE	75-00-3	0.500	ND
TRICHLOROFLUOROMETHANE	75-69-4	0.500	ND
1,1-DICHLOROETHENE	75-35-4	0.500	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	0.500	ND
METHYLENE CHLORIDE	75-09-2	2.50	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	0.500	ND
1,1-DICHLOROETHANE	75-34-3	0.500	0.660
CIS-1,2-DICHLOROETHENE	156-59-2	0.500	ND
2,2-DICHLOROPROPANE	594-20-7	0.500	ND
BROMOCHLOROMETHANE	74-97-5	0.500	ND
CHLOROFORM	67-66-3	0.500	ND
1,1,1-TRICHLOROETHANE	71-55-6	0.500	ND
CARBON TETRACHLORIDE	56-23-5	0.500	ND
1,1-DICHLOROPROPENE	563-58-6	0.500	ND
BENZENE	71-43-2	0.500	ND
1,2-DICHLOROETHANE	107-06-2	0.500	ND
TRICHLOROETHENE	79-01-6	0.500	ND
1,2-DICHLOROPROPANE	78-87-5	0.500	ND
DIBROMOMETHANE	74-95-3	0.500	ND
BROMODICHLOROMETHANE	75-27-4	0.500	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	0.500	ND
TOLUENE	108-88-3	0.500	ND
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.500	ND
1,1,2-TRICHLOROETHANE	79-00-5	0.500	ND
TETRACHLOROETHENE	127-18-4	0.500	ND
1,3-DICHLOROPROPANE	142-28-9	0.500	ND
DIBROMOCHLOROMETHANE	124-48-1	0.500	ND
1,2-DIBROMOETHANE	106-93-4	0.500	ND
CHLOROBENZENE	108-90-7	0.500	ND
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.500	ND
ETHYLBENZENE	100-41-4	0.500	ND
XYLENE (M+P)	1330-20-7	0.500	ND
XYLENE (O)	1330-20-7	0.500	ND
STYRENE	100-42-5	0.500	ND
BROMOFORM	75-25-2	0.500	ND
ISOPROPYLBENZENE	98-82-8	0.500	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.500	ND
BROMOBENZENE	108-86-1	0.500	ND
1,2,3-TRICHLOROPROPANE	96-18-4	0.500	ND
N-PROPYLBENZENE	103-65-1	0.500	ND
2-CHLOROTOLUENE	95-49-8	0.500	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	0.500	ND

K PRIME, INC.
LABORATORY REPORT

SAMPLE ID: W-17
LAB NO: 85648
DATE SAMPLED: 10/6/2010
TIME SAMPLED: 12:35
BATCH #: 100510W1
DATE ANALYZED: 10/12/2010

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

METHOD: VOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 5030/8260

SAMPLE TYPE: WATER
UNITS: ug/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
4-CHLOROTOLUENE	106-43-4	0.500	ND
TERT-BUTYLBENZENE	98-06-6	0.500	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	0.500	ND
SEC-BUTYLBENZENE	135-98-8	0.500	ND
1,3-DICHLOROBENZENE	541-73-1	0.500	ND
4-ISOPROPYLTOLUENE	99-87-6	0.500	ND
1,4-DICHLOROBENZENE	106-46-7	0.500	ND
N-BUTYLBENZENE	104-51-8	0.500	ND
1,2-DICHLOROBENZENE	95-50-1	0.500	ND
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	0.500	ND
1,2,4-TRICHLOROBENZENE	120-82-1	1.00	ND
HEXACHLOROBUTADIENE	87-68-3	1.00	ND
NAPHTHALENE	91-20-3	1.00	ND
1,2,3-TRICHLOROBENZENE	87-61-6	1.00	ND
1,4-DIOXANE	123-91-1	50.0	ND

SURROGATE RECOVERY	%
DIBROMOFLUOROMETHANE	100
TOLUENE-D8	105
4-BROMOFLUOROBENZENE	95

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA -NOT APPLICABLE OR AVAILABLE

APPROVED BY: ch
DATE: 10/14/2010

K PRIME, INC.
LABORATORY REPORT

METHOD: TOTAL LEAD
REFERENCE: EPA 3050B/6020A

K PRIME PROJECT: 9946
CLIENT PROJECT: RC.CHEMICAL WAY

SAMPLE TYPE: SOLID
UNITS: mg/Kg

SAMPLE ID	LAB ID	BATCH #	DATE SAMPLED	DATE ANALYZED	REPORTING LIMIT	SAMPLE CONC
W-13-1	85649	101011S01	10/06/10	10/11/10	2.50	14.6
W-13-3	85650	101011S01	10/06/10	10/11/10	2.50	13.4
W-17-1	85651	101011S01	10/06/10	10/11/10	2.50	7.58
W-17-3	85652	101011S01	10/06/10	10/11/10	2.50	8.78
W-5-1	85653	101011S01	10/06/10	10/11/10	2.50	9.55
W-5-3	85654	101011S01	10/06/10	10/11/10	2.50	5.26
W-6-1	85655	101011S01	10/06/10	10/11/10	2.50	5.15
W-6-3	85656	101011S01	10/06/10	10/11/10	2.50	21.7
W-7-1	85657	101011S01	10/06/10	10/11/10	2.50	3.16
W-7-3	85658	101011S01	10/06/10	10/11/10	2.50	13.5
W-12-1	85659	101011S01	10/06/10	10/11/10	2.50	10.5
W-12-3	85660	101011S01	10/06/10	10/11/10	2.50	31.5

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT AVAILABLE OR APPLICABLE

APPROVED BY: _____

DATE: 10/14/2010

K PRIME, INC.

LABORATORY METHOD BLANK REPORT

METHOD BLANK ID: B10131001
SAMPLE TYPE: AIR

BATCH ID: 101310A01
DATE ANALYZED: 10/13/10

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

		PPB (V/V)		µg/cu. m	
COMPOUND NAME	**CAS NO.**	**MRL**	**SAMPLE CONC**	**MRL**	**SAMPLE CONC**
DICHLORODIFLUOROMETHANE	75-71-8	0.500	ND	2.47	ND
DICHLOROTETRAFLUOROETHANE	76-14-2	0.500	ND	3.50	ND
CHLOROMETHANE	74-87-3	0.500	ND	1.03	ND
VINYL CHLORIDE	75-01-4	0.500	ND	1.28	ND
BROMOMETHANE	74-83-9	0.500	ND	1.94	ND
CHLOROETHANE	75-00-3	0.500	ND	1.32	ND
TRICHLOROFLUOROMETHANE	75-69-4	0.500	ND	2.81	ND
1,1-DICHLOROETHENE	75-35-4	0.500	ND	1.98	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	0.500	ND	3.83	ND
METHYLENE CHLORIDE	75-09-2	0.500	ND	1.74	ND
1,1-DICHLOROETHANE	75-34-3	0.500	ND	2.02	ND
CIS-1,2-DICHLOROETHENE	156-59-2	0.500	ND	1.98	ND
CHLOROFORM	67-66-3	0.500	ND	2.44	ND
1,1,1-TRICHLOROETHANE	71-55-6	0.500	ND	2.73	ND
CARBON TETRACHLORIDE	56-23-5	0.500	ND	3.15	ND
1,2-DICHLOROETHANE	107-06-2	0.500	ND	2.02	ND
BENZENE	71-43-2	0.500	ND	1.60	ND
TRICHLOROETHENE	79-01-6	0.500	ND	2.69	ND
1,2-DICHLOROPROPANE	78-87-5	0.500	ND	2.31	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	0.500	ND	2.27	ND
TOLUENE	108-88-3	0.500	ND	1.88	ND
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.500	ND	2.27	ND
1,1,2-TRICHLOROETHANE	79-00-5	0.500	ND	2.73	ND
TETRACHLOROETHENE	127-18-4	0.500	ND	3.39	ND
1,2-DIBROMOETHANE	106-93-4	0.500	ND	3.84	ND
CHLOROBENZENE	108-90-7	0.500	ND	2.30	ND
ETHYLBENZENE	100-41-4	0.500	ND	2.17	ND
XYLENE (M+P)	1330-20-7	0.500	ND	2.17	ND
XYLENE (O)	95-47-6	0.500	ND	2.17	ND
STYRENE	100-42-5	0.500	ND	2.13	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.500	ND	3.43	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	0.500	ND	2.46	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	0.500	ND	2.46	ND
1,3-DICHLOROBENZENE	541-73-1	0.500	ND	3.01	ND
1,4-DICHLOROBENZENE	106-46-7	0.500	ND	3.01	ND
1,2-DICHLOROBENZENE	95-50-1	0.500	ND	3.01	ND
1,2,4-TRICHLOROBENZENE	120-82-1	1.00	ND	7.42	ND
HEXACHLOROBUTADIENE	87-68-3	0.500	ND	5.33	ND

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
MRL - METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
µg/cu. m VALUES ARE CALCULATED FROM PPB RESULTS USING NORMAL TEMPERATURE AND PRESSURE (NPT).

K PRIME, INC.
LABORATORY QUALITY CONTROL REPORT

LAB CONTROL ID: L10131001
LAB CONTROL DUPLICATE ID: D10131001

SAMPLE TYPE: AIR
BATCH ID: 101310A01
DATE ANALYZED: 10/14/10

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

COMPOUND NAME	SPIKE ADDED (PPB)	REPORTING LIMIT (PPB)	SAMPLE CONC (PPB)	SPIKE CONC (PPB)	SPIKE REC (%)	REC LIMITS (%)
1,1-DICHLOROETHENE	10.0	0.500	ND	10.4	104	60 - 140
TRICHLOROETHENE	10.0	0.500	ND	10.7	107	60 - 140
BENZENE	10.0	0.500	ND	10.9	109	60 - 140
TOLUENE	10.0	0.500	ND	10.8	108	60 - 140
TETRACHLOROETHENE	10.0	0.500	ND	8.71	87.1	60 - 140

COMPOUND NAME	SPIKE ADDED (PPB)	SPIKE DUP CONC (PPB)	SPIKE DUP REC (%)	RPD (%)	QC LIMITS RPD (%)	QC LIMITS REC (%)
1,1-DICHLOROETHENE	10.0	10.1	101	3.62	25	60 - 140
TRICHLOROETHENE	10.0	10.5	105	2.55	25	60 - 140
BENZENE	10.0	11.3	113	3.79	25	60 - 140
TOLUENE	10.0	11.0	110	1.74	25	60 - 140
TETRACHLOROETHENE	10.0	8.64	86.4	0.807	25	60 - 140

NOTES:
NA - NOT APPLICABLE OR AVAILABLE
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT

K PRIME, INC.
LABORATORY QUALITY CONTROL REPORT

METHOD BLANK ID: B092710W1
SAMPLE TYPE: WATER

METHOD: GRO-GASOLINE RANGE ORGANICS
REFERENCE: EPA 8015B

BATCH #: 092710W1
DATE EXTRACTED: 9/27/2010
DATE ANALYZED: 9/27/2010

UNITS: mg/L

COMPOUND NAME	REPORTING LIMIT	SAMPLE CONC
TPH-G	0.050	ND

SAMPLE ID: L092710W1
DUPLICATE ID: D092710W1
BATCH #: 092710W1
SAMPLE TYPE: WATER
UNITS: mg/L

DATE EXTRACTED: 9/27/2010
DATE ANALYZED: 9/27/2010

ACCURACY (MATRIX SPIKE)

PARAMETER	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
TPH-G	0.250	ND	0.235	94	60-140

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
TPH-G	0.050	0.235	0.227	3.5	±20

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE

K PRIME, INC.
LABORATORY QC REPORT

METHOD: GRO-GASOLINE RANGE ORGANICS
REFERENCE: EPA 8015B

METHOD BLANK ID: B100710S1
SAMPLE TYPE: SOIL

BATCH #: 100710S1
DATE EXTRACTED: 10/7/2010
DATE ANALYZED: 10/7/2010

UNITS: mg/kg

COMPOUND NAME	REPORTING LIMIT	SAMPLE CONC
TPH-G	1.00	ND

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT AVAILABLE OR APPLICABLE

SAMPLE ID: L100710S1
DUPLICATE ID: D100710S1
BATCH #: 100710S1
SAMPLE TYPE: SOIL
UNITS: mg/kg

DATE EXTRACTED: 10/7/2010
DATE ANALYZED: 10/7/2010

ACCURACY (MATRIX SPIKE)

PARAMETER	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
TPH-G	5.00	ND	4.80	96	60-140

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
TPH-G	1.00	4.80	4.71	2.0	±20

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT AVAILABLE OR APPLICABLE

K PRIME, INC.
LABORATORY METHOD BLANK REPORT

METHOD BLANK ID: B100510W1

BATCH #: 100510W1
DATE ANALYZED: 10/6/2010

METHOD: VOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 5030/8260

SAMPLE TYPE: WATER
UNITS: ug/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
DICHLORODIFLUOROMETHANE	75-71-8	0.500	ND
CHLOROMETHANE	74-87-3	0.500	ND
VINYL CHLORIDE	75-01-4	0.500	ND
BROMOMETHANE	74-83-9	0.500	ND
CHLOROETHANE	75-00-3	0.500	ND
TRICHLOROFLUOROMETHANE	75-69-4	0.500	ND
1,1-DICHLOROETHENE	75-35-4	0.500	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	0.500	ND
METHYLENE CHLORIDE	75-09-2	2.50	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	0.500	ND
1,1-DICHLOROETHANE	75-34-3	0.500	ND
CIS-1,2-DICHLOROETHENE	156-59-2	0.500	ND
2,2-DICHLOROPROPANE	594-20-7	0.500	ND
BROMOCHLOROMETHANE	74-97-5	0.500	ND
CHLOROFORM	67-66-3	0.500	ND
1,1,1-TRICHLOROETHANE	71-55-6	0.500	ND
CARBON TETRACHLORIDE	56-23-5	0.500	ND
1,1-DICHLOROPROPENE	563-58-6	0.500	ND
BENZENE	71-43-2	0.500	ND
1,2-DICHLOROETHANE	107-06-2	0.500	ND
TRICHLOROETHENE	79-01-6	0.500	ND
1,2-DICHLOROPROPANE	78-87-5	0.500	ND
DIBROMOMETHANE	74-95-3	0.500	ND
BROMODICHLOROMETHANE	75-27-4	0.500	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	0.500	ND
TOLUENE	108-88-3	0.500	ND
CIS-1,3-DICHLOROPROPENE	10061-01-5	0.500	ND
1,1,2-TRICHLOROETHANE	79-00-5	0.500	ND
TETRACHLOROETHENE	127-18-4	0.500	ND
1,3-DICHLOROPROPANE	142-28-9	0.500	ND
DIBROMOCHLOROMETHANE	124-48-1	0.500	ND
1,2-DIBROMOETHANE	106-93-4	0.500	ND
CHLOROBENZENE	108-90-7	0.500	ND
1,1,1,2-TETRACHLOROETHANE	630-20-6	0.500	ND
ETHYLBENZENE	100-41-4	0.500	ND
XYLENE (M+P)	1330-20-7	0.500	ND
XYLENE (O)	1330-20-7	0.500	ND
STYRENE	100-42-5	0.500	ND
BROMOFORM	75-25-2	0.500	ND
ISOPROPYLBENZENE	98-82-8	0.500	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.500	ND
BROMOBENZENE	108-86-1	0.500	ND
1,2,3-TRICHLOROPROPANE	96-18-4	0.500	ND
N-PROPYLBENZENE	103-65-1	0.500	ND
2-CHLOROTOLUENE	95-49-8	0.500	ND
1,3,5-TRIMETHYLBENZENE	108-67-8	0.500	ND

K PRIME, INC.
LABORATORY METHOD BLANK REPORT

METHOD BLANK ID: B100510W1

BATCH #: 100510W1
DATE ANALYZED: 10/6/2010

METHOD: VOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 5030/8260

SAMPLE TYPE: WATER
UNITS: ug/L

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
4-CHLOROTOLUENE	106-43-4	0.500	ND
TERT-BUTYLBENZENE	98-06-6	0.500	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	0.500	ND
SEC-BUTYLBENZENE	135-98-8	0.500	ND
1,3-DICHLOROBENZENE	541-73-1	0.500	ND
4-ISOPROPYLTOLUENE	99-87-6	0.500	ND
1,4-DICHLOROBENZENE	106-46-7	0.500	ND
N-BUTYLBENZENE	104-51-8	0.500	ND
1,2-DICHLOROBENZENE	95-50-1	0.500	ND
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	0.500	ND
1,2,4-TRICHLOROBENZENE	120-82-1	1.00	ND
HEXACHLOROBUTADIENE	87-68-3	1.00	ND
NAPHTHALENE	91-20-3	1.00	ND
1,2,3-TRICHLOROBENZENE	87-61-6	1.00	ND
1,4-DIOXANE	123-91-1	50.0	ND

SURROGATE RECOVERY	%
DIBROMOFLUOROMETHANE	104
TOLUENE-D8	91
4-BROMOFLUOROBENZENE	101

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA -NOT APPLICABLE OR AVAILABLE

K PRIME, INC.
LABORATORY QC REPORT

METHOD: VOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 5030/8260

SAMPLE ID: B100510W1
SPIKE ID: L100510W1
DUPLICATE ID: D100510W1
BATCH #: 100510W1
SAMPLE TYPE: WATER
UNITS: µg/L

ACCURACY (MATRIX SPIKE)

PARAMETER	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
1,1 DICHLOROETHENE	10.0	ND	10.1	101	60-140
BENZENE	10.0	ND	7.80	78	60-140
TRICHLOROETHENE	10.0	ND	8.69	87	60-140
TOLUENE	10.0	ND	9.13	91	60-140
CHLOROBENZENE	10.0	ND	11.2	112	60-140

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
1,1 DICHLOROETHENE	0.500	10.1	9.72	3.3	±20
BENZENE	0.500	7.80	7.71	1.2	±20
TRICHLOROETHENE	0.500	8.69	8.83	1.6	±20
TOLUENE	0.500	9.13	8.89	2.7	±20
CHLOROBENZENE	0.500	11.2	10.6	5.2	±20

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT AVAILABLE OR APPLICABLE

WEST
Environmental Services & Technology
711 Grand Avenue, Suite 220
San Rafael, California 94901
415.460.6770 • Fax 415.460.6771
main@westenvironmental.com

SAMPLE ANALYSIS/COMPOSITE REQUEST FORM

CHAIN-OF-CUSTODY

Invoice to: WEST, Inc.	**Date:** 10.7.10 **Page** ~~1 of 1~~ 1 of 3
Project: RC.Chemical Way	**Location: Redwood City**
Project Manager: Peter Krasnoff, WEST, Inc.	**Phone: 415/460-6770** **Fax: 415/460-6771**
Laboratory: KPrime, Inc, Santa Rosa, CA	**Turnaround time (days)** 1 / 2 / 3 / 5 / 7 / 10 / Std. X
Sampler Signature:	**Analyses Requested**

KPI #	Sample ID	Date	Time	Type	# Containers	Composite	TPHg/TPHd/TPHmo (8015M)*	VOCs + 1,4-Dioxane (8260B)	SVOCs (8270C-SIM)	~~Total Nitrate and Nitrite (USEPA 300.0)~~	Lead (6020)	VOCs (TO-14A/TO-15)	Methane **	Summa ID			HOLD
85642	W-5	10.6.10	15:02 / 15:23	SG	1							X		S-658			
85643	W-6	"	14:02 / 14:12	SG	1							X	X	S-232			
85644	W-7	"	14:56 / 15:22	SG	1							X	X	S-650			
85645	W-12	"	14:26 / 14:37	SG	1							X		S-356			
85646	W-13	"	14:32 / 14:42	SG	1							X		S-292			
85647	W-16	"	10:30	W	8		X	X	X								
85648	W-17	"	12:35	W	5		X	X									
85649	W-13-1	"	13:17	S	1						X						
85650	W-13-3	"	13:18	S	1						X						
85651	W-17-1	"	11:30	S	1						X						
85652	W-17-3	"	11:32	S	1						X						
85653	W-5-1	"	16:00	S	1						X						

NOTES: (*) Silica Gel Cleanup

** 24 Hr Methane per peter M 10/14/10 pt

+ Results by October 15, 2010 -COB

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	10.7.10 11:00	Eric (VTC)	10/7/10 11:0
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Eric (VTC)	10/7/10 1435	(KPI	10/7/10 1435

WEST
Environmental Services & Technology
711 Grand Avenue, Suite 220
San Rafael, California 94901
415.460.6770 • Fax 415.460.6771
main@westenvironmental.com

SAMPLE ANALYSIS/COMPOSITE REQUEST FORM

CHAIN-OF-CUSTODY

Invoice to: WEST, Inc.
Project: RC.Chemical Way
Project Manager: Peter Krasnoff, WEST, Inc.
Laboratory: KPrime, Inc, Santa Rosa, CA
Sampler Signature:

Date: 10.7.10 Page 2 of 3
Location: Redwood City
Phone: 415/460-6770 Fax: 415/460-6771

Turnaround time (days): 1 | 2 | 3 | 5 | 7 | 10 | Std. X

Analyses Requested

KPI #	Sample ID	Date	Time	Type	# Containers	Composite	TPHg/TPHd/TPHmo (8015M)*	VOCs + 1,4-Dioxane (8260B)	SVOCs (8270C-SIM)	Total Nitrate and Nitrite (USEPA 300.0)	Lead (6020)	VOCs (TO-14A/TO-15)	Methane ***	Summa ID			HOLD
85654	W-5-3	10.6.10	16:03	S	1						X						
85655	W-6-1	"	15:00	S	1						X						
85656	W-6-3	"	15:03	S	1						X						
85657	W-7-1	"	15:50	S	1						X						
85658	W-7-3	"	15:53	S	1						X						
85659	W-12-1	"	15:25	S	1						X						
85660	W-12-3	"	15:27	S	1						X						
85661	W-1	10.7.10	9:45 / 9:56	SG	1							X		S-651			
85662	W-3	"	9:53 / 10:10	SG	1							X	X	S-659			
85663	W-20-3	"	10:25	S	1		X		X								
85664	W-20-6	"	10:28	S	1		X		X								
85665	W-21-3	"	10:44	S	1		X		X								

NOTES: (*) Silica Gel Cleanup

*** 24 Hr methane per Peter 10/14/10 ph

* Results by October 5, 2010 – COB

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	10.7.10 11:00	(VTC)	10/7/10 11:05
(VTC)	10/7/10 1435	(KPI)	10/7/10 1435

WEST
Environmental Services & Technology
711 Grand Avenue, Suite 220
San Rafael, California 94901
415.460.6770 • Fax 415.460.6771
main@westenvironmental.com

SAMPLE ANALYSIS/COMPOSITE REQUEST FORM

CHAIN-OF-CUSTODY

Invoice to: WEST, Inc.
Project: RC.Chemical Way
Project Manager: Peter Krasnoff, WEST, Inc.
Laboratory: KPrime, Inc, Santa Rosa, CA
Sampler Signature:

Date: 10/7/10 Page 3 of 3
Location: Redwood City
Phone: 415/460-6770 Fax: 415/460-6771
Turnaround time (days): 1 | 2 | 3 | 5 | 7 | 10 | Std. X

Analyses Requested

KPI#	Sample ID	Date	Time	Type	# Containers	Composite	TPHg/TPHd/TPHmo (8015M)*	VOCs + 1,4-Dioxane (8260B)	SVOCs (8270C-SIM)	Total Nitrate and Nitrite (USEPA 300.0)	Lead (6020)	VOCs (TO-14A/TO-15)		Summa ID			HOLD
85666	W-21-G	10.7.10	10:47	S	1		X		X								

NOTES: (*) Silica Gel Cleanup

* Results by October 15, 2010 - COB

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	10.7.10 11:00		10/7/10 11:00
Relinquished by: (Signature) Email (TO)	Date/Time 10/7/10 1435	Received by: (Signature)	Date/Time 10/7/10 1435

WEST
Environmental Services & Technology
711 Grand Avenue, Suite 220
San Rafael, California 94901
415.460.6770 • Fax 415.460.6771
main@westenvironmental.com

SAMPLE ANALYSIS/COMPOSITE REQUEST FORM

CHAIN-OF-CUSTODY

Invoice to: WEST, Inc.
Project: RC.Chemical Way
Project Manager: Peter Krasnoff, WEST, Inc.
Laboratory: KPrime, Inc, Santa Rosa, CA
Sampler Signature:

Date: 10.7.10 **Page** ~~3 of 4~~ 1 of 3
Location: Redwood City
Phone: 415/460-6770 **Fax:** 415/460-6771

Turnaround time (days)	1	2	3	5	7	10	Std.
							X

KPI #	Sample ID	Date	Time	Type	# Containers	Composite	TPHg/TPHd/TPHmo (8015M)*	VOCs + 1,4-Dioxane (8260B)	SVOCs (8270C-SIM)	~~Total Nitrate and Nitrite (USEPA 300.0)~~	Lead (6020)	VOCs (TO-14A/TO-15)		Summa ID			HOLD
85642	W-5	10.6.10	~~15:02~~ 15:23	SG	1							X		S-658			
85643	W-6	"	~~14:02~~ 14:12	SG	1							X		S-232			
85644	W-7	"	~~14:56~~ 15:22	SG	1							X		S-650			
85645	W-12	"	~~14:26~~ 14:37	SG	1							X		S-356			
85646	W-13	"	~~14:32~~ 14:42	SG	1							X		S-292			
85647	W-16	"	10:30	W	8		X	X	X								
85648	W-17	"	12:35	W	5		X	X									
85649	W-13-1	"	13:17	S	1						X						
85650	W-13-3	"	13:18	S	1						X						
85651	W-17-1	"	11:30	S	1						X						
85652	W-17-3	"	11:32	S	1						X						
85653	W-5-1	"	16:00	S	1						X						

NOTES: (*) Silica Gel Cleanup

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	10.7.10 11:00	(VTC)	10/7/10 11:0
Relinquished by: (Signature) (VTC)	Date/Time 10/7/10 1435	Received by: (Signature) (KPI	Date/Time 10/7/10 1435

WEST
Environmental Services & Technology
711 Grand Avenue, Suite 220
San Rafael, California 94901
415.460.6770 • Fax 415.460.6771
main@westenvironmental.com

SAMPLE ANALYSIS/COMPOSITE REQUEST FORM

CHAIN-OF-CUSTODY

Invoice to: WEST, Inc.
Project: RC.Chemical Way
Project Manager: Peter Krasnoff, WEST, Inc.
Laboratory: KPrime, Inc, Santa Rosa, CA
Sampler Signature:

Date: 10.7.10 Page 2 of 3
Location: Redwood City
Phone: 415/460-6770 Fax: 415/460-6771

Turnaround time (days)	1	2	3	5	7	10	Std.
							X

KPI #	Sample ID	Date	Time	Type	# Containers	Composite	TPHg/TPHd/TPHmo (8015M)*	VOCs + 1,4-Dioxane (8260B)	SVOCs (8270C-SIM)	Total Nitrate and Nitrite (USEPA 300.0)	Lead (6020)	VOCs (TO-14A/TO-15)		Summa ID			HOLD
85654	W-5-3	10.6.10	16:03	S	1						X						
85655	W-6-1	"	15:00	S	1						X						
85656	W-6-3	"	15:03	S	1						X						
85657	W-7-1	"	15:50	S	1						X						
85658	W-7-3	"	15:53	S	1						X						
85659	W-12-1	"	15:25	S	1						X						
85660	W-12-3	"	15:27	S	1						X						
85661	W-1	10.7.10	9:45 / 9:56	SG	1							X		S-651			
85662	W-3	"	9:53 / 10:10	SG	1							X		S-659			
85663	W-20-3	"	10:25	S	1		X		X								
85664	W-20-6	"	10:28	S	1		X		X								
85665	W-21-3	"	10:44	S	1		X		X								

NOTES: (*) Silica Gel Cleanup

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	10.7.10 11:00	(VTC)	10/7/10 11:00
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
(VTC)	10/7/10 1435	(KPI)	10/7/10 1435

WEST
Environmental Services & Technology
711 Grand Avenue, Suite 220
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415.460.6770 • Fax 415.460.6771
main@westenvironmental.com

SAMPLE ANALYSIS/COMPOSITE REQUEST FORM

CHAIN-OF-CUSTODY

Invoice to: WEST, Inc.	**Date:** 10/7/10 **Page** 3 of 3
Project: RC.Chemical Way	**Location:** Redwood City
Project Manager: Peter Krasnoff, WEST, Inc.	**Phone:** 415/460-6770 **Fax:** 415/460-6771
Laboratory: KPrime, Inc, Santa Rosa, CA	**Turnaround time (days):** 1 / 2 / 3 / 5 / 7 / 10 / Std. — Std. X
Sampler Signature:	**Analyses Requested**

KP#	Sample ID	Date	Time	Type	# Containers	Composite	TPHg/TPHd/TPHmo (8015M)*	VOCs + 1,4-Dioxane (8260B)	SVOCs (8270C-SIM)	Total Nitrate and Nitrite (USEPA 300.0)	Lead (6020)	VOCs (TO-14A/TO-15)		Summa ID			HOLD
85666	W-21-G	10.7.10	10:47	S	1		X		X								

NOTES: (*) Silica Gel Cleanup

Relinquished by: (Signature)	Date/Time 10.7.10 11:00	Received by: (Signature) (VTC)	Date/Time 10/7/10 11:08
Relinquished by: (Signature) (VTC)	Date/Time 10/7/10 1433	Received by: (Signature) (KP)	Date/Time 10/7/10 1435

WEST Environmental Services & Technology
711 Grand Avenue, Suite 220
San Rafael, California 94901
415.460.6770 • Fax 415.460.6771
main@w-e-s-t.com

SOIL GAS SAMPLING AND INTRINSIC PERMEABILITY TESTING FIELD DATA SHEET

Date: 10·6·10 **Sampled by:** JZ

Project: Redwood City, Chemical Way

Weather Conditions: Clear, Sunny, 26°C

SOIL GAS SAMPLING

W-6

Summa Canister ID: S-232 Sample time: 14:02 / 14:12.

Canister atmosphere before sampling: 30 (in. water)

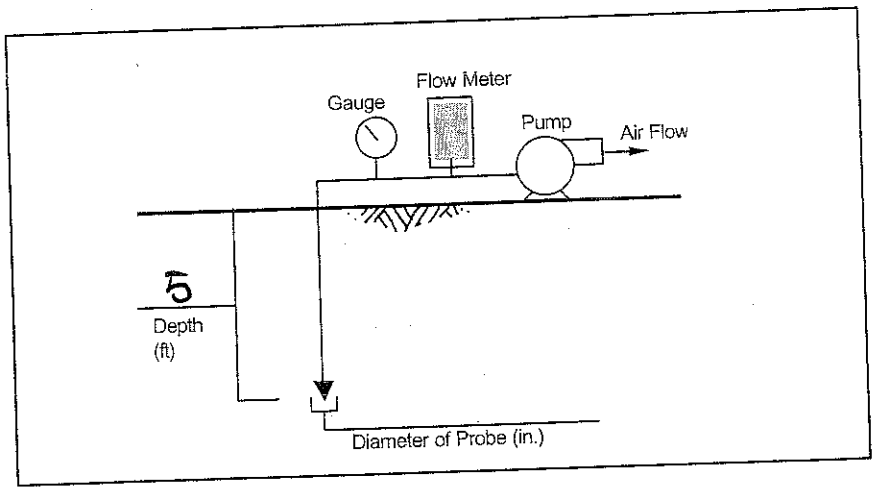
Canister atmosphere after sampling: 0 (in. water)

Tubing I.D.: 1/4" OD Teflon Length of Tubing (ft): 10'

Tubing Volume (L/ft): 0.009 Purge volume (L):

INTRINSIC PERMEABILITY TESTING

Purge Test		PID
1 vol	10 sec	0.5
3 vol	30 sec	1.2
*7 vol	70 sec	1.3 *
	End @ 13:10	



	Test 1	Test 2	Test 3
Vacuum (in. water)	0.5	1	2.2
Meter Reading/Flow Rate (cc/min)	22	30	45
Length of Test (sec.)	60	60	60

Observations:

Canister Sampling Field Data Sheet

SUMMA AIR SAMPLING WORK SHEET

Site: 50 Chemical Way
Samplers: JG
Date: 10.6.10

Site#: Redwood City - Chem. Way
Work Assignment Manager:
Project Leader:

Sample #	W-12	W-13	W-7	W-5	W-6
Location	W-12	W-13	W-7	W-5	
SUMMA ID	S-356	S-292	S-650	S-658	S-232
Orifice Used					
Analysis/Method	TO-14-VOCs	TO-14-VOCs	TO-14-VOCs	TO-14-VOCs	TO-14-VOCs
Time (Start)	14:26	14:32	14:56	15:02	14:02
Time (Stop)	14:37	14:42	15:22	15:23	14:12
Total Time	11	10	26	21	10
SUMMA WENT TO AMBIENT	YES NO	YES NO	YES NO	YES NO	YES NO
Initial Pressure Gauge	30	30	30	30	30
Final Pressure Gauge	0	0	0	0	0
Flow Rate (Pre)					
Flow Rate (Post)					
Flow Rate (Average)					

MET Station On-site? Y / N

General Comments: Purge 7 well volumes

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711 Grand Avenue, Suite 220
San Rafael, California 94901
415.460.6770 • Fax 415.460.6771
main@w-e-s-t.com

SOIL GAS SAMPLING AND INTRINSIC PERMEABILITY TESTING FIELD DATA SHEET

Date: 10-7-10 **Sampled by:** JZ

Project: Redwood City · Chemical Way #70

Weather Conditions: Clear sunny 22°

W-1

SOIL GAS SAMPLING

Summa Canister ID: S-651 Sample time: 9:45 / 9:56

Canister atmosphere before sampling: 30 (in. water)

Canister atmosphere after sampling: 0 (in. water)

Tubing I.D.: OD = 1/4" Length of Tubing (ft): ≈ 10'

Tubing Volume (L/ft): 0.009 Purge volume (L):

INTRINSIC PERMEABILITY TESTING

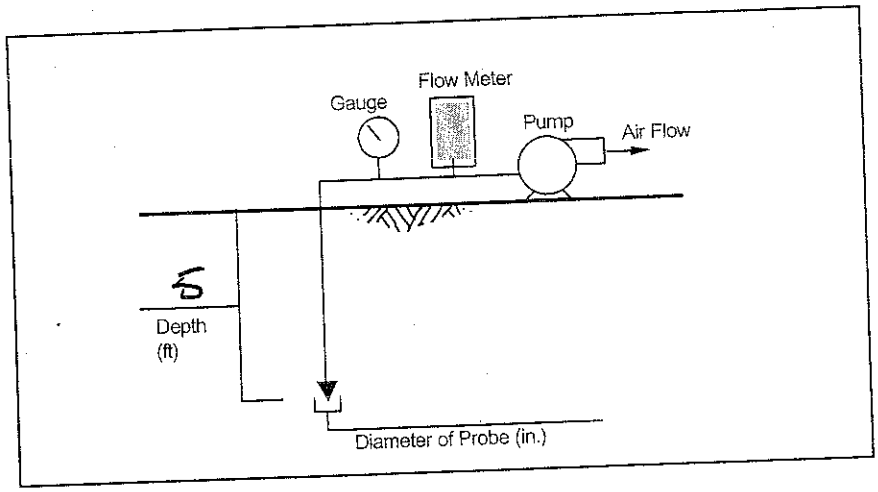
710

1 vol 10s 0.7

3 vol 30s 0.5

7 vol 70sec 0.8

end @ 9:24



	Test 1	Test 2	Test 3
Vacuum (in. water)	0.8	2.5	7
Meter Reading/Flow Rate (cc/min)	22	30	45
Length of Test (sec.)	90	90	90

Observations:

Canister Sampling Field Data Sheet

SUMMA AIR SAMPLING WORK SHEET

Site: 70 Chemical Way
Samplers: JZ
Date: 10-7-10

Site#:
Work Assignment Manager:
Project Leader:

Sample #	W-1	W-2	W-3	W-4	
Location					
SUMMA ID	S-651	S-655	S-659	S-353	
Orifice Used					
Analysis/Method	TO-14-VOCs	TO-14-VOCs	TO-14-VOCs	TO-14-VOCs	TO-14-VOCs
Time (Start)	9:45	9:34 *	9:53	11:08	
Time (Stop)	9:56	14:23	10:10	11:23	
Total Time	11	*		13	
SUMMA WENT TO AMBIENT	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO
Initial Pressure Gauge	30	30	30	28	
Final Pressure Gauge	0	0	0	0	
Flow Rate (Pre)					
Flow Rate (Post)					
Flow Rate (Average)					

MET Station On-site? Y / N

General Comments: Purge 7 well volumes
W-2 - shut @ 13:30 & pull rods up 1' - repurged & started sample @ 14:15

→ 9:34 → 13:30 Can'sh went 30 - 28
14:15 → 14:23 Can sh went 28 - 0

Canister Sampling Field Data Sheet

SUMMA AIR SAMPLING WORK SHEET

Site: Redwood City. Chemical Way
Samplers: JZ
Date: 10.7.10

Site#: _____
Work Assignment Manager: _____
Project Leader: _____

Sample #	W-14	W-9	W-15		
Location	W-14				
SUMMA ID	S-231	S-435	S-236		
Orifice Used					
Analysis/Method	TO-14-VOCs	TO-14-VOCs	TO-14-VOCs	TO-14-VOCs	TO-14-VOCs
Time (Start)	15:41	15:53	16:08		
Time (Stop)	15:55	16:13	16:45		
Total Time	14	20	32		
SUMMA WENT TO AMBIENT	YES/NO	YES/NO	YES/NO	YES/NO	YES/NO
Initial Pressure Gauge	30	30	30		
Final Pressure Gauge	0	0	0		
~~Flow Rate (Pre)~~					
~~Flow Rate (Post)~~					
Flow Rate (Average)					

MET Station On-site? Y / N

General Comments:

Canister Sampling Field Data Sheet

SUMMA AIR SAMPLING WORK SHEET

Site: RC. Chem Way
Samplers: JB
Date: 10.8.10

Site#:
Work Assignment Manager:
Project Leader:

Sample #	W-11	W-10	W-8		
Location					
SUMMA ID	S-433	S-234	S-267		
Orifice Used					
Analysis/Method	TO-14-VOCs	TO-14-VOCs	TO-14-VOCs	TO-14-VOCs	TO-14-VOCs
Time (Start)	8:55	10:24	10:36		
Time (Stop)	9:07	10:38	10:54		
Total Time					
SUMMA WENT TO AMBIENT	(YES)/NO	(YES)/NO	(YES)/NO	YES/NO	YES/NO
Pressure Gauge	28	30	30		
Pressure Gauge	0	0	0		
Flow Rate (Pre)					
Flow Rate (Post)					
Flow Rate (Average)					

MET Station On-site? Y / N

General Comments: Purge 7 well vols.

Depth (feet)	Graphic Log	Description	Sample No. & Interval	(PID) / Core Interval, Ft.
		Asphalt		0-4
		silty sand & gravel, brown, fine to coarse, cobble to med sand, dry to slightly damp		
2.5		silty clay, dk olive brn (7.5Y 4/3) med to high plast, firm to stiff, slightly damp to damp	2.5	0.0 (8.46)
		sandy clay, v. dark greenish gray, med plast, firm to stiff, damp to slightly moist		0.0 (8.73)
0			5.0	4-8
		Δ to moist to v. moist		
		GRAVEL, gray & white, med to coarse, some sand, v. wet		0.0 (8.27)
7.5		thin layer wood waste	7.5	
		sandy clay, v. dark gray, med plast, soft to firm moist to v. moist, trace wood/organic waste; grade to clay lv. dark gray, med to high plas, soft to firm, moist to v. moist, trace decomp. wood/roots		8-10
10			10	
		EOH @ 11'		
5		Set 5' prepack screen temp well	5	
		plt @ vatr = 7.06		
0		Samples 5 yrs w. HCl	0	
5			5	
0			0	

water @ 4.5' intermittent

first water @ 6.5

(pH)

SAND SILT CLAY GRAVEL

Drilling method: Geoprobe
Sampling method: Dual twr

Drilling date: 10·6·10
Geologist: JZ

WEST Environmental Services & Technology

Date:
Project: RC Chemlog

Soil Boring Lithology for W-16

LITHOLOGY			SAMPLE DATA	
Depth (feet)	Graphic Log	Description	Sample No. & Interval	(PID) / Core Interval, Ft.
		Asphalt		0-4 (11.46)
		SAND & gravel, gray 5/(GLEY1) fine to coarse, v. loose to loose, dry to slightly moist.	W-17-1	0.0
5		silty clay, v. dark grayish brown (10YR3/2), stiff firm to stiff, mod to high plast, slightly damp to damp, trace organics + sand/gravel	W-17-3	0.0 (9.27)
		PEAT, black mottled dark greenish gray, v. soft to soft, mod to high plast, moist to v. moist, trace organics.		4-8
5.0			5.0	
Lvl measured @ 6' ▽				0.0 (8.64)
▽ 7.5		SAND CLAY CLAYEY SAND, v. dk greenish gray → black, coarse, mod plast, sl. soft to soft, v. moist to wet	7.5	
		same as above PEAT v. slightly more sand content		8-12
		wet clayey sand, same as above		
		Clay, dk greenish gray, soft to firm, mod to high plast, slightly damp to damp, black pocks of decomp organics + trace organics		
0			10	
5			12.5	
		EOH @ 12' set temp well with 5' prepack screen		
		Sample @ 12:35 - 1 Amber 4 VOA - v. out previously		
0			0	
		pH @ water = 7.09		
5			5	
0			0	

SAND SILT CLAY GRAVEL

Drilling method: Geoprobe
Sampling method: Macro Core
Drilling date: 10.6.10
Geologist: JR

WEST Environmental Services & Technology

Date:
Project: RC. Chromway

Soil Boring Lithology for W-17

Depth (feet)	Graphic Log	Description	Sample No. & Interval	(PID) / Core Interval, Ft.
		Asphalt		0-4
		silty sand w. gravel, grayish brn fine to med gr, v. loose to loose, dry to slightly dmp.		
2.5			2.5	
		SANDY SILT, yellowish brn, stiff to v. stiff v. fine gr. low plast, dry to slightly dmp trace gravel		4-8
5.0		Peat, dk brn, v. fine to fine gr, low plas v. dns to stiff, slightly damp to moist some organics	5.0	
		Rocks/Gravel		
7.5		peat rocks/ice	7.5	
		clay, v dark grayish brn, mottles mod to high plast. stiff to v. stiff slightly dmp to dmp		8-12
10		Grades to soft to firm, dmp to moist	10	
		Grades to SAND/CLAY, v. dk greenish gray mod to high plast, v. soft to soft, moist to v. moist		
12.5			12.5	12-16
		Gravelly clay, bluish gray, mottled brn v. dnss / v. stiff, low plas, dry to slightly dmp		
15.0			15.0	
		EOH @ 16'		
		Det temp well overnight		
5			5	
0			0	

SAND SILT CLAY GRAVEL

Drilling method: Geoprobe
Sampling method: Macro Core
Drilling date: 10.6.10
Geologist: JZ

WEST Environmental Services & Technology

Date:

Project: Redwood City, Chemical Why

Soil Boring Lithology for W-12

LITHOLOGY | SAMPLE DATA

Depth (feet)	Graphic Log	Description	Sample No. & Interval	(PID) / Core Interval, Ft.
		Asphalt		0.4
		silty sand + gravel, grayish brn, fine to med gr	W-7-1'	
		v. loose to loose, dry to slightly damp		
		clayey SAND / sandy CLAY, brown, low-mod plas		
2.5		fine gr, red dust, trace gravel, damp to slightly moist	2.5	
			W-7-3'	
		Peat / sandy clay, black, mottled dk brnish gray		
		soft to firm, low to mod plast, damp to slightly moist		
		some organics, decay wood		
6.0			5.0	
		EOH @ 4'		
5			5	
0			0	
		Asphalt		0.4
		silty sand + gravel, grayish brn. fine to med gr	W-5-1	
		v. loose + loose, dry to slightly damp		
		SANDY SILT, v. gravel, brn, v. fine to fine gr		
2.5		low plast, v. dense, dry to slight damp	2.5	
			W-5-3	
		EOH @ 4'		
0			5.0	
5			5	
0			0	

W-7

W-5

SAND | SILT | CLAY | GRAVEL

Drilling method: Geoprobe
Sampling method: Macro

Drilling date: 10.6.10
Geologist: JE

WEST Environmental Services & Technology

Date:

Project: RC. Chem Way

Soil Boring Lithology for W-5 + W-7

LITHOLOGY				SAMPLE DATA	
Depth (feet)	Graphic Log	Description (10YR 5/2)		Sample No. & Interval	(PID) / Core Interval, Ft.
		Asphalt	0.4		0-4
		Silty sand w. gravel, grayish brn, fine to med gr, v. loose to loose, dry & slightly damp.		W-13-1	0.0
			2.5		
5		SANDY SILT/ silty sand, yellowish brown (10YR 5/4) low plast, firm to stiff, dry to slightly damp, trace gravel		W-13-3	0.0
		Δ color to v. dk grayish brn (10YR 3/2)			4-8
		SANDY CLAY/PEAT, dark brn (7.5YR 3/2) v. fine to fine gr., low plast, v. dense / stiff slightly damp, some organics + trace gravel	5.0		0.0
7.5		GRAVEL/ROCKS	7.5		
		CLAY/SILTY CLAY, v. dark grayish brn mottled mod to high plast., stiff to v. stiff, slightly dry to damp			8-12
		CLAY, v. dk green gray w. black pockets + trace organics, low to mod plast, v. stiff, slightly dry to damp	10		0.0
		@ 10 Δ to soft to firm, damp to moist			
		Grades to SANDY CLAY, v. dk greenish gray, mod to high plast, v. soft to soft v. moist to wet	12.5		12-16
		GRAVELLY CLAY, bluish gray (5BG 5/1) mottled brn, v. dense, v. stiff, low plas dry to slightly damp.	15.0		
		EOH @ 16'			
		Set temp well w. 5' prepack screen			

SAND SILT CLAY GRAVEL

Drilling method: Geoprobe
Sampling method: Macro
Drilling date: 10-6-10
Geologist: JZ

WEST Environmental Services & Technology

Date:
Project: Redwood City Chemical Way

Soil Boring Lithology for W-13

(pH)
9.6 pH strip = 7
+.89 pH strip = 6
7.60 pH strip = 7

LITHOLOGY			SAMPLE DATA	
Depth (feet)	Graphic Log	Description	Sample No. & Interval	(PID) / Core Interval, Ft.
		SANDY CLAY, v. dk greyish grey, mod to high plas, v. soft to soft, v. moist, wet, trace gravel		16-20
5		Δ color to dk grayish brn (2.5Y 4/2) 17.5		
		GRAVELLY CLAY, dk grayish brn (2.5Y 4/2) mod plast, v. soft to soft, wet		
		CLAY/SILTY CLAY, v. some gravel, grayish brn, comp, v. stiff, slightly dense to dense. 20		
0				
		GOH @ 20' set temp well		
5			5	
		Water @ 11' in Bore		
		pH of water = 6.65		
0		collect 1 Amber & 4 VOAs - unpres	0	
5			5	
0			0	
5			5	
0			0	

SAND SILT CLAY GRAVEL

Drilling method: Geoprobe
Sampling method: Macro

Drilling date: 10-7-16
Geologist: JZ

WEST Environmental Services & Technology

Date:
Project:

Soil Boring Lithology for W-13

LITHOLOGY			SAMPLE DATA	
Depth (feet)	Graphic Log	Description	Sample No. & Interval	(PID) / Core Interval, Ft.
		Asphalt		0-4
		SANDY, SILT / SILTY SAND, dk yellowish brn, v. fine to fine gr, loose to med dns, dry		0.0 (8.30)
2.5		trace gravel + brick	2.5	
		SANDY CLAY / CLAYEY SAND, black, v. fine to med gr, low plast, med dense, slightly damp to damp		2.0 (8.40)
		trace glass, brick, gravel, organics		4-8
5.0			5.0	
		GRAVEL, v. dk gray + cream rocks, med to v. coarse gr, loose to med dns, moist to v. moist		0.0 (7.37)
7.5		SANDY CLAY / SILTY CLAY, v. dk greenish gray	7.5	
GRAVEL, wet		mottled + pocked black, mod to high plast, soft to firm, some organics / wood, moist to damp to moist		8-12
		b/w 10-11' Δ + v soft to soft		
			12.5	
		EOH @ 12'		
		set temp well		
		wtr in @ 5.2'		
		PH @ gw = 6.72		
		Collect 3 Amb & 4 VOAs (unpres		

SAND SILT CLAY GRAVEL

Drilling method: Geoprobe
Sampling method: macro
Drilling date: 10.7.10
Geologist: JZ

WEST Environmental Services & Technology

Date:
Project: PCC Chem Way

Soil Boring Lithology for W-4

Depth (feet)	Graphic Log	Description	Sample No. & Interval	(PID) / Core Interval, Ft.
		CLAYEY SAND + GRAVEL, dk grayish brown v. fine to med gr, loose to med dnse, dry to slightly dp.	W-1-1	0-4
5		CLAYEY SAND/SANDY CLAY, v. dk grayish brown mottled greenish gray, ?fibers, some gravel 2.5 v. fine to fine gr. low plast, v. dnse, slightly dp to dp	W-1-3	
		W-1 EOH @ 4' 5.0		
0				
5				
0				W-19 (PH)
		Asphalt		0-4
		CLAYEY SAND + GRAVEL, dk grayish brown v. fine to med gr loose to med dns slightly dmp to moist rock/gravel		0.0 (10.31)
2.5		CLAYEY SAND, dk greenish gray (GLEY 2 4/1) 2.5 v. fine to med gr, med dns; damp to moist trace gravel	W-19-3	0.0 (9.43)
		SANDY CLAY, v. dk brn, low to med plast, firm to stiff; slightly dmp to dmp, some organics trace gravel		4-6
5.0		SAND, CLAYEY SAND 5.0 dk greenish gray (GLEY 1 4/1) v. fine to fine gr, med dnse to dns, slightly dmp to dmp.	W-19-6	0.0 (8.64)
		EOH @ 6'		
5				
0				

SAND SILT CLAY GRAVEL

Drilling method: Geoprobe
Sampling method: Macrocore

Drilling date: 10-7-10
Geologist: JR

WEST Environmental Services & Technology

Date:

Project: RC-ChemWAM

Soil Boring Lithology for W-1 & W-19

LITHOLOGY			SAMPLE DATA	
Depth (feet)	Graphic Log	Description	Sample No. & Interval	(PID) / Core Interval, Ft.
		CONCRETE		0-4
		CLAYEY SAND + GRAVEL, dk yellowish brown (10YR 3/6) fine to med gr, dense m. dense + dry, slight hydrocarbon odor (Color)		2.0
		SANDY CLAY, v. dk gray, low to mod plast soft to firm, slightly dense to damp; some shells, trace organic + gravel ↑@3' throughout	2.5 W-20-3'	0.0
5.0			5.0	4-7
			W-20-6'	0.0
		GRAVEL		
		GRAVELLY CLAY, v. dk greenish gray (GLY 3/1), mod plast v. soft to soft, moist to v. moist		
7.5			7.5	
		EOH @ 4'		
0			0	
		CONCRETE		0-4
		CLAYEY SAND + GRAVEL, dk yellowish brn fine to med gr, mdnse to dns, dmp to moist		0.0
		SANDY CLAY/PEAT, Black, v fine gr, low to mod plast firm to stiff, slightly dmp to damp, organic	2.5	
2.5			W-21-3	0.7
		CLAYEY SAND / dk greenish gray, mottled v. fine to fine gr, loose to med dnse, slightly dmp to dmp trace brick, wood, gravel (FILL)		4-7
5.0		CLAYEY SAND / SANDY CLAY, greenish black, low to mod plast, v. fine to fine gr, v. soft / loose moist to v. moist	5.0 W-21-6	0.0
		EOH @ 7'		
7.5			7.5	
0			0	

SAND SILT CLAY GRAVEL

Drilling method: Geoprobe
Sampling method: DZ
Drilling date: 10-7-10
Geologist: DZ

WEST Environmental Services & Technology

Date:
Project: RC-ChemWay

Soil Boring Lithology for W-20

W-20 (PH) (7.56) (7.39) (7.48) (7.27) (7.87) (7.26)

W-21

LITHOLOGY			SAMPLE DATA	
Depth (feet)	Graphic Log	Description	Sample No. & Interval	(PID) / Core Interval, Ft.
		Asphalt		0-4
		GRAVELLY CLAY, dk grayish brn mottled greenish gry low to med plast, v. stiff, damp to moist		0.0
		Clayey SAND / SAND, dk greenish gry v. fine to med grained, mod dnse to dnse, dry to slightly damp		
2.5		trace gravel	2.5	
			W-22-3	0.0
		SANDY CLAY, v dark grayish brn, low-med plast, firm to stiff, damp to moist, trace organics + gravel		4-7
5.0			5.0	
			W-22-6	0.0
		EOH@7'	7.5	
				W-14
		Asphalt		0-4
		SANDY GRAVEL dk yellish brn, fine to med gr, dry to slightly damp		
		CLAYEY SAND/SANDY CLAY w. gravel v. dk brn, low to med plast, v. fine gr, dense/stiff slightly damp to damp	W-14-1	
2.5			2.5	
			W-14-3	
		CLAYEY SAND v. fine to med gr, dnse, slight dmp GRAVEL		
		EOH@4	5.0	

SAND SILT CLAY GRAVEL

Drilling method: Geoprobe
Sampling method: Macro

Drilling date: 10.7.10
Geologist: JZ

WEST Environmental Services & Technology

Date:

Project: RC Chemway

Soil Boring Lithology for W-22 & W-14

LITHOLOGY			SAMPLE DATA	
Depth (feet)	Graphic Log	Description	Sample No. & Interval	(PID) / Core Interval, Ft.
		Asphalt		0-4 (pH)
		SILTY SAND & GRAVEL, grayish brun (2.5Y 5/2) fine to coarse gr, v. loose to loose, dry to slightly moist damp	W-18-1	0.2 (11.71)
		CLAYEY SAND, light olive brun (2.5Y 5/6) v. fine to fine gr, low plast, dense to v. dense slightly damp to damp	2.5 W-18-3	0.0 (9.19)
2.5		SANDY CLAY/SILTY CLAY, black, v. fine gr, low-mod plast stiff to v. stiff, slightly damp to damp. trace gravel some		4-8
5.0		CLAY, SANDY CLAY, dk greenish gray mottled/packed mod to high plast, soft to firm, damp to slightly moist black some trace organics	5.0	0.0 (8.52)
7.5			7.5	0.0
		GRAVEL		8-12
		~~A col~~		
10			10	0.0
		PEAT		
		~~A color~~ to dark brun (3/3), v. fine to fine gr, low plast, ~~v. soft to~~ soft to firm, damp to slightly moist		
12.5		CLAY, SAND CLAY, dk greenish gray mod-high plas, soft to firm, slightly moist to moist	12.5	12-16
		CLAY/SILTY CLAY, grayish brun (2.5Y 5/2) mottled light olive brun (2.5Y 5/6) mod to high plast stiff to v. stiff, dry to slightly damp	15.0	
15.0		CLAYEY SAND/SANDY CLAY? v. dk gray (2.5Y 3/1) v. fine gr, mod plast, v. soft, v. moist, trace organics		16-20
5			5	
		CLAYEY SILT/SILTY CLAY, dk grayish brun (2.5Y 4/2) ~~low~~ mod plast, stiff to v. stiff, dry to slightly damp		
20			20	

SAND SILT CLAY GRAVEL

Drilling method: Geoprobe
Sampling method: MacroCore
Drilling date: 10.8.10
Geologist: JZ

WEST Environmental Services & Technology

Date: Oct. 8, 2010
Project: RC. Chemical Way

Soil Boring Lithology for W-18

W-18

1 of 2

LITHOLOGY			SAMPLE DATA	
Depth (feet)	Graphic Log	Description	Sample No. & Interval	(PID) / Core Interval, Ft.
		CLAYEY SAND/SANDY CLAY, v. dk brn, mod plast, v. soft to soft, v moist to wet		20-24
22.5		GRADES INTO ↓ SILTY SAND/SANDY SILT, gray/dk brn mottled l. olive brn, v. fine Sr; v. dense, slightly clay. to dry	22.5	
		SAND, olive brn (2.5Y 4/4) v. fine to med gr loose to med dense, wet		
		EOH @ 24'	25.0	
		Set well @ 24 w. 5' prepack		
		wtr @ 10.21		
		Collect 1 Amber & 4 VOAs.		
		pH of wtr = 6.68		

SAND SILT CLAY GRAVEL

Drilling method: Geoprobe
Sampling method: Macrocore

Drilling date: 10.8.10
Geologist: JB

WEST Environmental Services & Technology

Date:
Project:

Soil Boring Lithology for W-10

Depth (feet)	Graphic Log	Description	Sample No. & Interval	(PID) / Core Interval, Ft.	(pH)
		Planke stone landscaping surface		0-4	
		SILTY SAND + GRAVEL, Base, dk grayish brn, fine to med gr, poor to mod sorted, slightly damp to dry		(0.0)	9.66
		SANDY CLAY, v. dk grayish brn, low to mod plast, sft to v. stiff, slightly damp to damp, trace gravel + organics		(0.0)	9.96
5			5	4-8	
		CLAYEY SAND/ v. dk brn, v. fine gr, mod plast, sandy clay, soft to firm, moist to v. moist, some gravel		(0.0)	8.53
				8-12	
10		CLAY, SANDY CLAY, dk greenish gray, mottled/packed black, mod to high plast, firm to stiff, damp to slightly moist, trace organics + gravel	10		
				12-16	
		CLAY, grayish brn mottled light olive brn, mod. to high plast., firm to stiff, slightly moist to moist	15		
		CLAYEY SAND, black, v. fine gr, mod plast, v. soft to soft, v. moist to wet, trace org		16-20	
		CLAYEY SILT/SILTY CLAY, dk grayish brn, low mod plast, stiff to v. stiff, dry to slightly damp	20		
0					
		Water measured @ 17'			
		Collect 1 Arnica + 4 vials (DN pres)			
5			5		
0			0		
5			5		
0			0		

Boring Terminated @ 20'

PH of water = 6.58

SAND SILT CLAY GRAVEL

Drilling method: Geoprobe
Sampling method: Macrocore

Drilling date: 10.8.10
Geologist: JZ

WEST Environmental Services & Technology

Date:

Project: KC Chem Way

Soil Boring Lithology for W-9

LITHOLOGY | SAMPLE DATA

Depth (feet)	Graphic Log	Description	Sample No. & Interval	(PID) / Core Interval, Ft.
		Asphalt		0-4
		SILTY SAND & GRAVEL, grayish brn, fine to med gr, v. loose to loose, dry to slightly damp	W-23-1	
		SANDY SAND/SANDY CLAY w. gravel, brn, dense to v. dense, low to med plast, slightly pasty to dry	2.5 W-25-3	
5				
		W-23 EOH @ 4'		
0			0	
5			5	
				W-10
0			0	
		CONCRETE		
		SILTY SAND & GRAVEL, grayish brn, fine to med gr, v. loose to loose, dry to slightly damp	W-10-1	
		CLAYEY SAND/SANDY CLAY w. gravel, dk brn, dense to v. dense, low to med plast, slightly damp to dry	2.5 W-10-3	
5				
0			0	
5			5	
0			0	

SAND | SILT | CLAY | GRAVEL

Drilling method: Geoprobe
Sampling method: Macro Core
Drilling date: 10.8.10
Geologist: JL

WEST Environmental Services & Technology

Date:
Project: RC Chemical Utility

Soil Boring Lithology for W-23 + W-10

APPENDIX C

CALCULATIONS

TABLE C-1
SUMMARY OF SOIL GAS RISK CALCULATIONS - FUTURE CORRECTIONAL OFFICER
20 to 80 Chemical Way
Redwood City, California

Sample ID	Depth	Date	Chlorinated Volatile Organic Compounds											Petroleum-Related Volatile Organic Compounds					Total
			PCE	TCE	cis-1,2-DCE	CE	1,1-DCE	Chloro-ethane	1,1-DCA	CM	TCM	Freon 113	Styrene	Chloro-benzene	Benzene	Toluene	Ethyl benzene	Xylenes	TMB	
	(ft)		(µg/m^3)	(µg/m^3)	(µg/m^3)	(µg/m^3)	(µg/m^3)	(µg/m^3)	(µg/m^3)	(µg/m^3)	(µg/m^3)	(µg/m^3)	(µg/m^3)	(µg/m^3)	(µg/m^3)	(µg/m^3)	(µg/m^3)	(µg/m^3)	(µg/m^3)	
20 Chemical Way																				
W-10	5	10/8/10	< 33.9	< 26.9	< 19.8	< 12.8	< 19.8	< 13.2	< 20.2	< 10.3	< 24.4	< 38.3	< 21.3	27.9	43.9	21.4	< 21.7	< 21.7	< 24.6	
W-11	5	10/8/10	685	459	136	4.27	15.3	< 2.64	< 4.05	13.9	6.3	< 7.66	5.71	< 4.6	113	83.8	26.5	116	83.5	
W-15	5	10/7/10	< 6.78	< 5.37	< 3.97	3.81	< 3.97	< 2.64	< 4.05	2.19	< 4.88	< 7.66	< 4.26	< 4.6	15.7	10.9	< 4.34	6.25	< 4.92	
Maximum			685	459	136	4	15.3	--	--	--	6.3	--	5.71	27.9	113	83.8	26.5	116	83.5	
Carc. ILCR			0	0	2E-07	2.85E-08	--	--	--	--	3E-09	--	--	--	3E-07	--	6E-09	--	--	5.6.E-07
Non. Carc. HQ			5.E-03	2.E-04	5E-04	5.69E-09	5E-05	--	--	--	5E-06	--	2E-06	7E-06	0.0005	6.7E-05	3E-06	4.0E-05	3.E-03	6.0.E-03
50 Chemical Way																				
W-5	5	10/6/10	10.9	< 5.37	< 3.97	< 2.56	< 3.97	< 2.64	< 4.05	< 2.07	< 4.88	< 7.66	< 4.26	< 4.6	24.2	17.3	< 4.34	5.43	< 4.92	
W-6	5	10/6/10	< 6.78	< 5.37	< 3.97	< 2.56	< 3.97	< 2.64	6.96	< 2.07	< 4.88	< 7.66	< 4.26	< 4.6	61.8	10.1	< 4.34	4.73	< 4.92	
W-7	5	10/6/10	< 33.9	< 26.9	< 19.8	< 12.8	< 19.8	< 13.2	< 20.2	< 10.3	< 24.4	< 38.3	< 21.3	< 23	< 16	< 18.8	< 21.7	< 21.7	< 24.6	
W-12	5	10/6/10	< 33.9	< 26.9	< 19.8	< 12.8	< 19.8	< 13.2	< 20.2	< 10.3	104	< 38.3	< 21.3	< 23	< 16	< 18.8	< 21.7	< 21.7	< 24.6	
W-13	5	10/6/10	33.1	< 5.37	< 3.97	< 2.56	< 3.97	< 2.64	< 4.05	< 2.07	11.5	9.27	< 4.26	< 4.6	27.0	12.8	< 4.34	5.30	< 4.92	
Maximum			34	--	--	--	--	--	6.96	--	104	9.27	--	--	61.8	17.3	--	5.43	--	
Carc. ILCR			0	--	--	--	--	--	1E-09	--	5E-08	--	--	--	2E-07	--	--	--	--	2.0.E-07
Non. Carc. HQ			2.E-04	--	--	--	--	--	2E-06	--	8E-05	2E-06	--	--	2.E-04	1E-05	--	2E-06	--	5.8.E-04
70 Chemical Way																				
W-1	5	10/7/10	< 6.78	< 5.37	< 3.97	< 2.56	< 3.97	< 2.64	< 4.05	< 2.07	< 4.88	< 7.66	< 4.26	< 4.6	7.28	10.8	< 4.34	4.69	< 4.92	
W-2	5	10/7/10	< 6.78	< 5.37	< 3.97	< 2.56	< 3.97	< 2.64	< 4.05	2.37	< 4.88	< 7.66	< 4.26	< 4.6	30.0	29.7	5.30	22.11	8.50	
W-3	5	10/7/10	< 6,780	< 5,370	4,090	18,700	< 3,970	8,600	24,400	< 2,070	< 4,880	< 7,660	< 4,260	< 5	36,400	625,000	742,000	2,410,000	33,000	
W-4	5	10/7/10	< 6.78	< 5.37	< 3.97	< 2.56	< 3.97	< 2.64	< 4.05	2.07	< 4.88	< 7.66	< 4.26	< 4.6	5.81	9.04	< 4.34	5.12	< 4.92	
Maximum			--	--	--	--	--	8,600	24,400	2.37	--	--	--	--	34,600	62,500	742,000	2,410,000	33,000	
Carc. ILCR			--	--	7E-06	1.E-04	--	--	3E-06	--	--	--	--	--	9E-05	--	2.E-04	--	--	3.8.E-04
Non. Carc. HQ			--	--	2.E-02	2E-05	--	6E-07	8.E-03	4E-10	--	--	--	--	1.E-01	5.E-02	9.E-02	8.E-01	1.E+00	1.1.E+00
80 Chemical Way																				
W-8	5	10/8/10	< 33.9	< 26.9	< 19.8	< 12.8	< 19.8	< 13.2	< 20.2	< 10.3	< 24.4	< 38.3	< 21.3	< 23	< 16	< 18.8	< 21.7	< 21.7	< 24.6	--
W-9	5	10/8/10	< 33.9	< 26.9	< 19.8	< 12.8	< 19.8	< 13.2	< 20.2	< 10.3	< 24.4	< 38.3	< 21.3	< 23	88.6	23.1	< 21.7	< 21.7	< 24.6	--
W-14	5	10/7/10	< 33.8	< 26.9	< 19.8	< 12.8	< 19.8	< 13.2	< 20.2	< 10.3	< 24.4	< 38.3	< 21.3	< 23	< 16	< 18.8	< 21.7	< 21.7	< 24.6	--
Maximum			--	--	--	--	--	--	--	--	--	--	--	--	89	23.1	--	--	--	
Carc. ILCR			--	--	--	--	--	--	--	--	--	--	--	--	2E-07	--	--	--	--	2.2.E-07
Non. Carc. HQ			--	--	--	--	--	--	--	--	--	--	--	--	4.E-04	2E-05	--	--	--	3.7.E-04

TABLE C-2
INPUT PARAMETERS
20 to 80 Chemical Way
Redwood City, California

Exposure Parameters	Acronym	Units	Commercial	Ref.
Inhalation Rate - Child	IH_c	m^3/day		
Inhalation Rate - Adult	IH_a	m^3/day	20	d
Exposure Frequency - Child	EF_c	days/year		
Exposure Frequency - Adult	EF_a	days/year	250	a
Exposure Duration - Child	ED_c	years	6	
Exposure Duration - Adult	ED_a	years	25	b
Body Weight - Child	BW_c	kg		a
Body Weight - Adult	BW_a	kg	70	a
Exposure Time	ET	hr/day	24	b
Averaging Time - Noncarc.-Child	AT_c	days	2,190	a
Averaging Time - Noncarc.-Adult	AT_a	days	9,125	a
Averaging Time-Carc.	AT	days	25,550	a
Indoor Air Concentration	C_a	mg/m3	Chem-Spec	c
Reference Dose - inhalation	RfD_i	mg/kg-day	Chem-Spec	c
Reference Concentration - inhalation	RfC_i	mg/m3	Chem-Spec	c
Unit Risk Factor - inhalation	URF	m3/ug	Chem-Spec	c
Cancer Slope Factor - inhalation	SF_i = URF (m^3/ug)* 70 (kg)*CF (1000 ug/m^3)/20 (m^3/day)	$(mg/kg\text{-}day)^{-1}$	Chem-Spec	a
Inhalation - Non-Carc. - Child	C_a*IHc*EFc*EDc*ET/(BWc*AT*Rf D_i)	--	Chem-Spec	a
Inhalation - Non-Carc. - Adult	C_a*IHa*EFa*EDa*ET/(BWa*AT*Rf D_i)	--	Chem-Spec	a
Inhalation - Carc.- Child	SF_i*Ca*IHc*EFc*EDc*ET/(BWc*AT)	--	Chem-Spec	a
Inhalation - Carc.- Adult	SF_i*Ca*IHa*EFa*EDa*ET/(BWa*AT)	--	Chem-Spec	a

Notes:

Chem-Spec: Chemical-specific parameter value.
kg: Kilograms.
m^3/day: Cubic meters per day.
mg/m^3: Milligrams per cubic meter.
mg/kg-day: Milligrams per kilogram-day.
$(mg/kg\text{-}day)^{-1}$: Reciprocal milligrams per kilogram-day.
kg/mg: Kilograms per milligrams
mg/cm^2: milligrams per square centimeter
cm^2: square centimeter
a: OEHHA, Human Exposure Based Screening Numbers, January 2005.
b: DTSC, Human and Ecological Risk Division, Human Health risk Assessment, Note 1, October 27, 2005.
c: Table D-1
d: CCR22

TABLE C-3
INHALATION FACTOR CALCULATIONS
20 to 80 Chemical Way
Redwood City, California

InhF = EDc x IRAc x 1/BWc + (EDr-EDc) x IRAa/BWa (1)			Exposure Scenario						
Variable	Description	Unit	Residential[2]	Commercial[2]	Correctional Officer[3]			Visitor[3]	Inmate[3]
InhF	Inhalation factor		2,404	1,786	1,125	1,125	1,125	456	313
EDc	Exposure Duration Child	years	6	0	0	0	0	6	0
IRAc	Inhalation Rate Child	m3/day	10	0	0	0	0	10	0
BWc	Body Weight Child	kg	15	15	15	15	15	15	15
IRAa	Inhlation rate adult	m3/day	20	20	42	42	42	20	20
BWa	Body weight adult	kg	70	70	70	70	70	70	70
EDr	Exposure duration - adult	years	30	25	25	25	25	25	3
EF	Exposure Frequency	days/year	350	250	150	180	225	250	365
EH	Exposure Hours per day	Hours	24	24	12	10	8	8	24

Notes:

1 Equation 5; California Regional Water Quality Control Board - San Francisco Bay Region, Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final, May 2008.

2 California Department of Toxic Substances Control (DTSC) Human and Ecological Risk Division, Human Health Risk Assessment (HHRA) Note Number 1, October 27, 2005.

3 San Mateo County, User Fee Study, Email from Dave Titus, November 16, 2010.

TABLE C-4
TOXICITY VALUES
20 to 80 Chemical Way
Redwood City, California

Chemical	REL	RfD - Inh. (mg/kg-day)	Ref.	SF-Inh. (mg/kg-day)-1	Ref.	Inhalation Unit Risk Factor (ug/m3)-1	Ref.
Volatile Organic Compounds							
Tetrachloroethene	3.50E+01	1.0E-02	a	2.1E-02	a	5.9E-06	a
Trichloroethene	6.00E+02	1.7E-01	b	7.0E-03	a	2.0E-06	a
c-1,2-Dichloroethene	6.00E+01	1.7E-02	b	7.35E-02	a	2.10E-05	
Chloroethene	1.80E-05	5.1E-09	e	2.73E-01	a	7.85E-01	
1,1-Dichloroethene	7.00E+01	2.0E-02	b				
Chloroethane	1.00E+04	2.9E+00	b	2.91E-03	a	8.30E-07	a
1,1-Dichloroethane	7.00E+02	2.0E-01	a	5.60E-03	a	1.60E-06	a
Chloromethane	4.00E+02	1.1E-01	a	6.50E-03	a	1.80E-06	a
Trichloromethane	3.00E+02	8.6E-02	a	1.86E-02		5.30E-06	
Freon 113	7.00E+02	2.0E-01	a				
Styrene	9.00E+02	2.6E-01	a				
Chlorobenzene	1.00E+03	2.9E-01	a				
Benzene	6.00E+01	1.7E-02	b	1.02E-01		2.90E-05	
Toluene	3.00E+02	8.6E-02	a				
Ethylbenzene	2.00E+03	5.7E-01	a	8.75E-03		2.50E-06	
Xylenes	7.00E+02	2.0E-01	b				
1,2,4-Trimethylbenzene	7.00E+00	2.0E-03	c				

Notes:

a:	OEHHA - Office of Environmental Human Health Assessment
a*:	Computed from OEHHA REL, where REL (ug/m^3) x 70 kg (BWa) x 1/20 m^3 (IHa) x 1/1000 (CF - ug to mg) = 0.00028571 x REL
b:	IRIS - Integrated Risk Information System
c:	PPRTV - Provisional Peer Reviewed Toxicity Values
d:	NCEA - National Center for Environmental Assessment
e:	HEAST - USEPA Health Effects Assessment Summary Tables

TABLE C-5
NONCARCINOGENIC HAZARDS AND CARCINOGENIC RISKS -
INHALATION PATHWAY EVALUATION FOR INDOOR AIR EXPOSURE - UNIT RISK COMMERCIAL WORKER
20 to 80 Chemical Way
Redwood City, California

	Units	PCE	TCE	c-1,2-DCE	CE	1,1-DCE	Chloroethane	1,1-DCA	CM	TCM	Freon 113	Styrene	Chlorobenzene	Benzene	Toluene	Ethyl benzene	Xylenes	1,2,4-TMB	Total
Indoor Air Concentration (C_a)	µg/m3	1.0E+00	1.0E+00	1.0E+00	1.0E+00	1.0E+00	1.0E+00	1.0E+00	1.0E+00	1.0E+00	1.0E+00	1.0E+00	1.0E+00	1.0E+00	1.0E+00	1.0E+00	1.0E+00	1.0E+00	
Toxicity Criteria																			
REL	µg/m3	3.5E+01	6.0E+02	6.0E+01	1.8E+05	7.0E+01	1.0E+04	7.0E+02	4.0E+02	3.0E+02	7.0E+02	9.0E+02	1.0E+03	6.0E+01	3.0E+02	2.0E+03	7.0E+02	7.0E+00	
RfDi	mg/kg-day	1.00E-02	1.71E-01	1.71E-02	5.14E+01	2.00E-02	2.86E+00	2E-01	1E-01	9E-02	2E-01	3E-01	3E-01	2E-02	9E-02	6E-01	2E-01	2E-03	
SFi	mg/kg-day-1	2.07E-02	7.00E-03	7.35E-02	2.73E-01		2.91E-03	5.60E-03	6.30E-03	1.86E-02				1.02E-01	1.02E+01	8.75E-03			
URF	µg/m3^{-1}	5.9E-06	2.0E-06	2.1E-05	7.8E-05		8.3E-07	1.6E-06	1.8E-06	5.3E-06				2.9E-05	2.9E-03	2.5E-06			
Inhalation Risk																			
Inhalation - Non-Carc. - Child	--																		
Inhalation - Non-Carc. - Adult	--	1E-02	8E-04	8E-03	3E-06	7E-03	5E-05	7E-04	1E-03	2E-03	7E-04	5E-04	5E-04	8E-03	2E-03	2E-04	7E-04	7E-02	1.1E-01
Inhalation - Non-Carc.	--	1E-02	8.0E-04	8.0E-03	2.7E-06	6.8E-03	4.8E-05	6.8E-04	1.2E-03	1.6E-03	6.8E-04	5.3E-04	4.8E-04	8.0E-03	1.6E-03	2.4E-04	6.8E-04	6.8E-02	1.1E-01
Inhalation - Carc.- Child	--																		
Inhalation - Carc.- Adult	--	1E-06	3E-07	4E-06	1E-05		1E-07	3E-07	3E-07	9E-07				5E-06	5E-04	4E-07			1.8E-05
Inhalation - Carc.	--	1.0E-06	3.4E-07	3.6E-06	1.3E-05		1.4E-07	2.7E-07	3.1E-07	9.1E-07				5.0E-06	5.0E-04	4.3E-07			1.8E-05

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SECTION 01110

DEMOLITION HAZARDOUS MATERIALS PROCEDURES AND WORKPLANS

SECTION 01110

HAZARDOUS MATERIALS PROCEDURES AND WORKPLANS

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes general requirements and procedures for hazardous materials related work activities, as applicable, to the Work and the existing conditions at the project site.

2. Work includes abatement of hazardous materials incorporated into this section of 01110 as well as:

a) Daily clean-up of asbestos and lead-based paint debris from site demolition, coring, anchoring or other minor disturbances.

b) Final clean-up of the site for lead wipe clearance sampling, airborne asbestos sampling or visual inspection, as applicable.

B. Related Sections:

1. Section 02090 - Hazardous Materials Abatement and Control.

2. Abatement Work Plans incorporated herein.

1.2 DEFINITIONS

A. Abatement: Primary work involving the removal, containment, control or treatment of hazardous materials.

B. Asbestos: A generic name given to a number of naturally occurring hydrated mineral silicates that possess a unique crystalline structure, are incombustible in air, and are separate into fibers. Asbestos includes any material that contains greater than 0.1 percent by weight in the asbestiform varieties of chrysotile (serpentine); crocidolite (riebecklite); amosite (cummingtonite-grunerite); anthophyllite; tremolite; and actinolite. For the purposes of determining respiratory protection and worker protection both the asbestiform and non-asbestiform varieties of the above materials and any of these materials that have been chemically treated or altered shall be considered asbestos.

C. Asbestos-Containing Material (ACM): Any material which contains more than one percent (>1%) asbestos by weight for the purposes of abatement, waste disposal and fiber controls specified under this Contract.

D. Asbestos Containing Construction Material (ACCM): Any material which contains more than one tenth of one percent (>0.1%) asbestos by weight requiring personal protection, dust controls, Contractor registration, and worker training in compliance with Cal/OSHA regulation 8 CCR 1529. For waste disposal purposes, ACCM greater than 0.1% by weight and less than 1% by weight is classified as non-hazardous waste, although it is a regulated material under Cal/OSHA.

E. Hazardous Materials Control: Incidental work procedures for control of releases of project- related hazardous materials, including containment, enclosure, wetting, controlled renovations and demolition procedures, and removal and disposal.

F. Hazardous Waste:

1. Waste material, including asbestos, loose and peeling lead-based paints, PCB ballasts, and any other material which requires management, handling transport, treatment, storage or disposal according to the requirements of the Federal Resource, Conservation and Recovery Act (RCRA) and associated regulation 42 U.S.C. 6901 et seq. and 40 CFR Part 260 et seq.) or the California Hazardous Waste Control Law and associated regulations (Health and Safety Code 25000 et seq. and 22 CCR 66260 et seq.).

2. References to hazardous material or contaminated material incorporate definitions of hazardous pollutants, hazardous contaminants, hazardous material, hazardous substance, hazardous waste, toxic pollutants and toxic substance applicable in accordance with Federal, State, regional and local statutes, laws, regulations and policies.

G. Lead: Metallic lead, all inorganic lead compounds and organic lead soaps, and excluding all other organic lead compounds.

H. Lead-Based Paints: Paints or coated surfaces that contain an amount of lead equal to, or in excess of, one milligram per square centimeter or more than half of one percent (0.5%) lead by weight.

I. Lead-Containing: Any material, coating, substrate or product that contains metallic lead, all inorganic lead compounds and organic lead soaps, and excluding all other organic lead compounds.

J. Lead-Contaminated Dust: Dusts that contain an amount of lead equal to, or in excess of, 50 micrograms per square foot for floor surfaces and 250 micrograms per square foot for horizontal window surfaces.

K. Lead-Contaminated Soil: Bare soil that contains lead equal to, or in excess of, four hundred parts per million (400 ppm) in children's play areas and one thousand parts per million (1,000 ppm) in all other areas.

L. Lead-Related Construction Work: Means any construction, alteration, painting, demolition, salvage, renovation, repair or maintenance of any residential or public building, including preparation and clean-up, that, by using or disturbing lead-containing material or soil, may result in significant exposure of adults or children to lead.

M. Presumed Lead-Based Paint: Means paint or surface coating affixed to a component in or on a structure, excluding paint or surface coating affixed to a component in or on a residential dwelling constructed on or after January 1, 1978.

1.3 SUBMITTALS

A. Submit the following.

1. Site-Specific Hazardous Materials Management Plan (HMMP): Submit Contractor's HMMP for the Owner's approval within ten (10) days after the Notice to Proceed, including the following items.

a) Overall scope and schedule of all hazardous materials management including but not limited to:

(1) Description of all hazardous materials work to be performed or managed, and intended control procedures.

(2) Schedule of all hazardous materials work.

(3) Description of personal protective equipment and methods as well as intended compliance monitoring.

b) Name, phone number, pager number of Contractor's designated Hazardous Materials Supervisor as required in this section's "Quality Control."

Name, address and phone number of the Contractor's landfill;

2. Excavated Material Disposal Method: Refer to the Contract Documents and Specifications for submittal requirements.

3. Imported Material: Refer to the Contract Documents and Specifications for submittal requirements.

4. Close-out Submittals: Refer to the Contract Documents and Specifications for submittal requirements.

B. Submit Worker Documentation in accordance with the requirements outlined in the Contractor's HMMP, including but not limited to:

1. Certification of the worker's awareness or hazards training by a Certified trainer or as stated on the Contractor's letterhead by the Contractor's Health & Safety Officer or Superintendent.

2. Medical examination and approval for use of respiratory protection, as applicable, including current respirator fit test records.

1.4 PROJECT CONDITIONS

A. Contractor shall pay all costs associated with the compliance with applicable hazardous materials regulations or requirements incurred by the Contractor or its subcontractors for this Project.

B. Take precautions necessary to protect the health and safety of construction workers, site visitors, the Owner personnel, outside consultants, the public and others from exposure to hazardous materials.

C. Take precautions necessary to insure all surrounding properties or adjacent occupied areas are protected from any contamination from all hazardous materials from this Project Site.

D. Review the information in the environmental and hazardous material investigation reports and make such information available to appropriate subcontractors and building occupants.

E. Obtain and pay for all sampling and profiling analyses required for waste disposal. California DPH-accredited laboratories shall perform analyses.

F. Minimize generation and migration of hazardous and contaminated materials, waste, dust, fumes and debris.

G. Prevent contamination or further contamination of any material or area by hazardous or contaminated material, waste, dust, fumes or debris.

H. Avoid mixing or concentrating removed, or demolished materials so as to increase the cost of disposing of such materials required to be disposed as hazardous or contaminated wastes.

I. Contractor shall retain, and the Owner will not indemnify against, any liability of Contractor resulting from the activities or duties which are the responsibility of Contractor under the terms of the Contract, including but not limited to present or future liability arising from the arrangement of transportation or disposal of any hazardous or contaminated material, whether on or off-site.

J. Pursuant to 29 CFR 1926.1101, the Contractor shall be deemed to exercise general supervisory authority over the work covered by the standard, even though the General Contractor is not qualified to serve as the asbestos "Competent Person," as defined by the standard. As supervisor of the entire Project, the General Contractor shall ascertain whether any subcontractor is in compliance with the standard and shall require such contractor to come into compliance with the standard when necessary.

K. Contractors shall schedule and coordinate abatement activities to time limitations indicated in the Contract Documents, as indicated in Section 01041.

1.5 QUALIFICATIONS

A. Hazardous Materials Supervisor: Assign a qualified person directly responsible under the Contractor's Superintendent having the necessary training to be knowledgeable in the identification, control, and management of the hazardous materials on-site. The Hazardous Materials Supervisor is responsible for the following:

1. Enforcing safe work and hygiene practices in compliance with the Site-Specific Hazardous Materials Management Plan (HMMP).

2. Advising subcontractors of potential hazards and minimum general requirements of the HMMP.

3. Coordinating subcontractor's work regarding hazardous material procedures and controls.

4. Establishing and maintaining restricted work areas.

5. Requiring proper use of personal protective equipment.

6. Communicating approved modified safety requirements to site personnel.

7. Notification and coordinating signing of waste manifests with the Owner.

B. Hazardous Materials Handlers: Only qualified persons shall engage in hazardous material- related work. Contractor and subcontractor personnel who come into contact with, are exposed to, disturb, operate equipment or otherwise handle hazardous or contaminated material, or debris shall have appropriate hazard communication and required training, personal and medical monitoring, and shall be certified to wear appropriate personal protective equipment as required by the applicable laws and regulations. Special qualifications which may be required depending on the Contractor's means and methods include, but are not limited to, the following:

1. Asbestos-Related Work Involving Asbestos-Containing Materials exceeding 100 square feet:

   a) Valid asbestos handling license issued by the California State Contractors Licensing Board and a valid current Certificate of Registration for Asbestos-Related Work as issued by the California Department of Industrial Relations - Division of Occupational Safety and Health (Cal/OSHA).

   b) Work shall be completed under the on-site supervision of a Competent Person as defined by OSHA Regulation 29 CFR Part 1926.1101 (8 CCR 1529 in California).

   c) All abatement workers shall have AHERA training with annual 8-hour refresher training, current medical exams for the use of respiratory protection, and current fit tests of appropriate respirators.

2. Lead-Hazard Work: All affected workers shall have lead awareness training, current medical examinations and approval for the use of respiratory protection, and current fit testing of respirators complying with Cal/OSHA regulation 8 CCR 1532.1 when affecting lead paints and lead construction hazards including, but not limited to:

   a) Demolishing or salvaging structural items where lead or material containing lead are present.

   b) Removing or encapsulating materials containing lead.

   c) Constructing, altering, repairing or renovating structures, substrates, or portions thereof, which contain lead or materials containing lead.

   d) Installing of products containing lead.

   e) Cleaning-up of lead contamination.

   f) Transporting, disposing, storing, or containing lead or lead-containing materials on the site or other locations where construction and renovation activities are performed.

3. Lead Abatement Work: Only qualified persons with California Department of Public Health's (DPH)-approved Lead Workers training, annual medical examinations and approval for the use of respiratory protection, and current fit testing of respirators under the direct supervision of a DPH approved Lead Abatement Supervisor shall engage in work defined under Cal/OSHA regulation 8 CCR 1532.1 affecting lead-based paints and lead construction hazards, including but not limited to:

   a) Working in an environment where lead exposures exceed 30 micrograms/m^3.

   b) Abating lead-based paints, including but not limited to abatement of loose and peeling lead-based paints, demolition and disposal of concrete-encased primed structural steel and/or stripping of lead coatings from structural steel prior to torching or welding.

   c) As defined under Title 17, California Code of Regulations (CCR), Division 1, Chapter 8 "Accreditation, Certification and Work Practices in Lead-Related

Construction," Article 1, Sections 35001 et al, and Article 16, Section 36000 and 36100.

4. PCB Ballast-Related Work: Removal of non-leaking PCB ballasts, as required, may be completed by workers with PCB hazard awareness training as verified by the Contractor's Health and Safety Officer or Superintendent. Removal of leaking or damaged PCB ballasts from lighting fixtures shall be completed by a trained worker, wearing protective gloves and following safety procedures as outlined in the HMMP. Hazardous waste shall be handled according to the U. S. Environmental Protection Agency's Standards 40 CFR 761.60 and 761.65 (22 CCR Section 66699(b) in California).

5. Mercury Lamp/Thermostat-Related Work: Spent fluorescent and other mercury-containing lamps and thermostats shall be considered a hazardous waste by the California Department of Public Health (DPH; 22 CCR Section 66699(b)). Lamps and thermostats should be shipped to a commercial recycler. Removal of lamps and thermostats shall be completed by a trained worker who has successfully completed the 40-hour HAZWOPER worker training and mercury hazard communication training.

C. Hazardous Materials Haulers:

1. Possess during the hauling of hazardous material, applicable federal, state, and local vehicle insurance requirements, valid driver's license, vehicle registration and licenses, and a current Class 1 Certification of Compliance from the California Highway Patrol affixed to each vehicle or container

2. Possess a Hazardous Substance Removal Certification granted by the State of California Department of Toxic Substances Control (510-540-3802) and other required certifications and insurance.

3. Contractor shall be responsible for informing drivers of hauling vehicles about:

a) The nature of the material hauled.

b) Any recommended or required routes to and from the site.

c) Applicable city street use regulations and requirements, and State of California Department of Transportation (Caltrans) codes, regulations and requirements.

d) the Owner's requirements for proper handling and transportation of hazardous waste.

e) The legal maximum loads for each vehicle.

1.6 REGULATORY REQUIREMENTS

A. Hazardous and contaminated materials and hazardous waste shall be handled according to applicable laws and regulations in effect at the time of disturbance, transport or disposal of said hazardous materials or waste and requirements of the Contract Documents. In the event of conflict, the more stringent requirement shall apply.

B. The Owner is the generator, as defined in 22 CCR Section 66260.10 and 40 CFR Part 261, of any hazardous waste, and will be responsible for that hazardous waste to the extent required by law.

C. Contractor is alerted to and shall familiarize itself to the following laws and regulations regarding the generation, management, characterization and disposal of hazardous waste:

1. Resources Conservation and Recovery Act, 42 U.S.C. Section 6901 et seq. and regulations 40 CFR Part 260 et seq.

2. California Health and Safety Code, Division 20 and regulations, and 22 CCR Section 66000 et seq.

3. For asbestos hazards: Comply with the applicable requirements of the Cal/OSHA Construction Asbestos Standard, 8 CCR Section 1529, and all local, state, and federal regulations.

4. For lead hazards and abatement: Comply with the applicable requirements of the Cal/OSHA Lead in Construction Standard, 8 CCR Section 1532.1; Cal/EPA Regulation 22 CCR Section 66000, et seq.; California Department of Public Health (DPH) Regulation 17 CCR 35001, et seq.

3. For mercury hazards and abatement: Comply with the applicable requirements including: 8 CCR Section 5149 Hazard Communications, 8 CCR Section 5192 Hazardous Waste Operations and Emergency Response, 8 CCR Section 5155 Airborne Contaminants, 8 CCR Section 5144 Respiratory Protective Equipment, Title 22, California Code of Regulations – Cal/EPA DTSC regulations.

1.7 HAZARDOUS MATERIALS USED TO PERFORM THE WORK

A. General: Minimize the use of hazardous materials to perform the work. Where materials, which contain hazardous substances or mixtures, are used to perform the work, material usage shall be in strict adherence to Cal/OSHA's safety requirements and the manufacturer's warnings and application instructions listed on the Material Safety Data Sheet provided by the product manufacturer and on the product container label.

1. Contractor will be responsible for coordinating the exchange of MSDS or other hazard communication information between subcontractors at the site.

2. Contractor will notify the Owner when a specific product or equipment, or their intended usage, may be unsafe prior to ordering the product or equipment or prior to the product or equipment being incorporated in the Work.

B. Prohibited Material: The following materials and chemicals are specifically prohibited from use on this project unless otherwise accepted in writing by the Owner.

1. Material with a stated ACGIH threshold limit value of less than 25 parts per million.

2. Ethylene glycol monomethyl ether.

3. Dipropylene glycol methyl ether.

4. Ethylene glycol.

5. Formaldehyde.

6. Methylene chloride.

7. Isocyanates.

8. Chemicals with a flash point of less than 140 degrees Fahrenheit.

PART 2 - PRODUCTS

2.1 HAZARDOUS MATERIAL CONTROLS AND EQUIPMENT

A. Protective Devices: Temporary wash stations or showers, disposable clothing, respirators, gloves, hard hats, and other required items. Respirators shall protect against appropriate dusts, fumes and mists as approved by the National Institute for Occupational Safety and Health (NIOSH) under provisions of 30 CFR Part 11.

B. Waste Receptacles: Conform to federal and State regulations, with 6-mil minimum thickness waste bags.

C. Polyethylene Sheeting and Dust Barriers:

1. Polyethylene sheeting shall be flame-retardant and approved and listed by the State Fire Marshal in accordance with Section 13121 and/or 13144.1 of the California Health and Safety Code.

a) Thickness and Size: 6-mil thick minimum, unless otherwise specified, sized to minimize the frequency of joints.

b) Flammability: Comply with NFPA Standard 701 with a flame spread rating of no greater than 5 and a smoke development rating of no more than 70 when tested in accordance with ASTM procedures.

D. HEPA Vacuums and Negative Pressure Units (NPUs) used for clean-up of materials and detail cleaning shall be HEPA-filtered.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Notify the Contractor’s Hazardous Material Supervisor of suspect conditions for testing by the Owner.

B. Promptly notify the Owner of differing conditions.

3.2 ASBESTOS HAZARD CONTROL PROCEDURES

A. General Requirements:

1. Asbestos-containing materials shall not be disturbed by cutting, sawing, grinding, pulverizing, crumbling, breaking, or otherwise rendered friable or airborne unless these activities are conducted under the requirements of all applicable regulations and guidelines or controlled renovation procedures as outlined herein.

2. A qualified Asbestos Abatement Contractor per Cal/OSHA regulation 8 CCR 1529 shall complete Work exceeding 100 sq. ft. or 100 linear feet of asbestos-containing materials. All work affecting friable asbestos-containing materials shall be completed in compliance with Cal/OSHA Work Class I or III procedures, as applicable. Class III work may be completed by workers with EPA Asbestos Operations and Maintenance training and annual refresher training, minimum. Refer to Section 02090 - Hazardous Materials Abatement and Control.

3. Assemble equipment and supplies, including but not limited to a Hudson sprayer, an HEPA- filtered vacuum, polyethylene drop cloths and wetted sponges.

4. Other Non-Friable Materials: Complete controlled renovation procedures in compliance with Cal/OSHA's Work Class 2 procedures per 8 CCR 1529.

5. Work exceeding 100 SF or 100 LF of asbestos materials or thermal system insulation shall be completed by a qualified Asbestos Abatement Contractor.

B. Controlled procedures for installation of anchors or coring through friable asbestos materials, including but not limited to sprayed-on or troweled-on acoustical plasters, structural fireproofing, and linoleum backing:

1. Avoid contact with friable ACM where practical. Anchor to non-ACM materials were feasible.

2. Install drop cloths on the ground and use a glovebag or mini-containment constructed of 6-mil polyethylene sheeting to contain work affecting friable materials.

3. Wet the ACM with water and remove limited material as required for installations. Immediately clean-up all debris and seal the waste in a double 6-mil disposal bag for disposal as asbestos waste.

4. Clean-up the immediate area using wet methods and a HEPA vacuum. Dispose of friable plasters, linoleum backing, fireproofing and thermal system insulation as friable asbestos waste.

5. Textured Acoustical Plasters: Cordon off the area and set-up negative pressurization of the controlled renovation activity using glovebag or mini-containment methods. Do not drill or core openly through friable ACM; such work shall be completed by a Certified Asbestos Worker only under Cal/OSHA Work Class I or III procedures, as applicable. Wet the materials throughout the controlled renovations. Do not allow ACM on cores to fall into the ceiling plenum or Crawl Space below. Following the controlled renovation activities, clean-up the mini-containment using wet methods and a HEPA vacuum. Gooseneck and dispose of the glovebags, where applicable, within a double waste bag.

6. Thermal System Insulation (TSI): Avoid disturbing intact pipe and fitting lagging. Work within posted Crawl Spaces or plenums will require respiratory protection for all workers entering such zones, and use of personnel and equipment decontamination procedures in compliance with 8 CCR 1529. Avoid contacting TSI while installing conduit, etc. Use glovebag or mini-containment procedures for controlled renovation work as described above and in compliance with Cal/OSHA's Work Class III procedures per 8 CCR 1529. Dispose of lagging as friable asbestos waste.

7. Linoleum Backing: Cordon off the room and work area and cut-out the linoleum, using a carpet knife prior to coring. Wet the backing using water and shave cream and remove the asbestos-containing backing intact. Dispose of debris as friable asbestos waste. Wet wipe and HEPA vacuum the area of the controlled renovations for final clearance. Do not allow linoleum on cores to fall into the ceiling plenum or Crawl Space below, as applicable.

8. Other Friable Asbestos: Remove materials in compliance with Cal/OSHA Work Class 3 procedures per 8 CCR 1529.

9. Avoid contact or disturbance with intact asbestos-containing pipe lagging within concealed wall and plenum areas as well as within all accessible areas. Notify the Contractor's Hazardous Materials Supervisor (HMS) of the presence of damaged ACM materials, if accidentally contacted.

C. Demolition of non-ACM obstructing known intact ACM.

1. Remove non-contaminated and non-asbestos materials for access using standard dust control procedures as required for painted assemblies, etc.

2. Minimize disturbances to substrates concealing friable or damaged asbestos-containing materials, such as laid-in ceiling tiles concealing asbestos-containing fireproofing, demolition of non-ACM partitions which may destabilize sprayed-on asbestos-containing acoustical finishes, etc. Work impacting asbestos-containing materials shall be completed by qualified workers only.

3. Remove and dispose of non-contaminated waste, where feasible. Alert the Contractor's Hazardous Material Supervisor of contaminated conditions for proper removal and disposal and cordon off the affected areas where contamination is encountered. Do not dry sweep affected wastes and debris.

D. Unexpected exposure to known or suspect intact ACM.

1. Where asbestos materials are intact, such as intact pipe lagging, proceed to remove the affected substrate and immediately label the asbestos material with a "caution" sign to prevent unintentional disturbances.

2. Where asbestos materials uncovered are damaged or unknown asbestos contaminated conditions are encountered, discontinue work in the immediate contaminated area, shutdown the areas HVAC system, if not already disengaged, and alert the Contractor's Hazardous Materials Supervisor of the conditions for proper removal and disposal.

E. Unexpected release of asbestos into the environment.

1. Cordon off the immediate area (10 to 20 ft. radius average minimum), and shutdown the area's HVAC system (if applicable).

2. Notify the Contractor's Hazardous Materials Supervisor for proper removal and disposal using wet methods and HEPA-filtered vacuums. Clean-up work shall be completed under the directions of a Competent Person with 16-hour minimum EPA Operations and Maintenance asbestos training and by workers with 16-hours asbestos training minimum.

3. Decontaminate or dispose of friable waste in double 6-mil thick goosenecked labeled waste bags for manifesting and disposal.

F. Procedures for reporting Suspect Asbestos Containing Materials.

1. Advise the Contractor's Hazardous Materials Supervisor (HMS) of suspect conditions for testing by the Owner. Do not remove or disturb suspect materials until tested and approved.

G. Perimeter Action Level: Failure of the Contractor to follow wet methods, immediate clean-up, and fiber control procedures as outlined herein resulting in exceedances to the Perimeter Action Level of 0.01 fibers/cc by Phase Contrast Microscopy at the perimeter of the regulated area or within adjoining occupied zones as measured by the Owner shall result in clean-up and analysis of the samples by Transmission Electron Microscopy (TEM) at the Contractor's expense.

H. Demolition of Concrete impregnated with vapor barrier, if identified during demolition.

1. Concrete and vapor barrier will be removed by the Contractor.

2. Concrete and vapor barrier will be disposed of as asbestos-containing waste. Concrete will not be recycled.

3. Contractor will remove asbestos-containing debris from soil and project area following removal of concrete. Debris will be disposed of as asbestos-containing waste.

3.3 LEAD HAZARD CONTROL PROCEDURES

A. General Requirements.

1. Lead-related construction work affecting lead-based paints or lead-contaminated soils as defined under DPH. Refer to Section 02090 - Hazardous Materials Abatement and Control.

B. Prohibited Activities:

1. Open flame burning or torching of lead-based paints or presumed lead-based paints, including use of propane-fueled heat grids.

2. Scraping, sanding, or grinding of lead-based paints or presumed lead-based paints without proper containment or a HEPA local vacuum exhaust tool.

3. Uncontained hydroblasting or high pressure washing of lead-based paints or presumed lead-based paints.

4. Abrasive blasting or sandblasting or lead-based paints or presumed lead-based paints without proper containment or a HEPA local vacuum exhaust or dust collector.

5. Heat guns operating above 1,100 degrees Fahrenheit.

6. Dry sweeping of debris and removal of surface coatings by torch or flame.

7. Disturbance of lead-painted or lead-coated surfaces scheduled to remain within the structure(s) by cutting, sawing, grinding, or other construction operations without adequate dust controls.

8. Eating, smoking and drinking in or in the proximity of lead hazard operations.

9. Removal of lead-containing coatings with a torch or flame, except as a result of unavoidable welding or torching of back-to-back structural elements that cannot be adequately previously abated without affecting the integrity of the structure.

10. Steam cleaning and compressed air removal for lead-based paints or presumed lead-based paints.

11. Lead hazard contamination beyond the containment barriers.

C. Handling:

1. For existing lead-painted or lead-coated surfaces that are indicated to remain, advise workers of the potential hazards.

2. For areas where handling or disturbance of loose or peeling paints are required, verify that the paint that remains on interior walls, ceilings, and other surfaces in areas of active work, as applicable, is adhered to the substrate sufficiently to support eventual repainting. Paints that peel or loosen during wetting shall be handled and removed as specified in this Section.

3. Clean debris and surfaces with HEPA-filtered vacuums and wet methods. Dry sweeping is not permitted.

4. Show where existing lead-painted or lead-coated surfaces are scheduled to remain, workers shall be advised of the potential hazard of these materials with all work completed by qualified workers.

5. Shoveling, wet sweeping, and brushing may be used only where vacuuming or other equally effective methods have been tried and are found to be ineffective.

6. Loose debris and scraped materials shall be treated as hazardous lead waste unless shown to contain <1000 ppm of lead. Construction waste coated with intact lead paints or glazing may be disposed as construction debris in accordance with Cal/EPA requirements.

Debris containing between 350 ppm to <1000 ppm of lead may be disposed of at a landfill that has been notified by the Contractor, the landfill must also be granted a permit to accept such waste by the California Department of Toxic Substances.

7. Workers shall decontaminate themselves and appropriate equipment prior to eating, drinking and smoking.

D. Recycling: Items to be recycled, such as but not limited to lead roof flashings or lead sheeting, shall be accompanied with a bill of lading and a memorandum from the recycler acknowledging that lead may be present and work activities and disposal will comply with applicable regulations. Submit in accordance with procedures of Section 01300 - Submittals.

E. Cleaning: Provide daily "housekeeping" on the project site including, but limited to:

1. Clean-up of loose debris and contamination daily prior to leaving the job site, or covering with tarpaulins to prevent unwanted disturbances.

2. Daily clean-up of traffic areas, using a HEPA vacuum or wet methods.

3. Repair of torn or damaged protective barriers.

F. Field Quality Control:

1. Maintain airborne dust levels within the regulated construction zone and throughout the construction site below the Cal/OSHA Project Action Level of 30 micrograms per cubic meter. Levels above the Project Action Level may require an upgrade in respiratory protection for all affected workers, as well as amended work practices and clean-up of affected areas at no additional cost to the Owner.

2. Maintain airborne lead dust levels at the site's property line or adjoining occupied non-construction areas below the National Ambient Air Quality Standard (NAAQS) of 1.5 micrograms per cubic meter. Exceeding this level may require further isolation of the work areas, amended work practices, and clean-up of affected areas at no additional cost to the Owner.

3. All costs for additional sampling of contaminated areas, including the Owner's time and expenses for handling, shipping, and analysis charges, required to show background levels below the lead standards in Subparagraphs [D.1 and D.2] shall be at the Contractor's expense.

4. Failure by the Contractor to contain construction dust and debris and exceedances of the NAAQS standard of 1.5 micrograms/cubic meter outside the construction boundaries within adjoining occupied areas of the building as measured by the Owner will require detailed clean-up and additional clearance wipe sampling at the Contractor's expense.

G. Project Hygiene Facilities: Provide project hygiene wash-up facilities including:

1. A 2-stage decontamination assembly, minimum, including an equipment and contiguous clean room with a bucket wash-up facility positioned outside all regulated work areas. The Equipment Room shall contain labeled bags for storing contaminated protective clothing and equipment. The Clean Room shall contain lockers and containers for storing employee street clothes and personal items, including a suitable supply of potable water to permit each employee to wash their hair, hands, forearms, face and neck. Provide 1

wash station minimum for every 10 workers.

2. Sufficient sets of protective full-body clothing to be worn in the designated work areas and whenever a potential airborne lead hazard exists. Clothing shall include, but not be limited to, full-body coveralls, headgear, eye protection, and gloves. Disposable-type protective clothing is acceptable.

H. General Dust Controls: Provide general dust control including:

1. Hudson or airless sprayers for wetting-down construction materials and debris throughout demolition or scraping phases.

2. Fire-retardant polyethylene dust barriers.

3. HEPA-filtered vacuum for clean-up of loose debris and suspect contamination.

4. Polyethylene drop cloths for protection of floors, furnishings, landscaping, etc., as applicable, to prevent contamination or damage to building surfaces, equipment or finishes.

I. Warnings and Signs: Provide the following minimum signs and posting requirements:

1. Cordon off the proximity (within approximately 20 ft.) of regulated work areas using construction tape, polyethylene dust barriers, or other appropriate means. Persons entering the regulated "cordoned" work areas shall wear appropriate respiratory protection and full-body coveralls.

2. Affix warning signs at the entry and approaches to the regulated areas.

3. Lockout electrical and HVAC equipment within the regulated area, as necessary.

J. Assistance by Abatement Contractor: The Abatement Contractor will provide assistance to the General Contractor and other trades in hazards abatement control including torching hazards and lead dust control, as needed.

3.4 PCB BALLAST PROCEDURES (AS NEEDED)

A. Identifying PCB ballasts: All ballasts not specifically labeled "non-PCB" or "PCB free" shall be considered PCB-containing.

B. Prohibited Activities Not Specified in this Section: Removal of ballasts from fixtures with hazard awareness training as indicated by the Contractor's Hazardous Materials Supervisor.

C. Procedures for Removal of Non-Leaking Ballasts: Non-leaking ballasts shall be removed from their fixtures and packed in kitty litter-lined steel drums for hazardous waste disposal. Workers removing ballasts may require protective gloves as a precaution against unforeseen leaks or damage.

D. Procedure for Handling Leaking PCB Ballasts:

1. Workers removing ballasts from fixtures shall wear protective clothing and nitrile or neoprene gloves.

2. Leaking ballasts pose a health and safety hazard and shall therefore be removed by trained workers only (Cal/OSHA 40-hour Hazwoper training is recommended).

3. Wipe down the fixture showing signs of overheated or leaking ballasts with paper towels after the unit has been cooled to room temperature.

4. Follow with additional wiping with an organic solvent, e.g., mineral spirits or isopropyl alcohol.

5. Place leaking ballasts and rags into a plastic bag, which is tied-off and secured.

6. Pack the ballasts in steel drums for hazardous waste disposal.

E. Procedure for Disposal of PCB ballasts:

1. Pack PCB ballasts and bagged leaking ballasts and rags into a steel drum, sealed, labeled, and transported to an approved incinerator following required manifest procedures as specified in this Section.

2. Absorbent material, such as kitty litter, shall be used as a cushion and absorbent within the drums.

3. Do not exceed the incinerator's drum loading requirements, typically 350 to 500 lbs. per drum.

4. Transport hazardous waste for disposal per the requirements under 22 CCR Section 66268.110.

5. Dispose as a hazardous waste per EPA Regulation 40 CFR 761.00 and 761.65 and Cal/EPA Regulation 22 CCR Section 66508.

3.5 MERCURY-CONTAINING LAMP REMOVAL PROCEDURES (AS NECESSARY)

A. Handling and Disposal of Lamps:

1. Spent fluorescent and other mercury-containing lamps shall be considered a hazardous waste by the California Department of Public Health (DPH; 22 CCR Section 66699(b)).

2. Ship lamps to a commercial recycler where they are to be crushed and the mercury reclaimed.

3. Comply with DOT requirements for manifests, with evidence of proper disposal provided to the Owner, including a log of shipping dates and quantities.

4. Load into secured cardboard boxes for shipment to prevent unnecessary breakage.

5. In the event of lamp breakage, clean-up broken glass and debris immediately, using a HEPA-filtered vacuum for final clean-up.

3.6 NOT USED

3.7 NOT USED.

3.8 NOT USED.

3.9 NOT USED.

3.10 NOT USED.

3.11 WASTE DISPOSAL AND MANIFESTING PROCEDURES

A. Hazardous Waste Disposal:

1. Packing, labeling, transporting, and disposing of hazardous waste shall comply with Cal/EPA regulations under 22 CCR, including completion of the Uniform Hazardous Waste Manifest Form (DTSC 8022A and EPA 8700-22).

2. A "Waste Manifest" shall be completed for disposal of hazardous waste. The transporter shall possess a valid EPA Transporter I.D. number. The Contractor's Hazardous Materials Supervisor shall notify the Owner at least 48 hours prior to the time that the Manifest is required to be signed by a representative of the Owner.

3. Applicable information to be included in the "Waste Manifest" includes the following:

a) EPA Generator I.D. Number: Verify with the Owner.

b) Generator's Name and Address: Verify with the Owner.

c) Generator Tax I.D. Number: Verify with the Owner.

B. Disposal of Contaminated and Other Materials:

1. Disposal of intact lead-coated architectural or structural elements may occur as non-hazardous waste in accordance with Cal/EPA's and the Department of Toxic Substance Control's requirements.

2. Loose and peeling lead-based paints and miscellaneous lead debris shall be treated as hazardous waste, unless otherwise indicated. Lead wastes shall be profiled by the Contractor by means of standard digestion and extraction tests (TCLP, WET and SW846), as appropriate, and shall be manifested and properly disposed.

3.12 FINAL PROJECT CLEAN-UP CLEARANCE CRITERIA PROCEDURES PRIOR TO REOCCUPANCY BY DEMOLITION WORKERS AND OTHER TRADES

A. Asbestos: Asbestos-containing materials will be abated with clearance by visual inspection and phase contrast microscopy (PCM) or transmission electron microscopy (TEM), as applicable, as outlined in Section 02090, Hazardous Materials Abatement and Control.

B. Lead Hazards:

1. Visual Inspection: Final clean-up prior to the Owner's reoccupancy or Substantial Completion shall include wet wiping using a TSP solution and HEPA vacuuming all suspect dust and debris for final visual inspection or wipe dust sampling as outlined under the "Lead Hazard" or "Hazardous Materials Abatement and Control" Sections, as applicable.

ABATEMENT WORK PLAN

Project:	Demolition Project 20-80 Chemical Way, Redwood City, CA	**Updated:**	April 11, 2012

The work covered by this work plan includes the removal, handling and disposal of various hazardous materials in accordance with all sections of the attached specifications, and applicable federal, state and local regulations at the above designated site. A copy of this Abatement Work Plan is to be posted on-site during the abatement work.

I. Summary of Work

√	Removal and disposal of asbestos-containing materials (ACM) and asbestos-containing construction materials (ACCM) as part of the demolition.
√	Scraping of loose and peeling paints as required for disposal of intact painted elements as non-hazardous waste, including associated dust controls and personal protective procedures in compliance with Cal/OSHA's Construction Lead Standard, 8 CCR 1532.1 and DPH regulation 17 CCR Sections 35001 through 36100.
√	Demolition, removal and disposal of painted surfaces with lead-containing paints whereby airborne exposures may exceed the permissible exposure level, requiring such work to be completed by DPH Certified Lead Workers and Supervisors in compliance with Cal/OSHA's Construction Lead Standard, 8 CCR 1532.1 and DPH regulation 17 CCR Sections 35001 through 36100.
√	Removal and disposal of PCB-containing ballasts.
√	Removal and recycling of mercury-containing lamps & thermostats.
√	Possible disturbance of soils with naturally-occurring asbestos.

II. Submittals:

Pre-job Submittals (as designated):

√	BAAQMD Notification, as needed (10 working days in advance);
√	Cal/OSHA Notification per 8 CCR 1529 (24-hours in advance);
√	copy of current Contractors' State Licensing Board (CSLB) License;
√	copy of Cal/OSHA Asbestos Registration Certificate;
√	proof of all required permits or variances;
√	abatement work schedule;
√	abatement work plan(s);
√	copies of workers' asbestos training certificates, including the Competent Person;
√	copies of workers' lead awareness training certificates;
√	copies of workers' annual medical exam and respirator approval;
√	copies of workers' 12-month respirator fit testing records;
√	copies of workers' blood lead test within past 90 days;
√	Material Safety Data Sheets (MSDS) for chemicals used;
√	emergency phone and pager listing;
√	Independent on-site third-party DOP testing of negative pressure units and vacuums;
√	proposed location of locked dumpster; and
√	rotameter calibrations within past 6 months.

Periodic Submittals (as designated):

√	personal air monitoring (daily);
√	updated worker documentation (as needed);
√	boundary access logs (daily);
√	negative pressure records (daily); and
√	copies of updated notification to regulatory agencies (as needed).

Project Close-out Submittals (as designated within 2 weeks of completion):

√	Certificate of Completion;
√	receipt and weight tickets from landfill operator or recycler (as applicable);
√	copies of completed uniform waste manifests, including hazardous and non-hazardous waste;
√	waste profiling data (TCLP, WET and SW846, as applicable);
√	filter change logs for all filtration units, water filtration units (as applicable) and respirators;
√	foreman's daily job reports;
√	employee and visitor entry/exit logs for all containments;
√	manometer printouts for all applicable containments; and
√	air sample results for all personnel, work areas and air filtration units.

III. Schedule

Start Date:	TBD
End Date:	TBD
Maximum Abatement Shifts:	10
Work hours:	TBD

TBD=to be determined

IV. Contacts:

Contact	***Individual***	***Phone #***	***Cell #***	***email***
Project Manager:	Mr. Sam Lin	650-508-6722	408-391-5150	slin@co.sanmateo.ca.us
Abatement Contractor	TBD	TBD	TBD	TBD
Environmental Consultant SCA Environmental, Inc.:	Christina Codemo	415/882-1675	415/867-9540	ccodemo@sca-enviro.com
Prime Contractor:	TBD	TBD	TBD	TBD

TBD=to be determined

V. Security

Arrange site security with the Owner's representative at the beginning of the job. Please note the following:

1. Abatement contractor employees and equipment will be required to enter the buildings at entrance ways designated by the Owner's representative. No employee may enter the buildings at any other point than the designated entryways.
2. Abatement contractor's equipment will be stored and secured in an area agreed upon by the Owner's representative and the Contractor.
3. Provide temporary security at building penetrations created by the demolition and abatement.

VI. Special Conditions

1. The minimum negative pressure level for this project is –0.02" w.g. at all locations. The Abatement contractor is responsible for maintaining this level during all work activities, including bagout and until satisfactory clearance air results have been received and notice of clearance is provided by the Environmental Consultant.

2. Negative pressure recording: the Abatement contractor is responsible for recording negative pressure as follows:
   a. Negative pressure will be recorded throughout the entire project, including inspections, clearance testing, and at all times until the Consultant provides a final clearance notice.
   b. At least one spare manometer must be kept on site at all times.
   a. A printout of recordings must be transmitted to the Environmental Consultant by the Abatement Contractor each day.

3. Waste will be removed from the buildings each night and disposed of in approved waste receptacles in the designated loading areas. Waste receptacles will be properly labeled and locked each night.

4. Air Sampling:
   a. PCM Analysis: Analysis of PCM samples shall follow the procedures outlined in NIOSH method 7400 and within these Contract Documents.

   b. TEM Analysis: The U. S. Environmental Protection Agency passed regulations for schools under the Asbestos Hazard Emergency Response Act (AHERA), which are found in 40 CFR Part 763 "Asbestos Containing Materials in Schools". This regulation states that all abatement work shall be evaluated upon completion by collecting air samples using aggressive sampling techniques and that all such samples shall be analyzed using Transmission Electron Microscopy (TEM). The TEM protocol for large projects/zones calls for the collection of a minimum of 5 inside samples, 5 outside samples, and 3 blank samples and each should be analyzed by TEM. The regulation strictly defines the criteria that must be met to determine that a building is acceptably clean after removal. TEM analysis turnaround times shall be 24 hours, unless otherwise indicated.

   c. The sampling and analytical criteria in the AHERA regulation for schools shall be viewed as the preferred method for determining that any asbestos abatement project in any building has achieved a satisfactory level of cleanliness.

   d. The Owner shall pay the Environmental Consultant's costs of the final round of visual inspections, air sampling, and PCM and/or TEM analyses that will meet the asbestos abatement specification. All rounds of visual inspections, air sampling, and PCM and/or TEM analyses that fail to meet the contract criteria shall be borne by the Contractor. For the purpose of this paragraph, visual inspection includes the area isolation inspection, pre-encapsulation inspection, and final area clean-up inspection.

   e. During all asbestos-related work, perimeter sample results will be collected by the designated Environmental Consultant (Industrial Hygienist). These samples will be analyzed by Phase Contrast Microscopy (PCM). Sample results that are in excess of the background level or 0.01 fibers per cubic centimeter (f/cc) Project Action Level may be forwarded for analysis by Transmission Electron Microscopy (TEM) with a 12-hour turnaround specified. Handling, shipping, and analysis charges (including the Environmental Consultants time and expenses) will be paid for by the Contractor. Any sample results in excess of 70 asbestos structures per square millimeter of filter area (corrected for a 1,200 - 1,800 liter sample volume as appropriate) will require cleaning, inspection, and resampling of the affected area at the Contractor's expense.

f. During all lead hazard-related work, such as demolition, torching and welding activities, etc., as applicable, perimeter air sample and/or lead wipe sample results will be collected by the designated Environmental Consultant (Industrial Hygienist). These samples will be analyzed by flame atomic absorption. Wipe sample results which are in excess of the construction dust control standard of 800 micrograms per square foot for adjoining construction zones on two consecutive samplings (or two consecutive days) or 50 micrograms per square foot for adjoining floor areas on any occasion will require isolation and clean-up of the affected areas. Air sampling results in excess of the Cal/OSHA "Project Action Level" of 30 micrograms per cubic meter will require isolation of the work area and amendment of work procedures and/or clean-up of the affected areas. Resampling of the affected areas and handling, shipping, and analysis charges (including the Environmental Consultant's time and expenses) for additional sampling required to show background levels below these construction lead standards shall be borne by the Contractor.

5. Submittals:
   a. All pre-construction submittals shall be forwarded to the Owner's representative and the Owner's designated Environmental Consultant prior to the start of abatement as designated in the Contract Documents and herein. Documents shall be provided at least **5 business days prior to** commencement of abatement activities.

   b. Failure by the Contractor to fulfill the submittal requirements as specified in the Contract Documents and herein shall be the basis for withholding final payment until such submittal requirements are satisfied.

6. Waste Manifests:
   a. The Contractor shall coordinate the inspection and signing of all waste manifests with the Owner and its Environmental Consultant, while on-site. Failure to complete the manifests or callbacks after completion of the project will be backcharged to the Contractor.

7. The Contractor shall pay for all Environmental Consultant costs for delays in completion of work beyond the authorized schedule established as stated in Section III of this abatement work plan or in the contract documents. Such charges shall include Consultant's observations and inspections, daily air monitoring, equipment, transportation and analysis charges. Such costs are estimated at $1,500 per day, exclusive of any costs associated with final clearance air testing.

VII. Summary of Survey Result and Conditions

For a list of ACM, ACCM and non asbestos-containing materials in the building, refer to the material matrix reports attached to this work plan. Additional suspect materials identified should be assumed asbestos-containing until such time as sampling can be performed to verify asbestos content.

SCA also performed a limited lead sampling of representative coatings in the buildings. Sampling was performed by collection of bulk samples in various locations. Paints were generally noted to be in good condition at the time of the survey. Refer to the attached table for a summary of results.

Note that sampling to verify the presence of naturally-occurring asbestos in Serpentine soil was not included in this scope of work. The Contractor and Owner should be aware that naturally-occurring asbestos may be present at the site and should be addressed prior to demolition activities. If present, the requirements issued by the California Air Resources Board (CARB) and Bay Area Air Quality Management District (BAAQMD) should be implemented. All soils shall be assumed asbestos-containing until sampling can be performed to verify asbestos content.

As lead was identified in some paints and a detailed inventory of paints was not performed for the project, for the purpose of complying with the Cal/OSHA lead in construction regulation (8 CCR 1532.1), all coated surfaces shall be considered to contain some lead.

Treat all similar paints and substrates in kind. Note that most building paints contain some lead content, and require demolition dust control procedures for compliance with Cal/OSHA's Construction Lead Standard under 8 CCR 1532.1.

Characterize debris from coated materials for possible disposal as hazardous waste. Intact painted elements may be disposed as non-hazardous waste complying with dust controls and personal protective procedures per Cal/OSHA regulation 8 CCR 1532.1 and DPH regulation 17 CCR Sections 35001 through 36100, if both the total and leachable lead contents of the waste streams are below 1000 mg/kg and 5 mg/liter (WET and TCLP tests)

VIII. Scope of Work: 20 Chemical Way

Contractor will be responsible for quantifying all hazardous materials requiring abatement for bidding purposes. Materials listed below include all identified hazardous materials that may be impacted within the area. Refer to the attached Material Matrix Reports for detailed information regarding identified hazardous materials.

Asbestos Abatement:
Task 1

Abatement Materials	Vinyl Floor Tiles with Related Mastics							
Method:		X	Full Isolation or Mini-Containments		Glovebag		Glovebag-Cutout	
Material	***Activity Class***	***Material I.D.***			***% Asbestos***	***Est. Quantity requiring abatement*** *(Field verify)*		
Vinyl Floor Tiles with Associated Mastics	2	FLVCT-100			See Section XII	Field Verify		
Decon System:	X	Shower		Central		___	Hudson sprayer or bucket decon if <25 SF	
Floor:		# Layers Poly		Drop Cloths			Scaffold	
Walls:	1	# of Polyethylene Layers			Splash Guards			
Criticals:	2	# of Polyethylene Layers			Plywood Barriers			

Other Comments: **For Vinyl Floor Tiles & Mastic Abatement:** Abate the vinyl floor tiles and mastics using full isolation or mini-containment abatement methods per Cal/OSHA 8 CCR 1529 Work Class II procedures, minimum, with negative pressurization of all zone(s). Demolish interior partitions and counters to access and abate concealed materials. Remove the mastics using an approved "low odor" mastic remover with greater than 140°F flash point. Dispose of tile waste as Category 1 non-friable waste. Characterize and dispose of rags and solvent residues as a separate hazardous waste stream.

For Disposal & Cleanup: Double gooseneck bag all asbestos floor tiles as dispose as Category 1 non-friable waste. Dispose of mastics, rags and associated waste as specified by the mastic remover manufacturer, potentially as hazardous waste. HEPA vacuum the surrounding area, prior to visual inspection by the Environmental Consultant.

Task 2

Abatement Materials	Drywall, tape & mud with skim coat										
Method:	X	Full Isolation or Mini-Containments	___	Central	___	Hudson sprayer or bucket decon					
Material	***Activity Class***	***Material I.D.***				***% Asbestos***		***Est. Quantity*** *(Field verify)*			
Drywall walls and ceilings with trace joint compound and ACM skim coat	2	WLSH/CLSH-103 & WLTX-112				>1%, cannot be composited as trace asbestos		Field Verify			
Decon System:	X	Shower		Central		Bucket					
Floor:	1	# Layers Poly		Drop Cloths		Scaffold					
Walls:	1	# of Polyethylene Layers		X	Splash Guards						
Criticals:	1	# of Polyethylene Layers			Plywood Barriers						
Other Comments: **For Sheetrock Abatement:** Remove materials using full isolation or mini-containment procedures, satisfying the requirements of Cal/OSHA 8 CCR 1529 Work Class II procedures with negative pressurization of the zone. Use wet methods for dust controls. Dispose of drywall, joint compound and skim coat materials as friable asbestos waste. HEPA vacuum the contained area prior to final clearances.											

Task 3

Abatement Materials	Vinyl sheet flooring and mastics										
Method:	X	Full Isolation or Mini-Containments		Glovebag		Glovebag-Cutout					
Material	***Activity Class***	***Material I.D.***				***% Asbestos***		***Est. Quantity*** *(Field verify)*			
Vinyl sheet flooring and mastics	2	FLGLUE-108				See Section XII		Field Verify			
Decon System:	X	Shower		Central		Bucket					
Floor:		# Layers Poly		Drop Cloths		Scaffold					
Walls:	1	# of Polyethylene Layers			Splash Guards						
Criticals:	1	# of Polyethylene Layers			Plywood Barriers						
Other Comments: Abate the vinyl floor sheeting (linoleum) using full isolation or mini-containment abatement methods per Cal/OSHA 8 CCR 1529 Work Class 2 procedures, minimum, with negative pressurization of the zone(s). Demolish interior partitions and counters to access and abate concealed materials. using wet methods and dispose of as friable asbestos waste. **For Mastics (as applicable):** Remove the mastics using an approved "low odor" mastic remover with greater than 140°F flash point. Characterize and dispose of rags and solvent residues as a separate hazardous waste stream.										

Task 4

Abatement Material	Soils excavation or disturbance of soils with possible naturally-occurring asbestos								
Method:	X	Cordon Area		Glovebag		Glovebag-Cutout			
Material	***Activity Class***	***Material I.D.***			***% Asbestos***		***Est. Quantity***		
Excavation or disturbance of soils with assumed naturally-occurring asbestos	2	Not applicable			Assumed		Field Verify		
Decon System:		Shower		Central			X	Bucket	
Walls:		# of Polyethylene Layers				Splash Guards			
Criticals:		# of Polyethylene Layers				Plywood Barriers			

Other Comments: The Contractor will be responsible for excavation and soil disturbance activities. The soil will be wetted so no visible emissions are noted during all excavation. Exposed soil will be continuously wetted or tarped to avoid migration of dust during excavation activities.

Work will be performed using wet methods and following all Cal-OSHA Class 2 work procedures, minimum.

If soil disposal is required, prior to disposal the Contractor will forward the landfill acceptance certificate to the Owner for review at least 5 days prior to removal of soils. The Contractor will notify the receiving facility that the material is assumed to contain naturally-occurring asbestos. Soil will not be reused on another site without the written approval of the Owner.

Lead Hazards Construction Work:
Task 5

Abatement Material:	Removal of loose and peeling lead-based paints, as needed; paints on structural steel or steel members encased in concrete columns								
Sample I.D.	***Color***		***Area***		***Lead Content***		***Activity Class***		
N/A	All		All		>600 ppm		1		
Decon System:		Shower		Central		X	Bucket		
Required Methods:		Full Containment	X	Manual Methods w/Drop Cloths		X	Loose & Peeling Paints Only		

Other Comments:
Quantities: Field verified and as needed.
Paints: Loose and peeling lead-based paints on non-asbestos containing materials should be damp-broomed. All work areas should be cleaned daily before leaving the site. No dry sweeping.

Task 6

Abatement Material:	Removal of lead paints prior to torching, welding or cutting of painted or primed structural steel or steel encased in concrete columns, as needed.						
Sample I.D.	***Color***		***Area***		***Activity Class***		
N/A	All		All		1		
Decon System:		Shower		Central	X	Bucket	
Required Methods:		Full Containment	X	Manual Methods w/Drop Cloths		Loose & Peeling Paints Only	
Other Comments: **Quantities**: Field verified and as needed. **Structural Steel:** All paints and/or coatings on structural steel are assumed to contain measurable amounts of lead. Perform spot removal of painted or coated steel at locations to be torched, welded or flame-cut, as needed per the project requirements, satisfying all Cal/OSHA regulations.							

Other Items:
Task 7

PCB Ballasts:	X	Remove and dispose of all PCB ballasts throughout the buildings. Any ballast not otherwise labeled by the manufacturer as non-PCB is considered as PCB containing. Quantity— field verify.
Mercury Lamp Recycling	X	Remove and recycle fluorescent lamps throughout the buildings. Quantity— field verify.

IX. Scope of Work: 50 Chemical Way

Contractor will be responsible for quantifying all hazardous materials requiring abatement for bidding purposes. Materials listed below include all identified hazardous materials that may be impacted within the area. Refer to the attached Material Matrix Reports for detailed information regarding identified hazardous materials.

Asbestos Abatement:

Task 1

Abatement Materials	Drywall, tape & mud with skim coat										
Method:	X	Full Isolation or Mini-Containments	___	Central	___	Hudson sprayer or bucket decon					
Material	***Activity Class***	***Material I.D.***			***% Asbestos***		***Est. Quantity*** *(Field verify)*				
Drywall walls and ceilings with trace joint compound and ACM skim coat	2	WLSH-201 & WLTX-202			>1%, cannot be composited as trace asbestos		Field Verify				
Decon System:	X	Shower		Central		Bucket					
Floor:	1	# Layers Poly		Drop Cloths		Scaffold					
Walls:	1	# of Polyethylene Layers		X	Splash Guards						
Criticals:	1	# of Polyethylene Layers			Plywood Barriers						
Other Comments: **For Sheetrock Abatement:** Remove materials using full isolation or mini-containment procedures, satisfying the requirements of Cal/OSHA 8 CCR 1529 Work Class II procedures with negative pressurization of the zone. Use wet methods for dust controls. Dispose of drywall, joint compound and skim coat materials as friable asbestos waste. HEPA vacuum the contained area prior to final clearances.											

Task 2

Abatement Materials	White plaster-like compound under wood wall panels										
Method:	X	Cordon Area		Glovebag		Glovebag-Cutout					
Material	***Activity Class***	***Material I.D.***			***% Asbestos***		***Est. Quantity*** *(+/- 15%)*				
White compound under wood wall panels	1	WLPNL-203			See Section XII		Field Verify				
Decon System:	X	Shower		Central		Bucket					
Floor:		# Layers Poly		Drop Cloths		Scaffold					
Walls:	1	# of Polyethylene Layers			Splash Guards						
Criticals:	2	# of Polyethylene Layers			Plywood Barriers						
Other Comments: Remove panels and compound using full isolation or mini-containment procedures, satisfying the requirements of Cal/OSHA 8 CCR 1529 Work Class 2 procedures, with negative pressurization of the zone. Use wet methods for dust controls. Dispose of materials as friable asbestos waste. Remove substrates as required to access materials. Treat all substrates as asbestos-contaminated and dispose in double goosenecked, labeled bags as friable asbestos waste.											

Task 3

Abatement Materials	Window and door putties and caulks						
Method:	X	Full Isolation or Mini-Containments	X	Glovebag		Glovebag-Cutout	
Material	***Activity Class***	***Material I.D.***		***% Asbestos***		***Est. Quantity requiring abatement*** *(Field verify)*	
Window and door putties and caulks	2	**PUTTY-219**		See Section XII		Field Verify	
Decon System:		Shower		Central	X	Bucket	
Floor:	1	# Layers Poly	X	Drop Cloths		Scaffold	
Walls:	1	# of Polyethylene Layers				Splash Guards	
Criticals:	1	# of Polyethylene Layers				Plywood Barriers	

Comments:

Remove windows and doors intact without disturbance. Double wrap and dispose of as asbestos waste. HEPA-vacuum surrounding area and drop cloths before final visual clearances.

If removal of putties or caulks results in RACM, complete abatement using full isolation or mini-containment procedures, satisfying the requirements of Cal/OSHA 8 CCR 1529 Work Class II procedures with negative pressurization of the zone.

Task 4

Abatement Materials	Residual Mastics under ceramic flooring & grout							
Method:	X	Full Isolation or Mini-Containments		Glovebag		Glovebag-Cutout		
Material	***Activity Class***	***Material I.D.***		***% Asbestos***		***Est. Quantity requiring abatement*** *(Field verify)*		
Residual Mastics under ceramic flooring & grout	2	CORE-223/ FLCERAMIC-204		See Section XII		Field Verify		
Decon System:	X	Shower		Central		___	Hudson sprayer or bucket decon if <25 SF	
Floor:		# Layers Poly		Drop Cloths			Scaffold	
Walls:	1	# of Polyethylene Layers				Splash Guards		
Criticals:	2	# of Polyethylene Layers				Plywood Barriers		

Other Comments: Abate the tiles and mastics using full isolation or mini-containment abatement methods per Cal/OSHA 8 CCR 1529 Work Class II procedures, minimum, with negative pressurization of all zone(s). Demolish interior partitions and counters to access and abate concealed materials. Remove the mastics using an approved "low odor" mastic remover with greater than 140°F flash point. Dispose of tile waste as Category 1 non-friable waste. Characterize and dispose of rags and solvent residues as a separate hazardous waste stream.

For Disposal & Cleanup: Double gooseneck bag all tiles with residual mastics as dispose as Category 1 non-friable waste. Dispose of mastics, rags and associated waste as specified by the mastic remover manufacturer, potentially as hazardous waste. HEPA vacuum the surrounding area, prior to visual inspection by the Environmental Consultant.

Task 5

Abatement Materials	Miscellaneous Items							
Method:	X	Full Isolation or Mini-Containments		Glovebag		Glovebag-Cutout		
Material	***Activity Class***	***Material I.D.***		***% Asbestos***		***Est. Quantity***		
Fire doors	2	FIREDOORS-AAA		See Section XII		Field Verify		
Decon System:		Shower		Central		X	Bucket	
Floor:		# Layers Poly	X	Drop Cloths			Scaffold	
Walls:		# of Polyethylene Layers				Splash Guards		
Criticals:	1	# of Polyethylene Layers				Plywood Barriers		

Other Comments*:* Remove items intact without disturbance. Double wrap and dispose of as friable asbestos waste. HEPA-vacuum surrounding area and drop cloths before final visual clearances.

Task 6

Abatement Material	Soils excavation or disturbance of soils with possible naturally-occurring asbestos									
Method:	X	Cordon Area		Glovebag		Glovebag-Cutout				
Material	***Activity Class***	***Material I.D.***			***% Asbestos***		***Est. Quantity***			
Excavation or disturbance of soils with assumed naturally-occurring asbestos	2	Not applicable			Assumed		Field Verify			
Decon System:		Shower		Central		X	Bucket			
Walls:		# of Polyethylene Layers				Splash Guards				
Criticals:		# of Polyethylene Layers				Plywood Barriers				

Other Comments: The Contractor will be responsible for excavation and soil disturbance activities. The soil will be wetted so no visible emissions are noted during all excavation. Exposed soil will be continuously wetted or tarped to avoid migration of dust during excavation activities.

Work will be performed using wet methods and following all Cal-OSHA Class 2 work procedures, minimum.

If soil disposal is required, prior to disposal the Contractor will forward the landfill acceptance certificate to the Owner for review at least 5 days prior to removal of soils. The Contractor will notify the receiving facility that the material is assumed to contain naturally-occurring asbestos. Soil will not be reused on another site without the written approval of the Owner.

Lead Hazards Construction Work:
Task 7

Abatement Material:	Removal of loose and peeling lead-based paints, as needed; paints on structural steel or steel members encased in concrete columns								
Sample I.D.	***Color***		***Area***		***Lead Content***		***Activity Class***		
N/A	All		All		>600 ppm		1		
Decon System:		Shower		Central		X	Bucket		
Required Methods:		Full Containment	X	Manual Methods w/Drop Cloths		X	Loose & Peeling Paints Only		

Other Comments:
Quantities: Field verified and as needed.
Paints: Loose and peeling lead-based paints on non-asbestos containing materials should be damp-broomed. All work areas should be cleaned daily before leaving the site. No dry sweeping.

Task 8

Abatement Material:	Removal of lead paints prior to torching, welding or cutting of painted or primed structural steel or steel encased in concrete columns, as needed.						
Sample I.D.	***Color***		***Area***		***Activity Class***		
N/A	All		All		1		
Decon System:		Shower		Central	X	Bucket	
Required Methods:		Full Containment	X	Manual Methods w/Drop Cloths		Loose & Peeling Paints Only	
Other Comments: **Quantities**: Field verified and as needed. **Structural Steel:** All paints and/or coatings on structural steel are assumed to contain measurable amounts of lead. Perform spot removal of painted or coated steel at locations to be torched, welded or flame-cut, as needed per the project requirements, satisfying all Cal/OSHA regulations.							

Other Items:
Task 9

PCB Ballasts:	X	Remove and dispose of all PCB ballasts throughout the buildings. Any ballast not otherwise labeled by the manufacturer as non-PCB is considered as PCB containing. Quantity— field verify.
Mercury Lamp Recycling	X	Remove and recycle fluorescent lamps throughout the buildings. Quantity— field verify.

X. Scope of Work: 70 Chemical Way

Contractor will be responsible for quantifying all hazardous materials requiring abatement for bidding purposes. Materials listed below include all identified hazardous materials that may be impacted within the area. Refer to the attached Material Matrix Reports for detailed information regarding identified hazardous materials.

Asbestos:
Task 1

Abatement Material	Soils excavation or disturbance of soils with possible naturally-occurring asbestos									
Method:	X	Cordon Area		Glovebag		Glovebag-Cutout				
Material	***Activity Class***	***Material I.D.***			***% Asbestos***		***Est. Quantity***			
Excavation or disturbance of soils with assumed naturally-occurring asbestos	2	Not applicable			Assumed		Field Verify			
Decon System:		Shower		Central		X	Bucket			
Walls:		# of Polyethylene Layers				Splash Guards				
Criticals:		# of Polyethylene Layers				Plywood Barriers				

Other Comments: The Contractor will be responsible for excavation and soil disturbance activities. The soil will be wetted so no visible emissions are noted during all excavation. Exposed soil will be continuously wetted or tarped to avoid migration of dust during excavation activities.

Work will be performed using wet methods and following all Cal-OSHA Class 2 work procedures, minimum.

If soil disposal is required, prior to disposal the Contractor will forward the landfill acceptance certificate to the Owner for review at least 5 days prior to removal of soils. The Contractor will notify the receiving facility that the material is assumed to contain naturally-occurring asbestos. Soil will not be reused on another site without the written approval of the Owner.

Lead Hazards Construction Work:
Task 2

Abatement Material:	Removal of loose and peeling lead-based paints, as needed; paints on structural steel or steel members encased in concrete columns								
Sample I.D.	***Color***		***Area***		***Lead Content***		***Activity Class***		
N/A	All		All		>600 ppm		1		
Decon System:		Shower		Central		X	Bucket		
Required Methods:		Full Containment	X	Manual Methods w/Drop Cloths		X	Loose & Peeling Paints Only		

Other Comments:
Quantities: Field verified and as needed.
Paints: Loose and peeling lead-based paints on non-asbestos containing materials should be damp-broomed. All work areas should be cleaned daily before leaving the site. No dry sweeping.

Task 3

Abatement Material:	Removal of lead paints prior to torching, welding or cutting of painted or primed structural steel or steel encased in concrete columns, as needed.						
Sample I.D.	***Color***		***Area***		***Activity Class***		
N/A	All		All		1		
Decon System:		Shower		Central	X	Bucket	
Required Methods:		Full Containment	X	Manual Methods w/Drop Cloths		Loose & Peeling Paints Only	
Other Comments: **Quantities**: Field verified and as needed. **Structural Steel:** All paints and/or coatings on structural steel are assumed to contain measurable amounts of lead. Perform spot removal of painted or coated steel at locations to be torched, welded or flame-cut, as needed per the project requirements, satisfying all Cal/OSHA regulations.							

Other Items:
Task 4

PCB Ballasts:	X	Remove and dispose of all PCB ballasts throughout the buildings. Any ballast not otherwise labeled by the manufacturer as non-PCB is considered as PCB containing. Quantity— field verify.
Mercury Lamp Recycling	X	Remove and recycle fluorescent lamps throughout the buildings. Quantity— field verify.

XI. Scope of Work: 80 Chemical Way

Contractor will be responsible for quantifying all hazardous materials requiring abatement for bidding purposes. Materials listed below include all identified hazardous materials that may be impacted within the area. Refer to the attached Material Matrix Reports for detailed information regarding identified hazardous materials.

Asbestos Abatement:

Task 1

Abatement Materials	Vinyl Floor Tiles with Related Mastics									
Method:	X	Full Isolation or Mini-Containments		Glovebag		Glovebag-Cutout				
Material	***Activity Class***	***Material I.D.***			***% Asbestos***		***Est. Quantity requiring abatement*** *(Field verify)*			
Vinyl Floor Tiles with Associated Mastics	2	FLVCT-300			See Section XII		Field Verify			
Decon System:	X	Shower		Central		___	Hudson sprayer or bucket decon if <25 SF			
Floor:		# Layers Poly		Drop Cloths			Scaffold			
Walls:	1	# of Polyethylene Layers				Splash Guards				
Criticals:	2	# of Polyethylene Layers				Plywood Barriers				

Other Comments: **For Vinyl Floor Tiles & Mastic Abatement:** Abate the vinyl floor tiles and mastics using full isolation or mini-containment abatement methods per Cal/OSHA 8 CCR 1529 Work Class II procedures, minimum, with negative pressurization of all zone(s). Demolish interior partitions and counters to access and abate concealed materials. Remove the mastics using an approved "low odor" mastic remover with greater than 140°F flash point. Dispose of tile waste as Category 1 non-friable waste. Characterize and dispose of rags and solvent residues as a separate hazardous waste stream.

For Disposal & Cleanup: Double gooseneck bag all asbestos floor tiles as dispose as Category 1 non-friable waste. Dispose of mastics, rags and associated waste as specified by the mastic remover manufacturer, potentially as hazardous waste. HEPA vacuum the surrounding area, prior to visual inspection by the Environmental Consultant.

Task 2

Abatement Materials	Drywall, tape & mud with skim coat									
Method:	X	Full Isolation or Mini-Containments	___	Central		___	Hudson sprayer or bucket decon			
Material	***Activity Class***	***Material I.D.***			***% Asbestos***		***Est. Quantity*** *(Field verify)*			
Drywall walls and ceilings with trace joint compound and non-ACM skim coat	2	WLSH302 & WLTX-301			See Section XII		Field Verify			
Decon System:	X	Shower		Central			Bucket			
Floor:	1	# Layers Poly		Drop Cloths			Scaffold			
Walls:	1	# of Polyethylene Layers				X	Splash Guards			
Criticals:	1	# of Polyethylene Layers					Plywood Barriers			

Other Comments: **For Sheetrock Abatement:** Remove materials using full isolation or mini-containment procedures, satisfying the requirements of Cal/OSHA 8 CCR 1529 Work Class II procedures with negative pressurization of the zone. Use wet methods for dust controls.

Dispose of drywall, joint compound and skim coat materials as asbestos waste. HEPA vacuum the contained area prior to final clearances.

Task 3

Abatement Materials	Acoustical Ceiling Plasters											
Method:	X	Full Isolation or Mini-Containments		Glovebag		Glovebag-Cutout						
Material	***Activity Class***	***Material I.D.***			***% Asbestos***		***Est. Quantity*** *(Field verify)*					
Acoustical Ceiling Plasters & overspray	1	CLTX-316			See Section XII		Field Verify					
Decon System:	X	Shower		Central		Bucket						
Floor:		# Layers Poly		Drop Cloths		Scaffold						
Walls:	1	# of Polyethylene Layers		Splash Guards								
Criticals:	2	# of Polyethylene Layers		Plywood Barriers								
Other Comments: Remove materials using full isolation procedures, satisfying the requirements of Cal/OSHA 8 CCR 1529 Work Class 1 procedures. Use wet methods for dust controls. Dispose of materials as friable asbestos waste. Remove substrates as required to access materials and overspray. Treat all enclosing substrates or materials, such as laid-in ceiling tiles, as asbestos-contaminated and dispose in double goosenecked, labeled bags as friable asbestos waste.												

Task 4

Abatement Material	Soils excavation or disturbance of soils with possible naturally-occurring asbestos											
Method:	X	Cordon Area		Glovebag		Glovebag-Cutout						
Material	***Activity Class***	***Material I.D.***			***% Asbestos***		***Est. Quantity***					
Excavation or disturbance of soils with assumed naturally-occurring asbestos	2	Not applicable			Assumed		Field Verify					
Decon System:		Shower		Central		X	Bucket					
Walls:		# of Polyethylene Layers		Splash Guards								
Criticals:		# of Polyethylene Layers		Plywood Barriers								

Other Comments: The Contractor will be responsible for excavation and soil disturbance activities. The soil will be wetted so no visible emissions are noted during all excavation. Exposed soil will be continuously wetted or tarped to avoid migration of dust during excavation activities.

Work will be performed using wet methods and following all Cal-OSHA Class 2 work procedures, minimum.

If soil disposal is required, prior to disposal the Contractor will forward the landfill acceptance certificate to the Owner for review at least 5 days prior to removal of soils. The Contractor will notify the receiving facility that the material is assumed to contain naturally-occurring asbestos. Soil will not be reused on another site without the written approval of the Owner.

Lead Hazards Construction Work:
Task 5

Abatement Material:	Removal of loose and peeling lead-based paints, as needed; paints on structural steel or steel members encased in concrete columns							
Sample I.D.	***Color***		***Area***		***Lead Content***		***Activity Class***	
N/A	All		All		>600 ppm		1	
Decon System:		Shower		Central		X	Bucket	
Required Methods:		Full Containment	X	Manual Methods w/Drop Cloths		X	Loose & Peeling Paints Only	
Other Comments: **Quantities**: Field verified and as needed. **Paints:** Loose and peeling lead-based paints on non-asbestos containing materials should be damp-broomed. All work areas should be cleaned daily before leaving the site. No dry sweeping.								

Task 6

Abatement Material:	Removal of lead paints prior to torching, welding or cutting of painted or primed structural steel or steel encased in concrete columns, as needed.					
Sample I.D.	***Color***		***Area***		***Activity Class***	
N/A	All		All		1	
Decon System:		Shower		Central	X	Bucket
Required Methods:		Full Containment	X	Manual Methods w/Drop Cloths		Loose & Peeling Paints Only
Other Comments: **Quantities**: Field verified and as needed. **Structural Steel:** All paints and/or coatings on structural steel are assumed to contain measurable amounts of lead. Perform spot removal of painted or coated steel at locations to be torched, welded or flame-cut, as needed per the project requirements, satisfying all Cal/OSHA regulations.						

Other Items:
Task 7

PCB Ballasts:	X	Remove and dispose of all PCB ballasts throughout the buildings. Any ballast not otherwise labeled by the manufacturer as non-PCB is considered as PCB containing. Quantity— field verify.
Mercury Lamp Recycling	X	Remove and recycle fluorescent lamps throughout the buildings. Quantity— field verify.

XII. Tables

Table 1: Material Matrix Report: 20 Chemical Way
Table 2: Material Matrix Report: 50 Chemical Way
Table 3: Material Matrix Report: 70 Chemical Way
Table 4: Material Matrix Report: 80 Chemical Way
Table 5: Summary of Lead Levels: 20-80 Chemical Way

XIII. Asbestos Sample Location Diagrams

Figure 1 – 20 Chemical Way: 1st Floor
Figure 2 – 20 Chemical Way: 2nd Floor
Figure 3 – 20 Chemical Way: Roof
Figure 4 – 50 Chemical Way: 1st Floor
Figure 5 – 50 Chemical Way: Roof
Figure 6 – 70 Chemical Way: 1st Floor
Figure 7 – 70 Chemical Way: Mezzanine

Figure 8 – 70 Chemical Way: Roof
Figure 9 – 80 Chemical Way: 1st Floor
Figure 10 – 80 Chemical Way: 2nd Floor
Figure 11 – 80 Chemical Way: Roof

XIV. Monitoring and Clearance

Asbestos Clearance Requirements (includes estimated # of samples):

Roofing Abatement	X Visual Only	___ PCM/zone	___ TEM/zone
Caulk & Putty Abatement	X Visual Only	___ PCM/zone	___ TEM/zone
Fire Door abatement	X Visual Only	___ PCM/zone	___ TEM/zone
Drywall and skim coat	___ Visual Only	___ PCM/zone	1-5 TEM/zone
Acoustical Ceiling	___ Visual Only	___ PCM/zone	1-5 TEM/zone
Vinyl Floor tile & mastic	___ Visual Only	___ PCM/zone	1-5 TEM/zone
Vinyl floor sheeting & mastic	___ Visual Only	___ PCM/zone	1-5 TEM/zone
Residual mastics under ceramic tiles	___ Visual Only	___ PCM/zone	1-5 TEM/zone
Compounds under wall panels	___ Visual Only	___ PCM/zone	1-5 TEM/zone

Consultant's Signature: Chuck Siu, CIH, PE, CAC (92-0098), DPH	Date: 4/11/12
Consultant's Signature: Christina Codemo, CHMM, CAC (99-2649), REA	Date: 4/11/12
Contractor's Signature	Date:

Table 1. 20 Chemical Way, Redwood City, CA - Pre-Demolition Hazmat Survey

Material ID	Material Description	Asbestos? Pos, Neg, Trace, Assumed	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 7	Units	Exterior	Lobby	HW	Office 1, Office 2, Office 3	Lunch & Bath	Common	Shop	Laundry & Shower	2nd Fl (Gym/Elec Cl/Bath)	Stair	Roof		Total (+/- 15%)
Asbestos																							
FLVCT-100 / CORE-116	12"x12" beige vinyl floor tile (+) with brown & white speckles & mastic (+)	Yes	1-5% CH							SF		300	50	850	300	300		100					1900
WLSH/CLSH-103 & WLTX-112	wall and ceiling drywall (-) with tape & mud (<1%) and textured skim (+) (cannot be composited	Yes	<1% CH mud; ND Skim	<1% CH mud; ND skim	<1% CH; 1-5% skim					SF		300	220	1400	600	400	2800	300	800				6820
FLGLUE-108	vinyl sheet flooring (-) with yellow/brown mastic (+)	Yes	1-5% CH							SF					50								50
SOIL-AAA	soil with assumed naturally-occurring asbestos	Assumed								CF	PNQ												PNQ
Non-Asbestos																							
CLLI-101	2'x4' laid-in acoustical ceiling tile with fissures	No	ND							SF		300	50	800	300	300			1200				2950
PAINT-102	beige paint on exterior concrete wall	No	ND	ND	ND	ND	ND	ND	ND	SF	20000												20000
CAULK-104	grey window and door exterior caulking (quantity refers to perimeter of window and not linear/square footage of caulk)	No	ND							LF	150												150
SHOWER-105	white ceramic shower	No	ND							SF								60					60
CERAMIC-106	beige ceramic tile and grout in 2nd floor bathroom & shower	No	ND							SF				300					150				450
FORMICA-107	Formica counter with clear glue at bathroom counter	No	ND							SF								20					20
CAULK-110	caulking at perimeter of the building (expansion joint)	No	ND							LF	150												150
PAINT-111	paint on interior concrete wall	No	ND	ND	ND					SF		300		1100	200	400	3000	100	1500	800			7400
BBMAS	brown glue for 2" baseboard (sampled with WLSH-103-1,2, 3)	No	ND	ND	ND					SF		80	25	340	80	80		40					645
RFPEN-113	roof penetration mastic at skylight & vents	No	ND	ND						LF											80		80
RFAG-114	gravel & asphalt roofing	No	ND	ND						SF											8000		8000
PAINT-115	paint on concrete floor in shop	No	ND							SF							2000						2000
VAPOR-NNN	vapor barrier under core (7" on 1st floor slab) & (3" in 2nd floor bathroom)--no vapor barrier noted	Not present								SF													
CAULK-NNN	no skylight caulk observed on inspection	not present																					
FIREDOOR-NNN	fire doors not noted to be present	not present																					
WLPNL-NNN	wood wall panel on concrete wall with no glue	not suspect													PNQ				PNQ				PNQ
CARPET-NNN	nailed-in carpet with no glue (note FLVCT-100 noted under carpet in 1st floor office)	not suspect												PNQ					PNQ				PNQ
FLOOR-NNN	non-suspect flooring	not suspect															c			PNQ			PNQ
WOOD-NNN	wood deck with structural steel	not suspect															PNQ						PNQ
FLOOR-NNN	non-suspect flooring	not suspect															c						
WALLS-NNN	non-suspect walls	not suspect															c						
CEILING-NNN	non-suspect ceiling	not suspect															w						
Other Hazardous Construction Materials																							
Mercury	Fluorescent tubes	Present								EA		8	2	24	10	8	8	2	36				98
PCB	Lighting ballasts	Present								EA		2	1	7	33	2	2	1	9				57
Lead	Lead-containing paints	Present								EA	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ

Table 2. 50 Chemical Way, Redwood City, CA - Pre-Demolition Hazmat Survey

Material ID	Material Description	Asbestos? Pos, Neg, Trace, Assumed	Sample 1	Sample 2	Sample 3	Units	Showroom	Off 1	Bathrooms ! & 2	Utility Room	Bathroom 3	Warehouse	Off/Lab	Break Room	Training Rm	Fill Plant	Exterior	Showroom Roof	Warehouse Roof	Fill plant Roof	Total (+/- 15%)
Asbestos																					
WLSH/CLSH-201/WLTX-202	wall and ceiling drywall with mud (<1%) and skim coat sampled as WLTX-202 (+), cannot be composited	Yes	5% CH	5% CH	5% CH	SF	3000	1200	500	300	300	300									5600
WLPNL-203	white plaster-like compound (+) behind painted wood wall panels	Yes	1-5% CH			SF	100	250													350
PUTTY-219	window & door putty	Yes	5-10%CH			LF											500				500
FLCERAMIC-204/ COR-223	beige ceramic floor tile (-) & grey grout (-) on floor & wall base on black mastic (+	Yes	ND in tile & grout; 5-10% CH in residual black mastic identified in CORE-223 sample			SF			120		120										240
SOIL-AAA	soil with assumed naturally-occurring asbestos	Assumed				CF											PNQ				PNQ
FIREDOOR-AAA	assumed asbestos-containing firedoor	Assumed				EA				1	1	1	1	1	1	2					8
Non-Asbestos																					
FLVCT-200	12"x12" beige vinyl floor tile (-) w/ brown & green speckles & black mastic (+	No	ND			SF	600	250													850
BBMAS-225	off-white baseboard glue for grey 4" baseboard (sampled with WLSH-201-1)	No	ND			LF	300	100						100							500
PAINT-205	paint on interior concrete wall	No	ND	ND	ND	SF	1500			100	100										1700
CAULK-206	grey door caulking for bathroom 3	No	ND			SF					40										40
WLGLUE-207	yellow glue for vinyl wall covering on all 3 bathrooms	No	ND			SF			80		80										160
PAINT-208	paint on concrete wall	No	ND	ND		SF						4000	150	200	150						4500
PAINT-209	paint on concrete floor	No	ND			SF						2000	150	200	150						2500
WLSH-210	drywall with tape & mud & texture	No	ND	ND	ND	SF						800	100	800	800	800					3300
PAINT-211	textured paint on concrete wall	No	ND			SF										800					800
CLLI-212	2'x4' laid-in ceiling tile with fissures	No	ND			SF							150	200	150						500
FLVCT-213	12"x12" beige floor tile (-) with brown & green speckles & mastic (-	No	ND			SF							150	200	150						500
BBMAS-226	off-white baseboard mastic for 4" grey baseboard (sampled with WLSH-201-2)	No	ND			LF							80	100	100						280
STUCCO-214	beige painted exterior wall stucco & eave (no vapor barrier noted under	No	ND	ND	ND	SF											1800				1800
PAINT-215	beige painted exterior concrete wall	No	ND			SF											800				800
CAULK-216	grey door /window caulking	No	ND			LF											150				150
RFPEN-220	roof penetration mastic above show room & warehouse roof	No	ND			LF												80	120		200
RFAG-221	asphalt & gravel roofing above show room roof	No	ND	ND		SF												2000			2000
RFAG-222	asphalt & gravel roofing above warehouse	No	ND	ND		SF													2000		2000
CAULK-NNN	no skylight caulk observed on inspection	not present																			
VAPOR-NNN	vapor barrier not present under slab from coring sample CORE-223	not present															PNQ				PNQ
RF-NNN	metal panel roofing with tar, mastic, etc. roofing material unde	not suspect																		PNQ	PNQ
FLOOR-NNN	non-suspect flooring	not suspect								c						c					
WALLS-NNN	non-suspect walls	not suspect										c,m				c,m					
CEILING-NNN	non-suspect ceiling	not suspect										w				w					
Other Hazardous Construction Materials																					
Mercury	Fluorescent tubes	Present				EA	16	8		2		8	8	8	8						58
PCB	Lighting ballasts	Present				EA	8	2		1		4	2	2	2						21
Lead	Lead-containing paints	Present				EA	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ

NOTE: Portable sheds not included in survey. Airgas will take sheds upon departure from site.

Table 3. 70 Chemical Way, Redwood City, CA - Pre-Demolition Hazmat Survey

Material ID	Material Description	Asbestos? Pos, Neg, Trace, Assumed	Sample 1	Sample 2	Sample 3	Units	Lobby & Kitch	Bath 1&2	Off 1	Off 2	Elec.	Off 3	Off 4	Off 5	HW	Off 6	Warehouse	Bathrooms 3&4	Roof	Mezzanine	Stairway	Exterior	Total (+/- 15%)
Asbestos																							
SOIL-AAA	soil with assumed naturally-occurring asbestos	Assumed				CF																PNQ	PNQ
Non-Asbestos																							
FLVCT-400	12"x12" grey floor tile (-) with blue dots and black/yellow mastics (-) on concrete	No	ND			SF	250	180															430
LVCPD-401	leveling compound under tacked down carpet	No	ND	ND		SF	100		300	150		250	250	250	150	250							1700
WLSH-402	textured wall and ceiling drywall with tape & mud	No	ND	ND	ND	SF	1000	800	800	300	180	800	800	800	400	800	10000	1000			800		18480
BBMAS-421	off-white baseboard mastic sampled with WLSH-402-2	No	ND			LF	200	100	100	60	40	100	100	100	80	180	80	80					1220
WLTX-403	wall texturing on WLSH-402 & concrete walls	No	ND	ND	ND	SF	1000	800	800	400		800	800	800	400	800	10000	1000			800		18400
FORMICA-404	formica counter top with yellow glue	No	ND			SF	140																140
WLGL-405	yellow glue for vinyl wall covering at bathrooms	No	ND			SF		150										150					300
CLLI-406	2'x4' laid-in acoustical ceiling tiles with fissures	No	ND			SF	200		300	150									800				650
RFAG-407	asphalt & gravel roofing	No	ND	ND	ND	SF													150				800
RFPEN-408	roof penetration mastic	No	ND			LF													150				150
CAULK-409	grey skylight caulking	No	ND			LF														120			120
FLMAS-410	black-residual mastic under carpet in various areas	No	ND			SF	120	180	300	150	60							60			1500		2500
FLVCT-411	12"x12" grey floor tile (-) with white glue (-) on concrete	No	ND			SF					60							60					120
PAINT-412	paint on concrete floor	No	ND			SF											4000						4000
PAINT-413	non-textured paint on interior concrete wall	No	ND	ND		SF											1000			1500			2500
FLVCS-414	blue/purple "pebble look" vinyl floor sheeting with brown glue	No	ND			SF												60					60
CAULK-415	caulk at HVAC duct joints	No	ND			LF														120			120
PAINT-416	paint on exterior tank	No	ND			SF																200	200
STUCCO-417	stucco with vapor paper on exterior wall	No	ND	ND	ND	SF																3000	3000
PAINT-418	exterior paint on concrete wall	No	ND	ND	ND	SF																20000	20000
FIREDOORS-419	assumed asbestos-containing firedoor	No	ND			EA						1											1
CAULK-NNN	no window caulk/putty noted	not present																					
CORE-420	vapor barrier not present under slab from coring sample	not present																				PNQ	PNQ
FLOOR-NNN	non-suspect flooring	not suspect																		w	w		
WALLS-NNN	non-suspect walls	not suspect																					
CEILING-NNN	non-suspect ceiling	not suspect															w			w			
Other Hazardous Construction Materials																							
Mercury	Fluorescent tubes	Present				EA	12		12	8	2	16	16	16	6	24	40			4			156
PCB	Lighting ballasts	Present				EA	3		3	2	1	4	4	4	3	6	18			2			50
Lead	Lead-containing paints	Present				EA	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ

C□c□r□□□□e □□be□□□ □D□□□□e de□ec□ed □□□□re□e□□b□□□□□□□□□□□ed □□□□d c□□c□r□□□□e □□be□□□

Table 4. 80 Chemical Way, Redwood City, CA - Pre-Demolition Hazmat Survey

Material ID	Material Description	Asbestos? Pos, Neg, Trace, Assumed	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 7	Units	1st Floor Office	Stairway	2nd Floor Office	Exterior	Roof	Waterhouse	Store	Superior Doors	Total (+/- 15%)
Asbestos																			
FLVCT-300/CORE-319	yellow vinyl floor tile (+) with brown speckles and black mastic (+), some under carpe	Yes	1-5% CH							SF	3000		2500			80			5580
WLSH-302/WLTX-301	wall & ceiling drywall (-) with tape & mud (1-5% CH) & texturing (-) over drywall & concrete (no asbestos noted in texturing)	Yes	1-5% CH	1-5% CH	1-5% CH					SF	10,000	300	5000			200	800		16300
CLTX-316	acoustical ceiling texture on drywall ceiling, and overspray behind and in the vicinity	Yes	1-5% CH	NA	NA					SF						80		800	880
SOIL-AAA	soil with assumed naturally-occurring asbestos	Assumed								CF				PNQ					PNQ
Non-Asbestos																			
WLTX-301	texturing (-) over drywall & concrete	No	ND	ND	ND					SF	20,000	300	8000			200	800		29300
BBMAS-322	brown baseboard mastic, sampled with WLSH-302-1	No	ND							LF	3000								3000
WLPNL-303	yellow glue behind wall panels on drywall	No	ND	ND						SF	4000		1000					800	5800
CARMAS-304	yellow carpet mastic	No	ND							SF	600		3000					800	4400
WLGL-305	grey glue for vinyl wall covering in bathrooms	No	ND							SF	150								150
FLVCS-306	brown vinyl floor sheeting with black mastic and anti-skid stripes	No	ND							SF		150	200						350
CLLI-307	2'x4' laid in ceiling tile	No	ND							SF			2500						2500
FORMICA-308	Formica with clear glue	No	ND							SF			40						40
PAINT-309	exterior paint on concrete	No	ND	ND	ND	ND	ND	ND	ND	SF				40000					40000
CAULK-310	exterior window & door caulking	No	ND	ND						LF				16					16
RFROLL-311	roll sheeting roof felts & mastics	No	ND	ND	ND					SF					12000				12000
RFPEN-312	roof penetration mastics	No	ND							LF					300				300
HDUTP-313	duct tape on roof mounted HVAC units	No	ND							SF					100				100
CAULK-314	caulking associated with roof-mounted HVAC units	No	ND							LF					100				100
WLSH-315	untextured drywall (-) with tape & mud (-)	No	ND	ND	ND					SF						10000	4000	800	14800
FLVCT-317	12"x12" yellow vinyl floor tile (-) with yellow glue (-	No	ND							SF						120			120
FLVCT-318	12"x12" white vinyl floor tile (-) with mastic (-) over 2nd layer of vinyl floor tile (-) & mastic (-	No	ND							SF							50		50
PAINT-319	paint on interior concrete wall	No	ND	ND						SF							2000		2000
CARMAS-320	yellow carpet mastic on concrete	No	ND							SF							600		600
FLVCT-321	12"x12" white floor tile (-) with yellow glue (-)	No	ND							SF								16	16
VAPOR-NNN	vapor barrier not present under slab from coring sample	not present																	
FIREDOOR-NNN	fire doors not noted to be present	not present																	
FLOOR-NNN	non-suspect flooring	not suspect														w			
WALLS-NNN	non-suspect walls	not suspect																	
CEILING-NNN	non-suspect ceiling	not suspect																	
Other Hazardous Construction Materials																			
Mercury	Fluorescent tubes	Present								EA	62		40			52		86	240
PCB	Lighting ballasts	Present								EA	31		18			26		24	99
Lead	Lead-containing paints	Present								EA	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ

Table 5. Summary of Lead Levels - Representative Bulk Testing of Coatings
20-80 Chemical Way, Redwood City, CA

SCA PROJECT NO.: F10606

Building	Sample I.D.	Location	Surface Color	Substrate Component	Substrate Material	Condition	AA Results (ppm)
20 Chemical Way	WLSH-PAINT-PB	1st Floor	White	Wall	Sheetrock	Intact	<46
	PAINT-102-PB	Exterior	Beige	Wall	Concrete	Intact	89
	PAINT-111-PB	1st Floor	White	Wall	Concrete	Intact	<41
50 Chemical Way	PAINT-WOOD-PB	1st floor	white	wall	wood	Intact	<44
	PAINT-215-PB	1st floor	white	wall	concrete	Intact	820
	PAINT-208-PB	Exterior	white	wall	concrete	Intact	<41
70 Chemical Way	PAINT-418-PB	Exterior	beige	wall	Wood	Intact	200
	WLSH-PAINT-PB	Exterior	white	wall	concrete	Intact	640
	TANK-PAINT-PB	Exterior	beige	tank	metal	Intact	<40
80 Chemical Way	PAINT-INT-CONCRETE-PB	1st floor	White	Wall	Concrete	Peeling	<46
	SHEETROCK-PAINT-PB	1st floor	White	Wall	Sheetrock	Intact	<40
	PAINT-309-PB	Exterior	Beige	Wall	Concrete	Intact	<38

Note: Paints and glazing with any detectable lead content are presumed to contain >600 ppm of lead, & require the Contractor's compliance with Cal/OSHA regulation 8 CCR 1532.1 during demolition, scraping of loose and peeling paints, spot abatement prior to torching or cutting, etc. Any paint not sampled shall be assumed lead-containing and treated accordingly.

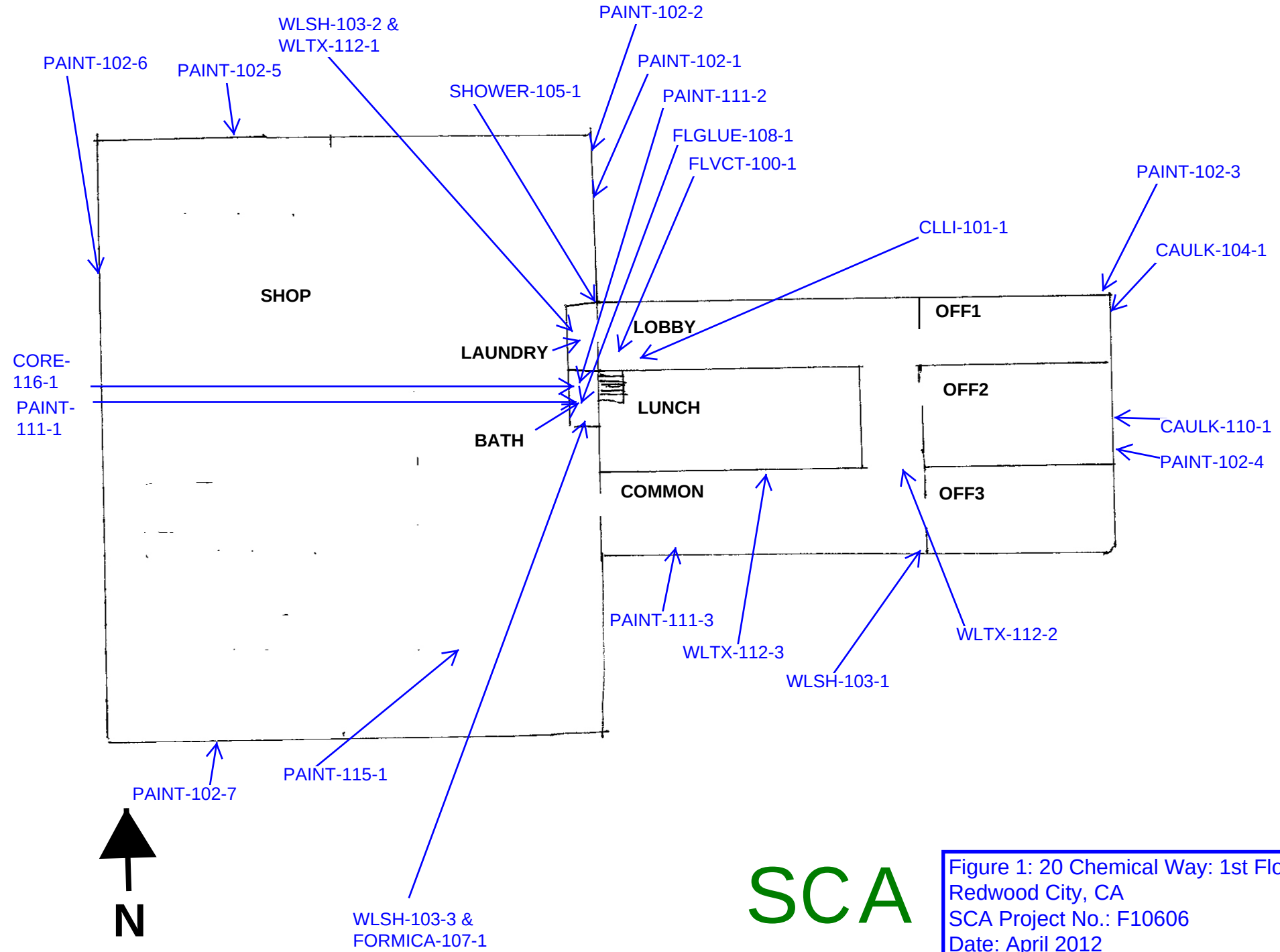

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Figure 1: 20 Chemical Way: 1st Floor
Redwood City, CA
SCA Project No.: F10606
Date: April 2012

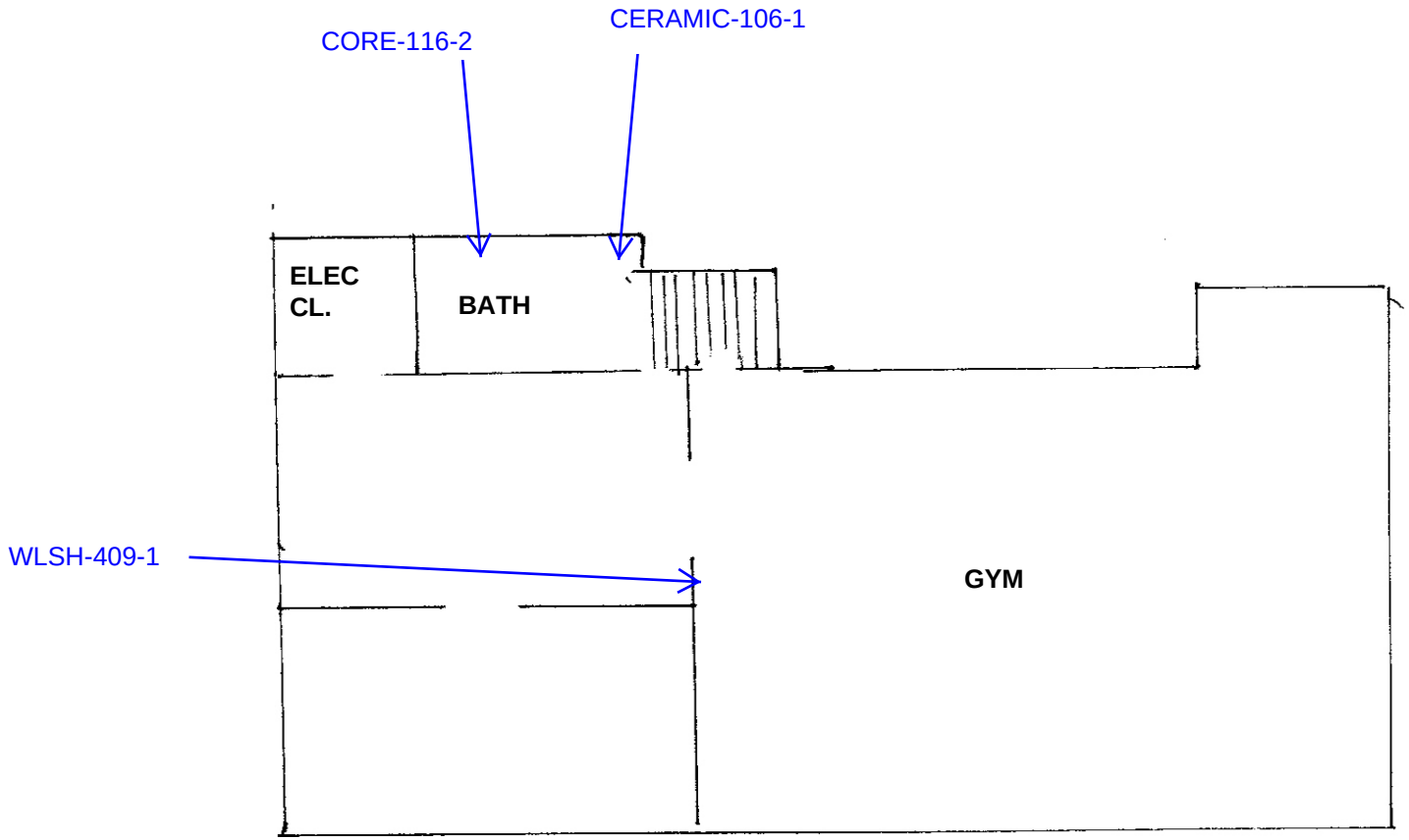

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Figure 2: 20 Chemical Way: 2nd Floor
Redwood City, CA
SCA Project No.: F10606
Date: April 2012

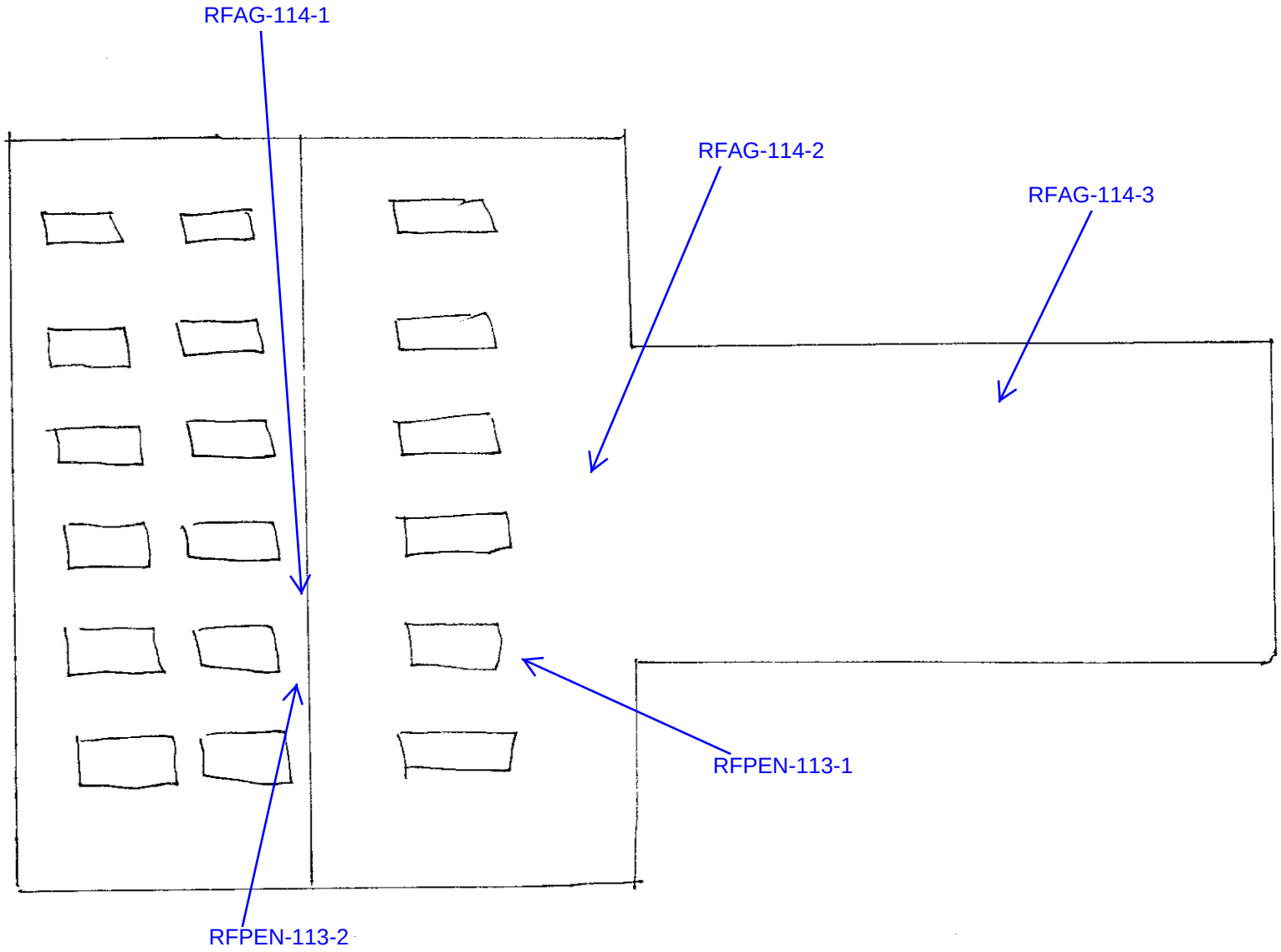

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Figure 3: 20 Chemical Way: Roof
Redwood City, CA
SCA Project No.: F10606
Date: April 2012

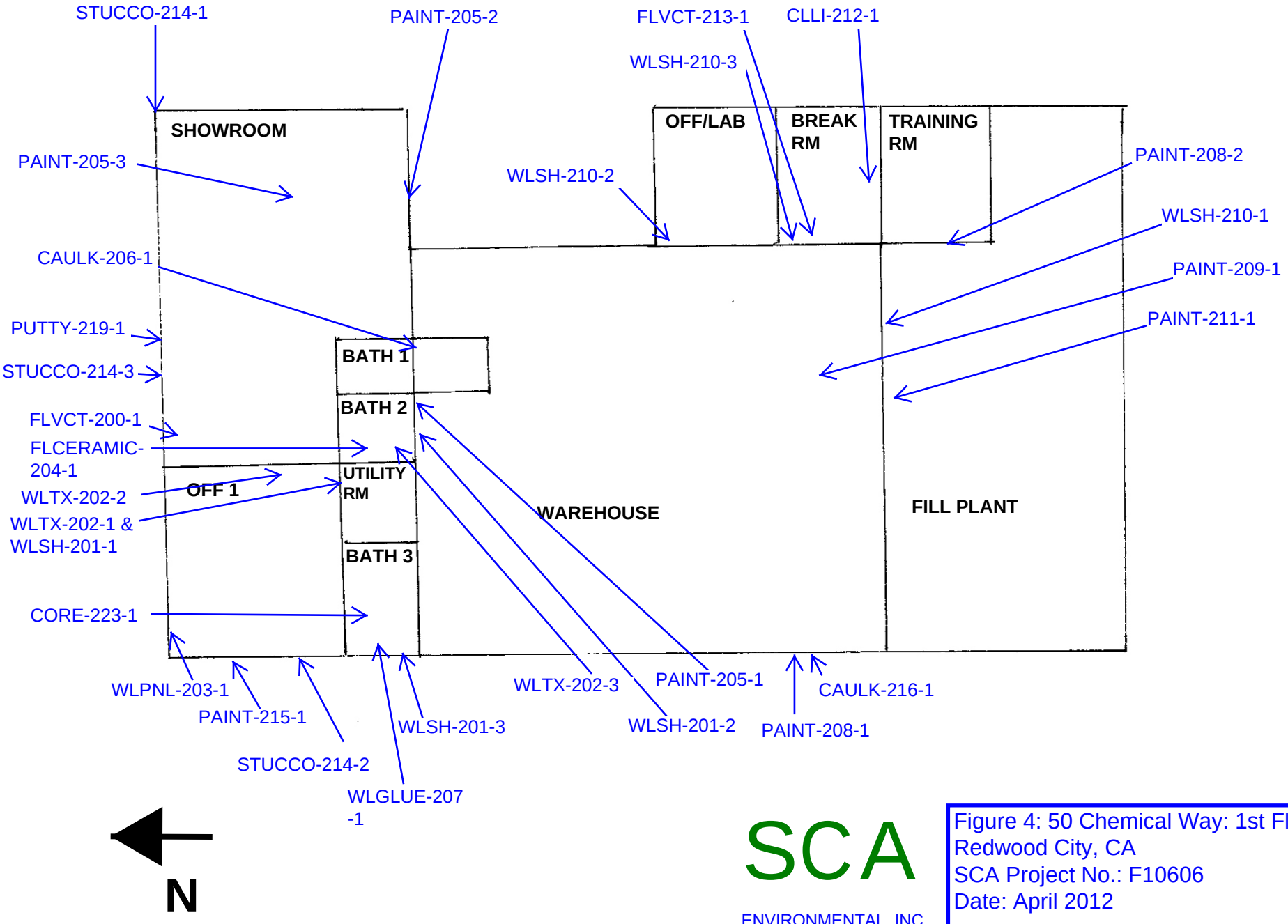

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Figure 4: 50 Chemical Way: 1st Floor
Redwood City, CA
SCA Project No.: F10606
Date: April 2012

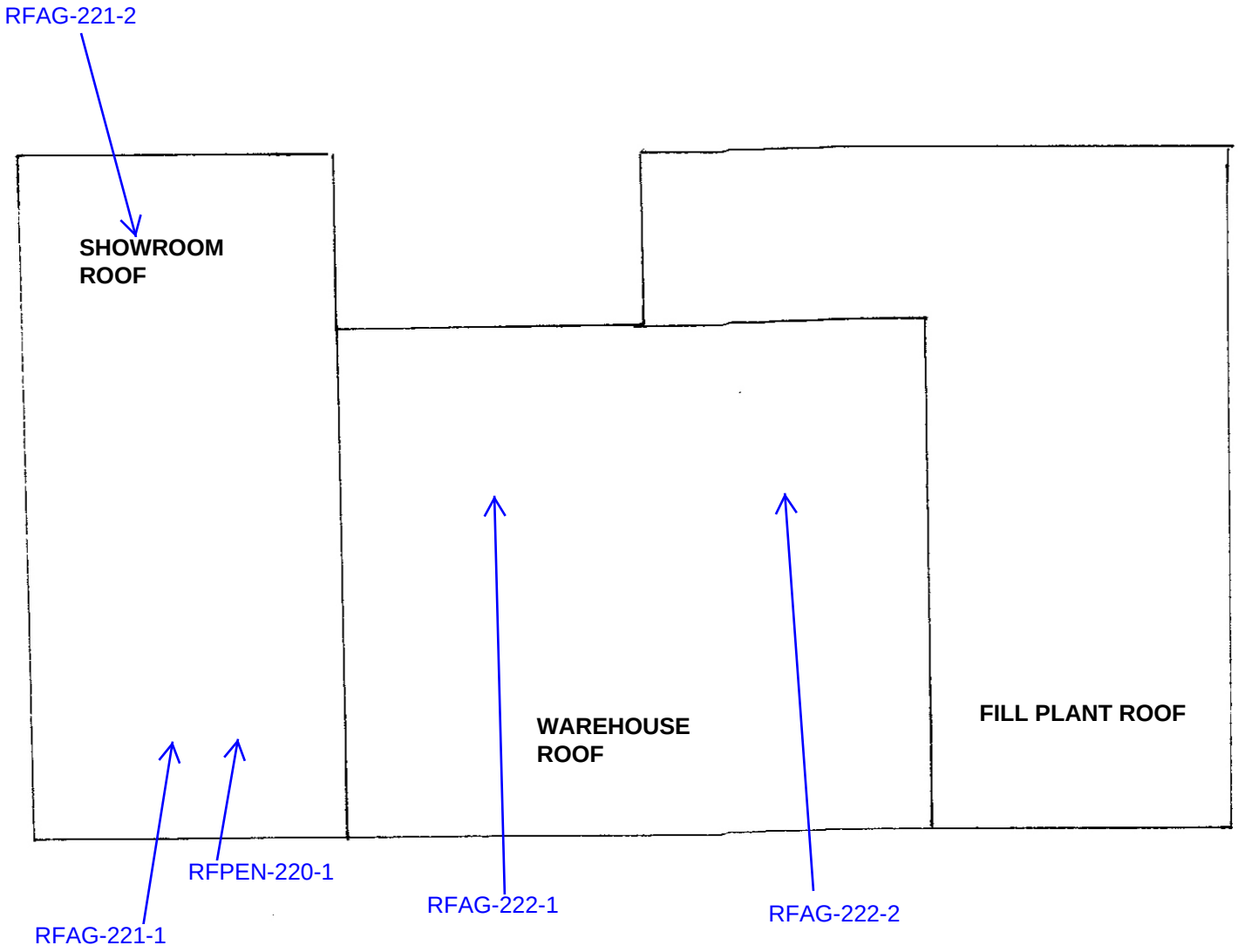

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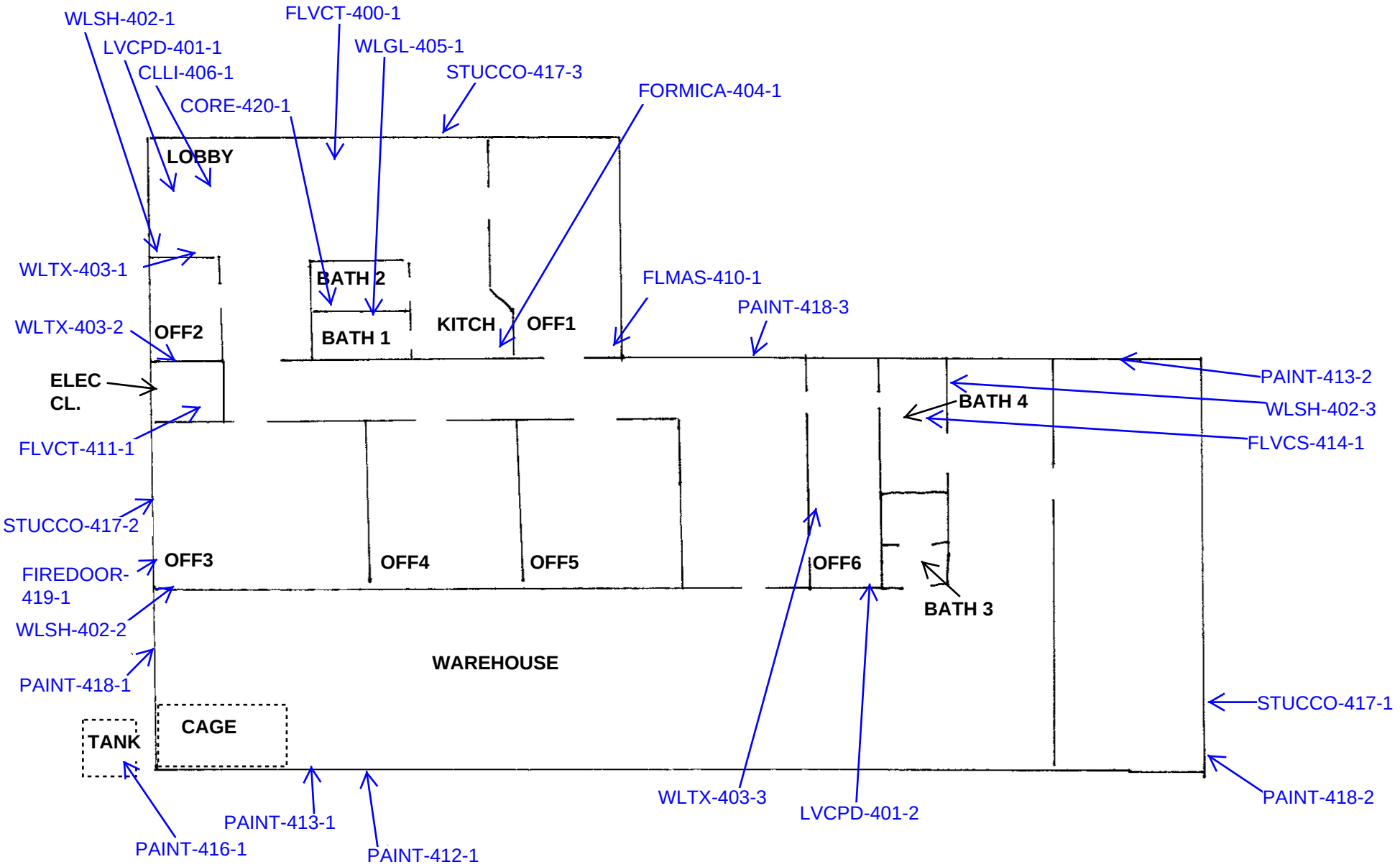
Figure 5: 50 Chemical Way: Roof
Redwood City, CA
SCA Project No.: F10606
Date: April 2012



SCA

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Figure 6: 70 Chemical Way: 1st Floor
Redwood City, CA
SCA Project No.: F10606
Date: April 2012

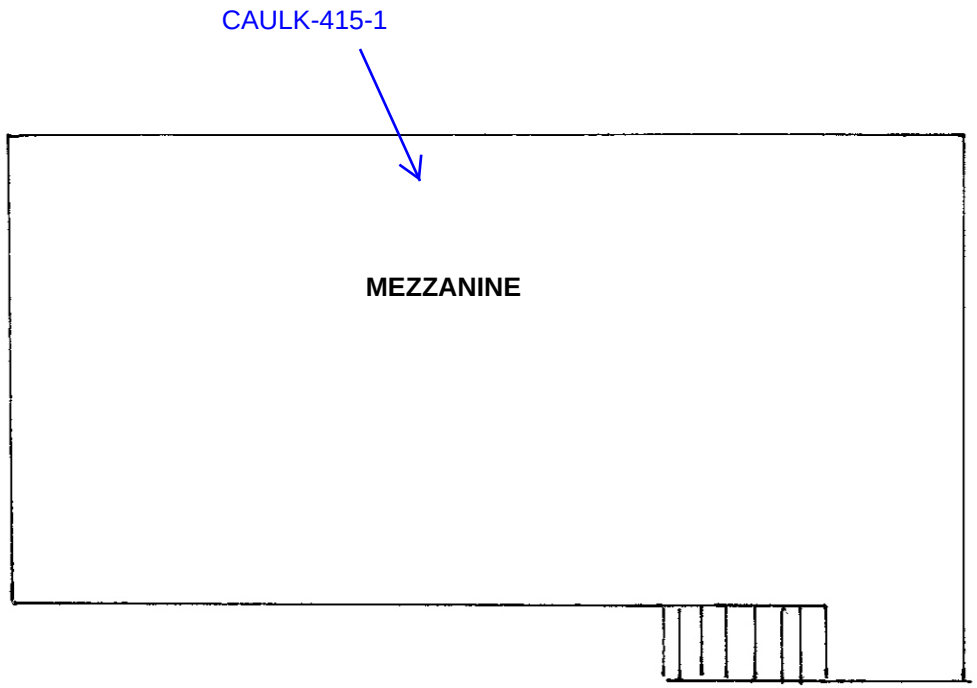

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Figure 7: 70 Chemical Way: Mezzanine
Redwood City, CA
SCA Project No.: F10606
Date: April 2012

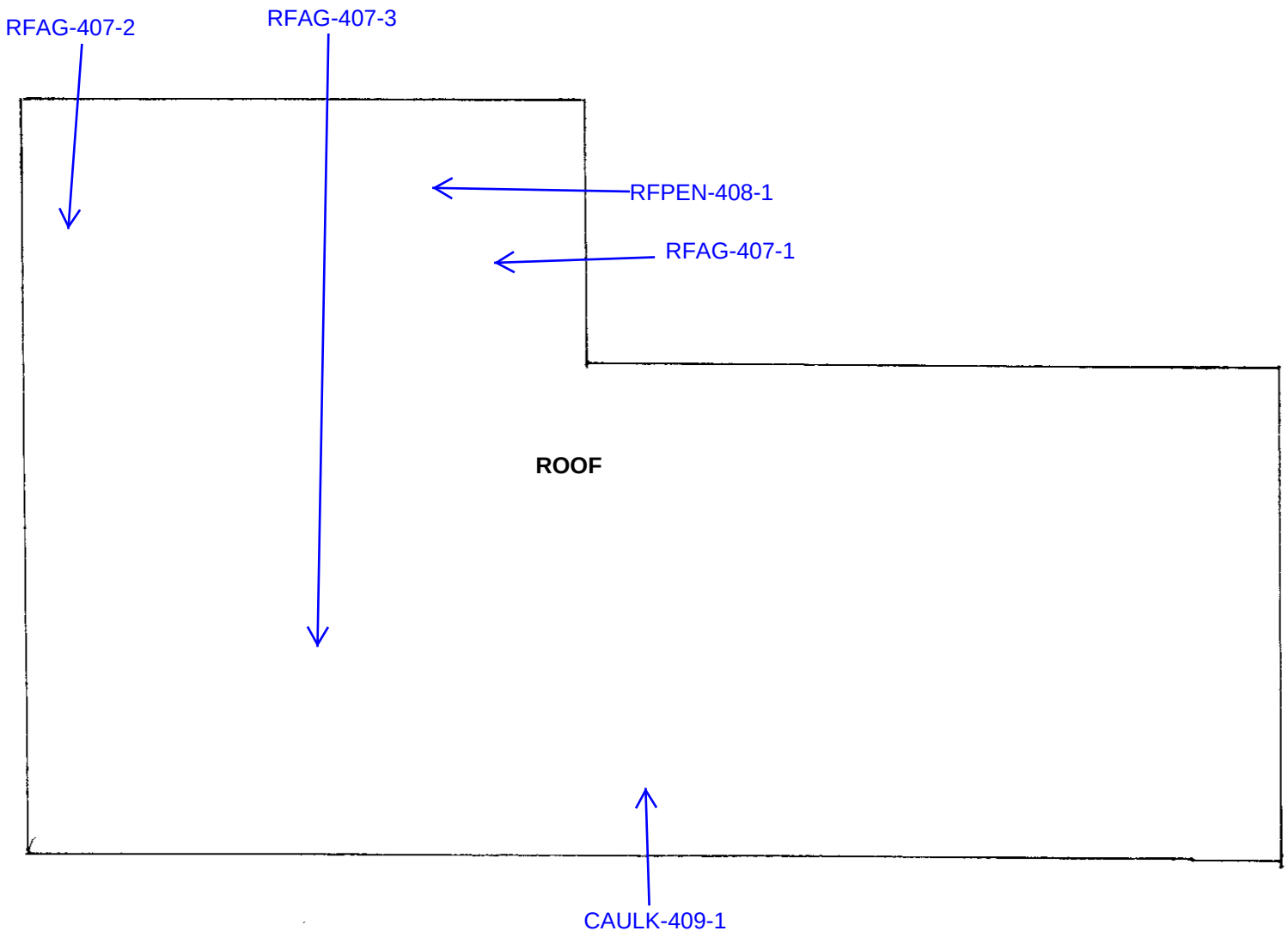

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Figure 8: 70 Chemical Way: Roof
Redwood City, CA
SCA Project No.: F10606
Date: April 2012

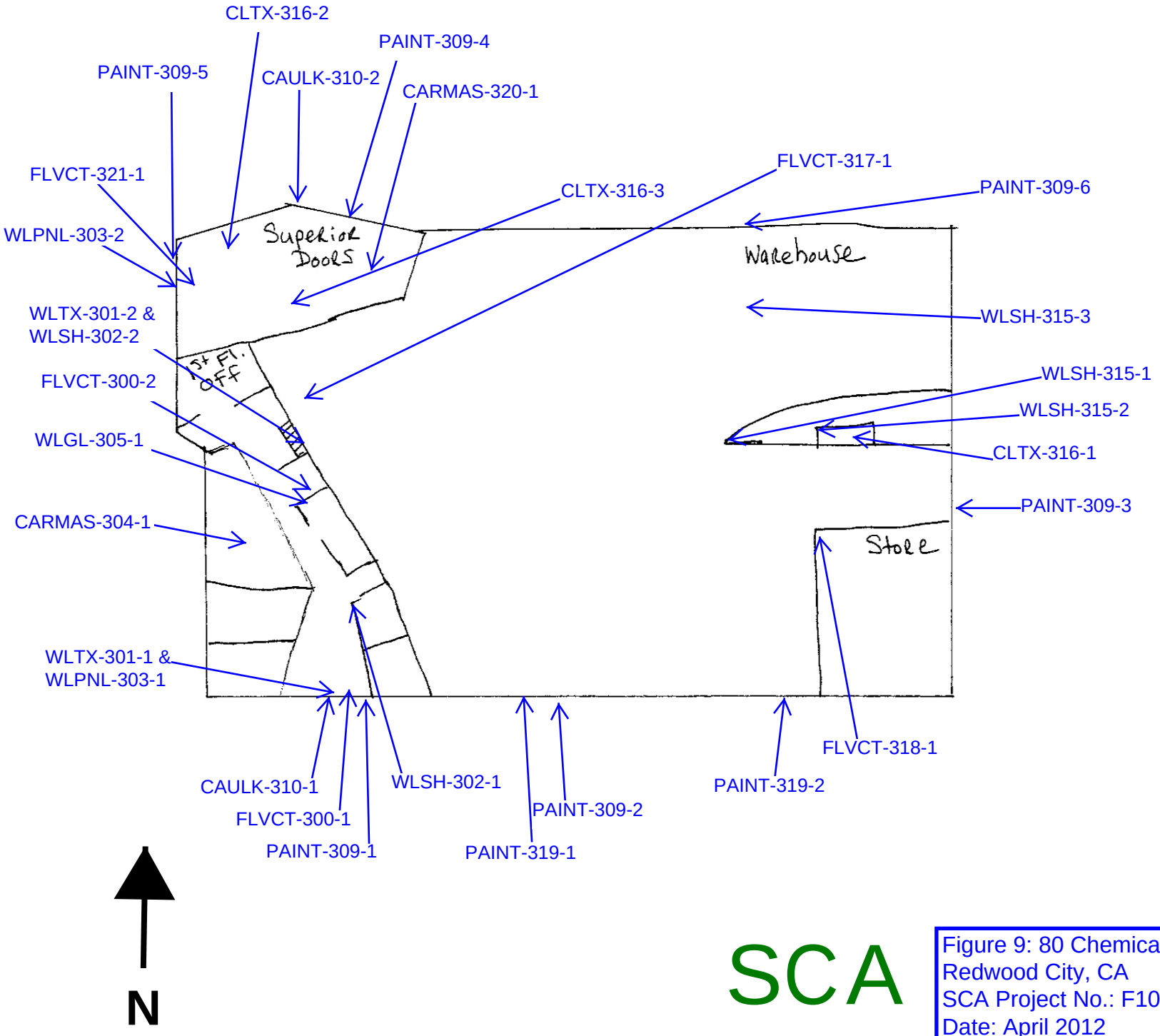

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Figure 9: 80 Chemical Way: 1st Floor
Redwood City, CA
SCA Project No.: F10606
Date: April 2012

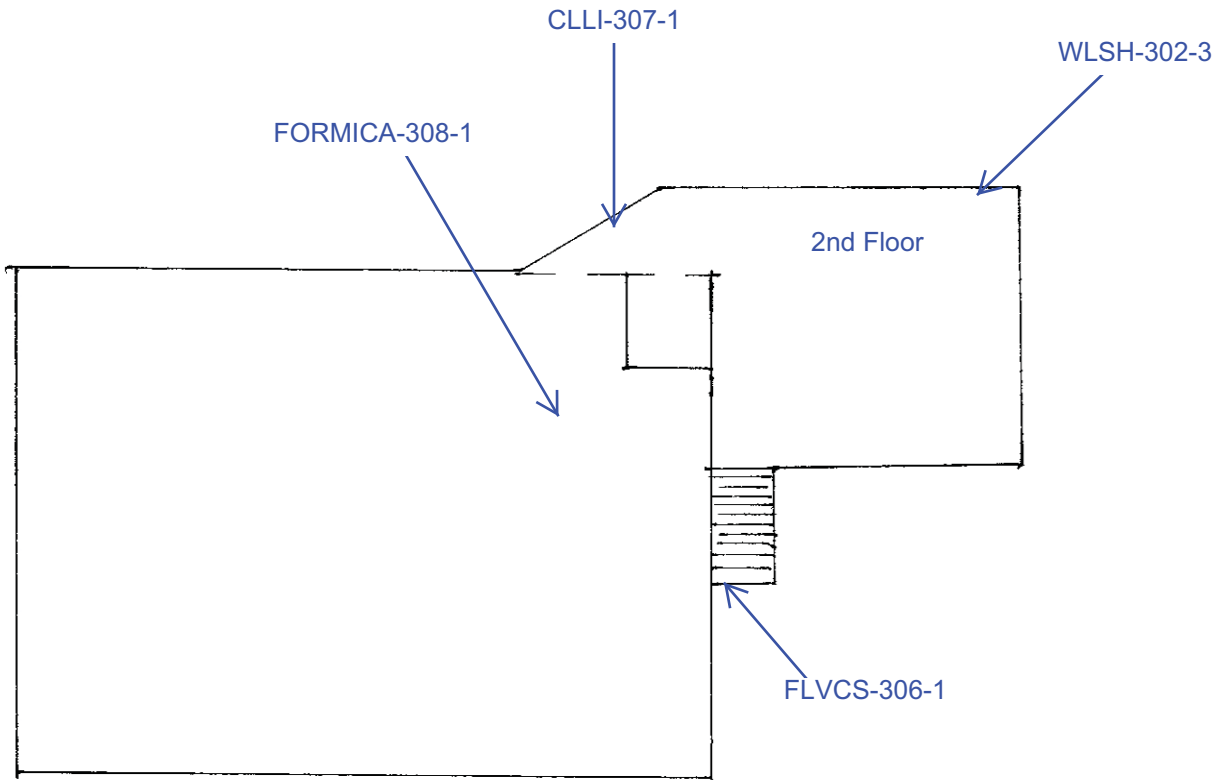

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Figure 10: 80 Chemical Way: 2nd Floor
Redwood City, CA
SCA Project No.: F10606
Date: April 2012

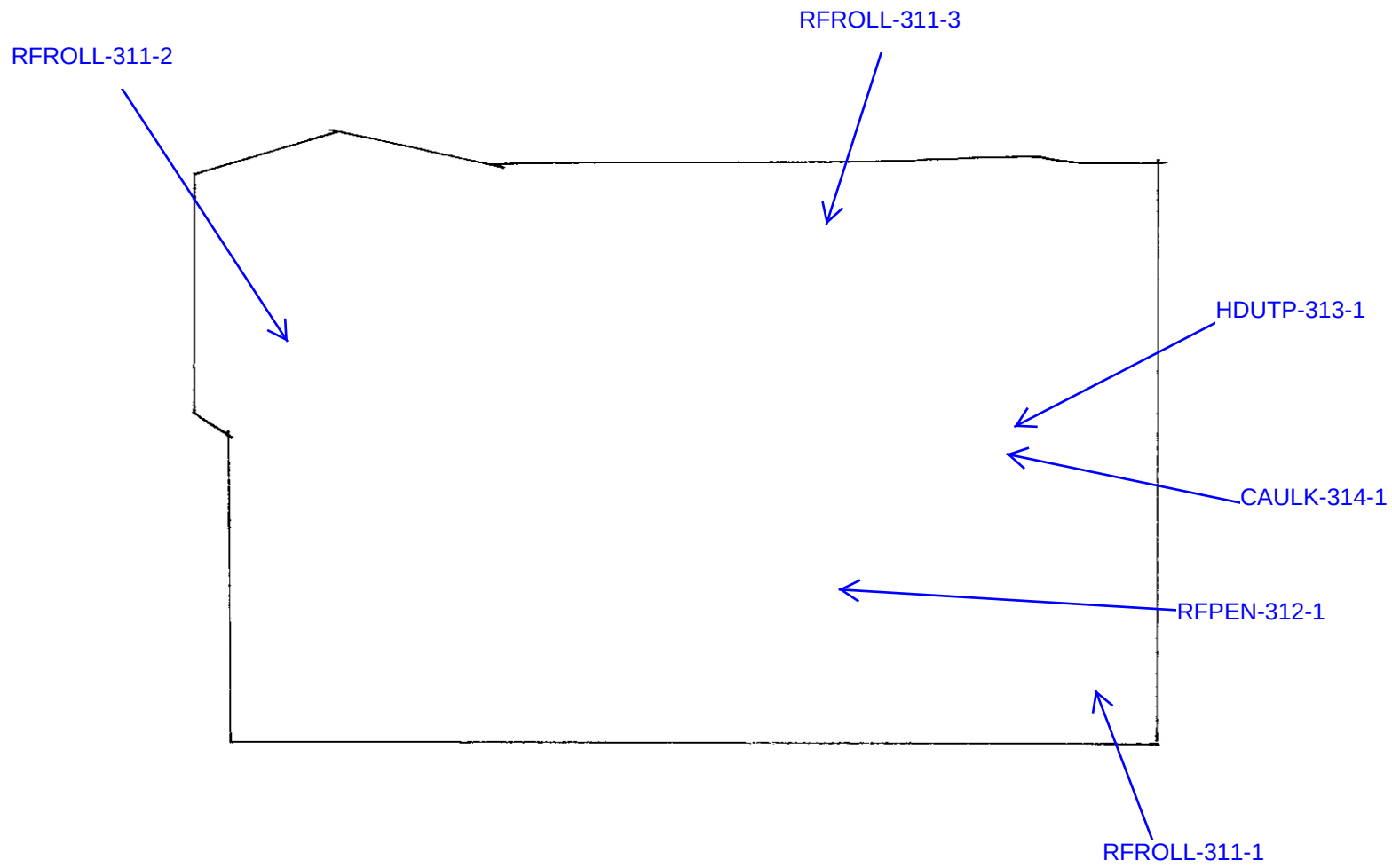

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Figure 11: 80 Chemical Way: Roof
Redwood City, CA
SCA Project No.: F10606
Date: April 2012

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SECTION 02090

DEMOLITION HAZARDOUS MATERIALS ABATEMENT AND CONTROL

SECTION 02090

HAZARDOUS MATERIALS ABATEMENT AND CONTROL

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Minimum requirements for hazardous materials handling, control, and abatement activities, as applicable, including, but not necessarily limited to:

1. Hazardous materials controls.

2. Handling and disposal of asbestos-containing building materials (ACBM).

3. Handling and disposal of lead-based paints and lead-containing materials.

4. Removal and disposal of existing ballasts containing polychlorinated biphenyls (PCB).

5. Disposal of mercury-containing lamps.

6. Disposal of mercury controls.

7. Demolition associated with access to hazardous materials.

8. Criteria for abatement zone clearance testing.

9. Criteria for reoccupancy clearance.

B. Related Documents: None applicable

C. Related Sections:

1. Section 01110 - Hazardous Material Procedures and Workplans.

1.2 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. E84: "Test Method for Surface Burning Characteristics of Building Materials."

2. E119: “Standard Method for Fire Tests of Building Construction and Materials.”

3. E849: Safety and Health Requirements Relating to Occupational Exposure to Asbestos.”

B. American National Standards Institute (ANSI):

1. Z9.2: “Fundamentals Governing the Design and Operation of Local Exhaust Systems.”

2. Z41.1: “Men’s Safety Toe Footwear.”

3. Z86.1: “Commodity Specification for Air.”

4. Z87.1: “Practice for Occupational and Educational Eye and Face Protection.”

5. Z88.2: “Practices for Respiratory Protection.”

6. Z88.6: “Respiratory Protection - Respiratory Use Physical Qualifications for Personnel.”

7. Z89.1: “Requirements for Industrial Head Protection.”

C. National Fire Protection Association (NFPA):

1. Standard 10: “Fire Extinguishers”.

2. Standard 70: “National Electric Code.”

3. Standard 90A: “Fire Rating of Sprayed-On Fireproofing.”

4. Standard 701: "Small Scale Fire Test for Flame Resistant Textiles and Films."

D. California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA):

1. Title 8 California Code of Regulations (8 CCR) Section 5144 - Respiratory Protection.

2. Title 8 California Code of Regulations (8 CCR) Section 1532.1 - Construction Lead Standard.

3. Title 8 California Code of Regulations (8 CCR), Article 4, Section 1529 - Asbestos Standard for the Construction Industry.

4. Title 8 California Code of Regulations (8CCR) Sections 3203 and 1509 - Injury and Illness Prevention Program.

5. Title 8 California Code of Regulations (8 CCR), Article 110, Section 5208 - Asbestos Standard for General Industry.

6. Title 8 California Code of Regulations (8 CCR), Article 2.5, Section 341.6 for employer registration when disturbing more than 100 sq. ft. of ACCM.

E. U. S. Department of Housing and Urban Development (HUD): Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing,” referred to as the “HUD Guidelines.”

1.3 DEFINITIONS

A. Abatement: as defined by the Department of Health Services for lead hazards work, includes any set of measures designed to reduce or eliminate lead hazards.

B. Activity Class/Category - Lead: Lead hazard designations assigned to work activities that involve lead-containing materials. Activities that fall into Classes I through III, including as examples the operations defined below, are required to assume the following personal airborne exposure levels, unless otherwise demonstrated.

1. Activity Class I; exposure <500 micrograms/m^3

Surface clean-up of lead-containing dust or debris <15,000 micrograms/ft^2;
Spray painting with lead-based paints; Manual demolition of structures (e.g. drywall, plaster, etc.);
Manual sanding, grinding, needle gunning, chiseling, hammering, wire brushing, milling or scraping of lead-based coatings;
Head gun removal of any surface coating; and Power tool cleaning with dust collection systems.

2. Activity Class II; exposure >500 micrograms/m^3 and <2,500 micrograms/m^3

Using lead mortar;
Lead burning;
Rivet busting;
Power tool cleaning without dust collection systems;
Clean-up of dry abrasive; and
Abrasive blasting enclosure movement and removal

3. Activity Class III; exposure >2,500 micrograms/m^3

a) Abrasive blasting of any coated surfaces;

b) Welding on any coated surfaces;

c) Torching or cutting or any coated surfaces; and

d) Torch burning of any coated surfaces.

C. Asbestos Work Class: Activities for removing asbestos materials by categories are as follows:

1. Work Class I:

a) Activity involving removal of TSI and surfacing asbestos-containing materials (ACM) or friable presumed asbestos-containing materials (PACM).

2. Work Class II:

a) Activity involving removal miscellaneous materials excluding TSI and surfacing asbestos-containing materials (ACM) or friable presumed asbestos-containing materials (PACM), including but not limited to wallboard, floor tiles and sheeting, roofing and siding shingles, and construction mastics.

3. Work Class III:

a) Repair and maintenance operations where TSI or surfacing is likely to be disturbed, which fits within one standard glovebag or waste container under 60 inches.

4. Work Class IV:

a) Maintenance and custodial activities during which employees contact but do not disturb PACM or ACM and activities to clean-up dust, waste and debris resulting from Work Class I, II, and III activities.

D. Certified Lead Worker: includes those who do lead-related construction work activities on a work site under the directions of a Certified Lead Supervisor, including:

1. Removal, disposal or abatement of loose and peeling lead-based paints as defined by HUD, including scraping, demolition or other Cal/OSHA Activity 1 through 3 work as defined above lasting over 20 years.

2. Removal or repair of lead plumbing.

3. Repainting or general construction on surfaces painted with lead-based paints.

4. Removal, enclosing or covering of lead-contaminated soils.

5. Note that renovations, remodeling, painting, operations and maintenance work or other activities listed above that are considered to be interim controls, or lasting under 20 years, may be completed by workers satisfying Cal/OSHA's asbestos awareness training requirements only.

E. Certified Lead Supervisor: includes those who supervise daily work activities on a lead-related construction site, as well as supervision of repainting or general construction performed on surfaces with lead-based paints where abatement is designed to permanently reduce or eliminate lead hazards for public (non-industrial) buildings or to last more than 20 years. The Certified Lead Supervisor shall oversee the Certified Lead Workers, enforce safe work practices, and schedule and coordinate work site activities with the building occupants and other contractors and consultants.

F. Containment: as defined by the California Department of Health Services includes any system. process or barrier used to contain lead hazards in a work area, including plastic sheeting, wet scraping, and other lead-safe work practices as described in the HUD Guidelines, Chapter 8.

1.4 SUBMITTALS

A. Asbestos:

1. Submit the following, prior to Commencement of the Abatement Work:

a) Proof of current Asbestos Contractor's license (CSLB).

b) Proof of current California Department of Health Services (DHS) Asbestos Contractor's registration certification.

c) Valid and current BAAQMD notification for the Project (as applicable).

d) Cal/OSHA 24-hour Temporary Worksite Notification for Asbestos and Methylenedianiline-Related Work per 8 CCR 1529 for disturbances exceeding 100 sq. ft.

e) Worker documentation, including:

1) Current AHERA training certifications - supervisor/competent persons.

2) Current AHERA training certifications - workers.

3) Respiratory fit test records in compliance with 8 CCR 5144.

4) Medical examination approvals for respirator use in compliance with 8 CCR 5144.

f) Written asbestos abatement work plan and schedule as part of the Contractor's Hazardous Materials Management Plan (HMMP) to be submitted in accordance with Section 01110 - Hazardous Materials Procedures.

g) Material Safety Data Sheets (MSDS) for chemicals used.

h) Emergency phone number and pager listing.

i) DOP testing of negative pressure units and vacuums.

j) Rotameter calibration data within past 6 months.

k) Negative Exposure Assessment, as warranted, where personal protective equipment differs from minimal requirements established by Cal/OSHA's Construction Industry Standards.

2. Submit the following on a weekly basis, with the last documents to be submitted within 5 calendar days of completion of the abatement or hazard control work.

a) Contractor daily personal air-monitoring data.

b) Updated worker documentation, as needed.

c) Daily boundary access logs.

d) Daily negative pressure records, as applicable.

e) Copies of updated schedules and notices to regulatory agencies, as needed.

f) Receipt and weight tickets from landfill operator or incinerator, as applicable.

g) Copies of completed uniform waste manifests.

h) Certification of Completion.

B. Lead-Related Work:

1. Submit the following, prior to commencement of the lead-related work:

a) Worker documentation, including:

1) Abatement Plan prepared by a Certified Lead Supervisor, Certified Lead Project Monitor, or Certified Lead Project Designer including:

(a) detailed lead hazards control and management measures.

(b) a detailed description of abatement methods, locations and components where abatement is planned.

(c) a recommended schedule for inspection.

(d) instructions to maintain potential lead hazards in safe condition.

2) Current DHS Certified Lead Worker and Certified Lead Supervisor training certificates.

3) Completed DHS Form 8551 (12/97) prior to lead-based paint or lead-contaminated soils abatement work.

4) Respiratory fit test records within past 12 months.

5) Current Medical Examination approvals for all workers wearing half facepiece negative air respirators or greater.

6) Blood lead test for Certified Lead Workers within the past 90 days.

b) Material safety data sheets for chemicals used.

c) Lead Hazard Control Plan pursuant to 8 CCR 1532.1: Procedures for minimizing and controlling the migration of lead from disturbance of lead-containing materials incidental to the contract work, including a written lead hazard or lead abatement work plan and schedule as part of the Contractor's Hazardous Materials Management Plan (HMMP) to be submitted in accordance with Section 01110 - Hazardous Materials Procedures.

2. Submit the following on a weekly basis, with the last documents to be submitted within 5 calendar days of completion of the abatement or hazard control work.

a) Updated worker documentation, as needed.

b) Contractor periodic personal air-monitoring results.

c) Receipt and weight tickets from landfill operator or recycler as applicable.

d) Waste profiling data (TCLP, WET, and SW846, as applicable).

C. PCB Ballast-Related Work:

1. Submit the following, prior to commencement of the work:

a) Hazard Control Plan: Procedures for clean-up of leaking ballasts and disposal and transportation for incineration of PCB ballasts as part of the Contractor's Hazardous Materials Management Plan (HMMP) to be submitted in accordance with Section 01110 - Hazardous Materials Procedures.

b) Evidence of hazard awareness training of workers removing and packing PCB ballasts.

c) Identification of EPA approved incinerator and DOT approved transporter.

d) PPE to be used.

2. Submit the following, within 5 calendar days of the request by the Owner or within 5 calendar days of completion of the abatement or hazard control work.

a) Completed Uniform Waste Manifest.

D. Fluorescent Light Tube-Related Work Submittals:

1. Submit the following, prior to commencement of the work:

a) Identification of EPA approved recycler.

b) Temporary storage plan.

2. Submit the following, within 5 calendar days of the request by the Owner or within 5 calendar days of completion of the hazard control work.

a) Completed manifest or evidence of shipment date, recycler and quantities shipped.

C. Mercury-Related Work:

1. Submit the following, prior to commencement of the work:

a) Hazard Control Plan: Procedures for removal of mercury-containing items as part of the Contractor's Hazardous Materials Management Plan (HMMP) to be submitted in accordance with Section 01110 - Hazardous Materials Procedures.

b) Evidence of hazard awareness training of workers.

c) Identification of EPA approved incinerator and DOT approved transporter.

d) PPE to be used.

2. Submit the following, within 5 calendar days of the request by the Owner or within 5 calendar days of completion of the abatement or hazard control work.

a) Completed Uniform Waste Manifest.

1.5 QUALITY ASSURANCE

A. Qualifications

1. Asbestos Abatement Work: Only qualified persons shall engage in asbestos abatement activities. Work involving asbestos-containing materials exceeding 100 square feet (SF) or 100 linear feet (LF) shall be completed by a Contractor holding a valid asbestos handling license issued by the California State Contractors Licensing Board (SCLB) and a valid current Certificate of Registration for Asbestos-Related Work as issued by the California Department of Industrial Relations - Division of Occupational Safety and Health (Cal/OSHA). Work shall be completed under the on-site supervision of a Competent Person as defined by OSHA Regulation 29 CFR Part 1926.1101 (8 CCR 1529 in California). All abatement workers shall have AHERA training with annual 8-hour refresher training, current medical exams for the use of respiratory protection, and current fit test of appropriate respirators.

2. Lead Hazard/Abatement Work: Only qualified persons with DHS approved Lead Workers training, current medical examinations and approval for the use of respiratory protection, and current fit testing of respirators under the direct supervision of a DHS approved Lead Abatement Supervisor shall engage in work defined under Cal/OSHA regulation 8 CCR 1532.1 affecting lead-based paints and lead construction hazards, including but not limited to:

a) Working in an environment where lead exposures exceed 30 micrograms per cubic meter.

b) Abating lead-based paints, including but not limited to abatement of loose and peeling lead-based paints, demolition and disposal of concrete-encased primed structural steel and/or stripping of lead coatings from structural steel prior to torching or welding.

3. PCB Hazard Work: Removal of leaking or damaged PCB ballasts from lighting fixtures shall be completed by a trained worker, wearing protective gloves and following safety procedures as outlined in the HMMP. Hazardous waste shall be handled according to the U. S. Environmental Protection Agency's Standards 40 CFR 761.60 and 761.65 (22 CCR Section 66699(b) in California).

B. Regulatory Requirements: The Contractor shall be alerted to and familiar with the following laws and regulations regarding the hazards, control measures, management, characterizing, transport and disposal of hazardous wastes:

1. Asbestos Abatement Work: All labor, materials, facilities, equipment, services, employees and training, and testing necessary to perform the work required for asbestos abatement and disposal of waste shall be in accordance with these Specifications and the most current regulations, including but not limited to:

a) Environmental Protection Agency NESHAP and AHERA regulations (40 CFR Part 763, as applicable).

b) Occupational Safety and Health Administration (inclusive of OSHA 29 CFR 1926.1101)

c) California Department of Occupational Safety and Health (inclusive of Cal/OSHA 8 CCR 1529)

d) California Environmental Protection Agency (Cal/EPA).

e) Other applicable federal, state, and local governmental regulations pertaining to asbestos-containing materials (ACM) and asbestos waste.

2. Lead Hazard/Abatement Work: All labor, materials, facilities, equipment, services, employees and training, and testing necessary to perform the work required for lead abatement, demolition, decontamination, hazard control, and disposal of waste shall be in accordance with these Specifications and the most current regulations, including but not limited to:

a) Environmental Protection Agency National Ambient Air Quality Standards, as applicable (40 CFR 61).

b) Occupational Safety and Health Administration (inclusive of OSHA 29 CFR 1926.62)

c) California Department of Occupational Safety and Health (inclusive of Cal/OSHA 8 CCR 1532.1)

d) California Environmental Protection Agency (Cal/EPA), Title 22.

e) California Department of Health Services (17 CCR Sections 35001 -35099).

f) Other applicable federal, state, and local governmental regulations pertaining to lead hazards and lead waste.

3. Polychlorinated Biphenyl Work: All labor, materials, facilities, equipment, services, employees and training, and testing necessary to handle, containerize, secure, label, manifest, transport and either reuse, dispose, incinerate, or recycle PCB-containing ballasts shall be in accordance with these Specifications and with Cal/EPA Regulation 22 CCR Sections 6628.110 and 66508.

4. Mercury-Containing Lamp Disposal/Recycling: All labor, materials, facilities, equipment, services, employees and training, and testing necessary to handle, containerize, secure, label, manifest, transport and either reuse, dispose, or recycle mercury-containing lamps shall be in accordance with these Specifications and with Cal/EPA Regulation 22 CCR Section 66699(b).

C. Meetings:

1. Pre-Construction or Pre-Abatement Meeting:

a) Prior to any abatement work, the Contractor is to attend a pre-construction meeting to be attended by representatives of the Owner, the Owner's Consultants, the Hazardous Materials Abatement Contractor, the Demolition Contractor and other Contractors whose work may be affected. The meeting agenda shall include the following considerations:

1) Review of the Specifications and Plans in detail related to the abatement and hazards work. All conflicts and ambiguities, if any, shall be discussed.

2) Review in detail the project conditions, schedule, construction sequencing, abatement application requirements, and quality of completed work.

3) Review in detail the means of protecting adjoining areas, protection of Contractor's, Subcontractor's, the Owner's workers, and completed work during the abatement activities.

4) Pre-job submittals requirements.

5) Site security requirements.

2. Weekly Meetings: At the Owner's option, the Contractor will attend a weekly progress meeting. The purpose of this meeting is to review abatement and project scheduling, coordination with other trades, security and site specific requirements.

1.6 TIME LIMITATION AND DELAY CHARGES

A. Complete all asbestos, lead, and other hazard work specified in this Section within the time limitations.

B. In the event of failure to complete the Work of this Section within the specified time, the Contractor shall pay liquidated damages as specified in the Bid Form.

PART 2 - PRODUCTS

2.1 ASBESTOS WORK - MATERIALS AND EQUIPMENT

A. Protective Devices:

1. Temporary wash stations or showers, disposable clothing, respirators, gloves, hard hats, and other required items.

2. Respirators shall protect against asbestos and other appropriate dusts, fumes and mists as approved by the National Institute for Occupational Safety and Health (NIOSH) under provisions of 30 CFR Part 11.

B. Waste Receptacles: Conform to federal and State regulations, with 6-mil minimum thickness or glovebags or waste bags.

C. Sealants and Polyethylene Sheeting:

1. Polyethylene sheeting shall be flame-retardant and approved and listed by the State Fire Marshal in accordance with Section 13121 and/or 13144.1 of the California Health and Safety Code.

a) Thickness and Size: 6-mil thick minimum, unless otherwise specified, sized to minimize the frequency of joints.

b) Flammability: Comply with NFPA Standard 701 with a flame spread rating of no greater than 5 and a smoke development rating of no more than 70 when tested in accordance with ASTM E84 procedures.

2. Sealing Tape shall conform to the following:

a) 2-inches or wider, capable of sealing joints of adjacent sheets of polyethylene and attaching polyethylene sheet to finished or unfinished surfaces or similar materials.

b) Tape shall be capable of adhering under dry and wet conditions, including use of amended water.

3. Preservation Sealing Tape: Type specifically designed for adhering to critical or sensitive surfaces without damage to surface; 3M or equal.

4. Spray adhesives shall not contain methylene chloride or methyl chloroform (1,1,1-trichloroethane) compounds.

5. Fire resistant sealants shall be compatible with concrete, metals, wood, cable jacketing and other materials capable of preventing fire, smoke, water and toxic fumes from penetrating through sealants.

a) Sealants shall be asbestos free and shall have a flame spread, smoke and fuel contribution of zero.

b) Sealants shall be ASTM -and UL-rated for 3 hours for standard method of fire test for firestop systems.

6. Lagging sealer for enclosing and sealing raw exposed edges of piping, fitting, equipment and duct insulation (as applicable) shall meet the requirements of NFPA 90A.

D. Surfactants and Encapsulants:

1. Wetting agents or surfactants shall be effective and compatible with the ACM and ACBM being wetted.

2. Bridging or penetrating type encapsulants shall have the following characteristics:

a) Water based. Do not utilize an organic solvent in which the solid parts of the encapsulant are suspended.

b) Non-flammable with no methylene chloride.

c) U.L. listed encapsulants, in full-scale ASTM E119 fire test, compatible with W.R. Grace "Retroguard, RG-1" fireproofing with "Spatterkote" Type SKII" bonding treatment for structural and decking widths exceeding 24 inches.

d) Compatible with replacement materials, especially mastics, fireproofing, and adhesives.

E. Mastic Removers shall conform to the following:

1. Non-flammable solvent or gel, with a flash point above 140 degrees Fahrenheit.

2. Solvent waste shall not result in the generation of hazardous waste as described under 22 CCR, Division 4.

3. Removers shall not contain methylene chloride, halogenated hydrocarbons, or any of the following glycol ethers:

Common Name	**Abbrev.**	**CAS#**	**Chemical Name**
ethylene glycol methyl ether	EGME	109-86-	4,2-methoxyethanol
ethylene glycol methyl ether acetate	EGMEA	110-49-6	2-methoxyethyl acetate
ethylene glycol ethyl ether	EGEE	110-80-5	2-ethoxyethanol
ethylene glycol ethyl ether acetate	EGEEA	111-15-9	2-ethoxyethyl acetate
ethylene glycol dimethyl ether	EGDME	110-71-4	1,2dimethoxyethane
ethylene glycol diethyl ether	EGDEE	629-14-1	1,2- diethoxyethane
diethylene glycol	DEG	111-46-6	2,2'-dihydroxyethyl ether
diethylene glycol methyl ether	DEGME	111-77-3	2-(2-methoxyethoxy) ethanol
diethylene glycol ethyl ether	DEGEE	111-90-0	2-(2-ethoxyethoxy) ethanol
diethylene glycol dimethyl ether	DEGDME	111-90-6	bis(2-methoxyethoxy) ether
triethylene glycol dimethyl ether	TEGDME	112-49-2	2,5,8,11-tetraoxadodecane
dipropylene glycol	DPG	110-98-5	2,2'-dihydroxyisopropyl ether

F. Vacuums and Negative Pressure Units (NPUs) used for clean-up of materials and detail shall be HEPA-filtered. Provide DOP testing on-site for all units.

2.2 LEAD-RELATED WORK - MATERIALS AND EQUIPMENT

A. Protective Devices:

1. Polyethylene drop cloths and dust barriers, temporary wash stations or showers, disposable clothing, respirators, gloves, hard hats, and other required items.

2. Respirators shall protect against lead and other appropriate dusts, fumes and mists as approved by the National Institute for Occupational Safety and Health (NIOSH) under provisions of 30 CFR Part 11

B. Sealants and Polyethylene Sheeting:

1. Polyethylene sheeting shall be flame-retardant and approved and listed by the State Fire Marshal in accordance with Section 13121 and/or 13144.1 of the California Health and Safety Code.

a) Thickness and Size: 6-mil thick minimum, unless otherwise specified, sized to minimize the frequency of joints.

b) Flammability: Comply with NFPA Standard 701 with a flame spread rating of no greater than 5 and a smoke development rating of no more than 70 when tested in accordance with ASTM E84 procedures.

2. Sealing Tape shall conform to the following:

a) 2-inches or wider, capable of sealing joints of adjacent sheets of polyethylene and attaching polyethylene sheet to finished or unfinished surfaces or similar materials.

b) Tape shall be capable of adhering under dry and wet conditions, including use of amended water.

3. Preservation Sealing Tape: Type specifically designed for adhering to critical or sensitive surfaces without damage to surface: 3M or equal.

4. Spray adhesives shall not contain methylene chloride or methyl chloroform (1,1,1-trichloroethane) compounds.

5. Fire resistant sealants shall be compatible with concrete, metals, wood, cable jacketing and other materials capable of preventing fire, smoke, water and toxic fumes from penetrating through sealants.

a) Sealants shall be asbestos free and shall have a flame spread, smoke and fuel contribution of zero.

b) Sealants shall be ASTM -and UL-rated for 3 hours for standard method of fire test for firestop systems.

C. Provide waste receptacles that meet federal and State regulations.

D. Paint Removers shall conform to the following:

1. Non-flammable removing solvents or gels, with a flash point above 140 degrees F.

2. Solvent waste shall not result in the generation of hazardous waste as described under 22 CCR, Division 4.

3. Removers shall not contain methylene chloride, halogenated hydrocarbons, or any of the following glycol ethers.

Common Name	**Abbrev.**	**CAS#**	**Chemical Name**
ethylene glycol methyl ether	EGME	109-86-	4,2-methoxyethanol
ethylene glycol methyl ether acetate	EGMEA	110-49-6	2-methoxyethyl acetate
ethylene glycol ethyl ether	EGEE	110-80-5	2-ethoxyethanol
ethylene glycol ethyl ether acetate	EGEEA	111-15-9	2-ethoxyethyl acetate
ethylene glycol dimethyl ether	EGDME	110-71-4	1,2dimethoxyethane
ethylene glycol diethyl ether	EGDEE	629-14-1	1,2- diethoxyethane
diethylene glycol	DEG	111-46-6	2,2'-dihydroxyethyl ether
diethylene glycol methyl ether	DEGME	111-77-3	2-(2-methoxyethoxy) ethanol
diethylene glycol ethyl ether	DEGEE	111-90-0	2-(2-ethoxyethoxy) ethanol
diethylene glycol dimethyl ether	DEGDME	111-90-6	bis(2-methoxyethoxy) ether
triethylene glycol dimethyl ether	TEGDME	112-49-2	2,5,8,11-tetraoxadodecane
dipropylene glycol	DPG	110-98-5	2,2'-dihydroxyisopropyl ether

E. Vacuums and negative pressure units shall be HEPA-filtered for clean-up of loose debris and contaminants. Provide DOP testing on-site for all units.

2.3 OTHER HAZARDOUS MATERIALS - MATERIAL AND EQUIPMENT

A. Waste Containers:

1. Provide sealable metal drums, 55-gallon capacity, with sealable lids. Label the drums in accordance with EPA and DTSC requirements, including the Generator I.D. or location identification and manifest number. Drums shall be air and water tight.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Review the hazardous material report(s) to familiarize oneself with hazardous material locations and conditions, and previous abatement by Others, as applicable.

B. Review site conditions to verify quantities, work zones, available utilities, security, etc.

3.2 PREPARATION

A. Minimum Protective Procedures for Asbestos Work:

1. Protection of Visitors and Other Site Personnel: Cordon off the abatement area(s) with appropriate signs, and provide temporary tunneling or scaffolding, as applicable.

2. Respiratory Protection: Comply with Cal/OSHA Regulation 8 CCR Section 1529 and ANSI Standard Z88.2, “Practices for Respiratory Protection.” Use respirators approved by the National Institute for Occupational Safety and Health (NIOSH).

3. Provide site security to assure that no member of the public is able to gain access to the asbestos work area at any time. Maintain access and egress routes at all times.

4. Provide worker training, respiratory protection, and medical examinations to meet applicable regulations.

5. Provide temporary lighting and power to work areas, including installation of ground fault interrupters.

6. Fully ground all equipment within the work zone and decontamination assemblies.

7. Establish negative pressure in work area(s) as required under 8 CCR Section 1529.

8. Construct enclosure system(s) for worker and equipment decontamination.

9. Provide workers with sufficient sets of protective full-body clothing to be worn in the designated work area and whenever a potential exposure to airborne asbestos or potential safety hazards exist. Such clothing shall include but not be limited to: full-body coveralls, headgear, eye protection, and gloves. Disposable-type protective clothing, headgear, and footwear may be provided.

a) Full-Body Clothing: Assure that workers wear hoods covering their hair in the designated work areas at all times. Do not wear protective clothing in lieu of street clothing outside the work area. Leave non-disposable-type protective clothing and footwear in the wash room until the end of the asbestos abatement work. An acceptable alternative to disposal is proper storage in a sealed and labeled container so that containers would be opened and clothing reused only in an asbestos work area.

b) Eye protection: Provide eye protection to be worn as required by applicable safety regulations. Wear eye protection at all times within the asbestos work areas during all phases of work: preparation, removal, clean-up, encapsulation, waste handling, and similar operations. When appropriate, based on regulatory mandates, a full facepiece respirator may be worn to satisfy this requirement. Equipment shall conform with ANSI Z87.1. Use of contact lenses with respiratory protection is prohibited.

c) Head Protection: Provide hard hats or other head protection as required by applicable safety regulations, conforming with ANSI Z89.1, Class A or B.

d) Foot Protection: Provide nonskid footwear to all abatement workers, conforming to ANSI Z41.1, Class 75.

B. Minimum Protective Procedures for Lead-Related Work:

1. Follow, at the minimum, dust control procedures as outlined under Cal/OSHA regulation 8 CCR 1532.1.

2. Respiratory Protection: Comply with Cal/OSHA Regulations included in 8 CCR Section 1532.1 and ANSI Standard Z88.2, "Practices for Respiratory Protection."

a) Use respirators approved by the National Institute for Occupational Safety and Health (NIOSH).

b) Provide respiratory protection to employees involved with lead-based paint demolition and/or abatement elements or as required for demolition work where employees may be occupationally exposed to lead at or exceeding the Action Level (AL) at no cost to the employees or the Owner.

c) Workers shall wear appropriate respiratory protection during lead hazards work, unless initial testing verifies that employee exposures are below the Action Level.

3. Site security to assure that no member of the public is able to gain access to regulated work areas. Maintain access and egress routes at all times.

4. Worker training, respiratory protection, medical examinations, and blood lead monitoring to meet applicable regulations.

5. Activity Class I work areas, as a minimum, with a 2-stage decontamination assembly, including an equipment and contiguous clean room with bucket wash-up facilities positioned as follows:

a) Equipment Room shall have lockers or labeled bags and containers for storing contaminated protective clothing and equipment.

b) Clean Room shall have lockers or containers for storing employee's street clothes and personal items. Clean Room shall also contain a suitable supply of potable water to permit each employee to wash their hair, hands, forearms, face and neck.

6. Sufficient sets of protective full-body clothing for workers to be worn in designated work area and/or whenever a potential airborne lead hazard exists. Clothing shall include, but not be limited to, full-body coveralls, headgear, eye protection, and gloves. Disposable-type protective clothing, headgear and footwear is acceptable.

7. Full-Body Clothing: Workers shall wear hoods covering their hair in the designated lead hazard work areas at all times.

   a) Wearing of protective clothing, in lieu of street cloths, outside the work area is not permitted.

   b) Non-disposable-type protective clothing and footwear shall be left in the Wash Room decontamination assembly for disposal.

   c) The use of cloth coveralls following the prescribed laundry procedures as identified in 8 CCR, 1532.1 is acceptable.

8. Eye Protection: Eye protection, conforming to ANSI Z87.1 shall be worn at all times within the lead hazard areas.

9. Head Protection: Hard hats or other head protection as required by applicable safety regulations and conforming to ANSI Z89.1, Class A or B.

10. Foot Protection: Construction workers shall use non-skid footwear conforming to ANSI Z41.1, Class 75.

C. Site Protective Controls:

1. Protect against unnecessary disturbances or damages to sensitive finishes or furnishings that will remain within or adjacent to the facility.

2. Locate temporary scaffolding and containment barriers, as required, and proceed with the construction or demolition, allowing for continued operation of any adjacent occupied areas, as applicable.

3. Protect existing furnishings and building finishes from water, lead dusts, encapsulant, or chemical strippers.

4. Erect temporary protective covers over pedestrian walkways and at points of passage for persons or vehicles that are to remain operational during the lead hazard work.

5. Exterior lead hazard operations shall utilize mini-containments, drop cloths, wet methods, and HEPA vacuums as outlined in Cal/OSHA regulation 8 CCR Section 1532.1 and the HUD Guidelines, Chapter 8.

6. The Owner may evaluate the lead dust concentrations outside the work area on adjoining finishes during the work progress by collecting wipe samples to evaluate the integrity of the containment and to detect dust contamination.

   a) Evaluation will review possible contamination resulting from:

(1) Failure to adequately cordon off or contain work area dusts, clean-up debris, and use approved work practices, such as wet wiping and HEPA vacuuming.

(2) Failure or breaches in the work area isolation containment.

(3) Failure or rupture in the negative pressurization/HEPA filtration system.

(4) Incomplete decontamination of personnel or equipment removed from the work area(s).

b) Perimeter wipe samples may be collected adjacent to each work area and compared to the pre-construction background concentrations. The wipe sample will be analyzed by the Owner by flame atomic absorption per NIST Standard 1578.

c) The Contractor shall reclean adjoining occupied areas with surface concentrations exceeding background level or 800 micrograms/ft^2 during the construction activities. The Contractor shall bear the costs (including engineering, administrative, housekeeping, analytical and the labor and materials costs of the Owner's consultant(s)) to return surface lead concentrations in elevated areas to acceptable levels.

3.3 ASBESTOS ABATEMENT PROCEDURES

A. Notifications:

1. Notify, in writing, the BAAQMD 10 working days prior to commencement of any non-emergency asbestos project involving more than 100 linear feet (LF) or more than 100 square feet (SF) of asbestos materials.

2. Notify Cal/OSHA 24 hours in advance of any disturbances of any amount of friable or non-friable asbestos-containing materials or prior to performing asbestos-related work.

B. Procedures:

1. Roofing:

a) Remove the roofing and flashing materials.

b) Cordon off the work area, installing critical barriers at the skylights, roof-level windows, and other penetrations, as applicable.

c) Remove all 3-dimensional materials using wet methods per Cal/OSHA's Regulation 8 CCR 1529, Work Class II.

d) Set-up drop cloths on the ground and nearby objects to contain falling materials the ground or public access areas surrounding the work area.

e) HEPA vacuum the roof following abatement.

f) Provide a full decontamination system with shower for areas exceeding 100 SF.

g) Dispose of roofing as Category 1 non-friable waste.

h) Use of disposal chutes shall be approved by the Owner per the Contractor's Hazardous Materials Management Plan (HMMP) submittal. Chutes shall be leak-tight, using negative air and HEPA equipment.

2. Contaminated Non-Asbestos Materials:

a) Remove contaminated non-ACM substrates or underlying ceiling tiles, etc.

b) Use wet methods and HEPA-filtered vacuums to decontaminate, where feasible. Allow inspection of the decontaminated materials by the Owner's Environmental Consultant prior to removal from the work area.

c) Contaminated waste shall be disposed in double goosenecked bags or burrito-wrapped as friable asbestos waste.

d) Minimize excess waste quantities, where feasible.

C. Special Techniques and Procedures

1. Isolate HVAC system(s) to prevent contamination and fiber dispersal to other areas of the building.

a) Openings to ducts, fans, louvers, and plenums shall be sealed with two layers of polyethylene sheeting prior to the start of removal.

b) Provide caulked, rigid panels at the discretion of the Owner.

c) Repair any damage to ductwork, grilles, dampers, louvers, or HVAC equipment at the completion of the abatement work.

d) Secure systems and equipment using OSHA lock-out and tag-out procedures, as applicable.

2. Ensure that all electrical power terminating in the work area, including but not limited to outlets and lights are disconnected and cannot be reenergized during the course of the work.

a) Ensure that all power lines which transit the work area and are necessary for the continued operation of services in areas outside the work area are identified and protected adequately in order not to pose a hazard to workers during the course of work.

b) Provide temporary power and lighting, and ensure safe installation of temporary sources and equipment per applicable electrical code requirements, and provide safety lighting and ground fault interrupter circuits as power source of electrical equipment.

c) Secure systems and equipment using OSHA lock-out and tag-out procedures, as applicable.

3. Construct critical barriers and decontamination enclosure systems, as applicable. Erect polyethylene sheeting to protect walls, windows, flooring, and fixed equipment, as applicable.

4. Provide differential air pressure systems for each work area in accordance with Appendix J of the EPA's "Guidance for Controlling Asbestos-Containing Materials in Buildings," EPA 560/5-85-024.

a) Establish negative pressurization within all Asbestos Work Class 1 areas, exhausting air to the exterior, unless otherwise approved by the Owner.

b) Do not locate outlets near or adjacent to other building intake vents or louvers or at the entrances to the building.

c) Do not exhaust air into the building's interior spaces or within 50 feet of the building's supply air intakes without on-site DOP testing of all NPUs to show a filter efficiency of 99.97 percent minimum.

d) Provide a minimum work area differential air pressure of -0.025 inch w.g. and 4 air changes per hour at all times for Asbestos Work Class 1 areas or as otherwise designated by the Contract Documents.

5. Remove ACM employing full isolation, glovebag, and glovebag with mini-containment procedures as designated by material quantities and work class under Cal/OSHA regulation 8 CCR Section 1529.

a) Glovebag cut-out methods may be used for systems scheduled for demolition as outlined in the Demolition Plans.

b) Use wet cleaning methods, HEPA vacuuming, and proper work practices.

c) Mini-containments may not be required for glovebag TSI removal in unoccupied zones provided the bag is evacuated with a HEPA-filtered vacuum prior to the removal of the element being stripped or unless otherwise indicated in the Contract Documents. All areas requiring aggressive clearance air sampling will require mini-containments or full containments and pre-cleaning throughout the isolated area using HEPA vacuums and wet methods.

6. As applicable to abatement of surfacing materials and non-glovebag thermal system insulation removal projects or for other work completed within full isolation containments, remove visible accumulations of asbestos material, debris, and dust from within the work area and its decontamination enclosure systems. Clean all surfaces within the work area.

7. Where encapsulation is required, encapsulate following the Owner's pre-encapsulation inspection.

8. Protect building finishes and features to be salvaged or recycled from all encapsulants.

9. After encapsulation:

   a) Remove the inner layer of polyethylene sheeting from the floor, walls, and other equipment.

   b) Dispose as asbestos waste, as applicable.

   c) Leave all critical barriers with one layer of polyethylene sheeting.

10. After removing the final layer of polyethylene sheeting (as appropriate):

    a) Final-clean all surfaces, including the inner surface of the outer layer of polyethylene that serves as a critical barrier, any subfloor trenches, and similar locations.

    b) Allow adequate time for settlement of dust, then repeat final cleaning operation.

    c) Clean and remove all materials and equipment within the work area, using the equipment decontamination enclosure system.

11. Exterior Asbestos Work Class II abatement operations shall utilize critical barriers, drop cloths, wet methods, and HEPA vacuums as outlined under Cal/OSHA regulation 8 CCR Section 1529.

D. Field Quality Control

1. Site Tests: Clearance Criteria

   a) Clearance air samples using aggressive air sampling techniques shall be collected for all abatement zones, unless otherwise designated in the Contract Documents.

   b) Phase Contrast Microscopy (PCM) Clearances: Areas cleared by PCM shall show an airborne concentration of total fibers for each sample at or below 0.01 fibers per cubic centimeter (f/cc) using the NIOSH 7400A counting rules. Any sample result exceeding 0.01 fibers/cc shall require recleaning of the work area and retesting.

   c) When transmission electron microscopy (TEM) clearances are required by AHERA or as designated by the Contract Documents, analysis shall be by the method described in 40 CFR Part 763, Appendix A, Subpart E (AHERA), with an analysis turn-around time of 24 hours, unless otherwise designated by the Owner.

   d) The Owner shall pay the costs of the final round of visual inspections, aggressive air sampling, and PCM and/or TEM analyses that will meet the

Specifications. All rounds of visual inspections, aggressive air sampling, and PCM and/or TEM analyses that fail to meet the contract criteria shall be borne by the Contractor. For the purpose of this paragraph, visual inspection includes the area isolation inspection, pre-encapsulation inspection, and final area cleanup inspection.

E. Waste Disposal and Manifesting:

1. Packing, labeling, transporting, and disposing of asbestos materials shall comply with Cal/EPA regulations under 22 CCR, including completion of the Uniform Hazardous Waste Manifest Form (DTSC 8022A, 7/92, and EPA 8700-22), and the requirements of Article 3.10- Waste Disposal and Manifesting, of this Section.

3.4 LEAD ABATEMENT AND HAZARD CONTROL

A. Notifications: Cordon off active lead hazard and abatement zone(s) and post with warning signs at entries to regulated areas bearing the following information:

Warning
Lead Work Area
No Smoking or Eating
Authorized Personnel Only

B. Procedures:

1. Abatement of lead-based paints and presumed lead-based paints as defined by HUD and as regulated under the California Department of Health Services' Title 17, California Code of Regulations (CCR), Division 1, Chapter 8, "Accreditation, Certification, and Work Practices in Lead-Related Construction," Article 1, Sections 35001 et al, and Article 16, Sections 36000 and 36100 shall:

a) Include posting and delivery of notifications prior to conducting abatement, including:

(1) Completing DHS Form 8551 (12/97) and posting all entrances to the structure at least 5 days prior to conducting abatement. The posted form shall not be removed until abatement is completed and a clearance inspection has been conducted.

(2) Deliver of the completed DHS Form 8551 to the Department of Health Services, c/o Notification at the Childhood Lead Prevention Program Branch, 5801 Christie Avenue, Suite 600, Emeryville, CA 94608.

(3) Retain records of notification for at least 3 years.

b) Be conducted only by a Certified Lead Supervisor or a Certified Lead Worker where abatement is designed to permanently eliminate or reduce lead hazards for public (non-industrial) buildings or to be effective for a period exceeding 20 years. The Certified Lead Supervisor shall be on-site during all work site preparation and during the post-abatement clean-up of work areas. At all other times when abatement is conducted, the Certified Lead Supervisor shall be on-

site or available by telephone, pager or answering service, and able to be present at the work area in no more than 2 hours.

c) Be conducted using containment in a manner such as not to contaminate non-work areas with lead dust, soil, or paint debris.

d) Be conducted in accordance with procedures specified in the HUD Guidelines, Chapters 11 and 12.

2. Loose and Peeling Paint:

a) Scrape loose and peeling paints using dust control procedures and procedures as outlined under Cal/OSHA Regulation 8 CCR 1532.1.

b) Characterize the waste for possible disposal as a hazardous waste.

3. Lead Dust Clean-up:

a) Clean-up background or construction-related dusts from demolition of lead-coated elements or other contaminant sources using wet methods and HEPA-filtered vacuums.

b) Do not dry sweep.

4. Lead Hazard Control:

a) Scrape loose and peeling paints and use dust controls for demolition of lead-coated architectural and structural elements as indicated by the Demolition Plans, following minimum procedures as outlined under Cal/OSHA Regulation 8 CCR 1532.1.

b) Remove and dispose of intact lead-coated architectural and structural elements as non-hazardous waste.

c) HEPA vacuum residual debris and wet wipe affected substrates as required for clearance inspection or testing.

C. Special Procedures and Techniques:

1. Cordon off the proximity (within approximately 20 feet) of Activity Class I work areas using construction tape, polyethylene dust barriers, or other appropriate means.

a) Persons entering the regulated "cordoned" work area shall wear appropriate respiratory protection and full body coveralls.

b) Affix appropriate warning signs at the entry and approaches to the regulated area(s).

2. Lockout electrical and HVAC equipment within the regulated area as necessary.

3. Protect floors, furnishings, landscaping, and other items with polyethylene drop cloths or other acceptable means to prevent contamination or damage to other building surfaces and finishes.

4. Apply chemical strippers and scrape following the manufacturer's recommended procedures. After scraping, remove remaining loose paint with a HEPA vacuum.

5. Maintain work area surfaces as free as practicable from accumulated dust or debris. Clean equipment, tools and containment structures within regulated areas, at a minimum, with HEPA vacuums or wet methods.

6. Conduct operations to prevent injury to adjoining facilities, persons, motor vehicles, and other items as applicable.

   a) Prevent chemical cleaning agents from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other items and other surfaces, which could be injured or damaged by such contact.

   b) Do not spray or scrape outdoors during winds of sufficient force to spread cleaning agents to unprotected surfaces.

7. For areas where removal of loose and peeling paints only are required, the Contractor shall ensure that the paint that remains on walls, ceilings, eaves, and other surfaces in areas of active work, as applicable, shall be adhered to the substrate sufficiently to support eventual repainting. Paints that peel or loosen during wetting will become part of the scope of work scheduled for removal and disposal.

8. Where complete removal of lead coats is required, finished work shall show no signs of stains, scratches, streaks, or runs of discoloration from use of cleaners.

   a) Leave substrate surfaces neat and clean, including removal of primers in addition to finish coats. Surfaces shall be uniformly cleaned.

   b) Neutralize substrate using a TSP and detergent wash.

9. Where mechanical removal of surface coatings constitutes a Level II activity, provide power tools, to the extent feasible, with local HEPA exhaust or dust collector systems to capture the aerosolized lead.

D. Demolition Procedures:

1. Removal of obstructing materials as needed for access to hazardous materials.

2. Removal of obstructing materials where hazardous materials contamination is known to exist.

3. Removal of obstructing materials where hazardous materials exposure is likely to result.

4. General non-hazardous demolition.

5. Follow, at the minimum, the protective procedures as outlined in Cal/OSHA regulation 8 CCR 1532.1.

6. Protection of Visitors and Other Site Personnel: Cordon off the abatement area(s) with appropriate signs, and provide temporary tunneling or scaffolding, as applicable.

7. Respiratory Protection: Comply with Cal/OSHA Regulation 8 CCR Section 1529 and ANSI Standard Z88.2, "Practices for Respiratory Protection." Use respirators approved by the National Institute for Occupational Safety and Health (NIOSH).

E. Prohibited Activities:

1. Workers shall decontaminate themselves and appropriate equipment prior to eating, drinking and smoking.

2. Clean debris and surfaces with HEPA-filtered vacuums or wet methods.

3. Shoveling, wet sweeping, and brushing may be used only where vacuuming or other equally effective methods have been tried and are found to be ineffective.

F. Field Quality Control

1. Site Test: Monitoring and Clearance by the Owner:

a) During lead hazard-related work, such as demolition, the Owner may collect air samples for analysis by flame atomic absorption.

b) Air sampling results in excess of the Cal/OSHA "Project Action Level" of 30 micrograms per cubic meter within the construction zone may require isolation of the work area, upgrades in the required respiratory protection, amendment of work procedures, and/or clean-up of the affected area.

c) Air sampling results in excess of the EPA's National Ambient Air Quality Standard (NAAQS) of 1.5 micrograms/m^3 at the site's property line or at adjoining occupied non-construction areas may require isolation of the work area, amendment of work procedures, and clean-up of the affected area.

d) Resampling of the contaminated areas and handling, shipping, and analysis charges (including the Owner’s time and expenses) for additional sampling required to show background levels below these lead standards shall be borne by the Contractor.

2. Clearance Criteria -- Lead Abatement Zones:

a) The lead abatement zone shall remain secured until cleared by the Owner.

b) Visual Inspection:

(1) When the Contractor considers the work or a designated portion of the work to be complete, the Contractor shall notify the Owner that the work is ready for abatement zone clearance inspection.

(2) Within a reasonable time after receiving notification from the Contractor, the Owner will perform a visual inspection of the work area.

(3) Evidence of lead contamination identified during the inspection will necessitate further cleaning as specified herein.

G. Waste Disposal and Manifesting:

1. Comply with current federal, State and local regulations concerning the waste handling, containerization, transportation, and disposal of lead-based paint or lead-contaminated materials, and Article 3.10 of this Section. 2.Loose debris and scraped materials shall be treated as hazardous waste, unless otherwise approved by the Owner. Construction waste coated with intact LBP may be disposed of as construction debris in accordance with the Cal/EPA requirements.

3. Laboratory costs associated with analyses required for disposal, if required, shall be at the Contractor's expense.

4. Segregate, containerize, and characterize construction debris including rags, protective coveralls, polyethylene sheeting, and other consumable items. Waste shall be packaged in accordance with the applicable U. S. Department of Transportation regulations included in 49 CFR Parts 173, 178 and 179.

5. Profile waste with an approved landfill or incinerator by means of standard digestion and extraction tests (TCLP, WET, and SW846), as appropriate. Use the facility's EPA Generator I.D. number on the "Waste Manifest." See additional requirements specified below in Article titled "Manifesting."

6. If debris is to be recycled, provide a bill of lading and a memorandum from the recycler acknowledging that lead may be present and work activities and disposal will comply with applicable regulations.

3.5 PCB BALLAST REMOVAL

A. Contractor shall ensure that PCB-containing lighting ballasts, are handled, containerized, secured, labeled, manifested, transported, and either reused, disposed, incinerated or recycled, as appropriate.

B. Generators of PCB ballasts who transport off-site no more than two 55-gallon drums per transportation vehicle shall be exempt from the standards set forth in Article 1, Article 2 and Article 4 of 22 CCR, Chapter 12 and 13 as follows:

1. Generators of PCB-containing light ballasts shall be except from filing an "Extremely Hazardous Waste Disposal Permit" as required by §67430.1.

2. A transporter of twelve or more non-leaking PCB-containing fluorescent light ballasts shall be exempt from provisions under 22 CCR, Chapter 13 provided the following conditions are met:

a) The transporter shall use a shipping paper that contains the information required pursuant to Title 49, Code of Federal Regulations, Part 172, Subpart C to document the transportation of the ballasts. The shipping paper or manifest shall accompany the shipments, with a legible copy maintained by the transporter for a minimum period of three years.

b) The total number of PCB-containing light ballasts being transported shall not exceed two 55 gallon drums of non-leaking ballasts per load and shall not contain any other hazardous wastes.

c) The transporting container shall meet applicable federal and state regulations.

d) Any discharges or spills of hazardous waste consisting of PCB-containing fluorescent light ballasts shall be reported and cleaned up as required in 22 CCR, Chapter 13, Article 3.

3. Transfer of hazardous waste consisting of PCB-containing light ballasts from one container to another shall not be subject to the requirements of 22 CCR provided the containers hold no other hazardous wastes.

C. Waste Characterization: The U. S. Environmental Protection Agency (EPA; 40 CFR 761.60 & 761.65) and the California Department of Health Services (DHS; 22 CCR Section 66508) consider PCBs from ballasts as a hazardous waste. Disposal of the PCB-containing ballasts shall be in accordance with §66268.110 via incineration unless otherwise approved by the Owner.

D. Pack ballasts marked as "containing PCB" or ballasts not specifically marked as "non-PCB" or "PCB free" as hazardous waste. Workers removing ballasts from fixtures shall wear protective clothing and nitrile or neoprene gloves. Those ballasts showing signs of overheating or leakage will require wipe-down of the fixture with clean paper towels after the unit has cooled to room temperature. This step shall be followed with additional wiping with an organic solvent, such as mineral spirits or isopropyl alcohol. The leaking ballasts and rags shall be placed in a plastic bag, tied off, and secured. Remaining PCB ballasts and bagged waste shall be placed in steel drums, sealed, labeled, and transported to an approved incinerator following required manifest procedures. Absorbent material, such as kitty litter, shall be used as a cushion and absorbent within the drums. Drum loading shall not exceed the incinerator's requirements (typically 350 to 500 pound limit per drum).

3.6 MERCURY-CONTAINING LAMP REMOVAL

A. Spent fluorescent and mercury vapor lamps contain mercury, which is considered a hazardous waste by the California Department of Health Services (DHS; 22 CCR Section 66699(b)).

B. Ship lamps to a commercial recycler, (e.g., Mercury Technologies) where they are crushed and the mercury is reclaimed. The recycler shall comply with DOT requirements for manifests, etc., with evidence of proper disposal provided to the Owner, including a log of shipment dates and quantities.

C. Quantities under 25 lamps per day may be disposed of as non-hazardous waste.

3.7 NOT USED

3.8 NOT USED

3.9 NOT USED

3.10 WASTE DISPOSAL AND MANIFESTING

A. Hazardous Waste Disposal:

1. Packing, labeling, transporting, and disposing of hazardous waste shall comply with Cal/EPA regulations under 22 CCR, including completion of the Uniform Hazardous Waste Manifest Form (DTSC 8022A and EPA 8700-22). Waste and glovebags shall be properly labeled prior to their removal from the contained or regulated area, including all required asbestos warning labels.

2. Waste dumpsters shall be placarded, sealed, and locked overnight. Waste containers shall be stored to prevent public access or disturbances.

3. A "Waste Manifest" shall be completed for disposal of hazardous waste. The transporter shall posses a valid EPA Transporter I.D. number. The Contractor shall notify the Owner at least 48 hours prior to the time that the Manifest is required to be signed by the Owner’s representative.

4. Applicable information to be included in the "Waste Manifest" includes the following:

a) EPA Generator I.D. Number: Verify with the Owner.

b) Generator's Name and Address: Verify with the Owner.

c) Generator Tax I.D. Number: Verify with the Owner.

3.11 FINAL PROJECT CLEAN-UP AND REOCCUPANCY CLEARANCE CRITERIA

A. Asbestos: Asbestos-containing materials will be abated with clearance by visual inspection and phase contrast microscopy (PCM) or transmission electron microscopy (TEM), as applicable, as outlined in the Abatement Work Plans.

B. Lead

1. Final Reoccupancy Cleaning:

a) Final clean-up prior to the Owner reoccupancy shall include wet wiping using a TSP solution and HEPA vacuuming all suspect dust and debris areas.

2. Final Reoccupancy Clearance:

a) Following the final clean-up, the Owner will visually inspect for any loose dust or debris.

b) Areas that do not comply with the “Final Reoccupancy Clearance Criteria" and are not acceptable by the Environmental Consultant’s visual inspection shall continue to be cleaned by and at the Contractor's expense until the specified criteria is achieved, as evidenced by results of inspections as previously specified.

END OF SECTION

SCA
ENVIRONMENTAL, INC.
Engineering and Environmental Consultants

April 5, 2012

Mr. Sam Lin
Project Manager
Jail Planning Unit
Sheriff's Office
Email: slin@co.sanmateo.ca.us

RE: Proposal for Add't Services
20, 50, 70, & 80 Chemical Way, Redwood City, CA
SCA Project No: F10606

Dear Mr. Lin:

This letter reports the results of a hazardous materials survey conducted at 20-80 Chemical Way in Redwood City, California.

The sampling consisted of pre-demolition surveys of four buildings prior to demolition for construction of the new San Mateo County Jail. The buildings were constructed circa 1970 and are summarized below: The

Building	Approx. SF	Comments
20 Chemical Way	8000 SF	Welding shop building with approx. 3200 SF office space (1st floor) and residential unit (2nd floor) and remaining area used as shop/warehouse.
50 Chemical Way	3000 SF	Warehouse addition which is covered in metal siding was constructed circa June 2009. Occupied by AirGas.
70 Chemical Way	8111 SF	Building is currently vacant. Approx. 2500 SF office space and remaining shop/warehouse. Fire sprinkler tank on exterior of building is will be included in survey.
80 Chemical Way	17000 SF	Approx. 2500 SF office space and remaining shop/warehouse.

All buildings were occupied at the time of the investigation with the exception of 20 Chemical Way.

Sampling was conducted on March 22-26, 2012 by Joseph Young, CAC (#11-4724), CDPH (#19352).

Asbestos in Building Construction Materials

SCA has entered the sampling data from the above-referenced structures into a Materials Matrix Report (MMR) for each building. Hand-drafted sample location drawings are also included in Attachment B. The MMR printouts, which show detailed sample results, locations, and quantity estimates, are included in Attachment A of this report. Materials designated as NNN are items that are visually considered not to contain asbestos (e.g., metal, wood, carpet, etc.).

1. The MMRs (Attachment A) list positive and negative materials, the locations where each material is present, and the quantity estimates in each location.

2. Due to the occupancy of some of the buildings, some materials were assumed asbestos-containing and are designated as such in the attached MMRs. These materials could not be sampled without impacting the structural integrity of the items (e.g., fire doors). These items should be assumed asbestos-containing and treated accordingly.

3. SCA assumes that in the future, this survey report may be referenced by Abatement Contractors providing bids for abatement of materials at the surveyed site. SCA requests that this text portion of the report be provided to bidding contractors for review. Bidding Contractors are hereby notified that the quantities included herein are estimates only, and all quantities should be field verified by the Contractor for any budgeting, planning or bidding decisions.

Naturally-Occurring Asbestos in Soil

Sampling to verify the presence of naturally-occurring asbestos in Serpentine soil was not included in this scope of work. The Contractor and Owner should be aware that naturally-occurring asbestos may be present at the site and should be addressed prior to demolition activities. If present, the requirements issued by the California Air Resources Board (CARB) and Bay Area Air Quality Management District (BAAQMD) should be implemented, including submitting an Asbestos Dust Mitigation Plan (ADMP) at least 14 days prior to excavation, grading, if the total area exceeds 1 acre.. All soils shall be assumed asbestos-containing until sampling can be performed to verify asbestos content.

Lead

SCA performed limited bulk sampling of representative coatings at the above-referenced structure to confirm the presence and extent of lead-containing coatings. This included samples from representative exterior and interior finishes throughout the structures. Paints in the buildings were generally noted to be in fair to good condition at the time of the survey; however various areas of loose and peeling paints were noted on interior and exterior areas of the buildings.

As a detailed inventory of paints was not performed under this scope of work and measurable amounts of lead were noted in some of the paints sampled, SCA recommends that all paint be treated as lead-containing for the purpose of complying with Cal-OSHA requirements.

A summary of the lead results is included in Attachment A.

Polychlorinated Biphenyls (PCBs) & Mercury-Containing Items

SCA inspected for lighting ballasts in conjunction with mercury-containing, fluorescent lighting fixtures in various locations. If a “No PCBs” stamp was not evident on the ballasts, this indicates that they are likely to contain PCBs. Quantities of both PCB ballasts and fluorescent tubes in various locations are included in the MMRs.

If you have any questions or would like more information, please contact us.

Sincerely,
SCA ENVIRONMENTAL, INC.

Reviewed by:

Christina Codemo, CHMM, REA II
Sr. Project Manager
415-882-1675

Chuck Siu, PE, CIH
President
510-645-6200

Appendices:

Appendix A:	Materials Matrix Reports & Summary of Lead Levels Table
Appendix B:	Asbestos Sample Location Drawings
Appendix C:	Laboratory Results

Appendix A

Materials Matrix Reports & Summary of Lead Levels Table

Table 1. 20 Chemical Way, Redwood City, CA - Pre-Demolition Hazmat Survey

Material ID	Material Description	Asbestos? Pos, Neg, Trace, Assumed	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 7	Units	Exterior	Lobby	HW	Office 1, Office 2, Office 3	Lunch & Bath	Common	Shop	Laundry & Shower	2nd Fl (Gym/Elec CL/Bath)	Stair	Roof		Total (+/- 15%)
Asbestos																							
FLVCT-100 / CORE-116	12"x12" beige vinyl floor tile (+) with brown & white speckles & mastic (+	Yes	1-5% CH							SF		300	50	850	300	300		100					1900
WLSH/CLSH-103 & WLTX-112	wall and ceiling drywall (-) with tape & mud (<1%) and textured skim (+) (cannot be composited	Yes	<1% CH mud; ND Skim	<1% CH mud; ND skim	<1% CH; 1-5% skim					SF		300	220	1400	600	400	2800	300	800				6820
FLGLUE-108	vinyl sheet flooring (-) with yellow/brown mastic (+	Yes	1-5% CH							SF					50								50
SOIL-AAA	soil with assumed naturally-occurring asbestos	Assumed								CF	PNQ												PNQ
Non-Asbestos																							
CLLI-101	2'x4' laid-in acoustical ceiling tile with fissures	No	ND							SF		300	50	800	300	300			1200				2950
PAINT-102	beige paint on exterior concrete wal	No	ND	ND	ND	ND	ND	ND	ND	SF	20000												20000
CAULK-104	grey window and door exterior caulking (quantity refers to perimeter of window and not linear/square footage o caulk)	No	ND							LF	150												150
SHOWER-105	white ceramic shower	No	ND							SF								60					60
CERAMIC-106	beige ceramic tile and grout in 2nd floor bathroom & shower	No	ND							SF				300					150				450
FORMICA-107	Formica counter with clear glue at bathroom counte	No	ND							SF								20					20
CAULK-110	caulking at perimeter of the building (expansion joint	No	ND							LF	150												150
PAINT-111	paint on interior concrete wall	No	ND	ND	ND					SF		300		1100	200	400	3000	100	1500	800			7400
BBMAS	brown glue for 2" baseboard (sampled with WLSH-103-1,2, 3)	No	ND	ND	ND					SF		80	25	340	80	80		40					645
RFPEN-113	roof penetration mastic at skylight & vents	No	ND	ND						LF											80		80
RFAG-114	gravel & asphalt roofing	No	ND	ND						SF											8000		8000
PAINT-115	paint on concrete floor in shop	No	ND							SF							2000						2000
VAPOR-NNN	vapor barrier under core (7" on 1st floor slab) & (3" in 2nd floor bathroom)--no vapor barrier note	Not present								SF													
CAULK-NNN	no skylight caulk observed on inspection	not present																					
FIREDOOR-NNN	fire doors not noted to be present	not present																					
WLPNL-NNN	wood wall panel on concrete wall with no glue	not suspect													PNQ				PNQ				PNQ
CARPET-NNN	nailed-in carpet with no glue (note FLVCT-100 noted under carpet in 1st floor office	not suspect												PNQ					PNQ				PNQ
FLOOR-NNN	non-suspect flooring	not suspect															c			PNQ			PNQ
WOOD-NNN	wood deck with structural steel	not suspect															PNQ						PNQ
FLOOR-NNN	non-suspect flooring	not suspect															c						
WALLS-NNN	non-suspect walls	not suspect															c						
CEILING-NNN	non-suspect ceiling	not suspect															w						
Other Hazardous Construction Materials																							
Mercury	Fluorescent tubes	Present								EA		8	2	24	10	8	8	2	36				98
PCB	Lighting ballasts	Present								EA		2	1	7	33	2	2	1	9				57
Lead	Lead-containing paints	Present								EA	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ

CH-chrysotile asbestos ND=none detected PNQ=present, but not quantified c=uncoated concrete w=wood ch=chrysotile asbestos

Table 2. 50 Chemical Way, Redwood City, CA - Pre-Demolition Hazmat Survey

Material ID	Material Description	Asbestos? Pos, Neg, Trace, Assumed	Sample 1	Sample 2	Sample 3	Units	Showroom	Off 1	Bathrooms 1 & 2	Utility Room	Bathroom 3	Warehouse	Off/Lab	Break Room	Training Rm	Fill Plant	Exterior	Showroom Roof	Warehouse Roof	Fill plant Roof	Total (+/- 15%)
Asbestos																					
WLSH/CLSH-201/WLTX-202	wall and ceiling drywall with mud (<1%) and skim coat sampled as WLTX-202 (+), cannot be composited	Yes	5% CH	5% CH	5% CH	SF	3000	1200	500	300	300	300									5600
WLPNL-203	white plaster-like compound (+) behind painted wood wall panels	Yes	1-5% CH			SF	100	250													350
PUTTY-219	window & door putty	Yes	5-10%CH			LF											500				500
FLCERAMIC-204/ COR-223	beige ceramic floor tile (-) & grey grout (-) on floor & wall base on black mastic (+	Yes	ND in tile & grout; 5-10% CH in residual black mastic identified in CORE-223 sample			SF			120		120										240
SOIL-AAA	soil with assumed naturally-occurring asbestos	Assumed				CF											PNQ				PNQ
FIREDOOR-AAA	assumed asbestos-containing firedoor	Assumed				EA				1	1	1	1	1	1	2					8
Non-Asbestos																					
FLVCT-200	12"x12" beige vinyl floor tile (-) w/ brown & green speckles & black mastic (+	No	ND			SF	600	250													850
BBMAS-225	off-white baseboard glue for grey 4" baseboard (sampled with WLSH-201-1)	No	ND			LF	300	100						100							500
PAINT-205	paint on interior concrete wall	No	ND	ND	ND	SF	1500			100	100										1700
CAULK-206	grey door caulking for bathroom 3	No	ND			SF					40										40
WLGLUE-207	yellow glue for vinyl wall covering on all 3 bathrooms	No	ND			SF			80		80										160
PAINT-208	paint on concrete wall	No	ND	ND		SF						4000	150	200	150						4500
PAINT-209	paint on concrete floor	No	ND			SF						2000	150	200	150						2500
WLSH-210	drywall with tape & mud & texture	No	ND	ND	ND	SF						800	100	800	800	800					3300
PAINT-211	textured paint on concrete wall	No	ND			SF										800					800
CLLI-212	2'x4' laid-in ceiling tile with fissures	No	ND			SF							150	200	150						500
FLVCT-213	12"x12" beige floor tile (-) with brown & green speckles & mastic (-	No	ND			SF							150	200	150						500
BBMAS-226	off-white baseboard mastic for 4" grey baseboard (sampled with WLSH-201-2	No	ND			LF							80	100	100						280
STUCCO-214	beige painted exterior wall stucco & eave (no vapor barrier noted under	No	ND	ND	ND	SF											1800				1800
PAINT-215	beige painted exterior concrete wall	No	ND			SF											800				800
CAULK-216	grey door /window caulking	No	ND			LF											150				150
RFPEN-220	roof penetration mastic above show room & warehouse roof	No	ND			LF												80	120		200
RFAG-221	asphalt & gravel roofing above show room roof	No	ND	ND		SF												2000			2000
RFAG-222	asphalt & gravel roofing above warehouse	No	ND	ND		SF													2000		2000
CAULK-NNN	no skylight caulk observed on inspection	not present																			
VAPOR-NNN	vapor barrier not present under slab from coring sample CORE-223	not present															PNQ				PNQ
RF-NNN	metal panel roofing with tar, mastic, etc. roofing material unde	not suspect																		PNQ	PNQ
FLOOR-NNN	non-suspect flooring	not suspect								c						c					
WALLS-NNN	non-suspect walls	not suspect										c,m				c,m					
CEILING-NNN	non-suspect ceiling	not suspect										w				w					
Other Hazardous Construction Materials																					
Mercury	Fluorescent tubes	Present				EA	16	8		2		8	8	8	8						58
PCB	Lighting ballasts	Present				EA	8	2		1		4	2	2	2						21
Lead	Lead-containing paints	Present				EA	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ

NOTE: Portable sheds not included in survey. Airgas will take sheds upon departure from site.

CH-chrysotile asbestos ND=none detected PNQ=present, but not quantified c=uncoated concrete w=wood m=metal ch=chrysotile asbestos

Table 3. 70 Chemical Way, Redwood City, CA - Pre-Demolition Hazmat Survey

Material ID	Material Description	Asbestos? Pos, Neg, Trace, Assumed	Sample 1	Sample 2	Sample 3	Units	Lobby & Kitch	Bath 1&2	Off 1	Off 2	Elec.	Off 3	Off 4	Off 5	HW	Off 6	Warehouse	Bathrooms 3&4	Roof	Mezzanine	Stairway	Exterior	Total (+/- 15%)
Asbestos																							
SOIL-AAA	soil with assumed naturally-occurring asbestos	Assumed				CF																PNQ	PNQ
Non-Asbestos																							
FLVCT-400	12"x12" grey floor tile (-) with blue dots and black/yellow mastics (-) on concrete	No	ND			SF	250	180															430
LVCPD-401	leveling compound under tacked down carpet	No	ND	ND		SF	100		300	150		250	250	250	150	250							1700
WLSH-402	textured wall and ceiling drywall with tape & mud	No	ND	ND	ND	SF	1000	800	800	300	180	800	800	800	400	800	10000	1000			800		18480
BBMAS-421	off-white baseboard mastic sampled with WLSH-402-2	No	ND			LF	200	100	100	60	40	100	100	100	80	180	80	80					1220
WLTX-403	wall texturing on WLSH-402 & concrete walls	No	ND	ND	ND	SF	1000	800	800	400		800	800	800	400	800	10000	1000			800		18400
FORMICA-404	formica counter top with yellow glue	No	ND			SF	140																140
WLGL-405	yellow glue for vinyl wall covering at bathrooms	No	ND			SF		150										150					300
CLLI-406	2'x4' laid-in acoustical ceiling tiles with fissures	No	ND			SF	200		300	150													650
RFAG-407	asphalt & gravel roofing	No	ND	ND	ND	SF													800				800
RFPEN-408	roof penetration mastic	No	ND			LF													150				150
CAULK-409	grey skylight caulking	No	ND			LF													150				150
FLMAS-410	black-residual mastic under carpet in various areas	No	ND			SF	120	180	300	150	60												810
FLVCT-411	12"x12" grey floor tile (-) with white glue (-) on concrete	No	ND			SF					60							60					120
PAINT-412	paint on concrete floor	No	ND			SF											4000						4000
PAINT-413	non-textured paint on interior concrete wall	No	ND	ND		SF											1000			1500			2500
FLVCS-414	blue/purple "pebble look" vinyl floor sheeting with brown glue	No	ND			SF												60					60
CAULK-415	caulk at HVAC duct joints	No	ND			LF														120			120
PAINT-416	paint on exterior tank	No	ND			SF																200	200
STUCCO-417	stucco with vapor paper on exterior wall	No	ND	ND	ND	SF																3000	3000
PAINT-418	exterior paint on concrete wall	No	ND	ND	ND	SF																20000	20000
FIREDOORS-419	assumed asbestos-containing firedoor	No	ND			EA						1											1
CAULK-NNN	no window caulk/putty noted	not present																					
CORE-420	vapor barrier not present under slab from coring sample	not present																				PNQ	PNQ
FLOOR-NNN	non-suspect flooring	not suspect																		w	w		
WALLS-NNN	non-suspect walls	not suspect																					
CEILING-NNN	non-suspect ceiling	not suspect															w			w			
Other Hazardous Construction Materials																							
Mercury	Fluorescent tubes	Present				EA	12		12	8	2	16	16	16	6	24	40			4			156
PCB	Lighting ballasts	Present				EA	3		3	2	1	4	4	4	3	6	18			2			50
Lead	Lead-containing paints	Present				EA	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ

CH-chrysotile asbestos ND=none detected PNQ=present, but not quantified w=wood ch=chrysotile asbestos

Table 4. 80 Chemical Way, Redwood City, CA - Pre-Demolition Hazmat Survey

Material ID	Material Description	Asbestos? Pos, Neg, Trace, Assumed	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 7	Units	1st Floor Office	Stairway	2nd Floor Office	Exterior	Roof	Waterhouse	Store	Superior Doors	Total (+/- 15%)
Asbestos																			
FLVCT-300/CORE-319	yellow vinyl floor tile (+) with brown speckles and black mastic (+), some under carpe	Yes	1-5% CH							SF	3000		2500			80			5580
WLSH-302/WLTX-301	wall & ceiling drywall (-) with tape & mud (1-5% CH) & texturing (-) over drywall & concrete (no asbestos noted in texturing)	Yes	1-5% CH	1-5% CH	1-5% CH					SF	10,000	300	5000			200	800		16300
CLTX-316	acoustical ceiling texture on drywall ceiling, and overspray behind and in the vicinity	Yes	1-5% CH	NA	NA					SF						80		800	880
SOIL-AAA	soil with assumed naturally-occurring asbestos	Assumed								CF				PNQ					PNQ
Non-Asbestos																			
WLTX-301	texturing (-) over drywall & concrete	No	ND	ND	ND					SF	20,000	300	8000			200	800		29300
BBMAS-322	brown baseboard mastic, sampled with WLSH-302-1	No	ND							LF	3000								3000
WLPNL-303	yellow glue behind wall panels on drywall	No	ND	ND						SF	4000		1000					800	5800
CARMAS-304	yellow carpet mastic	No	ND							SF	600		3000					800	4400
WLGL-305	grey glue for vinyl wall covering in bathrooms	No	ND							SF	150								150
FLVCS-306	brown vinyl floor sheeting with black mastic and anti-skid stripes	No	ND							SF		150	200						350
CLLI-307	2'x4' laid in ceiling tile	No	ND							SF			2500						2500
FORMICA-308	Formica with clear glue	No	ND							SF			40						40
PAINT-309	exterior paint on concrete	No	ND	ND	ND	ND	ND	ND	ND	SF				40000					40000
CAULK-310	exterior window & door caulking	No	ND	ND						LF				16					16
RFROLL-311	roll sheeting roof felts & mastics	No	ND	ND	ND					SF					12000				12000
RFPEN-312	roof penetration mastics	No	ND							LF					300				300
HDUTP-313	duct tape on roof mounted HVAC units	No	ND							SF					100				100
CAULK-314	caulking associated with roof-mounted HVAC units	No	ND							LF					100				100
WLSH-315	untextured drywall (-) with tape & mud (-)	No	ND	ND	ND					SF						10000	4000	800	14800
FLVCT-317	12"x12" yellow vinyl floor tile (-) with yellow glue (-	No	ND							SF						120			120
FLVCT-318	12"x12" white vinyl floor tile (-) with mastic (-) over 2nd layer of vinyl floor tile (-) & mastic (-	No	ND							SF							50		50
PAINT-319	paint on interior concrete wall	No	ND	ND						SF							2000		2000
CARMAS-320	yellow carpet mastic on concrete	No	ND							SF							600		600
FLVCT-321	12"x12" white floor tile (-) with yellow glue (-)	No	ND							SF								16	16
VAPOR-NNN	vapor barrier not present under slab from coring sample	not present																	
FIREDOOR-NNN	fire doors not noted to be present	not present																	
FLOOR-NNN	non-suspect flooring	not suspect														w			
WALLS-NNN	non-suspect walls	not suspect																	
CEILING-NNN	non-suspect ceiling	not suspect																	
Other Hazardous Construction Materials																			
Mercury	Fluorescent tubes	Present								EA	62		40			52		86	240
PCB	Lighting ballasts	Present								EA	31		18			26		24	99
Lead	Lead-containing paints	Present								EA	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ

CH-chrysotile asbestos ND=none detected PNQ=present, but not quantified c=uncoated concrete w=wood ch=chrysotile asbestos

Table 5. Summary of Lead Levels - Representative Bulk Testing of Coatings
20-80 Chemical Way, Redwood City, CA

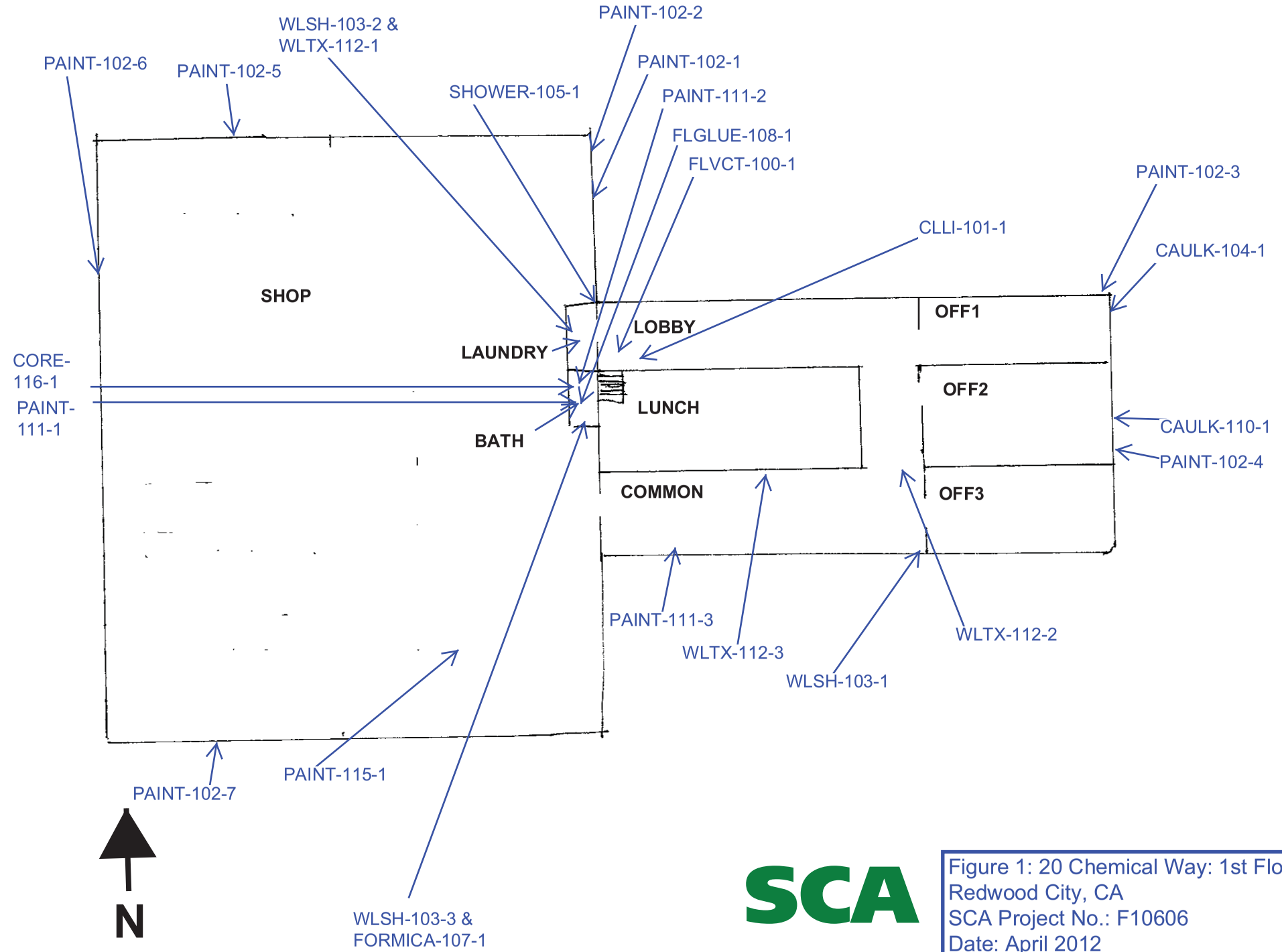
SCA PROJECT NO.: F10606

Building	Sample I.D.	Location	Surface Color	Substrate Component	Substrate Material	Condition	AA Results (ppm)
20 Chemical Way	WLSH-PAINT-PB	1st Floor	White	Wall	Sheetrock	Intact	<46
	PAINT-102-PB	Exterior	Beige	Wall	Concrete	Intact	89
	PAINT-111-PB	1st Floor	White	Wall	Concrete	Intact	<41
50 Chemical Way	PAINT-WOOD-PB	1st floor	white	wall	wood	Intact	<44
	PAINT-215-PB	1st floor	white	wall	concrete	Intact	820
	PAINT-208-PB	Exterior	white	wall	concrete	Intact	<41
70 Chemical Way	PAINT-418-PB	Exterior	beige	wall	Wood	Intact	200
	WLSH-PAINT-PB	Exterior	white	wall	concrete	Intact	640
	TANK-PAINT-PB	Exterior	beige	tank	metal	Intact	<40
80 Chemical Way	PAINT-INT-CONCRETE-PB	1st floor	White	Wall	Concrete	Peeling	<46
	SHEETROCK-PAINT-PB	1st floor	White	Wall	Sheetrock	Intact	<40
	PAINT-309-PB	Exterior	Beige	Wall	Concrete	Intact	<38

Note: Paints and glazing with any detectable lead content are presumed to contain >600 ppm of lead, & require the Contractor's compliance with Cal/OSHA regulation 8 CCR 1532.1 during demolition, scraping of loose and peeling paints, spot abatement prior to torching or cutting, etc. Any paint not sampled shall be assumed lead-containing and treated accordingly.

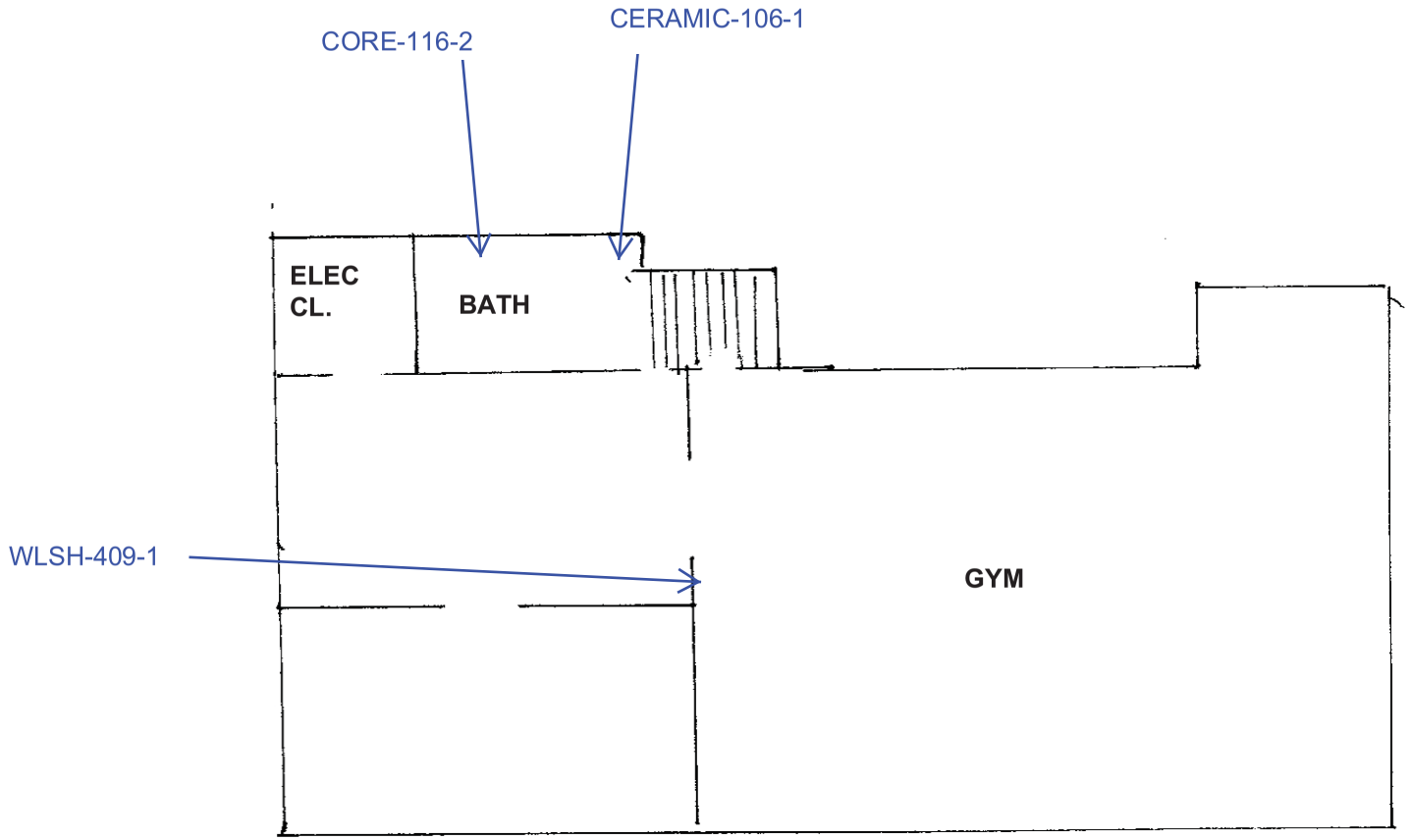
Appendix B

Asbestos Sample Location Drawings



SCA ENVIRONMENTAL, INC.

Figure 1: 20 Chemical Way: 1st Floor
Redwood City, CA
SCA Project No.: F10606
Date: April 2012



N

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Figure 2: 20 Chemical Way: 2nd Floor
Redwood City, CA
SCA Project No.: F10606
Date: April 2012

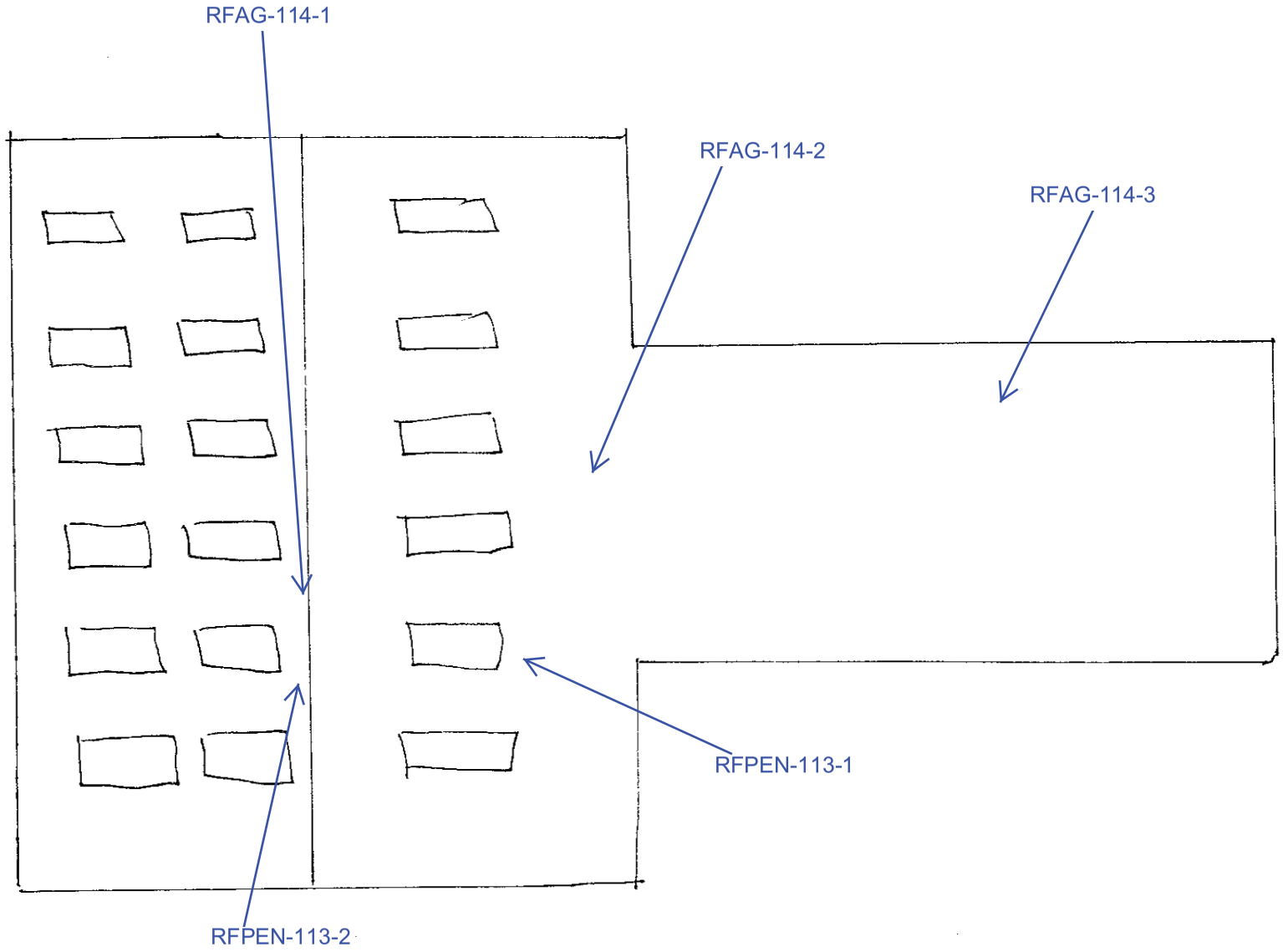

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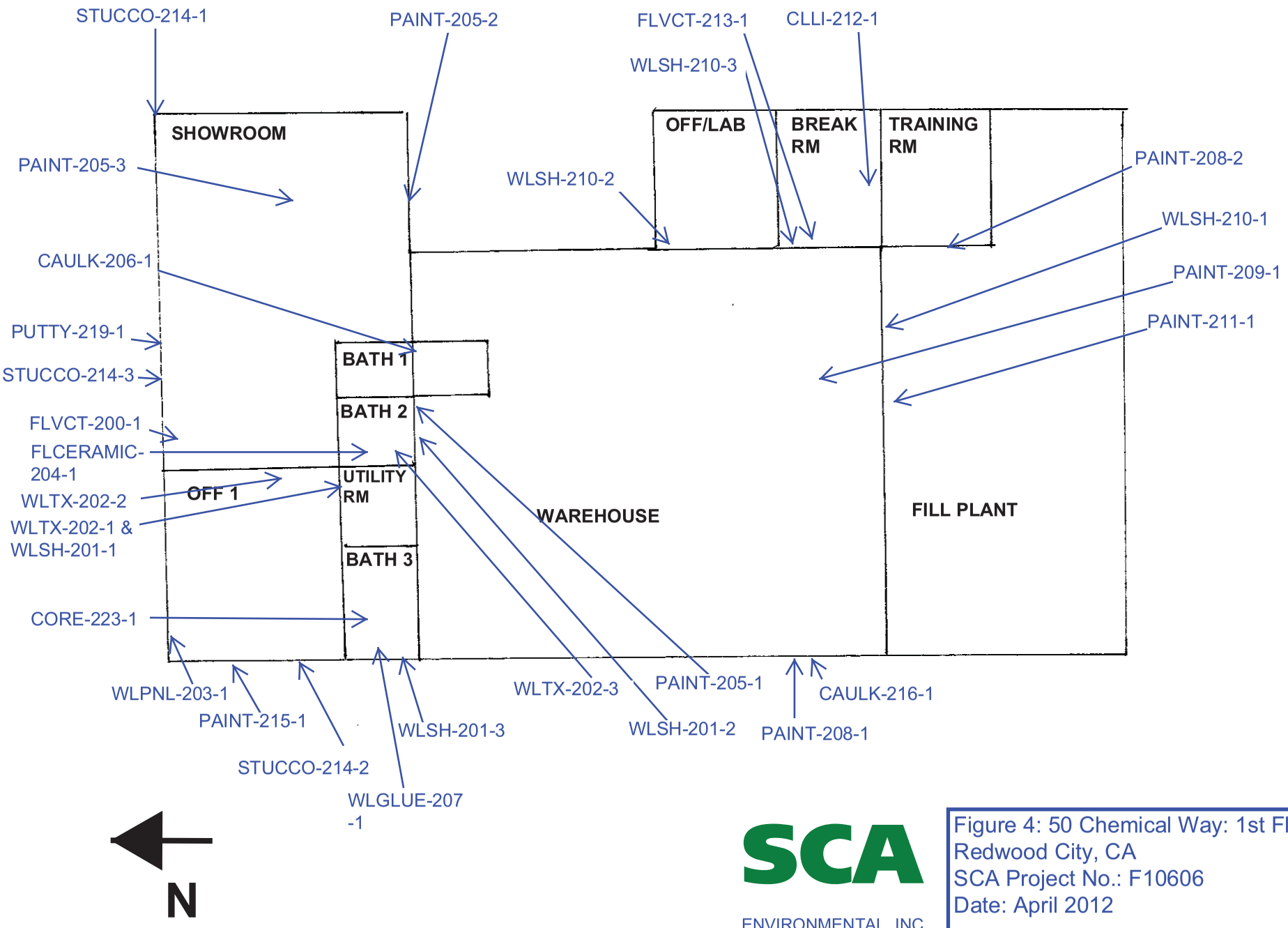
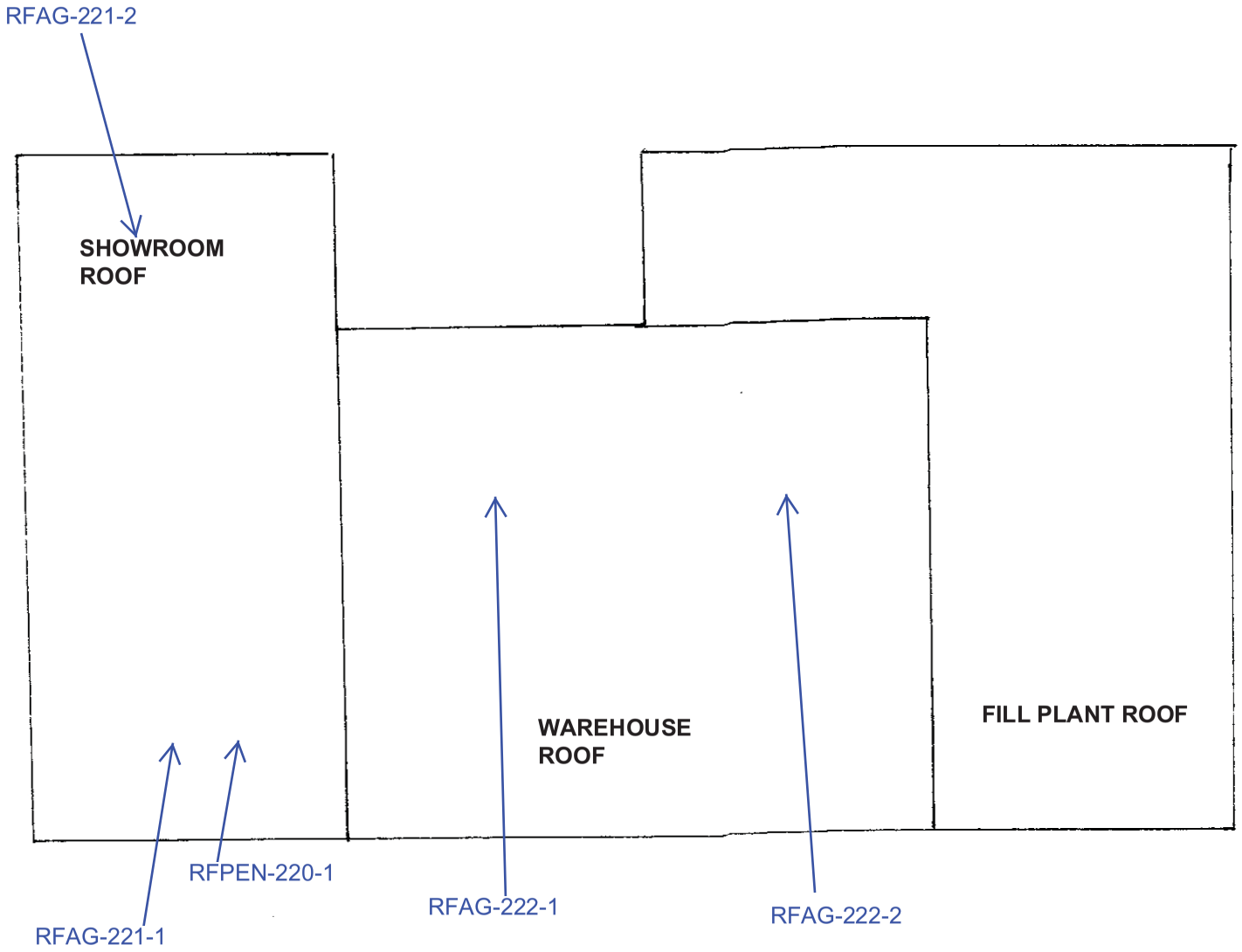
Figure 3: 20 Chemical Way: Roof
Redwood City, CA
SCA Project No.: F10606
Date: April 2012



SCA ENVIRONMENTAL, INC.

Figure 4: 50 Chemical Way: 1st Floor
Redwood City, CA
SCA Project No.: F10606
Date: April 2012



N

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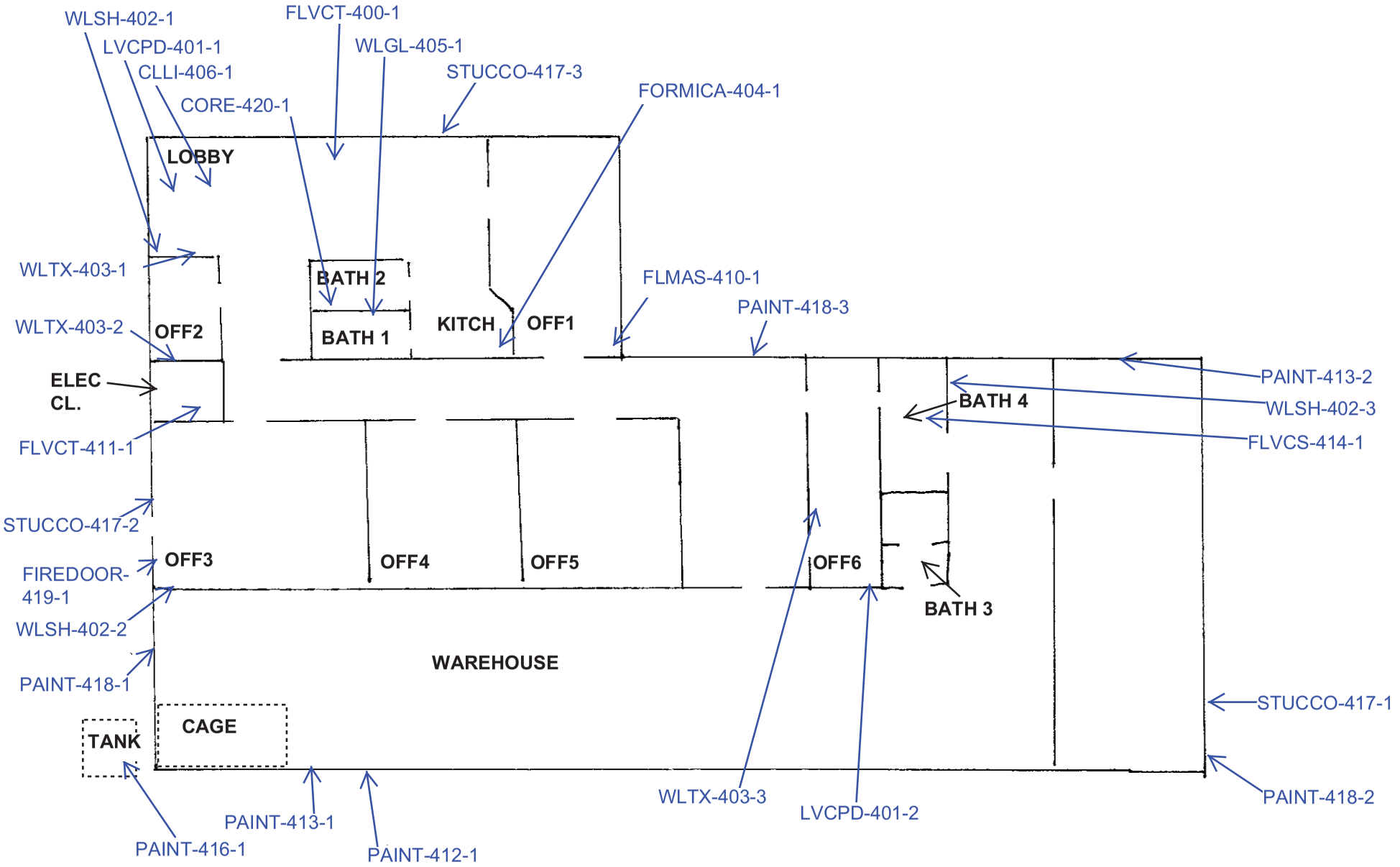
Figure 5: 50 Chemical Way: Roof
Redwood City, CA
SCA Project No.: F10606
Date: April 2012



SCA ENVIRONMENTAL, INC.

Figure 6: 70 Chemical Way: 1st Floor
Redwood City, CA
SCA Project No.: F10606
Date: April 2012

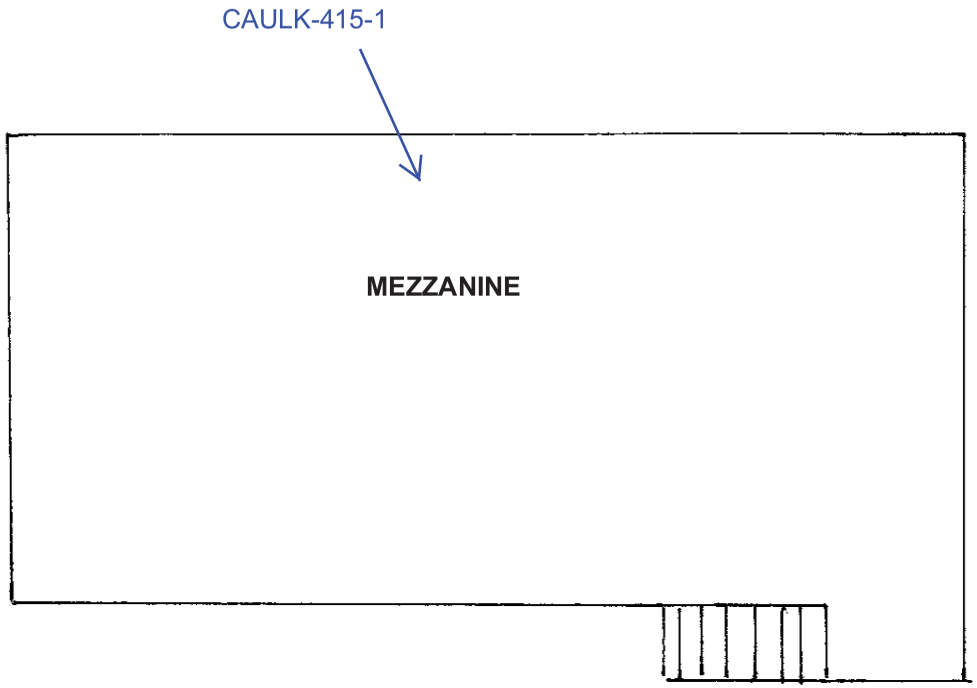


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Figure 7: 70 Chemical Way: Mezzanine
Redwood City, CA
SCA Project No.: F10606
Date: April 2012

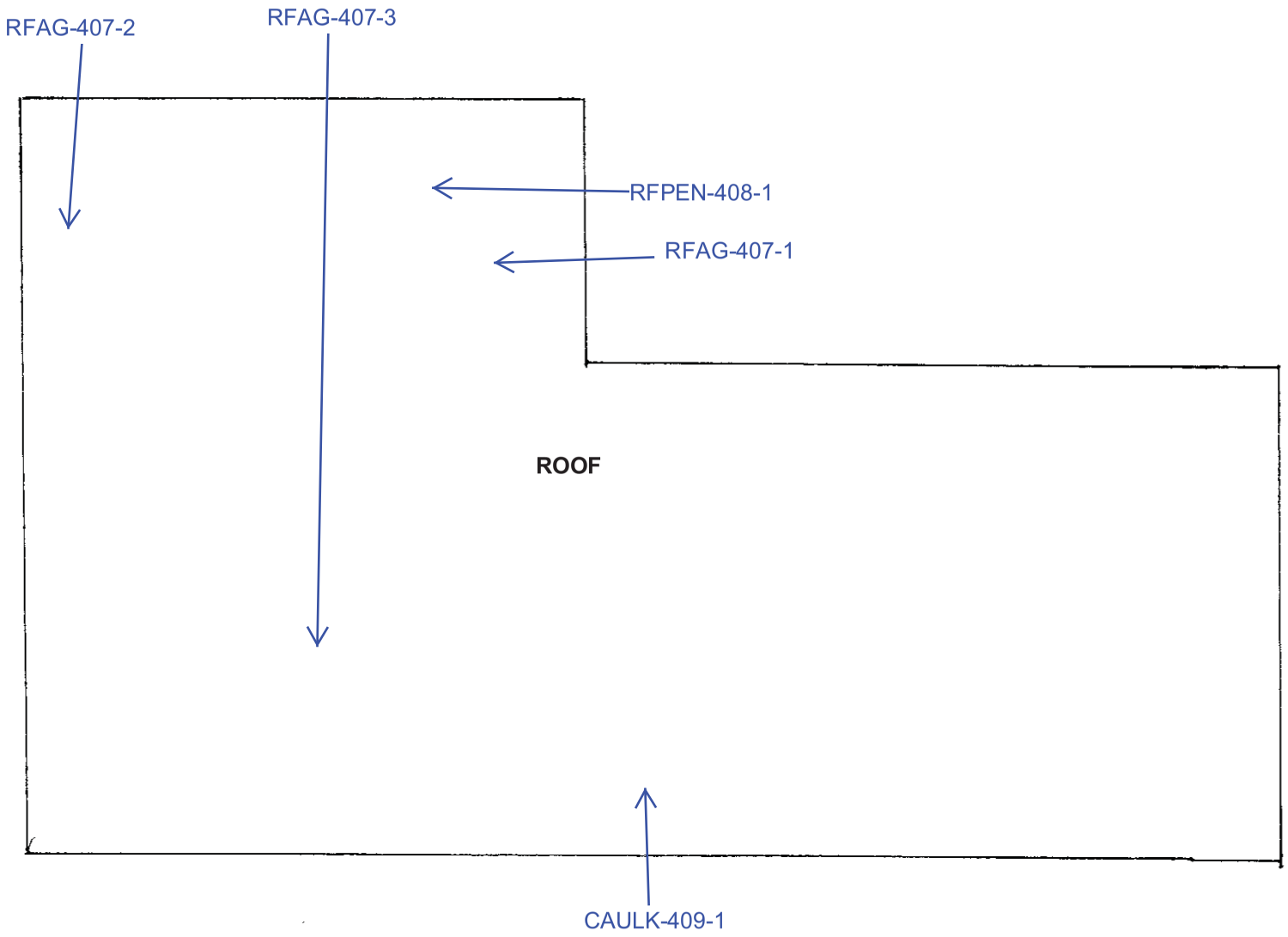

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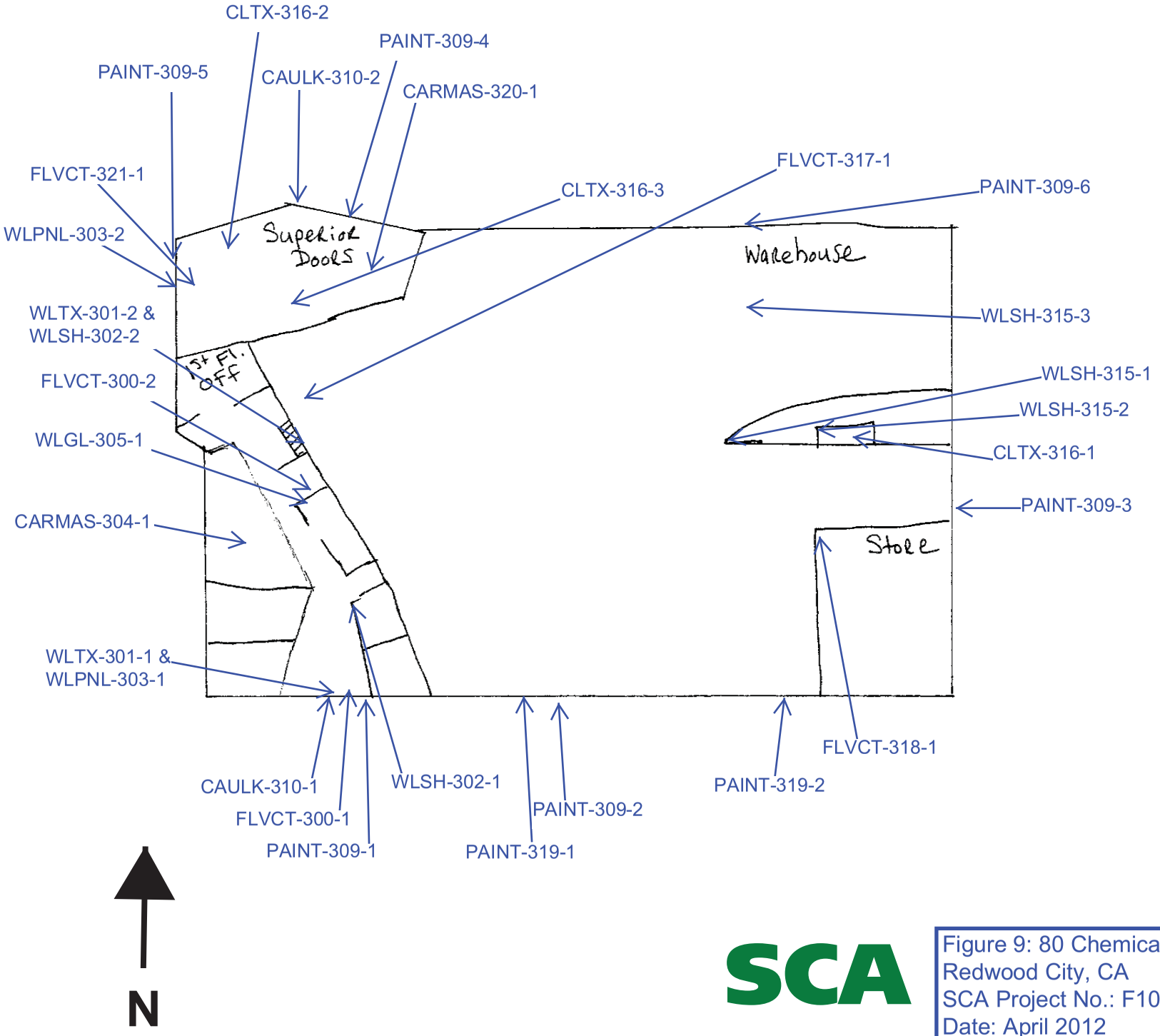
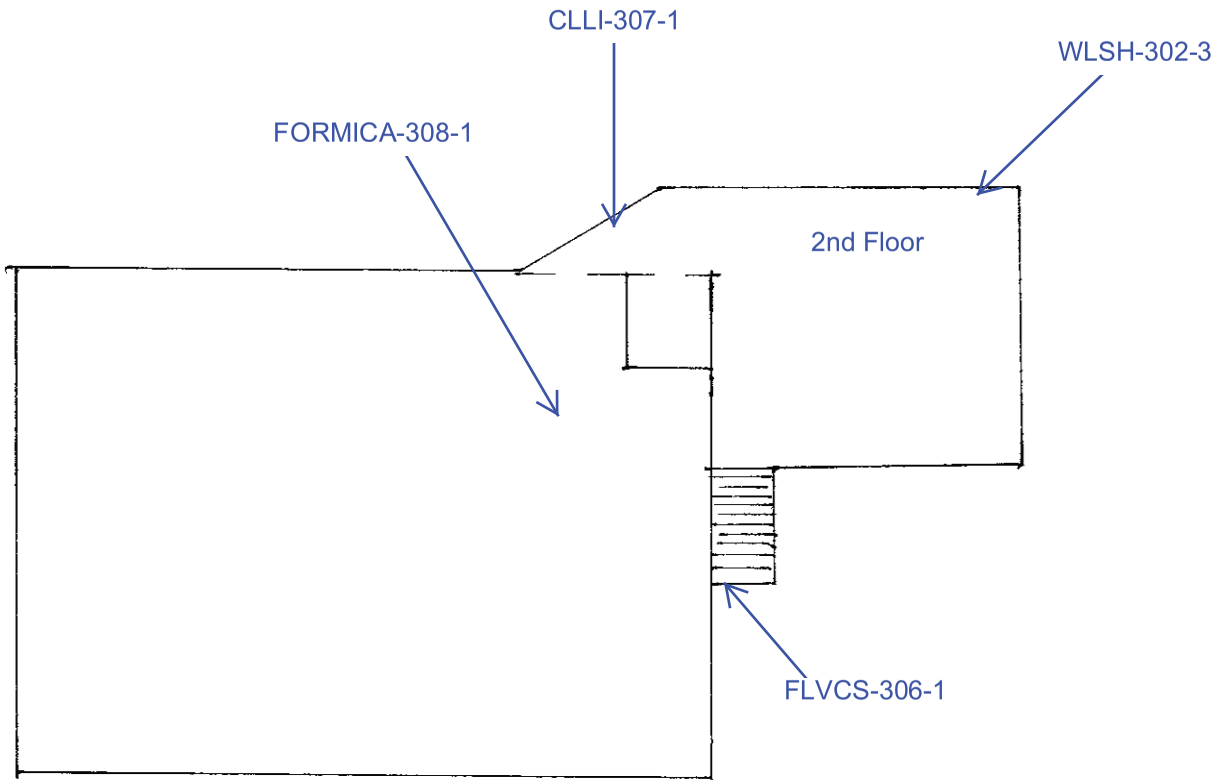
Figure 8: 70 Chemical Way: Roof
Redwood City, CA
SCA Project No.: F10606
Date: April 2012



SCA ENVIRONMENTAL, INC.

Figure 9: 80 Chemical Way: 1st Floor
Redwood City, CA
SCA Project No.: F10606
Date: April 2012



N

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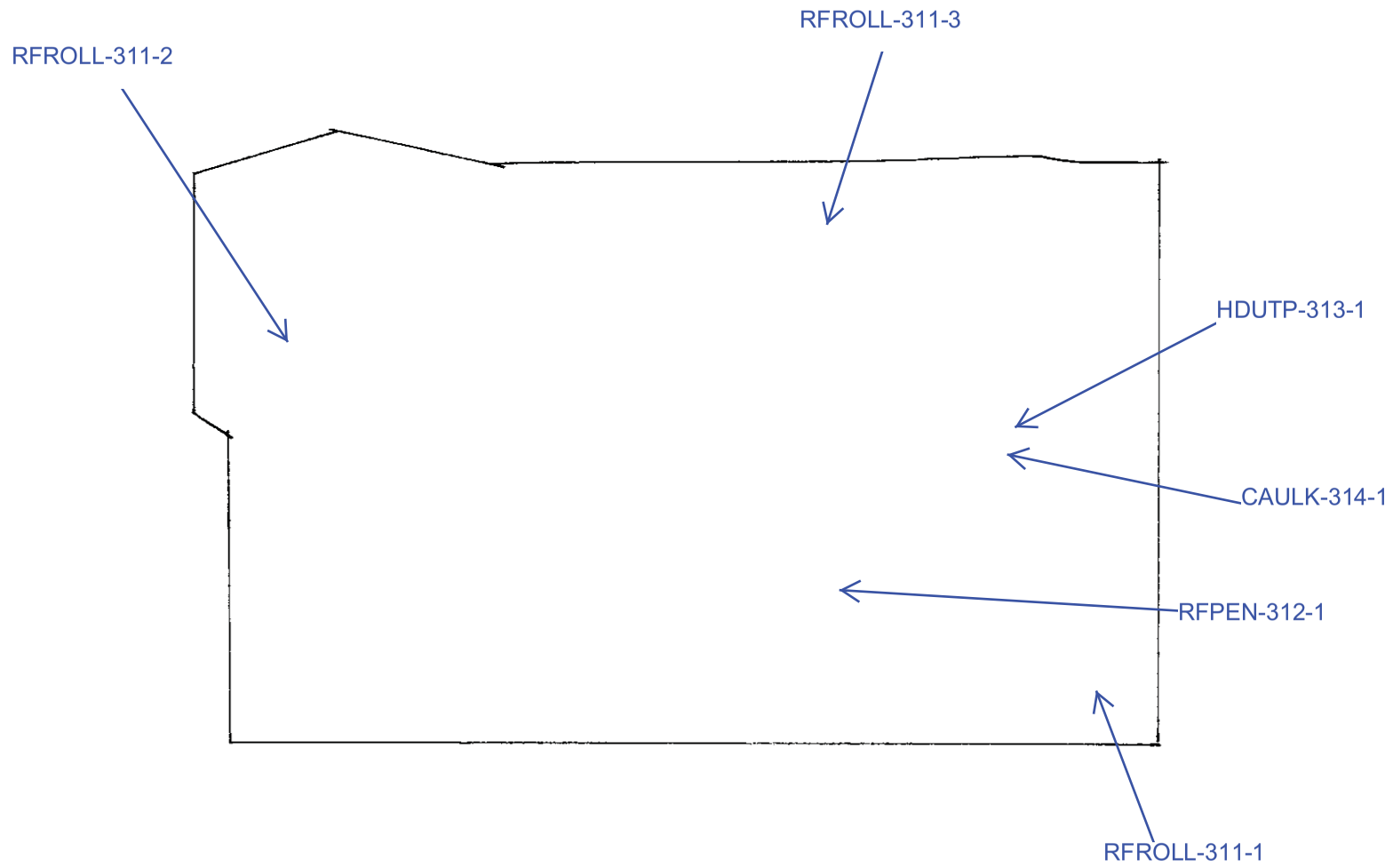
Figure 10: 80 Chemical Way: 2nd Floor
Redwood City, CA
SCA Project No.: F10606
Date: April 2012



N

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Figure 11: 80 Chemical Way: Roof
Redwood City, CA
SCA Project No.: F10606
Date: April 2012

Appendix C

Asbestos Laboratory Results

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

Samples Indicated: 32
Reg. Samples Analyzed: 32
Split Layers Analyzed: 23

Job Site / No. 50 Chemical Way
F10606 - CC

Report No. **308648**
Date Submitted: Mar-23-12
Date Reported: Mar-26-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
FLVCT-200-1		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Bndr, Other m.p.	
Lab ID # 532-02093-001A			3) 4) Mar-26-12	Floor Tile-Grey
FLVCT-200-1		**None Detected**	1) None Detected 2) 99-100% Glue	
Lab ID # 532-02093-001B			3) 4) Mar-26-12	Mastic-Yellow
WLSH-201-1		**None Detected**	1) 1-5% Fiberglass 2) 95-99% Gyp, Other m.p.	
Lab ID # 532-02093-002A			3) 4) Mar-26-12	Drywall-Off-White
WLSH-201-1	**<1%**	**Chrysotile**	1) 2-10% Cellulose, Fiberglass 2) 90-98% Gyp,Calc,Mica,Qtz,Opq	
Lab ID # 532-02093-002B			3) 4) Mar-26-12	JointCom/Text-Off-White
WLSH-201-1		**None Detected**	1) None Detected 2) 99-100% Qtz, Opq, Glue, Other m.p.	
Lab ID # 532-02093-002C			3) 4) Mar-27-12	Paint/Mastic-Off-White
WLSH-201-2		**None Detected**	1) 1-5% Fiberglass 2) 95-99% Gyp, Other m.p.	
Lab ID # 532-02093-003			3) 4) Mar-27-12	Drywall-Off-White
WLSH-201-2	**<1%**	**Chrysotile**	1) 2-10% Cellulose, Fiberglass 2) 90-98% Gyp,Calc,Mica,Qtz,Opq	
Lab ID # 532-02093-003B			3) 4) Mar-27-12	JointCom/Text-Off-White
WLSH-201-2		**None Detected**	1) None Detected 2) 99-100% Qtz, Opq, Glue, Other m.p.	
Lab ID # 532-02093-003C			3) 4) Mar-27-12	Paint/Mastic-Off-White
WLSH-201-3		**None Detected**	1) 1-5% Fiberglass 2) 95-99% Gyp, Other m.p.	
Lab ID # 532-02093-004			3) 4) Mar-27-12	Drywall-Off-White
WLSH-201-3	**<1%**	**Chrysotile**	1) 2-10% Cellulose, Fiberglass 2) 90-98% Gyp,Calc,Mica,Qtz,Opq	
Lab ID # 532-02093-004B			3) 4) Mar-27-12	JointCom/Text-Off-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst Jo Ann Hewitt

ASBESTOS TEM LABORATORIES, INC.
www.asbestostemlabs.com
630 Bancroft Way, Berkeley CA 94710 (510) 704-8930
With Offices in Reno, NV (775) 359-3377

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

Samples Indicated: 32
Reg. Samples Analyzed: 32
Split Layers Analyzed: 23

Job Site / No. 50 Chemical Way
F10606 - CC

Report No. **308648**
Date Submitted: Mar-23-12
Date Reported: Mar-26-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
WLSH-201-3		**None Detected**	1) None Detected 2) 99-100% Qtz, Opq, Glue, Other m.p.	
Lab ID # 532-02093-004C			3) 4) Mar-27-12	Paint/Mastic-Off-White
WLSH-201-3		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Gyp, Mica, Qtz	
Lab ID # 532-02093-004D			3) 4) Mar-26-12	Texture-White
WLTX-202-1		**None Detected**	1) None Detected 2) 99-100% Calc, Other m.p.	
Lab ID # 532-02093-005A			3) 4) Mar-26-12	Skim Coat-Off-White
WLTX-202-1	**1-5%**	**Chrysotile**	1) None Detected 2) 95-99% Calc, Other m.p.	
Lab ID # 532-02093-005B			3) 4) Mar-26-12	Texture-Off-White
WLTX-202-2		**None Detected**	1) None Detected 2) 99-100% Calc, Other m.p.	
Lab ID # 532-02093-006A			3) 4) Mar-26-12	Skim Coat-Off-White
WLTX-202-2	**1-5%**	**Chrysotile**	1) None Detected 2) 95-99% Calc, Other m.p.	
Lab ID # 532-02093-006B			3) 4) Mar-26-12	Texture-Off-White
WLTX-202-3		**None Detected**	1) None Detected 2) 99-100% Calc, Other m.p.	
Lab ID # 532-02093-007A			3) 4) Mar-26-12	Skim Coat-Off-White
WLTX-202-3	**1-5%**	**Chrysotile**	1) None Detected 2) 95-99% Calc, Other m.p.	
Lab ID # 532-02093-007B			3) 4) Mar-26-12	Texture-Off-White
WLPNL-203-1	**1-5%**	**Chrysotile**	1) None Detected 2) 95-99% GlassFoam, Other m.p.	
Lab ID # 532-02093-008			3) 4) Mar-26-12	Plaster-Off-White
FLCERMIC-204-1		**None Detected**	1) None Detected 2) 99-100% Calc, Qtz, Opq	
Lab ID # 532-02093-009A			3) 4) Mar-26-12	CerTile-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst Jo Ann Hewitt

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

Samples Indicated: 32
Reg. Samples Analyzed: 32
Split Layers Analyzed: 23

Job Site / No. 50 Chemical Way
F10606 - CC

Report No. **308648**
Date Submitted: Mar-23-12
Date Reported: Mar-26-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
FLCERMIC-204-1 Lab ID # 532-02093-009B		**None Detected**	1) None Detected 2) 99-100% Qtz, Opq, Other m.p. 3) 4) Mar-26-12	Grout-Pink
PAINT-205-1 Lab ID # 532-02093-010		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p. 3) 4) Mar-26-12	Paint-Off-White
PAINT-205-2 Lab ID # 532-02093-011		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p. 3) 4) Mar-26-12	Paint-Off-White
PAINT-205-3 Lab ID # 532-02093-012		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p. 3) 4) Mar-26-12	Paint-Off-White
CAULK-206-1 Lab ID # 532-02093-013		**None Detected**	1) None Detected 2) 99-100% Calc, Bndr 3) 4) Mar-26-12	Caulk-Grey
WLGLUE-207-1 Lab ID # 532-02093-014		**None Detected**	1) None Detected 2) 99-100% Glue 3) 4) Mar-26-12	Mastic-Yellow
PAINT-208-1 Lab ID # 532-02093-015		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p. 3) 4) Mar-26-12	Paint-Off-White
PAINT-208-2 Lab ID # 532-02093-016		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p. 3) 4) Mar-26-12	Paint-Off-White
PAINT-209-1 Lab ID # 532-02093-017		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p. 3) 4) Mar-26-12	Paint-Grey
WLSH-210-1 Lab ID # 532-02093-018A		**None Detected**	1) 1-5% Fiberglass 2) 95-99% Gyp, Other m.p. 3) 4) Mar-26-12	Drywall-Off-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst Jo Ann Hunter

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POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

Samples Indicated: 32
Reg. Samples Analyzed: 32
Split Layers Analyzed: 23

Job Site / No. 50 Chemical Way
F10606 - CC

Report No. **308648**
Date Submitted: Mar-23-12
Date Reported: Mar-26-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
WLSH-210-1		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Bndr, Mica, Other m.p.	
Lab ID # 532-02093-018B			3) 4) Mar-26-12	JointCom/Text-Off-White
WLSH-210-1		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Gyp, Mica, Qtz	
Lab ID # 532-02093-018C			3) 4) Mar-26-12	Texture-Off-White
WLSH-210-2		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Bndr, Mica, Other m.p.	
Lab ID # 532-02093-019A			3) 4) Mar-26-12	JointCom/Text-Off-White
WLSH-210-2		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Gyp, Mica, Qtz	
Lab ID # 532-02093-019B			3) 4) Mar-26-12	Texture-Off-White
WLSH-210-3		**None Detected**	1) 1-5% Fiberglass 2) 95-99% Gyp, Other m.p.	
Lab ID # 532-02093-020A			3) 4) Mar-26-12	Drywall-Off-White
WLSH-210-3		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Bndr, Mica, Other m.p.	
Lab ID # 532-02093-020B			3) 4) Mar-26-12	JointCom/Text-Off-White
WLSH-210-3		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Gyp, Mica, Qtz	
Lab ID # 532-02093-020C			3) 4) Mar-26-12	Texture-Off-White
PAINT-211-1		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p.	
Lab ID # 532-02093-021			3) 4) Mar-26-12	Paint-Off-White
CLLI-212-1		**None Detected**	1) 99-100% Cellulose 2) <1% Paint	
Lab ID # 532-02093-022			3) 4) Mar-26-12	Ceiling Tile-Grey
FLVCT-213-1		**None Detected**	1) None Detected 2) 99-100% Calc, Bndr	
Lab ID # 532-02093-023A			3) 4) Mar-26-12	Floor Tile-Pink

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst Jo Ann Hewitt

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

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Job Site / No. 50 Chemical Way
F10606 - CC

Report No. **308648**
Date Submitted: Mar-23-12
Date Reported: Mar-26-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
FLVCT-213-1 Lab ID # 532-02093-023B		**None Detected**	1) None Detected 2) 99-100% Glue 3) 4) Mar-26-12	Mastic-Yellow
STUCCO-214-1 Lab ID # 532-02093-024A		**None Detected**	1) None Detected 2) 99-100% Qtz, Opq, Other m.p. 3) 4) Mar-26-12	Stucco-Grey
STUCCO-214-1 Lab ID # 532-02093-024B		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p. 3) 4) Mar-26-12	Paint-Beige
STUCCO-214-2 Lab ID # 532-02093-025A		**None Detected**	1) None Detected 2) 99-100% Qtz, Opq, Other m.p. 3) 4) Mar-26-12	Stucco-Grey
STUCCO-214-2 Lab ID # 532-02093-025B		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p. 3) 4) Mar-26-12	Paint-Beige
STUCCO-214-3 Lab ID # 532-02093-026A		**None Detected**	1) None Detected 2) 99-100% Qtz, Opq, Other m.p. 3) 4) Mar-26-12	Stucco-Grey
STUCCO-214-3 Lab ID # 532-02093-026B		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p. 3) 4) Mar-26-12	Paint-Beige
PAINT-215-1 Lab ID # 532-02093-027		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p. 3) 4) Mar-26-12	Paint-Beige
CAULK-216-1 Lab ID # 532-02093-028		**None Detected**	1) None Detected 2) 99-100% Calc, Bndr 3) 4) Mar-26-12	Caulk-Grey
PUTTY-219-1 Lab ID # 532-02093-029	**5-10%**	**Chrysotile**	1) None Detected 2) 90-95% Calc, Bndr, Other m.p. 3) 4) Mar-26-12	Putty-Beige

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst Jo Ann Hurtte

ASBESTOS TEM LABORATORIES, INC.
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With Offices in Reno, NV (775) 359-3377

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

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Split Layers Analyzed: 23

Job Site / No. 50 Chemical Way
F10606 - CC

Report No. **308648**
Date Submitted: Mar-23-12
Date Reported: Mar-26-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD LAB
RFPEN-220-1 Lab ID # 532-02093-030A		**None Detected**	1) 60-70% Cellulose 2) 30-40% Tar, Other m.p. 3) 4) Mar-26-12	Roofing Felt-Black
RFPEN-220-1 Lab ID # 532-02093-030B		**None Detected**	1) None Detected 2) 99-100% Tar, Opq, Qtz, Other m.p. 3) 4) Mar-26-12	Roof Mastic-Black
RFPEN-220-1 Lab ID # 532-02093-030C		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p. 3) 4) Mar-26-12	Paint-Beige
RFAG-221-1 Lab ID # 532-02093-031		**None Detected**	1) 10-20% Cellulose,Fiberglass 2) 80-90% Calc, Tar, Qtz, Opq 3) 4) Mar-26-12	Roofing Felt/Tar-Black
RFAG-221-2 Lab ID # 532-02093-032		**None Detected**	1) 10-20% Cellulose,Fiberglass 2) 80-90% Calc, Tar, Qtz, Opq 3) 4)Mar-26-12	Roofing Felt/Tar-Black
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst Jo Ann Hewitt

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With Offices in Reno, NV (775) 359-3377

CHAIN OF CUSTODY FORM

✓ 45[illegible] Delaney St #222, SF, CA [illegible]
334 [illegible] St, Oakland, CA 94612
5[illegible] W. Century Blvd, #[illegible], LA, CA [illegible]

Tel [illegible]
Fax [illegible]

CALL TXT with results: 310-382-6[illegible]
[illegible]@messaging.sprintpcs.com

Email rpt COC & invoice: [illegible]@sca-enviro.com
jyoung@sca-enviro.com

Email Prj Mgr Name:
Chuck Siu Glenn Cass Christina Cademo

EMAIL HEADING: (Project #) (Project Manager Initials) (Site Name, Address) (Date MMDD)
F1066 CC 50 Chemical Way 03/22

LAB
ATEN

Accounting Data:

COURIER: pick-up
LAB REP NOTIFIED: Notification DATE TIME:
AIRBILL FLIGHT NO.: Shipper REFERENCE I.D.:
EST. ARRIVAL DATE: EST. ARRIVAL TIME:

Method Reference: 7400 PCM | AHERA-25 | CARB AHERA TEM 0.001 s/cc Detection Limit
PLM (asbestos) | Flame AA (Lead)

Sample Media: 25 37 mm | 0.45 .08 micron | MCEF | (Bulk) | Water | Wipe

RESULTS DUE: 03/27 | 10:00 AM / PM

CHAIN OF CUSTODY DATA:
Sending Info: 32 samples submitted by JY (SCA) on 03/22 at 5:30 PM
Received by Lab: 32 samples received by [illegible] on 3/23 at 8:15
Received by Analyst: _____ samples received by _____ on _____ at _____

SAMPLE ID	LITERS	Results	Ins/Blanks/Outs
FLUCT-200-1			
WLSH-201-1,2,3			
WLTX-202-1,2,3			
WLPNL-203-1			
FLCERMSC-204-1			
paint-205-1,2,3			
caulk-206-1			
WLGlue-207-1			
paint-208-1,2			
paint-209-1			
WLSH-210-1,2,3			
paint-211-1			
CLLI-212-1			
FLVCT-213-1			
Stucco-214-1,2,3			
Paint-215-1			
	0 LITERS		BLANK
	0 LITERS		BLANK
	0 LITERS		BLANK

	ASBESTOS										LEAD									
	Units (each)										Units (each)									
	PCM NIOSH 7400										Flame AA									
	PLM Bulk										Wipes									
	CARB 435 (400 Pt Ct) w/ prep																			
	PLM Std Point Count 400)																			
	TEM AHERA																			
	CARB AHERA 35-40 grid openings																			
	CARB AHERA 10-15 grid openings																			
	< 6 hours										< 6 hours									
	1 to 9	10 to 40	>40								1 to 9	10 to 40	>40							
	24 hours										24 hours									
	1 to 9	10 to 40	>40								1 to 9	10 to 40	>40							
	48 hours										48 hours									
	1 to 9	10 to 40	>40								1 to 9	10 to 40	>40							
	3 to 5 days										3 to 5 days									
	1 to 9	10 to 40	>40								1 to 9	10 to 40	>40							
	> 5 days										> 5 days									
	1 to 9	10 to 40	>40								1 to 9	10 to 40	>40							
	32																			

INSTRUCTIONS TO LAB (delete items not applicable AND circle items applicable):
1. Pickup requested: 11.: _____
Contact: _____
Time of Call: _____
2. Call SCA's contact to acknowledge receipt of samples.
3. Analyze samples by PCM only.
4. Analyze inside samples by PCM first; if any sample >0.01 f/cc, contact SCA.
5. If all samples are <0.01 f/cc, proceed with items 6, 7 or 8, as noted.
6. Analyze inside samples only; stop if Avg >70 str/mm^2, contact SCA before analyzing outsides or blanks.
7. Analyze all samples, including outside samples and blanks.
8. Do NOT analyze outside or blank samples.
9. Analyze by TEM only the inside air sample with the highest PCM result.
10. Serial analysis; stop at first positive (>1%); first trace (<0.1%);except sheetrock and plaster samples.
11. Analyze all bulk samples, unless otherwise indicated.

Report Number: 30864[illegible]

Invoice Number:

Supplies/Equipment	Qty
Hi-Vol (3040)	
Lo-Vol (3020)	
TEM - Pb cassettes (3520)	
PCM cassettes (3500)	
Bulk sampling supply (3710)	32

CHAIN OF CUSTODY FORM

	Tel	Fax
✓ 55 Delaney St #222, SF, CA 94102	[illegible]	[illegible]
234 16th St, Oakland, CA 94612	[illegible]	[illegible]
5707 W. Century Blvd #649, LA, CA 90045	[illegible]	[illegible]

CALL, TXT with results:

[illegible]@messaging.sprintpcs.com

Email rpt COC & invoice: [illegible]@sca-enviro.com

Email Prj Mgr Name:
Chuck Siu Glenn Cass Christina Codemo

Accounting Data:

EMAIL HEADING: (Project #) (Project Manager Initials) (Site Name, address) (Date MMDD)

A0606 CC 50 Chemical Way 03/22

LAB ATEM

COURIER ~~Drop off~~ pickup

LAB REP NOTIFIED — Notification DATE TIME

AIRBILL FLIGHT NO. — Shipper REFERENCE I.D.

EST. ARRIVAL DATE: — EST. ARRIVAL TIME

Method Reference: 7400 PCM | AHERA TEM | CARB-AHERA TEM 0.001 s/cc Detection Limit

(PLM (asbestos)) | Flame AA (Lead)

Sample Media: 25 37 mm | 0.45 .08 micron | MCEF (Bulk) Water Wipe

RESULTS DUE: 03/27 | 0100 (AM) / PM

CHAIN OF CUSTODY DATA:

Sending Info: _____ samples submitted by _____ (SCA) on _____ at _____

Received by Lab: _____ samples received by _____ on _____ at _____

Received by Analyst: _____ samples received by _____ on _____ at _____

SAMPLE ID	LITERS	Results	Ins/Blanks/Outs
Caulk-216-1			
Putty-219-1			
RFPEN-220-1			
RFAG-221-1,2			
	0 LITERS		BLANK
	0 LITERS		BLANK
	0 LITERS		BLANK

ASBESTOS	< 6 hours			24 hours			48 hours			3 to 5 days			> 6 days		
Units (each)	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40
PCM NIOSH 7400															
PLM Bulk															
CARB 435 (400 Pt Ct) w/ prep															
PLM Std Point Count 400)															
TEM AHERA															
CARB AHERA 35-40 grid openings															
CARB AHERA 10-15 grid openings															

LEAD	< 6 hours			24 hours			48 hours			3 to 5 days			> 6 days		
Units (each)	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40
Flame AA															
Wipes															

INSTRUCTIONS TO LAB (delete items not applicable AND circle items applicable):

1. Pickup requested: 11. : _____

Contact: _____

Time of Call: _____

2. Call SCA's contact to acknowledge receipt of samples.
3. Analyze samples by PCM only.
4. Analyze inside samples by PCM first; if any sample >0.01 f/cc, contact SCA.
5. If all samples are <0.01 f/cc, proceed with items 6, 7 or 8, as noted.
6. Analyze inside samples only; stop if Avg >70 str/mm^2, contact SCA before analyzing outsides or blanks.
7. Analyze all samples, including outside samples and blanks.
8. Do NOT analyze outside or blank samples.
9. Analyze by TEM only the inside air sample with the highest PCM result.
10. Serial analysis; stop at first positive (>1%); first trace (<0.1%);except sheetrock and plaster samples.
11. Analyze all bulk samples, unless otherwise indicated.

Report Number: 308648

Invoice Number:

Supplies /Equipment	Qty
Hi-Vol (3040)	
Lo-Vol (3020)	
TEM - Pb cassettes (3520)	
PCM cassettes (3500)	
Bulk sampling supply (3710)	

page #2

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

Samples Indicated: 30
Reg. Samples Analyzed: 30
Split Layers Analyzed: 25

Job Site / No. 20 Chemical Way
F10606-CC

Report No. **308656**
Date Submitted: Mar-23-12
Date Reported: Mar-28-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
FLVCT-100-1	**1-5%**	**Chrysotile**	1) 1-5% Cellulose 2) 90-98% Bndr, Calc, Qtz	
Lab ID # 532-02096-001A			3) 4) Mar-26-12	Floor Tile-Beige
FLVCT-100-1	**1-5%**	**Chrysotile**	1) None Detected 2) 95-99% Tar, Bndr, Calc, Other m.p.	
Lab ID # 532-02096-001B			3) 4) Mar-26-12	Mastic-Black
CLLI-101-1		**None Detected**	1) 70-80% Cellulose 2) 20-30% GlassFoam, Other m.p.	
Lab ID # 532-02096-002			3) 4) Mar-26-12	Ceiling Tile-Beige
PAINT-102-1		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p.	
Lab ID # 532-02096-003A			3) 4) Mar-26-12	Paint-Beige
PAINT-102-1		**None Detected**	1) None Detected 2) 99-100% Qtz, Opq, Other m.p.	
Lab ID # 532-02096-003B			3) 4) Mar-26-12	Concrete-Grey
PAINT-102-2		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p.	
Lab ID # 532-02096-004			3) 4) Mar-26-12	Paint-Beige
PAINT-102-3		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p.	
Lab ID # 532-02096-005			3) 4) Mar-26-12	Paint-Beige
PAINT-102-4		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p.	
Lab ID # 532-02096-006			3) 4) Mar-26-12	Paint-Beige
PAINT-102-5		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p.	
Lab ID # 532-02096-007			3) 4) Mar-26-12	Paint-Beige
PAINT-102-6		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p.	
Lab ID # 532-02096-008			3) 4) Mar-26-12	Paint-Beige

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst Jo Ann Hewitt

ASBESTOS TEM LABORATORIES, INC.
www.asbestostemlabs.com
630 Bancroft Way, Berkeley CA 94710 (510) 704-8930
With Offices in Reno, NV (775) 359-3377

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

Samples Indicated: 30
Reg. Samples Analyzed: 30
Split Layers Analyzed: 25

Job Site / No. 20 Chemical Way
F10606-CC

Report No. **308656**
Date Submitted: Mar-23-12
Date Reported: Mar-28-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
PAINT-102-7		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p.	
Lab ID # 532-02096-009			3) 4) Mar-26-12	Paint-Beige
WLSH-103-1		**None Detected**	1) None Detected 2) 99-100% Calc, Bndr	
Lab ID # 532-02096-010A			3) 4) Mar-26-12	Baseboard-Brown
WLSH-103-1		**None Detected**	1) 1-5% Fiberglass 2) 95-99% Gyp, Other m.p.	
Lab ID # 532-02096-010B			3) 4) Mar-26-12	Drywall-Off-White
WLSH-103-1	**<1%**	**Chrysotile**	1) None Detected 2) 100-100% Calc, Other m.p.	
Lab ID # 532-02096-010C			3) 4) Mar-26-12	Texture-Off-White
WLSH-103-1		**None Detected**	1) None Detected 2) 99-100% Glue, Opq, Calc, Qtz	
Lab ID # 532-02096-010D			3) 4) Mar-26-12	Paint-Off-White
WLSH-103-2		**None Detected**	1) None Detected 2) 99-100% Calc, Bndr	
Lab ID # 532-02096-011A			3) 4) Mar-26-12	Baseboard-Brown
WLSH-103-2		**None Detected**	1) 1-5% Fiberglass 2) 95-99% Gyp, Other m.p.	
Lab ID # 532-02096-011B			3) 4) Mar-26-12	Drywall-Off-White
WLSH-103-2	**<1%**	**Chrysotile**	1) None Detected 2) 100-100% Calc, Other m.p.	
Lab ID # 532-02096-011C			3) 4) Mar-26-12	Texture-Off-White
WLSH-103-2		**None Detected**	1) None Detected 2) 99-100% Glue, Opq, Calc, Qtz	
Lab ID # 532-02096-011D			3) 4) Mar-26-12	Paint-Off-White
WLSH-103-2		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Bndr, Mica, Other m.p.	
Lab ID # 532-02096-011E			3) 4) Mar-26-12	JointCom/Text-Off-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst Jo Ann Hewitt

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630 Bancroft Way, Berkeley CA 94710 (510) 704-8930
With Offices in Reno, NV (775) 359-3377

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

Samples Indicated: 30
Reg. Samples Analyzed: 30
Split Layers Analyzed: 25

Job Site / No. 20 Chemical Way
F10606-CC

Report No. **308656**
Date Submitted: Mar-23-12
Date Reported: Mar-28-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
WLSH-103-3		**None Detected**	1) None Detected 2) 99-100% Calc, Bndr	
Lab ID # 532-02096-012A			3) 4) Mar-26-12	Baseboard-Brown
WLSH-103-3		**None Detected**	1) 1-5% Fiberglass 2) 95-99% Gyp, Other m.p.	
Lab ID # 532-02096-012B			3) 4) Mar-26-12	Drywall-Off-White
WLSH-103-3	**<1%**	**Chrysotile**	1) None Detected 2) 100-100% Calc, Other m.p.	
Lab ID # 532-02096-012C			3) 4) Mar-26-12	Texture-Off-White
WLSH-103-3		**None Detected**	1) None Detected 2) 99-100% Glue, Opq, Calc, Qtz	
Lab ID # 532-02096-012D			3) 4) Mar-26-12	Paint-Off-White
WLSH-103-3		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Bndr, Mica, Other m.p.	
Lab ID # 532-02096-012E			3) 4) Mar-26-12	JointCom/Text-Off-White
CAULK-104-1		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Bndr, Other m.p.	
Lab ID # 532-02096-013			3) 4) Mar-26-12	Caulk-Grey
SHOWER CER-105-1		**None Detected**	1) None Detected 2) 99-100% Calc, Qtz, Opq	
Lab ID # 532-02096-014A			3) 4) Mar-26-12	CerTile-White
SHOWER CER-105-1		**None Detected**	1) None Detected 2) 99-100% Qtz, Opq, Other m.p.	
Lab ID # 532-02096-014B			3) 4) Mar-26-12	Grout-Black
CERAMIC-106-1		**None Detected**	1) None Detected 2) 99-100% Calc, Qtz, Opq	
Lab ID # 532-02096-015A			3) 4) Mar-26-12	CerTile-Off-White
CERAMIC-106-1		**None Detected**	1) None Detected 2) 99-100% Qtz, Opq, Other m.p.	
Lab ID # 532-02096-015B			3) 4) Mar-26-12	Grout-Beige/Pink

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst Jo Ann Hewitt

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

Samples Indicated: 30
Reg. Samples Analyzed: 30
Split Layers Analyzed: 25

Job Site / No. 20 Chemical Way
F10606-CC

Report No. **308656**
Date Submitted: Mar-23-12
Date Reported: Mar-28-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
FORMICA-107-1 Lab ID # 532-02096-016A		**None Detected**	1) 50-60% Cellulose 2) 40-50% Bndr 3) 4) Mar-26-12	Formica-Brown
FORMICA-107-1 Lab ID # 532-02096-016B		**None Detected**	1) None Detected 2) 99-100% Glue 3) 4) Mar-26-12	Mastic-Yellow
FLGLUE-108-1 Lab ID # 532-02096-017A		**None Detected**	1) None Detected 2) 99-100% Calc, Bndr 3) 4) Mar-26-12	Vinyl Sheet Floor-Grey
FLGLUE-108-1 Lab ID # 532-02096-017B		**None Detected**	1) None Detected 2) 99-100% Glue 3) 4) Mar-26-12	Mastic-Tan
FLGLUE-108-1 Lab ID # 532-02096-017C		**None Detected**	1) None Detected 2) 99-100% Calc, Mica, Other m.p. 3) 4) Mar-26-12	LevelCmpd-Grey
FLGLUE-108-1 Lab ID # 532-02096-017D		**None Detected**	1) 6-15% Fiberglass,Cellulose 2) 85-94% Calc, Gyp, Other m.p. 3) 4) Mar-26-12	Plaster-Off-White
FLGLUE-108-1 Lab ID # 532-02096-017E	**1-5%**	**Chrysotile**	1) None Detected 2) 95-99% Tar, Bndr, Calc, Other m.p. 3) 4) Mar-26-12	Mastic-Brown
CAULK-110-1 Lab ID # 532-02096-018		**None Detected**	1) 10-20% Cellulose 2) 80-90% Bndr, Calc, Glue, Qtz 3) 4) Mar-26-12	Caulk-Off-White
PAINT-111-1 Lab ID # 532-02096-019		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p. 3) 4) Mar-26-12	Paint-Off-White
PAINT-111-2 Lab ID # 532-02096-020		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p. 3) 4) Mar-26-12	Paint-Off-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst Jo Ann Hewitt

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

Samples Indicated: 30
Reg. Samples Analyzed: 30
Split Layers Analyzed: 25

Job Site / No. 20 Chemical Way
F10606-CC

Report No. **308656**
Date Submitted: Mar-23-12
Date Reported: Mar-28-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
PAINT-111-3		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p.	
Lab ID # 532-02096-021			3) 4) Mar-26-12	Paint-Off-White
WLTX-112-1		**None Detected**	1) 1-5% Fiberglass 2) 95-99% Gyp, Other m.p.	
Lab ID # 532-02096-022A			3) 4) Mar-26-12	Drywall-Off-White
WLTX-112-1		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Gyp, Mica, Qtz	
Lab ID # 532-02096-022B			3) 4) Mar-26-12	Texture-Off-White
WLTX-112-2		**None Detected**	1) 1-5% Fiberglass 2) 95-99% Gyp, Other m.p.	
Lab ID # 532-02096-023A			3) 4) Mar-26-12	Drywall-Off-White
WLTX-112-2		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Gyp, Mica, Qtz	
Lab ID # 532-02096-023B			3) 4) Mar-26-12	Texture-Off-White
WLTX-112-3		**None Detected**	1) 1-5% Fiberglass 2) 95-99% Gyp, Other m.p.	
Lab ID # 532-02096-024A			3) 4) Mar-26-12	Drywall-Off-White
WLTX-112-3		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Gyp, Mica, Qtz	
Lab ID # 532-02096-024B			3) 4) Mar-26-12	Texture-Off-White
WLTX-112-3	**1-5%**	**Chrysotile**	1) None Detected 2) 95-99% Calc, Other m.p.	
Lab ID # 532-02096-024C			3) 4) Mar-26-12	Texture-Off-White
RFPEN-113-1		**None Detected**	1) 5-10% Cellulose 2) 90-95% Tar, Other m.p.	
Lab ID # 532-02096-025A			3) 4) Mar-26-12	Roof Mastic-Black
RFPEN-113-1		**None Detected**	1) 60-70% Cellulose 2) 30-40% Tar, Other m.p.	
Lab ID # 532-02096-025B			3) 4) Mar-26-12	Roofing Felt-Black

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst Jo Ann Hewitt

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With Offices in Reno, NV (775) 359-3377

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

Samples Indicated: 30
Reg. Samples Analyzed: 30
Split Layers Analyzed: 25

Job Site / No. 20 Chemical Way
F10606-CC

Report No. **308656**
Date Submitted: Mar-23-12
Date Reported: Mar-28-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
RFPEN-113-2		**None Detected**	1) 10-20% Cellulose,Fiberglass 2) 80-90% Calc, Tar, Qtz, Opq	
Lab ID # 532-02096-026			3) 4) Mar-26-12	Roofing Felt/Tar-Black
RFAG-114-1		**None Detected**	1) 10-20% Cellulose,Fiberglass 2) 80-90% Calc, Tar, Qtz, Opq	
Lab ID # 532-02096-027			3) 4) Mar-26-12	Roofing Felt/Tar-Black
RFAG-114-2		**None Detected**	1) 10-20% Cellulose,Fiberglass 2) 80-90% Calc, Tar, Qtz, Opq	
Lab ID # 532-02096-028			3) 4) Mar-26-12	Roofing Felt/Tar-Black
RFAG-114-3		**None Detected**	1) 10-20% Cellulose,Fiberglass 2) 80-90% Calc, Tar, Qtz, Opq	
Lab ID # 532-02096-029			3) 4) Mar-26-12	Roofing Felt/Tar-Black
PAINT-115-1		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p.	
Lab ID # 532-02096-030			3) 4) Mar-26-12	Paint-Grey
			1) 2)	
Lab ID #			3) 4)	
			1) 2)	
Lab ID #			3) 4)	
			1) 2)	
Lab ID #			3) 4)	
			1) 2)	
Lab ID #			3) 4)	
			1) 2)	
Lab ID #			3) 4)	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst Jo Ann Hewitt

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www.asbestostemlabs.com
630 Bancroft Way, Berkeley CA 94710 (510) 704-8930
With Offices in Reno, NV (775) 359-3377

CHAIN OF CUSTODY FORM

✓		Tel	Fax
✓	55_ Delancey St #222, SF, CA [illegible]	[illegible]	[illegible]
	3_4 1_th St, Oakland, CA 94612	[illegible]	[illegible]
	5777 W. Century Blvd #1_55, LA, CA [illegible]	[illegible]	[illegible]

CALL/TXT with results: 310-382-6444
@messaging.sprintpcs.com

Email rpt COC & invoice: ICodemo @sca-enviro.com
Jyoung @sca-enviro.com

Email Prj Mgr Name: Chuck Siu · Glenn Cass · (Christina Codemo)

EMAIL HEADING: (Project #) - (Project Manager Initials) - (Site Name Address) - (Date MMDD)

F10606 · CC · 20 Chemical Way · 03/22

LAB: ATEM

Accounting Data:

COURIER	~~Drop off~~ pick-up		
LAB REP NOTIFIED:		Notification DATE TIME:	
AIRBILL FLIGHT NO.:		Shipper REFERENCE I.D.:	
EST ARRIVAL DATE:		EST. ARRIVAL TIME:	

Method Reference: 7400 PCM · AHERA TEM · CARB-AHERA TEM 0.001 s/cc Detection Limit · (PLM (asbestos)) · Flame AA (Lead)

Sample Media: 25 37 mm · 0.45 0.8 micron · MCEF · (Bulk) · Water · Wipe

RESULTS DUE: 03/27 10:00 (AM) / (PM)

CHAIN OF CUSTODY DATA:

Sending Info: 31 samples submitted by JY (SCA) on 03/22 at 5:30pm

Received by Lab: 30 samples received by PCV on 3/23 at 8:15

Received by Analyst: ______ samples received by ______ on ______ at ______

SAMPLE ID	LITERS	Results	Ins/Blanks/Outs
FLVCT-100-1			
CLLI-101-1			
paint-102-1,2,3,4,5,6,7			
WLSH-103-1,2,3			
Caulk-104-1			
Shower CER-105-1			
CERAMIC-106-1			
FORMICA-107-1			
FLGlue-108-1			
Caulk-110-1			
Paint-111-1,2,3			
WLTX-112-1,2,3			
RFPEN-113-1,2			
RFAG-114-1,2,3			
paint-115-1			
	0 LITERS		BLANK
	0 LITERS		BLANK
	0 LITERS		BLANK

Turnaround	Units (each)	ASBESTOS: PCM NIOSH 7400	PLM Bulk	CARB 435 (400 Pt Ct) w/ prep	PLM Std Point Count 400	TEM AHERA	CARB AHERA 35-40 grid openings	CARB AHERA 10-15 grid openings	LEAD: Units (each)	Flame AA	Wipes
< 6 hours	1 to 9								1 to 9		
	10 to 40								10 to 40		
	>40								>40		
24 hours	1 to 9								1 to 9		
	10 to 40								10 to 40		
	>40								>40		
48 hours	1 to 9								1 to 9		
	10 to 40								10 to 40		
	>40								>40		
3 to 5 days	1 to 9								1 to 9		
	10 to 40								10 to 40		
	>40								>40		
> 6 days	1 to 9								1 to 9		
	10 to 40								10 to 40		
	>40								>40		

INSTRUCTIONS TO LAB (delete items not applicable AND circle items applicable):

1. Pickup requested:
   Contact: ______
   Time of Call: ______
2. Call SCA's contact to acknowledge receipt of samples.
3. Analyze samples by PCM only.
4. Analyze inside samples by PCM first; if any sample >0.01 f/cc, contact SCA.
5. If all samples are <0.01 f/cc, proceed with items 6, 7 or 8, as noted.
6. Analyze inside samples only; stop if Avg >70 str/mm^2, contact SCA before analyzing outsides or blanks.
7. Analyze all samples, including outside samples and blanks.
8. Do NOT analyze outside or blank samples.
9. Analyze by TEM only the inside air sample with the highest PCM result.
10. Serial analysis; stop at first positive (>1%); first trace (<0.1%);except sheetrock and plaster samples.
11. Analyze all bulk samples, unless otherwise indicated.

11.: ______

Report Number: 3086656

Invoice Number:

Supplies/Equipment	Qty
Hi-Vol (3040)	
Lo-Vol (3020)	
TEM/Pb cassettes (3520)	
PCM cassettes (3500)	
Bulk sampling supply (3710)	3

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

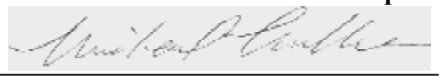
Samples Indicated: 32
Reg. Samples Analyzed: 32
Split Layers Analyzed: 33

Job Site / No. 70 Chemical
F10606 - CC

Report No. **308690**
Date Submitted: Mar-26-12
Date Reported: Mar-28-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
FLVCT-400-1 Lab ID # 532-02100-001A		**None Detected**	1) None Detected 2) 99-100% Calc, Bndr, Other m.p. 3) 4) Mar-28-12	Floor Tile-Off-White
FLVCT-400-1 Lab ID # 532-02100-001B		**None Detected**	1) 1-5% Cellulose 2) 95-99% Glue, Tar, Other m.p. 3) 4) Mar-28-12	Mastics-Yellow/black
LVCPD-401-1 Lab ID # 532-02100-002		**None Detected**	1) None Detected 2) 99-100% Calc, Other m.p. 3) 4) Mar-28-12	LevelCmpd-Off-White
LVCPD-401-2 Lab ID # 532-02100-003		**None Detected**	1) None Detected 2) 99-100% Calc, Other m.p. 3) 4) Mar-28-12	LevelCmpd-Off-White
WLSH-402-1 Lab ID # 532-02100-004A		**None Detected**	1) 1-5% Cellulose 2) 95-99% Gyp, Other m.p. 3) 4) Mar-28-12	Sheetrock-White
WLSH-402-1 Lab ID # 532-02100-004B		**None Detected**	1) None Detected 2) 99-100% Calc, Mica, Other m.p. 3) 4) Mar-28-12	Texture-White
WLSH-402-1 Lab ID # 532-02100-004C		**None Detected**	1) None Detected 2) 99-100% Paint, Other m.p. 3) 4) Mar-28-12	Paint-White
WLSH-402-1 Lab ID # 532-02100-004D		**None Detected**	1) None Detected 2) 99-100% Glue, Other m.p. 3) 4) Mar-28-12	Baseboard/Mastic-Off-White
WLSH-402-2 Lab ID # 532-02100-005A		**None Detected**	1) 1-5% Cellulose 2) 95-99% Gyp, Other m.p. 3) 4) Mar-28-12	Sheetrock-White
WLSH-402-2 Lab ID # 532-02100-005B		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Gyp, Mica, Qtz 3) 4) Mar-28-12	JointCom-Off-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst 

ASBESTOS TEM LABORATORIES, INC.
www.asbestostemlabs.com
630 Bancroft Way, Berkeley CA 94710 (510) 704-8930
With Offices in Reno, NV (775) 359-3377

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

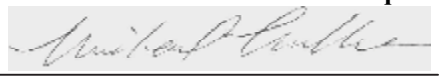
Samples Indicated: 32
Reg. Samples Analyzed: 32
Split Layers Analyzed: 33

Job Site / No. 70 Chemical
F10606 - CC

Report No. **308690**
Date Submitted: Mar-26-12
Date Reported: Mar-28-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
WLSH-402-2 Lab ID # 532-02100-005C		**None Detected**	1) None Detected 2) 99-100% Calc, Mica, Other m.p. 3) 4) Mar-28-12	Texture-White
WLSH-402-2 Lab ID # 532-02100-005D		**None Detected**	1) None Detected 2) 99-100% Paint, Other m.p. 3) 4) Mar-28-12	Paint-White
WLSH-402-2 Lab ID # 532-02100-005E		**None Detected**	1) None Detected 2) 99-100% Glue, Other m.p. 3) 4) Mar-28-12	Baseboard/Mastic-Off-White
WLSH-402-3 Lab ID # 532-02100-006A		**None Detected**	1) 1-5% Cellulose 2) 95-99% Gyp, Other m.p. 3) 4) Mar-28-12	Sheetrock-White
WLSH-402-3 Lab ID # 532-02100-006B		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Gyp, Mica, Qtz 3) 4) Mar-28-12	JointCom-Off-White
WLSH-402-3 Lab ID # 532-02100-006C		**None Detected**	1) None Detected 2) 99-100% Paint, Other m.p. 3) 4) Mar-28-12	Paint-Blue
WLTX-403-1 Lab ID # 532-02100-007A		**None Detected**	1) None Detected 2) 99-100% Calc, Perlite, Other m.p. 3) 4) Mar-28-12	Texture-White
WLTX-403-1 Lab ID # 532-02100-007B		**None Detected**	1) None Detected 2) 99-100% Paint, Other m.p. 3) 4) Mar-28-12	Paint-White
WLTX-403-2 Lab ID # 532-02100-008A		**None Detected**	1) None Detected 2) 99-100% Calc, Perlite, Other m.p. 3) 4) Mar-28-12	Texture-White
WLTX-403-2 Lab ID # 532-02100-008B		**None Detected**	1) None Detected 2) 99-100% Paint, Other m.p. 3) 4) Mar-28-12	Paint-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst 

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

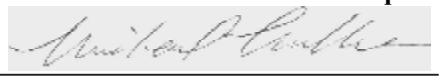
Samples Indicated: 32
Reg. Samples Analyzed: 32
Split Layers Analyzed: 33

Job Site / No. 70 Chemical
F10606 - CC

Report No. **308690**
Date Submitted: Mar-26-12
Date Reported: Mar-28-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
WLTX-403-3		**None Detected**	1) None Detected 2) 99-100% Calc, Perlite, Other m.p.	
Lab ID # 532-02100-009A			3) 4) Mar-28-12	Texture-White
WLTX-403-3		**None Detected**	1) None Detected 2) 99-100% Paint, Other m.p.	
Lab ID # 532-02100-009B			3) 4) Mar-28-12	Paint-White
FORMICA-404-1		**None Detected**	1) 50-60% Cellulose 2) 40-50% Bndr	
Lab ID # 532-02100-010A			3) 4) Mar-28-12	Formica-Tan/blue
FORMICA-404-1		**None Detected**	1) None Detected 2) 99-100% Glue, Other m.p.	
Lab ID # 532-02100-010B			3) 4) Mar-28-12	Mastic-Red
WLGL-405-1		**None Detected**	1) 20-30% Fiberglass 2) 70-80% Plast, Other m.p.	
Lab ID # 532-02100-011A			3) 4) Mar-28-12	Wall panel-White
WLGL-405-1		**None Detected**	1) None Detected 2) 99-100% Glue, Other m.p.	
Lab ID # 532-02100-011B			3) 4) Mar-28-12	Mastic-Yellow
CLLI-406-1		**None Detected**	1) 50-70% Cellulose,Mineral wool 2) 30-50% Perlite, Bndr, Other m.p.	
Lab ID # 532-02100-012			3) 4) Mar-28-12	Ceiling Tile-White/beige
RFAG-407-1		**None Detected**	1) 20-30% Fiberglass 2) 70-80% Tar, Qtz, Other m.p.	
Lab ID # 532-02100-013A			3) 4) Mar-28-12	Roofing Felt/Tar-Black
RFAG-407-1		**None Detected**	1) 20-30% Fiberglass 2) 70-80% Tar, Qtz, Other m.p.	
Lab ID # 532-02100-013B			3) 4) Mar-28-12	Roofing Felt/Tar-Black
RFAG-407-1		**None Detected**	1) 20-30% Fiberglass 2) 70-80% Tar, Qtz, Other m.p.	
Lab ID # 532-02100-013C			3) 4) Mar-28-12	Roofing Felt/Tar-Black

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst 

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

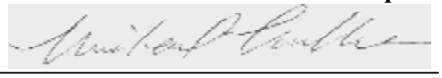
Samples Indicated: 32
Reg. Samples Analyzed: 32
Split Layers Analyzed: 33

Job Site / No. 70 Chemical
F10606 - CC

Report No. **308690**
Date Submitted: Mar-26-12
Date Reported: Mar-28-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
RFAG-407-1 Lab ID # 532-02100-013D		**None Detected**	1) 99-100% Cellulose 2) <1% Other m.p. 3) 4) Mar-28-12	Paper backing-Brown
RFAG-407-2 Lab ID # 532-02100-014A		**None Detected**	1) 20-30% Fiberglass 2) 70-80% Tar, Qtz, Other m.p. 3) 4) Mar-28-12	Roofing Felt/Tar-Black
RFAG-407-2 Lab ID # 532-02100-014B		**None Detected**	1) 20-30% Fiberglass 2) 70-80% Tar, Qtz, Other m.p. 3) 4) Mar-28-12	Roofing Felt/Tar-Black
RFAG-407-2 Lab ID # 532-02100-014C		**None Detected**	1) 20-30% Fiberglass 2) 70-80% Tar, Qtz, Other m.p. 3) 4) Mar-28-12	Roofing Felt/Tar-Black
RFAG-407-2 Lab ID # 532-02100-014D		**None Detected**	1) 99-100% Cellulose 2) <1% Other m.p. 3) 4) Mar-28-12	Paper backing-Brown
RFAG-407-3 Lab ID # 532-02100-015A		**None Detected**	1) 20-30% Fiberglass 2) 70-80% Tar, Qtz, Other m.p. 3) 4) Mar-28-12	Roofing Felt/Tar-Black
RFAG-407-3 Lab ID # 532-02100-015B		**None Detected**	1) 20-30% Fiberglass 2) 70-80% Tar, Qtz, Other m.p. 3) 4) Mar-28-12	Roofing Felt/Tar-Black
RFAG-407-3 Lab ID # 532-02100-015C		**None Detected**	1) 20-30% Fiberglass 2) 70-80% Tar, Qtz, Other m.p. 3) 4) Mar-28-12	Roofing Felt/Tar-Black
RFAG-407-3 Lab ID # 532-02100-015D		**None Detected**	1) 20-30% Fiberglass 2) 70-80% Tar, Qtz, Other m.p. 3) 4) Mar-28-12	Roofing Felt/Tar-Black
RFAG-407-3 Lab ID # 532-02100-015E		**None Detected**	1) 20-30% Fiberglass 2) 70-80% Tar, Qtz, Other m.p. 3) 4) Mar-28-12	Roofing Felt/Tar-Black

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst 

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www.asbestostemlabs.com
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POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

Samples Indicated: 32
Reg. Samples Analyzed: 32
Split Layers Analyzed: 33

Job Site / No. 70 Chemical
F10606 - CC

Report No. **308690**
Date Submitted: Mar-26-12
Date Reported: Mar-28-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
RFAG-407-3 Lab ID # 532-02100-015F		**None Detected**	1) 20-30% Fiberglass 2) 70-80% Tar, Qtz, Other m.p. 3) 4) Mar-28-12	Roofing Felt/Tar-Black
RFPEN-408-1 Lab ID # 532-02100-016		**None Detected**	1) None Detected 2) 99-100% Tar, Opq, Qtz, Other m.p. 3) 4) Mar-28-12	Tar-Black
CAULK-409-1 Lab ID # 532-02100-017		**None Detected**	1) None Detected 2) 99-100% Bndr, Other m.p. 3) 4) Mar-28-12	Caulk-Black
FLMAS-410-1 Lab ID # 532-02100-018		**None Detected**	1) 2-10% Cellulose,Synthetics 2) 90-98% Glue, Tar, Other m.p. 3) 4) Mar-28-12	Flooring mastic-Yellow/black
FLVCT-411-1 Lab ID # 532-02100-019A		**None Detected**	1) None Detected 2) 99-100% Calc, Bndr 3) 4) Mar-28-12	Floor Tile-Grey
FLVCT-411-1 Lab ID # 532-02100-019B		**None Detected**	1) None Detected 2) 99-100% Glue, Other m.p. 3) 4) Mar-28-12	Mastic-Yellow
PAINT-412-1 Lab ID # 532-02100-020		**None Detected**	1) None Detected 2) 99-100% Paint, Other m.p. 3) 4) Mar-28-12	Paint-Grey
PAINT-413-1 Lab ID # 532-02100-021		**None Detected**	1) None Detected 2) 99-100% Paint, Other m.p. 3) 4) Mar-28-12	Paint-White
PAINT-413-2 Lab ID # 532-02100-022		**None Detected**	1) None Detected 2) 99-100% Paint, Other m.p. 3) 4) Mar-28-12	Paint-White
FLVCS-414-1 Lab ID # 532-02100-023A		**None Detected**	1) 15-30% Synthetics,Cellulose 2) 70-85% Plast, Bndr, Calc, Other m.p. 3) 4) Mar-28-12	Sheet Floor/Backing-Blue/grey

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst _____

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

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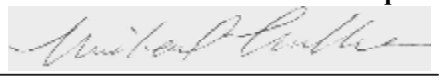
FLVCS-414-1 Lab ID # 532-02100-023B		**None Detected**	1) None Detected 2) 99-100% Glue, Other m.p. 3) 4) Mar-28-12	Mastic-Off-White
CAULK-415-1 Lab ID # 532-02100-024		**None Detected**	1) None Detected 2) 99-100% Bndr, Other m.p. 3) 4) Mar-28-12	Caulk-White
PAINT-416-1 Lab ID # 532-02100-025		**None Detected**	1) None Detected 2) 99-100% Paint, Other m.p. 3) 4) Mar-28-12	Paint-Beige/red
STUCCO-417-1 Lab ID # 532-02100-026A		**None Detected**	1) None Detected 2) 99-100% Calc, Qtz, Other m.p. 3) 4) Mar-28-12	Stucco-Grey
STUCCO-417-1 Lab ID # 532-02100-026B		**None Detected**	1) None Detected 2) 99-100% Paint, Other m.p. 3) 4) Mar-28-12	Paint-Beige
STUCCO-417-1 Lab ID # 532-02100-026C		**None Detected**	1) 90-95% Cellulose 2) 5-10% Tar, Other m.p. 3) 4) Mar-28-12	Tar Paper-Black
STUCCO-417-2 Lab ID # 532-02100-027A		**None Detected**	1) None Detected 2) 99-100% Calc, Qtz, Other m.p. 3) 4) Mar-28-12	Stucco-Grey
STUCCO-417-2 Lab ID # 532-02100-027B		**None Detected**	1) None Detected 2) 99-100% Paint, Other m.p. 3) 4) Mar-28-12	Paint-Beige
STUCCO-417-2 Lab ID # 532-02100-027C		**None Detected**	1) 90-95% Cellulose 2) 5-10% Tar, Other m.p. 3) 4) Mar-28-12	Tar Paper-Black
STUCCO-417-3 Lab ID # 532-02100-028A		**None Detected**	1) None Detected 2) 99-100% Calc, Qtz, Other m.p. 3) 4) Mar-28-12	Stucco-Grey

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst 

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
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Samples Indicated: 32
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Job Site / No. 70 Chemical
F10606 - CC

Report No. **308690**
Date Submitted: Mar-26-12
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STUCCO-417-3		**None Detected**	1) None Detected 2) 99-100% Paint, Other m.p.	
Lab ID # 532-02100-028B			3) 4) Mar-28-12	Paint-Beige
PAINT-418-1		**None Detected**	1) None Detected 2) 99-100% Paint, Other m.p.	
Lab ID # 532-02100-029			3) 4) Mar-28-12	Paint-Beige
PAINT-418-2		**None Detected**	1) None Detected 2) 99-100% Paint, Other m.p.	
Lab ID # 532-02100-030			3) 4) Mar-28-12	Paint-Beige
PAINT-418-3		**None Detected**	1) None Detected 2) 99-100% Paint, Other m.p.	
Lab ID # 532-02100-031			3) 4) Mar-28-12	Paint-Beige
FIREDOORS-419-1		**None Detected**	1) 90-95% Cellulose 2) 5-10% Other m.p.	
Lab ID # 532-02100-032			3) 4) Mar-28-12	Insulation-Brown
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst _____

CHAIN OF CUSTODY FORM

550 Delancey St #202, SF, CA 94107 — Tel 415-882-1675 — Fax 415-882-1736
334 19th St, Oakland, CA 94612 — Tel 510-645-6200 — Fax 415-882-1736
5772 W. Century Blvd. #1055, LA, CA 90045 — Tel 310-258-4269 — Fax 415-882-1736

CALL/TXT with results: 310-382-6444 @messaging.sprintpcs.com

Email rpt, COC & invoice: CCodemo @sca-enviro.com
JYoung @sca-enviro.com

Email Prj Mgr Name: Chuck Siu / Glenn Cass / (Christina Codemo)

Accounting Data:

EMAIL HEADING: Project # / Project Manager Initials / Site Name Address / Date MMDD
F10606 CC 70 Chemical 03/23

LAB: ATEM

COURIER: Dropoff
LAB REP NOTIFIED: Notification DATE TIME:
AIRBILL FLIGHT NO.: Shipper REFERENCE I.D.
EST. ARRIVAL DATE: EST. ARRIVAL TIME:

Method Reference: 7400 PCM — AHERA TEM — CARB-AHERA TEM 0.001 s/cc Detection Limit — (PLM (asbestos)) — Flame AA (Lead)

Sample Media: 25 37 mm 0.45 0.8 micron MCEF (Bulk) Water Wipe

RESULTS DUE: 03/28 10:00 (AM) / PM

CHAIN OF CUSTODY DATA:
Sending Info: 32 samples submitted by JY (SCA) on 03/23 at 6:00pm
Received by Lab: 32 samples received by PCY on 3/26 at 8:15
Received by Analyst: ____ samples received by ____ on ____ at ____

SAMPLE ID	LITERS	Results	Ins/Blanks/Outs
FLVCT-400-1			
LVCPD-401-1,2			
WLSH-402-1,2,3			
WLTX-403-1,2,3			
Formica-404-1			
WLGL-405-1			
CLLI-406-1			
RFAG-407-1,3,3			
RFPEN-408-1			
Caulk-409-1			
FLMAS-410-1			
FLVCT-411-1			
paint-412-1			
Paint-413-1,2			
FLVCS-414-1			
Caulk-415-1			
paint-416-1			
Stucco-417-1,3,3			
Paint-418-1,2,3			
Firedoors-419-1			

Turnaround	Count	PCM NIOSH 7400	PLM Bulk	CARB 435 (400 Pt Ct) w/ prep	PLM Std Point Count 400	TEM AHERA	CARB AHERA 35-40 grid openings	CARB AHERA 10-15 grid openings	LEAD: Flame AA	Wipes
< 6 hours	1 to 9									
	10 to 40									
	>40									
24 hours	1 to 9									
	10 to 40									
	>40									
48 hours	1 to 9		32							
	10 to 40									
	>40									
3 to 5 days	1 to 9									
	10 to 40									
	>40									
> 6 days	1 to 9									
	10 to 40									
	>40									

1. Pickup requested: 11.:
Contact:
Time of Call:
2. Call SCA's contact to acknowledge receipt of samples.
3. Analyze samples by PCM only.
4. Analyze inside samples by PCM first; if any sample >0.01 f/cc, contact SCA.
5. If all samples are <0.01 f/cc, proceed with items 6, 7 or 8, as noted.
6. Analyze inside samples only; stop if Avg >70 str/mm^2, contact SCA before analyzing outsides or blanks.
7. Analyze all samples, including outside samples and blanks.
8. Do NOT analyze outside or blank samples.
9. Analyze by TEM only the inside air sample with the highest PCM result.
10. Serial analysis; stop at first positive (>1%); first trace (<0.1%); except sheetrock and plaster samples.
11. Analyze all bulk samples, unless otherwise indicated.

Report Number: 308690

Invoice Number:

Supplies/Equipment	Qty
Hi-Vol (3040)	
Lo-Vol (3020)	
TEM / Pb cassettes (3520)	
PCM cassettes (3500)	
Bulk sampling supply (3710)	32

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

Samples Indicated: 41
Reg. Samples Analyzed: 38
Split Layers Analyzed: 22

Job Site / No. 80 Chemical Way
F10606-CC

Report No. **308691**
Date Submitted: Mar-26-12
Date Reported: Mar-28-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
FLVCT-300-1 Lab ID # 532-02101-001A	**1-5%**	**Chrysotile**	1) 1-5% Cellulose 2) 90-98% Bndr, Calc, Qtz 3) 4) Mar-28-12	Floor Tile-Brown
FLVCT-300-1 Lab ID # 532-02101-001B	**1-5%**	**Chrysotile**	1) None Detected 2) 95-99% Tar, Bndr, Calc, Other m.p. 3) 4) Mar-28-12	Mastic-Black
FLVCT-300-2 Lab ID # 532-02101-002		**Not Analyzed**	1) 2) 3) 4) Mar-28-12	
WLTX-301-1 Lab ID # 532-02101-003A		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Gyp, Mica, Qtz 3) 4) Mar-28-12	Texture-Beige
WLTX-301-1 Lab ID # 532-02101-003B		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Gyp, Mica, Qtz 3) 4) Mar-28-12	Texture-Off-White
WLTX-301-2 Lab ID # 532-02101-004A		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Gyp, Mica, Qtz 3) 4) Mar-28-12	Texture-Beige
WLTX-301-2 Lab ID # 532-02101-004B		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Gyp, Mica, Qtz 3) 4) Mar-28-12	Texture-Off-White
WLSH-302-1 Lab ID # 532-02101-005A		**None Detected**	1) 1-5% Fiberglass 2) 95-99% Gyp, Other m.p. 3) 4) Mar-28-12	Drywall-Off-White
WLSH-302-1 Lab ID # 532-02101-005B	**1-5%**	**Chrysotile**	1) None Detected 2) 95-99% Calc, Other m.p. 3) 4) Mar-28-12	JointCom-Off-White
WLSH-302-1 Lab ID # 532-02101-005C		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p. 3) 4) Mar-28-12	Paint-Beige

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst Jo Ann Hewitt

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

Samples Indicated: 41
Reg. Samples Analyzed: 38
Split Layers Analyzed: 22

Job Site / No. 80 Chemical Way
F10606-CC

Report No. **308691**
Date Submitted: Mar-26-12
Date Reported: Mar-28-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
WLSH-302-1		**None Detected**	1) None Detected 2) 99-100% Glue	
Lab ID # 532-02101-005D			3) 4) Mar-28-12	Mastic-Brown
WLSH-302-2		**None Detected**	1) 1-5% Fiberglass 2) 95-99% Gyp, Other m.p.	
Lab ID # 532-02101-006A			3) 4) Mar-28-12	Drywall-Off-White
WLSH-302-2	**1-5%**	**Chrysotile**	1) None Detected 2) 95-99% Calc, Other m.p.	
Lab ID # 532-02101-006B			3) 4) Mar-28-12	JointCom-Off-White
WLSH-302-3		**None Detected**	1) 1-5% Fiberglass 2) 95-99% Gyp, Other m.p.	
Lab ID # 532-02101-007A			3) 4) Mar-28-12	Drywall-Off-White
WLSH-302-3	**1-5%**	**Chrysotile**	1) None Detected 2) 95-99% Calc, Other m.p.	
Lab ID # 532-02101-007B			3) 4) Mar-28-12	JointCom-Off-White
WLPNL-303-1		**None Detected**	1) 1-5% Fiberglass 2) 95-99% Gyp, Other m.p.	
Lab ID # 532-02101-008A			3) 4) Mar-28-12	Drywall-Off-White
WLPNL-303-1		**None Detected**	1) None Detected 2) 99-100% Glue	
Lab ID # 532-02101-008B			3) 4) Mar-28-12	Mastic-Yellow
WLPNL-303-2		**None Detected**	1) 1-5% Fiberglass 2) 95-99% Gyp, Other m.p.	
Lab ID # 532-02101-009A			3) 4) Mar-28-12	Drywall-Off-White
WLPNL-303-2		**None Detected**	1) None Detected 2) 99-100% Glue	
Lab ID # 532-02101-009B			3) 4) Mar-28-12	Mastic-Yellow
CARMAS-304-1		**None Detected**	1) None Detected 2) 99-100% Glue	
Lab ID # 532-02101-010			3) 4) Mar-28-12	Mastic-Yellow

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst Jo Ann Hwatte

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

Samples Indicated: 41
Reg. Samples Analyzed: 38
Split Layers Analyzed: 22

Job Site / No. 80 Chemical Way
F10606-CC

Report No. **308691**
Date Submitted: Mar-26-12
Date Reported: Mar-28-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
WLGL-305-1 Lab ID # 532-02101-011		**None Detected**	1) None Detected 2) 99-100% Glue 3) 4) Mar-28-12	Mastic-Yellow
FLVCS-306-1 Lab ID # 532-02101-012A		**None Detected**	1) 60-70% Cellulose 2) 30-40% Calc, Bndr, Glue 3) 4) Mar-28-12	Vinyl-Black
FLVCS-306-1 Lab ID # 532-02101-012B		**None Detected**	1) None Detected 2) 99-100% Glue 3) 4) Mar-28-12	Mastic-Clear
FLVCS-306-1 Lab ID # 532-02101-012C		**None Detected**	1) None Detected 2) 99-100% Calc, Bndr 3) 4) Mar-28-12	Floor Tile-Tan
FLVCS-306-1 Lab ID # 532-02101-012D		**None Detected**	1) None Detected 2) 99-100% Glue 3) 4) Mar-28-12	Mastic-Brown
CLLI-307-1 Lab ID # 532-02101-013		**None Detected**	1) 70-80% Cellulose 2) 20-30% GlassFoam, Other m.p. 3) 4) Mar-28-12	Ceiling Tile-Grey
FORMICA-308-1 Lab ID # 532-02101-014A		**None Detected**	1) 50-60% Cellulose 2) 40-50% Bndr 3) 4) Mar-28-12	Formica-Brown
FORMICA-308-1 Lab ID # 532-02101-014B		**None Detected**	1) None Detected 2) 99-100% Glue 3) 4) Mar-28-12	Mastic-Off-White
PAINT-309-1 Lab ID # 532-02101-015		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p. 3) 4) Mar-28-12	Paint-Beige
PAINT-309-2 Lab ID # 532-02101-016		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p. 3) 4) Mar-28-12	Paint-Beige

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst Jo Ann Hewitt

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www.asbestostemlabs.com
630 Bancroft Way, Berkeley CA 94710 (510) 704-8930
With Offices in Reno, NV (775) 359-3377

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

Samples Indicated: 41
Reg. Samples Analyzed: 38
Split Layers Analyzed: 22

Job Site / No. 80 Chemical Way
F10606-CC

Report No. **308691**
Date Submitted: Mar-26-12
Date Reported: Mar-28-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
PAINT-309-3 Lab ID # 532-02101-017		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p. 3) 4) Mar-28-12	Paint-Beige
PAINT-309-4 Lab ID # 532-02101-018		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p. 3) 4) Mar-28-12	Paint-Beige
PAINT-309-5 Lab ID # 532-02101-019		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p. 3) 4) Mar-28-12	Paint-Beige
PAINT-309-6 Lab ID # 532-02101-020		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p. 3) 4) Mar-28-12	Paint-Beige
PAINT-309-7 Lab ID # 532-02101-021		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p. 3) 4) Mar-28-12	Paint-Beige
CAULK-310-1 Lab ID # 532-02101-022		**None Detected**	1) None Detected 2) 99-100% Calc, Bndr 3) 4) Mar-28-12	Caulk-Grey
CAULK-310-2 Lab ID # 532-02101-023		**None Detected**	1) None Detected 2) 99-100% Calc, Bndr 3) 4) Mar-28-12	Caulk-Grey
RFROLL-311-1 Lab ID # 532-02101-024		**None Detected**	1) 10-20% Cellulose,Fiberglass 2) 80-90% Calc, Tar, Qtz, Opq 3) 4) Mar-28-12	Roofing Felt/Tar-Black
RFROLL-311-2 Lab ID # 532-02101-025		**None Detected**	1) 10-20% Cellulose,Fiberglass 2) 80-90% Calc, Tar, Qtz, Opq 3) 4) Mar-28-12	Roofing Felt/Tar-Black
RFROLL-311-3 Lab ID # 532-02101-026		**None Detected**	1) 10-20% Cellulose,Fiberglass 2) 80-90% Calc, Tar, Qtz, Opq 3) 4) Mar-28-12	Roofing Felt/Tar-Black

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst Jo Ann Hewitt

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

Samples Indicated: 41
Reg. Samples Analyzed: 38
Split Layers Analyzed: 22

Job Site / No. 80 Chemical Way
F10606-CC

Report No. **308691**
Date Submitted: Mar-26-12
Date Reported: Mar-28-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
RFPEN-312-1 Lab ID # 532-02101-027		**None Detected**	1) 5-10% Cellulose 2) 90-95% Tar, Other m.p. 3) 4) Mar-28-12	Roof Mastic-Black
HDUTP-313-1 Lab ID # 532-02101-028		**None Detected**	1) 10-20% Cellulose 2) 80-90% Glue, Other m.p. 3) 4) Mar-28-12	Duct Wrap-Off-White
CAULK-314-1 Lab ID # 532-02101-029		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Bndr, Other m.p. 3) 4) Mar-28-12	Caulk-Grey
WLSH-315-1 Lab ID # 532-02101-030A		**None Detected**	1) 1-5% Fiberglass 2) 95-99% Gyp, Other m.p. 3) 4) Mar-28-12	Drywall-Off-White
WLSH-315-1 Lab ID # 532-02101-030B		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Gyp, Mica, Qtz 3) 4) Mar-28-12	Texture-Off-White
WLSH-315-2 Lab ID # 532-02101-031A		**None Detected**	1) 1-5% Fiberglass 2) 95-99% Gyp, Other m.p. 3) 4) Mar-28-12	Drywall-Off-White
WLSH-315-2 Lab ID # 532-02101-031B		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Gyp, Mica, Qtz 3) 4) Mar-28-12	Texture-Off-White
WLSH-315-3 Lab ID # 532-02101-032A		**None Detected**	1) 1-5% Fiberglass 2) 95-99% Gyp, Other m.p. 3) 4) Mar-28-12	Drywall-Off-White
WLSH-315-3 Lab ID # 532-02101-032B		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Gyp, Mica, Qtz 3) 4) Mar-28-12	Texture-Off-White
CLTX-316-1 Lab ID # 532-02101-033	**1-5%**	**Chrysotile**	1) None Detected 2) 95-99% Calc, Bndr, Mica, Other m.p. 3) 4) Mar-28-12	Spray-On Ceiling-Off-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst Jo Ann Hwatte

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

Samples Indicated: 41
Reg. Samples Analyzed: 38
Split Layers Analyzed: 22

Job Site / No. 80 Chemical Way
F10606-CC

Report No. **308691**
Date Submitted: Mar-26-12
Date Reported: Mar-28-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
CLTX-316-2 Lab ID # 532-02101-034		**Not Analyzed**	1) 2) 3) 4) Mar-28-12	
CLTX-316-3 Lab ID # 532-02101-035		**Not Analyzed**	1) 2) 3) 4) Mar-28-12	
FLVCT-317-1 Lab ID # 532-02101-036A		**None Detected**	1) 10-20% Cellulose 2) 80-90% Bndr, Calc, Glue, Qtz 3) 4) Mar-28-12	Floor Tile-Beige
FLVCT-317-1 Lab ID # 532-02101-036B		**None Detected**	1) None Detected 2) 99-100% Glue 3) 4) Mar-28-12	Mastic-Yellow
FLVCT-318-1 Lab ID # 532-02101-037A		**None Detected**	1) None Detected 2) 99-100% Calc, Bndr 3) 4) Mar-28-12	Floor Tile-Pink
FLVCT-318-1 Lab ID # 532-02101-037B		**None Detected**	1) None Detected 2) 99-100% Glue 3) 4) Mar-28-12	Mastic-Yellow
FLVCT-318-1 Lab ID # 532-02101-037C		**None Detected**	1) 1-5% Cellulose 2) 95-99% Calc, Bndr, Glue, Plast 3) 4) Mar-28-12	Vinyl Floor Tile-Off-White
FLVCT-318-1 Lab ID # 532-02101-037D		**None Detected**	1) None Detected 2) 99-100% Glue 3) 4) Mar-28-12	Mastic-Clear
PAINT-319-1 Lab ID # 532-02101-038		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p. 3) 4) Mar-28-12	Paint-Off-White
PAINT-319-2 Lab ID # 532-02101-039		**None Detected**	1) None Detected 2) 99-100% Glue, Qtz, Opq, Other m.p. 3) 4) Mar-28-12	Paint-Off-White

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst Jo Ann Hwatte

ASBESTOS TEM LABORATORIES, INC.
www.asbestostemlabs.com
630 Bancroft Way, Berkeley CA 94710 (510) 704-8930
With Offices in Reno, NV (775) 359-3377

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

Samples Indicated: 41
Reg. Samples Analyzed: 38
Split Layers Analyzed: 22

Job Site / No. 80 Chemical Way
F10606-CC

Report No. **308691**
Date Submitted: Mar-26-12
Date Reported: Mar-28-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA 1) Non-Asbestos Fibers 2) Matrix Materials 3) Date/Time Collected 4) Date Analyzed	DESCRIPTION FIELD / LAB
CARMAS-320-1 Lab ID # 532-02101-040		**None Detected**	1) None Detected 2) 99-100% Glue 3) 4) Mar-28-12	Mastic-Yellow
FLVCT-321-1 Lab ID # 532-02101-041A		**None Detected**	1) None Detected 2) 99-100% Calc, Bndr 3) 4) Mar-28-12	Floor Tile-Off-White
FLVCT-321-1 Lab ID # 532-02101-041B		**None Detected**	1) None Detected 2) 99-100% Glue 3) 4) Mar-28-12	Mastic-Yellow
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	
Lab ID #			1) 2) 3) 4)	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst Jo Ann Hewitt

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630 Bancroft Way, Berkeley CA 94710 (510) 704-8930
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CHAIN OF CUSTODY FORM

	Tel	Fax
654 Delaney St #202, SF, CA 94129	415-441-2676	415-441-2726
334 14th St Oakland, CA 94612	510-834-5900	415-441-2726
5777 W. Century Blvd #1055, LA, CA 90045	310-258-0840	415-441-2726

CALL, TXT with results: 310-382-6444

@messaging.sprintpcs.com

Email rpt COC & invoice: Ccodemo @sca-enviro.com
JYoung @sca-enviro.com

Email Prj Mgr Name:
Chuck Siu Glenn Cass ~~Christina Codemo~~

Accounting Data:

EMAIL HEADING: (Project #) (Project Manager Initials) (Site Name, Address) (Date MMDD)

F10606 CC 80 Chemical 03/23

LAB: ATEM

COURIER: Drop off

LAB REP NOTIFIED:		Notification DATE TIME:	
AIRBILL FLIGHT NO.:		Shipper REFERENCE I.D.:	
EST. ARRIVAL DATE:		EST. ARRIVAL TIME:	

Method Reference: 7400 PCM | AHERA TEM | CARB-AHERA TEM 0.001 s/cc Detection Limit
~~PLM (asbestos)~~ | Flame AA (Lead)

Sample Media: 25 37 mm 0.45 0.8 micron | MCEF (Bulk) Water Wipe

RESULTS DUE: 03/28 | 0200 (AM) / PM

CHAIN OF CUSTODY DATA:

Sending Info: 41 samples submitted by JY (SCA) on 03/23 at 600 pm

Received by Lab: 41 samples received by fer on 3/26 at 8:15

Received by Analyst: ____ samples received by ____ on ____ at ____

SAMPLE ID	LITERS	Results	Ins/Blanks/Outs
FLVCT-304, 2			
WLTX-301-1, 2			
WLSH-302-1, 2, 3			
WLPNL-303-1, 2			
CARMAS-304-1			
WLGL-305-1			
FLVCS-306-1			
CLG1-307-1			
Formica-308-1			
Paint-309-1, 2, 3, 4, 5, 6, 7			
Caulk-310-1, 2			
RFROLL-311-1, 2, 3			
RFPEN-312-1			
HDWTP-313-1			
Caulk-314-1			
WLSH-315-1, 2, 3			
CLTX-316-1, 2, 3			K
FLVCT-317-1			K
FLVCT-318-1			K

	ASBESTOS												LEAD					
	Units (each)	PCM NIOSH 7400	PLM Bulk	CARB 435 (400 Pt Ct w/ prep	PLM Std Point Count 400)	TEM AHERA	CARB AHERA 35-40 grid openings	CARB AHERA 10-15 grid openings					Units (each)	Flame AA Wipes				
< 8 hours	1 to 9												1 to 9					
	10 to 40												10 to 40					
	>40												>40					
24 hours	1 to 9												1 to 9					
	10 to 40												10 to 40					
	>40												>40					
48 hours	1 to 9												1 to 9					
	10 to 40												10 to 40					
	>40												>40					
3 to 5 days	1 to 9												1 to 9					
	10 to 40												10 to 40					
	>40												>40					
> 6 days	1 to 9												1 to 9					
	10 to 40												10 to 40					
	>40												>40					

41

INSTRUCTIONS TO LAB (delete items not applicable AND circle items applicable):

1. Pickup requested: 11.: _____
   Contact: _____
   Time of Call: _____
2. Call SCA's contact to acknowledge receipt of samples.
3. Analyze samples by PCM only.
4. Analyze inside samples by PCM first; if any sample >0.01 f/cc, contact SCA.
5. If all samples are <0.01 f/cc, proceed with items 6, 7 or 8, as noted.
6. Analyze inside samples only; stop if Avg >70 str/mm^2, contact SCA before analyzing outsides or blanks.
7. Analyze all samples, including outside samples and blanks.
8. Do NOT analyze outside or blank samples.
9. Analyze by TEM only the inside air sample with the highest PCM result.
10. Serial analysis; stop at first positive (>1%); first trace (<0.1%);except sheetrock and plaster samples.
11. Analyze all bulk samples, unless otherwise indicated.

Report Number: 308691

Invoice Number:

Supplies /Equipment	Qty
Hi-Vol (3040)	
Lo-Vol (3020)	
TEM / Pb cassettes (3520)	
PCM cassettes (3500)	
Bulk sampling supply (3710)	41

CHAIN OF CUSTODY FORM

	Tel	Fax
✓ 550 Delancey St #222, SF, CA 94107	415-495-0174	415-520-0736
334 16th St, Oakland, CA 94612	510-625-8200	415-520-0736
5717 W. Century Blvd. #1055, LA, CA 90045	310-258-0241	415-520-0736

CALL/TXT with results:

@messaging.sprintpcs.com

Email rpt / COC & invoice:

@sca-enviro.com

EMAIL HEADING: Project # - (Project Manager Initials) - (Site Name, Address) - (Date MMDD)

#10606 CC 80 Chemical Way 03/23

Email Prj Mgr Name:
Chuck Siu Glenn Cass Christina Codemo

LAB: ATEM

Accounting Data:

COURIER: Dropoff

LAB REP NOTIFIED: _____ Notification DATE TIME: _____

AIRBILL FLIGHT NO.: _____ Shipper REFERENCE I.D.: _____

EST. ARRIVAL DATE: _____ EST. ARRIVAL TIME: _____

Method Reference: 7400 PCM | AHERA TEM | CARB-AHERA TEM 0.001 s/cc Detection Limit

~~PLM (asbestos)~~ | Flame AA (Lead)

Sample Media: 25 37 mm | 0.45 0.8 micron | MCEF | (Bulk) | Water | Wipe

RESULTS DUE: 03/28 | 10:00 (AM) / PM

CHAIN OF CUSTODY DATA:

Sending Info: _____ samples submitted by _____ (SCA) on _____ at _____

Received by Lab: _____ samples received by _____ on _____ at _____

Received by Analyst: _____ samples received by _____ on _____ at _____

SAMPLE ID	LITERS	Results	Ins/Blanks/Outs
paint-319-1,2			
CARMAS-320-1			
FLVC7-321-1			
	0 LITERS		BLANK
	0 LITERS		BLANK
	0 LITERS		BLANK

ASBESTOS	< 6 hours			24 hours			48 hours			3 to 5 days			> 6 days		
	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40
Units (each)															
PCM NIOSH 7400															
PLM Bulk															
CARB 435 7400 Pt Ct w/ prep															
PLM Std Point Count 400															
TEM AHERA															
CARB AHERA 35-40 grid openings															
CARB AHERA 10-15 grid openings															

LEAD	< 6 hours			24 hours			48 hours			3 to 5 days			> 6 days		
	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40
Units (each)															
Flame AA															
Wipes															

INSTRUCTIONS TO LAB (delete items not applicable AND circle items applicable):

1. Pickup requested: 11. : _____

Contact: _____

Time of Call: _____

2. Call SCA's contact to acknowledge receipt of samples.
3. Analyze samples by PCM only.
4. Analyze inside samples by PCM first; if any sample >0.01 f/cc, contact SCA.
5. If all samples are <0.01 f/cc, proceed with items 6, 7 or 8, as noted.
6. Analyze inside samples only; stop if Avg >70 str/mm^2, contact SCA before analyzing outsides or blanks.
7. Analyze all samples, including outside samples and blanks.
8. Do NOT analyze outside or blank samples.
9. Analyze by TEM only the inside air sample with the highest PCM result.
10. Serial analysis; stop at first positive (>1%); first trace (<0.1%);except sheetrock and plaster samples.
11. Analyze all bulk samples, unless otherwise indicated.

Report Number: 308691

Invoice Number:

Supplies /Equipment	Qty
Hi-Vol (3040)	
Lo-Vol (3020)	
TEM - Pb cassettes (3520)	
PCM cassettes (3500)	
Bulk sampling supply (3710)	

POLARIZED LIGHT MICROSCOPY
ANALYTICAL REPORT

EPA Method 600/R-93/116 or 600/M4-82-020

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

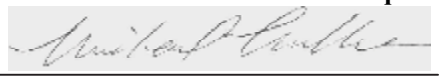
Samples Indicated: 2
Reg. Samples Analyzed: 2
Split Layers Analyzed: 7

Job Site / No. 50 Chemical
F10606 - CC

Report No. **308693**
Date Submitted: Mar-26-12
Date Reported: Mar-27-12

SAMPLE ID	ASBESTOS %	ASBESTOS TYPE	OTHER DATA (1) Non-Asbestos Fibers (2) Matrix Materials (3) Date/Time Collected (4) Date Analyzed	DESCRIPTION FIELD / LAB
RFAG-222-1 Lab ID # 532-02103-001A		**None Detected**	1) None Detected 2) 99-100% Other m.p. 3) 4) Mar-27-12	Roofing Felt/Tar-Black
RFAG-222-1 Lab ID # 532-02103-001B		**None Detected**	1) None Detected 2) 99-100% Other m.p. 3) 4) Mar-27-12	Roofing Felt/Tar-Black
RFAG-222-1 Lab ID # 532-02103-001C		**None Detected**	1) None Detected 2) 99-100% Other m.p. 3) 4) Mar-27-12	Roofing Felt/Tar-Black
RFAG-222-1 Lab ID # 532-02103-001D		**None Detected**	1) None Detected 2) 99-100% Other m.p. 3) 4) Mar-27-12	Roofing Felt/Tar-Black
RFAG-222-1 Lab ID # 532-02103-001E		**None Detected**	1) None Detected 2) 99-100% Other m.p. 3) 4) Mar-27-12	Roofing Felt/Tar-Black
RFAG-222-1 Lab ID # 532-02103-001F		**None Detected**	1) None Detected 2) 99-100% Other m.p. 3) 4) Mar-27-12	Roofing Felt/Tar-Black
RFAG-222-2 Lab ID # 532-02103-002A		**None Detected**	1) None Detected 2) 99-100% Other m.p. 3) 4) Mar-27-12	Roofing Felt/Tar-Black
RFAG-222-2 Lab ID # 532-02103-002B		**None Detected**	1) None Detected 2) 99-100% Other m.p. 3) 4) Mar-27-12	Roofing Felt/Tar-Black
RFAG-222-2 Lab ID # 532-02103-002C		**None Detected**	1) None Detected 2) 99-100% Other m.p. 3) 4) Mar-27-12	Roofing Felt/Tar-Black
Lab ID #			1) 2) 3) 4)	

Detection Limit of Method is Estimated to be 1% Asbestos Using a Visual Area Estimation Technique

Analyst 

ASBESTOS TEM LABORATORIES, INC.
www.asbestostemlabs.com
630 Bancroft Way, Berkeley CA 94710 (510) 704-8930
With Offices in Reno, NV (775) 359-3377

CHAIN OF CUSTODY FORM

√ 65 Delancey St #222, SF CA 94107 Tel [illegible] Fax [illegible]
1004 14th St Oakland CA 94612 Tel [illegible] Fax [illegible]
[illegible] W Carson Blvd #105 LA CA [illegible] Tel [illegible] Fax [illegible]

CALL, TXT with results: 310-382-6444
@messaging.sprintpcs.com

EMAIL HEADING: (Project #) (Project Manager Initials) (Site Name, Address) (Date MM/DD)
F0606 CC 50 Chemical 03/23

Email rpt COC & invoice: TYoung @sca-enviro.com

Email Prj Mgr Name:
Chuck Siu Glenn Cass Christina Codella

LAB
ATEM

Accounting Data:

COURIER: Drop off
LAB REP NOTIFIED: Notification DATE TIME:
AIRBILL FLIGHT NO.: Shipper REFERENCE I.D.
EST. ARRIVAL DATE: EST. ARRIVAL TIME:

Method Reference: 7400 PCM | AHERA TEM | CARB-AHERA TEM 0.001 s cc Detection Limit
PLM (asbestos) | Flame AA (Lead)

Sample Media: 25 37 mm 0.45 0.8 micron MCEF Bulk Water Wipe

RESULTS DUE: 03/28 10:00 AM / PM

CHAIN OF CUSTODY DATA:
Sending Info: 2 samples submitted by JY (SCA) on 03/23 at 6:00pm
Received by Lab: 2 samples received by PCV on 3/24 at 8:15
Received by Analyst: _____ samples received by _____ on _____ at _____

SAMPLE ID	LITERS	Results	Ins/Blanks/Outs
RFAG-222-1,2			
	0 LITERS		BLANK
	0 LITERS		BLANK
	0 LITERS		BLANK

ASBESTOS	< 6 hours			24 hours			48 hours			3 to 5 days			> 6 days		
	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40
Units (each)															
PCM NIOSH 7400															
PLM Bulk															
CARB 435 (400 Pt Ct) w/ prep															
PLM Std Point Count 400															
TEM AHERA															
CARB AHERA 35-40 grid openings															
CARB AHERA 10-15 grid openings															
LEAD	< 6 hours			24 hours			48 hours			3 to 5 days			> 6 days		
Units (each)															
Flame AA															
Wipes							2								

INSTRUCTIONS TO LAB (delete items not applicable AND circle items applicable):
1. Pickup requested: IL: _____
Contact: _____
Time of Call: _____
2. Call SCA's contact to acknowledge receipt of samples.
3. Analyze samples by PCM only.
4. Analyze inside samples by PCM first; if any sample >0.01 f/cc, contact SCA.
5. If all samples are <0.01 f/cc, proceed with items 6, 7 or 8, as noted.
6. Analyze inside samples only; stop if Avg >70 str/mm^2, contact SCA before analyzing outsides or blanks.
7. Analyze all samples, including outside samples and blanks.
8. Do NOT analyze outside or blank samples.
9. Analyze by TEM only the inside air sample with the highest PCM result.
10. Serial analysis; stop at first positive (>1%); first trace (<0.1%);except sheetrock and plaster samples.
11. Analyze all bulk samples, unless otherwise indicated.

Report Number: 308893

Invoice Number:

Supplies/Equipment	Qty
Hi-Vol (3040)	
Lo-Vol (3020)	
TEM / Pb cassettes (3520)	
PCM cassettes (3500)	
Bulk sampling supply (3710)	2

ATOMIC ABSORPTION SPECTROSCOPY
LEAD PAINT ANALYSIS REPORT
EPA 3050B (modified) Digestion / EPA 7420 (modified) Analysis Methods

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

Samples Submitted: 3

Samples Analyzed: 3

Job Site / No. 50 Chemical Way
F10606-CC

Report No.: **308687**
Date Submitted: Mar-23-12
Date Reported: Mar-26-12

SAMPLE ID	METAL	SAMPLE RESULT	REPORTING LIMIT	LOCATION / DESCRIPTION		
Paint-208-Pb Lab ID # 532-02098-001	Pb	**< 41 mg/kg** < 0.004 %	**41 mg/kg** 0.004 %	Sampling Date	Analysis Date Mar-26-12	Analyzed Weight (g) 0.2455
Paint-215-Pb Lab ID # 532-02098-002	Pb	**820 mg/kg** 0.082 %	**46 mg/kg** 0.005 %	Sampling Date	Analysis Date Mar-26-12	Analyzed Weight (g) 0.2191
Paint-Wood-Pb Lab ID # 532-02098-003	Pb	**< 44 mg/kg** < 0.004 %	**44 mg/kg** 0.004 %	Sampling Date	Analysis Date Mar-26-12	Analyzed Weight (g) 0.2281
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)

µg - micrograms **1% = 10,000 ppm** **1ppm = 1 mg/Kg**

Lab QC Reviewer _____ **Analyst** _____

R. Mark Bailey **Jane Zhang**

CHAIN OF CUSTODY FORM

	Tel	Fax
45[illegible] Delancey St #202, SF, CA 94[illegible]	415[illegible]675	415[illegible]758
334 19th St, Oakland, CA 94612	510-834-5200	415-642-1758
5777 W. Century Blvd. #1665, LA, CA 90[illegible]45	310[illegible]4944	415[illegible]758

CALL TXT with results: 310-382-6446

@messaging.sprintpcs.com

Email rpt COC & invoice: JYoung @sca-enviro.com

Email Prj Mgr Name: Chuck Siu Glenn Cass Christina Coderre

Accounting Data:

EMAIL HEADING: Project # | Project Manager Initials | Site Name, Address | Date MMDD

F1606 CC 50 Chemical Way 03/22

LAB

pick-up ATEM

COURIER pick-up

LAB REP NOTIFIED:		Notification DATE TIME:	
AIRBILL FLIGHT NO.:		Shipper REFERENCE I.D.:	
EST. ARRIVAL DATE:		EST. ARRIVAL TIME:	

Method Reference: 7400 PCM | AHERA TEM | CARB-AHERA TEM 0.001 s/cc Detection Limit

PLM (asbestos) | (Flame AA (Lead))

Sample Media: 25 37 mm 0.45 0.8 micron MCEF (Bulk) Water Wipe

RESULTS DUE: 03/27 10:00 (AM) PM

CHAIN OF CUSTODY DATA:

Sending Info: 3 samples submitted by JY (SCA) on 3/22 at 5:30 PM

Received by Lab: 3 samples received by RCV on 3/23 at 8:15

Received by Analyst: _____ samples received by _____ on _____ at _____

SAMPLE ID	LITERS	Results	Ins/Blanks/Outs
paint-208-Pb			
paint-215-Pb			
paint-wood-Pb			
	0 LITERS		BLANK
	0 LITERS		BLANK
	0 LITERS		BLANK

	ASBESTOS										LEAD											
	Units (each) PCM NIOSH 7400	PLM Bulk	CARB 435 (400 Pt Ct) w/ prep	PLM Std Point Count 400	TEM AHERA	CARB AHERA 35-40 grid openings	CARB AHERA 10-15 grid openings				Units (each) Flame AA Wipes											
< 8 hours	1 to 9										1 to 9											
	10 to 40										10 to 40											
	>40										>40											
24 hours	1 to 9										1 to 9											
	10 to 40										10 to 40											
	>40										>40											
48 hours	1 to 9										1 to 9	3										
	10 to 40										10 to 40											
	>40										>40											
3 to 5 days	1 to 9										1 to 9											
	10 to 40										10 to 40											
	>40										>40											
> 5 days	1 to 9										1 to 9											
	10 to 40										10 to 40											
	>40										>40											

INSTRUCTIONS TO LAB (delete items not applicable AND circle items applicable):

1. Pickup requested: 11. : _____

Contact: _____

Time of Call: _____

2. Call SCA's contact to acknowledge receipt of samples.
3. Analyze samples by PCM only.
4. Analyze inside samples by PCM first; if any sample >0.01 f/cc, contact SCA.
5. If all samples are <0.01 f/cc, proceed with items 6, 7 or 8, as noted.
6. Analyze inside samples only; stop if Avg >70 str/mm^2, contact SCA before analyzing outsides or blanks.
7. Analyze all samples, including outside samples and blanks.
8. Do NOT analyze outside or blank samples.
9. Analyze by TEM only the inside air sample with the highest PCM result.
10. Serial analysis; stop at first positive (>1%); first trace (<0.1%);except sheetrock and plaster samples.
11. Analyze all bulk samples, unless otherwise indicated.

Report Number: 308687

Invoice Number:

Supplies/Equipment	Qty
Hi-Vol (3040)	
Lo-Vol (3020)	
TEM - Pb cassettes (3520)	
PCM cassettes (3500)	
Bulk sampling supply (3710)	3

ATOMIC ABSORPTION SPECTROSCOPY
LEAD PAINT ANALYSIS REPORT
EPA 3050B (modified) Digestion / EPA 7420 (modified) Analysis Methods

Contact: Christina Codemo
Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

Samples Submitted: 3
Samples Analyzed: 3
Job Site / No. 20 Chemical Way
F10606-CC

Report No.: **308689**
Date Submitted: Mar-23-12
Date Reported: Mar-26-12

SAMPLE ID	METAL	SAMPLE RESULT	REPORTING LIMIT	LOCATION / DESCRIPTION		
WLSH-Paint-Pb Lab ID # 532-02099-001	Pb	**< 46 mg/kg** < 0.005 %	**46 mg/kg** 0.005 %	Sampling Date	Analysis Date Mar-26-12	Analyzed Weight (g) 0.2193
Paint-111-Pb Lab ID # 532-02099-002	Pb	**89 mg/kg** 0.009 %	**42 mg/kg** 0.004 %	Sampling Date	Analysis Date Mar-26-12	Analyzed Weight (g) 0.2353
Paint-102-Pb Lab ID # 532-02099-003	Pb	**< 41 mg/kg** < 0.004 %	**41 mg/kg** 0.004 %	Sampling Date	Analysis Date Mar-26-12	Analyzed Weight (g) 0.2461
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)

µg - micrograms **1% = 10,000 ppm** **1ppm = 1 mg/Kg**

Lab QC Reviewer R. Mark Bailey

Analyst Jane Zhang

CHAIN OF CUSTODY FORM

	Tel	Fax
✓ 650 Delancey St #222, SF, CA [illegible]	415-[illegible]	415-[illegible]
334 19th St, Oakland, CA 94612	510-[illegible]	415-[illegible]
5777 W. Century Blvd. #1155, LA, CA [illegible]	[illegible]	415-[illegible]

CALL/TXT with results: 3/0-382-6444 @messaging.sprintpcs.com

Email rpt, COC & invoice: ccodemo @sca-enviro.com
JYoung @sca-enviro.com

Email Prj Mgr Name: Chuck Siu Glenn Cass (Christina Codemo)

EMAIL HEADING: (Project #) - (Project Manager Initials) - (Site Name/Address) - (Date MMDD)
F10606 CC 20 Chemical Way 03/22

LAB: ATEM

Accounting Data:

COURIER	~~Drop off~~ pickup		
LAB REP NOTIFIED:		Notification DATE/TIME:	
AIRBILL/FLIGHT NO.:		Shipper REFERENCE I.D.:	
EST. ARRIVAL DATE:		EST. ARRIVAL TIME:	

Method Reference: 7400 PCM AHERA TEM CARB-AHERA TEM 0.001 s/cc Detection Limit
PLM (asbestos) (Flame AA (Lead))

Sample Media: 25 37 mm 0.45 0.8 micron MCEF (Bulk) Water Wipe

RESULTS DUE: 03/28 | 10:00 (AM) PM

CHAIN OF CUSTODY DATA:

Sending Info: 3 samples submitted by [illegible] (SCA) on 03/22 at 5:30 pm
Received by Lab: 3 samples received by PCr on 3/23 at 8:15
Received by Analyst: ______ samples received by ______ on ______ at ______

SAMPLE ID	LITERS	Results	Ins/Blanks/Outs
WLH-paint-Pb			
paint-111-Pb			
paint-102-Pb			
	0 LITERS		BLANK
	0 LITERS		BLANK
	0 LITERS		BLANK

Turnaround	Units (each)	LEAD: Wipes	LEAD: Flame AA	ASBESTOS: CARB AHERA 10-15 grid openings	CARB AHERA 35-40 grid openings	TEM AHERA	PLM Std Point Count 400	CARB 435 (400 Pt Ct) w/ prep	PLM Bulk	PCM NIOSH 7400
< 6 hours	1 to 9									
	10 to 40									
	>40									
24 hours	1 to 9									
	10 to 40									
	>40									
48 hours	1 to 9		3							
	10 to 40									
	>40									
3 to 5 days	1 to 9									
	10 to 40									
	>40									
> 6 days	1 to 9									
	10 to 40									
	>40									

INSTRUCTIONS TO LAB (delete items not applicable AND circle items applicable):

1. Pickup requested: 11.: ______
   Contact: ______
   Time of Call: ______
2. Call SCA's contact to acknowledge receipt of samples.
3. Analyze samples by PCM only.
4. Analyze inside samples by PCM first; if any sample >0.01 f/cc, contact SCA.
5. If all samples are <0.01 f/cc, proceed with items 6, 7 or 8, as noted.
6. Analyze inside samples only; stop if Avg >70 str/mm^2, contact SCA before analyzing outsides or blanks.
7. Analyze all samples, including outside samples and blanks.
8. Do NOT analyze outside or blank samples.
9. Analyze by TEM only the inside air sample with the highest PCM result.
10. Serial analysis; stop at first positive (>1%); first trace (<0.1%);except sheetrock and plaster samples.
11. Analyze all bulk samples, unless otherwise indicated.

Report Number: 308689

Invoice Number:

Supplies/Equipment	Qty
Hi-Vol (3040)	
Lo-Vol (3020)	
TEM/Pb cassettes (3520)	
PCM cassettes (3500)	
Bulk sampling supply (3710)	3

ATOMIC ABSORPTION SPECTROSCOPY
LEAD PAINT ANALYSIS REPORT
EPA 3050B (modified) Digestion / EPA 7420 (modified) Analysis Methods

Contact: Christina Codemo

Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

Samples Submitted: 3

Samples Analyzed: 3

Job Site / No. 70 Chemical
F10606-CC

Report No.: **308702**
Date Submitted: Mar-26-12
Date Reported: Mar-27-12

SAMPLE ID	METAL	SAMPLE RESULT	REPORTING LIMIT	LOCATION / DESCRIPTION		
Paint-418-Pb	Pb	**200 mg/kg**	**48 mg/kg**	Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID # 532-02108-001		0.020 %	0.005 %		Mar-27-12	0.2093
Tank-Paint-Pb	Pb	**640 mg/kg**	**48 mg/kg**	Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID # 532-02108-002		0.064 %	0.005 %		Mar-27-12	0.2062
WLSH-Paint-Pb	Pb	**< 40 mg/kg**	**40 mg/kg**	Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID # 532-02108-003		< 0.004 %	0.004 %		Mar-27-12	0.2496
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)

µg - micrograms **1% = 10,000 ppm** **1ppm = 1 mg/Kg**

Lab QC Reviewer R. Mark Bailey

Analyst Jane Zhang

CHAIN OF CUSTODY FORM

✓ 55 Delancey St #200, SF, CA 94107 Tel 415-440-1676 Fax 415-440-1704
354 19th St, Oakland, CA 94612 Tel 510-444-2600 Fax 415-440-1704
5717 W. Century Blvd #1165, LA, CA 90045 Tel 310-258-0849 Fax 415-440-1704

CALL: EXT with results: 310-382-6404
@ messaging.sprintpcs.com

Email cert. COC & invoice: tcademo @sca-enviro.com
jtoms @sca-enviro.com

Email Prj Mgr Name:
Chuck Siu Glenn Cass (Christina Cademo)

Accounting Data:

EMAIL HEADING: Project # | Project Manager Initials | Site Name, Address | Date MMDD

F0606 CC 70 Chemical 03/23

LAB: ATEM

COURIER: Dropoff

LAB REP NOTIFIED: | Confirmation DATE TIME:
AIRBILL FLIGHT NO.: | Shipper REFERENCE I.D.:
EST. ARRIVAL DATE: | EST. ARRIVAL TIME:

Method Reference: 7400 PCM | AHERA TEM | CARB-AHERA TEM 0.001 s/cc Detection Limit
PLM (asbestos) | (Flame AA (Lead))

Sample Media: 25 37 mm 0.45 0.8 micron MCEF (Bulk) Water Wipe

RESULTS DUE: 03/28 10:00 (AM) / PM

CHAIN OF CUSTODY DATA:

Sending Info: 3 samples submitted by JY (SCA) on 03/23 at 6:00 pm
Received by Lab: 3 samples received by PC on 3/24 at 645
Received by Analyst: _____ samples received by _____ on _____ at _____

SAMPLE ID	LITERS	Results	Ins/Blanks/Outs
paint 418 Pb			
Tank-paint-Pb			
WLG-paint-Pb			
	0 LITERS		BLANK
	0 LITERS		BLANK
	0 LITERS		BLANK

ASBESTOS				LEAD				< 8 hours				24 hours				48 hours				3 to 5 days				> 5 days			
Units (each)	1 to 9	10 to 40	>40	Units (each)	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40		1 to 9	10 to 40	>40		1 to 9	10 to 40	>40		1 to 9	10 to 40	>40		1 to 9	10 to 40	>40	
PCM NIOSH 7400				Flame AA Wipes												4											
PLM Bulk																											
CARB 435 (400 Pt Ct) w/ prep																											
PLM Std Point Count 400																											
TEM AHERA																											
CARB AHERA 35-40 grid openings																											
CARB AHERA 10-15 grid openings																											

INSTRUCTIONS TO LAB (delete items not applicable AND circle items applicable):

1. Pickup requested: 11. : _____
   Contact: _____
   Time of Call: _____
2. Call SCA's contact to acknowledge receipt of samples.
3. Analyze samples by PCM only.
4. Analyze inside samples by PCM first; if any sample >0.01 f/cc, contact SCA.
5. If all samples are <0.01 f/cc, proceed with items 6, 7 or 8, as noted.
6. Analyze inside samples only; stop if Avg >70 str/mm^2, contact SCA before analyzing outsides or blanks.
7. Analyze all samples, including outside samples and blanks.
8. Do NOT analyze outside or blank samples.
9. Analyze by TEM only the inside air sample with the highest PCM result.
10. Serial analysis; stop at first positive (>1%); first trace (<0.1%);except sheetrock and plaster samples.
11. Analyze all bulk samples, unless otherwise indicated.

Report Number: 308702

Invoice Number:

Supplies/Equipment	Qty
Hi-Vol (3040)	
Lo-Vol (3020)	
TEM - Pb cassettes (3520)	
PCM cassettes (3500)	
Bulk sampling supply (3710)	3

ATOMIC ABSORPTION SPECTROSCOPY
LEAD PAINT ANALYSIS REPORT
EPA 3050B (modified) Digestion / EPA 7420 (modified) Analysis Methods

Contact: Christina Codemo
Address: SCA Environmental
650 Delancey Street, #222
San Francisco, CA 94107

Samples Submitted: 3
Samples Analyzed: 3
Job Site / No. 80 Chemical
F10606-CC

Report No.: **308705**
Date Submitted: Mar-26-12
Date Reported: Mar-27-12

SAMPLE ID	METAL	SAMPLE RESULT	REPORTING LIMIT	LOCATION / DESCRIPTION		
Paint-Int-Concrete-Pb	Pb	**< 46 mg/kg**	**46 mg/kg**	Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID # 532-02109-001		< 0.005 %	0.005 %		Mar-27-12	0.2165
Sheetrock-Paint-Pb	Pb	**< 40 mg/kg**	**40 mg/kg**	Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID # 532-02109-002		< 0.004 %	0.004 %		Mar-27-12	0.2473
Paint-309-Pb	Pb	**< 38 mg/kg**	**38 mg/kg**	Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID # 532-02109-003		< 0.004 %	0.004 %		Mar-27-12	0.2601
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)
Lab ID #				Sampling Date	Analysis Date	Analyzed Weight (g)

µg - micrograms **1% = 10,000 ppm** **1ppm = 1 mg/Kg**

Lab QC Reviewer R. Mark Bailey **Analyst** Jane Zhang

CHAIN OF CUSTODY FORM

✓ 455 Delancey St #222, SF, CA 94107 — Tel 415-442-1675 — Fax 415-442-1676
1334 14th St Oakland, CA 94612 — Tel 510-658-6650 — Fax 415-442-1676
[illegible] Century Blvd #1055, LA, CA 90045 — Tel 310-258-0464 — Fax 415-442-1676

CALL TXT with results: 310-382-6444
@messaging.sprintpcs.com

Email rpt COC & invoice: ccodemo @sca-enviro.com
jyoung@sca-enviro.com

Email Prj Mgr Name: Chuck Siu Glenn Cass (Christina Codemo)

Accounting Data:

EMAIL HEADING: Project # (Project Manager Initials) (Site Name, Address) (Date MMDD)

F1606 CC 80 Chemical 03/23

LAB: ATEM

COURIER: Propak

LAB REP NOTIFIED: Notification DATE TIME:

AIRBILL FLIGHT NO.: Shipper REFERENCE I.D.

EST. ARRIVAL DATE: EST. ARRIVAL TIME:

Method Reference: 7400 PCM | AHERA TEM | CARB-AHERA TEM 0.001 s/cc Detection Limit

PLM (asbestos) | (Elemé AA (Lead))

Sample Media: 25 37 mm 0.45 .8 micron MCEF (Bulk) Water Wipe

RESULTS DUE: 03/28 10:00 (AM) PM

CHAIN OF CUSTODY DATA:

Sending Info: 3 samples submitted by JY (SCA) on 03/23 at 5:00 pm

Received by Lab: 3 samples received by PCV on 3/26 at 8:15

Received by Analyst: _____ samples received by _____ on _____ at _____

SAMPLE ID	LITERS	Results	Ins/Blanks/Outs
paint-Int-Concrete-Pb			
Sheetrock-paint-Pb			
paint-309-Pb			
	0 LITERS		BLANK
	0 LITERS		BLANK
	0 LITERS		BLANK

ASBESTOS	< 6 hours			24 hours			48 hours			3 to 5 days			> 6 days		
Units (each)	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40
PCM NIOSH 7400															
PLM Bulk															
CARB 435 (400 Pt Ct) w/ prep															
PLM Std Point Count 400															
TEM AHERA															
CARB AHERA 35-40 grid openings															
CARB AHERA 10-15 grid openings															

LEAD	< 6 hours			24 hours			48 hours			3 to 5 days			> 6 days		
Units (each)	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40
Flame AA															
Wipes							W								

INSTRUCTIONS TO LAB (delete items not applicable AND circle items applicable):

1. Pickup requested:
   Contact: _____
   Time of Call: _____
2. Call SCA's contact to acknowledge receipt of samples.
3. Analyze samples by PCM only.
4. Analyze inside samples by PCM first; if any sample >0.01 f/cc, contact SCA.
5. If all samples are <0.01 f/cc, proceed with items 6, 7 or 8, as noted.
6. Analyze inside samples only; stop if Avg >70 str/mm^2, contact SCA before analyzing outsides or blanks.
7. Analyze all samples, including outside samples and blanks.
8. Do NOT analyze outside or blank samples.
9. Analyze by TEM only the inside air sample with the highest PCM result.
10. Serial analysis; stop at first positive (>1%); first trace (<0.1%);except sheetrock and plaster samples.
11. Analyze all bulk samples, unless otherwise indicated.
11. : _____

Report Number: 308705

Invoice Number:

Supplies/Equipment	Qty
Hi-Vol (3040)	
Lo-Vol (3020)	
TEM - Pb cassettes (3520)	
PCM cassettes (3500)	
Bulk sampling supply (3710)	3

ALSF ANALYTICAL LABS SAN FRANCISCO INC.

POLARIZED LIGHT MICROSCOPY ANALYSIS FOR ASBESTOS CONTENT

Client: SCA ENVIRONMENTAL, INC.
650 DELANCEY ST. #222
SAN FRANCISCO, CA 94107

Report Number: ZC2604
Date: APRIL 2, 2012
Analyst: OLGA KIST
Date Analyzed: APRIL 2, 2012
Sample Collector: JOSEPH YOUNG
Collection Date: MARCH 26, 2012
1 Sample(s) containing Asbestos

Project No.: F10606
Location: 80 CHEMICAL

1 Sample(s) Analyzed
1 Sample(s) Received 3/26/12 11:00

Sample #	Location / Description	*ASBESTOS* Type and Range % or NONE DETECTED	NONASBESTOS Other Fibers (%) Balance
1. CORE-319-1	**A) GOLD-BROWN (0.2 CM)**	**CHRYS 3-5**	SILI, CARB, IRON OXIDES, OPAQUES, SYN
	B) BLACK MASTIC	**CHRYS 5-10**	ASPHALT, MISC.
	C) GRAY CONCRETE WITH AGGREGATES (12.0 CM)	NONE DETECTED	
	D) BLACK RUBBER SHEET AND FIBERGLASS	NONE DETECTED	
	E) BROWN CLAY SOIL	NONE DETECTED	
	F) BLACK MATERIAL BETWEEN TILES (WAX)	NONE DETECTED	
		NONE DETECTED	
040212	LABORATORY BLANK (1866 GLASS FIBERS)	NONE DETECTED	

ASBESTOS TYPES

CHRYS: Chrysotile
AMOS: Amosite
CROC: Crocidolite
TREM: Tremolite/Actinolite
ANTH: Anthophyllite

NONASBESTOS

CELL: Cellulose
GL: Fiberglass/Mineral Wool
SYN: Synthetic
CARB: Carbonates
SILI: Mixed Silicates
POLY: Polyethylene
FTALC: Fibrous Talc
FGYP: Fibrous Gypsum
FELD: Feldspar
CASI: Calcium Silicates

Bulk samples analyzed in accordance with "Method for the Determination of Asbestos in Bulk Building Materials" EPA/600/R-93/116, July 1993. The detection limit is 1%. Quantitation of asbestos is by calibrated visual estimation. Analytical Labs San Francisco, Inc. (ALSF) is recognized under the National Laboratory Accreditation Program for satisfactory compliance with criteria established in Title 15, Part 7 code of Federal Regulations and accredited for bulk asbestos fiber analysis (NVLAP lab code: 101909-0). Asbestos fibers less than 0.2 microns cannot be resolved by light microscope. This report must not be reproduced except in full, without the written approval of ALSF and pertains only to the samples analyzed.

AUTHORIZED SIGNATURE _____ DATE 4/3/12

467 Potrero Avenue, San Francisco, CA 94110 (415) 552-4595 FAX 552-0730

ALSF ANALYTICAL LABS SAN FRANCISCO INC.

POLARIZED LIGHT MICROSCOPY ANALYSIS FOR ASBESTOS CONTENT

Client: SCA ENVIRONMENTAL, INC.
650 DELANCEY ST. #222
SAN FRANCISCO, CA 94107

Report Number: ZC2605
Date: APRIL 2, 2012
Analyst: OLGA KIST
Date Analyzed: APRIL 2, 2012
Sample Collector: JOSEPH YOUNG
Collection Date: MARCH 26, 2012

Project No.: F10606
Location: 70 CHEMICAL

0 Sample(s) containing Asbestos

1 Sample(s) Analyzed
1 Sample(s) Received 3/26/12 11:00

Sample #	Location / Description	ASBESTOS Type and Range % or NONE DETECTED	NONASBESTOS Other Fibers (%) Balance
1. CORE-420-1	A) BEIGE-GRAY TILE (0.3 CM)	NONE DETECTED	SILI, CARB, IRON OXIDES, OPAQUES, SYN ASPHALT,BINDER, MISC.
	B) CLEAR GLUE (RUBBER CEMENT)	NONE DETECTED	
	C) GRAY CONCRETE WITH AGGREGATES (16.5 CM)	NONE DETECTED	
	D) GRAY PEBBLES (BOTTOM)	NONE DETECTED	
040212	LABORATORY BLANK (1866 GLASS FIBERS)	NONE DETECTED	

ASBESTOS TYPES

CHRYS: Chrysotile
AMOS: Amosite
CROC: Crocidolite
TREM: Tremolite/Actinolite
ANTH: Anthophyllite

NONASBESTOS

CELL: Cellulose
GL: Fiberglass/Mineral Wool
SYN: Synthetic
CARB: Carbonates
SILI: Mixed Silicates
POLY: Polyethylene
FTALC: Fibrous Talc
FGYP: Fibrous Gypsum
FELD: Feldspar
CASI: Calcium Silicates

Bulk samples analyzed in accordance with "Method for the Determination of Asbestos in Bulk Building Materials" EPA/600/R-93/116, July 1993. The detection limit is 1%. Quantitation of asbestos is by calibrated visual estimation. Analytical Labs San Francisco, Inc. (ALSF) is recognized under the National Laboratory Accreditation Program for satisfactory compliance with criteria established in Title 15, Part 7 code of Federal Regulations and accredited for bulk asbestos fiber analysis (NVLAP lab code: 101909-0). Asbestos fibers less than 0.2 microns cannot be resolved by light microscope. This report must not be reproduced except in full, without the written approval of ALSF and pertains only to the samples analyzed.

AUTHORIZED SIGNATURE _____ DATE 4/3/12

467 Potrero Avenue, San Francisco, CA 94110 (415) 552-4595 FAX 552-0730

ALSF ANALYTICAL LABS SAN FRANCISCO INC.

POLARIZED LIGHT MICROSCOPY ANALYSIS FOR ASBESTOS CONTENT

Client: SCA ENVIRONMENTAL, INC.
650 DELANCEY ST. #222
SAN FRANCISCO, CA 94107

Report Number: ZC2606
Date: APRIL 2, 2012
Analyst: OLGA KIST
Date Analyzed: APRIL 2, 2012
Sample Collector: JOSEPH YOUNG
Collection Date: MARCH 26, 2012

Project No.: F10606
Location: 50 CHEMICAL

1 Sample(s) containing Asbestos

1 Sample(s) Analyzed
1 Sample(s) Received 3/26/12 11:00

Sample #	Location / Description	*ASBESTOS* Type and Range % or NONE DETECTED	NONASBESTOS Other Fibers (%) Balance
1. CORE-223-1	A) BEIGE CERAMIC TILE (0.6 CM)	NONE DETECTED	SILI, CARB, IRON OXIDES, OPAQUES,
	B) OFF-WHITE MORTAR	NONE DETECTED	CALCINED CLAY, ASPHALT, SYN, MISC.
	C) BLACK MASTIC	**CHRYS 5-10**	
	D) GRAY CONCRETE WITH AGGREGATES (15.3 CM)	NONE DETECTED	
	E) OFF-WHITE PLASTIC SHEETING	NONE DETECTED	
	F) BROWN CLAY SOIL WITH GRAVEL	NONE DETECTED	
	G) MINOR BLACK RUBBER	NONE DETECTED	
040212	LABORATORY BLANK (1866 GLASS FIBERS)	NONE DETECTED	

ASBESTOS TYPES

CHRYS: Chrysotile
AMOS: Amosite
CROC: Crocidolite
TREM: Tremolite/Actinolite
ANTH: Anthophyllite

NONASBESTOS

CELL: Cellulose
GL: Fiberglass/Mineral Wool
SYN: Synthetic
CARB: Carbonates
SILI: Mixed Silicates
POLY: Polyethylene
FTALC: Fibrous Talc
FGYP: Fibrous Gypsum
FELD: Feldspar
CASI: Calcium Silicates

Bulk samples analyzed in accordance with "Method for the Determination of Asbestos in Bulk Building Materials" EPA/600/R-93/116, July 1993. The detection limit is 1%. Quantitation of asbestos is by calibrated visual estimation. Analytical Labs San Francisco, Inc. (ALSF) is recognized under the National Laboratory Accreditation Program for satisfactory compliance with criteria established in Title 15, Part 7 code of Federal Regulations and accredited for bulk asbestos fiber analysis (NVLAP lab code: 101909-0). Asbestos fibers less than 0.2 microns cannot be resolved by light microscope. This report must not be reproduced except in full, without the written approval of ALSF and pertains only to the samples analyzed.

AUTHORIZED SIGNATURE _____ DATE 4/3/12

467 Potrero Avenue, San Francisco, CA 94110 (415) 552-4595 FAX 552-0730

ALSF ANALYTICAL LABS SAN FRANCISCO INC.

POLARIZED LIGHT MICROSCOPY ANALYSIS FOR ASBESTOS CONTENT

Client: SCA ENVIRONMENTAL, INC.
650 DELANCEY ST. #222
SAN FRANCISCO, CA 94107

Report Number: ZC2607
Date: APRIL 2, 2012
Analyst: OLGA KIST
Date Analyzed: APRIL 2, 2012
Sample Collector: JOSEPH YOUNG
Collection Date: MARCH 26, 2012

Project No.: F10606
Location: 20 CHEMICAL

1 Sample(s) containing Asbestos

1 Sample(s) Analyzed
1 Sample(s) Received 3/26/12 11:00

Sample #	Location / Description	*ASBESTOS* Type and Range % or NONE DETECTED	NONASBESTOS Other Fibers (%) Balance
1. CORE-116-1	**A) OFF-WHITE-BEIGE (0.2 CM)**	**CHRYS 3-5**	SILI, CARB, IRON OXIDES, OPAQUES, SYN
	B) BLACK MASTIC	**CHRYS 5-10**	ASPHALT, MISC.
	C) GRAY CONCRETE WITH AGGREGATES (16.5 CM)	NONE DETECTED	
	D) BROWN-BLACK CLAY SOIL	NONE DETECTED	

040212 LABORATORY BLANK (1866 GLASS FIBERS) NONE DETECTED

ASBESTOS TYPES

CHRYS: Chrysotile
AMOS: Amosite
CROC: Crocidolite
TREM: Tremolite/Actinolite
ANTH: Anthophyllite

NONASBESTOS

CELL: Cellulose
GL: Fiberglass/Mineral Wool
SYN: Synthetic
CARB: Carbonates
SILI: Mixed Silicates
POLY: Polyethylene
FTALC: Fibrous Talc
FGYP: Fibrous Gypsum
FELD: Feldspar
CASI: Calcium Silicates

Bulk samples analyzed in accordance with "Method for the Determination of Asbestos in Bulk Building Materials" EPA/600/R-93/116, July 1993. The detection limit is 1%. Quantitation of asbestos is by calibrated visual estimation. Analytical Labs San Francisco, Inc. (ALSF) is recognized under the National Laboratory Accreditation Program for satisfactory compliance with criteria established in Title 15, Part 7 code of Federal Regulations and accredited for bulk asbestos fiber analysis (NVLAP lab code: 101909-0). Asbestos fibers less than 0.2 microns cannot be resolved by light microscope. This report must not be reproduced except in full, without the written approval of ALSF and pertains only to the samples analyzed.

AUTHORIZED SIGNATURE _____ DATE 4/3/12

467 Potrero Avenue, San Francisco, CA 94110 (415) 552-4595 FAX 552-0730

ZC2604-

CHAIN OF CUSTODY FORM

✓

45 Delaney St #222, SF CA 941 [illegible] Tel [illegible] Fax [illegible]
234 16th St Oakland CA 94612 [illegible] [illegible]
2277 W. Grand Blvd #155 LA CA 90 [illegible] [illegible]

CALL TXT with results: 310-382-6444
@messaging.sprintpcs.com

Email rpt COC & invoice: ccodemo @sea-enviro.com
jyoung @sea-enviro.com

Email Prj Mgr Name:
Chuck Su Glenn Cass Christina Codemo

EMAIL HEADING: (Project # / Project Manager Initials / Site Name, Address / Date MMDD)
F1606 CC 88 Chemical 03/26

LAB: ALSF

Accounting Data:

COURIER: Drop off
LAB REP NOTIFIED:
AIRBILL FLIGHT NO.:
EST. ARRIVAL DATE:
Notification DATE TIME:
Shipper REFERENCE I.D.:
EST. ARRIVAL TIME:

Method Reference: 7400 PCM | AHERA TEM | CARB-AHERA TEM 0.001 s/cc Detection Limit

PLM (asbestos) | Flame AA (Lead)

Sample Media: 25 37 mm | 0.45 .8 micron | MCEF | Bulk | Water | Wipe

RESULTS DUE: 03/30 ~~4:00~~ 12:00 AM / PM

CHAIN OF CUSTODY DATA: 10:45am

Sending Info: 1 samples submitted by JY (SCA) on 03/26 at ~~[illegible]~~
Received by Lab: 1 samples received by [illegible] on 3/26 at 11:00
Received by Analyst: 1 samples received by [illegible] on 3/26 at 11

SAMPLE ID	LITERS	Results ZC2604-	Ins/Blanks/Outs
Core-319-1			1
	0 LITERS		BLANK
	0 LITERS		BLANK
	0 LITERS		BLANK

ASBESTOS

Units (each)	< 6 hours	6 hours	24 hours	48 hours	3 to 5 days	> 5 days
PCM NIOSH 7400	1 to 9	10 to 40	>40			
PLM Bulk						
CARB 435 (400 Pt Ct) w/ prep						
PLM Std Point Count 400						
TEM AHERA						
CARB AHERA 35-40 grid openings						
CARB AHERA 10-15 grid openings						

LEAD

Units (each)	< 6 hours	6 hours	24 hours	48 hours	3 to 5 days	> 5 days
Flame AA	1 to 9	10 to 40	>40			
Wipes						

INSTRUCTIONS TO LAB (delete items not applicable AND circle items applicable):

1. Pickup requested: 11.: _____
   Contact: _____
   Time of Call: _____
2. Call SCA's contact to acknowledge receipt of samples.
3. Analyze samples by PCM only.
4. Analyze inside samples by PCM first; if any sample >0.01 f/cc, contact SCA.
5. If all samples are <0.01 f/cc, proceed with items 6, 7 or 8, as noted.
6. Analyze inside samples only; stop if Avg >70 str/mm^2, contact SCA before analyzing outsides or blanks.
7. Analyze all samples, including outside samples and blanks.
8. Do NOT analyze outside or blank samples.
9. Analyze by TEM only the inside air sample with the highest PCM result.
10. Serial analysis; stop at first positive (>1%); first trace (<0.1%);except sheetrock and plaster samples.
11. Analyze all bulk samples, unless otherwise indicated.

Report Number: ZC2604-

Invoice Number: ZC2604-

Supplies/Equipment	Qty
Hi-Vol (3040)	
Lo-Vol (3020)	
TEM Pb cassettes (3520)	
PCM cassettes (3560)	
Bulk sampling supply (3310)	1

ZC2605-

CHAIN OF CUSTODY FORM

Tel

Fax

CALL LAT with results: 310-382-6444

@messaging.sprintpcs.com

Email rpt/COC & invoice: ccodemo @sca-enviro.com

jyoung @sca-enviro.com

Email Prj Mgr Name:

Chuck Stu Glenn Cass (Christina Codemo)

EMAIL HEADING: Project # | Project Manager Initials | Site Name, Address | Date MMDD

FI0606 cc To chemical 03/26

LAB: ALSF

Accounting Data:

COURIER: Drop off

LAB REP NOTIFIED:

Notification DATE TIME:

AIRBILL FLIGHT NO.:

Shipper REFERENCE I.D.:

EST. ARRIVAL DATE:

EST. ARRIVAL TIME:

Method Reference: 7400 PCM | AHERA TEM | CARB-AHERA TEM 0.001 s/cc Detection Limit

(LAT (asbestos)) | Flame AA (Lead)

Sample Media: 25 37 mm | 0.45 .8 micron | MCEF (Bulk) Water Wipe

RESULTS DUE: 03/30 ~~4:00~~ 12:00 AM / (PM)

CHAIN OF CUSTODY DATA:

Sending Info: 1 samples submitted by JY (SCA) on 03/26 at ~~5:00pm~~ 10:45am

Received by Lab: 1 samples received by [illegible] on 3/26 at 1400

Received by Analyst: 1 samples received by [illegible] on " at "

SAMPLE ID	LITERS	Results	Ins/Blanks/Outs
core-420-1		ZC2605-	1
	0 LITERS		BLANK
	0 LITERS		BLANK
	0 LITERS		BLANK

	ASBESTOS								LEAD			
	Units (each)	PCM NIOSH 7400	PLM Bulk	CARB 435 (400 Pt Ct w/ prep)	PLM Std Point Count 400	TEM AHERA	CARB AHERA 35-40 grid openings	CARB AHERA 10-15 grid openings	Units (each)	Flame AA Wipes		
< 6 hours	1 to 9								1 to 9			
	10 to 40								10 to 40			
	>40								>40			
24 hours	1 to 9								1 to 9			
	10 to 40								10 to 40			
	>40								>40			
48 hours	1 to 9								1 to 9			
	10 to 40								10 to 40			
	>40								>40			
3 to 5 days	1 to 9			1					1 to 9			
	10 to 40								10 to 40			
	>40								>40			
6 days	1 to 9								1 to 9			
	10 to 40								10 to 40			
	>40								>40			

INSTRUCTIONS TO LAB (delete items not applicable AND circle items applicable):

1. Pickup requested: II.: _____
   Contact: _____
   Time of Call: _____
2. Call SCA's contact to acknowledge receipt of samples.
3. Analyze samples by PCM only.
4. Analyze inside samples by PCM first; if any sample >0.01 f/cc, contact SCA.
5. If all samples are <0.01 f/cc, proceed with items 6, 7 or 8, as noted.
6. Analyze inside samples only; stop if Avg >70 str/mm^2, contact SCA before analyzing outsides or blanks.
7. Analyze all samples, including outside samples and blanks.
8. Do NOT analyze outside or blank samples.
9. Analyze by TEM only the inside air sample with the highest PCM result.
10. Serial analysis; stop at first positive (>1%); first trace (<0.1%);except sheetrock and plaster samples.
11. Analyze all bulk samples, unless otherwise indicated.

Report Number: ZC2605-

Invoice Number: IZC2605-

Supplies/Equipment	Qty
Hi-Vol (3040)	
Lo-Vol (3020)	
TEM Pb cassettes (3520)	
PCM cassettes (3560)	
Bulk sampling supply (3710)	1

ZC2606-

CHAIN OF CUSTODY FORM

✓ 45 Delancey St #200, SF, CA 94107 | Tel | Fax
334 14th St Oakland, CA 94612 | Tel | Fax
2277 W. Century Blvd #755, LA, CA 90045 | Tel | Fax

CALL/TXT with results: 310 382-6404
@messaging.sprintpcs.com

Email rpt COC & invoice: JYoung@sca-enviro.com

Email Prj Mgr Name: CCadena@sca-enviro.com
Chuck Su Glenn Cass Christina Cadena

Accounting Data:

EMAIL HEADING: <Project #> <Project Manager Initials> <Site Name, Address> <Date MM/DD>

FloF06 CC 50 clerical 03/26

LAB: ALSF

COURIER: drop-off
LAB REP NOTIFIED: Notification DATE TIME:
AIRBILL FLIGHT NO.: Shipper REFERENCE I.D.:
EST ARRIVAL DATE: EST. ARRIVAL TIME:

Method Reference: 7400 PCM | AHERA TEM | CARB-AHERA TEM 0.001 s/cc Detection Limit
PLM (asbestos) | Flame AA (Lead)

Sample Media: 25 37 mm | 0.45 0.8 micron | MCEF (Bulk) Water Wipe

RESULTS DUE: 03/30 ~~5:00~~ 12:00 AM (PM)

CHAIN OF CUSTODY DATA:
Sending Info: 1 samples submitted by SY (SCA) on 03/26 at ~~5:00 pm~~ D: Sam
Received by Lab: 1 samples received by SM on 3/26 at 11 a
Received by Analyst: 1 samples received by CA on 3/26 at 11:00

SAMPLE ID	LITERS	Results	Ins/Blanks/Outs
Core-223-1		ZC2606-	1
	0 LITERS		BLANK
	0 LITERS		BLANK
	0 LITERS		BLANK

ASBESTOS

	Units (each)	PCM NIOSH 7400	PLM Bulk	CARB 435 (400 Pt Ct) w/ prep	PLM Std Point Count 400	TEM AHERA	CARB AHERA 35-40 grid openings	CARB AHERA 10-15 grid openings
< 6 hours	1 to 9							
	10 to 40							
	>40							
24 hours	1 to 9							
	10 to 40							
	>40							
48 hours	1 to 9							
	10 to 40							
	>40							
3 to 5 days	1 to 9		1					
	10 to 40							
	>40							
> 5 days	1 to 9							
	10 to 40							
	>40							

LEAD

	Units (each)	Flame AA Wipes
< 6 hours	1 to 9	
	10 to 40	
	>40	
24 hours	1 to 9	
	10 to 40	
	>40	
48 hours	1 to 9	
	10 to 40	
	>40	
3 to 5 days	1 to 9	
	10 to 40	
	>40	
> 5 days	1 to 9	
	10 to 40	
	>40	

INSTRUCTIONS TO LAB (delete items not applicable AND circle items applicable):
1. Pickup requested: II.: _____
Contact: _____
Time of Call: _____
2. Call SCA's contact to acknowledge receipt of samples.
3. Analyze samples by PCM only.
4. Analyze inside samples by PCM first; if any sample >0.01 f/cc, contact SCA.
5. If all samples are <0.01 f/cc, proceed with items 6, 7 or 8, as noted.
6. Analyze inside samples only; stop if Avg >70 str/mm^2, contact SCA before analyzing outsides or blanks.
7. Analyze all samples, including outside samples and blanks.
8. Do NOT analyze outside or blank samples.
9. Analyze by TEM only the inside air sample with the highest PCM result.
10. Serial analysis; stop at first positive (>1%); first trace (<0.1%);except sheetrock and plaster samples.
11. Analyze all bulk samples, unless otherwise indicated.

Report Number: ZC2606-

Invoice Number: ZC2606-

Supplies/Equipment	Qty
Hi-Vol (3040)	
Lo-Vol (3020)	
TEM - Pb cassettes (3520)	
PCM cassettes (3500)	
Bulk sampling supply (3710)	1

ZC2607-

CHAIN OF CUSTODY FORM

V [illegible] Tel [illegible] Fax [illegible]

EMAIL HEADING: Project # | Project Manager Initials | Site Name, Address | Date MMDD

Fb606 CC 20 Chemical 03/26

LAB: ALSF

CALL TXT with results: 510-326444 @ messaging.sprintpcs.com

Email rpt COC & invoice: Ccademo 5young @ sca-enviro.com

Email Prj Mgr Name: Chuck Siu Oscar Cass Christina Codemo

Accounting Data:

COURIER: Drop off

LAB REP NOTIFIED: | Notification DATE TIME:

AIRBILL FLIGHT NO.: | Shipper REFERENCE I.D.:

EST ARRIVAL DATE: | EST. ARRIVAL TIME:

Method Reference: 7400 PCM | AHERA TEM | CARB-AHERA TEM 0.001 s/cc Detection Limit

PLM (asbestos) | Flame AA (Lead)

Sample Media: 25 37 mm 0.45 .05 micron | MCEF (Bulk) Water Wipe

RESULTS DUE: 03/30 ~~4 hr 24 hr~~ 72 hr 12:00 pm

CHAIN OF CUSTODY DATA:

Sending Info: 1 samples submitted by JY (SCA) on 03/26 at ~~6:00 pm~~ 10:45 am

Received by Lab: 1 samples received by [illegible] on 3/26/12 11:00

Received by Analyst: ____ samples received by ____ on 3/26 at 11:00

SAMPLE ID	LITERS	Results	Ins/Blanks/Outs
Core-116-1		ZC2607-	1
	0 LITERS		BLANK
	0 LITERS		BLANK
	0 LITERS		BLANK

ASBESTOS	< 6 hours			24 hours			48 hours			3 to 5 days			> 5 days		
Units (each)	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40
PCM NIOSH 7400															
PLM Bulk															
CARB 435 (400 Pt Ct w/ prep)															
PLM Std Point Count 400															
TEM AHERA															
CARB AHERA 35-40 grid openings															
CARB AHERA 10-15 grid openings															

LEAD	< 6 hours			24 hours			48 hours			3 to 5 days			> 5 days		
Units (each)	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40	1 to 9	10 to 40	>40
Flame AA															
Wipes															

INSTRUCTIONS TO LAB (delete items not applicable AND circle items applicable):

1. Pickup requested: | TIME: ____
   Contact: ____
   Time of Call: ____
2. Call SCA's contact to acknowledge receipt of samples.
3. Analyze samples by PCM only.
4. Analyze inside samples by PCM first; if any sample >0.01 f/cc, contact SCA.
5. If all samples are <0.01 f/cc, proceed with items 6, 7 or 8, as noted.
6. Analyze inside samples only; stop if Avg >70 str/mm^2, contact SCA before analyzing outsides or blanks.
7. Analyze all samples, including outside samples and blanks.
8. Do NOT analyze outside or blank samples.
9. Analyze by TEM only the inside air sample with the highest PCM result.
10. Serial analysis; stop at first positive (>1%); first trace (<0.1%);except sheetrock and plaster samples.
11. Analyze all bulk samples, unless otherwise indicated.

Report Number: ZC2607-

Invoice Number: ZC2607-

Supplies/Equipment	Qty
Hi-Vol (3040)	
Lo-Vol (3020)	
TEM Pb cassettes (3520)	
PCM cassettes (3500)	
Bulk sampling supply (3710)	1

ver 20.11