STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
320 West 4th Street, Suite 200, Los Angeles, California 90013

FACT SHEET
WASTE DISCHARGE REQUIREMENTS
FOR
3M PHARMACEUTICALS
REMEDIATION SYSTEM
TREATED GROUNDWATER BENEFICIAL USE

ORDER NO. R4-2002-0030 (SERIES NO. 34)
CI-8641, FILE# 03-035

FACILITY ADDRESS
3M Pharmaceuticals
19901 Nordhoff Street
Northridge, CA 91324

FACILITY MAILING ADDRESS
Mr. Robert Paschke, P.E.
Environmental Engineering Manager
3M Environmental Technology and Safety Services
900 Bush Avenue, Building 42-2E-27
St. Paul, Minnesota, 55106

PROJECT DESCRIPTION:
3M Pharmaceuticals is located at 19901 Nordhoff Street, Northridge, at approximately Latitude: N34° 13' 54", Longitude: W118° 34' 13" (Figures 1&2). The underlying groundwater at the site is contaminated with chloroform, perchloroethene (PCE), trichloroethene (TCE), 1,2-dichloroethane (1,2-DCA), Freon-11, methylene chloride, carbon tetrachloride, and gasoline constituents. The site was permitted to treat and dispose of treated groundwater to surface water (Winnetka Avenue storm drain) west of the site, under National Pollutant Discharge Elimination System (NPDES) No. CA 0063312, issued by the Los Angeles Regional Water Quality Control Board (Regional Board).

The groundwater pumping system consists of 15 groundwater recovery wells, and an air stripper groundwater treatment system. Each recovery well contains a submersible electric pump. Sustained flows from each well range from <1 gallons per minute (gpm) from several wells, to 10-12 gpm from well REW-1. The treatment system capacity is 144,000 gallons per day (gpd). The existing NPDES permit allows discharge to the storm drain. Currently, the system treats approximately 60,000 gpd. Approximately 32,000 gpd are beneficially used in the facility's air handling equipment. With the proposed modification, the remaining water that is currently discharged will be infiltrated on site for landscape irrigation.

The main objectives of reusing the treated groundwater are the following:

1. To obtain a beneficial reuse from the treated groundwater by using it for irrigation.

2. Return the treated groundwater to the aquifer to aid prevention of aquifer depletion.

A work plan was developed for the proposed modification to the treatment and irrigation systems. The work plan was approved by this Regional Board in a letter dated July 25, 2003. The Work Plan proposes:

1. To infiltrate treated groundwater to the underlying aquifer beneath approximately 11.5 acres of landscaped and open plant-covered land (Figure 1).

2. That the infiltration system will be placed in operation in three phases. The areas of the three phases are also shown in Figure 1.

3. That the first phase will consist of connecting into the existing irrigation system to supply treated groundwater to the existing landscaped area. The second phase will provide treated water to the open area in the northwest portion and the west boundary of the site. The third phase will supply treated groundwater to the open area north of Building 3 and along the east boundary of the site.

4. To irrigate at night between 8:00 PM and 6:00 AM. Measures are in place to assure that watering will not result in runoff.

5. To properly label all sprinkler heads and valve boxes according to the reclaimed water standard. There will be signs posted to indicate that the irrigation water is reclaimed. The treated groundwater is not truly "reclaimed" water, as it does not originate from domestic-type waste. The intent of the notice is to inform workers, etc. that the water is not potable.

6. The existing treated groundwater discharge line will be diverted from the discharge line with a tee, check valve, and a control valve so that the treated groundwater can be discharged to either the storm drain or the irrigation system.

7. During extended rainy periods, the following alternatives will be available to avoid surface runoff: i) The water level in the holding tank will be maintained at a level to contain at least 3 days of full flow, without any discharge through irrigation; ii) The site's air handling system currently uses approximately 50% of the total volume of treated groundwater, this capacity will not be influenced by rainfall, therefore, if needed, selected interior (source area) wells can be shut off, or have flow rates reduced, while the down gradient wells maintain their flow rates and contain the contaminant plume; iii) In the unlikely event that the holding tank is filled and the air handling system fails, the pumping wells can be temporarily shut down until the air handling system is operating, a short shutdown will not cause a significant loss of plume control. iiii) It will be possible to make various combinations of these three earlier alternatives to avoid the need for discharge through irrigation.

Groundwater treatment system influent, intermediate, and effluent water will be monitored and analyzed throughout the remediation process according to NPDES permit requirements.

Based on the aforementioned facts and the nature of the treated groundwater (through the remediation system) that will be used for irrigation and groundwater replenishment, it can be concluded that the infiltrated treated groundwater will have no adverse effects on the groundwater quality of the existing uppermost aquifer. On the contrary, the treated water is expected to contain more dissolved oxygen than in the natural aquifer water and this will promote and accelerate the on going bioremediation process beneath the site.

Site activities related to Phase 1 are expected to begin on October 1, 2003, with operation expected by December 1, 2003.

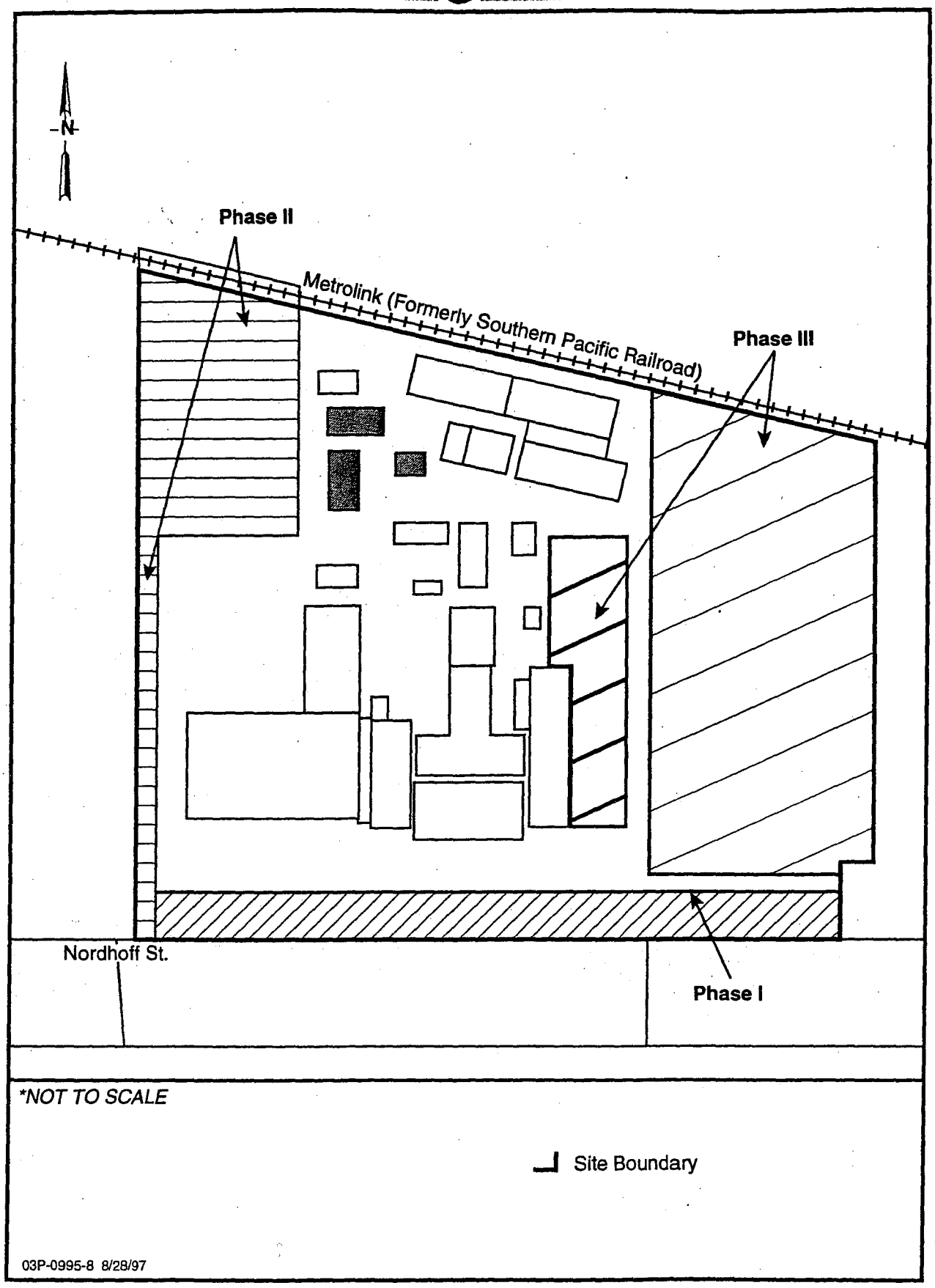

FIGURE 1 LOCATION OF LANDSCAPED AND OPEN AREAS
3M PHARMACEUTICALS, NORTHRIDGE, CA

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

MONITORING AND REPORTING PROGRAM NO. CI-8641
FOR
3M PHARMACEUTICALS

ENROLLMENT UNDER REGIONAL BOARD
ORDER NO. R4-2002-0030 (Series No. 034)
FILE NO. 03-035

I. MONITORING AND REPORTING REQUIREMENTS

A. 3M Pharmaceuticals Company (hereinafter Discharger) shall implement this monitoring program on the effective date of this enrollment (September 19, 2003) under Regional Board Order No. R4-2002-0030. The first monitoring report under this program, for July – September 2003, shall be received at the Regional Board by October 15, 2003. Subsequent monitoring reports shall be received at the Regional Board according to the following schedule:

Monitoring Period	Report Due
January – March	April 15
April – June	July 15
July – September	October 15
October – December	January 15
Annual Summary Report	March 1 of each year

B. If there is no discharge during any reporting period, the report shall so state. Monitoring reports must be addressed to this Regional Board, Attention: Information Technology Unit.

C. By March 1 of each year, the Discharger shall submit an annual summary report to the Regional Board. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous calendar year. In addition, the Discharger shall discuss the compliance record and the corrective actions taken or planned, which may be needed to bring the discharge into full compliance with the Requirements.

D. The Discharger shall comply with requirements contained in Section G. of Order No. R4-2002-0030 "*Monitoring and Reporting Requirements*" in addition to the aforementioned requirements.

September 19, 2003

II. WATER QUALITY MONITORING

A. Influent Monitoring

A representative sample of groundwater shall be obtained from the treatment stream influent line immediately before entry into the treatment system. This sampling station shall not be changed and any proposed change of this sampling location shall be identified and approved by the Executive Officer prior to use.

The following shall constitute the influent monitoring program for the combined groundwater stream from the extraction wells immediately before entering the treatment system:

CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS
Total Petroleum Hydrocarbons as Gasoline (TPH-G) (EPA Method 8015B)	µg/l	grab	Quarterly
VOCs including oxygenates (EPA Method 8260B)	µg/l	grab	Quarterly
Oil & Grease (EPA Method 413.2)	mg/l	grab	Quarterly
PH	pH units	grab	Quarterly
Temperature	°F	grab	Quarterly

µg/L: micrograms per liter; mg/L: milligrams per liter

B. Effluent Monitoring

A sampling station shall be established at the point of discharge from the treatment system (prior to the irrigation system) and shall be located where representative samples of the effluent can be obtained. This sampling station shall not be changed and any proposed change of sampling location shall be identified and approved by the Executive Officer prior to its use.

The following shall constitute the effluent monitoring program for the treated water prior to discharge to the irrigation system:

CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS
Total Petroleum Hydrocarbons as Gasoline (TPH-G) (EPA Method 8015B)	µg/l	grab	Quarterly
VOCs including oxygenates (EPA Method 8260B)	µg/l	grab	Quarterly
PH	pH units	grab	Quarterly
Temperature	°F	grab	Quarterly
Sulfides	mg/l	grab	Quarterly
Sulfate	mg/l	grab	Quarterly
Chloride	mg/l	grab	Quarterly
Nitrate-Nitrogen	mg/ll	grab	Quarterly

µg/L: micrograms per liter; mg/L: milligrams per liter
If any of these constituents exceed the discharge limits, the analyses frequency must be increased to weekly. After four consecutive weeks of compliance with the discharge limits, the analyses frequency may return to quarterly. The discharge must be discontinued if the four consecutive samples do not show full compliance.

C. Groundwater Monitoring

Representative samples of groundwater shall be obtained from all groundwater monitoring wells sampled for the "Progress Report for the First Semester 2003", dated July 2003. These groundwater-monitoring wells shall remain the same and any proposed change of monitoring locations shall be identified and approved by the Executive Officer prior to their use. For those constituents for which background data are not available, background concentrations must be determined before the start of irrigation. The following shall constitute the ongoing groundwater-monitoring program:

CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS
Total Petroleum Hydrocarbons as Gasoline (TPH-G) (EPA Method 8015B)	µg/l	grab	Quarterly
VOCs including oxygenates (EPA Method 8260B)	µg/l	grab	Quarterly
Sulfate	mg/l	grab	Quarterly
Chloride	mg/l	grab	Quarterly
Boron	mg/l	grab	Quarterly
Total Dissolved Solids	mg/l	grab	Quarterly
PH	pH units	grab	Quarterly
Temperature	°F	grab	Quarterly

µg/L: micrograms per liter; mg/L: milligrams per liter

In addition, for 1 year, monitoring wells RMW-12, RMW-5, and RMW-16 (Figure 1), must be sampled and analyzed quarterly for the following:

CONSTITUENT	Acceptable Test Method	TYPE OF SAMPLE	REPORTING LIMIT
Perchlorate	USEPA Method 314.0	grab	4 µg/L
N-Nitrosodimethylamine (NDMA)	USEPA Method 1625	grab	0.002 µg/L
1,4-Dioxane	USEPA Method 8270	grab	2 µg/L
1,2,3-Trichloropropane	USEPA Method 524.2	grab	0.005 µg/L
Total/Hexavalent Chromium	USEPA Method 200.8/218.6	grab	1 µg/L/0.3 µg/L
Polybrominated Diphenyl Ether	USEPA Method 8270	grab	2 µg/L

µg/L: micrograms per liter

All groundwater monitoring reports must include, at minimum, the following:

a. Well identification, date and time of sampling;
b. Sampler identification, and laboratory identification; and
c. Quarterly observation of groundwater levels, recorded to 0.01 feet mean sea level and groundwater flow direction.
d. Tabulated analytical results

III. OPERATION AND MAINTENANCE REPORT

The Discharger shall file a technical report with this Regional Board, no later than 30 days after receipt of these Waste Discharge Requirements, relative to the operation and maintenance program for the groundwater treatment system. The information to be contained in that report shall include, at a minimum, the following:

1. The name, address, and telephone number of the person or company responsible for operation and maintenance of the groundwater treatment system;

2. Type of maintenance (preventive or corrective); and

3. Frequency of maintenance, if preventive.

IV. MONITORING FREQUENCIES

Specifications in this monitoring program are subject to periodic revisions. Monitoring requirements may be modified or revised by the Executive Officer based on review of monitoring data submitted pursuant to this Order. Monitoring frequencies may be adjusted to a less frequent basis or parameters and locations dropped by the Executive Officer if the Discharger makes a request and the request is backed by statistical trends of monitoring data submitted.

V. CERTIFICATION STATEMENT

Each report shall contain the following completed declaration:

"I certify under penalty of law that this document, including all attachments and supplemental information, was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting

false information, including the possibility of a fine and imprisonment.

Executed on the _____day of _____

at _____

_____(Signature)

_____(Title)"

All records and reports submitted in compliance with this Order are public documents and will be made available for inspection during business hours at the office of the California Regional Water Quality Control Board, Los Angeles Region, upon request by interested parties. Only proprietary information, and only at the request of the Discharger will be treated as confidential.

Ordered by: _____ Date: September 19, 2003
Dennis A. Dickerson
Executive Officer

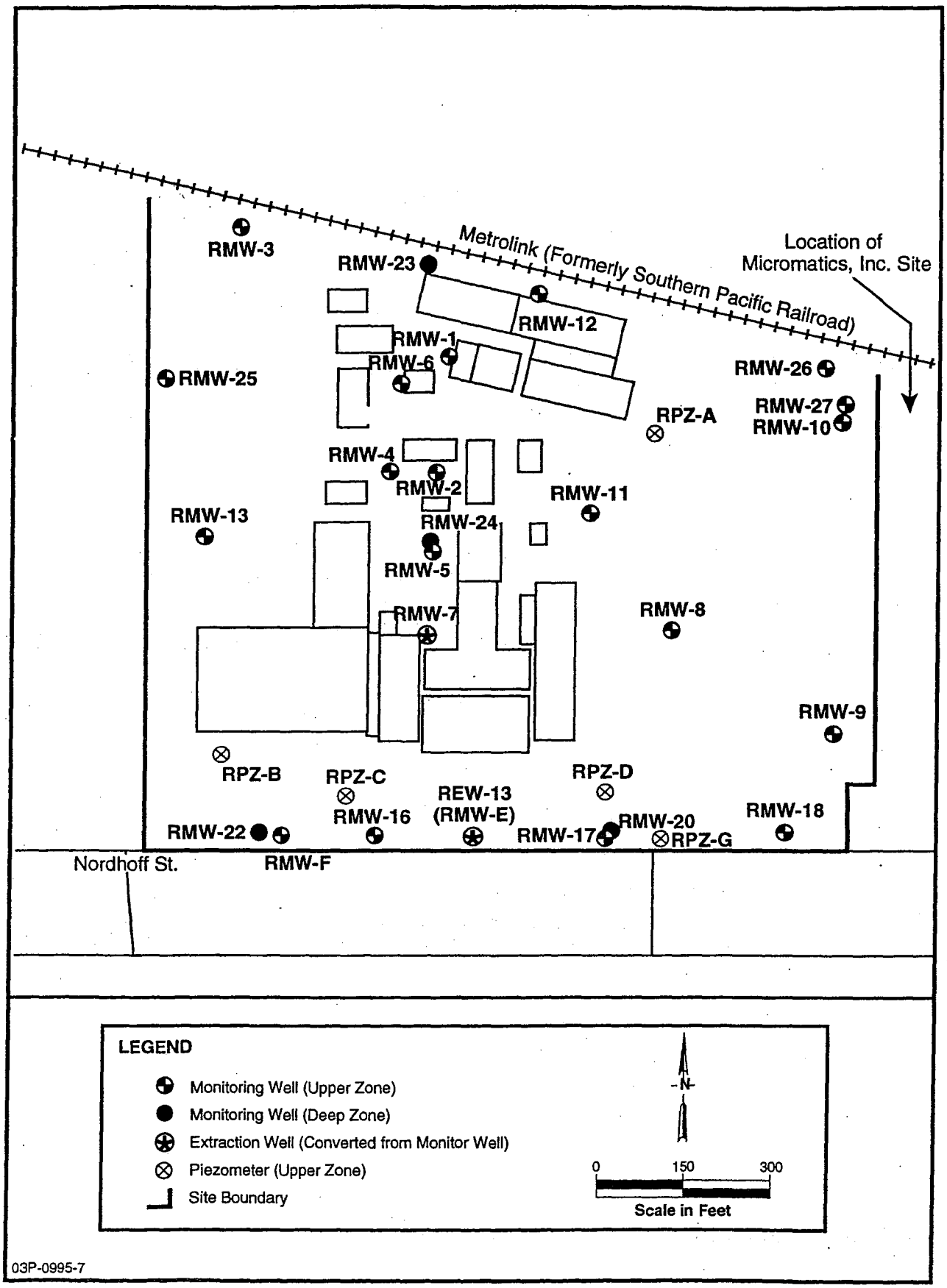

FIGURE 1 LOCATION OF ON-SITE GROUNDWATER MONITORING WELLS
3M PHARMACEUTICALS, NORTHRIDGE

California Regional Water Quality Control Board

Los Angeles Region

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320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: http://www.swrcb.ca.gov/rwqcb4

September 19, 2003

Mr. Robert Paschke, P.E.
Environmental Engineering Manager
3M Environmental Technology and Safety Services
900 Bush Avenue, Building 42-2E-27
St. Paul, Minnesota, 55106

GENERAL WASTE DISCHARGE REQUIREMENTS (ORDER NO. R4-2002-0030, SERIES NO. 34, CI NO. - 8641) FOR PROPOSED INFILTRATION OF TREATED GROUNDWATER FOR LANDSCAPE IRRIGATION - 3M PHARMACEUTICALS, 19901 NORDHOFF STREET, NORTHRIDGE, CALIFORNIA (SLIC NO. 372, SITE ID NO. 2041300)

Dear Mr. Paschke:

We have completed our review of your application for coverage under General Waste Discharge Requirements (WDR) to infiltrate treated groundwater into the shallow aquifer underlying the site for irrigation, as a modification to the operation of ongoing groundwater remediation system currently at the site.

The primary contaminants of concern (COCs) in groundwater at the 3M Pharmaceuticals include chloroform, perchloroethene (PCE), trichloroethene (TCE), 1,2-dichloroethane (1,2-DCA), Freon-11, methylene chloride, carbon tetrachloride, and gasoline constituents. The groundwater remediation system is a groundwater pump and treat system. The groundwater pump and treat system withdraws contaminated groundwater and treats it using two air stripping towers operated in series. A third tower as a standby during maintenance. The treated groundwater (effluent) is discharged to surface water (Winnetka Avenue storm drain) west of the site, under National Pollutant Discharge Elimination System (NPDES) No. CA 0063312, issued by the Los Angeles Regional Water Quality Control Board (Regional Board), or used in the facility's air handling system. The system design flow rate is 144,000 gallons per day (gpd). Currently, the system treats approximately 60,000 gpd. Of the 60,000 gallons, approximately 32,000 are beneficially used in the facility's air handling equipment.

The proposed system modification expands the beneficial reuse of the treated groundwater. The treatment system effluent, that is not used in the facility's air-handling equipment, will be diverted to a holding tank, and used to irrigate landscaping.

You may begin to infiltrate the treated groundwater immediately, at 3M Pharmaceuticals facility, approximately at Latitude: N34° 13' 54", Longitude: W118° 34' 13".

Because the system influent, intermediate, and effluent water are monitored and analyzed throughout the remediation process according to NPDES permit requirements, you may use the same set of data for Monitoring and Reporting Program CI-8641 of this WDR. In addition, the volume of the infiltrated groundwater shall be documented per the Monitoring and Reporting Program CI-8641.

Regional Board staff have reviewed the information provided and have determined that the proposed discharge meets the conditions specified in Regional Board Order No. R4-2002-0030, "*General Waste Discharge Requirements for Groundwater Remediation at Petroleum Hydrocarbon Fuel and/or Volatile Organic Compound Impacted Sites*," adopted by this Regional Board on January 24, 2002. Refer to the attached Fact Sheet.

Enclosed are your Waste Discharge Requirements, consisting of Regional Board Order No. R4-2002-0030 and Monitoring and Reporting Program CI-8641. Please note that the discharge limits in Attachment A (DWR Basin No. 4-12 (San Fernando Basin, west of the 405)) of this Order No. R4-2002-0030 are applicable to your discharge.

The Monitoring and Reporting Program (CI-8641) requires you to implement the monitoring program on the effective date of this enrollment (September 19, 2003) under Regional Board Order No. R4-2002-0030. All monitoring reports (two copies each) should be sent to the Regional Board, ATTN: Information Technology Unit.

When submitting monitoring or technical reports to the Regional Board per these requirements, please include a reference to "Compliance File No. CI-8641", which will assure that the reports are directed to the appropriate file and staff. Also, please do not combine other reports with your monitoring reports. Submit each type of report as a separate document.

We are sending a copy of Order No. R4-2002-0030 only to the applicant. A copy of the Order will be furnished to anyone who requests it.

If you have any questions, please contact Mr. Peter Raftery at (213) 576-6724.

Sincerely,

Dennis A. Dickerson
Executive Officer

Enclosures:
1) Fact Sheet
2) General Waste Discharge Requirements, Order No. R4-2002-0030
3) Monitoring and Reporting Program, CI No. 8641

cc: Mr. Mike Floyd, Division of Water Quality, State Water Resources Control Board
Mr. Richard Wagner, Department of Health Services, County of Los Angeles
Mr. Mark Mackowski, Upper Los Angeles River Area Water Master, Los Angeles
Mr. Jaisimha Kesari, Weston Solutions, Inc., West Chester, Pennsylvania