CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 94-071
REVISING ORDER NO. 88-087

FINAL SITE CLEANUP REQUIREMENTS FOR

ARATEX SERVICES, INC., AND

HANLEY MURRAY

for the property located at

918, 920 AND 942 CHESTNUT STREET
SAN JOSE
SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board) finds that:

1. **Site Location and Description** The former Aratex facility includes 918, 920 and 942 Chestnut Street in San Jose, Santa Clara County. The site is located approximately one-half mile south of the San Jose Municipal Airport and 10 miles southeast of the San Francisco Bay.

2. The land surface of the site vicinity is generally flat. The land use near the site consists of light-industrial, commercial and residential areas.

3. **Site History and Regulatory Status** Aratex is the former owner of the property located at 918/920/942 Chestnut Street, San Jose. Aratex operated an industrial laundry business and dry cleaning (using stoddard solvent) at the site from 1970 until 1982. Mr. Hanley Murray ("Murray") purchased the property in 1983. Since then, Murray has been using the facility as a storage area for vehicle parts and abandoned and disabled vehicles impounded in connection with his towing business. Murray currently leases a portion of the premises for use as an automobile shop.

4. Aratex installed ten underground storage tanks at the facility. Aratex stored gasoline in one 10,000-gallon tank. Two 10,000-gallon and seven 1,500-gallon tanks were utilized to store stoddard solvent (a non-halogenated solvent) and treatment oil for cleaning industrial gloves, dust and sweeping clothes and floor mops for rental and re-use.

5. Aratex is named as a discharger because of its chemical usage history and chemical release to soil and groundwater underneath the 918/920/942 Chestnut Street property, during its ownership and occupancy of the property. Murray is named as a discharger because he is the current owner and operator of the property. If additional information is submitted indicating that any other parties caused or permitted any waste to be discharged on the site where it entered or could have entered waters of the State, the Board will consider adding that party's name to this Order.

6. **Previous Board Orders and Permits** The Board has adopted the following orders and permits for the 918/920/942 Chestnut Street site:

   - Site Cleanup Requirements Order No. 88-087, adopted May 18, 1988.

   - Waste Discharge Requirements Order No. 89-145 (NPDES Permit No. CA0029556), adopted September 20, 1989.

7. **Hydrogeology** Based on the hydrogeologic investigations at the site, the geology beneath the site consists of an inter-bedded sequence of alluvial, estuarine, and shallow bay deposits, predominantly clays and silts, with intermixed sand and gravelly sand beds. Three water-bearing zones are identified underneath the site. A shallow zone is encountered at about 26 ft, an intermediate zone at about 45 ft, and a deeper zone at about 70 ft below ground surface (bgs). The regional, confined aquifer, which is a primary source for agricultural, municipal and industrial water supplies, occurs in the site vicinity at depths greater than 200 feet bgs. The regional aquifer is separated from the upper water-bearing zones by an approximately 80- to 100-foot thick interval of confining clay aquitard (regional aquitard).

8. Groundwater elevation measurements have been conducted at the site from 1989 until now. A significant rise in shallow groundwater levels has been observed since 1989. This change has created concomitant changes in groundwater flow direction and migration of free products at the site. The cause of the rise in groundwater levels is unknown but may be due to several factors, including reduced groundwater withdrawal by the San Jose Water Company since early 1989, groundwater extraction from nearby groundwater remediation sites, and shallow aquifer recharge from the Guadalupe River.

9. The groundwater flow direction in the shallow and intermediate water-bearing

zones is generally north to northeast toward the San Francisco Bay. Presently, the shallow, intermediate and deeper zones beneath the site are not used as drinking water supply.

10. **Soil Investigation and Interim Remediation** Aratex conducted soil investigation to assess the extent and distribution of contaminants in 1986. Murray removed all ten underground storage tanks from the site in April 1986. Aratex performed additional soil remedial investigation at both storage tank locations to evaluate potential remedial actions from May 1987 to July 1989.

Former Stoddard Solvent Storage Tank Area: Soil samples collected near the former stoddard solvent storage tank areas at a depth of approximately 11, 16 and 34 ft bgs (March 1988), indicated the presence of total petroleum hydrocarbons as stoddard solvent (TPH-SS) at concentrations of 6900, 4200 and 1300 mg/kg, respectively. However, recent soil borings from product recovery well data (EX-6) indicated stoddard solvent concentrations significantly reduced to about 44 mg/kg. This reduction of stoddard solvent concentrations in soil is attributed to the soil vapor extraction system (SVES) and biodegradation.

Former Gasoline Storage Tank Area: Soil samples collected during the excavation and removal of the gasoline tank identified the presence of total petroleum hydrocarbons as gasoline (TPH-G) up to 7,100 mg/kg and benzene up to 12,000 mg/kg. Other contaminants such as toluene, ethylbenzene, and total xylenes also detected at significant concentrations in soil samples collected immediately above the groundwater table. Aratex excavated approximately 140 yd^3 of contaminated soil in 1988. Excavation halted at a depth of about 20 ft bgs due to extensive shoring and jeopardizing structural integrity of the buildings. Chemical analyses of soil samples in excavation sidewalls ranged mostly from not detectable to 63 mg/kg, except one sample (140 mg/kg) of gasoline concentrations. Soil chemical data in the bottom of the excavation (about 20 ft) indicated an average concentration 183 mg/kg of gasoline. No further soil remediation was recommended in the gasoline tank area because the highly contaminated soil was removed. The remaining gasoline at the bottom of the unsaturated zone were in contact with the silty clay layer, and SVES was infeasible. Residual gasoline identified in soil samples collected below the silty clay layer is presently in contact with groundwater due to the rise in groundwater levels. Aratex is recovering free product from six recovery wells. If groundwater drops and contaminants in soil are still above

cleanup level, Aratex will be required to cleanup the contaminated soil.

11. <u>Evaluation of SVES</u> The SVES has been in operation since 1990. It consists of eight vapor extraction wells designed to remediate the unsaturated soils underneath the former stoddard solvent tanks. The SVES was originally connected to a thermal oxidation treatment units to control off-gas emissions. In April 1992, it was replaced with granular activated carbon units to treat contaminated vapors prior discharge. The SVES has been effectively recovering TPH-SS from the vadose zone. The average extraction rate dropped from about 15 lbs/day at the beginning of the operation to 4.3 lbs/day now. The SVES has recovered more than 6,000 lbs of stoddard solvent.

12. The system may have enhanced in-situ biodegradation by increasing the oxygen content of the soil. It is likely that a significant quantity of TPH-SS has been converted due to increased microbial activity.

13. <u>Groundwater Investigation and Interim Remediation</u> From 1986 through 1987, Aratex conducted groundwater remedial investigation underneath the site. Aratex installed 19 shallow monitoring wells, two piezometers, six wells to recover floating products, and three extraction wells to extract dissolved contaminants.

    Floating Products: A measurable floating petroleum hydrocarbon layer has been observed in some monitoring wells underneath the former underground storage tank locations. Aratex has been collecting TPH-G in the central portion of the site using six floating product recovery wells. Four of the product recovery wells were installed in October 1993 and are designed to recover floating products that have risen due to increasing groundwater levels. Each recovery well has a passive petroleum hydrocarbon recovery canister to keep the effective screen area at the water/free product interface. The canisters are checked monthly for product accumulation, and the results were and will be included in the quarterly monitoring reports.

    Dissolved Contaminants: Contaminants such as TPH-G, TPH-SS, benzene, toluene, ethylbenzene, and xylenes were identified in groundwater samples. These chemicals were selected as indicator compounds. TPH-G, benzene, toluene, ethylbenzene, and xylenes were detected in the proximity to the former gasoline tank. TPH-SS has been identified in most on-site and off-site monitoring wells, with the exception of deeper aquifer wells. Aratex installed

three extraction wells as an interim remedial measure to contain the plume and reduce contaminant concentrations in groundwater.

14. Aratex initiated interim remedial measures (IRMs) for contaminated groundwater in 1988. The IRM was implemented to reduce contaminant concentrations and to contain the plume. Aratex installed three groundwater extraction wells followed by above ground treatment system. Two of the extraction wells are near the former gasoline tanks and one extraction well is located downgradient of the former stoddard solvent storage tanks area. The original groundwater treatment system was connected to a biofiltration unit. This unit was replaced with granular activated carbon in August 1992, because the influent petroleum hydrocarbons were insufficient to support microbial growth. The treated ground-water is discharged to the storm sewer tributary to Guadalupe River pursuant to NPDES Permit.

15. <u>Evaluation of Groundwater Interim Remedial Measures</u> The system has reduced contaminant concentrations; however, further plume containment is needed, especially downgradient of the gasoline tank area. Aratex has proposed to install an additional extraction well to address this issue.

16. <u>State Water Resources Control Board Resolutions</u>

State Board Resolution 68-16: On October 28, 1968, the State Board adopted Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality Waters in California." This policy calls for maintaining the existing high quality of State waters unless it is demonstrated that any change would be consistent with the maximum public benefit and not unreasonably affected beneficial uses. This is based on a Legislative finding, contained in Section 13000, California Water Code, which states in part that it is State policy that "waters of the State shall be regulated to attain the highest water quality which is reasonable." The original discharge of wastes to the groundwater at this site was in violation of this policy.

State Board Resolution 88-63: On May 19, 1988, the State Board adopted Resolution 88-63, "Sources of Drinking Water." This resolution states that, with certain exceptions, surface and ground waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic water supply.

17. <u>Regional Water Quality Control Board Resolutions</u>

Regional Board Resolution 88-160: Resolution 88-160 strongly encourages the maximum feasible reuse of extracted water from groundwater pollution remediations either by the dischargers or other public or private water users. The dischargers have already demonstrated that reuse is not feasible at the site, with the possible exception of groundwater recharge.

Regional Board Resolution 89-39: Resolution 89-39, "Incorporation of 'Sources of Drinking Water' Policy into the Water Quality Control Plan" was adopted on March 15, 1989. This policy defines groundwater as suitable or potentially suitable for municipal or domestic supply if it: 1) has a total dissolved solids content of less than 3,000 mg/l, and 2) is capable of providing sufficient water to supply a single well with at least 200 gallons a day.

For purposes of establishing cleanup objectives, the water-bearing zones at this site qualify as potential sources of drinking water.

18. <u>Water Quality Control Plan</u> The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986, and the State Board approved it on May 21, 1987. The Basin Plan contains Water Quality objectives and beneficial uses for South San Francisco Bay and contiguous surface and ground waters.

The existing and potential beneficial uses of the groundwater underlying and adjacent to the facility include:

a. industrial process water supply
b. industrial service water supply
c. municipal and domestic water supply, and
d. agricultural water supply.

The Board amended the Basin Plan on September 16, 1992 (to implement two statewide plans) and again on October 21, 1992 (to formalize groundwater protection and management policies). The latter amendment describes how groundwater cleanup standards should be established. The primary objective is to maintain background, but standards should be set no higher than maximum contaminant levels (MCLs), and may be set lower based on a site-specific risk assessment. The Board will consider several factors when setting

cleanup standards: cost and effectiveness of cleanup alternative, time to achieve cleanup, and pollutants toxicity, mobility, and volume.

19. <u>Summary of Risk Assessment</u> Aratex included a risk assessment in the proposed final remedial action plan and its addendum. The risk assessment determined the primary chemicals of interest and their toxicity and identified potential exposure pathways and routes. The assessment computes risks for carcinogenic and non-carcinogenic chemicals in the groundwater, and compares them to the EPA recommended risk range. The land-use of the site vicinity is for light commercial/industrial; however, the assessment assumes a more conservative residential land-use scenario and used drinking water standards (MCLs) to evaluate the post-cleanup risk.

Toxicity Classification for Chemicals of Interest: Five compounds have been consistently detected in the site groundwater. These compounds are benzene, toluene, ethylbenzene, xylenes, and total petroleum hydrocarbons as gasoline and stoddard solvent and are classified as indicator chemicals.

One of the indicator chemicals, benzene is a class "A" carcinogen (known human carcinogen). Toluene, ethylbenzene, and xylenes are non-carcinogens (Class "D"). Other total petroleum hydrocarbon constituents detected in soil and groundwater are not used in developing risk-based cleanup standards since slope factors and hazard indices are chemical specific.

Exposure Assessment: Under current use of the site, there appear to be no complete exposure pathways. The shallow and intermediate groundwater underneath the site are not currently used, and the deeper groundwater is not affected.

Based on the conservative residential land-use scenario, the assessment identified two potential exposure pathways. The first hypothetical pathway is the use of groundwater underneath the site as a source of drinking water. Quantification of exposure from this pathway assumes ingestion as an exposure route. The second hypothetical pathway is exposure to vapor of volatile organic compounds by inhalation exposure route via household use of contaminated groundwater.

A deed restriction is appropriate to assure that future owners are aware of total petroleum hydrocarbons and volatile organic compound contamination and to

prohibit the use of the shallow and intermediate groundwater underneath the site as a source of drinking water until cleanup standards are achieved.

Post-Cleanup Risk: Quantified public health total risks were determined using the estimated potential chemical intake from the hypothetical drinking water well and inhalation of vapor that were computed utilizing the MCLs as a final cleanup goal for all pollutants of the site. This approach would protect the future beneficial uses of the groundwater underneath the site. For benzene, the excess cancer risk predicted is about 1.6×10^{-6}; this total includes both the inhalation and ingestion routes. This excess cancer risk level lies within the EPA's recommended risk range (1×10^{-4} to 1×10^{-6}). The total hazard index (HI) for the three indicator chemicals was found to be about 0.55. EPA recommends that the total HI for a site not exceed 1.0.

The risk assessment did not identify soil as an exposure pathway. For residential land-use scenario, the soil pathways are based on the exposure via only ingestion of chemicals in soil or dust. The potential sources of contaminants in soil have been removed from the former underground storage tank locations, and the remaining contaminant concentration in the unsaturated zone are reduced to slightly above cleanup level. Furthermore, the site is entirely paved or covered by concrete building foundation, precluding potential exposure to soil (i.e., ingestion). Thus, no complete exposure pathway exists under the current or future site use.

20. <u>Evaluation of Remedial Technologies</u> Aratex developed and evaluated a list of possible alternatives for remediating contaminated soil and groundwater underneath the site. The screening of technologies was based on their applicability to site characteristics, on the properties of the chemicals, and on reliability and performance of treatment technologies. Six technologies passed this screening step: (a) passive remediation, (b) surfactant flushing, (c) in-situ volatilization, (d) in-situ bioremediation, (e) air sparging, and (f) expansion of groundwater extraction and treatment, floating products recovery and soil-vapor extraction. These remaining technologies, were then further evaluated on the basis of environmental and public health impacts and cost analysis. Final detailed analysis involved implementability, effectiveness, and total project costs. This evaluation followed the approach outlined in EPA's National Contingency Plan (see 40 CFR Part 300).

21. <u>Remedial Actions</u> In compliance with its site cleanup requirements (Order No.

88-087), Aratex submitted two reports titled Results of Interim Remedial Action and Proposed Final Remedial Action Plan (FRAP) in December 1993 and FRAP Addendum in March 1994.

The FRAP and its addendum identify three areas of concern that require remediation at the site: (a) the shallow and intermediate groundwater beneath the site, (b) floating petroleum hydrocarbons in the central portion of the property, and (c) the unsaturated soil underlying the former stoddard solvent tank areas. The FRAP and its addendum recommend expansion of the groundwater extraction and treatment system, continued recovery of floating products, and continued operation the soil-vapor extraction system. In particular:

a) Aratex will install one additional groundwater extraction well to provide hydraulic control and further reduce contaminant concentrations in groundwater.

b) Aratex will convert monitoring well LF-19 into an extraction well, and convert extraction well EX-1 into a monitoring well. Groundwater samples from well LF-19 measured high contaminant concentrations, and extraction from this well is anticipated to provide sufficient hydraulic containment of the plume.

c) Initially, the FRAP proposed to pulse the SVES. The RAP addendum proposes to continuously operate the SVES at a rate of 35 ft^3 per minute because recent studies (Armstrong, 1993) suggested that a slow continuous extraction rate is more effective than pulsing.

d) Aratex will continue extracting and treating contaminants from unsaturated soil and groundwater until cleanup standards are achieved.

d) The extracted and treated waste water will continue to be discharged based on NPDES permit limits, and volatile organic compounds extracted by SVES will continue to be treated using granular activated carbon to meet Bay Area Air Quality Management District permit limits.

22. <u>Basis for Cleanup Standards</u>

a. **Volatile Organic Compounds:** The groundwater cleanup standards for

the site are the more stringent of U. S. EPA or California Department of Health Services primary MCLs (proposed or adopted). At this time, it appears that cleanup of groundwater to background level may be technically impractical due to the site's hydrogeology and the difficulties in restoring aquifers with respect to the physical and chemical properties of the contaminants. Thus, the MCL is acceptable to meet the intent of Resolution 68-16.

Soil contamination is a potential source to groundwater contamination. The allowable cleanup action level (1 mg/kg) for soil is appropriate to prevent further leaching of volatile organic compounds to groundwater underneath the site.

b. **Total Petroleum Hydrocarbons:** No risk-based criteria, California or U. S. EPA primary MCLs are proposed or adopted for TPH-G or TPH-SS in soil and groundwater. The clean-up standards for these constituents are chosen to be twice the detection limits based on common practice by the Regional Board. If the concentrations of the total petroleum hydrocarbons are reduced to the selected level, the residual hydrocarbons will be readily biodegraded.

23. The dischargers have caused or permitted, and threatens to cause or permit, waste to be discharged or deposited where it is or probably will be discharged to waters of the State and creates or threatens to create a condition of pollution or nuisance.

24. This action is an order to enforce the laws and regulations administered by the Board. This action is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15321 of the Resources Agency Guidelines.

25. The Board has notified the dischargers and interested agencies and persons of its intent under California Water Code Section 13304 to prescribe Site Cleanup Requirements for the discharge and has provided them with the opportunity for a public hearing and an opportunity to submit their written views and recommendations.

26. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the dischargers shall cleanup and abate the effects described in the above findings as follows:

A. **PROHIBITIONS**

1. The discharge of wastes or hazardous materials in a manner which will degrade water quality or adversely affect the beneficial uses of the waters of the State is prohibited.

2. Further significant migration of pollutants through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of pollutants are prohibited.

B. **SPECIFICATIONS**

1. The storage, handling, treatment or disposal of soil or groundwater containing pollutants shall not create a nuisance as defined in Section 13050(m) of the California Water Code.

2. Additional characterization of the pollutant plume may be required, should monitoring results show evidence of further plume migration beyond that already identified, or new evidence of soil contamination.

3. **Cleanup Standards**

   a. **Soil Cleanup Standards:** The soil cleanup standards are 1 mg/kg for total volatile organic compounds, 20 mg/kg for TPH-G, and 20 mg/kg TPH-SS.

   b. **Groundwater Cleanup Standards:** The following groundwater cleanup standards shall be met at all monitoring wells:

Groundwater Cleanup Standards (ppb)			
Chemical	California Primary MCL	U.S. EPA Primary MCL	Cleanup Standards
Benzene	1	5	1
Ethylbenzene	680	700	680
Toluene	100	1,000	100
Xylenes	1,750	10,000	1,750
TPH-G	--	--	100
TPH-SS	--	--	100

4. **Future Changes to Cleanup Standards:** If cleanup standards cannot be achieved, the dischargers must demonstrate to the satisfaction of the Board that it is technically impractical from an engineering and/or hydrogeologic perspective and that an alternate proposed level will be protective of human health and the environment. The Board will decide if further final cleanup actions, beyond those completed, shall be implemented at the site.

5. The dischargers shall implement the remedial actions described in Finding 21.

6. **Cost Recovery:** Pursuant to Section 13304 of the California Water Code, the dischargers are hereby notified that the Board is entitled to, and may seek reimbursement for all reasonable costs actually incurred by the Board to investigate unauthorized discharger of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, as required by this Order. The dischargers shall reimburse the Board upon receipt of a billing statement for those costs.

C. PROVISIONS

1. The dischargers shall comply with the attached Self-Monitoring Program.

2. The dischargers shall comply with the Prohibitions and Specifications above immediately except as modified by the time schedule and tasks listed below.

   a. **COMPLETION DATE: SEPTEMBER 16, 1994**

   TASK 1: IMPLEMENTATION OF EXPANDED GROUNDWATER TREATMENT SYSTEM: Submit a report acceptable to the Executive Officer which describes the expanded groundwater extraction and treatment system and documents full implementation of the system.

   b. **COMPLETION DATE: SEPTEMBER 16, 1994**

   TASK 2: CONTINGENCY PLAN FOR SOIL REMEDIATION: Submit a report acceptable to the Executive Officer that documents soil sampling data and proposes a contingent remedy such as soil vapor extraction or bioremediation for the gasoline tank area if groundwater level drops and floating product recovery is impractical.

   c. **GROUNDWATER RECHARGE**

      1) **COMPLETION DATE: SEPTEMBER 16, 1994**

   TASK 3: RECHARGE FEASIBILITY: Submit a technical report acceptable to the Executive Officer evaluating the feasibility of recharging treated groundwater. The report shall discuss technical feasibility, cost, regulatory constraints, and potential effects on groundwater remediation. If recharge is feasible, the technical report shall include an implementation schedule.

      2) **COMPLETION DATE: According to schedule in Task 3 as approved by Executive Officer**

   TASK 4: IMPLEMENTATION: Submit a technical report acceptable to the Executive Officer documenting that the proposed and approved groundwater recharge has been implemented.

d. **INSTITUTIONAL CONSTRAINTS**

1) **COMPLETION DATE: OCTOBER 31, 1994**

TASK 5: PROPOSED CONSTRAINTS: Submit a technical report acceptable to the Executive Officer documenting procedures to be implemented by the discharger, including a deed restriction prepared and filed by Murray (the owner) prohibiting the use of the upper aquifer groundwater as a source of drinking water. Constraints shall remain in effect until groundwater cleanup standards have been achieved and pollutant levels have stabilized in aquifers underneath the site.

2) **COMPLETION DATE: 60 days after Executive Officer's approval of Task 5**

TASK 6: IMPLEMENT CONSTRAINTS: Submit a technical report acceptable to the Executive Officer documenting that the proposed and approved constraints have been implemented.

e. **COMPLETION DATE: JANUARY 31, 2000**

TASK 7: FIVE-YEAR STATUS REPORT AND EFFECTIVENESS EVALUATION: Submit a technical report acceptable to the Executive Officer containing the results of any additional investigation; an evaluation of the effectiveness of installed final cleanup measures and cleanup costs; additional recommended measures to achieve final cleanup objectives and standards, if necessary; a comparison of previous expected costs with the costs incurred and projected costs necessary to achieve cleanup objectives and standards; and the tasks and time schedule necessary to implement any additional final cleanup measures. This report shall also describe the reuse of extracted groundwater and evaluate and document the cleanup of contaminated groundwater. If cleanup standards in this Order have not been achieved on-site and are not expected to be achieved through continued groundwater extraction and/or soil remediation, this report shall also contain an evaluation addressing whether it is technically practicable to achieve the cleanup standards, and if so, a proposal for procedures to do so.

f. **COMPLETION DATE:** **90 days after request made by the Executive Officer**

TASK 8: EVALUATION OF NEW HEALTH CRITERIA: Submit a technical report acceptable to the Executive Officer which contains an evaluation of how the final plan and cleanup standards would be affected, if the concentrations as listed in Specification B.3. changes as a result of promulgation of drinking water standards, maximum contaminant levels or action levels or other health based criteria.

g. **COMPLETION DATE:** **90 days after request made by the Executive Officer**

TASK 9: EVALUATION OF NEW TECHNICAL INFORMATION: Submit a technical report acceptable to the Executive Officer that documents an evaluation of new technical and economic information which indicates that cleanup standards or cleanup technologies in some areas may be considered for revision. Such technical reports shall not be required unless the Executive Officer or the Board determines that such new information indicates a reasonable possibility that the Order may need to be changed under the criteria described in Finding 21.

h. **CURTAILMENT OF REMEDIATION**

1) **COMPLETION DATE:** **90 days prior to proposed curtailment**

TASK 10: CURTAILMENT CRITERIA AND PROPOSAL: Submit a technical report acceptable to the Executive Officer containing a proposal to curtail extracting volatile organic compounds from any SVE well, pumping from any groundwater extraction well, recovering floating products from any recovery well, and the criteria used to justify such curtailment. Curtailment of SVES, groundwater extraction, and floating product recovery may include, but is not limited to: final shutdown of the system, a phased approach to shutdown, pulsed pumping, or a significant change in extracting or pumping rates. The report shall include the rationale for curtailing or modifying the system. The report for final shutdown of the system shall include data to show that soil and groundwater cleanup standards for all volatile organic compounds and

total petroleum hydrocarbons have been achieved and pollutant levels have stabilized or are stabilizing, and that the potential for pollutant levels rising above cleanup standards is minimal.

If the proposal is substantive curtailment of groundwater extraction, it is subject to approval by the Board. Otherwise, it is subject to approval by the Executive Officer.

If the dischargers claim that it is not feasible to achieve cleanup standards, the report shall evaluate the alternate standards that can be achieved, and that the alternative cleanup standards proposed will be protective of human health and the environment.

2) **COMPLETION DATE:** **60 days after Board or Executive Officer approves curtailment**

TASK 11: IMPLEMENTATION OF CURTAILMENT: Submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical report submitted for Task 10.

3. The submittal of technical reports evaluating interim and final remedial measures will include a projection of the cost, effectiveness, benefits, and impact on public health, welfare, and environment with the guidance provided by Subpart F of the NCP (40 CFR Part 300); Section 25356.1(c) of the California Health and Safety Code; CERCLA guidance documents; and shall be consistent with the State Water Resources Control Board's Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California."

4. If the dischargers are delayed, interrupted or prevented from meeting one or more of the completion dates specified in this order, the dischargers shall promptly notify the Executive Officer, and the Board may consider revision to this Order for such delays that are beyond the control of the dischargers.

5. Technical status reports on compliance with the Prohibitions, Specifications, and Provisions of this Order shall be submitted quarterly to the Board commencing on July 31, 1994, and covering the previous

calendar quarter. Reports shall be submitted on a quarterly basis, until one year after implementation of the expanded groundwater extraction and treatment system. The technical reports may then be submitted semi-annually after the second and fourth quarters thereafter, or as required by the Executive Officer. These reports shall consist of: (1) a summary of work completed since submittal of the previous report and work projected to be completed by the time of the next report, (2) obstacles identified which may threaten compliance with the schedule of this Order and what actions are being taken to overcome these obstacles, and (3) include, in the event of non-compliance with any Provision of Specification of this Order, written notification which clarifies the reasons for non-compliance and which proposes specific measures and a schedule to achieve compliance. This written notification shall identify work not completed that was projected for completion, and shall identify the impact of non-compliance on achieving compliance with the remaining requirements of this Order.

These reports shall also identify any problems with or changes in the SVES, groundwater extraction and treatment system, and floating product recovery. Additionally, the reports shall include, but not be limited to, updated water table and piezometric surface maps and plume maps for all affected water-bearing zones, and appropriately scaled and detailed base maps showing the location of all monitoring wells and identifying adjacent facilities and structures. These reports may be combined with quarterly self-monitoring reports required pursuant to Provision C.1.

6. On an annual basis beginning with the report due January 31, 1995, or as required by the Executive Officer, the status report shall include an evaluation of the progress of cleanup measures such as hydraulic control of the plume, performance of the remedy, estimation of capture zones influenced by extraction wells both for soil and groundwater, establishment cone of depression using field data, and a summary of soil and water quality data. The report shall also evaluate the effects of operation of existing extraction wells on groundwater levels and an estimate of the amount of chemicals removed via the extraction systems (soil and groundwater) and floating products recovery system. These reports may be combined with quarterly self-monitoring reports required in Provision C.1. No such report needs to be filed in the year 2000.

7. The dischargers shall submit technical reports acceptable to the Executive Officer containing revised Quality Assurance Project Plans, Site Safety Plans, and Site Sampling Plans, if requested by the Executive Officer.

8. All hydrogeological plans, specification, reports, and documents shall be signed by or stamped with the seal of a registered geologist, engineering geologist, or professional engineer.

9. All samples shall be analyzed by State certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Board review.

10. The dischargers shall maintain in good working order, and operate, as efficiently as possible, any facility or control system installed to achieve compliance with the requirements of this Order.

11. The dischargers shall provide copies of all correspondence, reports, and documents pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order to the Santa Clara Valley Water District. The dischargers shall also provide copies of cover letters, title page, table of contents and the executive summaries of compliance report to the following agencies.

    a. Santa Clara County Department of Environmental Health
    b. City of San Jose Office of Environmental Services
    c. California EPA/DTSC Site Mitigation Branch

12. The dischargers shall permit the Board or its authorized representative, in accordance with Section 13267(c) of the California Water Code:

    a. Entry upon premises in which any pollution sources exist, or may potentially exist, or in which any required records are kept, which are relevant to this Order.

    b. Access to copy any records required to be kept under the terms and conditions of this Order.

c. Inspection of any monitoring equipment or methodology implemented in response to this Order.

d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger.

13. If any hazardous substance is discharged in or on any waters of the State, or discharged and deposited where it is, or probably will be discharged in or on any water of the State, the dischargers shall report such discharge to this Board, at (510) 286-1255 on weekdays during office hours from 8:00 a.m. to 5:00 p.m., and to the Office of Emergency Services at (800) 852-7550 during non-office hours. A written report shall be filed with the Board within five working days and shall contain information relative to: the nature of the waste or pollutant, quantity involved, duration of incident, cause of spill, estimated size of affected area, nature of effects, corrective measures that have been taken or planned, and scheduled of these activities, and persons, notified.

14. The dischargers shall file a report on any changes in site occupancy and ownership associated with the facility described in this Order.

15. The Board will review this Order periodically and may revise the requirements when necessary.

16. Board Order No. 88-087 is hereby rescinded.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on June 15, 1994.

Steven R. Ritchie
Executive Officer

Attachments: Figure 1 - Site Map
Groundwater Self-Monitoring Program

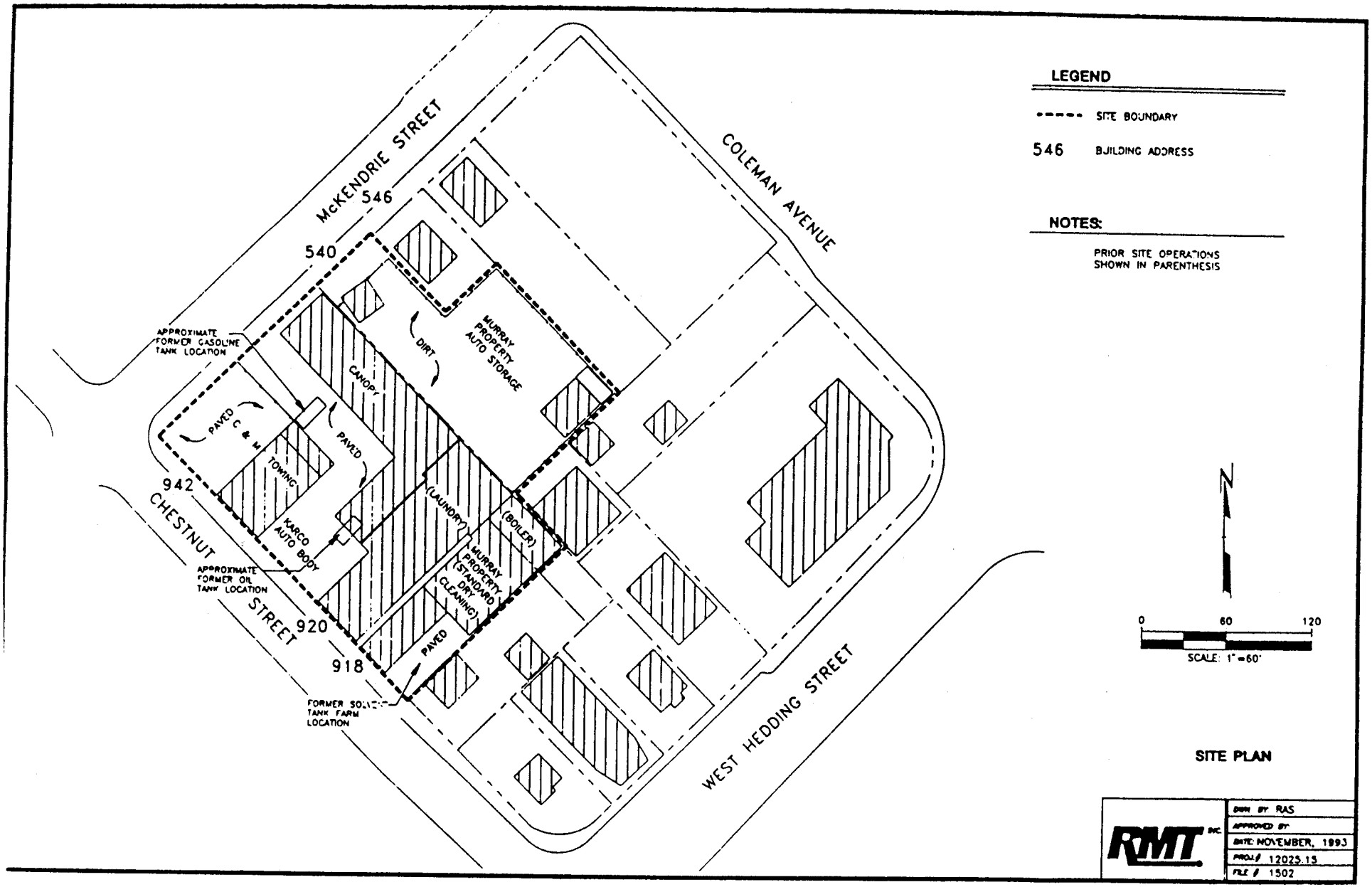
McKENDRIE STREET
546
540
COLEMAN AVENUE
APPROXIMATE FORMER GASOLINE TANK LOCATION
PAVED
C & M
TOWING
PAVED
CANOPY
DIRT
MURRAY PROPERTY AUTO STORAGE
942
CHESTNUT STREET
KARCO AUTO BODY
(LAUNDRY)
(BOILER)
MURRAY PROPERTY (STANDARD DRY CLEANING)
APPROXIMATE FORMER OIL TANK LOCATION
920
918
PAVED
FORMER SOLVENT TANK FARM LOCATION
WEST HEDDING STREET
LEGEND
SITE BOUNDARY
546 BUILDING ADDRESS
NOTES:
PRIOR SITE OPERATIONS SHOWN IN PARENTHESIS
N
0
60
120
SCALE: 1" = 60'
SITE PLAN
RMT INC.
DWN BY RAS
APPROVED BY
DATE NOVEMBER, 1993
PROJ # 12025.13
FILE # 1502

FIGURE 1

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

GROUNDWATER SELF-MONITORING PROGRAM

FOR

Aratex Services, Inc.

918/920/942 Chestnut Street

San Jose, Santa Clara County

ORDER NO. 94-071

Adopted on June 15, 1994

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

Aratex Services, Inc.
918/920/942 Chestnut Street Site

GROUNDWATER SELF-MONITORING PROGRAM

A. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13283, 13383 and 13387(b) of the California Water Code and this Regional Board's Resolution No. 73-16.

The principal purposes of a monitoring program by a waste discharger, also referred to as self-monitoring program (SMP), are: (1) to document compliance with waste discharge requirements and prohibitions established by this Regional Board, (2) to facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge, (3) to develop or assist in the development of effluent or other limitations, discharge prohibitions, national standards of performance, pretreatment and toxicity standards, and other standards, and (4) to prepare water and waste water quality inventories.

B. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed according to the EPA Method 8000 series in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," dated November 1986; or other methods approved and specified by the Executive Officer of this Regional Board.

C. REPORTS TO BE FILED WITH THE REGIONAL BOARD

1. Violation of Requirements

In the event the discharger is unable to comply with the conditions of the site cleanup requirements and prohibitions due to:

a. maintenance work, power failures, or breakdown of waste treatment equipment, or

b. accidents caused by human error or negligence, or

c. other causes, such as acts of nature, or

d. poor operation or inadequate system design,

the discharger shall notify the Regional Board office by telephone as soon as he or his agents have knowledge of the incident and confirm this notification in writing within five working days of the telephone notification. The written report shall include time, date, and person notified of the incident. The report shall include pertinent information explaining reasons for the non-compliance and shall indicate what steps were taken to prevent the problem from recurring.

2. The discharger shall file a written technical report to be received at least 30 days prior to advertising for bid (or 60 days prior to construction) on any construction project which would cause or aggravate the discharge of waste in violation of requirements; said report shall describe the nature, cost, and scheduling of all action necessary to preclude such discharge.

3. Self-Monitoring Reports (SMR)

SMRs shall be filed quarterly and are due one month after the end of the calendar quarter. The next SMR is due July 31, 1994.

The discharger shall notify Regional Board staff by telephone within fourteen days of receiving laboratory analytical results if (i) a chemical is detected which has not been detected previously, or (ii) if the concentration of any chemical in any well is at least one order of magnitude greater than detected the previous quarter.

The SMR shall be comprised of the following:

a. Letter of Transmittal:

A letter from the discharger transmitting the SMR should accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period and actions taken or planned for correcting any requirement violations. If the discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to this correspondence will be satisfactory. Monitoring reports and the letter transmitting reports shall be signed by a Principal Executive Officer or a duly authorized representative of that person.

The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true and correct.

b. Results of Analyses and Observations

(1) Results from each required analysis and observation shall be submitted in the self-monitoring regular reports. Results shall also be submitted for any additional analyses performed by the dischargers at the specific request of the Board. Quarterly water level data shall also be submitted in the report.

(2) The SMR shall include the groundwater extraction rates from each extraction well, water level data from the extraction wells, the results of any aquifer tests conducted.

(3) The SMR shall include a discussion of unexpected operational changes which could affect performance of the extraction and treatment system, such as groundwater velocity and gradient fluctuations and maintenance shutdown.

(4) The SMR shall also identify the analytical procedures used for analyses either directly in the report or by reference to a standard plan accepted by the Executive Officer. Any special methods shall be identified and should have prior approval of the Board's Executive Officer.

(5) The discharger shall describe in the SMR the reasons for significant increases in a pollutant concentration at a well. The description shall include:

(a) the source of the increase,

(b) how the discharger determined or will investigate the source of the increase, and

(c) what source removal measures have been completed or will be proposed.

(6) Original lab results shall be retained and shall be made available for inspection for six years after origination or until after all continuing or impending legal or administrative actions are resolved.

(7) The SMR shall include a summary of work completed since submittal of the previous report, design specifications if applicable, and work projected to be completed by the time of the next report.

(8) The SMR shall include tabulated results of self-monitoring water quality sampling analyses for all wells using appropriate analytical methods. The annual report shall include updated isoconcentration maps of VOCs in groundwater.

(9) The SMR shall include updated water table and piezometric surface maps, based on the most recent water level measurements for all affected water-bearing zones for all on-site and off-site wells. Interpretations of the data shall be discussed.

(10) A map or maps shall accompany the SMR showing all sampling locations and plume contours for the predominant chemical(s), or other indicator chemicals upon request by the Executive Officer.

(11) The annual report may be combined with the fourth quarter regular report and shall include cumulative data for current year. The annual report for January 31, 1995, shall also include minimum, maximum, median, and average water quality data for the year, and a summary of water level data and GC/MS results. The report shall contain both tabular and graphical summaries of historical monitoring data.

4. <u>SMP Revisions</u>

Additional long term or temporary changes in the sample collection frequency and routine chemical analysis may become warranted as

monitoring needs change. These changes shall be based on the following criteria and shall be proposed in a SMR. The changes shall be implemented no earlier than 45 days after the SMR is submitted for review unless approved in writing.

Criteria for SMP revision:

(1) Discontinued analysis for a routine chemical parameter for a specific well after a two-year period of below detection limit values for that parameter

(2) Changes in sampling frequency for a specific well after a two-year period of below detection limit values for all chemical parameters from that well

(3) Temporary increases in sampling frequency or changes in requested chemical parameters for a well or group of wells because of a change in data needs (e.g. groundwater extraction effectiveness or other remediation strategies)

(4) Add routine analysis for a chemical parameter if the parameter appears as an additional chromatographic peak in three consecutive samples from a particular well

(5) Alter sampling frequency based on evaluation of collective data base

D. DESCRIPTION OF SAMPLING STATIONS

See Table 1 for monitoring wells installed at the time of the adoption of this SMP.

E. SCHEDULE OF SAMPLING AND ANALYSES

1. All wells at the site shall be sampled according to the schedule in Table 1.

2. If a previously undetected compound or peak is detected in a sample from a well, a second sample shall be taken within a week after the results from the first sample are available. All chromatographic peaks

detected in two consecutive samples shall be identified and quantified in the SMR.

3. Groundwater elevations shall be obtained on a quarterly basis from all wells at the site and submitted in the self-monitoring report with the sampling results.

4. Well depths shall be determined on an annual basis and compared to the depth of the well as constructed. If greater than ninety percent of screen is covered, the discharger shall clear the screen by the next sampling.

I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing self-monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with site cleanup requirements established in Regional Board Order No. 94-071

2. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordered by the Executive Officer or Regional Board.

3. Was adopted by the Board on June 15, 1994.

6/15/94
Date

Steven R. Ritchie
Executive Officer

Attachments: Table 1 - Monitoring Schedule

Table 1

Groundwater Monitoring Schedule for
918/920/942 Chestnut Street Facility

Monitoring Well Location	Sampling Frequency
MW-2	Quarterly
MW-5	Quarterly
LF-12	Quarterly
EX-1	Quarterly
LF-19	Annually
EX-2	Annually
LF-9	Annually
MW-4	Annually
MW-6	Annually
MW-7	Annually
LF-10	Annually
LF-15	Annually
LF-16	Annually
LF-21	Annually
LF-22	Annually
LF-23	Annually

Note:

1. For quarterly monitoring, water samples should be analyzed for total petroleum hydrocarbons and volatile organic compounds, using EPA Methods 8015 and 8020 in quarters 1, 2 & 3 and using EPA Methods 8015 and 8240 in quarter 4.

2. For annual monitoring, water samples should be analyzed for total pertroleum hydrocarbons and for volatile organic compounds, using EPA Methods 8015 and 8240, respectively.