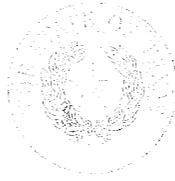


Bryan W. Shaw, Ph.D., *Chairman*  
Buddy Garcia, *Commissioner*  
Carlos Rubinstein, *Commissioner*  
Mark R. Vickery, P.G., *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

November 18, 2009

TO: All Persons on Mailing List

RE: **TCEQ Docket No. 2008-1402-IHW; Industrial Hazardous Waste Permit No. 32123.**  
Application of **American Ecology Environmental Services Corporation**, for a Post  
Closure Order, in **Smith County**, Texas.

The above-referenced matter is scheduled to be considered by the Texas Commission on Environmental Quality on **December 9, 2009 at 9:30 A.M.** in Room 201S, Building E, 12100 Park 35 Circle, Austin, Texas.

Oral presentations before the commission shall be limited to five minutes each, excluding time for answering questions, unless the chairman or general counsel establishes other limitations.

Should you need any additional information, please contact Melissa Chao at the Texas Commission on Environmental Quality, Office of the Chief Clerk, (512) 239-3300.

Sincerely,

A handwritten signature in black ink that reads "LaDonna Castañuela".

LaDonna Castañuela  
Chief Clerk

LDC/mc

**MAILING LIST**  
**AMERICAN ECOLOGY ENVIRONMENTAL SERVICES CORPORATION**  
**DOCKET NO. 2008-1402-IHW**

FOR THE APPLICANT:

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FOR ALTERNATIVE DISPUTE  
RESOLUTION:

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FOR THE CHIEF CLERK:

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INTERESTED PERSON(S):

Greta Boultinghouse  
P.O. Box 116  
Winona, Texas 75792-0116



bcc: Ms. Susan Jere White, Staff Attorney, Waste Section, Environmental Law Division  
Ms. Dan Long, Staff Attorney, Waste Section, Environmental Law Division  
Mr. Sri Venkat, I&HW Permits Section  
Mr. Gary Beyer, Corrective Action Section

**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY  
AGENDA ITEM REQUEST**

NAME & NUMBER OF PERSON TO CONTACT REGARDING CHANGES TO THIS REQUEST, IF NEEDED:

Ms. Susan Jere White or Mr. Dan Long, Environmental Law Division, MC 173, (512) 239-0600

**CAPTION:**

**Docket No. 2008-1402 IHW. Consideration of the application by American Ecology Environmental Services Corporation (formerly Gibraltar Waste Injection Facility) for issuance of a post-closure order to authorize post-closure care of solid and hazardous waste units pursuant to Tex. Health & Safety Code ch. 361; Tex. Water Code ch. 7; 40 Code of Federal Regulations Parts 264, 265, 270 and 271; and the rules of the Texas Commission on Environmental Quality, including specifically 30 Tex. Admin. Code Ch. 335. The facility is located 11 miles east of Tyler near Winona, in Smith County, Texas.**

**(Susan Jere White and Sri Venkat)**

  
Robert Martinez, Director  
Environmental Law Division

  
Susan Jere White  
Environmental Law Attorney

<b>IN THE MATTER OF POST- CLOSURE CARE CONCERNING AMERICAN ECOLOGY ENVIRONMENTAL SERVICES CORPORATION (AEESC) OF WINONA PCO NO. 32123</b>	§ § § § § §	<b>BEFORE THE  TEXAS COMMISSION ON  ENVIRONMENTAL QUALITY</b>
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**POST-CLOSURE ORDER  
DOCKET NO. 2008-1402-IHW**

**I. JURISDICTION AND STIPULATIONS**

This Post-Closure Order (“PCO”) is issued to American Ecology Environmental Services Corporation (AEESC – Applicant), as owner and operator of a closed commercial hazardous waste management facility. Before ceasing operations, the facility operated under a Resource Conservation and Recovery Act (RCRA) permit and conducted storage and processing operations in 31 tanks, 5 container storage areas, and 3 miscellaneous units. AEESC conducted disposal operations through Underground Injection Control (UIC) wells WDW-186 and WDW-229.

In 1994, AEESC applied to renew its RCRA permit, which was protested and remanded for a contested case hearing. The renewal application was held in abeyance because the facility ceased operations on March 20, 1997. AEESC conducted the closure of the waste management units under an Agreed Order issued November 12, 1997 (Docket Numbers: 97-0416-MLM and 95-1532-MLM).

During the active operation of the facility, constituents from hazardous waste were released to the groundwater at the site from RCRA-permitted units, solid waste management areas (SWMUs), and areas of concern (AOCs). The Applicant is entering into this PCO as the owner and operator of the facility and property. This PCO is issued pursuant to the authority vested in the Texas Commission on Environmental Quality (“the Commission” or “TCEQ”) under TEXAS HEALTH & SAFETY CODE §361.082(h) and TEX. WATER CODE, §7.031(f). The Commission and Applicant agree that the Commission has jurisdiction to enter into this PCO and that Applicant is subject to the Commission's jurisdiction. Upon execution, the Applicant consents to issuance of this PCO by voluntarily agreeing to comply with all the terms and conditions of this PCO and explicitly waives its right to request and participate in a hearing regarding PCO terms and conditions.

**II. STATEMENT OF PURPOSE**

AEESC has ceased operating this commercial hazardous waste management facility. The facility qualifies for a Post-Closure Order, as defined in 30 TEX. ADMIN. CODE §335.2(m), because the groundwater contaminant plume underlying the facility resulted from commingled releases from the RCRA-permitted units and from SWMUs and AOCs. Through this PCO, TCEQ requires AEESC to perform the following three activities:

1. Conduct post-closure care for hazardous waste management units, all of which are inactive and have been closed;

2. Conduct compliance monitoring for the closed RCRA-permitted waste management units, SWMUs, and AOCs as a single waste management area at the shut-down facility; and
3. Maintain financial assurance for post-closure care and compliance monitoring.

This Post-Closure Order supersedes and replaces the November 12, 1997 Agreed Order. Section VIII of the 1997 Agreed Order requires closure of the facility and directed the Company to apply for a post-closure permit if post-closure care was needed to address hazardous waste releases. However, in 1997, TCEQ did not have authority to issue a post-closure order. The Commission received authority to issue post-closure orders in lieu of RCRA permits in 2001. Because the RCRA permit renewal application has been inactive and administratively held in abeyance, the Executive Director determined that AEESC meets the eligibility requirements for a post-closure order. Termination of the RCRA permit will be handled as an administrative matter following the issuance of this PCO.

### **III. RESPONSIBILITIES OF APPLICANT/ORDERING PROVISIONS**

1. Applicant agrees to undertake all actions required by the terms and conditions of this PCO including any portions of this PCO incorporated by reference.
2. Applicant shall perform the Technical Requirements specified in Attachment A, Technical Requirements.
3. The Applicant is responsible for ensuring that all of its contractors, subcontractors, laboratories, and consultants retained to conduct or monitor any portion of the work performed under this PCO will comply with the terms of this PCO.
4. The obligations of this PCO, as set forth below for the Applicant, shall apply to, and be binding upon the Applicant, its officers, directors, employees, agents, trustees, receivers, successors, assigns, and all other persons, including, but not limited to, firms, corporations, subsidiaries, contractors, or consultants acting under or on behalf of the Applicant in connection with the implementation of this PCO.
5. No change in ownership, corporate status, or partnership status relating to the facility will alter in any way the status or responsibility of the Applicant under this PCO. The Applicant shall be responsible for and liable for completing all of its obligations under this PCO, regardless of whether the activities specified herein are to be performed by employees, agents, contractors, or consultants of the Applicant, or by employees, agents, contractors, or consultants of any party to whom the property is transferred before or after the execution of this PCO.
6. Any documents transferring ownership and/or operations of the facility from the Applicant to a successor-in-interest shall include written notice and a copy of this PCO. The Applicant shall provide written confirmation of the notice and a copy of this PCO being provided to the new owner and/or operator and written notice of the transfer of ownership and/or operations of the

facility to TCEQ no less than 90 days prior to the transfer. Transfer of any of the obligations of the Applicant under this PCO to any third party is subject to approval by the Executive Director.

#### **IV. APPLICATION MATERIALS**

This PCO is based on information submitted in the PCO Application dated December 28, 2007, and by subsequent revisions dated June 3, 2008; July 28, 2008; March 13, 2009; and April 20, 2009, which the Applicant has certified to be accurate and complete.

The PCO Application, as amended, is incorporated into this PCO by reference as if fully set out herein. In cases where the provisions of this PCO conflict with the PCO Application, this PCO supersedes the PCO Application. The expressed incorporation of the PCO Application does not relieve Applicant of its obligation to comply with all laws or regulations which are applicable to the activities authorized by this PCO.

#### **V. FINDINGS OF FACT**

1. AEESC operated a commercial hazardous waste management facility located approximately 11 miles north east of Tyler and 1.5 miles north of Interstate 20 near Winona, Smith County, Texas. The Applicant's RCRA Property is in the drainage area of Segment No. 0506 of the Sabine River Basin (North Latitude 32° 27' 37", West Longitude 95° 10' 46"). The main facility is located on an 8 acre tract of land within a larger area of owned-property consisting of approximately 280 acres.
2. The Applicant operated a commercial hazardous waste storage, treatment, and disposal facility beginning in 1981. The facility conducted storage and processing of hazardous wastes in 31 tanks, 5 container storage areas, and 3 miscellaneous units. The Applicant also disposed of hazardous wastes in Underground Injection Control (UIC) wells WDW-186 and WDW-229 as part of the waste management operations. The Applicant submitted a permit renewal application along with a Class 3 permit modification on November 1, 1994. The Applicant chose not to pursue the permit renewal application but instead ceased operations.
3. On March 20, 1997, the Applicant ceased receipt of hazardous waste from off-site and began closure activities at the facility.
4. Releases from historical waste management operations have contaminated the soil and groundwater at the facility. Hazardous wastes or hazardous constituents have been released from the RCRA-permitted units, SWMUs, and AOCs addressed by this PCO. Certain releases at the facility resulted in commingled plumes identified by the Applicant as originating from the RCRA-permitted units and one or more SWMUs or AOCs.

5. On November 12, 1997, TCEQ issued an Agreed Order to require a soil investigation plan, a groundwater assessment, and closure of the facility. From November 1997 to 2006, AEESC conducted site assessment and corrective action to achieve closure of the surface units.
6. The Executive Director approved plugging and closure of UIC Well WDW-186 on September 4, 2002. The Executive Director approved the final closure plan of the surface units on August 22, 2006. The Executive Director approved plugging and closure of UIC Well WDW-229 on October 27, 2008.
7. According to the February 2007 Affected Property and Assessment Report (APAR), the facility is underlain by alternating layers of clay, silt, sand and gravel of the Queen City formation. Some of these layers appear laterally continuous across the property. In addition, carbonaceous units including recognizable layers of lignite are also present.
8. As part of the site assessment and corrective action, AEESC installed 68 monitoring wells and three recovery wells in four hydraulically connected zones underlying the main facility. These four zones have historically been identified as the Perched Zone, the Shallow Saturated Zone, the Lower Saturated Zone, and the Basal Saturated Zone, which are all part of the Queen City Formation. The Queen City Aquifer is recognized as the uppermost aquifer in the vicinity of the AEESC facility. It is separated from the Carizzo-Wilcox Aquifer by the Reklaw Formation, which acts as an aquitard limiting flow between the two aquifers. The four water-bearing zones are separated by sandy silts and clays that appear to be laterally extensive across the site.
9. The groundwater contamination at the site consists of Volatile Organic Compounds (VOCs) and Semi-Volatile Organic Compounds (SVOC's). The single well completed in the lower-most Basal Zone has never yielded a groundwater sample containing detectable levels of the organic constituents detected in overlying zones.
10. AEESC completed corrective action monitoring and is currently monitoring VOCs, SVOCs, and metals in the groundwater as part of a compliance monitoring plan. AEESC has proposed to continue the compliance monitoring program during the post-closure care period. The site monitoring program was developed following a two-year study which used quarterly monitoring data to evaluate groundwater flow and contaminant degradation.
11. On December 17, 2007, the Applicant demonstrated that the soils no longer pose a threat to human health and the environment, consistent with 30 TAC Chapter 350, Texas Risk Reduction Program (TRRP). The Applicant must still demonstrate compliance with the protective contaminant levels (PCLs) for both the soils and groundwater before TCEQ will accept the facility as having achieved the objectives of this PCO. Therefore, the Applicant must conduct post-closure care and compliance monitoring of the former waste management areas, including the Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs), as a single waste

- management area until TCEQ determines that the Applicant has achieved the objectives of this PCO.
12. The PCO Application requests authorization to implement post-closure care for the waste management units, to perform compliance monitoring, and to maintain financial assurance for post-closure care and compliance monitoring under a PCO mechanism.
  13. This PCO sets out the post-closure requirements for monitoring of a groundwater contaminant plume resulting from commingled releases from the RCRA-permitted units, SWMUs, and AOCs. For the purposes of post-closure care and compliance monitoring, all the closed waste management units are combined into a single waste management area. *See* SWMUs identified in CP Table 1 of Attachment A.
  14. This PCO is based upon information contained in the PCO Application submitted December 28, 2007 and revisions dated June 3, 2008, July 28, 2008; and March 13, 2009, pursuant to 30 TEX. ADMIN. CODE §§305.50(b) and 335.2(m), and declared administratively complete by the Executive Director on January 18, 2008. The PCO Application includes a legal description of the facility. *See* Site Map, Attachment B.
  15. Public Notice of Receipt of an Application and the Intent to Obtain a PCO was published on February 1, 2008, in accordance with 30 TEX. ADMIN. CODE §39.806.
  16. Public comments regarding the Notice of Receipt of an Application and the Intent to Obtain a PCO were processed in accordance with 30 TEX. ADMIN. CODE §55.156.
  17. Notice of this Proposed PCO and Preliminary Decision was provided to the public in accordance with 30 TEX. ADMIN. CODE §39.807 on June 3, 2009.
  18. Public comments regarding the Notice of a Proposed PCO and Preliminary Decision were processed in accordance with 30 TEX. ADMIN. CODE §55.156. TCEQ received one letter from Ms. Greta Boultinghouse asking to be put on the mailing list. The Executive Director prepared a Response to Comments, which is filed as a part of this PCO packet.
  19. The Executive Director has prepared a compliance history of the Applicant, dated October 13, 2009, pursuant to the requirements of 30 TEX. ADMIN. CODE, Chapter 60. AEESC has a compliance history ranking of Average and a numerical rating of 1.61. AEESC's compliance history is incorporated into this PCO by reference.
  20. Upon execution, the Applicant consents to issuance of this PCO by voluntarily agreeing to comply with all the terms and conditions of this PCO and explicitly waives its right to request and participate in a hearing regarding those terms and conditions.

## **VI. CONCLUSIONS OF LAW AND DETERMINATIONS**

1. This PCO subjects the Applicant to the jurisdiction of the TCEQ under the TEXAS HEALTH & SAFETY CODE §361.082(h) and the Texas Water Code, §7.031(f).
2. The Applicant is a "person" as defined in TEXAS HEALTH & SAFETY CODE §361.003(23).
3. The Applicant is the "owner/operator" of a closed "hazardous waste management facility" as those terms are defined at 30 TAC §335.1.
4. The Applicant has demonstrated that the facility meets the definition of "facility" provided in 30 TAC §335.1(55)(b).
5. Certain wastes and constituents found at the facility are "hazardous wastes" or "hazardous constituents" as defined by 40 CFR Part 261, as adopted by reference in TEX. HEALTH & SAFETY CODE §361.003(12) and 30 TEX. ADMIN. CODE §335.1. Those hazardous wastes or hazardous constituents were released from the RCRA-permitted units and the SWMUs and AOCs, all of which are subject to compliance monitoring requirements in 30 TEX. ADMIN. CODE §335.167.
6. The facility meets the eligibility requirements for a PCO found in 30 TEX. ADMIN. CODE §335.2(m) because the groundwater contaminant plume underlying the facility resulted from commingled releases from the RCRA-permitted units and from one or more SWMUs and AOCs.
7. The subsurface geology of laterally continuous clay layers restricts the vertical migration of hazardous constituents released from the RCRA-permitted units, as well as the SWMUs and AOCs.
8. AEESC has installed an adequate compliance monitoring system to characterize the known extent and concentrations of hazardous constituents in the groundwater underlying the facility.
9. The Applicant has submitted an administratively complete PCO application.
10. The Executive Director processed the PCO Application in accordance with all applicable TCEQ procedural requirements.
11. This PCO supersedes and replaces the Agreed Order which was issued November 12, 1997 (Docket Numbers: 97-0416-MLM and 95-1532-MLM). Upon issuance, this PCO will govern the post-closure care and compliance monitoring requirements.

12. Pursuant to Finding of Facts Number 19, the Executive Director has satisfied the requirements of 30 TEX. ADMIN. CODE Chapter 60 and has provided a copy of the Applicant's compliance history as part of this PCO for consideration by the Commission.

#### **VII. SUBMISSION/AGENCY APPROVAL**

1. The Applicant shall submit all reports, plans, specifications, schedules, attachments, and response documents for review and approval within the time frame(s) specified either by the Technical Requirements provided in Attachment A of this PCO or by the Executive Director.
2. The Executive Director shall notify Applicant in writing of TCEQ's approval or disapproval of reports, plans, specifications, schedules, attachments, and response documents or any part thereof as necessary. Reports, plans, specifications, schedules, attachments, and response documents approved by the Executive Director in writing shall be deemed incorporated into and part of this PCO.
3. If the Executive Director does not approve any plan, report or other item required to be submitted to TCEQ for its approval pursuant to this PCO, the Applicant shall address any deficiencies as directed by the Executive Director and resubmit the plan, report, or other item within the time period specified by the Executive Director.
4. No informal advice, guidance, suggestion, or comments by the Executive Director regarding reports, plans, specifications, schedules, attachments, or any other written documents submitted by AEESC will be construed as relieving the Applicant of its obligations to obtain written approval, if and when required by this PCO.

#### **VIII. FINANCIAL ASSURANCE**

Applicant and/or its successors and assigns shall provide financial assurance for post-closure care and compliance monitoring programs at the facility, as applicable, in a manner acceptable to the Executive Director in an amount not less than \$333,960 (2008 dollars) for post-closure care and \$1,411,366 (2008 dollars) for post-closure compliance monitoring within sixty (60) days of the effective date of this PCO. The financial assurance shall be secured, maintained, and adjusted in compliance with 30 TEX. ADMIN. CODE §335.179; 30 TEX. ADMIN. CODE Chapter 37, Subchapter P; and 30 TEX. ADMIN. CODE §335.152. In addition, AEESC, its successors and/or assigns shall submit to the Executive Director, upon request, such information as may be required to determine the adequacy of the financial assurance.

#### **IX. DISPUTE RESOLUTION**

This section applies to any unresolved technical dispute between the TCEQ and Applicant arising under this PCO. Any dispute that arises under or with respect to this PCO shall first be subject to informal negotiations between the staff of the Executive Director and Applicant. The period of informal negotiations shall not exceed 30 calendar days from the date Applicant notifies the TCEQ of the need

for dispute resolution. The informal negotiation period may be extended at the discretion of the TCEQ. The TCEQ's decision regarding an extension of informal negotiations shall not be subject to dispute resolution or judicial review. Informal negotiations shall not postpone the deadlines for Applicant under this PCO and its Appendices and Attachments.

When informal negotiations end, the Applicant may refer the dispute to the Deputy Director, Office of Permitting and Registration in a letter briefly describing the issue(s) to be resolved. In its letter, Applicant shall describe the nature of the dispute and shall include a proposal for its resolution. The filing of a letter shall not, in itself, postpone the deadlines for Applicant under this PCO. In any dispute, Applicant shall have the burden of demonstrating that its position is consistent with this PCO, its Appendices and Attachments, and applicable state and federal law. Any unresolved issues will be responded to in writing.

Unless otherwise provided for in this PCO, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve technical disputes arising under or with respect to this PCO. The procedures set forth in this Section shall not apply to enforcement or compliance actions initiated by the TCEQ to enforce the failure by Applicant to comply with this PCO, its Attachments, or plans approved by the Executive Director of the TCEQ, or with obligations of Applicant that have not been disputed in accordance with this Section, or to prevent any imminent threat to the human health and the environment.

#### **X. RESERVATION OF RIGHTS**

1. TCEQ expressly reserves all statutory and regulatory powers, authorities, rights, remedies, both legal and equitable, which may pertain to Applicant's failure to comply with any of the requirements of this PCO. The PCO shall not be construed as a waiver or limitation of any rights, remedies, powers, and/or authorities that TCEQ has under the Texas Solid Waste Disposal Act or any other statutory, regulatory, or common law enforcement authority of the State of Texas. In addition, the Executive Director may, without further notice or hearing, refer this matter to the Office of the Attorney General of the State of Texas for further enforcement if the Executive Director determines that Applicant is noncompliant with the requirements set forth in this PCO.
2. This PCO shall not be construed to affect or limit in any way the obligation of Applicant to comply with all federal, state and local laws and regulations governing the activities required by this PCO. Nothing in this PCO is intended to release or waive any claim, cause of action, demand or defense in law or equity that any party to this Agreement may have against any person(s) or entity not a party to this Agreement.

3. TCEQ expressly reserves all rights and defenses that it may have, including the right both to disapprove of work performed by the Applicant pursuant to this PCO and to request that the Applicant perform tasks in addition to those stated in the Technical Requirements contained in Attachment A of this PCO.
4. Notwithstanding any other provision of this PCO, the Applicant shall remain responsible for obtaining any federal, state, or local permit for any activity at the Facility including that necessary for the performance of the work and for the operation or closure of the Facility.
5. Any noncompliance with such Executive Director approved plans, reports, specifications, schedules, attachments, and response documents shall be construed as a violation of the terms of this PCO.

#### **XI. MODIFICATION OR AMENDMENT OF THE POST-CLOSURE ORDER**

1. The Applicant may request that the Executive Director extend any deadline specified within any provision of Attachment A. Upon a satisfactory demonstration of force majeure or good cause, the Executive Director may grant an extension not to exceed 90 days for deadlines specified within Attachment A. So long as any granted extension is for less than 90 days, this PCO shall be deemed modified and duly enforceable with the new schedule without Commission approval of the extension.
2. Amendments to the PCO shall follow the PCO application requirements found in 30 TEX. ADMIN. CODE §305.50(b) and the public notification requirements found in 30 TEX. ADMIN. CODE §§39.809 and 55.156. All modifications or amendments require the approval of the Executive Director prior to implementation. The Executive Director may also initiate any modification or amendment if determined necessary for protection of human health and the environment. Any modification to the Attachment A Technical Requirements shall be in writing and shall be effective on the date signed by the Executive Director.
3. Any reports, plans, specifications, schedules, attachments and modifications required by this PCO shall be incorporated into this PCO upon written approval by the Executive Director.

#### **XII. REMEDIES FOR NONCOMPLIANCE**

1. The Applicant shall report to the Executive Director information regarding any noncompliance which may endanger human health or the environment.
  - a. The report of such information shall be provided orally within 24 hours from the time Applicant becomes aware of the noncompliance.

- b. A written submission of such information shall also be provided within fifteen (15) days of the time Applicant becomes aware of the noncompliance. The written submission shall contain the following:
- (1) a description of the noncompliance and its cause;
  - (2) the potential danger to human health or safety, or the environment;
  - (3) the period of noncompliance, including exact dates and times;
  - (4) if the noncompliance has not been corrected, the anticipated time it is expected to continue; and
  - (5) steps taken or planned to reduce, eliminate, and prevent the recurrence of the noncompliance, and to mitigate its adverse effects with schedule of implementation.
2. Noncompliance with any provisions of this PCO may subject the Applicant to enforcement action.

### **XIII. TERMINATION**

The provisions of this PCO shall be deemed satisfied upon the Applicant's receipt of written notice from TCEQ that the Applicant has demonstrated that the terms of this PCO, including any additional tasks determined by TCEQ to be required under this PCO, have been completed to the satisfaction of the TCEQ. This notice shall also affirm the Applicant's continuing obligation to recognize TCEQ's Reservation of Rights as required in Section X after all other requirements of the PCO are satisfied. The Applicant must provide public notice in accordance with 30 TAC §39.808 before the TCEQ issues a Notice of Termination.

### **XIV. INDEMNIFICATION OF THE STATE OF TEXAS**

The Applicant agrees to indemnify, save, and hold harmless the State of Texas, its agencies, departments, agents, and employees, from any and all claims or causes of action arising from or on account of acts or omissions of the Applicant or its agents, independent contractors, receivers, trustees, and assignees in carrying out activities required by this PCO. This indemnification shall not be construed in any way as affecting or limiting the rights or obligations of the Applicant under its various contracts.

#### **XV. FORCE MAJEURE**

1. The Applicant shall perform all the requirements of this PCO according to the time limits set unless this performance is prevented or delayed by events that constitute a force majeure.
2. For the purposes of this PCO, a force majeure is defined as any event that is caused by an act of God, labor strike, work stoppage, or other circumstance beyond the Applicant's control that could not have been prevented by due diligence, and that makes substantial compliance with the applicable provision or provisions of this PCO impossible. Such events do not include increased costs of performance, economic hardship, changed economic circumstances, normal precipitation events, or failure to submit timely and complete applications for federal, state, or local permits. Title 30 TAC §70.7(a) states: "If a person can establish that an event that would otherwise be a violation of a statute, rule, order, or permit was caused solely by an act of God, war, strike, riot, or other catastrophe, the event is not a violation of that statute, rule, order, or permit."
3. The Applicant has the burden of proving by clear and convincing evidence that any delay is or will be caused by events reasonably beyond its control.
4. In the event of a force majeure, the time for performance of the activity delayed by the force majeure shall be extended for the period of the delay attributable to the force majeure plus reasonable additional time for resumption of activities. The time for performance of any activity dependent on the delayed activity shall be similarly extended, except to the extent that the dependent activity can be implemented in a shorter time. The Executive Director shall determine whether subsequent requirements are to be delayed and the time period granted for any delay. The Applicant shall adopt all reasonable measures to avoid or minimize any delay caused by a force majeure.
5. In the event of a force majeure, the Applicant shall immediately notify the Executive Director by telephone within twenty-four (24) hours after the Applicant becomes aware of the event and shall within ten (10) calendar days of becoming aware of the event, notify the Executive Director in writing of the cause and anticipated length of the delay. The notification shall also state the measures taken and/or to be taken to prevent or minimize the delay and the time table that the Applicant intends to follow to implement the delayed activity. Failure of the Applicant to comply with the force majeure notice requirements will be deemed a forfeiture of its right under this section.

#### **XVI. STATEMENT OF SEVERABILITY**

The provisions of this PCO are severable. If a court of competent jurisdiction or other appropriate authority deems any provision of this PCO to be unenforceable, the remaining provisions shall be valid and enforceable.

**XVII. SURVIVABILITY/PERMIT INTEGRATION**

The requirements of this PCO shall not terminate upon the issuance of a RCRA permit or permit modification, air quality permit, or other form of permit or order, unless all of the requirements of this PCO are expressly integrated into or superceded by such permit or order, or if all provisions not expressly integrated into or superceded by such permit or order have been fully completed to TCEQ's satisfaction.

**XVIII. EFFECTIVE DATE**

The effective date of this PCO is the date of hand-delivery of the PCO to the Applicant, or three days after the date on which the TCEQ mails notice of this PCO to the Applicant, whichever is earlier, under the Texas Government Code §2001.142.

SIGNATURE PAGE

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

\_\_\_\_\_  
For the Commission

\_\_\_\_\_  
Date

I, the undersigned, have read and understand the attached Post-Closure Order in the matter of American Ecology Environmental Services Corporation (AEESC). I am authorized to agree to the attached Post-Closure Order on behalf of AEESC, and do agree to the specified terms and conditions.

I understand that by entering into this Post-Closure Order, AEESC waives certain procedural rights, including, but not limited to, the right to formal notice of an evidentiary hearing, the right to an evidentiary hearing, and the right to appeal the terms and conditions of the Post-Closure Order. I agree to the terms of the Post-Closure Order.



Signature

7/1/09

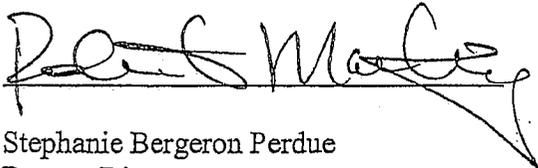
Date

\_\_\_\_\_  
Printed Name Simon Bell  
Authorized Representative of AEESC

V.P. Operations

Title

I, the undersigned, on behalf of the Executive Director of the Texas Commission on Environmental Quality, hereby agree to the terms of this Post-Closure Order.



10/13/2009

Date

FOR

Stephanie Bergeron Perdue  
Deputy Director  
Office of Legal Services  
Texas Commission on Environmental Quality

## ATTACHMENT A

### I. Post-Closure Care Requirements

#### A. Facility Post-Closure Care Requirements

The applicant shall conduct post-closure care of the locations of the closed former waste management units, addressed as a single waste management area, for a period of at least 30 years after November 2, 2007, the date of closure certification for the soil. Post-closure care shall be performed in accordance with the Post-Closure Plans referenced in the PCO Application submittals identified in Provision IV of the PCO (Application Materials), 40 CFR §264.117, and the following requirements:

1. Maintain all storm water conveyance structures, as applicable, in good functional condition.
2. Maintain the cover or appropriate barrier, as applicable, such that the cover promotes drainage, prevents ponding, minimizes surface water infiltration, and minimizes erosion.
3. Maintain identified benchmark(s) at the facility.
4. Maintain the facility perimeter fence, locked gates and warning signs in good functional condition.
5. Ensure that all entrances to the facility have locked gates.
6. Ensure that the Texas Commission on Environmental Quality (TCEQ) has access to the facility by providing contact information for an authorized agent located within the TCEQ Region within which the facility is located.
7. Prepare and submit the Biennial Report required by 40 CFR §264.75.
8. Perform all groundwater monitoring and related activities specified in Attachment A of the PCO.
9. Notify the Region 5 - Tyler office ten (10) days prior to any sampling/drilling/plugging/etc. activities so that Region personnel may split samples or observe activities.

#### B. General Post-Closure Requirements

##### 1. Request for Post-Closure Order Modification or Amendment

Applicant shall submit a written request for modification or amendment to this PCO to authorize a change in the approved Post-Closure Plan in accordance with 30 TAC §305.69 and §335.152 (a)(5). The written request shall include a copy of the amended Post-Closure Plan(s) for approval by the Executive Director.

2. Time Frames for Modification/Amendment Request

The Applicant shall submit a written request for an order modification or amendment to this PCO in accordance with the time frames in 30 TAC §305.69 and §335.152 (a)(5).

3. All dates in this PCO shall be referenced to the date of issuance of this PCO by the Texas Commission on Environmental Quality (TCEQ) unless otherwise specified. This Plan was developed based on the PCO and Compliance Plan Application dated December 31, 2007, and as revised by responses dated June 3, 2008, July 23, 2008, and April 20, 2009, which contained a Sampling and Analysis Plan dated December 31, 2007 and revised May 23, 2008.

C. Post-Closure Notice and Certification Requirements

No later than 60 days after completion of the established post-closure period for each unit, the Applicant shall submit to the Executive Director, by registered mail with a copy to the TCEQ Tyler Regional Office, a certification that the post-closure period for the unit was performed in accordance with the specifications of the approved Post-Closure Plan and this PCO. The certification shall be signed by the Applicant and a registered professional engineer or professional geoscientist. Documentation supporting the independent registered professional engineer's or geoscientists' credentials must be furnished to the Executive Director upon request until the Executive Director releases the owner or operator from the financial assurance requirements for post-closure care under 40 CFR §264.145 (i).

D. Financial Assurance for Post-Closure

1. The Applicant shall provide financial assurance for post-closure care required by this PCO in an amount not less than \$333,960 (2008 dollars) as shown on enclosed Table VII.D.-Post Closure Cost Estimate. Financial assurance shall be secured and maintained in compliance with 30 TAC Chapter 37, Subchapter P and 30 TAC §335.152.
2. The Applicant shall submit to the Executive Director, upon request, such information as may be required to determine the adequacy of the financial assurance.

**II. Compliance Plan Requirements**

A. General Information (and Applicability)

1. The term "Uppermost Aquifer" as referenced in this PCO refers to the Perched Zone, Shallow Zone, and Lower Zone.

Language for both the Corrective Action Program (30 TAC §335.166) and the Compliance Monitoring Program (30 TAC §335.165) is included in this PCO for reference and as a contingency for future changes in accordance with Provision II.D.6. Applicability of specific Corrective Action Program or Compliance Monitoring Program requirements depends on the status of the units, as defined in Provisions II.A.2. through A.4. and CP Table I.

2. The PCO is specific to the waste management units listed in the Compliance Plan (CP Table I (Items A and B) and depicted in Attachment B, for which the groundwater Corrective Action Program and Compliance Monitoring Program apply, pursuant to 30 TAC §335.166 and §335.165, for releases from RCRA-regulated units.
3. The PCO is specific to the waste management units listed in CP Table I (Item D) and depicted in Attachment B, for which alternative requirements for the groundwater Corrective Action Program apply, pursuant to 30 TAC §335.151, §335.156 and Chapter 350, for commingled releases from RCRA-regulated units and one or more Solid Waste Management Units (SWMUs) and/or Areas of Concern (AOC).
4. The PCO is specific to the SWMUs and/or AOCs listed in CP Table I (Item C) and depicted in Attachment B, for which the Corrective Action Program applies pursuant to 30 TAC §335.167 and Chapter 350 for releases from the SWMUs and/or AOCs.
5. The PCO is specific to the SWMUs and/or AOCs listed in CP Table II for which investigation and corrective action, as necessary, applies pursuant to 30 TAC §335.167 and Chapter 350 and Provision II.H. of this PCO..
6. This PCO applies to any SWMU and/or AOC discovered subsequent to issuance of this PCO. The Applicant shall notify the Executive Director within fifteen (15) days of such a discovery. Within forty-five (45) days of discovering a SWMU or AOC, the Applicant shall complete the following:

Submit a RCRA Facility Assessment (RFA) report for that SWMU and/or AOC which shall be based on EPA RFA Guidance, October 1986, NTIS PB 87-107769 or subsequent revisions. The purpose of the RFA is to identify releases or potential releases of hazardous waste, hazardous constituents or other constituents of concern from the SWMU and/or AOC that may require corrective action. If the RFA indicates there is no release, the Applicant shall submit the RFA report to TCEQ to document results and the requirements of 30 TAC Chapter 350 shall not apply. However, if the RFA indicates that there is a release or a potential for release that warrants further investigation, the Applicant shall conduct an investigation and necessary corrective action based on 30 TAC Chapter 350 requirements, applicable guidance, and the approved schedules in accordance with Provision II.H. Upon written approval of the RFA, the Applicant shall include the newly-discovered SWMU and/or AOC with each groundwater report in accordance with CP Table VII, and include the newly-discovered SWMU and/or AOC on CP Tables I or II as appropriate, with the next PCO modification, amendment or renewal.

B. Authorized Components and Functions of Corrective Action and Compliance Monitoring Systems

Corrective Action Systems (CAS) are required for units specified in CP Table I, Items A, C and D. The Applicant is authorized to install and operate the Corrective Action System components specified in Provisions II.B.1 through II.B.10. subject to the limitations contained herein. Compliance Monitoring System components for units listed in CP Table I, Item B are specified below in Provision II.B.11.

Corrective Action Systems:

1. Groundwater monitoring system may at a minimum consist of the following categories of wells listed in CP Table V, to monitor groundwater quality. An application to modify or amend the PCO is required to change the category or wells listed in CP Table V.
  - a. Background Well(s) unaffected by the operation of the facility.
  - b. POC Wells to demonstrate compliance with the Groundwater Protection Standard (GWPS).
  - c. Point of Exposure (POE) Wells, to demonstrate compliance with the GWPS and evaluate the effectiveness of the remediation program.
  - d. Alternate Point of Exposure (APOE) Wells to demonstrate compliance with the GWPS at a location other than the prescribed POE; and in maintaining a Plume Management Zone (PMZ) in accordance with 30 TAC §350.33.
  
2. The Applicant is authorized to install and operate the following additional corrective action system wells to monitor groundwater quality and hydrogeological conditions of the aquifer as designated in Attachment B. The Applicant may propose changes to the following corrective action system wells as part of the reporting requirements in CP Table VII (Item 12) and such changes shall become part of the PCO upon approval by the Executive Director. The purpose of this provision is to provide the Applicant with the flexibility to alter the groundwater monitoring system and Corrective Action System designs, as necessary, to address changing environmental conditions without modifying or amending the PCO.
  - a. Corrective Action Observation (CAO) Wells to evaluate the lateral and vertical extent of groundwater contamination in the Uppermost Aquifer and evaluate the effectiveness of the remediation program. The term “Uppermost Aquifer” as referenced in this PCO refers to the Perched Zone, Shallow Zone, and Lower Zone.
  - b. Corrective Action System (CAS) Wells to remediate and/or contain contaminated groundwater.
  - c. Attenuation Monitoring Point (AMP) Wells, located within the migration pathway of a chemical of concern which demonstrate that the GWPS will not be exceeded at the applicable point of exposure.
  - d. Supplemental Wells to gauge hydrogeologic conditions of the aquifer.
  
3. Groundwater Corrective Action System to withdraw, treat, and/or contain contaminated groundwater and non-aqueous phase liquids (NAPLs) using recovery wells, interceptor trenches, bioremediation, reactive walls, air sparging and/or another alternate Corrective Action System design. Any alternate Corrective Action System designs proposed by the Applicant subsequent to issuance of this PCO that are equivalent to or exceed the performance of the Corrective Action Systems approved herein shall become part of the PCO upon approval by the Executive Director. The type of Corrective Action System

in operation at the facility and an evaluation of system performance shall be reported in accordance with CP Table VII.

4. Collection and conveyance system to store recovered groundwater and NAPLs, if found, prior to disposal at authorized facilities. If the recovered groundwater is characteristically hazardous and/or is contaminated with listed hazardous waste and the collection system does not meet the wastewater treatment unit exemption under 30 TAC §335.2(f) and §335.41(d), the collection system shall comply with the following regulations: 1) If the contaminated groundwater is stored for less than ninety (90) days without a permit or interim status, then the container and tank collection systems shall comply with provisions of 30 TAC §335.69(a)(1) / 40 CFR Part 265 Subparts I and J; 2) If the contaminated groundwater is stored for more than ninety (90) days, then the container and tank collection system shall comply with the provisions of 30 TAC §335.152(a)(7) & (8) / 40 CFR Part 264 Subparts I and J. The collection and conveyance system shall consist of the following components:
  - a. A groundwater corrective action system,
  - b. A groundwater storage system,
  - c. Appurtenances for the collection and conveyance of recovered contaminated groundwater and NAPLs, if applicable
5. Treatment system to reduce the concentration of hazardous constituents in contaminated groundwater to the GWPS specified in CP Table III by means of biological, physical, and/or chemical treatment processes.
6. Groundwater containment system to inhibit contaminated groundwater above CP Table III GWPS from migrating beyond the influence of the corrective action system.
7. Reinjection of fresh or recovered groundwater, after treatment, into the contaminated aquifer in accordance with 30 TAC §331.9-10.
8. The following handling methods are authorized for recovered groundwater having concentrations of hazardous constituents exceeding the GWPS:
  - a. Treatment through an on-site wastewater treatment system and discharge via a permitted outfall in compliance with a current industrial wastewater discharge permit.
  - b. Treatment of recovered groundwater by means of air stripping and carbon adsorption. The air stripper shall be maintained in compliance with applicable air quality regulations.
  - c. Disposal at a permitted deep injection well facility.
  - d. Disposal at other authorized on-site facility or permitted off-site facility.
  - e. Any other treatment methods approved by the Executive Director.

The method(s) utilized for handling, disposing and recording volumes of all recovered/purged contaminated groundwater shall be reported in accordance with CP Table VII.

9. Recovered NAPLs, if found, shall be managed (treated, stored, and disposed), or recycled in an authorized on-site unit(s) or an off-site facility.
10. The Corrective Action Program shall consist of the system components listed in Provisions II.B.1. through II.B.9., to be operated according to the plans and specifications as approved in Provision II.C.1. and the specifications of this PCO.
  - a. If groundwater recovery wells are utilized in the Corrective Action System, the flow rate at each recovery well shall be set and recorded once a week. This weekly flow rate data shall be used to calculate a semiannual total flow which shall be reported in accordance with CP Table VII of this PCO.
  - b. All Corrective Action System components shall be maintained in a functional and leak-free condition. All above ground collection system pipes shall be inspected weekly. In addition, the area surrounding the wells shall be inspected weekly for visible signs indicating leaks in buried sections of the collection system. If a release of reportable quantity is detected in any part of the collection system, it must be reported within twenty-four (24) hours to the local TCEQ Region Office, and immediate action must be taken to stop the release and resolve the problem.
  - c. The Applicant shall notify the Executive Director of any scheduled or non-scheduled periods of Corrective Action System shutdown, Corrective Action System malfunction, or treatment system shutdown for maintenance lasting more than thirty (30) days. The Applicant shall notify the Executive Director in writing no later than seven (7) days following the date the Applicant determines that the shutdown will last more than thirty (30) days. All shutdowns and malfunctions, irrespective of duration, shall be recorded in the facility's inspection log, and shall be reported in accordance with CP Table VII.

Compliance Monitoring Systems:

11. Groundwater monitoring system may, at a minimum, consist of the following categories of wells listed in CP Table V, to monitor groundwater quality. An application to modify or amend the PCO is required to change the category or the wells listed in CP Table V.
  - a. Background Well(s) that are unaffected by the operation of the facility.
  - b. POC Wells to demonstrate compliance with the GWPS.
  - c. POE Wells to demonstrate compliance with the GWPS.
  - d. APOE Wells to demonstrate compliance with the GWPS at a location other than the prescribed POE.

C. General Design and Construction Requirements

1. All plans submitted with the PCO Application referenced in Provision II.A.7., concerning the design, construction, and operation of the authorized components of the Corrective Action and Groundwater Monitoring Programs and/or groundwater Compliance Monitoring Program, are approved subject to the terms established by this PCO. All plans must comply with this PCO and TCEQ Rules. Any alternate Corrective Action System designs proposed by the Applicant subsequent to issuance of this PCO that are equivalent to or exceed the performance of the Corrective Action Systems approved herein shall become part of the PCO upon approval by the Executive Director.
2. Well Design, Construction, Installation, Certification, Plugging and Abandonment Procedures and Specifications

For all wells to be constructed after issuance of this PCO that do not meet the well construction specifications identified in Attachment C of this PCO, the Applicant shall submit to the Executive Director the proposed well location and construction diagram for approval at least ninety (90) days in advance of the anticipated date of installation or in accordance with an approved schedule for installation. These requirements may be met through submittal of a work plan by the Applicant and subsequent approval by the Executive Director. Well installation shall commence upon written approval of the Executive Director. Wells constructed prior to issuance of this may be utilized as groundwater monitoring wells if they meet the standards of Attachment C or are otherwise authorized by issuance of the PCO.

Unless the Applicant proposes an alternate well design that will result in wells of equivalent performance, each well installed after issuance of this PCO shall follow the design specifications contained in Attachment C of this permit. The Applicant shall follow the certification and reporting requirements for installation of new, plugging/abandonment and replacement of existing wells as specified in Attachment of this permit and CP Table VII.

3. The Applicant shall not install or maintain any drinking water or supply wells that are screened within plumes of groundwater contamination at the facility.

D. Corrective Action and Compliance Monitoring Objectives and the Groundwater Protection Standard

Corrective Action and Compliance Monitoring Objectives for Units Specified in Table I

1. The GWPS defines the concentration limits of hazardous constituents, with respect to groundwater quality restoration in the Uppermost Aquifer and any lower interconnected aquifers, which are to be achieved at the POC (and POE, and APOE, if applicable) and beyond in accordance with Provision II.E.1. by operation of the Corrective Action Program and/or Compliance Monitoring Program at this facility.
2. POC wells are designated in Attachment B and further defined for purposes of this PCO by CP Table V, which also identifies the POE (and APOE, if any) Wells for which

groundwater monitoring procedures will apply (Provision II. F.)

3. For Corrective Action, the hazardous constituents detected in groundwater are specified in Column A of CP Table III. For Compliance Monitoring, hazardous constituents that are reasonably expected to be in or derived from waste placed in the units and that are to be monitored annually at the POC are listed in Column A of CP Table IV. The hazardous constituents detected in the groundwater are specified in Column A of CP Table IVA. Additional constituents shall be added to CP Tables IIIA (Corrective Action) and IVA (Compliance Monitoring) through a PCO modification or amendment in accordance with Provision II.J.4. Groundwater analysis for each hazardous constituent shall utilize an analytical method, listed in the EPA SW-846 and as listed in the July 8, 1987 edition of the Federal Register and later editions, which is capable of measuring the concentration of the hazardous constituent at a level equal to or less than the corresponding value specified in CP Tables III and IV except when matrix interference prevents achievement of that level.
4. The GWPS are specified in Column B of CP Tables III (Corrective Action) or IVA (Compliance Monitoring). The GWPS shall be the values for statistical comparisons unless CP Tables III or IVA are amended in accordance with current guidance and regulations, or if any other accepted levels are promulgated by the TCEQ or the EPA. The values in CP Tables III or IVA will change as updates to 30 TAC §335.160 and Chapter 350 are promulgated. The Executive Director or the Applicant may request to replace concentration limits through a modification or amendment to this PCO in accordance with 30 TAC §305 Subchapter D.
5. The Compliance Period for each unit is specified in CP Table VI.

Corrective Action Program:

6. Achieving the GWPS for Corrective Action and Compliance Monitoring Programs.
  - a. Achieving the GWPS, in accordance with Provision II.E.1., is defined by the results of the data evaluation of Provision II.E.4., wherein the concentrations of hazardous constituents have been reduced by the Corrective Action Program (Provision II.E.) to concentrations of hazardous constituents that do not exhibit a statistically significant increase or exceed the concentration limits when directly compared to the GWPS of CP Table III.
  - b. If the GWPS is achieved at the RCRA-regulated units or waste management areas, in accordance with Provision II.E.1., during the Compliance Period, the Applicant may apply to modify or amend this PCO to revise the Corrective Action Program to the extent necessary to demonstrate by means of the Groundwater Monitoring Program that the GWPS will not be exceeded during the remainder of the Compliance Period.
  - c. If the GWPS is not achieved at the RCRA-regulated units or waste management areas, in accordance with Provision II.E.1., during the Compliance Period, the Corrective Action Program must continue until the GWPS has not been exceeded in all wells for that corrective action area for three (3) consecutive years.

- d. If the GWPS established in this PCO for the RCRA-regulated unit or waste management area have not been exceeded for three (3) consecutive years at the end of the Compliance Period, then the Applicant must, within ninety (90) days, submit an application for a PCO modification or amendment to establish a Compliance Monitoring Program or a Detection Monitoring Program for the aquifer(s) during the remaining portion of the thirty (30) year post-closure care period in accordance with 40 CFR §264.117. If the thirty (30) year post-closure care period has expired, the Applicant may request that groundwater monitoring for that RCRA-regulated unit or waste management area be discontinued. Until approval of the request, the Applicant shall continue groundwater monitoring under current PCO provisions for each RCRA-regulated unit or waste management area.
- e. If the GWPS established in this PCO for SWMUs and/or AOCs listed in CP Table I, Item C have not been exceeded for three (3) consecutive years in all wells for that unit, then the Applicant may apply for a modification or amendment to the PCO to terminate the Corrective Action Program for that unit.
- f. If the GWPS established by this PCO for those units/areas listed in CP Table I, Item D (regarding alternative corrective action requirements for commingled plumes) have not been exceeded for three (3) consecutive years for all wells for those units/areas, and the performance standards of 30 TAC §335.8 and §335.167 are met, then the Applicant may apply for a modification or amendment to the PCO to terminate the Corrective Action Program for those units/areas.

#### Compliance Monitoring Program

- 7. Compliance with the GWPS for each well is defined by the results of the data evaluation of Provision II.F.4., wherein the concentrations of hazardous constituents do not exhibit a statistically significant increase (SSI) or do not exceed the concentration limits when directly compared to the concentration limits of CP Table IVA. If any POC (and/or POE, if any) Well of CP Table V is non-compliant with the GWPS at any time during the Compliance Monitoring Program, the Applicant shall respond and report according to CP Table VII.

The groundwater Compliance Monitoring Program established by this PCO shall extend until expiration of the Compliance Period specified in CP Table VI. At the end of the Compliance Period, the Applicant shall either:

- a. Submit a PCO modification or amendment request to re-establish a Detection Monitoring Program under 30 TAC §335.164 for the remaining portion of the thirty (30) year post-closure care period in accordance with 40 CFR Part 264.117 if none of the hazardous constituents are detected at concentrations equal to or greater than the values listed in CP Table IV. Until approval of the request, the Applicant shall continue groundwater monitoring under current provisions;

- b. Continue monitoring under the Compliance Monitoring Program if any hazardous constituent continues to be detected at concentrations equal to or greater than the value listed in CP Table IV and the GWPS in CP Table IVA is not exceeded during the remaining portion of the thirty (30) year post-closure care period; or
- c. If the thirty (30) year post-closure care period has expired and hazardous constituents continue to be detected in groundwater by the Compliance Monitoring Program, then the Applicant may request groundwater monitoring be discontinued if the GWPS of CP Table IVA are not exceeded at the end of the Compliance Period. Until approval, the Applicant shall continue groundwater monitoring under current provisions.

E. Corrective Action Program

The Corrective Action Program applies to units specified in CP Table I, Items A, C and D. The Corrective Action Program shall remediate, recover, and/or contain contaminated groundwater from the Uppermost Aquifer and any interconnected lower aquifers, if applicable. The Corrective Action Program shall consist of the system components of Provision II.B., to be operated according to the specifications of this PCO. The Applicant shall conduct the Corrective Action Program until the performance standards of Provision II.E.1. are met. The Applicant shall initiate the Corrective Action Program immediately upon issuance of this PCO, except where other specific TCEQ response deadlines may apply.

1. Performance Standard

The Applicant shall conduct the Corrective Action Program to remedy the quality of groundwater by removing or treating in place the hazardous constituents so as to achieve the concentration limits specified in the GWPS of Provision II.D. of this PCO in accordance with the following:

- a. At the POC (POE and APOE, if any) and between the POC (POE and APOE, if any) and the downgradient facility property line;
- b. Beyond the facility boundary where necessary to protect human health and the environment, unless the Applicant demonstrates to the satisfaction of the Executive Director that, despite the Applicant's best efforts, the necessary permission from the property owner(s) was not received to undertake such action. The Applicant is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied;
- c. Operate the Corrective Action System to intercept, contain and/or treat the contamination in the Uppermost Aquifer unless the system is under repair or maintenance;
- d. Recommend changes to the configuration of the Corrective Action System at any time that it is determined that the contamination present in the Uppermost Aquifer, deeper zone, or any interconnected lower aquifers is not being effectively contained and/or remediated; and

- e. The Applicant is required to actively remove NAPLs from the Uppermost Aquifer and any interconnected aquifers wherever found, to the extent technically practicable.

F. Groundwater Monitoring Program Requirements

The Applicant shall install, operate and maintain the Groundwater Monitoring System to evaluate the compliance status of the waste management units under the Compliance Monitoring Program, or to evaluate the effectiveness of the Corrective Action Program for those units undergoing remediation, as applicable. The Groundwater Monitoring System, shall be composed of wells specified in CP Table V, and shall include at a minimum Background, and Point of Compliance, and other wells as necessary which have been approved by the Executive Director (e.g. POE, and APOE, etc. ).

1. Waste Management Area Specific Background Groundwater Quality

The Applicant may submit to the Executive Director for review and approval a plan to determine site-specific background values of the naturally-occurring hazardous constituents of CP Table III (for Corrective Action) or CP Table IVA (for Compliance Monitoring) in lieu of the concentration limits given in these Tables. The plan shall include appropriate background well locations and screened intervals, well sampling schedules, and methodology for determining and expressing background values in a form appropriate for the statistical evaluation of the monitoring results. Once background values have been established, the Applicant shall submit a modification or amendment, in accordance with Provision II.J.4., to add background values.

2. Sampling and Analysis Plan

- a. Wells shall be sampled according to the Sampling and Analysis Plan referenced in Provision II.A.7. The Sampling and Analysis Plan is hereby incorporated into the PCO by reference as if set out fully herein. The Applicant or the Executive Director shall propose modifications to the plan, as necessary to reflect current methods in EPA SW-846 and ASTM Standard Test Methods or other methods accepted by the TCEQ. The laboratory methods utilized for groundwater analysis shall be capable of measuring the concentration of each hazardous constituent equal to or less than the values in CP Table III or IVA. Any and all revisions to the plan shall become conditions of this PCO at the beginning of the first quarter following approval by the Executive Director.
- b. An up-to-date and approved Sampling and Analysis Plan shall be maintained at the facility of an authorized agent located within the TCEQ region in which the facility is located and made available for inspection upon request.

3. Sampling and Analysis Frequencies and Parameters

- a. Frequencies of sampling are defined below:
  - (1) "Week" and "month" shall be based upon a calendar week and month;
  - (2) "Quarter" shall be based on divisions of the calendar year (i.e., January

- through March, April through June, July through September, October through December);
- (3) “Semiannual” shall be based on divisions of the calendar year (i.e., January through June, July through December) and consist of two consecutive quarters;
  - (4) “Annual” or “Year” shall be four consecutive quarters, beginning with the first quarter. Years shall be designated consecutively, beginning with the “first year”, “second year”, etc; and
  - (5) “Calendar year” shall be based on divisions of the calendar (i.e. January through December).
- b. Sampling of wells shall commence during the first semi-annual period after issuance of this PCO. Thereafter, samples shall be collected semiannually during the months of April, May or June in the first half of the year and September, October or November in the second half of the year. Data evaluations shall be completed within sixty (60) days of collection of the last sample unless QA/QC procedures show that data is unacceptable and re-analyses or re-sampling must be performed. In such cases, the Executive Director will be notified as soon as it becomes apparent that the sixty (60) day time limit will not be met.
- c. In the first and subsequent years of groundwater monitoring, the wells shall be sampled and analyzed according to the following schedules:
- (1) Corrective Action Monitoring for units specified in CP Table I, Items A, C and D.
    - (a) Each Background, POC, POE, and APOE Well listed in CP Table V; and each AMP, if applicable, CAO, and CAS Well depicted in Attachment B shall be sampled and analyzed semiannually for the constituents of CP Table IIIA until the achievement of the GWPS in accordance with Provision II.D.6.
    - (b) Each CAO Well, AMP Well (if applicable) and CAS Well shall continue to be sampled, according to Provision II.D., until any changes to these groups of wells are approved by the Executive Director pursuant to Provision II.B.3.
    - (c) Each Well of CP Table V shall be sampled for the constituents of CP Table IIIA, according to Provision II.D.3., until analytical results satisfy the GWPS of CP Table IIIA for all wells of CP Table V of that unit or area for two consecutive sampling events. All wells listed in CP Table V shall then be sampled and analyzed semiannually for the constituents of CP Table III until all constituents of CP Table III are below the GWPS for all CP Table V Wells of that unit or area in

accordance with Provision II.D.6.

- (d) If the GWPS is achieved in all wells (Background, POC, POE, APOE, AMP, CAO and CAS), in accordance with Provision II.D.6.a., then the Applicant may apply to modify or amend the PCO according to Provisions II.D.6.b., II.D.6.d., II.D.6.e., or II.D.6.f.
  - (e) Any well with NAPLs detected in the wellbore shall be considered as non-compliant with the GWPS and is not required to be analyzed for the constituents of CP Table III or IIIA.
- (2) Compliance Monitoring for units specified in CP Table I, Item B.
- (a) If data evaluation is performed in accordance with Provision II.F.4.a., one sample from each well of CP Table V shall be taken and analyzed semiannually for the constituents of CP Table IVA. If data evaluation is performed in accordance with Provision II.F.4.b., a sequence of at least four independent samples from each well of CP Table V shall be taken and analyzed semiannually for the constituents of CP Table IVA; and
  - (b) One sample from each well as specified on CP Table V shall be taken and analyzed annually for constituents in CP Table IV during the first half of each year. Analysis for the hazardous constituents of CP Table IV and CP Table IVA may be accomplished with the same sample when sampling events coincide.
- d. Field Determination Requirements - All Wells Specified in CP Table VII (Item 12).
- (1) Water level measurements relative to Mean Sea Level shall be measured to within 0.01 ft and shall be performed during each sampling event effective immediately with issuance of this PCO. Measurements shall be taken in all monitoring wells specified in this PCO.
  - (2) Field determinations of pH, temperature and Specific Conductivity are required for all wells of CP Table V and as depicted in CP Attachment B excluding wells containing NAPLs. Turbidity in nephelometric turbidity units is required if micropurging techniques are utilized during sample collection.
  - (3) Field observations including descriptions of appearance (clarity, color, etc.) shall be recorded semiannually for all wells of CP Table V and wells depicted in Attachment B, excluding wells containing NAPL.

- (4) The total depth of each well which is not equipped with a dedicated pump shall be measured during each sampling event. Total depth of each well which is equipped with a dedicated pump shall be measured when: 1) pumps are removed for maintenance; or 2) the groundwater flow is inadequate for proper sampling. The measured total depth shall be compared to the total depth recorded on the well construction log. Should a comparison of the measured and the recorded total depth reveal that greater than 20% of the well screen has been silted in, the Applicant shall perform such actions necessary (redevelopment, replacement, etc.) to enable the well to function properly.
- (5) All wells specified in CP Table VII (Item 12) shall be inspected during each sampling event in accordance with specifications in the Sampling and Analysis Plan. Repairs or a proposal for replacement for any affected well shall be performed within ninety (90) days of the routine sampling event inspection which identified the problem well.

#### 4. Data Evaluation Procedures

Data evaluation in accordance with this provision shall be performed for all wells within sixty (60) days of collection of the last sample for the duration of the Corrective Action Monitoring and Compliance Monitoring programs. When evaluating the monitoring results of each well, pursuant to Provision II.F., for the constituents of CP Tables III or IIIA for corrective action monitoring, or CP Tables IV or IVA for compliance monitoring, the Applicant shall either:

- a. Corrective action monitoring: Directly compare the value of each constituent to the respective concentration limit of CP Table III or IIIA and determine if it is less than, equal to, or greater than the concentration limits. If the values for all the constituents are less than or equal to the respective concentration limits, then the well shall be considered compliant with the GWPS for the sampling event. If one or more constituent value is greater than the respective concentration limit, then the well shall be considered non-compliant with the GWPS for the sampling event; or

Compliance monitoring: Directly compare the value of each constituent to the respective concentration limit of CP Table IV or IVA and determine if it is less than, equal to, or greater than the listed value. For constituents listed in CP Table IV that are not also listed in CP Table IVA, if constituents are detected at concentrations equal to or greater than the value listed in CP Table IV, then the procedures of Provision II.G.2.b. apply. For constituents listed in CP Table IVA, if the values for all the constituents are less than or equal to the respective concentration limits of CP Table IVA, then the well shall be considered compliant with the GWPS for the sampling event. If one or more constituent value is greater than the respective concentration limit, then the well shall be considered non-compliant with the GWPS for the sampling event and the procedures of Provision II.G.2.a. apply; or

- b. Compare the value of each constituent to its respective concentration limit of CP Table III or IIIA for corrective action monitoring, or CP Table IV or IVA

for compliance monitoring, using one of the following procedures:

- (1) The Confidence Interval Procedure for the mean concentration based on a normal, log-normal, or non-parametric distribution. The 95 percent confidence coefficient of the t-distribution will be used in constructing the confidence interval (Section 6.2.1 of Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Interim Final Guidance, U.S. EPA, April 1989) and the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Addendum to Interim Final Guidance (July 1992), and subsequent updates acceptable to the Executive Director. The confidence interval upper limit for each constituent shall be compared with the corresponding concentration limit in CP Table III or IIIA for corrective action monitoring, or CP Table IV or IVA for compliance monitoring. To be considered in compliance, the confidence interval upper limit for a well in question must not exceed the tabled concentration limit. A confidence interval upper limit above the tabled concentration limit shall be considered as evidence of statistically significant contamination; or,
  - (2) An alternative statistical method proposed by the Applicant and approved by the TCEQ. Any proposed alternative method must be appropriate with respect to distributional assumptions and must provide reasonable control of both false positive and false negative error rates.
- c. Within thirty (30) days of an initial data evaluation that determines concentration limits have been exceeded in a well, pursuant to Provisions II.F.4.a. or II.F.4.b., the Applicant may resample and repeat the analysis to verify concentration limits have been exceeded. If the second analysis indicates that the sample does not exceed the concentration limits, then the well shall be considered compliant with the concentration limits for the sampling event.

G. Response and Reporting

1. Corrective Action Monitoring for units specified in CP Table I, Items A, C, or D (if alternative corrective action requirements apply).
  - a. If the Applicant or the Executive Director determines that the Corrective Action Program required by this PCO no longer satisfies the requirements of 30 TAC §335.166 or §335.167, the Applicant must, within ninety (90) days of either the Applicant's determination or Executive Director's notification, submit an application for a PCO modification or amendment to make any appropriate changes to the Corrective Action Program which will satisfy the regulations.
  - b. If the Executive Director determines that the lateral or vertical extent of groundwater contamination is not delineated, the Applicant must, within ninety (90) days of the date of the Executive Director's notification unless otherwise

directed, initiate an investigation to determine the extent of the contamination based on the Practical Quantitation Limits (PQLs) or Method Quantitation Limit (MQL) of 40 CFR Part 264, Appendix IX, or other applicable standard as required or approved by the Executive Director.

c. This section applies only if POEs are defined in CP Table V and a GWPS is assigned at the POE; and an attenuation action level (if applicable) is assigned to its respective attenuation monitoring point. If during two (2) consecutive sampling events the GWPS is exceeded at the POE, or the attenuation action level (if applicable) is exceeded at its respective attenuation monitoring point, then within ninety (90) days of completing the data evaluation of the second sampling event, the Applicant must:

- (1) Install groundwater recovery wells or alternate Corrective Action System design to mitigate the downgradient migration of the contaminant plume; and/or
- (2) Reevaluate the criteria originally used to establish the GWPS, in accordance with Provision II.D.4., and submit an application to modify or amend the PCO to address the GWPS exceedance; and/or reevaluate the criteria originally used to establish the attenuation action level and submit an analysis to the Executive Director for approval to request changes to the attenuation action level.

2. Compliance Monitoring for units specified in CP Table I, Item B

a. Compliance with the GWPS for each POC (POE and APOE, if applicable) Well of CP Table V is defined by the results of the data evaluation of Provision II.F.4., wherein the concentrations of hazardous constituents do not exhibit a statistically significant increase or exceed the concentration limits when directly compared to the concentration limits of CP Table IVA. If the Applicant determines that any concentration limit of CP Table IVA is being exceeded pursuant to the procedures used in Provision II.F.4. at any POC (POE, and APOE, if applicable) Well of CP Table V, then the Applicant must notify the Executive Director of this finding in writing within seven (7) days. The notification must identify what concentration limits have been exceeded and indicate that the Applicant will either:

- (1) Submit a PCO modification or amendment to the Executive Director to establish a Corrective Action Program meeting the requirements of 30 TAC §335.166 within 180 days of such determination in accordance with 30 TAC §335.165(8)(B);
- (2) Demonstrate that a source other than the regulated unit caused the exceedance of the concentration limits of CP Table IVA or that the concentration is an artifact caused by errors in sampling, analysis, or statistical evaluation or natural variation (e.g. emergence of daughter products) in the groundwater within ninety (90) days in accordance with 30 TAC §335.165(9); or



Column B, CP Table VII, and contain the information listed in CP Table VII required for the specific program(s) that are applicable.

H. Corrective Action and Interim Corrective Measures (ICMs) for Solid Waste Management Units

1. Corrective Action Obligations

The Applicant shall conduct corrective action as necessary to protect human health and the environment for all releases of hazardous waste, hazardous constituents listed in Appendix VIII and/or 40 CFR Part 264, Appendix IX and/or other COCs from any newly-discovered SWMU and/or AOC according to 30 TAC §335.167. Corrective action shall consist of an Affected Property Assessment (APA), determination of protective concentration levels, selection of a remedy standard (if necessary), development and implementation of a response action (if necessary), and submittal of required reports according to 30 TAC Chapter 350.

In the case of SWMUs and/or AOC that have been grandfathered under 30 TAC Chapter 335, Subchapters A and S, corrective action shall consist of the RCRA Facility Investigation (RFI) and if necessary, Interim Corrective Measures (ICM), Baseline Risk Assessment (BLRA), Corrective Measures Study (CMS) and Corrective Measures Implementation (CMI). For grandfathered SWMUs and/or AOC, the Applicant may continue to complete the corrective action requirements under 30 TAC Chapter 335, Subchapters A and S, provided the Applicant complies with the notification and schedule requirements pursuant to 30 TAC §335.8 and §350.(2)(m). If on the basis of the APA /RFI, it is determined that COC have been or are being released into the environment, the Applicant may be required to conduct necessary ICMs and/or corrective actions.

Upon Executive Director's review of corrective action obligations, the Applicant may be required to perform any or all of the following:

- a. Conduct investigation(s);
- b. Provide additional information;
- c. Investigate additional SWMU(s) and/or AOC(s); and/or
- d. Submit an application for a modification/amendment to a PCO to implement corrective action.

Any additional requirements must be completed within the time frame(s) specified by the Executive Director.

2. The Applicant shall conduct an RFI/APA for the SWMUs and/or AOC listed in CP Table II, in accordance with Provision II.A.5., and for any new SWMUs and/or AOC discovered after the issuance of this PCO in accordance with Provision II.A.6.

3. Variance From Investigation

The Applicant may elect to certify that no COCs are currently or never have been

present or managed in a SWMU and/or AOC referenced in Provision II.H.2. in lieu of performing the investigation required in Provisions II.H.1. and II.H.4., provided that confirming data is submitted for the current and past waste(s) managed in the respective unit or area. The Applicant shall submit such information and certification(s) on a unit-by-unit basis in the time frame required in Provision II.H.4. for review and approval by the Executive Director of the TCEQ. Should the Applicant fail to demonstrate and certify that COCs are not or were not present in a particular unit, the investigation required in Provisions II.H.1. and II.H.4. shall be performed for the SWMU and/or AOC.

4. RCRA Facility Investigation (RFI)/Affected Property Assessment (APA)

If applicable, within sixty (60) days from the date of issuance of this PCO and/or approval of the RFA Report of Provision II.A.5., the Applicant shall submit a schedule for completion of the RFI(s)/APA to the Executive Director for review and approval. The Applicant shall initiate the investigations in accordance with the approved schedule and guidance contained in the EPA publication EPA/520-R-94-004, OSWER Directive 9902.3-2A, RCRA Corrective Action Plan (Final), May 1994 and in accordance with state regulations referenced in Provision II.H.1. The results of the RFI/APA must be appropriately documented in a report and submitted to the Executive Director for approval within the time frame established in the approved schedule. The Report shall be considered complete when the full nature and extent of the contamination, the QA/QC procedures and the Data Quality Objectives are documented to the satisfaction of the Executive Director. The Applicant shall propose or conduct ICMs, as necessary, to protect human health and the environment.

5. Remedy Selection

Upon approval of RFI Report/APAR, if it is determined that there has been a release of COCs into the environment, which poses a potential risk to human health and the environment, then the Applicant shall propose a remedy in accordance with the TCEQ Risk Reduction Rules (RRR) (if applicable), the TRRP rules, or as otherwise authorized by the Executive Director. This may require a BLRA and/or CMS Report to be submitted for review and approval within the time frame(s) specified by the Executive Director. For facilities that are grandfathered under the RRR, this report shall address RRR requirements, and the applicable items contained in the EPA publications referenced in Provision II.H.4. or other guidance acceptable to the Executive Director. For projects conducted under TRRP, the risk assessment process shall be addressed in the APAR and the evaluation of corrective measures shall be conducted as part of the remedy standard selection process.

6. Corrective Measures Implementation/Remedial Action Plan (RAP)

If on the basis of the RFI and/or BLRA and/or CMS or APA, it is determined that there is a risk to the human health and environment, then the Applicant shall submit for approval a CMI Work Plan(s) or propose a response action (TRRP) within 180 days of receipt of approval of the RFI and/or BLRA/CMS Report or APAR unless otherwise extended by the Executive Director. The CMI Workplan shall address all of the applicable items contained in the EPA publications referenced in Provision II.H.4. or other guidance acceptable to the Executive Director. Response actions, including

TRRP RSA, can not be self implemented as normally allowed by TRRP because under Hazardous Solid Waste Amendments (HSWA) corrective action and permit provisions requires the CMI workplan to be reviewed prior to approval and public participation (see also Provision II.H.7.). For TRRP RSA and RSB, the Applicant shall submit a RAP in accordance with schedules and requirements of 30 TAC Chapter 350. The CMI Workplan or RAP shall contain detailed final proposed engineering design, monitoring plans and schedule to implement the selected remedy and assurances of financial responsibility for completing the corrective action. Upon completion of the response action, the Applicant shall submit a CMI Report or Response Action Completion Report (RACR) to the TCEQ for review and approval. The CMI Report shall address all the applicable items in the EPA publications EPA/520-R-94-004, OSWER Directive 9902.3-2A, RCRA Corrective Action Plan (Final), May 1994 or other guidance acceptable to the Executive Director. The RACR shall address all the applicable items in Title 30 TAC Chapter 350 and applicable guidance.

Upon written approval of CMI Workplan or RAP, the Applicant must within ninety (90) days submit a PCO application and/or modification/amendment in accordance with Provision II.J.4. to establish corrective action and provide financial assurance to satisfy the requirements of 30 TAC §335.167. The Applicant may propose an alternative schedule to be approved by the Executive Director to incorporate several approved CMI Workplans or RAPs into a single PCO modification/or amendment when CMI Workplans or RAP schedules coincide. Implementation of the corrective measure(s) shall be addressed through issuance of a new or modified/amended PCO.

To report the progress of the corrective measures, the Applicant shall submit to the TCEQ CMI Progress Reports or RAER (TRRP) semiannually as a section of the report required by CP Table VII of this PCO, or as otherwise directed.

If deed recordation and necessary institutional controls are required as part of the final corrective action, the Applicant shall within ninety (90) days of approval for the final corrective action submit to the Executive Director for review and approval the required proof of deed notice in accordance with Provision II.J.1.

7. Public Notice

a. The Applicant shall conduct public notice when:

- (1) CMI Work Plan or RAP is submitted to the Executive Director, in accordance with Provision II.H.6., which contains the proposed final corrective measure for SWMU(s) and/or AOC(s) from which a release has occurred, and with proposed institutional control (as applicable). This process occurs through PCO renewal, or modification/amendment; or
- (2) If on the basis of the RFI/BLRA or APAR required by Provision II.H.4. and II.H.5., it is determined the release from SWMU(s) and/or AOC(s) meets the performance standards under RRR or TRRP such that no remedy is needed, there is no risk to the human health and environment, and the Applicant seeks approval of no further action determination by the Executive Director. This process occurs through

the corrective action process.

- b. No public notice is required when it is determined based on the results of the RFA required by Provision II.A.6., or the RFI or APAR required by Provision II.H.4., that no release occurred from a SWMU and/or AOC.

The purpose of the public notice is to give the members of the public the opportunity to submit written comments on the proposed corrective measure(s) or proposed no further action determination. Refer to Attachment D of this PCO for further guidance on public notice participation in HSWA corrective action.

8. Interim Corrective Measures (ICM)

- a. The ICM apply to waste management units or AOC under investigation for which a final Corrective Action Program has not been authorized by the PCO. ICM also apply to units/AOCs that are discovered after issuance of this PCO.
- b. The objectives of the ICM are to remove, decontaminate, and/or stabilize the source (i.e., waste and waste residues) and contaminated media to protect human health and the environment. The Applicant shall modify the ICM, as necessary, to achieve these objectives.
- c. The Applicant is authorized to design, construct, operate and maintain ICM for waste management units/AOC as necessary to protect human health and the environment. The ICM shall be operated until final corrective measures established, in accordance with Provision II.H.6., are authorized in the PCO. At a minimum, the ICM shall consist of the following:
  - (1) Specific performance goals to protect human health and the environment;
  - (2) A monitoring system to evaluate the ICM and determine if the objectives outlined in Provision II.H.8.b. are being met. All ICM wells must comply with the requirements of Provision II.C.2. and Attachment C ,Well Design and Construction Specifications, of this permit;
  - (3) An implementation schedule to initiate ICMs;
  - (4) Submittal of a report specifying the design of the ICM upon installation. During implementation of the ICM, periodic ICM Status Reports shall be submitted in accordance with CP Table VII (Item 25) to document the objectives of Provision II.H.8.b. are being achieved; and
  - (5) A procedure to modify the design, as necessary, to achieve the objectives outlined in Provision II.H.8.b. of this PCO .

I. Financial Assurance

The Applicant shall provide financial assurance for operation of the Groundwater Monitoring and Corrective Action Programs, as applicable, in accordance with this PCO in a form acceptable to the Executive Director in an initial amount not less than \$ 1,411,366 within sixty (60) days of issuance of this PCO. The financial assurance shall be secured, maintained, and adjusted in compliance with TCEQ regulations on hazardous waste financial requirements (30 TAC Chapter 37, Subchapter P).

J. General Provisions

1. Deed Recordation Requirements

For waste and contaminated media approved to remain in place above background or health-based concentration levels after completion of the corrective action and/or groundwater monitoring programs, the Applicant shall record an instrument in the county deed records for the facility to specifically identify the areas of contamination exceeding background or health-based values. The deed certification shall follow the requirements of 30 TAC §335.560 and §335.569 or 30 TAC §350.111, where applicable.

2. Notification Requirements

The Applicant shall notify the local TCEQ region office at least ten (10) days prior to any well installation or sampling activity required by the PCO in order to afford Region personnel the opportunity to observe these events and collect samples. This notification requirement will not apply to the routine semiannual or annual groundwater sampling events specified in this PCO.

3. Distribution of Copies

The Applicant shall submit all schedules, plans, and reports required by this PCO according to the following distribution list:

- a. An original and one copy to the Environmental Cleanup Section, Mail Code MC-127, Remediation Division, Texas Commission on Environmental Quality in Austin, Texas; and
- b. One copy to the Waste Program, Texas Commission on Environmental Quality Region 5 Office in Tyler Texas.

4. PCO Modification or Amendment

Any application to modify or amend the PCO shall be accomplished in accordance with the provisions of 30 TAC Chapter 305 Subchapter D and submitted in accordance with the PCO Application's general instructions.

5. Pursuant to applicable rules, the Executive Director may change the frequency, location and constituents of concern sampled in response to a modification/ amendment by the Applicant. Any changes to the Corrective Action or Groundwater Monitoring Systems

are subject to Executive Director's approval.

6. The Applicant shall maintain all reports, monitoring, testing, analytical, and inspection data obtained or prepared pursuant to the requirements of this PCO, including graphs and drawings, in the operating record located at the office of an authorized agent located within the TCEQ Region where the facility is located. The operating record at the facility shall be made available for review by the staff of the TCEQ upon request.
7. The Applicant shall submit a compliance schedule in accordance with CP Table VIII.A.

TABLE 1: CLOSED WASTE MANAGEMENT UNITS INCLUDING SWMUS THAT WERE PART OF THE WASTE MANAGEMENT AREA SUBJECT TO POST-CLOSURE CARE, COMPLIANCE MONITORING, and CORRECTIVE ACTION

No. *	Tank		N.O.R. Unit #	Storage and/or Processing	Waste No.s <sup>1</sup>	Rated Capacity	Dimensions	Containment Volume (including rainfall for unenclosed areas)	Unit Will Manage ignitable, Reactive, on Incompatible Waste (State all that apply)
	Group No.	Name							
WDW-186		Class 1 Injection Well	001	Plugged	N/A	N/A	N/A	N/A	N/A
WDW-229		Class 1 Injection Well	040	Plugged	N/A	N/A	N/A	N/A	N/A
RCRA 5	2	<b>Transfer Bays 1-9</b> (Container Storage Area No. 5)	005	Closed	N/A	N/A	N/A	N/A	N/A
	2	<i>Transfer Bays 1-5</i>	005	Closed	N/A	N/A	N/A	N/A	N/A
	2	<i>Transfer Bays 6-7</i>	005	Closed	N/A	N/A	N/A	N/A	N/A
	2	<i>Transfer Bays 8-9</i>	005	Closed	N/A	N/A	N/A	N/A	N/A
	2	<i>Ancillary Equipment (2 pumps, piping)</i>	005	Closed	N/A	N/A	N/A	N/A	N/A
RCRA 2	3	<b>Container Storage Area No. 2 (Injection Pad)</b>	002	Closed	N/A	N/A	N/A	N/A	N/A
	3	<i>Hogs Head Pump</i>	N/A	Closed	N/A	N/A	N/A	N/A	N/A
RCRA 9	3	<b>Tank System #4</b> (Tanks T-109 and T-110)	013, 014		N/A	N/A	N/A	N/A	N/A
	3	<i>Containment for T-109</i>	N/A	Closed	N/A	N/A	N/A	N/A	N/A
	3	<i>Containment for T-110</i>	N/A	Closed	N/A	N/A	N/A	N/A	N/A
	3	<i>Tanks T-109 and T-110</i>	013, 014	Closed	N/A	N/A	N/A	N/A	N/A
	3	<i>Pump for Tanks T-109 and T-110 ("Pump TS#4")</i>	N/A	Closed	N/A	N/A	N/A	N/A	N/A

TABLE 1: CLOSED WASTE MANAGEMENT UNITS INCLUDING SWMUS THAT WERE PART OF THE WASTE MANAGEMENT AREA SUBJECT TO POST-CLOSURE CARE, COMPLIANCE MONITORING, and CORRECTIVE ACTION

No. *	Tank		N.O.R. Unit #	Storage and/or Processing	Waste No.s <sup>1</sup>	Rated Capacity	Dimensions	Containment Volume (including rainfall for unenclosed areas)	Unit Will manage ignitable, reactive, on Incompatible Waste (State all that apply)
	Group No.	Name							
RCRA 10 RCRA 17 RCRA 18	4	<b>Process Pad</b> Common Containment Area for Tank System #5 (Tank T-117) Tank System #12 (Tanks T-106 and T-107), and Tank System #13 (Tanks T-111 and T-113)	015	Closed	N/A	N/A	N/A	N/A	N/A
RCRA 10	4	T-117	015	Closed	N/A	N/A	N/A	N/A	N/A
RCRA 17	4	T-106	036	Closed	N/A	N/A	N/A	N/A	N/A
	4	T-107	037	Closed	N/A	N/A	N/A	N/A	N/A
RCRA 18	4	T-111	038	Closed	N/A	N/A	N/A	N/A	N/A
	4	T-113	039	Closed	N/A	N/A	N/A	N/A	N/A
	4	Pump I, T-111/T-113	N/A	Closed	N/A	N/A	N/A	N/A	N/A
RCRA 6	5	<b>Tank System #1</b> (Tanks T-102 and T-127)	N/A	Closed	N/A	N/A	N/A	N/A	N/A
	5	Containment for T-102	N/A	Closed	N/A	N/A	N/A	N/A	N/A
	5	Containment for T-127	N/A	Closed	N/A	N/A	N/A	N/A	N/A
	5	T-102	009	Closed	N/A	N/A	N/A	N/A	N/A
	5	T-127	010	Closed	N/A	N/A	N/A	N/A	N/A
	5	Pump G, from T-102/T-127	N/A	Closed	N/A	N/A	N/A	N/A	N/A

TABLE 1: CLOSED WASTE MANAGEMENT UNITS INCLUDING SWMUS THAT WERE PART OF THE WASTE MANAGEMENT AREA SUBJECT TO POST-CLOSURE CARE, COMPLIANCE MONITORING, and CORRECTIVE ACTION

No. *	Tank		N.O.R. Unit #	Storage and/or Processing	Waste No.s <sup>1</sup>	Rated Capacity	Dimensions	Containment Volume (including rainfall for unenclosed areas)	Unit Will manage ignitable, reactive, on Incompatible Waste (State all that apply)
	Group No.	Name							
RCRA 11	5	<b>Tank System #6 Containment</b> (Tanks T-121 and T-125 )	N/A	Closed	N/A	N/A	N/A	N/A	N/A
	5	<i>Tanks T-121 and T-125</i>	016,017	Closed	N/A	N/A	N/A	N/A	N/A
	5	<i>Pump E, from T-121/T-125</i>	N/A	Closed	N/A	N/A	N/A	N/A	N/A
	5	<i>Pump H, from T-121 / T-125</i>	N/A	Closed	N/A	N/A	N/A	N/A	N/A
RCRA 12	5	<b>Tank System #7 containment</b> (Tanks T-122 and T-126)	N/A	Closed	N/A	N/A	N/A	N/A	N/A
RCRA 12	5	<i>Tanks T-122 and T-126</i>	018, 019	Closed	N/A	N/A	N/A	N/A	N/A
	5	<i>Pump C, from T-122 / T-126</i>	N/A	Closed	N/A	N/A	N/A	N/A	N/A
	5	<i>Pump D, from T-122 / T-126</i>	N/A	Closed	N/A	N/A	N/A	N/A	N/A
RCRA 7	6	<b>Tank System #2 Containment</b> (Tank T-104)	N/A	Closed	N/A	N/A	N/A	N/A	N/A
	6	<i>Tank T-104</i>	011	Closed	N/A	N/A	N/A	N/A	N/A
RCRA 8	6	<b>Tank System #3 Containment</b> (Tank T-105)	N/A	Closed	N/A	N/A	N/A	N/A	N/A
	6	<i>Tank T-105</i>	012	Closed	N/A	N/A	N/A	N/A	N/A
RCRA 13	6	<b>Tank System #8 Containment</b> (Tanks T-103 and T-123)	N/A	Closed	N/A	N/A	N/A	N/A	N/A
	6	<i>Tanks T-103 and T-123</i>	020, 023	Closed	N/A	N/A	N/A	N/A	N/A
	6	<i>Pump J, from T-103/ T-123</i>	N/A	Closed	N/A	N/A	N/A	N/A	N/A

TABLE 1: CLOSED WASTE MANAGEMENT UNITS INCLUDING SWMUS THAT WERE PART OF THE WASTE MANAGEMENT AREA SUBJECT TO POST-CLOSURE CARE, COMPLIANCE MONITORING, and CORRECTIVE ACTION

No. *	Tank		N.O.R. Unit #	Storage and/or Processing	Waste No.s <sup>1</sup>	Rated Capacity	Dimensions	Containment Volume (including rainfall for unenclosed areas)	Unit Will manage ignitable, reactive, on Incompatible Waste (State all that apply)
	Group No.	Name							
RCRA 14	6	<b>Tank System #9 Containment</b> (Tanks T-124 and T-128)	N/A	Closed	N/A	N/A	N/A	N/A	N/A
	6	<i>T-124</i>	022	Closed	N/A	N/A	N/A	N/A	N/A
	6	<i>T-128</i>	023	Closed	N/A	N/A	N/A	N/A	N/A
	6	<i>Ancillary Equipment, Piping, Pumps</i>	N/A	Closed	N/A	N/A	N/A	N/A	N/A
RCRA 19	7	<b>Main Sump, Appurtenances and Pipe Swale Containment</b>	N/A	Closed	N/A	N/A	N/A	N/A	N/A
	7	<i>Main Sump</i>	N/A	Closed	N/A	N/A	N/A	N/A	N/A
	7	<i>Pipe Swale Containment</i>	N/A	Closed	N/A	N/A	N/A	N/A	N/A
	7	<i>Pump A, Unloading Pump #1</i>	N/A	Closed	N/A	N/A	N/A	N/A	N/A
	7	<i>Pump B, Unloading Pump #2</i>	N/A	Closed	N/A	N/A	N/A	N/A	N/A
RCRA 19	7	<i>Pump F, Unloading Pump #3</i>	N/A	Closed	N/A	N/A	N/A	N/A	N/A
	7	<i>Unloading Pump #4</i>	N/A	Closed	N/A	N/A	N/A	N/A	N/A
	7	<i>Static Mixer</i>	N/A	Closed	N/A	N/A	N/A	N/A	N/A
	7	<i>Mass Flow Meter A (AKA Mass Flow Meter 1)</i>	N/A	Closed	N/A	N/A	N/A	N/A	N/A
	7	<i>Mass Flow Meter B (AKA, Mass Flow Meter 2, Exac Flow Meter)</i>	N/A	Closed	N/A	N/A	N/A	N/A	N/A

TABLE 1: CLOSED WASTE MANAGEMENT UNITS INCLUDING SWMUS THAT WERE PART OF THE WASTE MANAGEMENT AREA SUBJECT TO POST-CLOSURE CARE, COMPLIANCE MONITORING, and CORRECTIVE ACTION

No. *	Tank		N.O.R. Unit #	Storage and/or Processing	Waste No.s <sup>1</sup>	Rated Capacity	Dimensions	Containment Volume (including rainfall for unenclosed areas)	Unit Will manage ignitable, reactive, on Incompatible Waste (State all that apply)
	Group No.	Name							
RCRA 1	8	Container Storage Area No. 1 <b>(Drum Warehouse)</b>	002	Closed	N/A	N/A	N/A	N/A	N/A
	8	<b>Southeast Extension</b> of Container Storage Area #1 (aka "Drum Processing Area")	002	Closed	N/A	N/A	N/A	N/A	N/A
RCRA 21	8	Miscellaneous Unit - <b>Cowles Mixer</b>	N/A	Closed	N/A	N/A	N/A	N/A	N/A
RCRA 3	11	<b>Transfer Bays A&amp;B</b> (Container Storage Area No. 3)	N/A	Closed	N/A	N/A	N/A	N/A	N/A
RCRA 4	11	<b>Transfer Bays C&amp;D</b> (Container Storage Area No. 4)	N/A	Closed	N/A	N/A	N/A	N/A	N/A
RCRA 22	11	Miscellaneous Unit - <b>Drum Vat</b> <i>(was located in Drum Dock Processing Area)</i>	N/A	Closed	N/A	N/A	N/A	N/A	N/A
RCRA 23	11	Miscellaneous Unit - <b>Shale Shaker</b> <i>(was located in Drum Dock Processing Area)</i>	N/A	Closed	N/A	N/A	N/A	N/A	N/A
RCRA 24	11	<b>Drum Dock Processing Area</b>	002	Closed	N/A	N/A	N/A	N/A	N/A

TABLE 1: CLOSED WASTE MANAGEMENT UNITS INCLUDING SWMUS THAT WERE PART OF THE WASTE MANAGEMENT AREA SUBJECT TO POST-CLOSURE CARE, COMPLIANCE MONITORING, and CORRECTIVE ACTION

No. *	Tank		N.O.R. Unit #	Storage and/or Processing	Waste No.s <sup>1</sup>	Rated Capacity	Dimensions	Containment Volume (including rainfall for unenclosed areas)	Unit Will manage ignitable, reactive, on Incompatible Waste (State all that apply)
	Group No.	Name							
RCRA 15 RCRA 16	11	<b>Crude Tank Farm</b> (Also Known as “Solvent Crude Area”)Common Containment Area for:Tank System #10 (“Crude Tank Farm”; Tanks T-223, T-224, T-225, T-226) and Tank System #11 (“Crude Tank Farm”; Tanks T-227, T-228, T-229, T-230, T-231, T-232, T-233, T-234)	N/A	Closed	N/A	N/A	N/A	N/A	N/A
RCRA 15 RCRA 16	11	Pump #4	N/A	Closed	N/A	N/A	N/A	N/A	N/A
	11	Ancillary Equipment, Piping, Pumps from T-223, T-228, T-229, T-230, T-231, T-232	N/A	Closed	N/A	N/A	N/A	N/A	N/A
RCRA 15	11	<b>Tank System #10</b> (“Crude Tank Farm”; Tanks T-223, T-224, T-225, T-226)	N/A	Closed	N/A	N/A	N/A	N/A	N/A
	11	T-223	024	Closed	N/A	N/A	N/A	N/A	N/A
	11	T-224	025	Closed	N/A	N/A	N/A	N/A	N/A
	11	T-225	026	Closed	N/A	N/A	N/A	N/A	N/A
	11	T-226	027	Closed	N/A	N/A	N/A	N/A	N/A

TABLE 1: CLOSED WASTE MANAGEMENT UNITS INCLUDING SWMUS THAT WERE PART OF THE WASTE MANAGEMENT AREA SUBJECT TO POST-CLOSURE CARE, COMPLIANCE MONITORING, and CORRECTIVE ACTION

No. *	Tank		N.O.R. Unit #	Storage and/or Processing	Waste No.s <sup>1</sup>	Rated Capacity	Dimensions	Containment Volume (including rainfall for unenclosed areas)	Unit Will manage ignitable, reactive, on Incompatible Waste (State all that apply)
	Group No.	Name							
RCRA 16	11	<b>Tank System #11</b> ("Crude Tank Farm"; Tanks T-227, T-228, T-229, T-230, T-231, T-232, T-233, T-234)	N/A	Closed	N/A	N/A	N/A	N/A	N/A
	11	T-227	028	Closed	N/A	N/A	N/A	N/A	N/A
	11	T-228	029	Closed	N/A	N/A	N/A	N/A	N/A
	11	T-229	030	Closed	N/A	N/A	N/A	N/A	N/A
	11	T-230	031	Closed	N/A	N/A	N/A	N/A	N/A
	11	T-231	032	Closed	N/A	N/A	N/A	N/A	N/A
	11	T-232	033	Closed	N/A	N/A	N/A	N/A	N/A
	11	T-233	034	Closed	N/A	N/A	N/A	N/A	N/A
	11	T-234	035	Closed	N/A	N/A	N/A	N/A	N/A

TABLE VII.D. - UNIT POST-CLOSURE COST ESTIMATE

Task	Cost
AEESC Winona Site Annual Post Closure Costs  Monitoring Well Sampling and Analysis (This cost is not added to total here because it is shown on Table XI.E.2 and XI.E.3)  Annualized cost for benchmark inspection by surveyor once per 5 years  (Transportation/Disposal of purged water This cost is not added to total here because it is shown on Table XI.E.2 and XI.E.3.)  Monthly inspections of facilities and benchmarks, repairs of site fencing and monitoring wells for damage including mileage, vehicle use, communications, and professional hours.  Replacement parts, fencing supplies  (Semi-Annual Data Review and Reporting, \$4,000 per 6 months This cost is not added to total here because it is shown on Table XI.E.2 and XI.E.3.)	(\$30,642)  \$1,000  (\$2500)  \$8,160  \$960  (\$8,000)
subtotal	10,120
Contingency (10% minimum)	1,012
<b>TOTAL UNIT POST-CLOSURE CARE COST x 30 yrs</b>	<b>\$333,960</b>

**TABLE VII.G - POST-CLOSURE PERIOD**

Unit Name	Date Certified Closed	Permitted Post Closure Period (Yrs)	Date Post Closure Ends
Waste Management Units Closed as Waste Management Area	November 2, 2007	30	November 2, 2037

CP TABLE I  
 Waste Management Units and Areas Subject to Groundwater  
 Corrective Action and Compliance Monitoring

Item	Applicable Program		Unit Name	Notice of Registration (NOR) Number, if applicable	Date Program Requirement and Remedy Standard Completed <sup>4</sup>
A.	Corrective Action <sup>1</sup> 30 TAC §335.166	1. 2. 3.			
B.	Compliance Monitoring <sup>1</sup> 30 TAC §335.165	1. 2. 3.	Former Waste Management Area (Includes facility above-ground WMUs)	N/A	December 2007
C.	Corrective Action <sup>2</sup> 30 TAC §335.167	1. 2. 3.			
D.	Alternative Corrective Action <sup>3</sup> 30TAC §335.151	1. 2. 3.			

Foot Note:

1. Program applies to RCRA-regulated units only.
2. Program applies to releases from solid waste management units (SWMUs) and/or areas of concern (AOCs).
3. Program applies to commingled releases from RCRA-regulated unit and from one or more SWMUs and/or AOCs.
4. Specify the date of Commission's approval letter for program requirement and remedy standard completed.

CP TABLE II  
Solid Waste Management Units and/or Areas of Concern  
Addressed in Provision VIII

**Reserved**

Unit Name	NOR Number, If applicable	Date Program Requirement and Remedy Standard Completed <sup>1</sup>
1. N/A		
2.		
3.		
4.		
5.		
6.		

Note:

1. Specify the date of Commissions approval letter for program requirement and remedy standard completion.

CP TABLE III - CORRECTIVE ACTION PROGRAM  
Table of Detected Hazardous and Solid Waste Constituents and  
the Groundwater Protection Standard

**Reserved**

COLUMN A  
Hazardous Constituents

COLUMN B  
Groundwater Protection  
Standards (mg/l)

---

1. N/A

CP TABLE IIIA- CORRECTIVE ACTION PROGRAM  
Table of Indicator Parameters and Groundwater Protection Standard

**Reserved**

COLUMN A  
Hazardous Constituents

COLUMN B  
Groundwater Protection  
Standard (mg/l)

1. N/A

CP TABLE IV – COMPLIANCE MONITORING PROGRAM  
Table of Hazardous and Solid Waste Constituents and  
Practical Quantitation Limits or Method Quantitation Limits for Compliance Monitoring

COLUMN A Hazardous Constituents	COLUMN B Groundwater Protection Standard (mg/l)
Antimony	0.006* <sup>BKG</sup>
Arsenic	0.033* <sup>BKG</sup>
Barium	0.874* <sup>BKG</sup>
Beryllium	0.005* <sup>BKG</sup>
Chromium	0.019* <sup>BKG</sup>
Lead	0.065* <sup>BKG</sup>
Selenium	0.024* <sup>BKG</sup>
Silver	0.074* <sup>BKG</sup>

Foot Note:

ND Non-detectable at MQL as determined by the analytical methods of the EPA SW-846 (most recent edition), and as listed in the July 8, 1987 edition of the Federal Register and later editions. MQL is indicated in parentheses. MQL is defined in 30 TAC §350.4 (54) as the lowest non-zero concentration standard in the laboratory's initial calibration curve and is based on the final volume of extract (or sample) used by the laboratory.

BKG Background as determined in accordance with Provision XI.F.1.

CP TABLE IVA - COMPLIANCE MONITORING PROGRAM

Table of Detected Hazardous Constituents and the Groundwater Protection Standard for Compliance Monitoring

COLUMN A Hazardous Constituents	COLUMN B Groundwater Protection Standard (mg/l)		
1. Former Waste Management Area			
	POC Wells See CP Table V	AMP Wells See CP Table V	POE Wells See CP Table V
1,1,1,2-Tetrachloroethane	0.035 <sup>GWGWIng</sup>	0.035 <sup>GWGWIng</sup>	0.035 <sup>GWGWIng</sup>
1,1,1-Trichloroethane	113.850 <sup>AAL</sup>	5.285 <sup>AAL</sup>	0.200 <sup>GWGWIng</sup>
1,1,2,2-Tetrachloroethane	0.010 <sup>AAL</sup>	0.008 <sup>AAL</sup>	0.005 <sup>GWGWIng</sup>
1,1,2-Trichloroethane	89.600 <sup>AAL</sup>	0.659 <sup>AAL</sup>	0.005 <sup>GWGWIng</sup>
1,1-Dichloroethane	17.205 <sup>AAL</sup>	6.850 <sup>AAL</sup>	2.444 <sup>GWGWIng</sup>
1,1-Dichloroethene	65.771 <sup>AAL</sup>	0.658 <sup>AAL</sup>	0.007 <sup>GWGWIng</sup>
1,2,4-Trichlorobenzene	0.070 <sup>GWGWIng</sup>	0.070 <sup>GWGWIng</sup>	0.070 <sup>GWGWIng</sup>
1,2,4-Trimethylbenzene	0.540 <sup>AAL</sup>	0.410 <sup>AAL</sup>	0.244 <sup>GWGWIng</sup>
1,2-Dichlorobenzene	0.600 <sup>GWGWIng</sup>	0.600 <sup>GWGWIng</sup>	0.600 <sup>GWGWIng</sup>
1,2-Dichloroethane	5.905 <sup>AAL</sup>	0.202 <sup>AAL</sup>	0.005 <sup>GWGWIng</sup>
1,3,5-Trimethylbenzene	1.222 <sup>GWGWIng</sup>	1.222 <sup>GWGWIng</sup>	1.222 <sup>GWGWIng</sup>
1,3-Dichlorobenzene	0.733 <sup>GWGWIng</sup>	0.733 <sup>GWGWIng</sup>	0.733 <sup>GWGWIng</sup>
1,4-Dichlorobenzene	0.075 <sup>GWGWIng</sup>	0.075 <sup>GWGWIng</sup>	0.075 <sup>GWGWIng</sup>
1,4-Dioxane	5.500 <sup>AAL</sup>	1.229 <sup>AAL</sup>	0.083 <sup>GWGWIng</sup>
2-Chloroethylvinyl ether	0.015 <sup>AAL</sup>	0.003 <sup>AAL</sup>	0.001 <sup>GWGWIng</sup>
2-Chlorotoluene	0.489 <sup>GWGWIng</sup>	0.489 <sup>GWGWIng</sup>	0.489 <sup>GWGWIng</sup>
Acetone	171.895 <sup>AAL</sup>	64.435 <sup>AAL</sup>	22.000 <sup>GWGWIng</sup>
Benzene	2.500 <sup>AAL</sup>	0.154 <sup>AAL</sup>	0.005 <sup>GWGWIng</sup>
Bromodichloromethane	0.033 <sup>GWGWIng</sup>	0.024 <sup>AAL</sup>	0.015 <sup>GWGWIng</sup>
Carbon disulfide	2.444 <sup>GWGWIng</sup>	2.444 <sup>GWGWIng</sup>	2.444 <sup>GWGWIng</sup>
Chlorobenzene	7.880 <sup>AAL</sup>	0.919 <sup>AAL</sup>	0.100 <sup>GWGWIng</sup>
Chloroethane	9.777 <sup>GWGWIng</sup>	9.777 <sup>GWGWIng</sup>	9.777 <sup>GWGWIng</sup>
Chloroform	0.244 <sup>GWGWIng</sup>	0.244 <sup>GWGWIng</sup>	0.244 <sup>GWGWIng</sup>
Chloromethane	0.070 <sup>GWGWIng</sup>	0.070 <sup>GWGWIng</sup>	0.070 <sup>GWGWIng</sup>
cis-1,2-Dichloroethene	4.980 <sup>AAL</sup>	0.581 <sup>AAL</sup>	0.070 <sup>GWGWIng</sup>

Dichlorodifluoromethane	4.888 <sup>GWGWIng</sup>	4.888 <sup>GWGWIng</sup>	4.888 <sup>GWGWIng</sup>
Ethylbenzene	11.900 <sup>AAL</sup>	2.564 <sup>AAL</sup>	0.700 <sup>GWGWIng</sup>
Hexachlorobutadiene	3.184 <sup>AAL</sup>	0.047 <sup>AAL</sup>	0.005 <sup>GWGWIng</sup>
Isopropylbenzene (Cumene)	2.444 <sup>GWGWIng</sup>	2.444 <sup>GWGWIng</sup>	2.444 <sup>GWGWIng</sup>
m- and p-Xylene	52.900 <sup>AAL</sup>	92.416 <sup>AAL</sup>	10.000 <sup>GWGWIng</sup>
Methyl ethyl ketone (Butanone)	596.750 <sup>AAL</sup>	94.585 <sup>AAL</sup>	14.665 <sup>GWGWIng</sup>
Methyl Isobutyl Ketone	140.850 <sup>AAL</sup>	16.423 <sup>AAL</sup>	1.955 <sup>GWGWIng</sup>
Methylene chloride	72.162 <sup>AAL</sup>	1.147 <sup>AAL</sup>	0.005 <sup>GWGWIng</sup>
n-Butylbenzene	0.978 <sup>GWGWIng</sup>	0.978 <sup>GWGWIng</sup>	0.978 <sup>GWGWIng</sup>
n-Propylbenzene	0.978 <sup>GWGWIng</sup>	0.978 <sup>GWGWIng</sup>	0.978 <sup>GWGWIng</sup>
Naphthalene	7.220 <sup>AAL</sup>	2.115 <sup>AAL</sup>	0.488 <sup>GWGWIng</sup>
o-Xylene	52.900 <sup>AAL</sup>	92.416 <sup>AAL</sup>	10.000 <sup>GWGWIng</sup>
p-Isopropyltoluene (Cymene)	2.444 <sup>GWGWIng</sup>	2.444 <sup>GWGWIng</sup>	2.444 <sup>GWGWIng</sup>
sec-Butylbenzene	0.978 <sup>GWGWIng</sup>	0.978 <sup>GWGWIng</sup>	0.978 <sup>GWGWIng</sup>
tert-Butylbenzene	0.978 <sup>GWGWIng</sup>	0.978 <sup>GWGWIng</sup>	0.978 <sup>GWGWIng</sup>
tert-Butylmethylether (MTBE)	0.244 <sup>GWGWIng</sup>	0.244 <sup>GWGWIng</sup>	0.244 <sup>GWGWIng</sup>
Tetrachloroethene	2.500 <sup>AAL</sup>	0.116 <sup>AAL</sup>	0.005 <sup>GWGWIng</sup>
Toluene	96.400 <sup>AAL</sup>	11.240 <sup>AAL</sup>	1.000 <sup>GWGWIng</sup>
Total Xylenes	52.900 <sup>AAL</sup>	92.416 <sup>AAL</sup>	10.000 <sup>GWGWIng</sup>
trans-1,2-Dichloroethene	4.780 <sup>AAL</sup>	0.758 <sup>AAL</sup>	0.100 <sup>GWGWIng</sup>
Trichloroethene	22.400 <sup>AAL</sup>	0.414 <sup>AAL</sup>	0.005 <sup>GWGWIng</sup>
Trichlorofluoromethane	7.333 <sup>GWGWIng</sup>	7.333 <sup>GWGWIng</sup>	7.333 <sup>GWGWIng</sup>
Vinyl chloride	130.000 <sup>AAL</sup>	0.226 <sup>AAL</sup>	0.002 <sup>GWGWIng</sup>
2,4,5-Trichlorophenol <sup>#</sup>	2.444 <sup>GWGWIng</sup>	2.444 <sup>GWGWIng</sup>	2.444 <sup>GWGWIng</sup>
2,4,6-Trichlorophenol <sup>#</sup>	0.024 <sup>GWGWIng</sup>	0.024 <sup>GWGWIng</sup>	0.024 <sup>GWGWIng</sup>
2,4-Dichlorophenol <sup>#</sup>	0.073 <sup>GWGWIng</sup>	0.073 <sup>GWGWIng</sup>	0.073 <sup>GWGWIng</sup>
2,4-Dimethylphenol <sup>#</sup>	0.489 <sup>GWGWIng</sup>	0.489 <sup>GWGWIng</sup>	0.489 <sup>GWGWIng</sup>
2,6-Dinitrotoluene <sup>#</sup>	0.005 <sup>AAL</sup>	0.003 <sup>AAL</sup>	0.0013 <sup>GWGWIng</sup>
2-Chlorophenol <sup>#</sup>	0.122 <sup>GWGWIng</sup>	0.122 <sup>GWGWIng</sup>	0.122 <sup>GWGWIng</sup>
2-Methylphenol (o-Cresol) <sup>#</sup>	1.222 <sup>GWGWIng</sup>	1.222 <sup>GWGWIng</sup>	1.222 <sup>GWGWIng</sup>
3-Methylphenol (m-cresol) <sup>#</sup>	1.222 <sup>GWGWIng</sup>	1.222 <sup>GWGWIng</sup>	1.222 <sup>GWGWIng</sup>
4,6-Dinitro-2-methylphenol <sup>#</sup>	0.005 <sup>AAL</sup>	0.0031 <sup>AAL</sup>	0.0024 <sup>GWGWIng</sup>
Benzo(b)fluoranthene <sup>#</sup>	0.004 <sup>AAL</sup>	0.002 <sup>AAL</sup>	0.0013 <sup>GWGWIng</sup>

Benzo(k)fluoranthene <sup>#</sup>	0.028 <sup>AAL</sup>	0.021 <sup>AAL</sup>	0.013 <sup>GWGWIng</sup>
Benzyl Butyl phthalate <sup>#</sup>	0.480 <sup>GWGWIng</sup>	0.480 <sup>GWGWIng</sup>	0.480 <sup>GWGWIng</sup>
Bis(2-ethylhexyl)phthalate <sup>#</sup>	0.026 <sup>AAL</sup>	0.015 <sup>AAL</sup>	0.006 <sup>GWGWIng</sup>
Diethyl phthalate <sup>#</sup>	19.554 <sup>GWGWIng</sup>	19.554 <sup>GWGWIng</sup>	19.554 <sup>GWGWIng</sup>
Dimethyl phthalate <sup>#</sup>	19.554 <sup>GWGWIng</sup>	19.554 <sup>GWGWIng</sup>	19.554 <sup>GWGWIng</sup>
Di-n-octylphthalate <sup>#</sup>	0.489 <sup>GWGWIng</sup>	0.489 <sup>GWGWIng</sup>	0.489 <sup>GWGWIng</sup>
Fluoranthene <sup>#</sup>	0.978 <sup>GWGWIng</sup>	0.978 <sup>GWGWIng</sup>	0.978 <sup>GWGWIng</sup>
Isophorone <sup>#</sup>	0.961 <sup>GWGWIng</sup>	0.961 <sup>GWGWIng</sup>	0.961 <sup>GWGWIng</sup>
Phenol <sup>#</sup>	7.333 <sup>GWGWIng</sup>	7.333 <sup>GWGWIng</sup>	7.333 <sup>GWGWIng</sup>

Foot Note:

<sup>GW</sup>GW<sub>Ing</sub> ACL pursuant to 30 TAC §335.160(b) based upon the PCL determined under RSA or RSB Residential for Class 1 or Class 2 Groundwater ingestion PCL of 30 TAC Chapter 350. The PCL value, Column B, will change as updates to the rule are promulgated. Changes to the rule automatically change the concentration value established in Column B in this table. In accordance with §350.72(b), <sup>GW</sup>GW<sub>Ing</sub>, PCLs may need to be adjusted to lower concentrations to meet the cumulative carcinogenic risk level (less than or equal to  $1 \times 10^{-4}$ ) and hazard index criteria (less than or equal to 10) when there are more than 10 carcinogenic and/or more than 10 noncarcinogenic chemicals of concern within a source medium.

AAL Attenuation Action Level based on the PCL determined under Remedy Standard B of 30 TAC Chapter 350.

# Denotes semi-volatile organic constituent to be analyzed in samples collected from two wells as indicated on CP Table V.

CP TABLE V  
Designation of Wells

POINT OF COMPLIANCE WELLS

1. Former Waste Management Area

MW-2R, MW-3R<sup>#</sup>, MW-4R, MW-4D, MW-12R, MW-17S, MW-2D, MW-17D, MW-17\*, MW-DD3<sup>#</sup>

POINT OF EXPOSURE WELLS

1. Former Waste Management Area

MW-25b, MW-11S, MW-11D, MW-30S\*\*, MW-30D\*\*, MW-31S\*\*, MW-31D\*\*.

ALTERNATE POINT OF EXPOSURE WELLS

1. Former Waste Management Area

MW-3DD, MW-7S, MW-7D, MW-9S, MW-26S, MW-27S, MW8S, MW-26D, MW-27D, MW-24,  
MW-24S, MW-24D

BACKGROUND WELLS

1. Former Waste Management Area

MW-28S

Note: \* Wells also to be monitored annually for constituents listed in CP Table IV as per Provision G.2.b.

\*\*Denotes a total of four new wells to be installed within the owned-property at edge of PMZ north of Wiggins Creek southeast of the facility and at east edge of PMZ near railroad tracks. These wells will be installed no later than June 2012.

Wells that are not listed in this table are subject to change, upon approval by the Executive Director, without modification to the PCO.

# Denotes wells to be monitored semi-annually for complete list of detected hazardous constituents including semi-volatile organics listed on CP Table IVA.

CP TABLE VI  
Compliance Period for RCRA-Regulated Units

Former Waste Management Area

Year Waste Management Activities Initiated	1981
Year Closed	2007
Compliance Period	30
Compliance Period Began	2007

CP TABLE VII  
 REPORTING REQUIREMENTS

ITEM	PROGRAM	REPORTING FREQUENCY	REQUIREMENTS
1.	All programs	Semiannual or Annually by January 21	Each report shall be certified by a qualified engineer and/or Professional Geoscientist licensed in the State of Texas.
2.	Compliance Monitoring	Semiannual	A table of all modifications and amendments made to this PCO with their corresponding approval dates by the Executive Director or the Commission and a brief description of each action.
3.	Compliance Monitoring	Semiannual	A summary of any activity within an area subject to institutional control.
4.	Compliance Monitoring	Semiannual	Tabulation of well casing elevations in accordance with Attachment F.
5.	Compliance Monitoring	Semiannual	Certification and well installation diagram for any new well installation or replacement and certification for any well plugging and abandonment.
6.	Compliance Monitoring	Semiannual	Recommendation for any changes to the program.
7.	Compliance Monitoring	Semiannual	Any other items requested by the Executive Director.
8.	Compliance Monitoring	Semiannual	Water table maps shall be prepared from the groundwater data collected pursuant to <u>Provision II.G.</u> and shall be evaluated by the Applicant with regard to the following parameters: a. Development and maintenance of a cone of depression during operation of the system: N/A b. Direction and gradient of groundwater flow; c. Effectiveness of hydrodynamic control of the contaminated zone during operation; N/A and d. Estimation of the rate and direction of groundwater contamination migration.
9.	Compliance Monitoring	Semiannual	The Applicant shall submit a report to each recipient listed in <u>Provision II.J.3.</u> , which includes the following information in items 3 through 23 determined since the previously submitted report, if those items are applicable.  If both Corrective Action and Compliance Monitoring Programs are authorized, then the January 21st report shall contain information required for both programs.

CP TABLE VII  
 REPORTING REQUIREMENTS

ITEM	PROGRAM	REPORTING FREQUENCY	REQUIREMENTS
10.	Compliance Monitoring	Semiannual	The Corrective Action System(s) authorized under <u>Provision II.B.3.</u> in operation during the reporting period and a narrative summary of the evaluations made in accordance with <u>Provisions II.E., II.F., and II.G.</u> of this PCO for the preceding reporting period. The reporting periods shall be January 1 through June 30 and July 1 through December 31 for Corrective Action Monitoring, unless an alternative semiannual schedule is approved by the Commission. The period for Compliance Monitoring shall be based on the calendar year.
11.	Compliance Monitoring	Semiannual	The method(s) utilized for management of recovered/purged groundwater shall be identified in accordance with <u>Provision II.B.8.</u> The Applicant shall maintain this list as part of the facility operating record and make it available for inspection upon request.
12.	Compliance Monitoring	Semiannual	An updated table and map of all monitoring and corrective action system wells. The wells to be sampled shall be those wells proposed in the PCO Application referenced in <u>Provision II.A.7.</u> and any changes subsequently approved by the Executive Director pursuant to <u>Provision II.B.3.</u> Provide in chronological order, a list of those wells which have been added to, or deleted from, the groundwater monitoring and remediation systems since original issuance of the PCO. Include the date of the Commissions approval for each entry.
13.	Compliance Monitoring	Semiannual	The results of the chemical analyses, submitted in a tabulated format acceptable to the Executive Director which clearly indicates each parameter that exceeds the Groundwater Protection Standard (GWPS). Copies of the original laboratory report for chemical analyses showing detection limits and quality control and quality assurance data shall be provided if requested by the Executive Director.
14.	Compliance Monitoring	Semiannual	Tabulation of all water level elevations required in <u>Provision II.F.3.d.(1).</u> depth to water measurements, and total depth of well measurements collected since the data that was submitted in the previous monitoring report.
15.	Compliance Monitoring	Semiannual	Potentiometric surface maps showing the elevation of the water table at the time of sampling, and, if applicable, the delineation of the radius of influence of the Corrective Action System, and the direction of groundwater flow gradients outside any radius of influence.
16.	Compliance Monitoring	Semiannual	Tabulation of all data evaluation results pursuant to <u>Provision II.F.4.</u> and status of each well with regard to compliance with the Corrective Action objectives and compliance with the GWPS.

CP TABLE VII  
 REPORTING REQUIREMENTS

ITEM	PROGRAM	REPORTING FREQUENCY	REQUIREMENTS
17.	Compliance Monitoring	Semiannual	An updated summary as required by <u>CP Table VIII</u> .
18.	Compliance Monitoring	Semiannual	Summary of any changes made to the monitoring/corrective action program and a summary of well inspections, repairs, and any operational difficulties.
19.	Compliance Monitoring	Semiannual	A notation of the presence or absence of non-aqueous phase liquids (NAPLs), both light and dense phases, in each well during each sampling event since the last event covered in the previous monitoring report and tabulation of depth and thickness of NAPLs, if detected.
20.	PMZ	Semiannual	A summary evaluating the effectiveness of the corrective action system in controlling migration beyond the downgradient boundary and vertical limit of the PMZ to achieve the GWPS. The summary shall include an evaluation of whether the attenuation action levels are exceeded at their respective attenuation monitoring points pursuant to 30 TAC §350.33(f)(4)(A) and §350.33(f)(4)(D)(ii), if applicable.
21.	PMZ	Semiannual	An estimate of the percentage of the response action which has been completed within the PMZ, if applicable.
22.	PMZ	Semiannual	An estimate in years of the additional time necessary to complete the response actions for the PMZ, if applicable.
23.	PMZ	Semiannual	A determination whether sufficient progress is being made to achieve the selected remedy standard within a reasonable time frame given the circumstance of the affected property in the PMZ, if applicable.

TABLE VIII  
 COMPLIANCE SCHEDULE

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ITEM	COMPLIANCE SCHEDULE (from the date of issuance of the PCO unless otherwise specified)	REGULATORY CITATION	REQUIREMENT
A.	60	PCO	Submit to the Executive Director a schedule summarizing all activities required by the PCO. The schedule shall list the starting dates of all routine activities. The Applicant shall include an updated schedule in the groundwater monitoring report required by <u>Provision II.G.3</u> . The schedule shall list the activity or report, the PCO Section which requires the activity or report and the calendar date the activity or report is to be completed or submitted (if this date can be determined.)
B.	120	30 TAC §350.31(g)	Submit to the Executive Director proof of compliance with institutional control requirements in accordance with which provides notice of the existence and location of the Plume Management Zone (PMZ) which prevents exposure to groundwater from this zone until such a time as constituents of concern may be reduced to below the GWPS of <u>CP Table III</u> .
C.	Notify within 30 days	30 TAC §350.33(k)	After an unexpected event occurs, or a condition is detected, during post-response action care period which indicates that additional response actions will be required at an affected property.

**TABLE XLE.2. – GROUNDWATER MONITORING COST ESTIMATE**

**1. Annual Sampling and Analysis Cost:**

A. Background Wells			
(1) Number of wells	1		
(2) Sample analysis cost per well	223	\$/well	
(3) Number of sampling events per year	1	/yr	
(4) Sampling cost (1 x 2 x 3)	223		\$
B. Point of Compliance Wells			
(1) Number of wells	10		
(2) Sample analysis cost per well, VOA only	125	\$/well	
(3) Number of sampling events per year	2	/yr	
(4) Sampling cost (1 x 2 x 3)	2500		\$
C. Recovery Wells			
(1) Number of wells (None to be operated as recovery wells)	0		
(2) Sample analysis cost per well		\$/well	
(3) Number of sampling events per year		/yr	
(4) Sampling cost (1 x 2 x 3)			\$
D. Corrective Action Observation Wells			
(1) Number of wells	0		
(2) Sample analysis cost per well		\$/well	
(3) Number of sampling events per year		/yr	
(4) Sampling cost (1 x 2 x 3)			\$
E. Point of Exposure Wells			
(1) Number of wells	11		
(2) Sample analysis cost per well	125	\$/well	
(3) Number of sampling events per year	2	/yr	
(4) Sampling cost (1 x 2 x 3)	2750		\$
F. Supplemental Wells (AMP Wells)			
(1) Number of wells	12		
(2) Sample analysis cost per well	125	\$/well	
(3) Number of sampling events per year	2	/yr	
(4) Sampling cost (1 x 2 x 3)	3000		\$
G. Field Quality Control Sampling			
(1) Number of wells	6		
(2) Sample analysis cost per well	125	\$/well	
(3) Number of sampling events per year	2	/yr	
(4) Sampling cost (1 x 2 x 3)	1500		\$

**TABLE XLE.2. – GROUNDWATER MONITORING COST ESTIMATE**

H. 3 Metals Point of Compliance Wells, Annual Metals Sampling (Per CP Table IV)		
(1) Number of wells	3	
(2) Sample analysis cost per well, 4 Metals & SVOA only	98	\$/well
(3) Number of sampling events per year	1	/yr
(4) Sampling cost (1 x 2 x 3)	294	\$
I. 2 SVOA Point of Compliance Wells, Semi-Annual SVOA Sampling (Per CP Table IVA)		
(1) Number of wells	3	
(2) Sample analysis cost per well, 4 Metals & SVOA only	98	\$/well
(3) Number of sampling events per year	1	/yr
(4) Sampling cost (1 x 2 x 3)	294	\$
<b>2. Sampling Labor Cost:</b>		
A. Hours of sampling per well	2.5	hrs/well
B. Number of sampling technicians per well	1	
C. Charge per hour including vehicle and equipment	130	\$/hr
D. Total number of wells to be sampled annually	1	Wells
E. Total number of wells sampled semi-annually	29	Wells
F. Total number of wells sampled quarterly	59	Wells
G. Total number of wells sampled monthly	0	Wells
H. Total number of wells sampled per year (2D) + (2E x 2) + (2F x 4) + (2G x 12)	59	total wells sampled/yr
I. Sampling Labor Cost (2A x 2B x 2C x 2H)	19,175	\$
<b>*ANNUAL GROUNDWATER MONITORING COST</b>	30,642	\$
<b>3. Well Installation (typical cost):</b>		
A. Monitor well installation cost per well	5,000	\$/well
B. Number of monitor wells to be installed	4	Wells
C. Cost of monitor well system (A x B)		\$
D. Recovery well installation cost per well		\$/well
E. Number of Recovery Wells to be installed	0	Wells
F. Cost of Recovery well system (D x E)		\$
<b>*TOTAL WELL INSTALLATION COST (3C + 3F)</b>	20,000	\$
<b>4. Administrative Cost:</b>		
A. Annual cost for record-keeping and report preparation	8,000	\$
<b>*ANNUAL ADMINISTRATIVE COST (4A)</b>	8,000	\$
<b>5. Inspection and Maintenance Cost for the Monitoring Program:</b>		
A. Operator's time (hours) on-site for inspections and maintenance per year		hour/yr
B. Charge or salary per hour		\$/hr
C. Annual cost of labor (4A x 4B)		\$/yr
D. Replacement of parts and equipment per year	960	\$/yr
<b>*ANNUAL INSPECTIONS / MAINTENANCE COST FOR THE GROUNDWATER MONITORING PROGRAM (5C + 5D)</b>	960	\$

**TABLE XI.E.3. – FINANCIAL ASSURANCE SUMMARY**

ANNUAL OFF-SITE LIQUID TREATMENT / DISPOSAL COST	\$	<u>2,500</u>	
ANNUAL ON-SITE TREATMENT / DISPOSAL COST	\$	<u>0</u>	
ANNUAL INSPECTION / MAINTENACE / OPERATION COST FOR THE CORRECTIVE ACTION PROGRAM	\$	<u>0</u>	
ANNUAL GROUNDWATER MONITORING COST	\$	<u>30,642</u>	
ANNUAL ADMINISTRATIVE COST	\$	<u>8,000</u>	
ANNUAL INSPECTION AND MAINTENANCE COST FOR THE GROUNDWATER MONITORING PROGRAM (Wells are inspected during sampling, facility inspections and maintenance costs are represented on Table VII.D.)	\$	<u>                    </u>	
<u>ANNUAL SUB TOTAL</u>	\$	<u>42,102</u>	
TOTAL YEARS USED FOR CALCULATING FINANCIAL ASSURANCE		<u>30</u>	Yrs
REMEDIATION COST (Annual Sub Total x Total Years Used)	\$	<u>1,263,060</u>	
ON-SITE WASTE WATER TREATMENT SYSTEM CAPITAL COST	\$	<u>0</u>	
TOTAL WELL COST	\$	<u>20,000</u>	
10% Contingency	\$	<u>128,306</u>	
<b>GRAND TOTAL COST (nearest \$1000) in 2008 dollars</b>	<b>\$</b>	<b><u>1,411,366</u></b>	

ATTACHMENT B  
FACILITY SITE MAP AND WELL LOCATION MAPS

**SITE OVERVIEW MAP**

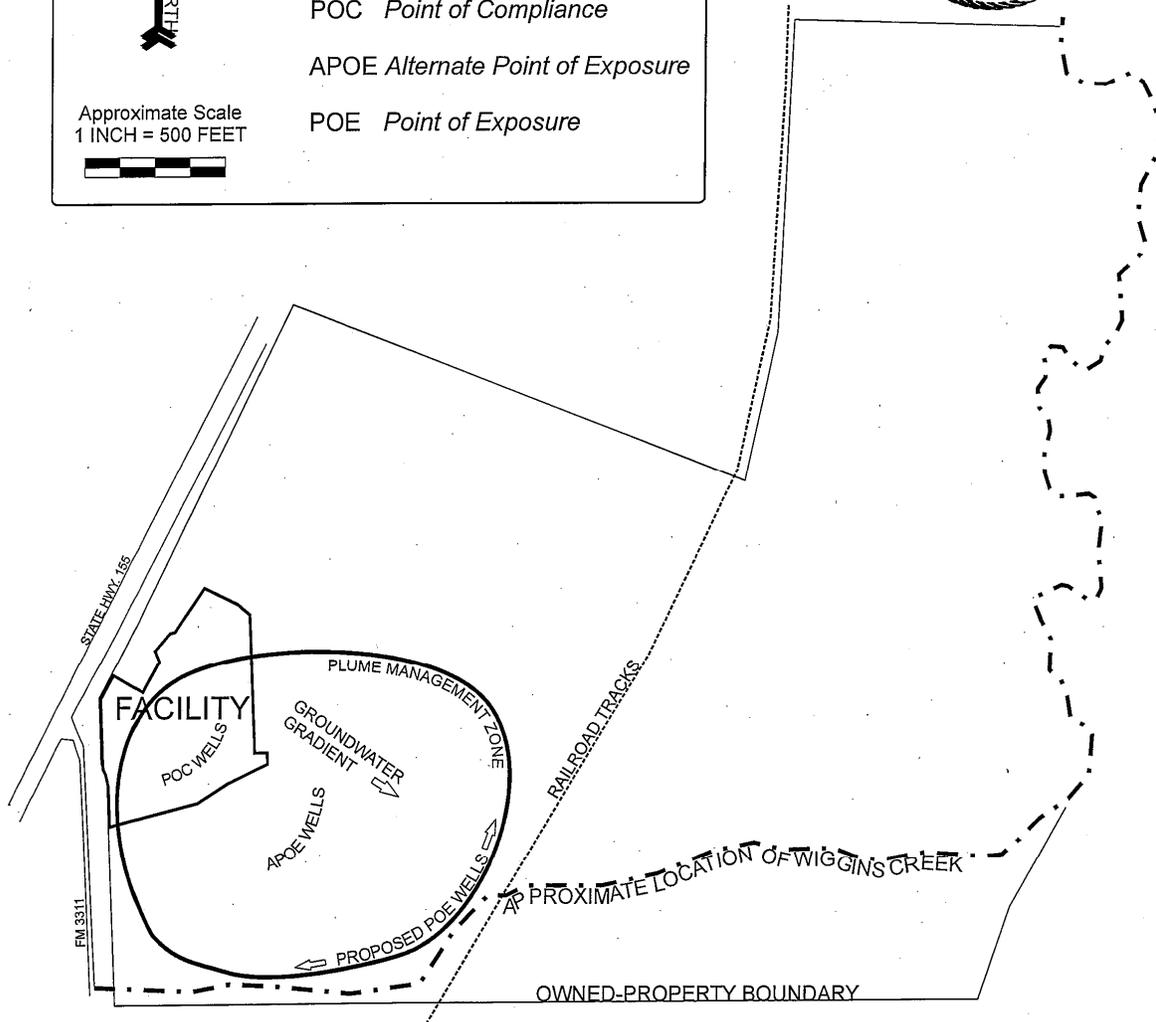
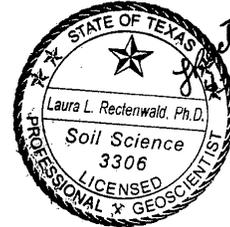
**EXPLANATION**

POC *Point of Compliance*

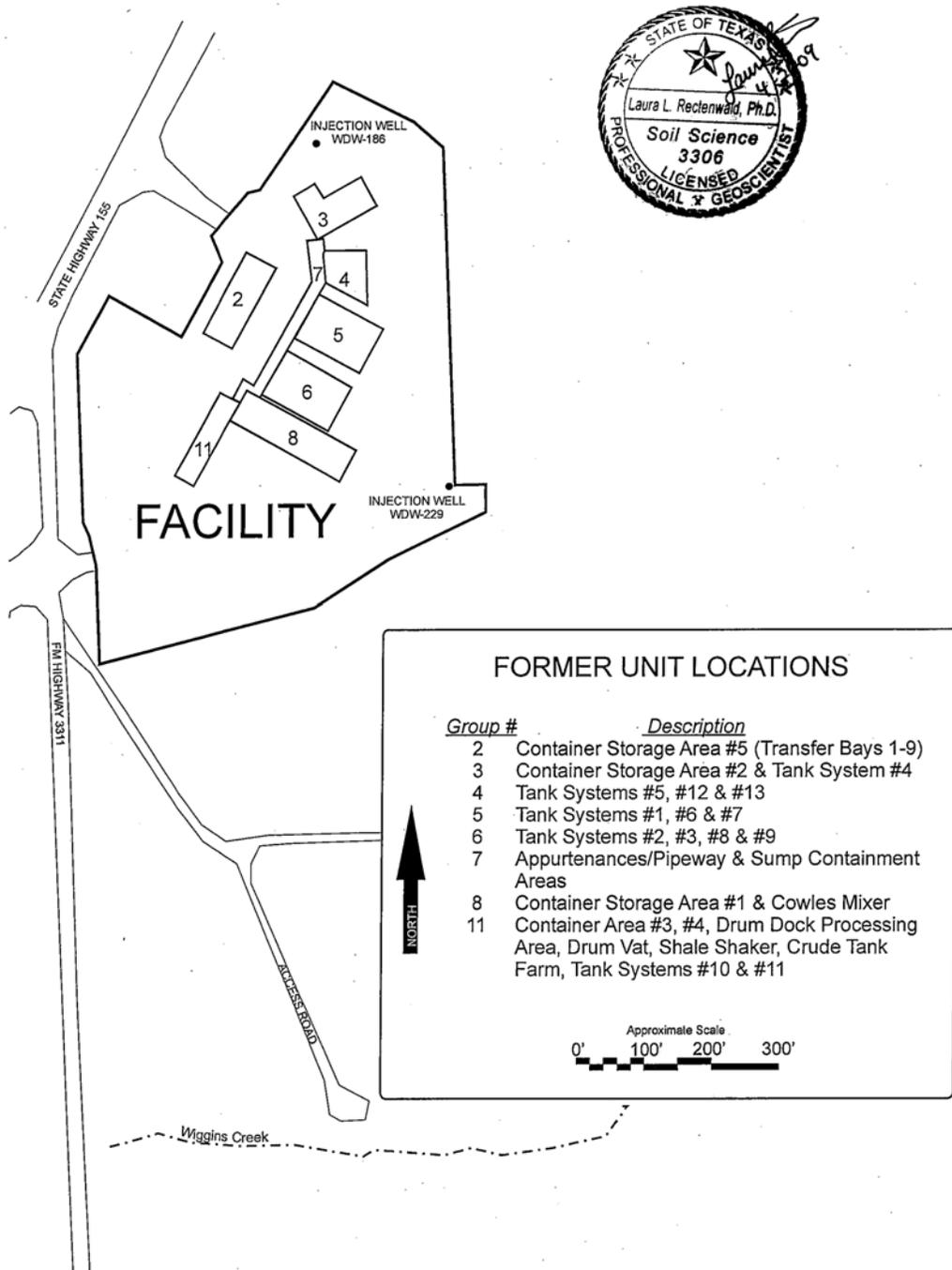
APOE *Alternate Point of Exposure*

POE *Point of Exposure*

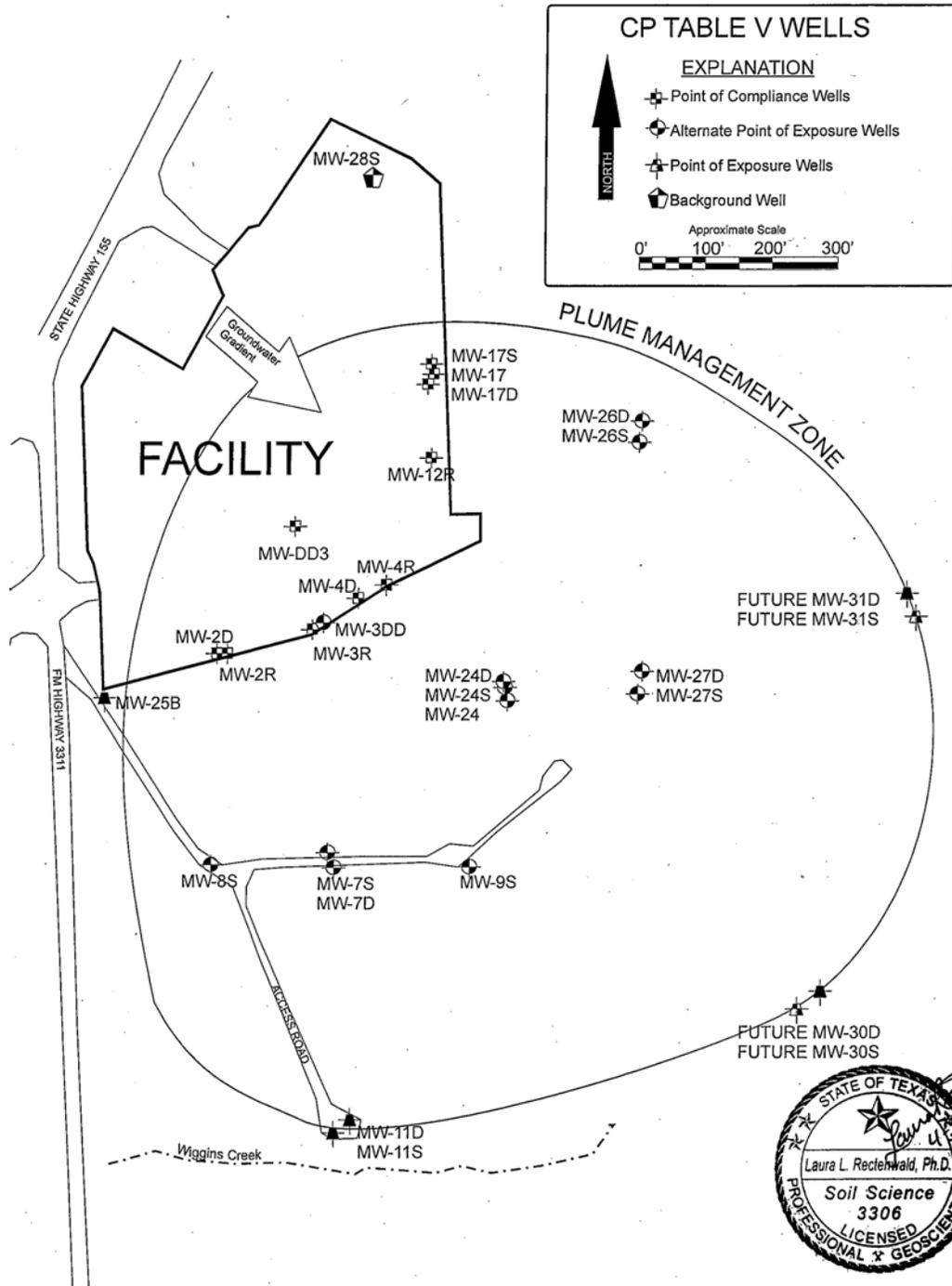
Approximate Scale  
1 INCH = 500 FEET



ATTACHMENT B  
 FACILITY SITE MAP AND WELL LOCATION MAPS



ATTACHMENT B  
 FACILITY SITE MAP AND WELL LOCATION MAPS



ATTACHMENT C - WELL DESIGN, CONSTRUCTION, INSTALLATION, CERTIFICATION,  
PLUGGING AND ABANDONMENT PROCEDURES AND SPECIFICATIONS

1. The Applicant shall use well drilling methods that minimize potential adverse effects on the quality of water samples withdrawn from the well, and that minimize or eliminate the introduction of foreign fluids into the borehole.
2. All wells constructed to meet the terms of this PCO shall be constructed such that the wells can be routinely sampled with a pump, bailer, or alternate sampling device. Piping associated with recovery wells should be fitted with sample ports or an acceptable alternative sampling method to facilitate sampling of the recovered groundwater on a well by well basis.
3. Above the saturated zone the well casing may be two (2)-inch diameter or larger schedule 40 or 80 polyvinyl chloride (PVC) rigid pipe or stainless steel or polytetrafluoroethylene (PTFE or "teflon") or an approved alternate material. The PVC casing must bear the National Sanitation Foundation logo for potable water applications (NSF-pw). Solvent cementing compounds shall not be used to bond joints and all connections shall be flush-threaded. In and below the saturated zone, the well casing shall be stainless steel or PTFE.

The Applicant may use PVC or fiberglass reinforced resin as an alternate well casing material in and below the saturated zone provided that it yields samples for groundwater quality analysis that are unaffected by the well casing material.

4. The Applicant shall replace any well that has deteriorated due to incompatibility of the casing material with the groundwater contaminants or due to any other factors. Replacement of the damaged well shall be completed within ninety (90) days of the date of the inspection that identified the deterioration.
5. Well casings and screens shall be steam cleaned prior to installation to remove all oils, greases, and waxes. Well casings and screens made of fluorocarbon resins shall be cleaned by detergent washing.
6. For wells constructed after the date of issuance of this PCO, the screen length shall not exceed ten (10) feet within a given transmissive zone unless otherwise approved by the Executive Director. Screen lengths exceeding ten (10) feet may be installed in groundwater recovery or injection wells to optimize the groundwater remediation process in accordance with standard engineering practice.
7. The Applicant shall design and construct the intake portion of a well so as to allow sufficient water flow into the well for sampling purposes and minimize the passage of formation materials into the well during pumping. The intake portion of a well shall consist of commercially manufactured stainless steel or PTFE screen or approved alternate material. The annular space between the screen and the borehole shall be filled with clean siliceous granular material (i.e., filter pack) that has a proper size gradation to provide mechanical retention of the formation sand and silt. The well screen slot size shall be compatible with the filter pack size as determined by sieve analysis data. The filter pack should extend no more than three (3) feet above the well screen. A silt trap, no greater than one (1) foot in length, may be added to the bottom of the well screen to collect any silt that may enter the well. The bottom of the well casing shall be capped with PTFE or stainless steel or approved alternate material.

Groundwater recovery and injection wells shall be designed in accordance with standard engineering practice to ensure adequate well production and accommodate ancillary equipment. Silt traps exceeding one (1) foot may be utilized to accommodate ancillary equipment. Well heads shall be fitted with mechanical wellseals, or equivalent, to prevent entry of surface water or debris.

8. A minimum of two (2) feet of pellet or granular bentonite shall immediately overlie the filter pack in the annular space between the well casing and borehole. Where the saturated zone extends above the filter pack, pellet or granular bentonite shall be used to seal the annulus. The bentonite shall be allowed to settle and hydrate for a sufficient amount of time prior to placement of grout in the annular space. Above the minimum two (2)-foot thick bentonite seal, the annular space shall be sealed with a cement/bentonite grout mixture. The grout shall be placed in the annular space by means of a tremie pipe or pressure grouting methods equivalent to tremie grouting standards.

The cement/bentonite grout mixture or TCEQ approved alternative grout mixture shall fill the annular space to within two (2) feet of the surface. A suitable amount of time shall be allowed for settling to occur. The annular space shall be sealed with concrete, blending into a cement apron at the surface that extends at least two (2) feet from the outer edge of the monitor well for above-ground completions. Alternative annular-space seal material may be proposed with justification and must be approved by the Executive Director prior to installation.

In cases where flush-to-ground completions are unavoidable, a protective structure such as a utility vault or meter box should be installed around the well casing and the concrete pad design should prevent infiltration of water into the vault. In addition, the Applicant must ensure that 1) the well/cap juncture is watertight; 2) the bond between the cement surface seal and the protective structure is watertight; and 3) the protective structure with a steel lid or manhole cover has a rubber seal or gasket.

9. Water added as a drilling fluid to a well shall contain no bacteriological or chemical constituents that could interfere with the formation or with the chemical constituents being monitored. For groundwater recovery and injection wells, drilling fluids containing freshwater and treatment agents may be utilized in accordance with standard engineering practice to facilitate proper well installation. In these cases, the water and agents added should be chemically analyzed to evaluate their potential impact on in-situ water quality and to assess the potential for formation damage. All such additives shall be removed to the extent practicable during well development.
10. Upon completion of installation of a well, the well must be developed to remove any fluids used during well drilling and to remove fines from the formation to provide a particulate-free discharge to the extent achievable by accepted completion methods and by commercially available well screens. Development shall be accomplished by reversing flow direction, surging the well or by air lift procedures. No fluids other than formation water shall be added during development of a well unless the aquifer to be screened is a low-yielding water-bearing aquifer. In these cases, the water to be added should be chemically analyzed to evaluate its potential impact on in-situ water quality, and to assess the potential for formation damage.

For recovery and injection wells, well development methods may be utilized in accordance with standard engineering practice to remove fines and maximize well efficiency and specific capacity. Addition of freshwater and treatment agents may be utilized during well development or re-development to remove drilling fluids, inorganic scale or bacterial slime. In these cases, the water and agents added should be chemically analyzed to evaluate their potential impact on in-situ water quality and to assess the potential for formation damage. All such additives shall be removed to the extent practicable during well development.

11. Each well shall be secured and/or designed to maintain the integrity of the well borehole and groundwater.
12. The Applicant shall protect the above-ground portion of the well by bumper guards and/or metal outer casing protection when wells are located in traffic areas or outside the secured plant area.
13. Copies of drilling and construction details demonstrating compliance with the items of this provision shall be kept on site. This record shall include the following information:
  - . name/number of well (well designation);
  - . intended use of the well(sampling, recovery, etc.);
  - . date/time of construction;
  - . drilling method and drilling fluid used;
  - . well location (+ 0.5 ft.);
  - . bore hole diameter and well casing diameter;
  - . well depth (+ 0.1 ft.);
  - . drilling and lithologic logs;
  - . depth to first saturated zone;
  - . casing materials;
  - . screen materials and design;
  - . casing and screen joint type;
  - . screen slot size/length;
  - . filter pack material/size;
  - . filter pack volume (how many bags, buckets, etc.);
  - . filter pack placement method;
  - . sealant materials;
  - . sealant volume (how many bags, buckets, etc.);
  - . sealant placement method;
  - . surface seal design/construction;
  - . well development procedure;
  - . type of protective well cap;
  - . ground surface elevation (+ 0.01 ft. MSL);
  - . top of casing elevation (+ 0.01 ft. MSL); and,
  - . detailed drawing of well (include dimensions).
14. The Applicant shall clearly mark and maintain the well number on each well at the site.
15. The Applicant shall measure and keep a record of the elevation of the top of each well casing in feet above mean sea level to the nearest 0.01 foot and permanently mark the measuring point on the well. The Applicant shall compare old and new elevations from previously surveyed wells and determine a frequency of surveying not to exceed five (5) year intervals.
16. A well's screened interval shall be appropriately designed and installed to meet the well's specific objective (i.e., either DNAPL, LNAPL, both, or other objective of the well). All wells designed to detect, monitor, or recover DNAPL must be drilled to intercept the bottom confining layer of the aquifer. The screened interval to detect DNAPL should extend from the top of the lower confining layer to above the portion of the aquifer saturated with DNAPL. The screened interval for all wells designed to detect, monitor, or recover LNAPL must extend high enough into the vadose zone to provide for fluctuations in the seasonal water table. In addition, the sandpacks for the recovery or monitoring well's screened interval shall be coarser than surrounding media to ensure the movement of NAPL to the well.

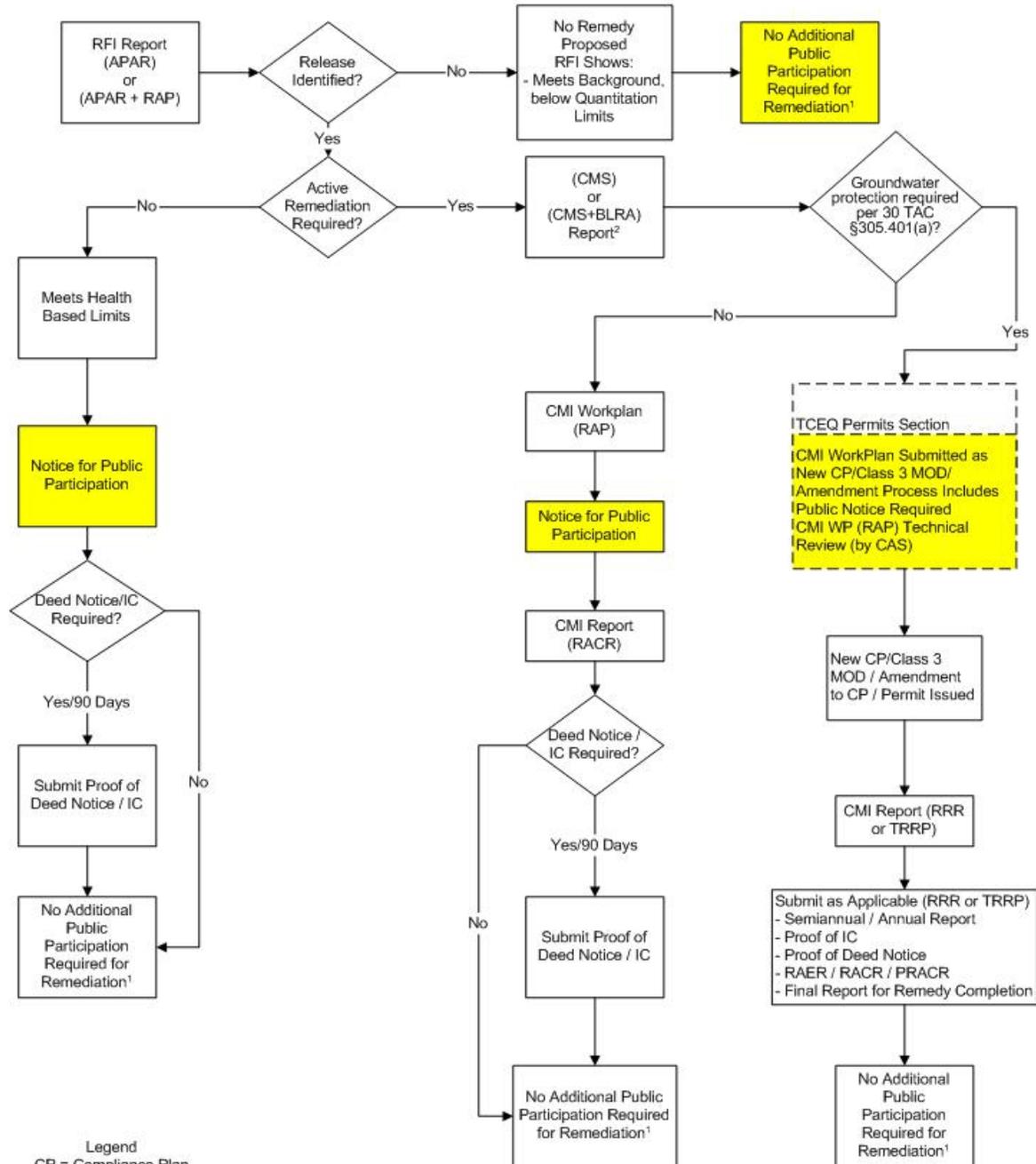
Certification, Plugging and Abandonment Procedures

17. Prior to installation of a Point of Compliance (POC), FOA Boundary of Compliance (FBOC), Point of Exposure (POE), Alternate Point of Exposure (APOE) or Background replacement well listed in Table V, the Applicant shall submit to the Executive Director for approval, the replacement well specifications and an explanation of why the well is being replaced. For any such well to be considered as a replacement well and not as a new well, the well shall have no substantive design changes from the well being replaced as determined by the Executive Director. The well shall be drilled within fifteen (15) feet of the well being replaced unless an alternate location is authorized by the Executive Director. The Applicant shall submit a replacement well certification to the Executive Director in accordance with Table VII and Attachment C, Provision 19.
18. Plugging and abandonment of a Corrective Action System Background, POC, FBOC, POE, and/or APOE wells shall be subject to the modification provisions in 30 TAC §305 Subchapter D. Plugging and abandonment of Corrective Action Observation, Corrective Action System and/or Attenuation Monitoring Point wells shall commence upon written approval of the Executive Director. The well shall be plugged and abandoned in accordance with requirements of this Attachment B. The Applicant shall certify proper plugging and abandonment in accordance with Table VII and Attachment C, Provision 19.
19. The Applicant shall complete construction or plugging and abandonment of each well in accordance with the requirements of this PCO and 16 TAC Chapter 76 and shall certify such proper construction or plugging and abandonment in the first report submitted pursuant to Table VII. following installation or plugging and abandonment. Well completion logs for each newly installed or replaced well shall be included with the report. The certification shall be prepared by a qualified geologist or geotechnical engineer. Each well certification shall be accompanied by a certification report, including an accurate log of the soil boring, which thoroughly describes and depicts the location, elevations, material specifications, construction details, and soil conditions encountered in the boring for the well. A copy of the certification and certification report shall be kept on-site, and a second copy shall be submitted to the Executive Director. Required certification shall be in the following format, edited as appropriate, and shall specify the PCO Number as indicated:  
  
"This is to certify that installation (or plugging and abandonment) of the following facility components authorized or required by TCEQ PCO No. 32123 has been completed, and that construction (or plugging) of said components has been performed in accordance with and in compliance with the design and construction specifications of this PCO No.: 32123 (Add description of facility components with reference to applicable PCO provisions)".
20. Wells may be replaced at any time the Applicant or Executive Director determines that the well integrity or materials of construction or well placement no longer enable the well to yield samples representative of groundwater quality.
21. The Applicant shall plug soil test borings and wells removed from service after issuance of the PCO with a cement/bentonite grout mixture so as to prevent the preferential migration of fluids in the area of the borehole. Certification of each plugging shall be reported in accordance with Provision 19 of Attachment C of this PCO. The plugging of wells shall be in accordance with 16 TAC Chapter 76 dealing with Well Drilling, Completion, Capping and Plugging.

ATTACHMENT D

Public Participation in HSWA Corrective Action

6/22/2005



Legend  
 CP = Compliance Plan  
 IC = Institutional Control

1 To Incorporate a Status Change to RFI unit(s) in the Permit or CP Requires Modification and Public Notice through the Permits Section  
 2 As Required by Rule, Permit, or CP

CP TABLE IV – COMPLIANCE MONITORING PROGRAM  
 Table of Hazardous and Solid Waste Constituents and  
 Practical Quantitation Limits or Method Quantitation Limits for Compliance Monitoring

COLUMN A Hazardous Constituents	COLUMN B Groundwater Protection Standard (mg/l)
1,1,1,2-Tetrachloroethane	ND (0.001)
1,1,1-Trichloroethane	ND (0.001)
1,1,2,2-Tetrachloroethane	ND (0.001)
1,1,2-Trichloroethane	ND (0.001)
1,1-Dichloroethane	ND (0.001)
1,1-Dichloroethene	ND (0.001)
1,2,4-Trichlorobenzene	ND (0.001)
1,2,4-Trimethylbenzene	ND (0.001)
1,2-Dichlorobenzene	ND (0.001)
1,2-Dichloroethane	ND (0.001)
1,3,5-Trimethylbenzene	ND (0.001)
1,3-Dichlorobenzene	ND (0.001)
1,4-Dichlorobenzene	ND (0.001)
1,4-Dioxane	ND (0.01)
2,4,5-Trichlorophenol	ND (0.001)
2,4,6-Trichlorophenol	ND (0.001)
2,4-Dichlorophenol	ND (0.001)
2,4-Dimethylphenol	ND (0.001)
2,6-Dinitrotoluene	ND (0.001)
2-Chloroethylvinyl ether	ND (0.001)
2-Chlorophenol	ND (0.001)
2-Chlorotoluene	ND (0.001)
2-Methylphenol (o-Cresol)	ND (0.001)
3-Methylphenol (m-cresol)	ND (0.001)
4,6-Dinitro-2-methylphenol	ND (0.002)
Acetone	ND (0.005)
Antimony	0.006* <sup>BKG</sup>
Arsenic	0.033* <sup>BKG</sup>
Barium	0.874* <sup>BKG</sup>
Benzene	ND (0.001)
Benzo(b)fluoranthene	ND (0.001)
Benzo(k)fluoranthene	ND (0.001)
Benzyl Butyl phthalate	ND (0.001)

CP TABLE IV – COMPLIANCE MONITORING PROGRAM  
 Table of Hazardous and Solid Waste Constituents and  
 Practical Quantitation Limits or Method Quantitation Limits for Compliance Monitoring

COLUMN A Hazardous Constituents	COLUMN B Groundwater Protection Standard (mg/l)
Beryllium	0.005* <sup>BKG</sup>
Bis(2-ethylhexyl)phthalate	ND (0.001)
Bromodichloromethane	ND (0.001)
Carbon disulfide	ND (0.001)
Chlorobenzene	ND (0.001)
Chloroethane	ND (0.001)
Chloroform	ND (0.001)
Chloromethane	ND (0.001)
Chromium	0.019* <sup>BKG</sup>
cis-1,2-Dichloroethene	ND (0.001)
Dichlorodifluoromethane	ND (0.001)
Diethyl phthalate	ND (0.001)
Dimethyl phthalate	ND (0.001)
Di-n-octylphthalate	ND (0.001)
Ethylbenzene	ND (0.001)
Fluoranthene	ND (0.001)
Hexachlorobutadiene	ND (0.001)
Isophorone	ND (0.001)
Isopropylbenzene (Cumene)	ND (0.001)
Lead	0.065* <sup>BKG</sup>
m- and p-Xylene	ND (0.002)
Methyl ethyl ketone (Butanone)	ND (0.005)
Methyl Isobutyl Ketone	ND (0.005)
Methylene chloride	ND (0.001)
Naphthalene	ND (0.001)
n-Butylbenzene	ND (0.001)
n-Propylbenzene	ND (0.001)
o-Xylene	ND (0.001)
Phenol	ND (0.001)
p-Isopropyltoluene	ND (0.001)
sec-Butylbenzene	ND (0.001)

CP TABLE IV – COMPLIANCE MONITORING PROGRAM  
Table of Hazardous and Solid Waste Constituents and  
Practical Quantitation Limits or Method Quantitation Limits for Compliance Monitoring

COLUMN A Hazardous Constituents	COLUMN B Groundwater Protection Standard (mg/l)
Selenium	0.024* <sup>BKG</sup>
Silver	0.074* <sup>BKG</sup>
tert-Butylbenzene	ND (0.001)
tert-Butylmethylether (MTBE)	ND (0.001)
Tetrachloroethene	ND (0.001)
Toluene	ND (0.001)
Total Xylenes	ND (0.001)
trans-1,2-Dichloroethene	ND (0.001)
Trichloroethene	ND (0.001)
Trichlorofluoromethane	ND (0.001)
Vinyl chloride	ND (0.001)

Foot Note:

ND Non-detectable at MQL as determined by the analytical methods of the EPA SW-846 (most recent edition), and as listed in the July 8, 1987 edition of the Federal Register and later editions. MQL is indicated in parentheses. MQL is defined in 30 TAC §350.4 (54) as the lowest non-zero concentration standard in the laboratory's initial calibration curve and is based on the final volume of extract (or sample) used by the laboratory.

BKG Background as determined in accordance with Provision XI.F.1.

CP TABLE V  
Designation of Wells

POINT OF COMPLIANCE WELLS

1. Former Waste Management Area

MW-2R, MW-3R\*, MW-4R, MW-4D, MW-12R, MW-17S, MW-2D, MW-17D, MW-17\*, MW-DD3\*

POINT OF EXPOSURE WELLS

1. Former Waste Management Area

MW-25b, MW-11S, MW-11D, MW-30S, MW-30D, MW-31S, MW-31D.

ALTERNATE POINT OF EXPOSURE WELLS

1. Former Waste Management Area

MW-3DD, MW-7S, MW-7D, MW-9S, MW-26S, MW-27S, MW8S, MW-26D, MW-27D, MW-24, MW-24S, MW-24D

BACKGROUND WELLS

1. Former Waste Management Area

MW-28S

Note: \* Wells also to be monitored annually for constituents listed in CP Table IV as per Provision G.2.b.

\*\*Denotes a total of four new wells to be installed within the owned-property at edge of PMZ north of Wiggins Creek southeast of the facility and at east edge of PMZ near railroad tracks. These wells will be installed no later than June 2012.

Wells that are not listed in this table are subject to change, upon approval by the Executive Director, without modification to the PCO.

# Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

## EXECUTIVE SUMMARY

**To:** Commissioners **Date** October 14, 2009  
:  
**Thru:** LaDonna Castañuela, Chief Clerk  
  
Mark Vickery, Executive Director  
**From:** Stephanie Bergeron Perdue, Deputy Director  
Office of Legal Services  
**Docket No.:** 2008-1402-IHW  
**Subject:** Commission Issuance of Post-Closure Order (PCO) to  
American Ecology Environmental Services Corporation, Winona, Smith County

### What is the Commission Being Asked to Consider?

The Commission is being asked to issue called a “post-closure order” (PCOs to require corrective action and post-closure care at a former RCRA facility. In general, clean up of hazardous waste contamination occurs in 3 phases: (1) Assessment of the Scope of Contamination; (2) Installation of Remedial Measures; and (3) Monitoring of Corrective Action for 15-30 years.

This third phase, known as “post-closure care,” often requires sampling of contaminated groundwater, repairing security fences around solid waste management units, and maintaining the cap on any landfill to prevent infiltration of rainfall into the landfill.

The applicant seeking this PCO, developed by the Industrial and Hazardous Waste Permits & Corrective Action programs at TCEQ is American Ecology Environmental Services Corporation (AEESC). The Applicant has assessed contamination at the site, completed closure of all solid and hazardous waste management units, and installed remedies to prevent the migration of contaminants of concern. The Applicant no longer operates at the site but is required to perform groundwater monitoring based on the schedule and provisions contained in the proposed PCO.

### What is a Post-closure Order?

A Post-closure Order is defined as “an order issued by the commission for post-closure care of interim status units, a corrective action management unit unless authorized by permit or alternative corrective action requirements for contamination commingled from RCRA and solid waste management units.” *See* 30 Texas Administrative Code (TAC) Section (§) 305.2. A PCO is not an enforcement order which seeks compliance and assessing penalty, but instead is an order which directs the applicant to perform certain corrective action or post-closure care activities.

### What is TCEQ’s Authority to Issue a PCO?

The statutory authorities for issuing a PCO are:

- **Texas Water Code §7.031(f)**, which authorizes the issuance of orders for Corrective Action Relating to Hazardous Waste;
- **Texas Health and Safety Code (THSC) §361.017**, which states the Commission is responsible for the management of industrial solid waste; and
- **THSC, § 361.024**, which provides the commission the authority to adopt rules consistent with the Texas Solid Waste Disposal Act and establishes minimum standards of operation for the management and control of solid wastes.

In addition, issuance of Post-closure Orders is allowed under federal law and regulations at 40 CFR Parts 264, 265, 270, and 271. *See 63 Fed. Reg. 56711 (October 22, 1998)*. However, issuance of the Proposed Order is not required by federal rule or state statute. Nor are there any legal deadlines by which any Post-closure Order (PCO) must be proposed, adopted, or effective.

**Public Comment:**

There were no comments received during the notice comment period for the PCO. One individual requested to be added to the Mailing List for the AEESC facility.

**Controversial Issues Related to this PCO:**

None

**Staff Recommendation:**

Issue PCO to American Ecology Environmental Services Corporation

**Agency Contacts:**

Susan Jere White, Staff Attorney, extension 0454  
Sri Venkat, Project Manager, IHW Permits, extension 6382  
Gary Beyer, Corrective Action, extension 2361

# Compliance History Report

Customer/Respondent/Owner-Operator:	CN600269740 American Ecology Environmental Services Corporation	Classification: AVERAGE	Rating: 1.63																																							
Regulated Entity:	RN102610375 AMERICAN ECOLOGY	Classification: AVERAGE	Site Rating: 0.26																																							
ID Number(s):	<table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">UNDERGROUND INJECTION CONTROL</td> <td style="width: 30%;">PERMIT</td> <td style="width: 20%;">WDW186</td> </tr> <tr> <td>UNDERGROUND INJECTION CONTROL</td> <td>PERMIT</td> <td>WDW229</td> </tr> <tr> <td>AIR NEW SOURCE PERMITS</td> <td>PERMIT</td> <td>12110</td> </tr> <tr> <td>AIR NEW SOURCE PERMITS</td> <td>ACCOUNT NUMBER</td> <td>SK0057E</td> </tr> <tr> <td>AIR NEW SOURCE PERMITS</td> <td>AFS NUM</td> <td>4842300028</td> </tr> <tr> <td>INDUSTRIAL AND HAZARDOUS WASTE GENERATION</td> <td>EPA ID</td> <td>TXD000742304</td> </tr> <tr> <td>INDUSTRIAL AND HAZARDOUS WASTE GENERATION</td> <td>ID NUMBER</td> <td>32123</td> </tr> <tr> <td>INDUSTRIAL AND HAZARDOUS WASTE GENERATION</td> <td>SOLID WASTE REGISTRATION # (SWR)</td> <td>32123</td> </tr> <tr> <td>IHW CORRECTIVE ACTION</td> <td>SOLID WASTE REGISTRATION # (SWR)</td> <td>32123</td> </tr> <tr> <td>INDUSTRIAL AND HAZARDOUS WASTE COMPLIANCE PLANS</td> <td>PERMIT</td> <td>50368</td> </tr> <tr> <td>INDUSTRIAL AND HAZARDOUS WASTE STORAGE</td> <td>PERMIT</td> <td>50368</td> </tr> <tr> <td>INDUSTRIAL AND HAZARDOUS WASTE POST CLOSURE</td> <td>PERMIT</td> <td>32123</td> </tr> <tr> <td>AIR EMISSIONS INVENTORY</td> <td>ACCOUNT NUMBER</td> <td>SK0057E</td> </tr> </table>			UNDERGROUND INJECTION CONTROL	PERMIT	WDW186	UNDERGROUND INJECTION CONTROL	PERMIT	WDW229	AIR NEW SOURCE PERMITS	PERMIT	12110	AIR NEW SOURCE PERMITS	ACCOUNT NUMBER	SK0057E	AIR NEW SOURCE PERMITS	AFS NUM	4842300028	INDUSTRIAL AND HAZARDOUS WASTE GENERATION	EPA ID	TXD000742304	INDUSTRIAL AND HAZARDOUS WASTE GENERATION	ID NUMBER	32123	INDUSTRIAL AND HAZARDOUS WASTE GENERATION	SOLID WASTE REGISTRATION # (SWR)	32123	IHW CORRECTIVE ACTION	SOLID WASTE REGISTRATION # (SWR)	32123	INDUSTRIAL AND HAZARDOUS WASTE COMPLIANCE PLANS	PERMIT	50368	INDUSTRIAL AND HAZARDOUS WASTE STORAGE	PERMIT	50368	INDUSTRIAL AND HAZARDOUS WASTE POST CLOSURE	PERMIT	32123	AIR EMISSIONS INVENTORY	ACCOUNT NUMBER	SK0057E
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Location:	13640 STATE HIGHWAY 155 N, TYLER, TX, 75708																																									
TCEQ Region:	REGION 05 - TYLER																																									
Date Compliance History Prepared:	October 13, 2009																																									
Agency Decision Requiring Compliance History:	Permit - Issuance, renewal, amendment, modification, denial, suspension, or revocation of a permit.																																									
Compliance Period:	August 06, 2004 to October 13, 2009																																									
TCEQ Staff Member to Contact for Additional Information Regarding this Compliance History																																										
Name:	BOBBIE ROGANS	Phone:	239 - 6197																																							

## Site Compliance History Components

1. Has the site been in existence and/or operation for the full five year compliance period? Yes
2. Has there been a (known) change in ownership/operator of the site during the compliance period? No
3. If Yes, who is the current owner/operator? N/A
4. If Yes, who was/were the prior owner(s)/operator(s) ? N/A
5. When did the change(s) in owner or operator occur? N/A
6. Rating Date: 9/1/2009 Repeat Violator: NO

### Components (Multimedia) for the Site :

- A. Final Enforcement Orders, court judgements, and consent decrees of the state of Texas and the federal government.
 

N/A
- B. Any criminal convictions of the state of Texas and the federal government.
 

N/A
- C. Chronic excessive emissions events.
 

N/A
- D. The approval dates of investigations. (CCEDS Inv. Track. No.)
 

1	09/23/2004	(334726)
2	10/26/2004	(338396)
3	12/06/2004	(342224)

4	05/24/2005	(377753)
5	07/15/2005	(395405)
6	10/21/2005	(431961)
7	11/08/2005	(434761)
8	12/20/2005	(438895)
9	03/20/2006	(452557)
10	07/20/2006	(486334)
11	10/06/2006	(511293)
12	02/18/2007	(538437)
13	04/12/2007	(542669)
14	11/01/2007	(599079)
15	11/01/2007	(599090)
16	12/17/2007	(609899)
17	04/29/2008	(638761)
18	08/29/2008	(685531)

E. Written notices of violations (NOV). (CCEDS Inv. Track. No.)

Date: 07/15/2005 (395405)

Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 335, SubChapter C 335.69(d)(1)  
 40 CFR Chapter 262, SubChapter I, PT 262, SubPT C 262.34(c)(1)(i)  
 40 CFR Chapter 265, SubChapter I, PT 265, SubPT I 265.173(a)

Description: Failure to cover a 55 gallon steel drum used as a satellite accumulation area for storing hazardous waste.

Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 335, SubChapter C 335.69(d)(2)  
 40 CFR Chapter 262, SubChapter I, PT 262, SubPT C 262.34(c)(1)(ii)

Description: Failure to label a 55 gallon steel drum used as a satellite accumulation area for storing hazardous waste with the words "hazardous waste" or with other words that identify the contents of the container.

Self Report? NO Classification: Moderate

Citation: 30 TAC Chapter 335, SubChapter C 335.69(a)(1)(B)  
 40 CFR Chapter 262, SubChapter I, PT 262, SubPT C 262.34(a)(1)(ii)

Description: Failure to obtain a written tank assessment for tanks T-250 and T-251.

F. Environmental audits.

N/A

G. Type of environmental management systems (EMSs).

H. Voluntary on-site compliance assessment dates.

N/A

I. Participation in a voluntary pollution reduction program.

N/A

J. Early compliance.

N/A

Sites Outside of Texas

N/A

## TECHNICAL SUMMARY AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

August 18, 2009

### Description of Application

**Applicant:** American Ecology Environmental Services Corporation (AEESC)  
Industrial Solid Waste Registration No. 32123  
EPA Identification No. TXD000742304  
PCO Order No. 32123  
Docket No. 2008-1402-IHW

**Location:** AEESC facility is located approximately 11 miles north east of Tyler and 1.5 miles north of Interstate 20 near Winona, Smith County, Texas. The site is in the drainage area of Segment No. 0506 of the Sabine River Basin (North Latitude 32° 27' 37", West Longitude 95° 10' 46"). The main facility is located on an 8 acre tract of land within a larger tract of approximately 280 acres.

This facility is not located in an area affected by the Texas Coastal Management Program.

**General:** AEESC began operating a commercial hazardous waste storage, treatment, and disposal facility at this location in 1981. The facility used 31 tanks, 5 container storage areas, and 3 miscellaneous units along with two Underground Injection Control (UIC) wells WDW-186 and WDW-229 for its hazardous waste management operations. The facility ceased active waste management operations on March 20, 1997. On November 12, 1997, TCEQ issued an Agreed Order to require a soil investigation plan, a groundwater assessment, and closure of the facility. From November 1997 to 2006, AEESC conducted site assessment and corrective action to achieve closure of the surface units. The surface units were certified closed on August 22, 2006 and the UIC wells were plugged and closed on June 27, 2002 and October 27, 2008, respectively.

The soil and groundwater at the facility were contaminated due to releases from historical waste management operations in the RCRA permitted units, RCRA-regulated Solid Waste Management Units (SWMUs), and Areas of Concern (AOCs). The facility has demonstrated that the soils no longer pose a threat to human health and the environment according to 30 TAC Chapter 350, Texas Risk Reduction Program (TRRP). However, both the soils and groundwater must be closed to the same standard before final closure of the soils can be accepted. The facility is, therefore, subject to post-closure care until the final closure is achieved for both soil and groundwater.

**Request:** AEESC has applied to the TCEQ for a Post-Closure Order (PCO) to conduct post-closure care and compliance monitoring at the facility SWMUs and AOCs. The application for a post-closure care order was made pursuant to 30 Texas Administrative Code (TAC) Sections 305.50(b) and 335.2(m). The application request was dated December 28, 2007 and received January 3, 2008. As part of post -closure care, AEESC is proposing to maintain its existing program of site security, groundwater monitoring and remediation. The site monitoring program was developed following a two-year study which used quarterly monitoring data to evaluate groundwater flow and contaminant degradation.

**Authority:** A proposed Post-Closure Care Order has been prepared in accordance with applicable requirements of 30 Texas Administrative Code (TAC) Chapters 335 and 305, which have been adopted under the authority of the TEXAS HEALTH AND SAFETY CODE ANN., Chapter 361 (Vernon Supp.), and Section 5.103, Texas Water Code Ann. (Vernon Supp.). The TCEQ and the EPA have entered into a Joint Permitting Agreement (JPA) whereby EPA accepts the applicant's information submitted through the State as a Federal application for purposes of implementing the Hazardous and Solid Waste Amendments (HSWA) of 1984.

### Technical Information:

This proposed Post-Closure Order has been prepared to address (1) post-closure care and (2) groundwater compliance monitoring.

1. Post-Closure Care includes the following:

- A. General provisions for post-closure care of the subject facility areas (30 TAC Chapter 335, Subchapter F);
- B. Requirement to establish and maintain financial assurance to provide facility post-closure care in the amount of \$333,960 (2008 dollars) (30 TAC § 335.179);
- C. Requirement to control access to the facility (40 CFR § 264.14);
- D. Applicable standard provisions and other requirements pertaining to the management of industrial solid waste, including hazardous industrial solid wastes (40 CFR Part 264, Subpart B);
- E. Standard post-closure care requirements for land based units:
  - 1. Maintain all storm water conveyance structures, as applicable, in good functional condition;
  - 2. Maintain proper cover, as applicable, on closed units to prevent erosion, ponding, and water infiltration, and to maintain identified benchmarks;
  - 3. Maintain facility perimeter fence and ensure that all entrances are manned or locked, and ensure TCEQ access to the facility; and
  - 4. Perform groundwater monitoring and, if applicable, any necessary corrective action.
- F. The Waste Management Area includes the locations of the permitted and non-permitted units (i.e., Tanks and Container Storage Areas)

2. AEESC proposes to continue the existing groundwater monitoring program at the facility which includes the following elements:

- A. Defines the point of compliance and requires AEESC to perform groundwater monitoring at specified wells for the duration of 30 years.
- B. Defines the Groundwater Protection Standard (GWPS) which specifies hazardous constituent concentration limits to be monitored at the point of compliance by operation of the compliance monitoring program.
- C. Authorizes Alternate Concentration Limits (ACLs) for the GWPS that are protective of human health and the environment in accordance with 30 TAC Section 335.160(b). The ACLs are based on Surface Water Quality Standards specified in 30 TAC Chapter 307, Media-Specific Concentrations specified in or calculated in accordance with 30 TAC Chapter 335, Subchapter S, and Maximum Contaminant Levels specified in 40 CFR Part 141, National Primary Drinking Water Regulations, Subparts B and G.
- D. Specifies procedures to determine if the GWPS has been exceeded at the point of compliance.
- E. Requires the permittee to provide financial assurance for compliance monitoring, operation of the plume management zone, and sampling and analysis costs for the duration of compliance period(s).

- F. Requires proof of financial responsibility for \$1,411,366 (2008 dollars) which addresses both post-closure care and groundwater compliance monitoring.

Subsurface Geology

At the uppermost terrace where the main facility is located, groundwater is typically encountered approximately 23 feet below the ground surface (BGS, approximately 320 feet above Mean Sea Level). The uppermost aquifer at the facility is the Queen City Formation. The Queen City includes four shallow groundwater zones that are monitored at the site, the perched zone, the shallow zone (27 feet BGS), lower saturated zone (33 feet BGS), and the basal zone (50 feet BGS). These four layers are separated by interbedded layers of silt and clay. The Queen City Formation is separated from deeper aquifers by the Reklaw Formation, a silty clay aquitard which prevents vertical migration. Groundwater flow is generally toward the south/southeast. Contamination has been verified in the Perched, Shallow, and Lower Zones. Compliance monitoring is required at the waste management area.

Public Concerns

The waste management units referenced by this PCO are closed and removed. The groundwater contamination is wholly contained within the AEESC owned-property boundary. There have been no current local concerns about the closed facility, although there was public concern when the facility was active.

Public Notice

The Applicant has provided public notice of the requested order in accordance with 30 TAC Chapter 39, Subchapter N.

Decisions regarding the order provisions issued under State authority may be reconsidered in response only from the Applicant, the Executive Director, or the Public Interest Counsel, in accordance with the provisions of 30 TAC §55.156.

Preliminary Decision

- General: This proposed Post-Closure Order, if issued, meets all the statutory and regulatory requirements.
- Special: The proposed Post-Closure Order does not authorize variances or alternatives to required standards.

Sources of Additional Information

- A. Technical information:
  - Srinath Venkat, Project Manager
  - Industrial & Hazardous Waste Permits Section
  - Waste Permits Division
  - Texas Commission on Environmental Quality
  - Mail Code MC 130
  - P. O. Box 13087
  - Austin, Texas 78711-3087
  - 512/239-2334

TECHNICAL SUMMARY AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Page 4

B. Procedural and public hearing information:

Office of Public Interest Counsel  
Texas Commission on Environmental Quality  
Mail Code MC 103  
P. O. Box 13087  
Austin, Texas 78711-3087  
512/239-6363

Prepared by:

Srinath Venkat, Project Manager  
Industrial & Hazardous Waste Permits Section  
Waste Permits Division  
Texas Commission on Environmental Quality

## CHRONOLOGY OF EVENTS

- 1980: Gibraltar Chemical Resources (GCR) begins operation of the Main Facility.
- November 3, 1980: Texas Water Commission (TWC, predecessor of TNRCC and TCEQ) issues Permit No. WDW-186 to GCR for use of a deep injection well for the management of hazardous wastes. The permit is renewed in July 1985, and September 1996.
- July 11, 1984: The Texas Air Control Board issues Air Permit No. AQ-9429.
- July 2, 1985: TWC issues Permit No. WDW-229 to GCR for use of a second deep injection well for the management of hazardous wastes. The permit is renewed in September 1996.
- April 1990: GCR discovers leak in laboratory building drain line and notifies TWC. GCR implements soil assessment program consisting of soil borings and soil sample collection to delineate the extent of soils impacted by released chemicals.
- July 1990: GCR excavates impacted soil from laboratory drain line release. Soils are disposed at the Chemical Waste Landfill in Louisiana. Confirmation samples were split with the TWC and site cleanup was confirmed and approved.
- August 1990: Impacted groundwater identified during drilling of pier holes as part of construction of a roof over the Drum Dock Processing area.
- October 1990: Preliminary shallow groundwater assessment performed in Drum Dock Processing Area. The preliminary assessment included drilling 8 soil borings and installing temporary monitoring wells. One of the temporary wells became background assessment well MW-1. All other wells were plugged and abandoned following sampling.
- February 1991: Two deep borings (74 feet) were drilled and sampled at perimeter locations to determine site stratigraphy. Four water-bearing zones were identified, now termed the Perched Zone, the Shallow Zone, the Lower Zone, and the Basal Zone.
- February 1991: One upgradient well (MW-6) and four downgradient wells (MW-2 through MW-5) were installed.

- June 1991: Monitoring well MW-3S (now identified as RW-3SR) installed to conduct a pumping test. MW-3D was installed to assess the Lower Zone.
- January 1992: Upgradient well MW-6 was plugged and abandoned, and replaced by well MW-6A, after it was determined MW-6 had been screened across both the Perched and Shallow Saturated Zones.
- July 1992: Additional well installation, consisting of:  
 Shallow Zone (eventual recovery wells) RW-2SR and -4SR.  
 Shallow Zone: MW-7S, -7I, MW-7D, and MW-8S.  
 Deep Zone: MW-7D, and -8D.
- November 1992 to February 1993: The Perched Zone groundwater recovery trench installation.
- July 19, 1993: The first Agreed Order between GCR and the TCEQ (then Texas Natural Resource Conservation Commission or TNRCC) is finalized.
- August 1993: Additional downgradient assessment wells installed, consisting of:  
 Shallow Zone: MW-9S, -10S.  
 Lower Zone: MW-9D, -10D.
- February 1994: Shallow Zone recovery well system activated.
- August 1994: Additional assessment wells installed, consisting of:  
 Perched Zone: MW-DD1, -DD2, -DD3, -DD4.  
 Perched Zone wells downgradient of recovery trench: T-1, T-2, T-3.  
 Shallow Zone wells: MW-11S, -12, and -13.  
 Lower Zone wells: MW-2D, -4D, and -11D.  
 Basal Zone well: MW-3DD.
- October 1994: Slug tests performed on wells MW-3D and MW-3DD.
- November 1994: Monitoring well MW-DD3 was replaced due to screen failure.
- December 31, 1994: AEESC purchases GCR.
- January 1995: Facility name changed to AEESC.
- December 1996: Well installations, consisting of:  
 Perched Zone: MW-14S, -15S.

Shallow Zone: MW-14M, -15M.

- January 1997: Replacement well installations, consisting of:  
Shallow Zone: MW-1R, -2R, -3R, -4R, -5R, -12R.
- March 1997: Well installations, consisting of:  
Perched Zone: MW-16, -17, -18.  
Shallow Zone: MW-17S, -18S.
- March 20, 1997: AEESC terminates receipt of hazardous waste from off-site, except for wastes from the Bulk Transfer and Rail Transfer facilities. AEESC initiates Closure Activities.
- April 4, 1997: AEESC withdraws its Air Permit.
- November 12, 1997: Agreed Order between TCEQ and AEESC finalized. Replaces 1993 Agreed Order.
- December 1997: Closure Plan for AEESC Winona facilities submitted to TCEQ, and revised in February 1998.
- January 1999: Sampling and analysis plan for closure of soils submitted to the TNRCC. Initial sampling program conducted from January through February 1999.
- November 1, 1999: Closure Certification Report (Arcadis 1999b) submitted to TCEQ.
- May 2002: TCEQ issues Notice of Deficiency (NOD) letter to AEESC requiring additional information regarding site closure.
- June 2002: Deep injection well WDW-186 is plugged and abandoned.
- November 2002: Titanium Environmental Services (TES) provides responses regarding NODs to TCEQ.
- March 20, 2003: TCEQ issues letter regarding additional NODs.
- May to July 2003: Additional assessment activities conducted by Cook-Joyce, Inc. (CJI) and TES to address NOD comments. Monitoring wells TMW-1 through TMW-5 installed.
- July 2003: Supplemental closure investigation reports (CJI, 2003 and TES, 2003) prepared and submitted to TCEQ.
- May 2004: Geomatrix (GMX) conducts additional assessment activities to define extent of groundwater impact to the east of the Main

Facility to assess recovery system effects on shallow and perched zone potentiometric surfaces; and to collect additional surface soil samples to address ecological risk concerns. Well installations included:

Perched Zone: MW-19, -20, -21, -22

Shallow Zone: MW-19S, -20S, -21S, -22S.

In addition, GMX evaluates effects of recovery well and recovery trench system on shallow potentiometric surfaces; and collects surface soil samples in Wiggins Creek floodplain area downgradient of Main Facility to verify non-impacted soil conditions.

- March 7, 2005: TCEQ allows discontinuation of collection and management of storm water in contact with all non-operational aboveground RCRA units following a review of decontamination and confirmation rinseate sampling activities.
- April 2005: GMX submits a work plan for a Monitored Natural Attenuation response action. The work plan is revised to address TCEQ review comments, and finalized in July 2006.
- October 2005: TES installs additional groundwater monitoring wells to further evaluate the eastern and southern peripheral areas to support an MNA program. This field event includes installation of the following wells:  
Perched Zone: MW-24, -25, -26, -27, -28  
Shallow Zone: MW-23S, -24S, -26S, -27S  
Deep Zone: MW-21D, -22D, -23D, -24D, -26D, -27D.
- April 2006: TES installs additional groundwater monitoring wells to complete the current MNA evaluation well network:  
Deep Zone: MW-16D, -17D, and -18D.
- June 2006: MNA Pilot Study is implemented with the termination of recovery system operation, collection of potentiometric surface data, and geochemical data.

APPLICATION BY AMERICAN ECOLOGY § BEFORE THE  
ENVIRONMENTAL SERVICES §  
CORPORATION, WINONA, SMITH COUNTY § TEXAS COMMISSION ON  
TCEQ Docket No. 2008-1402-IHW § ENVIRONMENTAL QUALITY

## I. EXECUTIVE DIRECTOR'S RESPONSE TO PUBLIC COMMENT

The Executive Director of the Texas Commission on Environmental Quality (the Commission or TCEQ) files this Response to Public Comment (Response) on the Post-Closure Order (PCO) application filed by American Ecology Environmental Services Corporation (AEESC) and Executive Director's Preliminary Decision to issue the proposed PCO.

As required by Title 30 Texas Administrative Code (TAC) §55.156, before an application is approved, the Executive Director must prepare a response to all timely, relevant and material, or significant comments. The Office of Chief Clerk timely received one comment letter which is from Mrs. Greta Boultinghouse on behalf of Concerned Citizens of Winona-Overtown Area (CCWOA).

This Response addresses all timely public comments received, whether or not withdrawn. If citizens need more information about AEESC's PCO application, please call the TCEQ Office of Public Assistance at 1-800-687-4040. General information about the TCEQ can be found at our website at [www.tceq.state.tx.us](http://www.tceq.state.tx.us).

## II. BACKGROUND INFORMATION

### A. Description of Facility

AEESC operated a commercial hazardous waste storage, treatment, and disposal facility in Winona, Texas. The facility used 31 tanks, 5 container storage areas, and 3 miscellaneous units along with two Underground Injection Control (UIC) wells WDW-186 and WDW-229 for its hazardous waste management operations. The wastes managed at the facility include hazardous wastes, Class 1, Class 2 and Class 3 non-hazardous industrial solid wastes.

The facility ceased active waste management operations on March 20, 1997. On November 12, 1997, TCEQ issued an Agreed Order to require a soil investigation plan, a groundwater assessment, and closure of the facility. From November 1997 to 2006, AEESC conducted site assessment and corrective action to achieve closure of the surface units. The surface units were certified closed on August 22, 2006 and the UIC wells were plugged and closed on June 27, 2002 and October 27, 2008, respectively.

AEESC's facility is located approximately 11 miles north east of Tyler and 1.5 miles north of Interstate 20 near Winona, Smith County, Texas. The site is in the drainage area of Segment No. 0506 of the Sabine River Basin (North Latitude 32° 27' 37", West Longitude 95° 10' 46"). The main facility is located on an 8-acre tract of land within a larger tract of approximately 280 acres.

AEESC has applied to the TCEQ for a Post-Closure Order (PCO) to conduct post-closure care and compliance monitoring of the Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) at the facility. AEESC filed its application for a post-closure care order in compliance with 30 TAC Sections 305.50(b) and 335.2(m), which define who is eligible for a PCO and what materials must be submitted as part of an application to be reviewed by the Executive Director.

## B. Procedural Background

AEESC's application is for a Post-Closure Order. The Executive Director received the PCO application on January 3, 2008, and declared it administratively complete on January 18, 2008. AEESC published the Notice of Receipt and Intent to Obtain a Post-Closure Order in Spanish on January 30, 2008, in the *La Opinion*. The Notice of Receipt and Intent to Obtain a PCO was also published in English on February 1, 2008, in the *Tyler Morning Telegraph*. The Notice of Application and Preliminary Decision was published in Spanish on May 27, 2009, in the *La Opinion*. The Notice of Application and Preliminary Decision was published in English on May 27, 2009, in *Tyler Morning Telegraph*, and on June 3, 2009 in *Gilmer Mirror*. The public comment period ended on July 3, 2009. Since this application was administratively complete after September 1, 1999, this action is subject to the procedural requirements adopted pursuant to House Bill 801, 76<sup>th</sup> Legislature, 1999.

### Access to Rules, Laws and Records

#### Access to Rules, Laws and Records

The following web sites contain rules, laws, and other information that applies to this application.

Secretary of State website <http://www.sos.state.tx.us/tac/index.shtml>Funder

Statutes <http://www.capitol.state.tx.us/statutes/hs.toc.htm>

TCEQ Website <http://www.tceq.state.tx.us/>

Commission records on the Applicant are available for viewing and copying at TCEQ's Office of Chief Clerk's Office located at 12100 Park 35 Circle, 1<sup>st</sup> Floor of Building F, in Austin. The Application has also been available for review and copying at the TCEQ Region 5 Office in Tyler and at the Tyler Public Library, 201 South College Avenue, Tyler, Smith County, Texas.

If you would like to file a complaint, you may contact the Agency at (888) 777-3186 or you may contact the TCEQ Region 5 Office in Tyler at 903-535-5100. If the facility is found to be out of compliance, it may be subject to enforcement action.

## **III. COMMENTS AND RESPONSES**

### **Comment:**

Mrs. Greta Boultinghouse stated that the group Concerned Citizens of Winona-Overtown Area (CCWOA) was extremely active in monitoring the former Gibraltar Waste Injection Facility many years ago and met with AEESC representatives when the Corporation purchased Gibraltar Chemical

Resources. Mrs. Boultinghouse commented that many of the former members of the CCWOA have passed away, but that the younger members are still interested in keeping the community free of toxic waste. Mrs. Boultinghouse also commented that the members still worry about their underground water systems. Mrs. Boultinghouse requested that they be added to the mailing list so that they may be “fully and technically educated about the process.”

**Response:**

The Executive Director appreciates the concerns of the citizens and is proposing a Post-Closure Order that adequately addresses those concerns. The purpose of the proposed Post-Closure Order is to specify how AEESC must conduct post-closure care and compliance monitoring at the facility. At present, there are no active waste management operations at the facility and the waste management units are closed and removed. The soil and groundwater at the facility were contaminated due to releases from historical waste management operations in the RCRA permitted units, RCRA-regulated Solid Waste Management Units (SWMUs), and Areas of Concern (AOCs).

AEESC has demonstrated that the soils no longer pose a threat to human health and the environment by complying with 30 TAC Chapter 350, Texas Risk Reduction Program (TRRP). The groundwater contamination is wholly contained within the AEESC owned-property boundary within a plume management zone which consists of ground water monitoring wells completely surrounding the pool of groundwater contamination. The current groundwater sampling data indicates that the groundwater contamination plume is reducing in concentration over time. However, both the soils and groundwater must be closed to the same standard before final closure of the soils can be accepted. Therefore, the facility is subject to post-closure care until the final closure is achieved for both soil and groundwater.

After issuance of the Post-Closure Order, the facility will be required to continue monitoring the existing contamination and to prevent migration of any contamination to sources of drinking water such as surface water bodies and aquifers. The Executive Director recommends issuance because the monitoring requirements in proposed Order will protect human health and the environment.

Mrs. Boultinghouse on behalf of CCWOA will be added to the mailing list for the facility.

**IV. CHANGES MADE IN RESPONSE TO COMMENT**

No changes to the draft Post- Closure Order has been made in response to public comment.

Respectfully submitted,

TEXAS COMMISSION ON  
ENVIRONMENTAL QUALITY

Mark R. Vickery, P.G.  
Executive Director

Stephanie Bergeron Perdue ,  
Deputy Director, Office of Legal Services

Robert Martinez  
Director, Environmental Law Division

*Susan Jere White*

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TCEQ Environmental Law Division  
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REPRESENTING THE  
EXECUTIVE DIRECTOR OF THE  
TEXAS COMMISSION ON  
ENVIRONMENTAL QUALITY

To: The Office of the Chief Clerk

June 14, 2009

TEXAS  
COMMISSION  
ON ENVIRONMENTAL  
QUALITY

From: Greta Baultinghouse

2009 JUN 17 AM 11:04

CHIEF CLERKS OFFICE

IHW  
61758

OPA

JUN 17 2009

BY UB

Owentown Area  
Environmental area watchdog group,  
PO Box 116 Winona, TX 75792

Concerning:

Request to be added to the mailing list for

Notice of Application + Preliminary Decision

for Proposed Post-Closure Order

No. 32123 TCEQ Docket No. 2008-1402-1HW

Comments: Our group <sup>members</sup> were extremely active in  
the monitoring of the former Liberator Waste Injection  
facility many years ago (1993 → 2000) and met with  
the American Ecology Environmental Services Corp.  
upon several occasions after they had purchased  
the facility. Many of our former members have  
passed away, but younger members are still  
interested in keeping our communities free of  
toxic unsafe company waste. We also worry  
still about our underground water systems.  
Please add us to your list so we may be fully  
and technically educated about this procedure.

Sincerely,

Greta Baultinghouse