State of New Mexico
ENVIRONMENT DEPARTMENT
Hazardous & Radioactive Materials Bureau
525 Camino De Los Marquez
P.O. Box 26110
Santa Fe, New Mexico 87502
(505) 827-4358
Fax (505) 827-4389

GARY E. JOHNSON
GOVERNOR

MARK E. WEIDLER
SECRETARY

EDGAR T. THORNTON, III
DEPUTY SECRETARY

CERRTIFIED MAIL
RETURN RECEIPT REQUESTED

March 21, 1996

Mr. Keith Hampe
Vice-President, Albuquerque Operations
Philips Semiconductors
9201 Pan American Freeway NE
Albuquerque, New Mexico 87113

Dear Mr. Hampe:

RE: RCRA Permit: HSWA Module Modification

Dear Mr. Hampe:

Enclosed please find your copy of the approved modifications to the Hazardous and Solid Waste Amendments (HSWA) module of the Resource Conservation and Recovery Act (RCRA) permit (Permit No. NMD00709782) for the Philips Semiconductors' Albuquerque plant. The modifications are effective as of the date of issuance.

These modifications were initiated and developed by the US Environmental Protection Agency (EPA) during 1995 under 40 CFR 270.41, ***Modification or revocation and reissuance of permits***. Because the State received authorization for some portions of the HSWA Corrective Action Program in January 1996, all HSWA related issues are now administered by the New Mexico Environment Department (NMED).

For ease of review, a mark-up copy of the module is also included. This copy shows changes made by NMED to the EPA modifications. These changes are administrative in nature and incorporate the change in administrative authority from EPA to NMED. Additions to the modifications are shown in redline and deletions in ~~strikeout~~.

Philips Semiconductors was the only commenter on the draft permit. Responses to these comments were prepared by EPA and are also enclosed for your information.

The HSWA module contains several references and requirements regarding the storage units currently regulated under this permit. As you know, these units are being closed under a separate action and will be regulated as ninety-day-storage units. Upon approval of Philips' final closure report for these units, sections in the RCRA permit, including the HSWA module, which pertain to the storage units will no longer be in effect. However, the HSWA module requirements for Corrective Action will remain in effect.

If you have any questions or comments regarding these modifications, please contact Stephanie Kruse of the Hazardous and Radioactive Materials Bureau at 827-1561.

Sincerely,

Ed Kelley

Ed Kelley, Ph. D., Director
Water and Maste Management Division

Enclosures

xc: Ed Kelley, Ph. D.
Benito Garcia, Chief, HRMB
Barbara Hoditschek, HRMB
Ron Kern, HRMB
Jim Cochran, Philips
David Neleigh, EPA
PS HSWA file - 96

MODIFICATIONS
to
MODULE IV - CORRECTIVE ACTION
of
RCRA PERMIT NO. NMD000709782-1

PHILIPS SEMICONDUCTORS
ALBUQUERQUE, NEW MEXICO

Issued by
NEW MEXICO ENVIRONMENT
DEPARTMENT

MARCH 1996

HAZARDOUS WASTE FACILITY PERMIT

MODULE V - CORRECTIVE ACTION

PERMITTEE: Philips Semiconductors, Inc. (formerly known as Signetics Company)

LOCATION: 9201 Pan American Freeway, N.E.
Albuquerque, New Mexico 87113

ID NUMBER: NMD000709782

PERMIT NUMBER: NMD000709782-1

EFFECTIVE DATE: April 1, 1986

EXPIRATION DATE: April 1, 1996

Pursuant to the New Mexico Hazardous Waste Act (Section 74-4-1, et seq., NMSA 1978) and the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. 6901, et seq.) and the Hazardous and Solid Waste Amendments of 1984 (HSWA), a permit is issued to Philips Semiconductors, Inc. (hereafter called the Permittee), formerly known as Signetics Company, to operate a hazardous waste storage facility at the location stated above.

The Permittee must comply with all the terms and conditions of this Permit. This Permit consists of the conditions contained herein. Applicable provisions are those which are in effect on the date of issuance of this Permit (see 20 NMAC 4.1, Subpart IX, 40 CFR 270.32(c)).

This Permit is based in part on the provisions of Sections 3004(u), 3005(i)(3), and 3005(h) of RCRA. These sections are HSWA amendments to RCRA which require corrective action for all releases of hazardous waste or constituents from any solid waste management unit at a treatment, storage, or disposal facility seeking a Permit, regardless of the time at which the waste was placed in such unit and provide the authority to review and modify the Permit at any time. This Permit is also based on the assumption that all information contained in the Permit application is accurate and that the facility will be operated as specified in the Permit application. The Permit application consists of information submitted on August 9, 1984 (and revised February 4, 1985).

Any inaccuracies found in the information may be grounds for the termination or modification of this Permit (see 20 NMAC 4.1, Subpart IX, 40 CFR 270.41, 270.42, and 270.43) and potential enforcement action.

Issued this 18th day of March 1996

by Ed Kelley

Ed Kelley, Ph. D., Director
Water and Waste Management Division
New Mexico Environment Department

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A. STANDARD

A.1 Effect of Permit.

The Permittee is allowed to store hazardous waste in accordance with the conditions of this Permit. Any treatment, storage, or disposal of any hazardous waste not authorized in this Permit is prohibited. Any hazardous waste treatment, storage, or disposal process not authorized in this Permit is prohibited. Compliance with this Permit will be considered compliance, for purposes of enforcement, with the New Mexico Hazardous Waste Act, §74-4-1 et seq., NMSA 1978 and Subtitle C of the Resource Conservation and Recovery Act (RCRA). A full RCRA Permit consists of this Permit which addresses the provisions of the Hazardous and Solid Waste Amendments of 1984 (HSWA) and the State of New Mexico Permit which addresses the portion of the RCRA program for which the State is authorized. Issuance of this Permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations. Compliance with the terms of this Permit does not constitute a defense to any action brought under §74-4-1 et seq., NMSA 1978, Section 7003 of RCRA (42 U.S.C. 6973), Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq., commonly known as CERCLA), or any other law governing protection of public health or the environment.

A.2 Permit Actions.

This Permit may be modified, revoked and reissued, or terminated for cause as specified in 20 NMAC 4.1, Subpart VI, 40 CFR 270.41, 270.42, 270.43, and HSWA Section 212. The filing of a request for a Permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittee, does not stay the applicability or enforceability of any Permit condition. Review of any application for Permit renewal shall consider improvements in the state of control and measurement technology as well as changes in the applicable regulations.

A.3 Duration of Permit.

This Permit is effective for a period of ten (10) years unless terminated, revoked, or reissued.

A.4 Severability.

The provisions of this Permit are severable. If any provision of this Permit is held invalid, the remainder of this Permit shall not be affected thereby. If the application of any provision of this Permit is held invalid, the application of such provision to other circumstances shall not be affected thereby.

A.5 Duty to Comply.

The Permittee shall comply with all conditions of this Permit, except to the extent and for the duration such noncompliance is authorized by an emergency Permit. Any Permit noncompliance constitutes a violation of RCRA and is grounds for enforcement action, Permit termination, revocation and reissuance, modification, or for denial of a Permit renewal application.

A.6 Duty to Reapply.

If the Permittee wishes to continue an activity regulated by this Permit after the expiration date of this Permit, the Permittee must submit a new application for a Permit at least one hundred eighty (180) days before this Permit expires.

A.7 Permit Expiration.

This Permit and all conditions herein will remain in effect beyond the Permit's expiration date if the Permittee has complied with condition A.6 and through no fault of the Permittee, the Secretary of the New Mexico Environment Department or his/her designee (the Secretary) has not issued a new Permit as set forth in 20 NMAC 4.1, Subpart 901.

A.8 Need To Halt Or Reduce Activity Not A Defense.

It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Permit.

A.9 Duty to Mitigate.

In the event of noncompliance with this Permit, the Permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment.

A.10 Proper Operation and Maintenance.

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, adequate spare parts inventory, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of a back-up or auxiliary facility or similar systems only when necessary to achieve compliance with the conditions of this Permit.

A.11 Duty to Provide Information.

The Permittee shall furnish to the Secretary, within a reasonable time, any relevant information which the Secretary may request to determine whether cause exists for modifying , revoking and reissuing, or terminating this Permit, or to determine compliance with this Permit. The Permittee shall also furnish to the Secretary, upon request, copies of records required to be kept by this Permit.

A.12 Inspection and Entry.

The Permittee shall allow the Secretary, or any authorized representative, upon the presentation of credentials and other documents as may be required by law to:

(a) Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Permit;

(b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;

(c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and

(d) Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by RCRA, any substances or parameters at any location.

A.13 Retention of Records.

The Permittee shall maintain records to show compliance with this Permit for three (3) years after this Permit is terminated or reissued. This time period is automatically extended during the course of any unresolved enforcement action. This time period may be extended at the request of the Secretary at any time.

A.14 Notices of Planned Physical Facility Changes.

The Permittee shall give notice to the Secretary as soon as possible of any planned physical alterations or additions to the permitted facility. Physical alterations or additions shall include all hazardous and solid waste activities and underground tanks. Construction of new units may not begin until a permit or permit modification has been issued.

A.15 Anticipated Noncompliance.

The Permittee shall give advance notice to the Secretary of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

A.16 Transfer of Permits.

This Permit may be transferred to a new owner or operator only if it is modified or revoked and reissued pursuant to 20 NMAC 4.1, Subpart IX, 40 CFR 270.41(b)(2) or 270.42(d). Before transferring ownership or operation of the facility, the Permittee shall notify the new owner or operator in writing of the requirements of 20 NMAC 4.1, Subpart V, 40 CFR 264 and Subpart IX, 40 CFR 270.

A.17 Twenty-Four Hour Reporting of Hazardous Noncompliance.

The Permittee shall report to the Secretary any noncompliance which may endanger human health or the environment. Any information shall be provided orally within twenty-four (24) hours from the time the Permittee becomes aware of the circumstances. The following shall be included as information which must be reported orally within twenty-four (24) hours:

(a) Information concerning release of any hazardous waste that may cause an endangerment to public drinking water supplies.

(b) Any information if a release or discharge of hazardous waste, or of a fire or explosion from the facility, which could threaten the environment or human health outside the facility. The description of the occurrences and its cause shall include:

(i) Name, address, and telephone number of the owner or operator;
(ii) Name, address, and telephone number of the facility;
(iii) Date, time, and type of incident;
(iv) Name and quantity of material(s) involved;
(v) The extent of injuries, if any;
(vi) An assessment of actual or potential hazard to the environment and human health outside the facility, where this is applicable; and
(vii) Estimated quantity and disposition of recovered material that resulted from the incident.

A.18 Follow-up Written Report of Hazardous Noncompliance.

A written submission shall also be provided within five (5) days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the periods of noncompliance (including exact dates and times), and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Permittee need not comply with the five day written notice requirements if the Secretary waives that requirement and the Permittee submits a written report within fifteen (15) days of the time the Permittee becomes aware of the circumstances.

A.19 Other Noncompliance.

At the time monitoring reports are submitted, the Permittee shall report all other instances of noncompliance not otherwise required to be reported. The reports shall contain the information listed in condition A.17.

A.20 Other Information.

Where the Permittee becomes aware that he or she failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Secretary, the Permittee shall promptly submit such facts or information. The term, "permit application", includes the information submitted on solid waste management units.

A.21 Signatory Requirement.

All reports or other information requested by the Secretary shall be signed and certified according to 20 NMAC 4.1, Subpart IX, 40 CFR 270.11.

B. SPECIFIC

B.1 Permitted Process Units.

The process units include container storage area number four (4) which holds a maximum of 36 fifty-five (55) gallon containers, container storage area number two (2) which holds a maximum of 64 fifty-five (55) gallon containers, and three (3) 5,000 gallon tanks.

B.2 Waste Minimization.

The Permittee shall certify annually by October 1 for the previous year ending August 31, that the Permittee:

(a) Has a program in place to reduce the volume and toxicity of all hazardous wastes which are generated by the Permittee's facility's operation to the degree determined to be economically practicable; and

(b) that the proposed method of treatment, storage, or disposal is that practicable method currently available to the Permittee which minimizes the present and future threat to human health and the environment.

The certification is to be included in the operating record.

B.3 Dust Suppression.

The Permittee shall comply with 20 NMAC 4.1, Subpart VII, 40 CFR 266.23(b).

B.4 Solid Waste Management Units.

The following SWMU requires a RCRA Facility Investigation (RFI), as detailed in Section C and Section F of this Permit:

SWMU #8 Coronado Municipal Landfill

If the Permittee becomes aware of any additional solid waste management unit, the Permittee must:

(a) Immediately notify the Secretary in accordance with condition A.20; and

(b) submit within forty-five (45) days of becoming aware of a solid waste management unit, preliminary assessment information for the solid waste management unit to determine if there has been or is currently a release from the unit. The Permittee is to contact the Secretary for guidance regarding the required information to be submitted. Based upon this information, the Secretary will modify this Permit as necessary.

B.5 Definitions.

For purposes of these special conditions pursuant to the 1984 Hazardous and Solid Waste Amendments to RCRA, the following definitions shall apply:

"Administrative Authority" means the New Mexico Environment Department (NMED) or his/her designee, or, in the case of provisions for which the State is not authorized, the United States Environmental Protection Agency (EPA). The mailing addresses for the EPA and the NMED are as follows:

U.S. EPA, Region 6
Multimedia Planning and Permitting Division
1445 Ross Avenue
Dallas, Texas 75202-2733

New Mexico Environment Department
Hazardous and Radioactive Materials Bureau
2044A Galisteo Street
Santa Fe, New Mexico 87505

"CMS" means Corrective Measures Study.

"EPA" means the United States Environmental Protection Agency.

"Facility" means all contiguous property under the control of the owner or operator seeking a permit under Subtitle C of RCRA.

"HSWA" means the 1984 Hazardous and Solid Waste Amendments to RCRA.

"Hazardous constituent" means any constituent identified in Appendix VIII of 40 CFR Part 261, or any constituent identified in Appendix IX of 40 CFR Part 264.

"Hazardous waste" means a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed. The term hazardous waste includes hazardous constituent.

"NMED" means the New Mexico Environment Department.

"Permit" means the conditions embodied in these special conditions pursuant to the 1984 Hazardous and Solid Waste Amendments to RCRA.

"Permittee" means Philips Semiconductors (formerly Signetics Company), 9201 Pan American Freeway, N.E., Albuquerque, New Mexico 87113, EPA I.D. Number NMD000709782.

"RCRA" means the Resource Conservation and Recovery Act of 1980 as amended by HSWA in 1984.

"RCRA Permit" means the full permit, with RCRA and HSWA portions.

"RFA" means RCRA Facility Assessment.

"RFI" means RCRA Facility Investigation.

"Release" means any spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing of hazardous wastes (including hazardous constituents) into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing hazardous wastes or hazardous constituents).

"Solid Waste Management Unit" (SWMU) means any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at a facility at which solid wastes have been routinely and systematically released.

If, subsequent to the issuance of this Permit, regulations are promulgated which redefine any of the above terms, the Administrative Authority may, at its discretion, apply the new definition to this Permit.

C. SPECIAL CONDITIONS

Within ninety (90) days of the effective date of this Permit modification, the Permittee shall submit an RFI Workplan in accordance with Section F and Section N of this Permit. In addition to the RFI Workplan requirement, the Permittee shall complete the following items:

C.1 Quarterly Sampling of Existing Ground Water Monitoring Wells

(a) Within thirty (30) days of the effective date of this permit modification, the Permittee shall sample ground water monitoring wells MW-1, MW-2, MW-3, and MW-4. These wells shall be sampled for *Appendix VIII* constituents, as codified in 40 CFR Part 261. The sampling and analysis program for these wells shall follow/be equivalent to the requirements of the RCRA Ground-Water Technical Enforcement Guidance Document, dated September 1986. All sampling results shall be reported to the Administrative Authorities as specified in Section B.5.

(b) All existing ground water monitoring wells shall be analyzed on a quarterly basis. Target compounds may be proposed only after adequate data exists to verify that indicator compounds are reliable surrogates for all contaminants of concern. All quarterly sampling results shall be reported to the Administrative Authorities as specified in Section B.5.

C.2 Installation of Additional Ground Water Monitoring Wells

The RFI Workplan, described further in Section F and Section N, shall include information on the proposed design, number, and placement of additional ground water monitoring wells. Wells used to detect DNAPLs (dense non-aqueous phase liquids) shall be screened at the bottom of the aquifer of concern. Well screen length should not exceed 15 feet. Longer screens may be used only with adequate justification from the facility and approval from the Administrative Authorities. See the March, 1991 "Handbook of Suggested Practices for the Design and Installation of Ground Water Monitoring Wells" (EPA/600/4-89/034) for specific information on monitoring well design and installation.

C.3 Identification of Water Supply Wells and Submittal of Area Map(s)

(a) Within ninety (90) days of the effective date of this permit modification, the Permittee shall locate all water supply wells within a one mile radius of the facility.

(b) Within ninety (90) calendar days of the effective date of this permit modification, the Permittee shall submit information characterizing/describing the slope of the water table or potentiometric surface underlying their facility. The characterization/ description shall be based upon current ground water level information, as collected by the Permittee.

(c) Map(s) depicting the information required under Section C.3 (a) and (b) shall be consistent with the requirements set forth in 20 NMAC 4.1, Subpart IX, 40 CFR 270.14. This information shall be submitted to the Administrative Authorities specified in Section B.5.

D. REPORTING REQUIREMENTS

D.1 Quarterly Progress Reports

The Permittee shall submit signed quarterly progress reports of all activities (i.e., well installation, RFI, CMS) conducted pursuant to the provisions of this Permit beginning no later than ninety (90) calendar days from the effective date of this Permit modification. These reports shall contain:

(a) A description of the work completed and an estimate of the percentage of work completed;

(b) Summaries of all findings, including summaries of laboratory data;

(c) Summaries of all problems or potential problems encountered during the reporting period and actions taken to rectify problems;

(d) Projected work for the next reporting period;

(e) Summaries of contacts pertaining to corrective action or environmental matters with representatives of the local community, public interest groups or State government during the reporting period;

(f) Changes in key project personnel during the reporting period; and

(g) Summaries of all changes made in implementation during the reporting period.

D.2 Other Reports

Copies of other reports (e.g., inspection reports), drilling logs and laboratory data shall be made available to the Administrative Authority upon request.

D.3 Status Review

In addition to the written reports, at the request of the Administrative Authority, the Permittee shall provide status review through semi-annual briefings with the Administrative Authority.

E. INTERIM MEASURES

E.1 Requirement to Conduct Interim Measures

If during the course of any activity initiated under this Permit, the Administrative Authority determines that a release or potential release of hazardous constituents from a SWMU poses a threat to human health and the environment, the Administrative Authority may require interim measures. The Administrative Authority shall determine the specific measure(s) or require the Permittee to propose a measure(s). The interim measure(s) may include a permit modification, a schedule for implementation, and a written plan. The Administrative Authority shall notify the Permittee in writing of the requirement to perform interim measures. The Administrative Authority shall modify this Permit to incorporate interim measures into the Permit.

E.2 Determination of Need for Interim Measures

The following factors will be considered by the Administrative Authority in determining the need for interim measures:

(a) Time required to develop and implement a final remedy;

(b) Actual and potential exposure to human and environmental receptors;

(c) Actual and potential contamination of drinking water supplies and sensitive ecosystems;

(d) The potential for further degradation of the medium in the absence of interim measures;

(e) Presence of hazardous wastes in containers that may pose a threat of release;

(f) Presence and concentration of hazardous waste including hazardous constituents in soil that have the potential to migrate to ground water or surface water;

(g) Weather conditions that may affect the current levels of contamination;

(h) Risks of fire, explosion, or accident; and

(i) Other situations that may pose threats to human health and the environment.

F. RFI Workplan

F.1 General Requirements

The RFI Workplan, as specified in this section and in Section C and Section N, shall be submitted to the Administrative Authority within ninety (90) days of the effective date of this Permit modification. The RFI Workplan must address releases of hazardous waste or hazardous constituents to all media for the SWMU listed in Section B.4. The SWMU number is from the RFA Report, prepared by PRC Environmental Management, Inc., dated October 26, 1992.

(a) The Workplan shall describe the objectives of the investigation and the overall technical and analytical approach to completing all actions necessary to characterize the direction, rate, movement, and concentration of releases of hazardous waste or hazardous constituents from specific units or groups of units, and their actual or potential receptors. The RFI Workplan shall detail all proposed activities and procedures to be conducted at the facility, the schedule for implementing and completing such investigations, the qualifications of personnel performing or directing the investigations, including contractor personnel, and the overall management of the RFI. The Scope of Work for a RCRA Facility Investigation (RFI) is in Section N.

(b) The RFI Workplan shall describe sampling, data collection quality assurance, and data management procedures, including formats for documenting and tracking data and other results of investigations, and health and safety procedures.

(c) Development of the RFI Workplan and reporting of data shall be consistent with the following EPA guidance documents or the equivalent thereof:

(i) RCRA Facility Investigation Guidance Document (EPA 530/5W-89-031);

(ii) RCRA Groundwater Monitoring Technical Enforcement Guidance Document (OSWER 9950.1) September 1986; and

(iii) Test Methods for Evaluating Solid Waste (SW 846, 2nd ed.) 1982.

F.2 Approval, Disapproval, or Modification of RFI Workplan by Administrative Authority

After the Permittee submits the Workplan, the Administrative Authority will either approve, disapprove, or modify the Workplan in writing.

If the Administrative Authority approves the Workplan, the Permittee shall implement the plan within two weeks (14 days) of receipt of approval, according to the schedule contained in the plan. All approved Workplans become incorporated into this Permit.

In the event of disapproval (in whole or in part) of the Workplan, the Administrative Authority shall specify deficiencies in writing. The Permittee shall modify the plan to correct these within the time frame specified in the notification of disapproval by the Administrative Authority. The modified Workplan shall be submitted in writing to the Administrative Authority for review. Should the Permittee take exception to all or part of the disapproval, the Permittee shall submit a written statement of the grounds for the exception within 10 days of receipt of the disapproval.

F.3 RFI Workplans for New SWMUs and New Releases

The Administrative Authority shall review for approval as part of the RFI Workplan or as a new Workplan any plans developed to address further investigations of newly-identified SWMUs, or to address new releases from previously-identified SWMUs.

G. RFI IMPLEMENTATION

Upon receipt of written approval from the Administrative Authority for the RFI Workplan, the Permittee shall implement the RFI according to the schedules and in accordance with the approved RFI Workplan and the following:

(a) The Permittee shall notify EPA and the NMED at least 10 days prior to any sampling, testing, or monitoring activity required by this Permit to give Agency personnel the opportunity to observe investigation procedures and/or split samples.

(b) Deviations from the approved RFI Workplan which are necessary during implementation of the investigations must be approved by the Administrative Authority and fully documented and described in the progress reports and in the RFI Final Report.

H. RFI FINAL REPORT AND SUMMARY

(a) Within sixty (60) calendar days after the completion of the RFI, or as specified by the Administrative Authority in the RFI Workplan approval, the Permittee shall submit an RFI Final Report and Summary. The RFI Final Report shall describe the procedures, methods, and results of all investigations as described in Section N. This includes SWMUs and their releases, the type and extent of contamination at the facility, sources and migration pathways, and actual or potential receptors. The RFI Final Report shall present all information gathered under the approved RFI Workplan. The RFI Final Report must contain adequate information to support further corrective action decisions at the facility. The Summary shall summarize the RFI Final Report.

(b) After the Permittee submits the RFI Final Report and Summary, the Administrative Authority shall either approve or disapprove them in writing.

If the Administrative Authority approves the RFI Final Report and Summary, the Permittee shall mail the approved Summary to all individuals on the facility mailing list established pursuant to 20 NMAC 4.1, Subpart 901.C., within fifteen (15) calendar days of receipt of approval.

If the Administrative Authority determines the RFI Final Report and Summary do not fully meet the objectives stated in Section N.5, the Administrative Authority may disapprove the RFI Final Report and Summary. If the Administrative Authority disapproves the Report, the Administrative Authority shall notify the Permittee in writing of the Report's deficiencies and specify a due date for submittal of a revised Final Report and Summary. Once approved, the Summary shall be mailed to all individuals on the facility mailing list as specified above.

I. DETERMINATION OF NO FURTHER ACTION

(a) Based on the results of the RFI and other relevant information, the Permittee may submit an application to the Administrative Authority for a Class III permit modification under 40 CFR 270.42(c) to terminate the RFI/CMS process for a specific unit. This permit modification application must contain information demonstrating that there are no releases of hazardous waste including hazardous constituents from a particular SWMU at the facility that pose threats to human health and/or the environment, as well as additional information required in 20 NMAC 4.1, Subpart IX, 40 CFR 270.42(c).

If, based upon review of the Permittee's request for a permit modification, the results of the RFI, and other information, including comments received during the sixty (60) day public comment period required for Class III permit modifications, the Administrative Authority determines that releases or suspected releases which were investigated either are non-existent or do not pose a threat to human health and/or the environment, the Administrative Authority will grant the requested modification.

(b) If necessary to protect human health or the environment, a determination of no further action shall not preclude the Administrative Authority from requiring continued or periodic monitoring of air, soil, ground water, or surface water, when site-specific circumstances indicate that releases of hazardous waste or hazardous constituents are likely to occur.

(c) A determination of no further action shall not preclude the Administrative Authority from requiring further investigations, studies, or remediation at a later date, if new information or subsequent analysis indicates a release or likelihood of a release from a SWMU at the facility that is likely to pose a threat to human health or the environment. In such a case, the Administrative Authority shall initiate a modification to the Permit.

J. CMS PLAN

(a) If the Administrative Authority has reason to believe that a SWMU has released concentrations of hazardous constituents, or if the Administrative Authority determines that contaminants present a threat to human health or the environment given site-specific exposure conditions, the Administrative Authority may require a CMS and shall notify the Permittee in writing. The notification may also specify remedial alternatives to be evaluated by the Permittee during the CMS.

(b) The Permittee shall submit a CMS Plan to the Administrative Authority within forty five (45) calendar days from notification of the requirement to conduct a CMS. The Scope of Work for a CMS Plan is found in Section O.

The CMS Plan shall provide the following information:

(i) A description of the general approach to the investigation, and potential remedies;

(ii) A definition of the overall objectives of the study;

(iii) Specific plans for evaluating remedies to ensure compliance with remedy standards;

(iv) Schedules for conducting the study; and

(v) The proposed format for the presentation of information.

(c) After the Permittee submits the CMS Plan, the Administrative Authority will either approve, disapprove, or modify the plan in writing.

If the Administrative Authority approves the CMS Plan, the Permittee shall implement the plan per Section K.

In the event of disapproval (in whole or in part) of the CMS Plan, the Administrative Authority shall specify deficiencies in writing. The Permittee shall modify the plan to correct these within the time frame specified in the notice of deficiency. The modified CMS Plan shall be submitted in writing to the Administrative Authority for review. Should the Permittee take exception to all or part of the disapproval, the Permittee shall submit a written statement of the grounds for the exception within 10 days of receipt of the disapproval.

K. CMS IMPLEMENTATION

No later than fourteen (14) calendar days after the Permittee has received written approval from the Administrative Authority for the CMS Plan, the Permittee shall implement the Corrective Measures Study according to the schedules specified and in accordance with the approved CMS Plan. All approved plans become incorporated into this Permit.

L. CMS FINAL REPORT AND SUMMARY

(a) Within sixty (60) calendar days after the completion of the CMS, the Permittee shall submit a CMS Final Report and Summary. The Summary shall summarize the Final Report. The CMS Final Report shall discuss the results of investigations of each remedy studied and of any bench-scale or pilot tests conducted. It must include an evaluation of each remedial alternative. The CMS Final Report shall present all information gathered during the CMS, and must contain adequate information to support the remedy selection process. In the CMS Final Report, the Permittee shall propose a corrective action program that shall:

(i) attain compliance with corrective action objectives for hazardous constituents in each medium, as established in Section O.3;

(ii) control sources of releases;

(iii) meet acceptable waste management requirements; and

(iv) protect human health and the environment.

(b) After the Permittee submits the CMS Final Report and Summary, the Administrative Authority will either approve or disapprove them in writing.

If the Administrative Authority approves the CMS Final Report and Summary, the Permittee shall mail the approved Summary to all individuals on the facility mailing list established pursuant to 20 NMAC 4.1, Subpart 901.C., within fifteen (15) calendar days of receipt of approval.

If the Administrative Authority determines the CMS Final Report and Summary do not fully meet the objectives stated in Section O, the Administrative Authority may disapprove the CMS Final Report and Summary. If the Administrative Authority disapproves the Report, the Administrative Authority shall notify the Permittee in writing of the Report's deficiencies and specify a due date for submittal of a revised Final Report and Summary. Once approved, the Summary shall be mailed to all individuals on the facility mailing list as specified above.

(c) Based on preliminary results and the CMS Final Report, the Administrative Authority may require the Permittee to evaluate additional remedies or particular elements of one or more proposed remedies.

M. CORRECTIVE MEASURE (REMEDY) SELECTION AND IMPLEMENTATION

Within fifteen (15) calendar days from receipt of approval of CMS Final Report and Summary, the Permittee shall submit a Permit Modification request according to Section A.2 for corrective measure (remedy) selection, based on the approved CMS Final Report. The resultant modified permit will include schedules for remedy implementation.

N. RFI SCOPE OF WORK

N.1 Purpose

The purpose of the RFI is to determine the nature and extent of releases of hazardous wastes or hazardous constituents from solid waste management units. The required information shall include each item specified under Tasks I-III. The Permittee shall furnish all personnel, materials, and services necessary for, or incidental to, performing the RFI.

If the Permittee believes that certain requirements of the Scope of Work are not applicable, the specific requirements shall be identified and a detailed rationale for inapplicability shall be provided.

N.2 Scope

The RFI consists of three tasks:

Task I: RFI Workplan

a. Introduction
b. Environmental Setting
c. Source Characterization
d. Contamination Characterization
e. Potential Receptor Identification
f. Data Collection Quality Assurance Plan
g. Data Management Plan
h. Health and Safety Plan
i. Community Relations Plan
j. Project Management Plan

Task II: RCRA Facility Investigation

Task III: RFI Final Report and Summary

N.3 Task I: RFI Workplan

The Permittee shall prepare a RFI Workplan as specified in Sections C and F and the following. The RFI Workplan shall provide for and address the following information needs:

(a) Introduction

(i) Facility Description

The introduction shall summarize the regional location, pertinent boundary features, general facility physiography, hydrogeology, and historical use of the facility for the treatment, storage, or disposal of solid and hazardous waste. Information from existing reports and studies is acceptable, as long as the source of this information is documented, pertinent, and reflective of current conditions. This section shall include:

(1) Map(s) depicting the information specified below. All maps shall be consistent with requirements set forth in 40 CFR 270.14 and shall be of sufficient detail and accuracy to locate all current and future work performed at the site.

a. general geographic location;

b. property lines, with the owners of all adjacent property clearly indicated, and all land previously owned and/or used by the Permittee around the facility;

c. topography, waterways, wetlands, floodplains, water features, and drainage patterns;

d. all tanks, buildings, utilities, paved areas, rights-of-way, and other features;

e. all solid waste management units;

f. all known past solid or hazardous waste treatment, storage and disposal areas or units regardless of whether they were active on November 19, 1980;

g. surrounding land uses (residential, commercial, agricultural, recreational); and

h. the location of all production and ground water monitoring wells. These wells shall be clearly labeled and ground and top of casing elevations included (these elevations may be included as an attachment).

(2) A history and description of ownership and operation, solid and hazardous waste generation, treatment, storage and disposal activities at the facility.

(3) A summary of approximate dates or periods of past waste releases, identification of the materials released, the amount released, the location released, and a description of the response actions conducted (local, state, or Federal response units, or private parties), including any inspection reports or technical reports generated as a result of the response.

(4) A reference to all environmental, geologic, and hydrogeologic studies performed by all parties, at or near the facility, with a short summary of the purpose, scope, and significant findings thereof.

(5) A reference to all environmental permits, applied for and/or received, the purpose thereof, and a short summary of requirements.

(ii) Nature and Extent of Contamination

(1) The Introduction shall summarize all possible source areas of contamination. This, at a minimum, should include all SWMUs. For each area, the Permittee shall identify the following:

a. location of unit/area on a facility map;

b. quantities of solid, hazardous,and radiochemical wastes;

c. quantities of radiochemical and hazardous constituents, to the extent known; and

d. identification of areas where additional information is necessary.

(2) The Permittee shall prepare an assessment and description of the existing degree and extent of contamination. This should include:

a. available monitoring data and qualitative information on locations and levels of contamination at the facility;

b. all potential migration pathways including information on geology, pedology, hydrogeology, physiography, hydrology, water quality, meteorology, and air quality; and

c. the potential impact(s) on human health or the environment, including demography, ground water and surface water use, and land use.

(iii) Implementation of Interim Measures

The Permittee shall document and report on all interim measures which were or are being undertaken at the facility, including under state or Federal compliance orders, other than those specified in the Permit. This shall include:

(1) Objectives of the interim measures: how the measure is mitigating a potential threat to human health or the environment and/or is consistent with and integrated into requirements for a long term solution;

(2) Schedules for design, construction and monitoring; and

(3) Schedule for progress reports.

(b) Environmental Setting

The Workplan shall provide for collection of information to supplement and verify existing information on the environmental setting at the facility. The Workplan shall provide for characterization of the following:

(i) Hydrogeology

The Workplan shall describe in detail a program to evaluate hydrogeologic conditions at the facility. This program shall provide for least the following information needs:

(1) A description of the regional, local, facility-wide, and SWMU-specific geologic and hydrogeologic characteristics affecting ground water flow beneath the facility.

(2) An analysis of any topographic features including surface water bodies that might influence the ground water flow system.

(3) A representative and accurate classification and description of the hydrogeologic units which may be part of migration pathways at the facility (i.e., the aquifers and any intervening saturated and unsaturated units) based on field data, tests (e.g., gamma and neutron logging of existing and new wells, piezometers and borings), and cores.

(4) The extent (depth, thickness, lateral extent) of hydrogeologic units which may be part of migration pathways based on field studies and cores, structural geology, and hydrogeologic cross sections, including:

a. unconsolidated sand and gravel deposits;

b. zones of fracturing or channeling in consolidated or unconsolidated deposits; and

c. zones of high permeability or low permeability that might direct and restrict the flow of contaminants.

(5) A description of representative water level or fluid pressure based on data obtained from ground water monitoring wells and piezometers installed upgradient and downgradient of the potential contaminant source. Information needs include: potentiometric surface maps; hydrologic cross sections showing vertical gradients; vertical and horizontal components of flow; temporal changes in hydraulic gradients; and flow nets.

(6) A description of man-made influences that may affect site hydrogeology such as active and inactive local water-supply and production wells, pipelines, french drains, and ditches.

(ii) Soils

The Permittee shall describe in detail a program designed to characterize soil and rock units above the water table. Such characterization shall include, but is not limited to, the following information: surface soil distribution; soil profile, including ASTM and USCS classifications of soils; transects of soil stratigraphy; saturated hydraulic conductivity; porosity; cation exchange capacity (CEC); soil pH; particle size distribution; depth to water table; moisture content; effect of stratification on unsaturated flow; infiltration; evapotranspiration; residual concentration of contaminants in soil; total natural organic carbon content; and mineral and metal content.

(c) Source Characterization

The Permittee shall describe in detail a program designed to completely characterize the wastes and the areas where wastes have been placed, including: type, quantity, physical form, composition, disposition (containment and nature of wastes), and the facility characteristics affecting releases (e.g., facility security, engineered barriers). This shall include quantification of the following specific characteristics, at each source area:

(i) Unit/disposal area characteristics, including but not limited to: location of unit/disposal area; type of unit/disposal area; design features; operating practices (past and present); period of operation; age of unit/disposal area; general physical conditions; and method used to close the unit/disposal area.

(ii) Waste characteristics, including but not limited to: type of waste placed in unit (hazardous classification, quantity, chemical composition); physical and chemical characteristics (physical form, physical description, temperature, Ph, general chemical class, molecular weight, density, boiling point, viscosity, solubility in water, solubility in solvents, cohesiveness, vapor pressure); and migration and dispersal characteristics of the waste (sorption coefficients, biodegradability, photodegradation rates, hydrolysis rates, chemical transformations).

(d) Contamination Characteristics

The Permittee shall describe in detail a program to collect analytical data on ground water, soils, surface water, sediment, and subsurface gas contamination when necessary to characterize contamination from a SWMU. The data shall be sufficient to define the extent, origin, direction, and rate of movement of contaminant plumes. Data required shall include time and location of sampling, media sampled, concentrations found, conditions during sampling, and the identity of the individual(s) performing the sampling and analysis. Each medium (ground water, surface water and sediments, soil, air, and gas) must be investigated. If the Permittee believes certain media could not be affected by a release from a specific unit, a detailed justification for not investigating those media must be provided. The Permittee shall address the following types of contamination at the facility:

(i) Ground Water Contamination

The Workplan shall describe in detail a program of ground water investigation to characterize any plumes of contamination at the facility. The program shall at a minimum provide for the following information needs:

(1) a description of the horizontal and vertical extent of any immiscible or dissolved plume(s) originating from the facility;

(2) the horizontal and vertical direction of contamination movement;

(3) the velocity of contaminant movement;

(4) the horizontal and vertical concentrations of any 40 CFR 264 Appendix IX constituents;

(5) an evaluation of factors influencing the plume movement; and

(6) an extrapolation of future contaminant movement.

(ii) Soil Contamination

The Permittee shall describe in detail a program to characterize contamination of soil and rock units above the water table in the vicinity of the contaminant release. The program shall provide for the following information needs:

(1) a description of the vertical and horizontal extent of contamination;

(2) a description of contaminant and soil chemical properties within the contaminant source area. This includes contaminant solubility, speciation, adsorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation, natural total organic carbon content, and other factors that might affect contaminant migration and transformation.

(3) plume migration and transformation; specific contaminant concentrations; the velocity and direction of contaminant movement; and an extrapolation to future contaminant movement.

(iii) Surface Water and Sediment Contamination

The Permittee shall describe in detail a program to characterize contamination in surface water bodies and sediment resulting from contaminant releases at the facility. The investigation shall at minimum include the following:

(1) a description of the surface water body including location, elevation, flow, velocity, depth, width, seasonal fluctuations, flooding tendencies, drainage patterns, and evapotranspiration rates.

(2) a description of sediment characteristics including depositional area, thickness, mineralogy, grain size, density, ion exchange capacity, and total natural organic carbon content.

(3) maps for all areas included in surface water and sediment investigations which meet requirements in 40 CFR 270.14 and which are sufficiently detailed and accurate to depict all the information required.

(4) a description of the horizontal and vertical extent of any immiscible or dissolved plumes originating from the facility, and the extent of contamination in the underlying sediments;

(5) the horizontal and vertical direction and velocity of contaminant movement;

(6) an evaluation of the physical, biological, chemical, and radiochemical factors influencing contaminant movement;

(7) an extrapolation to future contaminant movement;

(8) a description of the chemistry of the contaminated surface waters and sediments. This includes Ph, temperature, total dissolved solids, total suspended solids, biochemical oxygen demand, alkalinity, conductivity, dissolved oxygen profiles, nutrients, chemical oxygen demand, total organic carbon, and specific contaminant concentrations.

(iv) Air Contamination

The Permittee shall describe in detail a program to characterize particulate and gaseous contaminants released into the atmosphere. This investigation shall provide the following information: a description of the horizontal and vertical direction and velocity of contaminant movement; the rate and amount of the release; and the chemical, radiochemical, and physical composition of the contaminants released, including horizontal and vertical concentration profiles.

(v) Subsurface Gas

The Permittee shall describe in detail a program to characterize the nature, rate and extent of releases of reactive gases from the units. Such a program shall include, but is not limited to: provisions for monitoring subsurface gases released from the unit, and an assessment of the potential for threat to human health and/or the environment.

(e) Potential Receptors

The Permittee shall describe in detail a program to collect data to describe human populations and environmental systems that are susceptible to contaminant exposure from the facility. Chemical and radiochemical analysis of biological samples may be needed. Data on observable effects in ecosystems may also be required. The following characteristics shall be identified:

(i) Local uses and possible future uses of ground water, including:

(1) type of use (i.e., potable, domestic, agricultural, residential, industrial, municipal).

(2) location of all ground water wells, names of owners or tenants at those locations, USGS/DODT well designations, and current use of those wells within a 1 mile radius of facility.

(ii) Local uses and possible future uses of surface waters within a 1.5 mile radius of the facility, including domestic and municipal, recreational, agricultural, industrial, and environmental.

(iii) Human use of or access to the facility and adjacent lands, including but not limited to recreation, hunting, residential, commercial, and industrial.

(iv) A demographic profile of people who use or have access to the facility and adjacent land, including, but not limited to age, gender, and sensitive subgroups.

(v) A description of the local ecology, including biota in surface water bodies on, adjacent to, or affected by the facility, and a description of any endangered or threatened species near the facility.

(f) Data Collection Quality Assurance Plan

The Permittee shall prepare a plan to document all monitoring procedures: sampling, field measurements, and sample analysis performed at the facility during the investigation to characterize the environmental setting, source, and contamination, so as to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented.

(i) The strategy section of the Data Collection Quality Assurance Plan shall include but not be limited to the following:

(1) description of the intended uses for the data, and the necessary level of precision and accuracy for those intended uses;

(2) description of methods and procedures to be used to assess the precision, accuracy and completeness of the measurement data; and

(3) schedule and information to be provided in quality assurance reports, including at least:

a. periodic assessment of measurement data accuracy, precision, and completeness;

b. results of performance audits;

c. results of systems audits; and

d. significant quality assurance problems and resolutions.

(ii) The Sampling and Field Measurements Section of the Data Collection Quality Assurance Plan shall at least discuss:

(1) selecting appropriate sampling and field measurements locations, depths, etc.;

(2) providing a statistically sufficient number of sampling and field measurement sites;

(3) determining conditions under which sampling or field measurements shall be conducted;

(4) determining which parameters are to be measured and where;

(5) selecting the frequency of sampling and length of sampling period;

(6) selecting the types of sample (e.g., composites vs. grabs) and number of samples to be collected;

(7) delineating procedures designed to prevent contamination of sampling or field measurements equipment and cross contamination between sampling points;

(8) documenting field sampling operations and procedures;

(9) selecting appropriate sample containers;

(10) preserving samples;

(11) controlling chain-of-custody; and

(12) disposing of all contaminated materials generated by activities in a manner compliant with all state and Federal regulations.

(iii) The Sample Analysis shall include:

(1) chain-of-custody procedures;

(2) sample storage procedures and holding times;

(3) sample preparation methods;

(4) analytical procedures;

(5) calibration procedures and frequency;

(6) data reduction, validation and reporting; and

(7) frequency of internal quality control checks and laboratory performance audits.

(g) Data Management Plan

The Permittee shall develop and initiate a Data Management Plan to document and track investigation data and results. This plan shall identify and set up data documentation materials and procedures (data record), project file requirements, and project-related progress reporting procedures and documents.

(i) The data record shall include at least the following for all sample and field measurements: unique measurement code; measurement location; measurement type; laboratory ID number; property or component analyzed; and results of analysis.

(ii) The Data Management Plan shall provide the format to be used to present the data and conclusions of the investigation, etc.

(iii) The following shall be presented in tables: raw data; data sorted by significant features such as location, media, constituent; data reduction for statistical analysis; and summary data.

(iv) The following shall be presented in graphical formats (e.g., bar graphs, line graphs, plan maps, isopleth plots, cross-sections, three-dimensional displays, etc.): sampling location and grid; levels of contamination at each sampling location; geographical extent of contamination; and changes in concentration relative to source, time, depth, and other parameters.

(h) Health and Safety Plan

(i) The Permittee shall prepare a facility Health and Safety Plan, which shall include:

(1) a description of the facility including availability of resources such as roads, water supply, electricity and telephone service;

(2) a description of the known hazards and evaluation of the risks associated with each activity conducted, including but not limited to on and off-site exposure to contaminants during implementation of interim measures;

(3) a list of key personnel and alternatives responsible for site safety, response operations, and for protection of public health;

(4) a delineation of the work area;

(5) a description of levels of protection to be worn by personnel in the work area;

(6) procedures established to control site access;

(7) decontamination procedures for personnel and equipment;

(8) site emergency procedures;

(9) emergency medical care procedures for injuries and toxicological problems;

(10) requirements for an environmental field monitoring program;

(11) routine and special training requirements for responders; and

(12) procedures for protecting workers from weather-related problems.

(ii) The Facility Health and Safety Plan shall be consistent with:

(1) NIOSH Occupation Safety and Health Guidance Manual for Hazardous Waste Site Activities (1985);

(2) EPA Order 1440.1 - Respiratory Protection;

(3) EPA Order 1440.3 - Health and Safety Requirements for Employees engaged in Field Activities;

(4) approved Facility Contingency Plan;

(5) EPA Operating Safety Guide (1984);

(6) OSHA regulations, particularly 29 CFR 1910 and 1926;

(7) State and local regulations; and

(8) other EPA guidance as provided.

(i) Community Relations Plan

The Permittee shall prepare a plan for dissemination of information to the public regarding investigation activities and results.

(j) Project Management Plan

The Permittee shall prepare a Project Management Plan which will include a discussion of the technical approach, schedules, budget, and key project personnel. The project management plan will also include a description of qualifications of key project personnel performing or directing the RFI, including contractor personnel. This plan shall also document the overall management approach to the RFI.

N.4 Task II: RCRA Facility Investigation

The facility investigation activities shall follow the approved RFI Workplan. All sampling and analyses shall be conducted in accordance with the Data Collection Quality Assurance Plan. All sampling locations shall be documented in a log and identified on a detailed site map. During the RFI, it may be necessary to revise the RFI Workplan to increase or decrease the detail of information collected to accommodate the facility specific situation.

The Permittee shall conduct investigations of SWMUs previously identified with known or suspected releases of contamination to characterize the facility (Environmental Setting), define the source (Source Characterization), define the degree and extent of contamination (Contamination Characterization), and identify actual or potential receptors.

The investigations should result in data of adequate technical quality to develop and evaluate corrective measures alternatives during the Corrective Measures Study, when necessary.

N.5 Task III: RFI Final Report and Summary

The Permittee shall analyze all facility investigation data collected during the RFI process and prepare a detailed report on the type and extent of contamination at the facility including sources and migration pathways. All information generated during the investigation shall be presented and analyzed. All evidence and procedures used for making any determinations (e.g., velocity of ground water, extent of contamination) shall be fully documented. The report shall describe extent of contamination (qualitative/quantitative) in relation to background levels indicative for the area. The report shall contain the results of all tests, calculations, inspections, record searches, and observations. It shall contain soil and ground water contamination profiles, statistical comparisons, and the results of all sampling events conducted as part of the investigation. It shall display results in tables, graphs, maps, and cross sections as discussed in the Data Management Plan.

The Permittee shall identify all relevant and applicable standards for the protection of human health or the environment (e.g., National Ambient Air Quality Standards, Federally-approved State water quality standards, ground water protection standards, etc.)

Data shall be evaluated to ensure it is sufficient in quality (e.g., quality assurance procedures have been followed) and quantity to describe the nature and extent of contamination, to evaluate the potential threat to human health or the environment, and to support a CMS, if required. The report shall present all data in an Appendix.

(a) General RFI Reporting Requirements

(i) Two hard copies and one IBM compatible disk copy of all reports and data shall be submitted by the Permittee to the Administrative Authority as specified in Section B.5.

(ii) The RFI Workplan shall be submitted by the Permittee to the Administrative Authority as described in Section B.5.

(iii) The RFI Final Report and Summary shall be submitted by the Permittee to the Administrative Authority as described in Section B.5.

(iv) Within 90 days of the effective date of this Permit modification, the Permittee shall provide the Administrative Authority with signed, quarterly progress reports as specified in Section D.

O. CMS SCOPE OF WORK

O.1 Purpose

The purpose of the CMS is to develop and evaluate corrective measures alternatives and to recommend the corrective measure or measures to be taken. The required information shall include each item specified under CMS Tasks IV-VI. The Permittee will furnish the personnel, materials, and services necessary to prepare the CMS, except as otherwise specified.

If the Permittee believes that certain requirements of the Scope of Work are not applicable, the specific *requirements shall be identified and the rationale for inapplicability shall be provided.

O.2 Scope

The Corrective Measure Study consists of three tasks:

Task IV: CMS Plan

a. Description of Current Situation
b. Establishment of Corrective Action Objectives
c. Description of Approach to CMS
d. Schedule for CMS

Task V: Corrective Measures Study

a. Identification of Corrective Measures Alternatives(s)
b. Screening of Corrective Measures Alternatives(s)
c. Development of Corrective Measures Alternative(s)
d. Evaluation of Corrective Measures Alternative(s)
e. Selection of Corrective Measures Alternative(s)

Task VI: CMS Final Report and Summary

O.3 Task IV: CMS Plan

(a) Description of Current Conditions

The Permittee shall briefly describe current conditions at the facility to update information provided in the RFI Final Report and Summary. This shall include previous and/or ongoing remedial activity or interim measures.

(i) Establishment of Corrective Action Objectives

The Permittee shall propose to the Administrative Authority for review and approval, facility specific objectives for the corrective action. These objectives shall be based on public health and environmental criteria, information gathered during the RFI, EPA guidance, and the requirements of any applicable Federal statutes and regulations.

(ii) Description of Approach to CMS

The Permittee shall describe the general approach to the corrective measures study. The approach shall include identification, development, screening, and evaluation of the corrective measures alternatives, as discussed in detail in Section J. The Permittee shall describe specific plans for laboratory and bench-scale studies, or field studies, if needed. Specific plans for evaluating remedy effectiveness shall also be developed. The approach shall specify formats to be used for data presentation, including raw data, maps, charts, graphs, engineering schematics, construction design, etc.

(iii) Schedule

The Permittee shall develop a schedule for implementing the corrective measures study, and a schedule for submitting quarterly progress reports on the study implementation.

O.4 Task V: Corrective Measures Study

The CMS consists of five parts: identification, screening, development, evaluation, and selection of the corrective measures alternative(s).

(a) Identification of Preliminary Corrective Measures Alternative(s)

Based on the results of the RFI and the CMS Plan objectives, the Permittee shall identify all possible alternatives for removal, containment, treatment and/or other remediation of the contamination.

(i) Screening of Preliminary Corrective Measures Alternatives

The Permittee shall screen the identified preliminary corrective measures alternatives to eliminate those that may not prove feasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective action objective within a reasonable time period. This screening process focuses on eliminating those technologies which have severe limitations for a given set of waste and site-specific conditions. The screening step may also eliminate technologies based on inherent technological limitations.

Site, waste, and technological characteristics which are used to screen inapplicable technologies are described in more detail below:

(1) Site Characteristics
Site data should be reviewed to identify conditions which may limit or promote the use of certain technologies. Technologies whose use is clearly precluded by site characteristics should be eliminated from further consideration;

(2) Waste Characteristics
Identification of waste characteristics that limit the effectiveness or feasibility of technologies is an important part of the screening process. Technologies clearly limited by waste characteristics should be eliminated from consideration.

(3) Technological Limitations
The level of technology development, performance record, and operation and maintenance problems shall be identified for each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process.

(ii) Development of Corrective Measures Alternatives

The Permittee shall develop corrective measures alternatives based on corrective measures objectives, and identification and screening of preliminary alternatives. The Permittee shall rely on engineering practice to determine which of the previously identified and screened technologies appear most suitable for the site. Technologies can be combined to form the overall corrective measures alternatives. The alternatives developed should represent a workable number of options that each appear to adequately address all site problems and corrective action objectives. Each alternative may consist of an individual technology or a combination of technologies. The Permittee shall document the reasons for excluding technologies.

When a new technology is proposed or similar waste streams have not routinely been treated or disposed of using the technology, the Permittee shall conduct laboratory and/or bench-scale studies to determine the applicability to facility conditions. The Permittee shall analyze the technologies, based on literature review, vendor contracts, and past experience to determine the testing requirements.

(1) The Permittee shall develop a testing plan identifying the type(s) and goal(s) of the study(ies), the level of effort needed, and the procedures to be used for data management and interpretation.

(2) Upon completion of testing, the Permittee shall evaluate the testing results to assess the technology or technologies with respect to the site-specific questions identified in the test plan.

(3) The Permittee shall prepare a report summarizing the testing program and its results, both positive and negative.

(iii) Evaluation of Corrective Measures Alternative(s)

The Permittee shall evaluate each corrective measures alternative developed in Section J. The evaluation shall be based on technical, environmental, human health and institutional concerns. The Permittee shall also develop cost estimates for each corrective measure.

(1) Technical, Environmental, Human Health, and Institutional Concerns

The Permittee shall provide a description of each corrective measures alternative which includes but is not limited to the following: preliminary process flow sheets; preliminary sizing and type of construction for buildings and structures; and rough quantities of utilities required. The Permittee shall evaluate each alternative in the four following areas:

(2) Technical

The Permittee shall evaluate each corrective measure alternative based on performance, reliability, implementability and safety.

The Permittee shall evaluate performance based on the effectiveness and useful life of the corrective measure:

a. Effectiveness shall be evaluated in terms of the ability to perform intended functions such as containment, diversion, removal, destruction, or treatment. The effectiveness of each corrective measure shall be determined either through design specifications or by performance evaluation. Any specific waste or site characteristics which could potentially impede effectiveness shall be considered. The evaluation should also consider the effectiveness of combinations of technologies.

b. Useful life is defined as the length of time the level of effectiveness can be maintained. Each corrective measure shall be evaluated in terms of the projected service lives of its component technologies. Resource availability in the future life of the technology, as well as appropriateness of the technologies, must be considered in estimating the useful life of the project.

c. The Permittee shall provide information on the reliability of each corrective measure including operation and maintenance requirements and demonstrated reliability:

1. Operation and maintenance requirements include the frequency and complexity of operation and maintenance. Technologies requiring frequent or complex operation and maintenance activities should be regarded as less reliable than technologies requiring little or straightforward operation and maintenance. The availability of labor and materials to meet these requirements shall also be considered.

2. Demonstrated and expected reliability is a way of measuring risk and effect of failure. The Permittee should evaluate whether technologies have been used effectively under analogous conditions; whether the combination of technologies have been used together effectively; whether failure of any one technology has an immediate impact on receptors; and whether the corrective measure has the flexibility to deal with uncontrollable changes at the site.

d. The Permittee shall describe the implementability of each corrective measure including relative ease of installation (constructibility) and total time required to achieve a given level of response:

1. Constructibility is determined by conditions both internal and external to facility conditions and includes such items as location of underground utilities, depth to water table, heterogeneity of subsurface materials, and location of facility (i.e., remote location vs. congested urban area). The Permittee shall evaluate what measures can be taken to facilitate construction under site specific conditions. External factors which affect implementation include the need for special permits or agreements, equipment availability, and the location of suitable off-site treatment or disposal facilities.

2. Time has two components to be addressed: the time it takes to implement a corrective measure and the time it takes to see beneficial results. Beneficial results are defined as the reduction of contaminants to acceptable levels as established in the corrective measures objectives.

e. The Permittee shall evaluate each corrective measures alternative with regard to safety. This evaluation shall include threats to the safety of nearby communities and environments as well as those to workers during implementation. Factors to consider include fire, explosion, and exposure to hazardous substances.

(3) Environmental

The Permittee shall perform an Environmental Assessment for each alternative. The assessment shall focus on facility conditions and pathways of contamination actually addressed by each alternative. The Environmental Assessment for each alternative will include at a minimum, an evaluation of the short- and long-term beneficial and adverse effects of the response alternative, evaluation of any adverse effects on environmentally sensitive areas, and an analysis of measures to mitigate adverse impacts.

(4) Human Health

The Permittee shall assess each alternative in terms of the extent to which it mitigates short- and long-term potential exposure to any residual contamination and protects human health both during and after implementation of the corrective measure. The assessment will describe the levels and characterizations of contaminants on-site, potential exposure routes, and potentially affected populations. Each alternative will be evaluated to determine the level of exposure to contaminants and the reduction over time. For management of mitigation measures, the relative reduction of impact will be determined by comparing residual levels of each alternative with existing criteria, standards, or regulations acceptable to the Administrative Authority.

(5) Institutional

The Permittee shall assess relevant institutional needs for each alternative. Specifically, the effects of Federal, State, and Local environmental and public health standards, regulations, guidance, advisories, ordinances, or community relations on the design, operation, and timing of each alternative shall be considered.

a. Cost Estimate

The Permittee shall develop an estimate of the cost of each corrective measures alternative and for each phase or segment of the alternative. The cost estimate shall include capital, and operation and maintenance costs.

b. Capital costs consist of direct and indirect costs.

Direct capital costs include:

1. Construction costs: Cost of materials, labor (including fringe benefits and worker's compensation), and equipment required to install the corrective measures alternative;

2. Equipment costs: Costs of treatment, containment, disposal and/or servicing of equipment used to implement the action;

3. Land and site development costs: Expenses associated with purchase of land and development of existing property; and

4. Building and services costs: Costs of process and non-process buildings, utility connections, purchased services, and disposal costs.

Indirect capital costs include:

1. Engineering expenses: Costs of administration, design, construction, supervision, drafting, and testing of corrective measures alternatives;

2. Legal fees and license or permit costs: Administrative and technical costs necessary to obtain licenses and permits for installation and operation;

3. Start-up and shakedown costs: Costs incurred during corrective measure start-up; and

4. Contingency allowances: Funds to cover costs resulting from unforeseen circumstances such as adverse weather conditions, strikes, and inadequate facility characterization.

c. Operation and maintenance costs are post-construction costs necessary to ensure continued effectiveness of a corrective measure. The Permittee shall consider the following operation and maintenance cost components:

1. Operating labor costs: Wages, salaries, training, overhead, and fringe benefits associated with the labor needed for post-construction operation;

2. Maintenance materials and labor costs: Costs for labor, parts, and other resources required for routine maintenance of facilities and equipment;

3. Auxiliary materials and energy: Costs of such items as chemicals and electricity for treatment plant operations, water and sewer service, and fuel;

4. Purchased services: Sampling costs, laboratory fees, and professional fees which can be predicted;

5. Disposal and treatment: Costs of transporting, treating, and disposing of waste materials, such as treatment plant residues, generated during operation;

6. Administrative costs: Costs associated with administration of corrective measures operation and maintenance not included under other categories;

7. Insurance, taxes, and licensing costs: Costs of such items as liability and accident insurance; real estate taxes on purchased land or rights-of-way; licensing fees for certain technologies; and permit renewal and reporting costs;

8. Maintenance reserve and contingency funds: Annual payments into escrow funds to cover costs of anticipated replacement or rebuilding of equipment, and any large unanticipated operation and maintenance costs; and

9. Other costs: Items that do not fit any of the above categories.

(iv) Selection of Corrective Measures Alternative(s)

The Permittee shall select a corrective measures alternative using technical, human health, and environmental criteria. At a minimum, the following criteria shall be used to select the final corrective measure or measures:

(1) Technical

a. Performance. Corrective measure or measures which are most effective at performing their intended functions and maintaining performance over extended periods of time will be given preference;

b. Reliability. Corrective measure or measures which do not require frequent or complex operation and maintenance activities and have proven effective under conditions similar to those anticipated will be given preference;

c. Implementability. Corrective measure or measures which can be constructed and operated to reduce levels of contamination to attain or exceed applicable standards in the shortest period of time will be preferred; and

d. Safety. Corrective measure or measures which pose the least threat to the safety of nearby residents and environments as well as workers during implementation will be preferred.

(2) Human Health

The corrective measure or measures must comply with existing EPA criteria, standards, or regulations for the protection of human health. Corrective measures which provide the minimum level of exposure to contaminants and the maximum reduction in exposure with time are preferred.

(3) Environmental

The corrective measure or measures imposing the least adverse impact or greatest improvement on the environment over the shortest period of time will be preferred.

O.5 Task VI: CMS Final Report and Summary

The Permittee shall prepare a CMS Final Report and Summary presenting the results of the CMS and recommending a corrective action program. The Report shall at a minimum include:

(a) A summary of all the corrective measures alternatives originally identified, and the screening rationale employed. The results of development of each alternative shall be described, and the evaluation of those developed shall be presented in detail. The report will describe the rationale for selection of a corrective measures alternative, including performance expectations, preliminary design criteria and rationale, general operation and maintenance requirements, and long-term monitoring requirements. The report shall include summary tables which allow the alternative or alternatives to be easily understood. Trade-offs among health risks, environmental effects, and other pertinent factors shall be highlighted.

(b) A proposed corrective action program that will attain compliance with concentration level objectives, control sources of releases, meet acceptable waste management requirements, and protect human health and the environment.

(c) Design and implementation precautions, including special technical problems, additional engineering data required, permits and regulatory requirements, access, easements, and right-of-way, health and safety requirements, and community relations activities.

(d) Cost estimates and schedules including capital cost estimate, operation and maintenance cost estimate, and project schedule (design, construction, operation).

(e) A schedule for corrective measure (remedy) implementation.

O.6 General CMS Reporting Requirements

(a) Two hard copies and one IBM compatible disk copy of all reports shall be submitted by the Permittee to the Administrative Authority as specified in Section B.5.

(b) The CMS Plan shall be submitted by the Permittee to the Administrative Authority as described in Section J.

(c) The CMS Final Report and Summary shall be submitted by the Permittee to the Administrative Authority as described in Section L.

(d) Within 90 days of the date the Permittee is notified to begin a CMS, the Permittee shall provide the Administrative Authority with signed, quarterly progress reports as specified in Section D.

Table 1: RFI/CMS SUBMISSION SUMMARY

Below is a summary of the planned reporting requirements pursuant to this Permit:

Actions	Due Date (examples)
Progress reports on all activities	Quarterly; no later than ninety (90) calendar days after effective date of this Permit modification
RFI Workplan	Ninety (90) calendar days after the effective date of the Permit modification
Revised RFI Workplan	As determined by Administrative Authority, usually within thirty (30) calendar days of receipt of notice of deficiency
RFI Report and Summary	Sixty (60) calendar days after completion of RFI
Revised RFI Report and Summary	As determined by Administrative Authority, usually within thirty (30) calendar days of receipt of notice of deficiency
Notification of newly-identified SWMUs	Thirty (30) calendar days after discovery
Notification of newly-discovered releases	Fifteen (15) calendar days after discovery
Interim Measures Plan	As determined by Administrative Authority
Revised Interim Measure Plan	As determined by Administrative Authority
CMS Plan	Forty-five (45) calendar days after notification of requirement to perform CMS

Revised CMS Plan	As determined by Administrative Authority, usually within thirty (30) calendar days of receipt of notice of deficiency
CMS Final Report and Summary	Sixty (60) calendar days after completion of CMS
Revised CMS Final Report	As determined by Administrative Authority, usually thirty (30) calendar days after receipt of notice of deficiency
Demonstration of Financial Assurance at Facility	One hundred and twenty (120) calendar days after permit modification to implement corrective measures

Table 2: SWMUs REQUIRING AN RFI

Below is a list of the SWMU(s) requiring an RFI.

SWMU #	SWMU Name
8	Coronado Municipal Landfill