MODULE 1
STANDARD CONDITIONS

1.A. EFFECT OF PERMIT

1.A.1. The Permittee is allowed to store hazardous waste in containers and transfer, repackage, and add absorbent to waste in containers at the Clean Harbors Clive, LLC facility in accordance with the conditions of this permit. Treatment is allowed in compliance with Module 4 and Attachment 10 only. Any other treatment or storage of hazardous waste not authorized in this permit~~, or any other permit~~ is prohibited.

1.A.2. ~~Compliance with this permit during its term constitutes compliance, for purposes of enforcement, with the Utah Hazardous Waste Management Rules, except for those requirements not included in this permit which: become effective by statute, are promulgated under R315-13, or are promulgated under R315-7-26, R315-7-27, or R315-7-30. Specifically, c~~Compliance with this permit during its term constitutes compliance, for purposes of enforcement, with R315-~~8~~ 264 only for those management practices specifically authorized by this permit. The Permittee is also required to comply with Utah Administrative Code R315-124, 260, 261, 262, 263, 264, 265, 266, 268, and 270, ~~1, 2, 3, 4, 5, 6, 9, 12, 13, 14, 16, 50, and 101~~ as applicable.

1.A.3. Issuance of this permit does not convey property rights of any sort, or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations.

1.A.4 Compliance with the terms of this permit does not constitute a defense to any order issued or any action brought under Sections 3008, 3013, or 7003 of RCRA; Sections 106, 104, or 107 of CERCLA; or any other law providing for protection of public health or the environment, except as provided for in Condition 1.A.2.

1.A.5~~4~~. Attachments incorporated by reference are enforceable conditions of the permit, as are documents incorporated by reference into the attachments. Language in the modules of this permit supersedes any conflicting language in the attachments or documents incorporated into the attachments.

1.B. ENFORCEABILITY

Violations duly documented through the enforcement process pursuant to Utah Code Annotated 19-6-112, may result in penalties assessed in accordance with R315-102.

1.C. NO WAIVER OF AUTHORITY

The ~~Executive Secretary~~Director expressly reserves any right of entry provided by law and any authority to order or perform emergency or other response activities as authorized by law.

1.D. PERMIT ACTIONS

1.D.1. This permit may be modified, revoked and reissued, or terminated for cause, as specified in R315-270-41, R315-270~~3~~-4~~.~~2 and R315-270-43~~3-4.4~~. If the ~~Executive Secretary~~Director determines that cause exists to modify, revoke and reissue, or terminate this permit, the action will proceed in accordance with R315-124-5~~4-1.5~~.

1.D.2. This permit may be modified at the request of the Permittee in accordance with R315-270-42~~3-4.3~~. All modification requests involving design drawings, calculations, sketches, etc., shall be reviewed and stamped by a ~~qualified~~ Utah-registered professional engineer of the appropriate discipline. All relevant drawings, calculations, sketches etc., shall be included with the modification request.

1.D.3. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition.

1.D.4. If a conflict exists between conditions within this permit, the most stringent condition, as determined by the ~~Executive Secretary~~Director, shall be met.

1.E. SEVERABILITY

The provisions of this permit are severable and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby. Invalidation of any state or federal statutory or regulatory provision, which forms the basis for any condition of this permit, does not affect the validity of any other state or federal statutory or regulatory basis for said condition.

1.F. DUTY TO COMPLY

1.F.1. The Permittee shall comply with all conditions of this permit, except that the Permittee need not comply with the conditions of this permit to the extent and for the duration such noncompliance is authorized in an emergency permit, issued in accordance with R315-270-61~~3-6.2~~. Any permit noncompliance, except under the terms of an emergency permit, constitutes a violation of the Utah Solid and

Hazardous Waste Act, and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

1.F.2. Compliance with the terms of this permit does not constitute a defense to any order issued or any action brought under Sections 3008, 3013, or 7003 of the Resource Conservation and Recovery Act (RCRA), Sections 104, 106, or 107 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), or any other state or federal law providing for protection of human health or the environment.

1.G. PERMIT EXPIRATION

1.G.1. If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the Permittee must apply for and obtain a new permit, subject to Condition 1.G.2.

1.G.2. This permit shall expire ten years from the date of issuance. However, this permit and all conditions herein shall remain in force until the effective date of a new permit, if the Permittee has submitted a timely (at least 180 days prior to permit expiration or by an alternate date if requested by the ~~Executive Secretary~~Director), and complete application ~~under R315-3-2.5 and the applicable requirements of R315-3-2.6 through R315-3-2.20,~~ and through no fault of the Permittee, the ~~Executive Secretary~~Director does not issue a new permit with an effective date on or before the expiration date of the previous permit.

1.H. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE

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

1.I. DUTY TO MITIGATE

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

1.J. PROPER OPERATION AND MAINTENANCE

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control, and related appurtenances, which are installed or used by the Permittee to achieve compliance with the conditions of this permit.

Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.

1.K. <u>DUTY TO PROVIDE INFORMATION</u>

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

1.L. <u>INSPECTION AND ENTRY</u>

In accordance with R315-270-30(h)(i)~~2-12~~, the Permittee shall allow the ~~Executive Secretary~~Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

1.L.1. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept as required by the conditions of this permit;

1.L.2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

1.L.3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit;

1.L.4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Utah Solid and Hazardous Waste Act, any substances or parameters at any location;~~ and~~

1.L.5. Make record of inspections through photographic, magnetic, electronic, or any other reasonable means.

1.M. <u>CONSTRUCTION CERTIFICATION</u>

For a new hazardous waste management unit, and for a hazardous waste management unit being modified, the Permittee may not treat, store, or dispose of hazardous waste in the new or modified portion of the unit except as provided in R315-270-42~~3-4.3~~, until:

1.M.1. The Permittee has submitted to the ~~Executive Secretary~~Director:

a. A letter signed by the Permittee and a qualified Utah registered professional engineer stating that the unit or modified portion thereof has been constructed in compliance with this permit (i.e., in accordance with the approved design) and is operationally ready; and
b. Stamped as-built engineering plans and specifications with any deviations from the approved design noted and justification for each deviation provided; and

1.M.2. The ~~Executive Secretary~~Director, or an authorized representative, has reviewed and inspected the newly constructed facility and has notified the Permittee in writing that the unit was found to be in compliance with the conditions of this permit; or

1.M.3. The ~~Executive Secretary~~Director, or an authorized representative, has either waived the inspection, or has not, within 15 days of the date of receipt of the submission required in Condition 1.M.1., notified the Permittee of ~~an intent~~intent to inspect.

Insert Compliance Schedule (R315-270-33) here.

1.N. TRANSFER OF PERMIT

This permit is not transferable to any person except after notice to the ~~Executive Secretary~~Director and in accordance with R315-270-40~~3-4.1~~.

1.O. MONITORING AND RECORDS

1.O.1. Samples and measurements taken for the purpose of monitoring to demonstrate compliance with this permit shall be accurate and representative of the monitored activity.

1.O.2. The Permittee shall retain all records specified in R315-264-73 and those ~~of all monitoring information, including all calibration and maintenance records and, where applicable, all original strip chart recordings (or equivalent records) for continuous monitoring instrumentation, copies of all reports and records required~~

~~by this permit, the waste minimization certification required by R315-8-5.3 (40 CFR 264.73(b)(9) incorporated by reference), and records of all data used to complete the application for this permit,~~ required by this permit for a period of at least three years (~~,~~ unless specified otherwise ~~otherwise~~ elsewhere in this permit~~,~~) from the date of the sample, measurement, recording, report, certification, or application. This period may be extended by the ~~Executive Secretary~~Director at any time and is automatically extended during the course of any unresolved enforcement action regarding this facility.

~~1.O.3. Records of monitoring information shall include:~~

~~The date, exact place, and time of sampling or measurements;~~
~~The individual(s) who performed the sampling or measurements;~~
~~The date(s) analyses were performed;~~
~~The individual(s) who performed the analyses;~~
~~The analytical techniques or methods used; and~~
~~The results of such analyses including QA/QC data.~~

1.O.3~~4~~. All records required~~-~~ to ~~-~~be~~-~~ maintained under this permit, may be converted into ~~retrievable~~ electronic media or microfilm/fiche for storage in lieu of paper. However, all records must be available for review when requested by regulatory personnel. Copies of all records must be ~~made available i~~furnished upon request in a format requested by regulatory personnel.

1.O.4~~5~~. The Permittee shall maintain at the Clive facility, inspection records, manifests and related records documenting receipt and shipment of waste into and out of the facility, and waste tracking records. All other records and documents required by this permit may be maintained at the Aragonite facility.

1.O.5. The Permittee shall maintain a current copy of the permit at the facility.

1.P. REPORTING REQUIREMENTS

1.P.1. The Permittee shall report in writing to the ~~Executive Secretary~~Director, all instances of noncompliance within seven days from the time the Permittee becomes aware of the noncompliance. Reporting shall not excuse any noncompliance.

1.P.2. The Permittee shall give advance notice in writing to the ~~Executive Secretary~~Director of any planned changes in the permitted facility or activity which may result in noncompliance with requirements of this permit. Advance notice shall not constitute a defense for any noncompliance.

1.P.3. The Permittee shall orally report to the ~~Executive Secretary~~Director any noncompliance or other incident at the facility that may endanger human health or the environment within 24 hours from the time the Permittee becomes aware of the circumstances. The description of the occurrence and its cause shall include:

a. Name and telephone number of the person reporting the incident;
b. Date, time, and type of incident;
c. Description and quantity of material(s) involved;
d. The extent of injuries, if any;
e. An assessment of actual or potential hazards to the environment and human health outside the facility, where this applicable;
f. Estimated quantity and disposition of recovered material that resulted from the incident; and
g. Any other information necessary to fully evaluate the situation and develop an appropriate course of action.

A written submission shall also be provided within five days of the time the Permittee becomes aware of the circumstances. The written submission shall include the information required in the oral report and contain the steps taken or planned to prevent reoccurrence of the incident. ~~The Executive SecretaryDirector may waive the five day written notice requirement in favor of a written report within fifteen days.~~

1.P.4. The Permittee shall comply with the spill response, clean-up, and reporting requirements contained in R315-263-30 through R315-263-33~~9~~. Additionally, the Permittee shall notify the Tooele County Health Department, Environmental Health, of any spill requiring reporting as outlined in this condition.

1.P.5. The Permittee shall comply with the biennial report requirements contained in R315-264-75~~8-5.6~~. The biennial report shall be submitted to the ~~Executive Secretary~~Director by March 1st of each even numbered year.

I.P.6. If a significant discrepancy in a manifest of a load of waste arriving at the facility is discovered, the Permittee shall attempt to reconcile the discrepancy. If not resolved within 15 days, the Permittee shall immediately submit to the ~~Executive Secretary~~Director, a copy of the manifest and a written manifest discrepancy report describing the discrepancy and attempts to reconcile it. Significant discrepancies in quantity are: for batch waste (containerized loads), any variation in piece count, such as a discrepancy of one drum in a truckload, and for bulk waste, variations greater than ten percent in weight. Significant discrepancies in type are obvious differences that can be discovered by inspection or waste analysis, such as waste solvent substituted for waste acid, or toxic constituents not reported on the manifest or shipping paper.

1.P.7. If the ~~facility~~ Permittee receives a load of hazardous waste without an accompanying manifest, the Permittee shall submit to the ~~Executive Secretary~~Director an unmanifested waste report within 15 days of receipt of the unmanifested waste. The report shall identify the generator of the waste and provide details regarding the type, quantity, waste profile and disposition of the waste.

1.P.8. Whenever the Permittee becomes aware that it failed to submit any relevant facts in the permit application, or submitted incorrect information in the permit application or in any report to the ~~Executive Secretary~~Director, the Permittee shall submit such facts or corrected information within seven days of becoming aware of the error.

1.P.9. All reports, notifications, or other submittals required by this permit to be sent or provided to the ~~Executive Secretary~~Director should be sent by certified mail or other means of proof of delivery to:

~~Executive Secretary~~~~Director~~
~~Utah~~ Division of ~~Solid and Hazardous Waste Control Board~~ Waste Management and Radiation Control
P.O. Box 144880
Salt Lake City, Utah 84114-4880

All hand delivered submissions shall be made during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through~~–~~ Friday, at the Division of ~~Solid and Hazardous Waste~~Waste Management and Radiation Control, ~~Martha Hughes Cannon Building, 288~~ 195 North ~~1460~~ 1950 West, Salt Lake City, Utah.

1.P.10. Required oral notifications shall only be provided to the ~~Executive Secretary~~Director, an Environmental Manager, an Environmental Scientist or an Engineer at the Division of ~~Solid and Hazardous Waste~~Waste Management and Radiation Control, (801) ~~538~~536-~~6170~~0200, or if none of these individuals are available, to the Department of Environmental Quality's 24-hour answering service, (801) 536-4123.

1.Q. SIGNATORY REQUIREMENT

All applications, reports, or other information requested by or submitted to the ~~Executive Secretary~~Director shall be signed and certified in accordance with R315-270-11~~3-2.2~~.

1.R. CONFIDENTIAL INFORMATION

The Permittee may claim confidential any information required to be submitted by this permit in accordance with Utah Code Annotated, 63G-2-101 et seq and 19-1-306.

1.S. CORRECTIVE ACTION

1.S.1. The Permittee shall comply with R315-264-101~~8-6.12~~, which requires a permit to address corrective action for releases of hazardous waste including hazardous constituents, from any solid waste management unit at the facility, regardless of when the waste was placed in the unit.

1.S.2. If corrective action becomes necessary at a future solid waste management unit at the facility, the ~~Executive Secretary~~Director shall issue a schedule of compliance to the Permittee and/or initiate a permit modification in accordance with Condition 1.D~~.1~~.

1.T. REPORTING PLANNED CHANGES

The Permittee shall provide written notification to the Director, 15 days in advance, of any planned changes to a permitted hazardous waste management unit or activity that the Permittee does not consider as requiring a permit modification. The Director will notify the Permittee initially orally and then followup in writing within ten days that either it is agreed that no permit modification is required or the proposed changes require a permit modification. The Director may determine that the changes require a permit modification if the proposed changes modify the original design or operation that was represented in the application even though those portions of the application (i.e. design specifications, drawings, calculations, etc.) may not have been incorporated into the permit.

1.U~~T~~. DEFINITIONS

For purposes of this permit, the terms used herein shall have the same meaning as in Utah Administrative Code R315~~ or 40 CFR 260-270, with the definitions in R315 controlling, unless this permit specifically provides otherwise;~~. W~~w~~here terms are not defined in the regulations or the permit, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

~~"~~**Accept, Accepted or Acceptance**" means when Clean Harbors Clive, LLC has determined that a waste shipment received at the facility conforms to the approved profile (or all discrepancies have been resolved) and takes custody of the waste.

~~"Executive Secretary~~Director" means the ~~Executive Secretary~~Director of the ~~Utah~~ Division of ~~Solid and Hazardous Waste~~Waste Management and Radiation Control ~~Control Board~~.

Hazardous W~~w~~aste~~:~~ is as defined in ~~The definition of "hazardous waste" shall be as provided in~~ R315-261~~2~~-3 of Utah ~~Amin.~~Administrative Code ~~(40 CFR § 261.3)~~.

Infectious Waste means a solid waste that contains or may reasonably be expected to contain pathogens of sufficient virulence and quantity, that exposure to the waste by a susceptible host could result in an infectious disease (Utah Code Annotated Title 19 Section 6 Subsection 102).

Non-H~~h~~azardous ~~w~~Waste~~: "Non-hazardous waste"~~ refers to "solid waste" as defined in R312-~~2-2~~261-2 of Utah Admin. Code, ~~see also40 CFR § 261.2~~ which is not also "hazardous waste" as defined in R315-261-3~~2-3~~ of Utah Admin. Code ~~(40 CFR § 261.3)~~.

PCB(s)~~: The term "PCB(s)"~~ refers to polychlorinated biphenyls (PCB(s)) -or PCB Item(s) as defined in 40 CFR § 761.

PCB Waste~~:~~ refers to ~~Means any~~ waste (e.g. mixture of liquid, solid, or sludge etc. or any PCB-containing item) that contains PCBs regulated for disposal under 40 CFR § 761.

Profile~~:~~ ~~Means~~refers to the Waste Material Profile Sheet which a generator of a waste stream provides to Clean Harbors. The Profile ~~the electronic or other document that~~ describes a waste or waste stream and aids in the determination of acceptability of the waste or waste stream by ~~company~~Clean Harbors Clive, LLC.~~.~~

A **Radioactive~~: A "Radioactive"~~** material ~~shall be~~is any Byproduct or Source Material licensable by the Utah Division of Waste Management and Radiation Control or the Nuclear Regulatory Commission (NRC), or any waste found to have a count rate ~~as~~ measured one inch from the surface that exceeds background by three times or more. Ambient air background measurements shall be documented prior to sampling.

~~"~~**Receive or Received**~~"~~ means when a transport vehicle passes through the main~~front~~ gate or rail gate of the Clive facility.

Representative Ssample~~:~~ ~~Means~~is a sample ~~exhibiting~~that exhibits accurately the characteristics and composition of a waste or waste stream. ~~average properties of the whole waste.~~

~~"~~**Waste S~~s~~tream**~~"~~ means a waste that is, or ~~should~~ can be, identified as a line item on the Uniform Hazardous Waste Manifest from the same source of generation and delivered with the same load. Identical materials with the same waste profile number, that are listed on separate manifest line items only because of container size or type are considered to be the same waste stream.

~~Provisions of the Utah Solid and Hazardous Waste Act are cited as Utah Code Annotated 19-6-xxx.~~

~~Provisions of the Utah Hazardous Waste Management Rules are cited as Utah Administrative Code R315-xx-xxx.~~

MODULE 2
GENERAL FACILITY CONDITIONS

2.A. DESIGN AND OPERATION OF FACILITY

The Permittee shall maintain and operate the container management ~~areas~~ and the treatment container areas in a manner that minimizes the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to the air, soil, groundwater, or surface water which could threaten human health or the environment. Should such an incident occur, the Permittee shall investigate and determine the cause of the incident and implement corrective measures to prevent future occurrences. The ~~Executive Secretary~~Director may consider appropriate enforcement action, including the cessation of waste management activities, until adequate resolution of the problem occurs.

2.B. OFF-SITE WASTE RECEIPT NOTICE

When the Permittee is to receive hazardous waste from an off-site source, prior to the waste being shipped by the generator, the Permittee shall ~~must~~ inform the generator in writing that the Clean Harbors Clive, LLC facility has the appropriate permits for, and will accept, the waste the generator is planning on shipping. The Permittee shall keep a copy of this written notice as part of the operating record required by Condition 2.L.

2.C. PERMITTED AND PROHIBITED WASTE

2.C.1. The Permittee may accept for management at the facility, subject to the conditions in this permit, wastes identified by the waste codes in Utah Admin. Code ~~R315-2-9(d) thru (g), R315-2-10(e) and (f), and R315-2-11(e) and (f)~~R315-261-21 through R315-261-24 and Utah Admin. Code R315-261-31 through R315-261-33.

The Permittee may also accept for management at the facility, subject to the conditions of this permit, industrial waste, household hazardous waste, site generated waste, and regulated and non-regulated PCB waste

2.C.2. The following shall not be accepted for management at the facility at any time, regardless of the waste codes identified in Condition 2.C.1.:

a. Water reactive wastes or materials (defined as DOT Division 4.3, and in Utah Admin. Code R315~~-2-9(f)(1)(ii)-(iv)~~-261-23(a)(2) through– 261-23(a)(4)).
b. Pyrophoric wastes or materials (defined as DOT Division 4.2(1)).
c. Explosive wastes or materials (defined as DOT Forbidden, DOT Division 1.1, 1.2, and 1.3 explosives, DOT Division 4.1 Type A and Type B materials, and

in Utah Admin. Code R315-~~2-9(f)(1)(vi)-(viii)~~261-23(a)(6) through– R315-262-23(a)(8).~~).~~

d. Shock sensitive wastes or materials.

e. Radioactive wastes or materials (as defined ~~as having a count rate greater than three times the background value~~in Condition 1.T).

f. Any waste or material exhibiting the property, characteristic of reactivity, identified in Utah Admin. Code R315-261-23(a)(1)~~2-9(f)(1)(i)~~.

g. Any waste carrying a Utah ~~state~~State or EPA waste code not identified in Condition 2.C.1.

h. Infectious waste as defined in 19-6-102, UCA and Condition 1.T. (Definitions).

i. Compressed Gas Cylinders, unless they meet the RCRA definition of empty.

j. Waste carrying the waste code P999 as defined in Utah Admin. Code R315-~~264~~261-33~~2-11~~(e)~~(1)~~.

2.D. GENERAL WASTE ANALYSIS

The Permittee shall comply with the waste analysis procedures found in Attachment 1.

2.E. SECURITY

The Permittee shall comply with the security conditions and procedures found in Attachment 2.

2.F. GENERAL INSPECTION REQUIREMENTS

The Permittee shall comply with the inspection procedures found in Attachment 3.

2.G. PERSONNEL TRAINING

The Permittee shall comply with the personnel training procedures found in Attachment 4.

2.H. GENERAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE

The Permittee shall comply with the requirements of Utah Administrative Code R315-264-198~~8-2.8~~, ~~and~~ the requirements of all applicable National Fire Protection Association (NFPA) codes for those areas of the facility approved for operation and the applicable requirements of the International Fire Code.~~ prior to~~

~~September 30, 2005. The Permittee shall comply with R315-8-2.8 and the applicable requirements of the International Fire Code for modifications/additions approved for operation after this date.~~

2.I. PREPAREDNESS AND PREVENTION

The Permittee shall comply with the procedures found in Attachment 5 and maintain at the facility, the emergency equipment and systems identified in Attachment 5.

2.J. CONTINGENCY PLAN AND EMERGENCY PROCEDURES

The Permittee shall comply with the procedures found in Attachment 6.

2.K. MANIFEST SYSTEM

The Permittee shall comply with the manifest requirements of Utah Admin. ~~R315~~Code R315-262-23 through R315-262-25~~8-5.2~~, R315-264-70 through R315-264-72~~-8-5.4~~, and R315-264~~8-5.7~~-76.~~.~~

2.L. RECORDKEEPING

The Permittee shall maintain a written operating record at the facility in accordance with ~~R315-~~Utah Admin. Code R315-264-73~~8-5.3~~. ~~However. the~~However, the Permittee is only required to maintain at the Clive facility, inspection records, manifests and related records documenting receipt and shipment of waste into and out of the facility, and waste tracking records. All other records and documents required by Utah Admin. Code R315-264-73~~8-5.3~~ and this permit may be maintained at the Aragonite facility.

2.M. CLOSURE

The Permittee shall comply with Utah Admin. Code R315-264-111 and 112~~8-7~~ and close the facility in accordance with Attachment 7.

2.N. COST ESTIMATES FOR FACILITY CLOSURE

2.N.1. The facility's closure cost estimate shall be prepared and maintained in accordance with Utah Admin. Code R315-264-142~~8-8~~ and Attachment 7.

2.N.2. By May 15th of each year, the Permittee shall adjust the facility closure cost estimate for inflation for the previous calendar year in accordance with the procedures contained in Utah Admin. Code R315-~~40 CFR~~ 264~~.~~-142(b) and submit a copy of this adjusted closure cost estimate to the ~~Executive Secretary~~Director for approval. The Permittee shall maintain the latest adjusted closure cost estimate in the Operating Record. For each new hazardous waste unit placed into operation, an updated closure/post-closure cost estimate for the facility must be prepared which includes the new unit, prior to waste being placed on or into the new unit.

2.N.3. Whenever the current closure cost estimate increases to an amount greater than the face amount of the closure insurance, the Permittee, within 60 days after the increase, ~~must~~ shall either ~~cause~~ increase the face amount of the policy to ~~be increased~~ to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the ~~Executive Secretary~~Director or obtain other financial assurance as specified in Utah Admin. Code ~~40 CFR~~ R315-264~~.~~-143.

2.N.4~~3~~. The Permittee ~~must~~ shall revise the closure cost estimate whenever there is a change, approved by the Director, in the facility's closure plan as required by Utah Admin. Code R315-264-142(c)~~8-8~~.

2.O. FINANCIAL ASSURANCE FOR FACILITY CLOSURE

The Permittee shall demonstrate continuous compliance with the requirement to establish financial assurance for closure of the facility by obtaining and maintaining closure insurance. The closure insurance shall meet the requirements established in Utah Admin. Code R315-~~40 CFR~~ 264~~.~~-143(e)~~as incorporated by R315-8-8~~. Changes in the insurer issuing the closure insurance and changes in financial assurance mechanisms must be approved by the ~~Executive Secretary~~Director in accordance with the permit modification procedures contained in Condition 1.D.2.

2.P. LIABILITY REQUIREMENTS

2.P.1. The Permittee shall demonstrate continuous compliance with the requirements of Utah Admin. Code ~~40 CFR~~ 264~~.~~-147(a)(1)~~as incorporated by R315-8-8,~~ by obtaining and maintaining hazardous waste liability insurance for sudden accidental occurrences in the amount of at least one million U.S. dollars per occurrence with an annual aggregate of at least two million U.S. dollars, exclusive of legal defense costs.

2.P.2. The Permittee shall submit to the ~~Executive Secretary~~Director a Certificate of Liability Insurance worded as required by Utah Admin. Code R315-264-147(j)~~8-8~~. ~~Each year, within 30 days prior to May 15th, the Permittee shall submit to the Executive Secretary, a new certificate of liability insurance worded as required by R315-8-8.~~ The Permittee shall submit an approved certificate of hazardous waste liability insurance worded as required by Utah Admin. Code R315-264-151(i) ~~8-8~~ within 30 days of the receipt of the updated certificate of insurance.

2.P.3. Changes in the limits of liability provided by the policy shall require the issuance of a new Certificate of Liability Insurance. This new Certificate of Liability Insurance shall be submitted to the ~~Executive Secretary~~Director within 30 days after the effective date of the changes. Changes in liability insurance providers and liability coverage mechanisms must be approved by the ~~Executive Secretary~~Director in accordance with the permit modification procedures contained in Condition 1.D.2.

2.Q. INCAPACITY OF OWNER OR OPERATORS, GUARANTORS, OR FINANCIAL INSTITUTIONS

The Permittee shall comply with Utah Admin. Code ~~40 CFR~~ 264~~.1~~-148 ~~as incorporated by reference into R315-8-8.,~~ whenever necessary.

2.R. LAND DISPOSAL RESTRICTION REQUIREMENTS

The Permittee shall comply with the applicable land disposal restriction requirements in Utah Admin. Code R315-268~~13~~.

MODULE 3
STORAGE AND PROCESSING IN CONTAINERS

3.A. APPLICABILITY

The requirements of this module apply to the operation of hazardous waste container storage and processing areas at the facility. For purposes of this permit, the Thaw Unit – Unit 105; the Rail/Truck Transfer Bay located within Unit 535; the Truck Wash Bay located in Unit 604; and the Containerized Bulk Solids Storage Unit – Unit 106 (Subunits 1 through 3) are hazardous waste container storage and processing areas. For detail of all operational units at the Clive facility, refer to Attachment 9 (Design Drawings).

The Railcar to Trailer Transload Building~~,~~ (Unit 255~~,~~), 10-day drum transfer facility (Unit 101) and the Treatment Container~~,~~ (Unit 707)~~,~~ are not permitted for storage. Unit 255 is used as a transfer facility in accordance with the requirements of R315-263-~~6-1.~~12. Unit 707 is used for the addition of absorbent and/or reagent to a waste stream. Waste streams managed in ~~the Treatment Container~~Unit 707 are subject to the requirement of R315-262~~5~~, Hazardous Waste Generator Requirements and Attachment 8, Container Management. Unit 707 is located at the north end of Subunit 3 of Unit 106. A full description of Unit 106 is found in Section 1.1 of Attachment 8.

3.B. STORAGE CAPACITY

3.B.1. The Permittee may store wastes, as outlined in this module, in the container storage and processing areas specified below, up to the capacities listed. Storage of wastes in containers in any other area is prohibited. For purposes of determining compliance with the capacity limitations, all containers shall be considered to be full to their respective capacities with liquid hazardous waste~~.~~:

a. Thaw Unit (Unit 105) – 60,000 gallons
b. Rail/Truck Transfer Bay (Unit 535) – 23,560 gallons
c. Truck Wash Bay (Unit 604) and Containerized Bulk Storage Unit (Unit 106) – Combined Capacity – 1,847,871 gallons;
d. Unit 106, Subunit 1 – 448,440 gallons in the enclosed area, 181,800 gallons in the unenclosed area; Unit 106, Subunit 2 – 617,463 gallons; Unit 106, Subunit 3 – 600,168 gallons.
~~c.~~e. No more than four 30-yd^3 roll-offs (or volume equivalent) may be stored in Unit 604 at the same time.

3.B.2. The Permittee may process solid, semi-solid or liquid wastes in containers in the container storage and processing areas identified below. The processing is limited to waste transfer between containers and the addition of absorbent material to containerized waste. Any other treatment or processing of waste in containers or in the container management areas listed below is prohibited, except as provided in Condition 3.A above:~~.~~

a. Thaw Unit (Unit 105)
b. Rail/Truck Transfer Bay (Unit 535)
c. Truck Wash Bay (Unit 604)
d. Containerized Bulk Solids Storage Unit (Unit 106) – Subunits 1, 2 and 3

3.C. PERMITTED AND PROHIBITED WASTES

The Permittee may store and process hazardous waste specified in Condition 2.C in the container storage areas~~, the wastes identified in Condition 2.C.1., unless prohibited in Condition 2.C.2.~~

3.D. OPERATION AND MAINTENANCE

3.D.1. The Permittee shall maintain the container storage and processing areas and associated secondary containment systems as constructed and in accordance with the drawings contained in Attachment 9.

3.D.2. Modifications to the drawings for the container management areas and associated secondary containment systems are allowed only in accordance with the permit modification requirements in Condition 1.D.

3.D.3. The Permittee shall not proceed with construction or installation of a new or modified container management area or secondary containment system without the approval of the Director~~ unless construction is allowed as outlined in Condition 1.D~~ .

3.D.4. The Permittee shall maintain the container storage and processing areas and any ancillary equipment and secondary containment systems in good repair. Routine maintenance shall be performed at sufficient frequency to ensure that the container storage and processing areas and any ancillary equipment and secondary containment systems remain in good repair. Malfunctions and deterioration shall be corrected as expeditiously as possible.

3.D.5. The Permittee ~~container storage and processing areas and associated secondary containment systems~~ shall ~~be~~ design~~ed~~, construct~~ed~~, maintain~~ed~~ and operate~~d~~ the container storage, processing areas and associated secondary containment systems to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden discharge of hazardous waste or hazardous waste constituents to the air, soil, groundwater, surface water or any other location which could threaten human health or the environment.

3.D.6. The Permittee shall comply with the provisions specified in Attachment 8, Container Management.

3.E. OPERATING REQUIREMENTS

3.E.1. If a container holding hazardous waste is not in good condition (e.g., severe rusting, bulging, apparent structural defects) or it begins to leak, the Permittee shall transfer the hazardous waste from such container, or the container of hazardous waste itself, to a DOT acceptable container, as soon as possible, but no later than 24 hours from the time the problem was first discovered. If the damaged or leaking container is a large container (e.g., roll-off), instead of transferring the waste to another container or repackaging the leaking container within 24 hours, the following option may be followed:

3.E.1.a. If the large container is subject to R315-264-1080 through R315-264-1091 (Air Emission Standards for Tanks, Surface Impoundments, and Containers) ~~Subpart CC,~~ the Permittee shall attempt an initial repair within 24 hours of discovery of the leak. If repair efforts are unsuccessful at stopping the leak, the container shall be placed in Unit 604 within 24 hours of discovery of the leak and the leak repaired within five calendar days of discovery. If the leak cannot be repaired within five days of discovery, the contents of the container ~~must~~ shall be transferred to a container in good condition after which normal management of the waste ~~can~~ may resume ~~normal management at the facility~~in accordance with this permit. The date and time of leak detection, repair efforts, and container movements shall be documented in the operating record, which is defined in Utah Admin. Code R315-264-73.

3.E.1.b. If the large container is not subject to R315-264-1080 through R315-264-1091~~Subpart CC~~, the Permittee shall attempt an initial repair within 24 hours of discovery of the leak. If repair efforts are unsuccessful at stopping the leak, the container shall be placed in an enclosed storage location at the facility within 24 hours of discovery of the leak and the leak repaired within ten calendar days of discovery. If the leak cannot be repaired within ten days of discovery, the contents of the container ~~must~~ shall be transferred to a container in good condition after which normal management of the waste ~~can~~ may resume ~~normal management at the facility~~in accordance with this permit. The date and time of leak detection, repair efforts, and container movements shall be documented in the operating record.

3.E.2. The Permittee shall assure that wastes or other materials in containers are compatible with the containers. Containers must be made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste stored in them, so that the ability of the containers to contain the waste is not impaired.

3.E.3. The Permittee shall not place incompatible waste and~~or~~ materials in the same container.

3.E.4. The Permittee shall not place hazardous waste or materials in an unwashed container that previously held an incompatible waste or material.

3.E.5. The Permittee shall separate ~~A~~ any container holding a waste that is incompatible with any waste or other material ~~shall be separated~~ from the ~~other~~ incompatible waste or materials by placing it an alternative storage location in accordance with Attachment 8, Container Management.

3.E.6. The Permittee shall always keep ~~Containers~~ containers~~shall always be~~ closed except when ~~the Permittee is~~ adding or removing wastes or adding absorbent, as allowed by this permit~~, to or from the containers~~.

3.E.7. The Permittee ~~Containers~~ shall not be open~~ed~~, handle~~d~~, store~~d~~, or manage~~d~~ containers in a manner which may rupture the containers or cause them to leak.

3.E.8. Within ten days of arrival at the Clean Harbors Clive, LLC (Clive) facility, the Permittee shall accept and place all hazardous waste into permitted container storage at Clive or ship the waste off-site to another facility. Arrival for purposes of this condition is the day the waste enters the rail or truck gate of the Clive facility.

3.E.9. Within in ten days ~~F~~from the time that the Permittee hooks the site rail engine to railcars left by Union Pacific~~ or the Rail-to-Trailer Transfer Station (Unit 255), Clive has ten days to transfer~~the Permittee shall transfer all hazardous waste in the railcar ~~and get it~~ into permitted storage or ~~sent~~ship the waste off site in accordance with applicable rules.~~ Waste managed in the Rail-to-Trailer Transfer Station (Unit 255) are also subject to this requirement.~~

3.E.10~~9~~. The Permittee shall maintain sufficient aisle space in the container storage and processing areas to allow the unobstructed movement of personnel, fire protection equipment, discharge control equipment, and decontamination equipment to all areas of the container storage and processing areas. Sufficient aisle space shall be maintained such that access can be made to each container to check for leaks, container damage or deterioration, and also to view the label.

3.E.11~~0~~. The Permittee shall not locate containers holding ignitable or reactive waste, within 50 feet of the facility's property line.

3.E.1~~1~~2. No smoking shall be allowed within 50 feet of any of the container management areas. The Permittee shall take precautions to prevent accidental ignition or reaction of waste. The waste shall be separated and protected from sources of ignition or reaction including, but not limited to: open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, or mechanical), spontaneous ignition (e.g., from heat-producing chemical reactions), and radiant heat. Such sources of ignition shall be allowed only after adequate additional precautions have been taken to prevent ignition of wastes or other materials and a hot work permit has been issued.

3.E.1~~2~~3. The Permittee shall maintain a record of the location of each container in the container storage and processing areas. This record shall be updated prior to the end of the shift and shall document all containers and their locations. A history of the movement of each container of waste will be maintained from the time it is placed into one of the permitted container management areas until it is manifested off-site. The Permittee shall comply with the waste tracking provisions of Attachment 8, Container Management.

3.E.1~~3~~4. The Permittee shall not store ~~Small~~ small containers of hazardous waste (i.e., those having a capacity of 120 gallons or less) shall not be stored in ~~Unit 604,~~ in Unit 106, Subunits 2 and 3, or in the unenclosed portion of Subunit 1, Unit 106.

3.E.1.5 Small containers (<120 gallons) and intermediate bulk containers (<350 gallons) may be stored marked areas of Units 105, the enclosed portion of Unit 106, Subunit 1 and 604.

3.F. CONTAINMENT

3.F.1 The ~~secondary containment systems~~Permittee shall ~~be~~ operate~~d~~ and maintain~~ed~~ the secondary containment systems such that they are free of both cracks and gaps and are impervious to contain leaks, spills, and accumulated precipitation. ~~until the collected material is detected and removed~~.

3.F.2. When the facility is staffed, the Permittee shall empty all liquid and remove accumulated waste from a sump or secondary containment area no later than 24 hours after discovering the contents. All liquids and other materials collected from a sump or secondary containment area shall be ~~considered a~~managed as hazardous waste ~~and shall be managed appropriately~~.

3.F.3. The Permittee shall maintain a minimum ~~Containment~~ secondary containment ~~for~~ of 10% of the maximum capacity or the volume of the largest container, whichever is greater, ~~shall be maintained~~ for each container storage and processing area identified in Condition 3.B.1.

3.G. ORGANIC AIR EMISSION STANDARDS

3.G.1. The Permittee shall control air emissions from each of the containers of hazardous waste stored in the container storage and processing units in accordance with the applicable provisions of R315-264-1082 and R315-264-1086~~8-22 (specifically 40 CFR 264.1082 and 264.1086)~~.

3.G.2. The requirements contained in Condition 3.G. do not apply to a container that has a design capacity less than or equal to 0.1 m^3 (about 26 gallons).

3.G.3. ~~A~~ The following containers ~~is~~ are exempt from the standards specified in ~~this~~ condition 3.G ~~provided that the container is one of the following~~:

3.G.3.a. A container for which all hazardous waste in the container has an average volatile organic (VOC) concentration at the point of waste origination of less than 500 parts per million by weight (ppmw). The average VO concentration shall be determined using the procedures specified in R315-~~8-22 (specifically 40 CFR~~ 264~~.~~-1083(a)~~)~~. The Permittee shall review and update, as necessary, this VO determination at least once every 12 months following the date of the initial determination for each type of waste managed in containers at the facility. The initial review shall be conducted within 30 days of the effective date of this Permit. The reviews shall be documented in the Operating Record.

3.G.3.b. A container for which the organic content of all hazardous waste in the container has been reduced by an organic destruction method or removal process that achieves any one of the conditions contained in R315-~~8-22 (specifically 40 CFR~~ 264~~.~~-1082(c)(2)~~)~~. For these wastes, the necessary determinations to demonstrate organic destruction or removal shall be made using the applicable procedures specified in R315-~~8-22 (specifically 40 CFR~~ 264~~.~~-1083(b)~~)~~.

3.G.3.c. A container for which all hazardous waste in the container either: meets the numerical concentration limits for organic constituents, applicable to the hazardous waste, as specified in R315-~~13-1, 40 CFR~~ 268-40 in the table “Treatment Standards for Hazardous Wastes” ~~by reference~~ (LDR Treatment Standards), or the ~~organic~~ hazardous constituents in the waste have been treated by the treatment technology established by the EPA for the waste in R315-~~13-1, 40 CFR~~ 268-40 in the table “Treatment Standards for Hazardous Wastes”~~by reference~~ (LDR Treatment Technology Standards), or have been removed or destroyed by an equivalent method of treatment approved by the Director pursuant to R315-~~13-1, 40 CFR~~ 268-40(b)~~ by reference~~ .

3.G.4. The Director may at any time perform or upon the Director’s request, ~~that~~ the Permittee shall perform an average VO concentration determination of a hazardous waste managed in a container exempted from using air emission controls under the provisions of R315-~~8-22 (specifically 40 CFR~~ 264~~.~~-1082(d)~~)~~.

3.G.5. For containers of hazardous waste in the container storage and processing units having a design capacity greater than 0.1 m^3 (about 26 gallons) and less than or equal to 0.46 m^3 (about 119 gallons), the Permittee shall control air pollutant emissions from the containers in accordance with Level 1 standards.

3.G.5.a. Containers using Level 1 controls shall be one of the following:

3.G.5.a.i. A container that meets the applicable U.S. DOT regulations on packaging hazardous materials for transportation as specified in R315-~~40 CFR~~ 264~~.~~-1086(f).

3.G.5.a.ii. A container that is equipped with a cover and closure devices that form a continuous barrier over the container openings such that when the cover and closure devices are secured in the closed position, there are no visible holes, gaps, or other open spaces into the interior of the container. The cover may be a separate cover installed on the container, or may be an integral part of the container structural design.

3.G.5.a.iii. An open-top container in which an organic-vapor suppressing barrier is placed on or over the hazardous waste in the container such that no hazardous waste is exposed to the atmosphere.

3.G.5.b. A container complying with Level 1 controls shall be equipped with covers and closure devices, as applicable to the container, that are composed of suitable materials to minimize exposure of the hazardous waste to the atmosphere, and to maintain the equipment integrity for as long as the container is in service.

3.G.5.c. Whenever a hazardous waste is in a container using Level 1 controls, the Permittee shall install all covers and closure devices for the container, as applicable to the container, and secure and maintain each closure device in the closed position, except as follows:

3.G.5.c.i. Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material as follows:

3.G.5.c.i.A. When filling the container to the intended final level in one continuous operation, the Permittee shall promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.

3.G.5.c.i.B. When filling the container with discrete quantities or batches of material intermittently over a period of time, the Permittee shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either the container being filled to the intended final level; the completion of a batch loading after which no additional material will be added to the container within 15 minutes; the person performing the loading operation leaving the immediate vicinity of the container; or the shutdown of the process generating the material being added to the container, whichever condition occurs first.

3.G.5.c.ii. Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container as follows:

3.G.5.c.ii.A. Opening of the closure device or cover shall be allowed at any time if the container is empty as defined in R315-261-7.

3.G.5.c.ii.B. If discrete quantities or batches of material are removed from the container but the container does not meet the definition of an empty container, the Permittee shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes, or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.

3.G.5.c.iii. Opening of a cover or closure device is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste. Following completion of the activity, the Permittee shall promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.

3.G.5.c.iv. Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device that vents to the atmosphere, is allowed during normal operations for the purpose of maintaining the internal pressure of the container in accordance with the design specifications. The device shall be designed to operate with no detectable organic emissions when the device is secured in the closed position.

3.G.5.c.v. Opening of a safety device, as defined in R315-~~8-22 (specifically 40 CFR~~ 265~~.~~-1081~~)~~, shall be allowed at any time conditions require doing so to avoid an unsafe condition.

3.G.5.d. The Permittee shall inspect containers subject to Level 1 controls and their covers and closure devices as follows:

3.G.5.d.i. In the case when a hazardous waste is already in the container at the time the Permittee first accepts possession of the container at the facility and the container is not emptied within 24 hours after the container is accepted at the facility, the Permittee shall visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the Permittee shall make first attempts at repair no later than 24 hours after detection and the repair shall be completed as soon as possible, but not later than five calendar days after detection. If repair of a defect cannot be completed within five calendar days, then the hazardous waste shall be removed from the container and the container shall not be used to manage hazardous waste until the defect is repaired.

3.G.5.d.ii. In the case when a container used for managing hazardous waste remains at the facility for a period of 1 year or more, the Permittee shall visually inspect the container and its cover and closure devices initially and thereafter, at least weekly, to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the Permittee shall make first attempts at repair no later than 24 hours after detection and the repair shall be completed as soon as possible, but not later than five calendar days after detection. If repair of a defect cannot be completed within five calendar days, then the hazardous waste shall be removed from the container and the container shall not be used to manage hazardous waste until the defect is repaired.

3.G.6. For containers of hazardous waste at the container storage and processing units having a design capacity greater than 0.46 m^3 (about 119 gallons) that are not in light material service (see definition in R315-265~~, 40 CFR 265.~~-1081)~~)~~, the Permittee shall control air pollutant emissions from the containers in accordance with Level 1 standards identified in this module.

3.G.7. For containers of hazardous waste at the container storage and processing units having a design capacity greater than 0.46 m^3 (about 119 gallons) that are in light material service (see definition in R315-265~~-1081,~~ 40 CFR 265.1081) ~~),~~ the Permittee shall control air pollutant emissions from the containers in accordance with Level 2 standards.

3.G.7.a. Containers using Level 2 controls shall be one of the following:

3.G.7.a.i. A container that meets the applicable U.S. DOT regulations on packaging hazardous materials for transportation as specified in R315~~40 CFR~~-264~~.~~-1086(f).

3.G.7.a.ii. A container that operates with no detectable organic emissions as defined in R315-265-~~, 40 CFR 265.~~1081 ~~by reference~~ and determined in accordance with the procedure specified in R315-~~40 CFR~~ 264~~.~~-1086(g).

3.G.7.a.iii. A container that has been demonstrated within the preceding 12 months to be vapor-tight by using 40 CFR part 60, Appendix A, Method 27 in accordance with the procedure specified in R315-~~40 CFR~~ 264~~.~~-1086(h).

3.G.7.b. Transfer of hazardous waste in or out of a container using Level 2 controls shall be conducted in such a manner as to minimize exposure of the hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices for handling flammable, ignitable, reactive, or other hazardous materials. Examples of waste transfer procedures that are considered to meet the requirements of this condition include: A submerged-fill pipe or other submerged-fill method to load liquids into a container; a vapor-balancing system or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations; or a fitted opening in the top of a container through which the hazardous waste is filled and subsequently purging the transfer line before removing it from the container opening.

3.G.7.c. Whenever a hazardous waste is in a container using Level 2 controls, the Permittee shall install all covers and closure devices for the container, and secure and maintain each closure device in the closed position, except as follows:

3.G.7.c.i. Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container as follows:

3.G.7.c.i.A. When filling the container to the intended final level in one continuous operation, the Permittee shall promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.

3.G.7.c.i.B. When filling the container with discrete quantities or batches of material intermittently over a period of time, the Permittee shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either the container being filled to the intended final level; the completion of a batch loading after which no additional material will be added to the container within 15 minutes; the person performing the loading operation leaving the immediate vicinity of the container; or the shutdown of the process generating the material being added to the container, whichever condition occurs first.

3.G.7.c.ii. Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container as follows:

3.G.7.c.ii.A. Opening of the closure device or cover shall be allowed at any time if the container is empty as defined in R315-261-7.

3.G.7.c.ii.B. If discrete quantities or batches of material are removed from the container but the container does not meet the definition of an empty container, the Permittee shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.

3.G.7.c.iii. Opening of a cover or closure device is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste. Following completion of the activity, the Permittee shall promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.

3.G.7.c.iv. Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device that vents to the atmosphere is allowed during normal operations for the purpose of maintaining the internal pressure of the container in accordance with the design specifications. The device shall be designed to operate with no detectable organic emissions when the device is secured in the closed position.

3.G.7.c.v. Opening of a safety device, as defined in R315-~~8~~264~~-22~~-1081~~ (specifically 40 CFR 265.1081)~~, shall be allowed at any time conditions require doing so to avoid an unsafe condition.

3.G.7.d. The Permittee shall inspect containers subject to Level 2 controls and their covers and closure devices as follows:

3.G.7.d.i. In the case when a hazardous waste is already in the container at the time the Permittee first accepts possession of the container at the facility and the container is not emptied within 24 hours after the container is accepted at the facility, the Permittee shall visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the Permittee shall make first attempts at repair no later than 24 hours after detection and the repair shall be completed as soon as possible, but not later than five calendar days after detection. If repair of a defect cannot be completed within five calendar days, then the hazardous waste shall be removed from the container and the container shall not be used to manage hazardous waste until the defect is repaired**.**

3.G.7.d.ii. In the case when a container used for managing hazardous waste remains at the facility for a period of 1 year or more, the Permittee shall visually inspect the container and its cover and closure devices initially and thereafter, at least weekly, to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the Permittee shall make first attempts at repair no later than 24 hours after detection and the repair shall be completed as soon as possible, but not later than five calendar days after detection. If repair of a defect cannot be completed within five calendar days, then the hazardous waste shall be removed from the container and the container shall not be used to manage hazardous waste until the defect is repaired.

3.G.8. The Permittee shall comply with the applicable recordkeeping and reporting requirements contained in R315-264-1089 and~~ 8-22~~ R~~(specifically 40 CFR 264.1089 and ~~315-264~~.~~-1090~~)~~.

3.H. UNIT 106 SUSPENDED SUBUNIT OPERATIONS

3.H.1. At the Permittee's option, active waste management operations at one or two subunits in Unit 106 may cease and associated permit requirements for the subunit(s), including inspections, precipitation removal and management as a hazardous waste and maintaining financial assurance coverage, may be suspended provided the Permittee complies with the procedures outlined below:

3.H.1.a. The Permittee shall submit a Class 1 modification request requiring approval from the Director. The modification request shall identify the subunit(s) to be suspended from active operations and outline a tentative schedule for waste removal, subunit decontamination and confirmatory sampling. The Permittee may proceed with decontamination activities provided timely notification is provided to the Director regarding decontamination activities.

3.H.1.b. The Permittee shall decontaminate the subunit proposed for deactivation as outlined in Section 1.9 of Attachment 7, Closure Plan.

3.H.1.c. The Permittee shall submit to the Director, the analytical results and supporting documentation demonstrating that the decontamination standard has been achieved for the subunit being ~~seeking~~ deactivated~~ion~~.

3.H.1.d. Upon demonstrating to the Director that a subunit has achieved the decontamination standard outlined above, the Director, as formal action on the Class 1 modification request requiring prior agency approval, will change the status of the subunit(s) from active to suspended. The necessary changes to the permit will be made and notification of this decision will be provided to the Permittee in writing. This change in status of a subunit is not effective until the Permittee receives notification of the decision from the Director in writing. Modified permit conditions shall not be implemented and financial assurance for closure of the affected subunit(s) shall be maintained until the Permittee receives notice of the change in status from active to suspended for the subunit(s).

3.H.2. To reactivate a previously suspended subunit, the Permittee shall submit a Class 1 modification request requiring approval from the Director. The modification request shall identify proposed permit changes, including an updated closure cost estimate and modified financial assurance documentation, necessary to reactive the subunit. The necessary changes to the permit will be made and notification of the decision on the modification request to reactivate a subunit will be provided to the Permittee in writing. Active waste management on a previously suspended subunit may not begin until the Permittee receives written notice from the Director of the change in status.

3.H.3. The Permittee may suspend active waste management operations for up to two subunits. If the Permittee wishes to suspend operations at all three subunits, the applicable closure requirements of Condition 2.M. and Attachment 7, Closure Plan, apply.

3.H.4. The current status of the Unit 106 subunits is as follows:

Subunit 1 – Active
Subunit 2 – Active
Subunit 3 – Active

Module 4

Containment Building

MODULE 4
CONTAINMENT BUILDING

4.A. APPLICABILITY

4.A.1. The building on ~~Containment~~ Unit 106 ~~Building, subunits 1, 2 and 3, is are currently~~is currently permitted ~~for operationsubject to the3~~to operate as a Containment Building and is subject to Module 4 and Attachment 10, Management of Waste in Containment Building. ~~are not applicable When the Permittee has complied with Condition 4.I.3 the Unit 106 Building is a Containment Building.~~.

4.A.2. The requirements of this module shall apply to the storage of non-containerized waste stored in the Containment Building. The Containment Building is the enclosed area of Subunit 1 of Unit 106. The Permittee shall comply with Utah Administrative Code R315-264-1100 through R315-264-1101 ~~8-20~~ and all ~~of the~~ applicable conditions of this~~e~~ Permit.

4.A.3. Following the completion of a permit modification in accordance with Condition 4.I.3, t~~T~~he Permittee may store hazardous and non-hazardous waste in the Containment Building ~~. Storage shall be~~ in accordance with the provisions in Attachment 10, Management of Waste in Containment Building ~~(Attachment 10)~~.

4.A.4. The Permittee shall not ~~Operation~~ operate~~of~~ the Containment Building ~~is prohibited~~ when containers are being stored in the building. Container storage is addressed in Module 3 and Attachment 8, Container Management, of this Permit.

4.B. PERMITTED AND PROHIBITED WASTE INDENTIFICATION

4.B.1. The Permittee may store hazardous waste identified in Condition 2.C.1 in the Containment Building subject to the terms of this Permit and as described below:

AREA CAPACITY			
Containment Building Designation	**Capacity**	**Description of Hazardous Waste**	**Hazardous Waste Codes**
Enclosed Area of Subunit 1 of Unit 106	448,440 gal. or 2,583 cy.	Bulk solids, without any free liquids, having less than 500 ppmw volatile organic compound (VOC) emissions, as determined utilizing EPA Method 21.	Reference: Condition 2.C.1.

4.B.2. The Permittee is prohibited from storing waste identified in Condition 2.C.2 of the Permit in the Containment Building.

4.C. CONDITION OF WASTE IN THE CONTAINMEMNT BUILDING

4.C.1. The Permittee shall maintain the waste in the Containment Building in a manner that prevents contact with precipitation so that neither run-off nor leachate is generated.

4.C.2. The Permittee shall protect the Containment Building from surface water run-on.

4.D. SPECIAL PROVISIONS FOR IGNITABLE OR REACTIVE WASTE IN THE CONTAINMENT BUILDING

4.D.1. The Permittee shall not place ignitable or reactive waste in the Containment Building.

4.E. COMPATIBILITY OF WASTE

4.E.1. The Permittee shall not place incompatible wastes in the Containment Building, ~~unless the procedures described in~~if the wastes could cause the Containment Building or secondary containment to leak, corrode or otherwise fail as specified in Utah Administrative Code R315-~~8-20 (40 CFR §~~ 264~~-~~.1101~~-~~(a)~~-~~(3)~~ by reference) are followed~~.

4.F. OPERATION AND MAINTENANCE OF WASTE IN THE CONTAINMENT BUILDING

4.F.1. The Permittee shall maintain the waste in the Containment Building in accordance with the drawings contained in Attachment 9, Design Drawings.

4.F.2. The Permittee shall incorporate any ~~Modifications~~ modifications to ~~the~~ ~~to~~ any drawings in Attachment 9, Design Drawings~~drawings shall be conducted~~ in accordance with the permit modification requirements in Condition 1.D.

4.F.3. The Permittee shall comply with the provisions of Attachment 10, Management of Waste in Containment Building.

4.F.4. The Permittee shall not store wastes in the Containment Building higher than 9.5 feet.

4.F.5. The Permittee shall comply with the waste tracking provisions of Attachment 10, Management of Waste in Containment Building.

4.G. OPERATING REQUIREMENTS

4.G.1. Upon arrival at the facility, the Permittee shall assign a unique identifying number ~~shall be assigned~~ to each load of waste that is being considered for storage in the Containment Building. This number shall be used to track the location at the facility and all data associated with the waste.

4.G.2. Prior to being placed in the Containment Building and before the cover on the container is removed, the Permittee shall verify that each container or transport vehicle containing waste being considered for inclusion in the Containment Building ~~shall be verified to have~~has less than 500 ppmw VOC. The VOC concentration will be determined utilizing EPA Method 21, as specified in R315-264-1063(b)(1)~~7-30~~ (40 CFR 60, Appendix A, by reference). The Permittee shall sample ~~A~~ a minimum of one sample per container~~ is required~~. The Permittee shall document ~~All~~ all VOC measurements ~~shall be documented~~ in the operating record.

4.G.3. If a container has a VOC concentration of 500 ppmw, or greater, the Permittee shall not store the waste ~~in the container shall not be stored~~ in the Containment Building.

4.G.4. The Permittee shall verify all f~~F~~acility personnel measuring the VOC concentration of the containers ~~shall be~~are trained in conducting EPA Method 21. The Permittee shall incorporate ~~Verification~~ verification of training ~~shall be incorporated~~ into the employee's training record in accordance with Attachment 4, Personnel Training.

4.G.5. The Permittee shall not place incompatible waste or materials in the Containment Building unless the requirements of Condition 4.E.1 are met and that compatibility testing as provided in EPA-600/2-80-076 or ASTM ~~method~~ D5058-90 Test Method A is conducted. The Permittee shall document ~~All~~ all compatibility testing results ~~shall be documented~~ in the operating record.

4.G.6. The Permittee shall not place hazardous waste or materials with free liquids in the Containment Building. If free liquids are documented upon off-loading, the Permittee shall immediately solidify the liquid ~~must be solidifiedaddressed~~ with absorbent and document the ~~event~~ solidification ~~documented~~ in the operating record.

4.G.7. The Permittee shall allow ~~Transport~~ transport vehicles carrying loads of waste that are to be placed in the Containment Building ~~shall~~ to enter the building through the south truck door and exit via the north truck door.

4.G.7.a. The Permittee shall ~~make sure~~ close ~~t~~t~~T~~he south truck door ~~shall remains closed at all times,~~ except when waste is being added to or removed from the Containment Building.

4.G.7.b. The Permittee shall maintain, at a minimum, a ten-foot wide truck lane on the west side of the Containment Building.

4.G.7.c. The Permittee shall utilize “Jersey” style barricades between the waste in the Containment Building and the truck lane. At a minimum, the barricades shall extend five feet beyond the northern-most point of the waste in the Containment Building.

4.G.7.d. The Permittee shall not store waste in the northern most 40 feet of the Containment Building. The 40 foot mark shall be marked on the floor of the Containment Building. This area shall be used for truck access for the loading and unloading of waste and shall remain clean at all times.

4.G.7.e. The Permittee shall place waste ~~shall be placed~~ in the Containment Building starting from the south end.

4.G.7.f. Prior to bringing a vehicle into the building, the Permittee shall ~~assure~~ maintain the truck lane and the area north of the waste in the Containment Building ~~are~~ in a clean manner to ensure that waste will not contact the tires of the transport vehicle.

4.G.7.g. The Permittee shall ~~assure~~ maintain the floor ~~is~~ in a clean manner a minimum of five feet beyond the rear of the transport vehicle.

4.G.7.h. The Permittee shall ~~assure~~ maintain the working face of the waste in the Containment Building is ~~maintained~~ approximately perpendicular to the longitudinal axis of the building, therefore minimizing the risk of contact with the transport vehicle.

4.G.7.i. The Permittee shall not allow the toe of the waste in the Containment Building ~~cannot~~ to~~will not~~ exceed six inches in height measured at the concrete berm and the point of contact with the Jersey style truck lane barricade.

4.G.8. The Permittee shall immediately clean up any waste that spills outside of the concrete zone onto compacted soil between the containment area and the walls of the Containment Building. The Permittee shall document the location of all spills ~~will be documented~~ on a plan view drawing of the Containment Building and incorporate~~d~~ the drawing into the operating record.

4.G.9. The Permittee shall minimize tracking of waste from the area by, prior to the vehicle leaving the building, replacing the cover on all containers or end dumps and cleaning the exterior of the transport vehicle and waste container. The waste cleaned off will be swept up prior to the vehicle leaving the building. All waste from the cleaning process will be managed as hazardous waste.

4.G.10. The Permittee shall inspect all containers and transport vehicles for cleanliness by the north truck door through which the vehicle/container exits. The Permittee shall inspect ~~Each~~ each vehicle that exits the Containment Building ~~will be inspected~~ and incorporate the results of the inspection ~~shall be incorporated~~ into the operating record. The inspection parameters shall include at a minimum: barcode/tracking number (unique identifier); truck number, whether vehicle and the container are clean; whether the container is properly closed; the inspector's name; and the date and time when the inspection occurred.

4.G.11. The Permittee shall station a pressure washer by the north truck door of the Containment Building. Should waste exit the Containment Building on a transport vehicle, the Permittee shall~~it will be~~ ~~decontaminated~~decontaminate the vehicle with the pressure washer or other tools as necessary. The Permittee shall remove any ~~Water~~ water and waste accumulated as a result of the decontamination procedures ~~will be removed from the containment~~ prior to the end of the shift in which it was accumulated. The Permittee shall manage any ~~Rinsate~~ rinseate and sediment ~~shall be managed~~ as hazardous waste.

4.G.12 Waste stored in the Containment Building that are in polypropylene sacks are subject to the requirements of Section 4.0 of Attachment 10.

4.H. CONTAINMENT

4.H.1. The Permittee shall operate and maintain the concrete containment system ~~shall be operated and maintained~~ so that it is free of both cracks and gaps and is sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed.

4.H.2. When the facility is staffed, the Permittee shall empty all liquids from the secondary containment areas immediately, but no later than 24 hours after discovery~~ing the contents~~. The Permittee shall manage ~~All~~ all liquids and other materials collected from a sump or secondary containment area ~~shall be managed~~ as a hazardous waste.

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4.I. CLOSURE OF CONTAINMENT BUILDING

4.I.1. The Permittee shall ~~The~~ clos~~eure of~~ the Containment Building ~~shall begin by the Permittee~~ by removing all hazardous waste and hazardous waste residues from the floor in accordance with the procedures in the Closure Plan (Attachment 7) and as specified in R315-264-110 through R315-264-120~~8-7~~ and R315-264-1102~~8-20~~.

4.I.2. If the Permittee wishes to discontinue the operation of the Containment Building and return the enclosed portion of Unit 106 to ~~its previous service (~~ container storage~~)~~, the Permittee shall submit a Class 1 permit modification request requiring prior written approval from the Director upon completion of the steps specified in Condition 4.I.1.

4.I.3. If the Permittee wishes to commence operation of the Containment Building, changing the service in the building from container storage to a Containment

Building, the Permittee shall submit a Class 1 permit modification that does not require prior written approval from the Director.

ATTACHMENT 1

WASTE ANALYSIS PLAN

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WASTE ANALYSIS PLAN

1.0 Introduction

The following describes the methods that shall be used to manage hazardous waste regulated by the Resource Conservation Recovery Act (RCRA), waste regulated by the Toxic Substance Control Act (TSCA), and waste regulated by the Utah Administrative Code (Utah Admin. Code) R315, Environmental Quality, Division of Waste Management and Radiation Control at the Clean Harbors Clive Facility, hereafter referred to as Clive or the Facility.

1.1 Overview

Clean Harbors Clive, LLC ~~(Clive or Clive facility)~~, Clean Harbors Aragonite, LCC (Aragonite) and Clean Harbors Grassy Mountain, LLC (Grassy Mountain) are all subsidiaries owned by Clean Harbors, Inc. and are located in Utah. Analytical laboratories operated at the Aragonite and Grassy Mountain facilities may be available to perform analytical work required to ~~operate~~receive waste into storage at the Clive facility. ~~As described below, Clive may also rely on the analytical or sampling expertise at Aragonite or Grassy Mountain.~~ Additionally, the Clean Harbors, Inc., Central Profile Group located in Norwell, Massachusetts, conducts~~provides~~ waste acceptance procedures~~tasks~~ for the Clive facility.

The objective of the waste analysis plan (WAP) is to describe the procedures ~~that will be undertaken~~used to obtain sufficient information about waste streams to operate the facility in accordance with applicable permit requirements. More specifically, the waste analysis plan ensures that wastes accepted are appropriate for management at the facility and that the wastes that arrive at the facility are the same as those evaluated in the profiling process.

This plan also anticipates that wastes will be generated on-site at Clive and must be managed in accordance with the permit.~~and will ultimately be accepted for storage and management at this facility.~~ ~~These~~ On-site generated wastes will be subject to the same waste analysis procedures as wastes accepted from off-site sources except for incoming load procedures which are not required for site-~~-~~generated waste~~s~~.

~~In accordance with R315-264-13(a), (b), and (c), R315-8-2.4, 40 CFR 264.13(b), (c), R315-270-14(b)(3), and 40 CFR 761, t~~This waste analysis plan addresses the RCRA regulated hazardous waste and TSCA regulated PCB wastes that are managed at the Clive facility in accordance with R315-264-13(a), (b), and (c), R315-270-14(b)(3), and 40 CFR 761. ~~This facility~~Clive operates as ~~both~~ a hazardous waste and PCB transfer, treatment and storage facility. ~~It should be noted that t~~Treatment, which occurs infrequently, is conducted in Unit 707.

The purpose of this WAP is to establish necessary sampling methodologies, analytical techniques, and overall procedures for characterization, acceptance, and management of hazardous wastes accepted or generated at the Clive facility.

This waste analysis plan establishes the following:

- The waste profile procedures for determining ~~that~~ whether waste streams will be acceptable for management at the Clive facility and for notifying the generator ~~that the~~whether their waste will be accepted.
- The waste load acceptance procedures for characterizing the wastes to verify the waste corresponds to the waste profile sheet and the waste manifest and for establishing appropriate management strategies.
- The frequency and methods for sampling and analyzing incoming loads of waste.
- The parameters for which each waste will be analyzed and the rationale for the selection of these parameters.

This waste analysis plan is supported by Standard Operating Procedures (SOPs) that provide detailed instructions to perform the waste profile review, waste acceptance, sampling,- and are incorporated by reference as part of this waste analysis plan. Aragonite and Grassy Mountain laboratory personnel may also use the same SOPs. The SOPs may be required for Utah certification of the Aragonite and Grassy Mountain laboratories and will be followed for compliance with the permit~~.~~ The Quality Assurance Plan is Appendix 1 of Attachment 1, the Waste Analysis Plan of this Permit.~~These procedures may be updated as appropriate without prior UDWMRC approval.~~

Most of the ~~waste placed into storage at the Clive facility are~~wastes placed into storage at the Clive facility are destined for the ~~Clean Harbors~~ Aragonite facility or the ~~Clean Harbors~~ Grassy Mountain facility. Thus, Clive must also adhere to the Quality Assurance Plans~~-~~ (QAP) for ~~each of the~~the Aragonite or Grassy Mountain facilities.

~~This waste analysis plan is supported by Standard Operating Procedures (SOPs). The SOPs are used by Aragonite and Grassy Mountain laboratory personnel as detailed instructions for performing the necessary procedures. The SOPs are incorporated by reference as part of this waste analysis plan as stand-alone documents. They are required for Utah certification of the Aragonite and Grassy Mountain laboratories and will be followed for compliance with the permit. These procedures may be updated as appropriate without prior UDWMRC approval.~~

1.2 Definitions

The following terms, applied within the WAP, shall have the following meaning:

- Accept, Accepted or Acceptance: When it has been determined that a waste shipment received at the Facility conforms to the approved profile (or all discrepancies have been resolved) and the Facility is willing to accept the waste for treatment or storage.

- Accuracy: The closeness of a result, or the arithmetic mean of a set of results, to the true, expected, or accepted value.

- Analysis: The term "analysis" means any method by which the value of a particular parameter is determined. These methods may include laboratory procedures specified in this WAP or may rely on knowledge of the waste or the process generating the waste.

- Analyte: The substance, element or compound for which a sample is analyzed to determine its presence or quantity. Also known as an analytical parameter.

- Analytical Method: A quantitative procedure for determining the specific concentration or characteristic of an analyte or analyte group.

- Approve, Approved, or Approval: This term is used in the context of evaluating a profile. Approval of a waste stream profile occurs after all necessary evaluations and analyses have been made and when the generator is notified.

- ARA means the Assistance Regional Administrator of the Office of Partnerships, Regulatory Assistance, EPA Region 8.

- Aragonite: Clean Harbors Aragonite, LLC.

- Audit, performance: A check on the performance of analysts. Sometimes categorized as a quantitative appraisal of quality.

- Bulk Load: The term "Bulk Load" means any individual waste shipment transported to the facility which is too large to be managed through the Container Management Building (e.g. an intermodal container, end-dump truck, tanker truck, railcar, etc.).

- Clean Harbors: Parent corporation of the Clive facility.

- Clive: Clean Harbors Clive, LLC.

- Debris - is solid material exceeding a 60 mm (approximately 2-inches) particle size that is intended for disposal and that is a manufactured object; plant, animal matter; or natural geologic material

- Director: Means the Director of the Division of Waste Management and Radiation Control.

- EPA: Means the United States Environmental Protection Agency.

- Generator: Generator or generator's authorized representative.

- Generator Knowledge: If generator knowledge is used to make a hazardous waste determination, information shall be available to substantiate the waste evaluation. Below are examples of information that can be used to make the waste evaluation required under R315-262-11 of Utah Admin. Code. Some or all, or other information can be used to make a hazardous waste determination applying generator knowledge.

1. Generator specific process flow diagram or narrative description of the process generating the waste (should be used in most cases);

2. Chemical makeup of all ingredients or materials used in the process that generates the waste (should be used in most cases);

3. List of constituents that the Facility know or have reason to believe are byproducts or side reactions to the process that produces the waste;

4. Material Safety Data sheets (MSDSs) or Safety Data Sheets (SDS) and/or product labels or substances used in the process that generates the waste;

5. Data obtained from approved methods of sampling and laboratory analysis by a Utah-Certified laboratory;

6. Data obtained from literature regarding waste produced from a similar process using the same ingredients and/or materials; and/or

7. Documentation of product specifications of input materials and output products.

- GMF: Clean Harbors Grassy Mountain, LLC Facility. .

- Hazardous waste: The definition of "hazardous waste" shall be as provided in R315-261-3 of Utah Amin. Code.

- Holding Time - The maximum time allowable between time of sampling and time of extraction and analysis, or both.

- Infectious Waste means a solid waste that contains or may reasonably be expected to contain pathogens of sufficient virulence and quantity that exposure to the waste by a susceptible host could result in an infectious disease (Utah Code Annotated Title 19 Section 6 Subsection 102).

- Incoming Load: The term "Incoming Load" refers to a load during the period starting when a waste shipment arrives at the facility through the time when a waste shipment is rejected or accepted. Incoming loads may be placed in a storage unit pending the acceptance procedure.

- Laboratory: Laboratory refers to a laboratory certified by the State of Utah's Bureau of Laboratory Improvement. Also referred to as a Utah-certified laboratory.

- Laboratory Manager: The "Laboratory Manager" or however named by certifying agencies, refers to the individual or designee responsible for implementation of the WAP.

- NELAP: Means the National Environmental Laboratory Accreditation Program.

- Non-hazardous waste: "Non-hazardous waste" refers to "solid waste" as defined in R315-261-2 of Utah Amin. Code which is not also "hazardous waste" as defined in R315-261.3 of Utah Amin. Code.

- Parameter: The term "parameter" is a specific material property, such as pH, specific gravity, viscosity, etc.

- Particle size: The largest dimension of a portion of a waste.

- PCB(s): The term "PCB(s)" refers to polychlorinated biphenyls (PCB(s)) or PCB Item(s) as defined in 40 CFR § 761.

- PCB Waste: Means any waste (e.g. mixture of liquid, solid, or sludge etc. or any PCB-containing item) that contains PCBs regulated by 40 CFR § 761.

- Pre-acceptance: The period in which a waste stream's acceptability for storage and treatment at the facility is evaluated, is referred to as "pre-acceptance." This is the same as the Profile Approval Period.

- Precision: The agreement or repeatability of a set of replicate results among themselves or agreement among repeated observations made under the same conditions.

- Pre-treatment: The term "Pre-treatment" refers to the period between acceptance and treatment of the waste.

- Profile: Means Waste Profile in electronic or other format that describes a waste or waste stream.

- Radioactive: A "Radioactive" material shall be any Byproduct or Source Material licensable by the Utah Division of Radiation Control or the NRC, or any waste found to have a count rate as measured one inch from the surface that exceeds background by three times or more.

- Receive or Received: Means when waste passes into the fenced portion of the facility.

- Representative sample: Means a sample exhibiting average properties of the whole waste.

- Screening Method: A semi-quantitative procedure for determination of the specific concentration, or characteristic of an analyte or analyte group.

- Waste Stream: Waste stream means a waste that is, or can be, identified as a line item on the Uniform Hazardous Waste Manifest from the same source of generation and delivered with the same load. Identical materials with the same waste profile number, that are listed on separate manifest line items only because of container size or type are considered to be the same waste stream.

2.0 Identification of Wastes to be Managed

2.1 Wastes Accepted

Materials acceptable for storage at the ~~Clean Harbors Clive, LLC (~~Clive~~)~~ facility include: wastes regulated under the Resource Conservation and Recovery Act (RCRA), the Hazardous and Solid Waste Amendments (HSWA), Superfund (CERCLA), and the Toxic Substances Control Act (TSCA). Clive may also accept exempt ~~non-~~hazardous waste such as household hazardous waste and industrial waste.

2.2 RCRA Wastes

Wastes ~~are~~ may be accepted in a variety of physical forms, including liquids, sludges, and solids. The physical nature of some waste may inhibit waste analysis such as steel plates, rocks, glass, etc.. ~~although these~~ ~~wastes~~ Wastes may not arrive in a 100% homogenous form and many waste streams ~~are~~ may be a mixture of hazardous wastes codes. Modules 2, 3 and ~~3~~ 4 of this permit identify the wastes and waste codes that are acceptable and prohibited for management in the waste management units at the Clive facility.

2.3 Transfer-~~-~~Only Waste

~~The~~ Clive ~~facility~~ may also temporarily (ten days or less) hold wastes manifested to another facility in accordance with ~~40 CFR~~R315-~~-~~263-~~.~~12. This is referred to as transfer operations. There are no restrictions on waste codes or waste types for transfer operations.

2.4 PCB Wastes

The types of PCB materials accepted for storage and held for transfer operations at the facility are summarized i~~o~~n Table 1. Definitions of the terms used in the table are given. These wastes are regulated under the Toxic Substances Control Act (TSCA), and may be commingled with RCRA-regulated wastes.

Table 1 Summary of TSCA Wastes for Storage		
PCB TYPE ~~1~~	**CLASS**	**TYPICAL PCB CONCENTRATION (DRY WT)**
Oil[1]	Liquid	0-90%
Water	Liquid	0-10%
Articles & Capacitors	Solid	20%
Miscellaneous Solids[2]	Solid	0-10%
Soils, Spill Cleanup[3]	Solid, Sludge	< 50%

1 Oil may be, but not limited to~~is a~~ dielectric liquid containing PCB and a chlorinated solvent and is hydrocarbon based.~~;~~
2 ~~m~~Miscellaneous solids means gloves, protective clothing, debris, etc.~~;~~
~~1~~3 ~~s~~Soils means dirt, earth, rock.

3.0 Waste Characterization

This section describes the procedures that are followed for: approving a waste stream for management at the facility~~,~~; sampling, ~~and~~ analyzing or inspecting incoming loads to verify the waste shipment~~,~~; and resolving discrepancies that may occur upon receipt of the waste. Six load acceptance procedures (sections 3.1 through 3.6) are provided ~~Because~~ because ~~of~~ the differences in physical form, packaging, sampling requirements and management options for the many waste types that will be handled at the facility~~, and since~~ require the ability to sample and~~/or~~ analyze ~~the~~ a variety of different waste matrices.~~ varies, different procedures are necessary.~~ Section 3.1 describes the procedures for most waste categories. Sections 3.2 through 3.6 describe alternate procedures.~~ for wastes with special circumstances that do not fit into the procedures of Section 3.1.~~ Clive will clearly document the waste characterization procedure (i.e., 3.1 through 3.6~~, 3.2 etc.~~) ~~that applies to~~utilized for each waste stream accepted at the facility. If more than one characterization procedure applies to a given waste stream, Clive will choose one of the applicable characterization procedures and document ~~that designation~~the procedure selected.

3.1 Routine Wastes

3.1.1 Profile Approval Process (Routine Wastes)

Before Clive can approve a waste stream for storage and/or treatment at the facility, (1) a generator ~~must~~shall provide a completed Waste Profile Sheet;~~ must be provided by the generator~~ (2) Clive ~~must~~shall confirm the waste may be managed at the facility pursuant to the terms of this~~its~~ permit; and (3) Clive ~~must~~shall confirm the waste shipment corresponds to the waste profile sheet ~~-~~and the accompanying waste manifest. ~~First, When the profile information is must be determined to be complete, then the waste profile it will be reviewed in order to assess the acceptability of the waste stream for management at the Clive facility. These waste profile approval procedures occur prior to notifying the generator that whether the waste stream is acceptable for management at the Clive facility.This is initially done by t~~The Central Profile Group and Clive ~~initially~~ review~~s~~ the Waste Profile Sheet to determine acceptability of the waste stream at Clive.

3.1.1.1 Waste Profile Sheet Review

Waste Profile Sheets contain information about the generator, physical and chemical characteristics of the waste, process generating the waste, applicable waste codes, applicable DOT shipping name, and a generator certification that the information provided is accurate. ~~The generator must also certify that the waste is not one of the types prohibited at the Clive facility. The following list details the minimum information that must be supplied as part of~~At a minimum, the Waste Profile Sheet must provide the following ~~inforamation~~information:

- Generator Information
    - Generator
    - Address
    - Facility Contact
    - Phone #
    - Generator EPA ID#
- General Information
    - Generating Process
    - Common Name of Waste
    - Rate of Generation
    - DOT Shipping Name
    - DOT Hazard Class
    - EPA Waste Codes
- Chemical Composition
    - List of Chemical Constituents and Concentrations
- Physical Description
    - Physical Description
    - Physical State
    - Phases/Layering
    - % Free Liquid

Regulatory Information

Regulated or Licensed Radioactive Waste
Regulated Medical Waste
Dioxin Listed Waste
TSCA Regulated Waste

Generator Certification

Certification signed, actual or electronic, by the generator that the information supplied on the Waste Profile Sheet and any attachments or supplements represent a complete and accurate description of the waste.

Assessment of Clive's Ability to Manage the Waste

Following the review of the Waste Profile Sheet by the Central Profiling Group and Clive personnel, Clive evaluates whether the waste stream ~~is evaluated for management~~ may be managed at the facility pursuant to the permit. Additionally, the~~This~~ evaluation includes a review of:

~~-This permit and other Appropriate appropriate documents to ensure that acceptance of the waste material at Clive will be in compliance with all applicable federal, state, and local laws and regulations.~~

-Existing storage facilities and capabilities to ensure that the waste material can be satisfactorily managed by Clive in accordance with this permit or a~~n~~ permitted off-site facility.

-The physical and chemical characteristics of the waste material to ensure that the material is compatible with other wastes present at the facility.

-The waste characterization information and available analytical data to ensure that the waste material does not contain any specific waste codes, compounds, or properties that are prohibited at Clive.

3.1.1.2 Decision to Receive Waste Stream

~~All profiles for all waste streams must be approved by the waste acceptance personnel. Final~~ The wa~~final wa~~ste profile ~~approval~~ decision is recorded electronically in the WINWEB system ~~at Aragonite~~ and includes the Central Profiling Group/Clive~~individual~~ personnel issuing the ~~approval and~~~~final~~ decision with ~~-~~a date/time stamp ~~of when the final approval was issued~~. Following approval of the ~~candidate~~ waste stream and prior to shipment of the waste, the generator ~~is~~ will be notified in writing that the Clive facility has the appropriate permits for, and will accept the waste stream in accordance with Condition 2.B. and ~~40 CFR §~~R315-264~~.~~-12(b).

If the waste is approved for management at the Clive facility, a unique identification number (the Profile Number) is assigned to the waste stream.

Review of Waste Profile Approval

~~At a minimum, t~~The waste profile evaluation is repeated when: (1) a generator notifies ~~Clive~~ Clean Harbors or Clive that the process generating the waste has changed (e.g., when the raw materials to the process have changed), (2) if Clive has reason to suspect that the waste is in non-conformance with profile documentation, or~~,~~ (3) at a minimum, annually.

For an annual waste profile recertification~~reuthorization~~, ~~Clive will ask~~ the generator ~~to note~~~~provide~~shall notify of any changes in the waste stream or ~~to~~ certify in writing that the waste stream has not changed. After a review of the generator's certification, the waste profile will be ~~recertified~~reauthorized. Or i~~I~~f there are changes in the waste stream which do not result in the waste stream being unacceptable, the waste profile will be updated and ~~recertified~~approved. If there are changes in the waste stream which result in the waste stream becoming unacceptable, the waste profile approval will be canceled and the generator notified.

~~If the waste is approved for management at the facility, a unique identification number (the Profile Number) is assigned to the waste stream~~
~~. This number is used to track the material through the subsequent stages of the waste management process.~~

3.1.2 Load Acceptance and Handling of Discrepancies (Routine Wastes)

3.1.2.1 Waste Acceptance Inspection, Samples and Analysis

~~If~~ Upon approval of the waste profile~~ is approved~~, the waste may be scheduled for shipment to the Clive facility. Upon arrival at the Clive facility, the accompanying waste manifest is reviewed and the waste is inspected, sampled, and analyzed (fingerprint) prior to it being accepted or commingled with other waste streams. This serves two purposes. First, it compares the waste characteristics of the actual load with those determined during~~in~~ the waste profile approval process and those listed on the waste manifest. Second, it establishes the characteristics that identify proper management of the waste while at the facility. ~~Facility~~Clive-generated wastes are not subject to the incoming load procedures described in this Section.

3.1.2.2 Waste Acceptance Samples Collected at Aragonite or Grassy Mountain

Incoming load samples collected at ~~Clean Harbors Aragonite, LLC (~~Aragonite~~)~~ or ~~Clean Harbors Grassy Mountain, LLC (~~Grassy Mountain~~)~~ may be used in lieu of taking samples of the waste when it arrives at the Clive facility only if:~~.~~ (1) The waste stream ~~must still have~~has an approved waste profile issued by Clean Harbors; (2) Clive has evaluated and documented that the waste may be managed in accordance with this~~e~~ permit; (3) Clive has received and reviewed~~ the~~ ~~Clive and~~ the analytical results from ~~sampling~~ samples collected at Aragonite or Grassy Mountain: (4) ~~must be sent to Clive. T~~Clive has verified in writing that the Aragonite or Grassy Mountain facility collecting the samples ~~must follow~~ complied with the ~~same~~ identical sampling methods ~~as~~ prescribed in this ~~plan~~permit; (5) the analysis was performed by ~~laboratory certified by the~~a State of Utah-certified laboratory for the analytical methods used; (6) Clive confirmed the analytical quality assurance is acceptable; and (7) the analytical results and the waste profile meets the acceptability criteria described below.~~.~~ ~~The analysis must be performed by Clean Harbors Aragonite, Clean Harbors Grassy Mountain, or an alternate off-site laboratory using the methods specified for incoming load samples in this plan. For example: a waste stream is shipped to Clean Harbors Aragonite where it is inspected, sampled and all the necessary incoming load analyses are conducted. These analytical results and the waste are sent to Clean Harbors Clive where the waste may be accepted without taking additional incoming load samples provided the analytical results from Aragonite the laboratory conform to the approved profile.~~

3.1.2.3. Waste Acceptance

Clive determines the acceptability of the waste based on:

-A~~the degree of a~~greement between the waste profile and the load analyses;
-permit conditions at the facility, which was determined prior to waste shipment; and
-the availability of proper waste management ~~techniques~~.

Waste is not officially accepted until the waste has been determined to match the waste profile and the waste manifest and any ~~or all~~ discrepancies have been adequately resolved and documented.

Discrepancies from Waste Profile

Potential discrepancies for waste shipments include differences in quantity and type between the manifested waste and the waste ~~actually~~ received. Waste type discrepancies are determined by inspection and by comparing the analyses of the incoming load to the waste profile information and the waste manifest.

Discrepancy in Quantity of Waste

To check for quantity discrepancies, the number of containers, or the weight if it is a bulk shipment, is reconciled with the uniform hazardous waste manifest. The number of containers must be correct; there is no tolerance. The weight of bulk shipments must be within ± 10% of the manifested weight. If discrepancies in the quantity of waste occur, the generator will be contacted by Clive ~~ean Harbors~~ to resolve the difference.~~Waste type discrepancies are determined by inspection and by comparing the analyses of the incoming load to the profile information and the manifest description.~~

Discrepancy in Type of Waste

Changes in the proper shipping name, additional waste codes, etc. are documented ~~noted~~ in the operating record. If any of these conditions occur, the manifest is considered discrepant and actions will be taken to reconcile the discrepancy. ~~If discrepancies in the quantity of waste occur, the generator will be contacted by Clive Clean Harbors to resolve the difference.~~ If discrepancies of waste type occur, one or more of the following actions ~~occur~~ may be used to resolve the discrepancy:

- The sampling and analytical data are reviewed to verify that they are indeed correct.

- Additional analyses may be necessary to resolve discrepancies or to re-profile the waste. Container shipments with waste discrepancies are sampled as described in Section 4.8. The sample composites are analyzed for the acceptance parameters listed in Table 2. Each bulk liquid, sludge, and solid shipment with waste discrepancies is sampled as described in Section 4.9 and analyzed for the acceptance parameters listed in Table 2. If the container or bulk waste can be managed and is not prohibited at the Clive facility, the waste may then be accepted.

- A Clive facility employee contacts ~~The~~ the generator or authorized representative ~~is contacted~~. In cases where the waste is amenable to management at the facility, the discrepancy ~~is~~ may be resolved between Clive and the generator, or authorized representative, which may require~~. This may involve creating~~ a new profile for the waste or updating the existing profile. Waste that is not amenable to acceptance by Clive is rejected within ten days of receipt.

Resolution of Waste Discrepancy

The manifest discrepancy resolution~~will be resolved~~ between Clive and the generator, or authorized representative, ~~and~~ will be noted on the manifest which becomes part of the operating record. If the discrepancy is not resolved within 15 days, the ~~Executive Secretary~~Director of the ~~Utah Solid and Hazardous Waste Control Board~~ Division of ~~Solid and Hazardous~~ Waste Management and Radiation Control ~~is~~ shall be notified in writing.

~~Container shipments are sampled as described in Section 4.8. The sample composites are analyzed for the acceptance parameters listed in Table 2. If the wastes can be managed and are not prohibited at the facility, the containers can then be accepted.~~

~~Each bulk liquid, sludge, and solid shipment is sampled as described in Section 4.9 and analyzed for the acceptance parameters listed in Table 2. If the waste can be managed and is not prohibited at the facility, the waste can then be accepted.~~

Accepted Waste

Upon acceptance, the waste is placed into storage. The wastes may be stored and/or repackaged prior to shipment off-site. Each movement of a waste within the facility, during which any change in its characteristics may occur, makes the waste subject to additional inspection, sampling, and analysis to determine the appropriate handling and management of the waste. All ~~of the~~ analyses needed for the acceptance and storage functions are performed during incoming load verification. These are not repeated unless it is known or believed that the waste characteristics may change during storage or repackaging.

Prior to any mixing or commingling of any wastes, the wastes in question are subject to compatibility testing as described in EPA-600/2-80-076 or ASTM method 5058-90 Test Method A, prior to being commingled/mixed. If the wastes ~~pass the compatibility testing~~are compatible, the mixing/commingling may proceed. Incompatible wastes are not mixed/commingled.

3.2 Waste that Inhibit Analysis

This section is designed for characterizing wastes where the material is homogeneous and could be sampled, but not easily analyzed. Examples include steel plates, glass, rocks, small identical containers or objects, certain kinds of DOT 1.4, 1.5, and 1.6 explosives, transformer internals (windings, cores), and sealed containers such as capacitors and other sealed electrical devices that have historically contained PCBs. This category of material differs from debris (described in Section 3.3) in that it is homogenous (i.e., the contents of the entire drum or rolloff is all the same single material). It is limited to material consisting of relatively large objects that could not be readily analyzed. ~~(e.g., it would not apply to h~~For the purposes of this section, homogenous material such as soils, powders, pellets, etc~~.)~~. are not considered waste that inhibit analysis.

3.2.1 Additional Requirement for Profile Approval Process (Waste that Inhibits Analysis)

The profile approval process for waste that inhibits analysis is the same as that described in Section 3.1.1 with the exception of sampling~~.~~ The generator ~~will~~ must also supply a picture or a detailed written description of the waste stream ~~(meeting~~ that meet the requirements of ASTM method D4979-89~~)~~.

3.2.2 Load Acceptance and Handling of Discrepancies (Waste that Inhibits Analysis)

The handling of discrepancies for waste that inhibits analysis is the same as that described in Section 3.1.2.

Prior to accepting the waste, Clive shall inspect the contents of each container or each bulk load ~~are inspected~~ for physical appearance. The person inspecting the material will provide a detailed written description or photo, or will transmit video to waste acceptance personnel at Clive so that they can easily determine if the waste matches the profile. Other information necessary to properly store the material (e.g., potential incompatibilities) will be obtained and evaluated from the profile information supplied by the generator.

If the waste consists of containers that contain more than four ounces of a material that could be analyzed, a representative sample of the material will be collected and analyzed for the parameters on Table 2 to determine appropriate management and storage of the waste.

3.3 Heterogeneous Debris

Debris differs from the material described in Section 3.2 in that it contains a wide variety of materials. In virtually all situations debris has one thing in common: non-hazardous materials are contaminated with organic and inorganic hazardous constituents. For example, it may contain a mixture of spill absorbent, Tyvek® suits, rubber booties and gloves, and paper towels. PCB-~~-~~contaminated "shredder~~white~~ fluff" falls into this category. Items that may not be part of a debris profile include containers containing any liquid. Sampling of waste streams that are subject to technology based treatment standards identified in R315-268-42 is not required. ~~Although it may be possible to collect a sample of the debris, it would be difficult to collect a representative sample. If a representative sample could be collected, it would likely be very difficult to analyze since it would contain relatively large objects.~~

3.3.1 Profile Approval Process (Heterogeneous Debris)

The profile approval procedures for heterogeneous debris are identical to those for waste that inhibits analysis (Section 3.2.1).

3.3.2 Load Acceptance and Handling of Discrepancies (Heterogeneous Debris)

The procedures for accepting loads and handling discrepancies involving heterogeneous debris wastes are the same as those for waste that inhibits analysis (Section 3.2.2).

3.4 ~~MSDS/~~Off-~~SDS~~Specification Wastes

This category of wastes is limited to material that is in its original unopened packaging ~~(~~as a product~~)~~. The packaging and labeling ~~is~~ must still be in good condition so that the contents are easily identified. The ~~Material Safety Data Sheet (MSDS) or~~ Safety Data Sheet (SDS) for the material ~~is~~ must also be available.

3.4.1 Additional Requirements for Profile Approval Process (~~MSDS~~ Off-Specification ~~/SDS~~ Wastes)

The profile approval process for this category of wastes (~~MSDS/~~ Off-Specification~~SDS~~ wastes) is identical to that for routine wastes (3.1.1) except that the ~~MSDS/~~SDS is submitted with the waste profile in lieu of sampling.

3.4.2 Load Acceptance and Handling of Discrepancies (~~MSDS/~~ Off-Specification~~SDS~~ Wastes)

The handling of discrepancies for ~~MSDS/~~Off-specification~~SDS~~ wastes is the same as for routine wastes described in Section 3.1.2.

Prior to accepting the load, each container is inspected to ensure that the labeling is consistent with the ~~MSDS/~~SDS. If containers in the load have been opened, they will be re-opened and the material will be visually compared to material in one of the unopened containers to ensure the material is the same. This will be documented in the operating record. Other information necessary to properly manage the material (e.g., flash point, potential incompatibilities, etc.) will be obtained and evaluated from the profile information supplied by the generator.

3.5 Transfer Operations

These are wastes that are manifested to ~~another~~ a facility other than Clive, but are held temporarily (ten days or less) at the ~~Clive~~ facility during transit. The transfer waste may be part of a load for which some of the material is destined for ~~the~~ Clive ~~facility~~. The waste destined for the Clive facility shall meet the waste acceptance procedures provided in sections 3.1, and 3.2, 3.3, 3.5 or 3.6. When ~~this material~~transfer waste are ~~is~~ shipped off-site, the original manifest accompanies the waste. This differs from wastes which are accepted for storage and then subsequently ~~shipped~~ manifested to another facility. A new manifest is created with ~~the~~ Clive ~~facility~~ as the generator in this situation. The Clive facility will comply with the transporter emergency response requirements in R315-263-30 and 31 for these wastes.

3.5.1 Profile Approval Process (Transfer Operations)

No profile approval procedures are necessary.

3.5.2 ~~Load Acceptance and~~ Handling of Discrepancies (Transfer Operations)

The load is not accepted but rather is held on a temporary basis. There are no requirements for sampling or ensuring ~~the~~ waste~~s~~ are comparable to a profile. ~~The Clive facility will comply with the transporter requirements in Subpart C of 40 CFR §263 for these wastes.~~ ~~Also, if smaller~~When containers are off-loaded from a trailer, the containers will be inspected to ensure they are in good condition.

3.6 PCB-~~-~~Only Wastes

These PCB-only wastes are not hazardous waste under State of Utah or Federal RCRA regulations. These wastes include~~, but not limited to,~~ PCB Liquids, PCB Transformers/Bushings, PCB Debris (PPE, rags, wood, paper, gloves, etc. and empty PCB drums) and PCB Capacitors/Light Ballast.

3.6.1 Profile Approval Process (PCB-~~-~~Only Wastes)

PCB only wastes are categorized according to one of the previous waste categories defined in this plan and ~~the~~ follow the profile approval process for that category. The profile also requires the generator to certify that the waste is RCRA non-hazardous PCB-~~-~~only as defined above.

3.6.2 Load Acceptance and Handling of Discrepancies (PCB-~~-~~Only Wastes)

PCB--only waste are categorized according to one of the waste categories identified in this plan and follow the procedures for load acceptance and handling discrepancies as outlined for that category of waste. In addition, PCB wastes will be identified by review of the manifest, shipping papers, visual inspection, labels on containers, and the Waste Profile Sheet supplied by the generator. If regulated PCBs are discovered in a waste whose ~~manifest~~ profile did not identify PCBs as a contaminant, a manifest type discrepancy will exist. The generator will be required to resolve ~~explain how the PCBs came to be in the waste~~the discrepancy. If the explanation indicates that the waste should have been manifested as PCBs, the applicable portions of the 40 CFR Part 761.215, ~~Subpart K, which may include~~shall be followed which include the filing an "Manifest Discrepancy~~Unmanifested Waste~~ Report." ~~will be followed~~.

Also during the incoming load evaluation~~,~~ :

-All PCB Containers, PCB Article Containers, and PCB Articles not in containers will be marked with the appropriate PCB Mark (if not already marked by the generator) to comply with the marking requirements of 40 CFR §761.40.

-Each PCB container from a shipment will be visually inspected to verify that it is not leaking. If a leaking container of PCB waste is discovered during the inspection, it will be re-packaged or overpacked to prevent further leakage. The spill area will be decontaminated in accordance with 40 CFR Part 761 Subpart G. In addition, the transport vehicle bed will be inspected. In the case of flatbeds or vans carrying PCB wastes, water or other free liquid found on the bed will be collected and managed as PCB waste or treated as a PCB spill and cleaned in accordance with 40 CFR Part 761 Subpart G ~~by the appropriate responsible party~~.

~~Table 2 - Storage and Verification (Fingerprint) Analyses~~

~~**Parameter**~~	~~**Rationale for Selection**~~
~~Physical Description~~	~~Used to determine the general characteristics of the waste stream and in evaluating the incoming load against the approved profile. Also used to ensure correct grouping of wastes for sampling and to detect discrepancies in waste types. Also used to determine which waste characterization procedure will be used.~~
~~Ph~~	~~Used to determine the corrosivity of the waste to ensure proper storage of the waste.~~
~~Water Reactivity~~	~~Used to determine whether the waste has a potential to react with water to generate heat, flammable gases, or other products. It is also used to help identify prohibited wastes.~~
~~Reactive Sulfides Screen~~	~~Used to indicate whether the waste produces hydrogen sulfide upon acidification. This information is necessary in order to avoid storage and mixing incompatibilities.~~
~~Ignitability~~	~~Indicates the susceptibility of the waste to be ignited and can determine whether the waste is RCRA ignitable.~~
~~Reactive Cyanides Screen~~	~~Indicates whether the waste produces hydrogen cyanide upon acidification. This information is necessary in order to avoid storage and mixing incompatibilities.~~
~~Oxidizer Screen~~	~~A general qualitative test used to determine if a waste is an oxidizer. Oxidizers have the potential to react with a wide range of waste streams and therefore often need to be segregated.~~
~~Radioactivity Screen~~	~~It is used to help identify prohibited wastes.~~

Table 2 **Storage and Acceptance (Fingerprint) Analyses**	
Parameter	**Rationale for Selection**
Physical Description	Used to determine the general characteristics of the waste stream. Also used to ensure correct grouping of wastes for sampling. Also used to detect discrepancies in waste types. Also used to determine which waste characterization procedure will be used. Also used to determine the percentages of the various material types in debris-like wastes.
pH	Used to determine the corrosivity of the waste to ensure proper storage of the waste.
Water Reactivity	Used to determine whether the waste has a potential to react with water to generate heat, flammable gases, or other products. It is also used to help identify prohibited wastes.
Reactive Sulfides Screen	Used to indicate whether the waste produces hydrogen sulfide upon acidification. This information is necessary in order to avoid storage and mixing incompatibilities.
Ignitability	Indicates the susceptibility of the waste to be ignited. This information is necessary in order to avoid placement or storage of the waste in inappropriate areas.
Reactive Cyanides Screen	Used to indicate whether the waste produces hydrogen cyanide upon acidification. This information is necessary in order to avoid storage and mixing incompatibilities.
Oxidizer Screen	A general qualitative test used to determine if a waste is an oxidizer. Oxidizers have the potential to react with a wide range of waste streams and therefore often need to be segregated.
Radioactivity Screen	Used to help identify prohibited wastes.

Table 3 **Methods and Tolerance Limits**	
Parameter Limits	**Tolerance**
Physical Description	Shall be consistent with profile.
Specific Gravity	± 20%
pH Screen	+ 3 pH units, as long the profile pH is >2 and < 12.5. If the profile pH is < 2 or > 12.5, the incoming load sample must be the same.

Table 3 Methods and Tolerance Limits	
TLV-Sniff	If > 200 ppm, and destined for landfill, flash point shall be conducted. If TLV-Sniff is <200, the flashpoint is considered > 140°F and it may be disposed in landfill. Shall be < 500 ppm if destined for storage or treatment in tanks.
Water Reactivity Screen	No tolerance; load samples must agree with profile
Reactive Sulfides Screen	Shall be consistent with profile [1]
Reactive Cyanides Screen	Shall be consistent with profile [1]
Ignitability	Shall be consistent with profile, i.e. if profile is reported as being >140°F it must test >140°F.
Radioactivity Screen	No tolerance; load samples shall be less than 40 microR/hr over background unless authorization is obtained as described in the Prohibited Materials section of this Attachment. No explanation is required for wastes profiled with a positive radioactive screen and arriving with a negative screen.
Oxidizer Screen	Shall be consistent with profile. [1]

Notes:

1. For negative to positive results, the generator shall be contacted for a qualitative explanation of the difference. The answer shall be documented in the facility operating record.

4.0 Waste Sampling

This section presents methods utilized to obtain a representative sample of wastes. These methods apply to waste generated off-site as well as facility-generated waste. The specific sampling methods selected are dependent on the nature of the waste and ~~,~~ its container~~,~~. ~~and its location.~~

4.1 Sampling Locations

Samples, including incoming load samples, may be taken from a variety of locations throughout the facility and from containers on the ~~the Clean Harbors~~ Clive rail spur. Waste may be sampled from drums, roll-off boxes, rail gondola cars, rail tank cars, lugger boxes, tanker or dump-type trucks, etc., or from other locations including containment areas.

4.2 Sampling Methods

The methods and equipment used for sampling vary with the form and consistency of the waste to be sampled. The appropriate representative sampling techniques, devices, and containers are selected from the EPA document, "Test Methods for Evaluating Solid Wastes" (SW-846) or "American Society for Testing and Materials" (ASTM) methods. The approved methods are found in the most current copy of 40 CFR §261.11.

In order to determine the physical and chemical characteristics of a waste, a representative sample is needed. A representative sample is defined as a sample exhibiting average properties of the whole waste.

Sampling accuracy (the closeness of a sample value to its true value) and sampling precision (the closeness of repeated sample values) are the issues of importance. Thus, from both regulatory and scientific perspectives, the primary objectives of a sampling plan are to collect samples that allow accurate and precise measurements of the physical and chemical properties of the waste. If the chemical measurements are sufficiently accurate and precise, they are considered reliable estimates of the chemical properties of the waste. Statistical techniques for obtaining accurate and precise samples are relatively simple and easy to implement. ~~Some form of random sampling usually achieves sampling accuracy.~~Containers will sampled in accordance with the sampling SOPs. In random sampling, every unit in the population has a theoretically equal chance of being sampled and measured. Consequently, statistics generated by the sample are unbiased (accurate) estimators of true population parameters. In other words, the sample is representative of the population.

4.3 Traceability

Sample traceability for all internal sampling and analysis ~~is followed~~by documenting on a sample collection form and laboratory analysis report. This involves the documentation of procedures so that a set of data can be traced back through the analyst, to the person performing the sampling, and then to the waste itself. All samples receive a unique sample identification number to facilitate this process.

4.4 Sampling Personnel

Trained personnel perform sampling in accordance with the sampling methods. The ~~laboratory~~ operations manager or designee trains sampling personnel and observes their techniques periodically to ensure a thorough understanding of sample collection, storage, and transportation practices.

4.5 Sample Labels

Sample labels are necessary to provide identification of samples. The labels are affixed to the containers prior to or at the time of sampling. The labels are filled out at the time of collection and contain the following information:

- sample identification

- place of collection
- date and time of collection
- person sampling

4.6 Log Book

All information pertaining to sampling is recorded in a logbook, inspection or receiving report, or electronically. This record includes the following information:
- location of sampling point
- volume of sample taken
- date and time of collection
- sample identification number
- person sampling
- comments or observations
- sampling methodology
- number of samples and ~~disposition~~physical state

Sampling situations can vary widely; however, sufficient information is recorded to allow someone to reconstruct the sampling conditions without reliance on the collector's memory.

4.7 Sample Preservation

All samples are preserved in accordance with the parameter to be measured, as specified by the analytical method for that parameter. Samples for fingerprint analyses are not preserved and have a shortened holding time.

4.8 Sampling of Containers

The term "container" refers to receptacles designed for transporting materials, e.g., drums and other small receptacles (<120 gallon capacity) -and totes (<330 gallons) as opposed to stationary tanks. This section addresses the sampling of containers smaller than those carrying bulk materials. Sampling of bulk materials in large containers such as rolloffs, tank trucks, rail cars, etc. is addressed in Section 4.9. COLIWASAs, tubes, shovels, drum thieves, and triers are the devices used to sample containers.

A random sampling strategy is employed to sample incoming shipments of containerized waste. Samples from containers holding the same type of waste may be composited. The following procedure will be used to determine how many containers will be sampled and which samples may be composited. Each container will be opened and visually inspected. Wastes on a single load that have the same profile number and DOT description ~~(excluding waste codes~~) and appear to be of the same waste type may be grouped together. Ten percent (rounded up) of the containers in each of these groups will be sampled as described below. The samples within each separate group may be composited for analysis.

A unique tracking number is assigned to each container.

Samples are taken from locations displaced both vertically and horizontally throughout the waste. For liquids (or liquids with precipitated solids), the sampling person uses a COLIWASA or equivalent. The sampling device is inserted into the container from the top and is pushed down slowly until the bottom of the container is reached. The device is sealed to retain the contents. The contents of the entire sampling device are then transferred to a polyethylene or glass bottle, which is labeled with waste identification information specified in section 4.5~~. The sampling device may also be stoppered at both ends, wiped dry with a disposable cloth, and then transferred to the lab for analysis.~~

A trier, shovel or scoop~~ or thief~~ is used to sample containers holding material that is solid~~ in nature~~. These containers are generally filled with dirt and sludges. Several areas from the container are sampled and composited into a clean bucket where it is mixed and put in a jar in order to ensure a representative sample. The sampling person removes a sample that uniformly represents the waste composition of the container~~, i.e., all layers and phases are represented in the sample~~.

4.9 Sampling of Bulk Materials

Where sampling of bulk loads is required, each bulk container of each load will be sampled as described below.

Bulk solids in rolloffs or end dumps shall be~~are~~ sampled at two locations in the waste container. A trier, thief or shovel is used in order to draw a sample from as deep a cross section as possible at each of the two locations. The samples are composited together so that there is one sample which represents that particular bulk solids shipment.

Bulk liquids in a road tanker are sampled by using a COLIWASA or similar device which can sample vertical anomalies. Bulk sludges are sampled with a device appropriate for the consistency of the material. That may be a COLIWASA, trier, dip tube, thief, etc. Each compartment of tanker trucks is sampled. Compartment samples from the same generator and waste stream may be composited prior to analysis.

Tank trucks without man-ways are sampled through the valve. The valve is flushed prior to the sample~~ actually~~ being drawn.

~~An exception to the requirement for sampling each load of bulk load shipments is where a rail car of liquids or visibly similar solids is divided into multiple bulk tanker or truck loads for final shipment to Aragonite or Clive. This will only occur at the Bulk Solids Rail/Truck Transfer facility, Unit 255, and the Bulk Liquids Rail/Truck Transfer Bay, Unit 535, at the Clive facility. In such cases, a representative sample will be taken from each rail car and that sample may be used as the incoming load sample for each of the individual truck or tanker loads from that rail car. For bulk solids, the sample from the rail car will consist of at least six sub-samples taken from equal areas in the rail car at depths of at least one foot. Alternatively, the sample could be collected by compositing at least three grab samples from the backhoe bucket while the waste is being transferred from the rail car to the end dumps or rolloff boxes. For liquids, a representative~~

~~sample will be taken with a COLIWASA from the hatch of the rail car. Samples will follow necessary chain-of-custody procedures to the laboratory at Aragonite.~~

The analytical results from a sample from a bulk solid or bulk liquids rail car can be used as the incoming load analysis for the roll-off boxes, end dumps or road tankers that receive waste from a railcar. For example, a rail tanker is sampled and the sample analyzed. The contents of the rail tanker are then transferred to four road tankers for transport to the Aragonite facility. The analytical results from the rail tanker may be used for the four road tankers received at the Aragonite facility.

4.10 Frozen Waste

Clive will not sample waste that is frozen. Loads may arrive at temperatures which prevent a representative sample from being obtained. Under such circumstances, the waste will be allowed to warm in accordance with the procedures described in Attachment 8, Container Management, until such time as sampling can be performed. Loads that require thawing before sampling may be placed in the Thaw Unit, Unit 105 while awaiting sampling. If an incoming load is placed in Unit 105 for thawing prior to sampling (i.e., not yet accepted), it still must be sampled and a decision made regarding acceptance within the ten days of arrival at the facility. If an unaccepted load of waste is placed in Unit 105, the waste location must be documented in the operating record.

4.11 Other Samples

The sampling method for wastes in/on process equipment, containment and containment surfaces, sumps, etc., will vary with the nature of the waste material ~~but will~~ and- will be collected in accordance with this Waste Analysis Plan ~~as indicated b~~based on the nature of the waste. ~~normally be grab samples or samples of specific locations. For grab samples the sampling device of choice is usually a scoop, shovel or similar device with a bottle in which to collect the sample. Sampling surfaces may involve removing a layer of the surface with a chisel or coring device or wiping the surface with material soaked in a solvent in which the chemical being tested for is at least 5% soluble. A dip tube or COLIWASA may also be used to sample sumps. 40 CFR 761.123 contains standardized EPA procedures for taking PCB surface wipe samples. The definition constitutes the minimum requirements for an appropriate wipe testing protocol. A standard size template (10 cm X 10 cm) is used to identify the sampling area; the wiping media is an all collection gauze pad which has been saturated with hexane. The wipe is performed quickly once the gauze is exposed to air.~~

5.0 Test Methods

The test methods to measure the parameters discussed throughout this plan are identified in Table 3. The Clive facility ~~does not~~cannot conduct analysis at the site. Incoming load samples and other samples are usually analyzed at the Clean Harbors Aragonite facility, the ~~but the~~ Clean Harbors Grassy Mountain facility or other Utah- Certified~~another suitable~~ off-site laboratory. ~~may be used to perform the required analyses.~~ The samples shall be analyzed by a laboratory certified by the State of Utah for the analytical methods specified in Table 3, including~~Whenever~~

~~possible Aragonite uses established methods from~~ Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Edition, US EPA, 1986 and its updates; ~~. However, SW-846 does not have methods for all the parameters specified. In these particular cases, Aragonite uses other established methods, including~~ American Society for Testing and Materials (ASTM); and EPA 600/4-79-020, Methods for Chemical Analysis of Water and Wastes; Standard Methods for Examination of Water and Wastewater, Latest Edition; EPA 40 CFR, 136, Appendix A Methods; EPA Contract Laboratory Program, Inorganic SOW and Organic SOW Methods. Where other practical methods are not available, methods have been developed by Aragonite. These methods are described at the end of this section. ~~Any laboratory performing analysis required by this plan must use the methods described in this plan.~~

~~When Clean Harbors Aragonite, or an off-site laboratory, performs analysis using a method found in SW-846 and the method is one that is certifiable by the State of Utah, the laboratory performing the analysis shall be State of Utah- or NELAPC certified for that method.~~

The letter following a method number indicates the SW-846 revision of that method. When new method revisions are promulgated by the EPA, they will be implemented within six months of promulgation. Thus, listed method numbers will remain constant, but suffixes (A, B, C, etc.) will depend on the latest EPA revision. ~~Table 3 will be updated as soon as practical to include the latest promulgated method revisions.~~ Utah-certified laboratories used by Aragonite may have the prior revision designation on their certification as long as the method number reflects that listed in Table 3, analyses are actually performed and reported according to the latest revision, and the lab has applied for, and provided all necessary information to obtain certification for the new revision. If a lab has not yet implemented the update within the six months and it is necessary to use that laboratory, Aragonite may provide justification for using that lab and request a variance from the ~~Executive Secretary~~Director.

TABLE ~~3~~4 - ANALYTICAL PARAMETERS AND ASSOCIATED METHODS		
PARAMETER	**METHOD NUMBER**	**REFERENCE**
*Acid-Base Partition Cleanup	3650B~~A~~	(1)
Acid Digestion of Sediments, Sludges, and Soils	3050B	(1)
Acid Digestion of Aqueous Samples and Extracts for Total Metals for Analysis by Flame Atomic Absorption Spectroscopy or Inductively Coupled Plasma Spectroscopy	3010A-MOD	(1)
Acid Digestion of Aqueous Samples and Extracts for Total Metals for Analysis by Furnace Atomic Absorption Spectroscopy	3020A	(1)
*Alumina Column Cleanup	3610B~~A~~	(1)
~~*Aluminum (AA)~~	~~7020~~	~~(1)~~
Aluminum (ICP)	6010D~~A~~	(1)
Antimony (ICP)	6010D~~A~~	(1)
*Antimony (AA)	~~7040, 7041~~	~~(1)~~
Aromatic Volatile Organics	8020A	(1)
*Aromatic and Halogenated Volatile Organics	8021B~~A~~	(1)
Arsenic (ICP)	6010D~~A~~	(1)
*Arsenic (AA)	~~7060A,~~ 7061A	(1)
Ash	D482-87	(2)
Atomic Absorption Spectroscopy	7000B~~A~~	(1)
Barium (ICP)	6010D~~A~~	(1)
~~*Barium (AA)~~	~~7080A, 7081~~	~~(1)~~
Beryllium (ICP)	6010D~~A~~	(1)
~~*Beryllium (AA)~~	~~7090, 7091~~	~~(1)~~
Bromide	9056A	(1)
Cadmium (ICP)	6010D~~A~~	(1)
~~*Cadmium (AA)~~	~~7130, 7131A~~	~~(1)~~
Calcium (ICP)	6010D~~A~~	(1)

TABLE ~~3~~4 - ANALYTICAL PARAMETERS AND ASSOCIATED METHODS		
PARAMETER	**METHOD NUMBER**	**REFERENCE**
~~*Calcium (AA)~~	~~7140~~	~~(1)~~
*Carbamate pesticides (LCMS)	8321B	(1)
Chloride	~~9252A,~~ 9253	(1)
Chloride (Ion Chromatography)	9056A	(1)
Chlorinated Herbicides	~~8150B,~~ 8151A, ~~8150B/~~8151-MOD	(1) (1)
Chromium (ICP)	6010D~~A~~	(1)
~~*Chromium (AA)~~	~~7190, 7191~~	~~(1)~~
Cobalt (ICP)	6010D~~A~~	(1)
~~Cobalt (AA)~~	~~7201~~	~~(1)~~
Copper (ICP)	6010D~~A~~	(1)
~~*Copper (AA)~~	~~7210, 7211~~	~~(1)~~
*Continuous Liquid-Liquid Extraction	3520C~~B~~	(1)
Fluoride (Ion Chromatography)	9056A	(1)
Fluoride	340.2 5050	(3) (1)
Florisil Column Cleanup	3620C	(1)
Gas Chromatography	8000D~~A~~	(1)
Gas Chromatography/Mass Spectrometry for Volatile Organics	8260C~~B~~	(1)
Gas Chromatography/Mass Spectrometry for Semi-volatile Organics	8270D~~C~~	(1)
*Gel-Permeation Cleanup (GPC)	3640A	(1)
~~Halogenated Volatile Organics~~	~~8010B~~	~~(1)~~
~~Headspace~~	~~3810~~	~~(1)~~
Heat of Combustion (BTU)	D240-87-MOD	(2)
Ion Chromatography	9056A	(1)

TABLE ~~3~~4 - ANALYTICAL PARAMETERS AND ASSOCIATED METHODS

PARAMETER	METHOD NUMBER	REFERENCE
Ignitability Liquid, actual flashpoint, no suspended solids	1020B~~A~~, 1010A	(1)
Ignitability Liquid, at 140ºF, no suspended solids	8b	(4)
Ignitability Liquid, room temperature	D4982-89	(2)
Ignitability Liquid, actual flashpoint, suspended solids (sludge)	1010A	(1)
Ignitability Sludge, at 140ºF	8b	(4)
Ignitability Solids, room temperature	D4982-89	(2)
Ignitability Solids, at 140ºF	1020B-MOD	(1)
~~*Iron (AA)~~	~~7380, 7381~~	~~(1)~~
Iron (ICP)	6010D~~A~~, 6010B, 6010C, 6020A	(1)
Lead (ICP)	6010D, 6010B, 6010C, 6020A	(1)
~~*Lead (AA)~~	~~7420, 7421~~	~~(1)~~
LEL	14	(4)
Liquids, Sludge Compatibility (see note 3)	D5058-90 Test Method A	(2)
Magnesium (ICP)	6010D~~A~~	(1)
~~*Magnesium (AA)~~	~~7450~~	~~(1)~~
Manganese (ICP)	6010D~~A~~	(1)
~~*Manganese (AA)~~	~~7460, 7461~~	~~(1)~~
Mercury Cold Vapor (AA)	7470A, 7471B~~A~~	(1)
Microwave Assisted Acid Digestion of Aqueous Samples and Extracts	3015A	(1)
Microwave Assisted Acid Digestion of Sediments, Sludges, Soils and Oils	3051A	(1)
Moisture (organic liquids)	D1533	(2)
Moisture (Inorganics)	2540B	(5)
Molybdenum (ICP)	6010D~~A~~	(1)

TABLE ~~3~~4 - ANALYTICAL PARAMETERS AND ASSOCIATED METHODS

PARAMETER	METHOD NUMBER	REFERENCE
~~*Molybdenum (AA)~~	~~7480, 7481~~	~~(1)~~
Nickel (ICP)	6010D~~A~~	(1)
~~*Nickel (AA)~~	~~7520~~	~~(1)~~
~~Total Kjeldahl Nitrogen~~	~~D3590-89~~	~~(2)~~
Nitrate/Nitrite Ion Chromatography	9056A	(1)
Nitrogen, Total	351 ~~7.025-7.031~~	(1~~7~~)
Nonhalogenated Volatile Organics	8015C~~B~~	(1)
Organic Extraction and Sample Preparation	3500C~~A~~	(1)
Organochlorine Pesticides	~~8080A,~~ 8081B~~A~~	(1)
~~*Organophosphorus Pesticides~~	~~8140~~	~~(1)~~
*Organophosphorus Compounds by Capillary Column GC	8141~~A~~B	(1)
Oxidizer Screen	D4981-89	(2)
Paint Filter	9095B	(1)
*PCDD	8280B, 8290A	(1)
*PCDF	8280B, 8290A	(1)
PCBs	8082A	(1)
*PCB and Pesticides (GC/MS)	~~680~~80801B, 8082A	(6)
PCB Wipes	~~5503~~ 40§761.123, 8082A	(8)
pH Electrometric	9040C~~B~~	(1)
pH Paper	9041A	(1)
pH Waste	9045D~~C~~	(1)
pH Solids	9045D~~C~~	(1)
Physical Description	D4979-89	(2)
Potassium (ICP)	6010D~~A~~	(1)

TABLE ~~3~~4 - ANALYTICAL PARAMETERS AND ASSOCIATED METHODS		
PARAMETER	**METHOD NUMBER**	**REFERENCE**
~~*Potassium (AA)~~	~~7610~~	~~(1)~~
Purge-and-Trap	5030C	(1)
Radioactivity Screen	6	(4)
Reactive Cyanide Screen (Spot Test) Confirmation (see note 2)	D5049-90 Test Method A	(2)
Reactive Cyanide Screen (Drager) Prime (see note 2)	D5049-90 Test Method D	~~(2)~~
Reactive Sulfide Screen (Spot Test) Confirmation (see note 2)	D4978-89 Test Method A	(2)
Reactive Sulfide Screen (Drager) Prime (see note 2)	D4978-89 Test Method B	(2)
Cyanide (Releasable)	~~Chapter 7, Sec. 7.3.3.2~~	(1)
Sulfide (Releasable)	~~Chapter 7, Sec. 7.3.4.2~~	(1)
Selenium (ICP)	6010D~~A~~	(1)
~~*Selenium (AA)~~	~~7740, 7741A~~	~~(1)~~
Separatory Funnel Liq-Liq Extraction	3510C~~B~~	(1)
Silica Gel Cleanup	3630C~~B~~	(1)
Silver (ICP)	6010D~~A~~	(1)
~~*Silver (AA)~~	~~7760A, 7761~~	~~(1)~~
Sodium (ICP)	6010D~~A~~	(1)
~~*Sodium (AA)~~	~~7770~~	~~(1)~~
~~Solids Compatibility~~	~~N/A~~	~~(9)~~
Sonication Extraction	3550C~~A~~	(1)
Soxhlet Extraction	3540C~~B~~	(1)
Specific conductance	9050A~~120.1~~	(1~~3~~)
Specific Gravity	D1429-86-MOD	(2)
*Sulfides	9030B~~A~~, 9031	(1)
Sulfate Ion Chromatography	9056A	(1)

TABLE ~~3~~4 - ANALYTICAL PARAMETERS AND ASSOCIATED METHODS		
PARAMETER	**METHOD NUMBER**	**REFERENCE**
*Sulfur	~~D2784-89,~~ D1266-87	(2)
Sulfur Cleanup	3660B~~A~~	(1)
Sulfuric Acid Cleanup	3665A	(1)
Thallium (ICP)	6010D~~A~~	(1)
~~*Thallium (AA)~~	~~7841, 7840~~	~~(1)~~
Tin (ICP)	6010D~~A~~	(1)
TCLP	1311	(1)
Total and Amenable Cyanide (Colorimetric, Manual)	9010C~~A~~	(1)
*Total and Amenable Cyanide (Colorimetric, Automated UV)	9012B	(1)
Total Organic Carbo4~~n~~	9060A	(1)
Total Halogen	5050, 9253	(1)
Vanadium (ICP)	6010D~~A~~	(1)
~~*Vanadium (AA)~~	~~7910, 7911~~	~~(1)~~
Viscosity	D2983-87	(2)
Waste Dilution	3580A	(1)
Water Reactivity Screen (see note 1)	D5058-90 Test Method C	(2)
Zinc (ICP)	6010D~~A~~	(1)
~~*Zinc (AA)~~	~~7950, 7951~~	~~(1)~~
* *Non-Aragonite laboratory only*		

TABLE ~~3~~4
ANALYTICAL PARAMETERS AND ASSOCIATED METHODS

(1) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA Publication SW-846 [3rd Edition (November, 1986), with current updates]

(2) American Society for Testing and Materials

(3) Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-020

(4) Aragonite Methods, when Aragonite methods are modified, Clive must modify their permit to reflect the changes.

(5) Standard Methods for the Examination of Water and Wastewater, Latest Edition, APHA, WEF

(6) Alford-Steven, A.; Eichelberger, J.W. and Budde W.L. Method 680. Determination of Pesticides and PCBs in Water and Soil/Sediment by Gas Chromatography/Mass Spectrometry. Physical and Chemical Methods Branch. Environmental Monitoring and Support Laboratory Office of Research and Development. U.S. EPA, Cincinnati, Ohio 45268. November 1985.

(7) Association of Official Analytical Chemists, 14th Edition

~~(8) National Institute for Occupational Safety and Health~~

~~(9) A Method for Determining the Compatibility of Hazardous Wastes, EPA-600/2-80-076, April, 1980~~

NOTES FOR REACTIVITY SCREENS:

1. A significant temperature change as called out in paragraph 24.8 of ASTM method D5058-90 is defined as ≥15ºC. The test does not apply to wastes already in contact with excess water, nor is a waste water reactive if the heat generation is due solely to a strong acid/base reaction as verified by pH analysis. Occurrence of the reactions listed in paragraph 24.4 of ASTM method D5058-90 result in failure of the water reactivity test, except that formations of precipitates or emulsions are considered failures only if the ability to mix and pump the resulting liquids is impaired.

2. The test is not required for wastes with pH <6.

3. A temperature rise as called out in paragraph 11.8 of ASTM method D5058-90 is defined as ≥15ºC. Occurrence of the reactions listed in paragraph 11.7 of ASTM method D5058-90 result in failure of the compatibility test, except that formations of layers, precipitation, emulsification, or increases in viscosity are considered failures only if the ability to mix and pump the resulting liquids is impaired.

Aragonite Methods

Radioactivity Screen (Aragonite-6)

All incoming waste shipments will be monitored for radioactivity using a count rate meter with a Geiger-Mueller (GM) detector. The detector window shall have at least a 2.54 centimeters diameter opening utilizing window material of approximately 1.7 milligrams per square centimeter. The detector shall be operated in accordance with the manufacturer's recommended procedures. Detectors shall be calibrated at least annually and after repair.

The detector window shall be placed within one (1) inch (but not in contact) of the sample surface of bulk materials until a steady, time weighted count rate is obtained. Three (3) measurements shall be taken of each sample and recorded.

Results of surveys are to be recorded in terms of counts per minute. Any waste found to have a count rate exceeding background by three (3) times or greater for any measurement shall not be accepted without receiving authorization from the ~~Utah~~ Division ~~of~~ of Waste Management and Radiation Control. A background reading shall be taken for each sampling day prior to each sample event and the measurement recorded.

Ignitability Screen for Sludges (Aragonite-8b)

The ignitability screen for sludges is determined using a modified version of EPA SW-846 Method 1010. Instead of an actual flash point determination as outlined in the 1010, the sludge is heated in the test cup to 140˚F. When the temperature in the cup reaches 140˚F, the flame is applied to the sample. A flash/no-flash measurement is determined and recorded as positive or negative. The instrument is calibrated daily at 100 deg. F and 140 deg. F.

LEL (Aragonite 14)

This method is used for the determination of the presence of explosive vapors dissipating from a waste. A quantitative result in % LEL is indicated on the instrument.

Containers of waste are opened enough to insert the probe. The instrument pulls any vapors above the waste into the detectors. Sufficient time must be allowed to clear the air from the sample line. The container is sampled immediately after opening. The probe inlet is placed close to, but not touching, the waste in the container. The result in % LEL is recorded in the logbook. Care must be exercised to ensure that drafts are avoided in the area that is being sampled as this can cause an erroneous result. The test is not to be run on materials that will poison the detector.

~~The instrument will be calibrated according to the procedures and at the frequency specified by the manufacturer. It will be operated according to the instructions provided by the manufacturer. Daily sensitivity checks and continuing sensitivity checks every twentieth sample will be conducted. The test will not be run with an instrument that is not functioning correctly.~~

The instrument will be calibrated according to the procedures and at the frequency specified by the manufacturer. It will be operated according to the instructions provided by the manufacturer. Daily sensitivity checks and continuing sensitivity checks every twentieth sample will be conducted. The test will not be run with an instrument that is not functioning correctly.

ATTACHMENT 1
WASTE ANALYSIS PLAN

APPENDIX 1
QUALITY ASSURANCE PLAN

2.0 TABLE OF CONTENTS

FIGURES AND TABLES

3.0 QAP DESCRIPTION

Data of unknown quality is useless. It is this premise which Clean Harbors Aragonite management bases its stance on quality control.

Data of good quality does not just happen. Quality control must be an integral part of Aragonite's day to day operations. It relies on each individual within the program to make data quality his/her primary objective.

It is the goal of Clean Harbors Aragonite to produce high quality data. This Quality Assurance Plan is designed to ensure that all data generated are complete, precise, and accurate. Data quality will be documented.

There are three primary areas where data quality is of concern. These are as follows:

- Waste Approval and Acceptance
- Process Operating Parameters
- Residue Characterization

The objective of the first area is to characterize a particular waste stream and determine if the facility is capable of accepting the material under its permit conditions.

The objective of the second area is to provide analytical support so that Aragonite can operate within its permit conditions. This mainly addresses the blending of waste material so that maximum conditions stipulated in the operating permit such as Btu/hr, total chlorine, etc., are not exceeded. It also addresses other areas which may not be specified in the permit but enable Clean Harbors Aragonite to operate the facility in a more efficient manner. A waste's compatibility with other wastes already being stored at the facility is also assessed.

The last area concerns the by-products which are generated from the thermal treatment of the wastes. The slag from the kiln and the dusts from the spray dryer and baghouse are analyzed to ensure that the incineration process is destroying the organic hazardous constituents in compliance with the permit and Land Disposal Restrictions.

3.1 PURPOSE

The purpose of this Quality Assurance Plan is to ensure that all information, data, and resulting decisions compiled under a specific task are technically sound, statistically valid, and properly documented. Quality Assurance is the program or structure within an organization which plans, designs, and monitors the QA procedures and affirms the data quality in reports.

Quality Control is the mechanism or activities through which Quality Assurance achieves its goals. This is accomplished through a program which defines the frequency and methods of checks, audits, and reviews necessary to identify problems and dictate corrective action.

3.2 SCOPE

The Quality Assurance Plan encompasses the entire measurement system from initial sampling to the final reporting and interpretation of results. This QAP is for the Aragonite laboratory.

3.3 OBJECTIVE

This Quality Assurance Plan is designed to produce accurate and reliable data. In order to accomplish this objective, the following criteria must be achieved:

- All procedures and practices must be accepted by the client and/or regulatory agency.

- A continuing program must be developed to monitor the performance of the program.

- A mechanism must be developed for correcting problems which are determined by the monitoring assessment.

4.0 LABORATORY ORGANIZATION AND RESPONSIBILITY

The organizational structure of the Clean Harbors Aragonite laboratory is shown on the organization chart maintained at the facility.

The initial step in any Quality Assurance Plan begins with the people involved. In addition to the organizational chart, descriptions of those individuals involved in Quality Assurance and their responsibilities are included.

4.1 QUALITY ASSURANCE COMPLIANCE OFFICER

The QA Compliance Officer is responsible for identifying quality problems, to recommend and provide solutions, and to verify the implementation of the solutions. The duties include:

- developing mechanisms to carry out QA/QC objectives;
- administration of quality control procedures;
- implementation of corrective action(s); and
- maintenance of QA/QC records.

4.2 LABORATORY MANAGER

The Laboratory Manager is responsible for the daily operation and management of the Aragonite laboratory. The manager's duties include:

- management of laboratory personnel;
- oversee and coordinate instrument and equipment maintenance;
- review of work procedures and daily laboratory practices;
- work scheduling;
- record keeping;
- training of laboratory personnel; and
- responsibility for the administration of Quality Control at his/her respective laboratory.

4.3 CHEMISTS

The Chemist's duties as they relate to QA/QC are as follows:

- recommendations for technical decisions;
- evaluating and reviewing test procedures;
- reviewing and signing laboratory reports;
- ensuring that results are accurate and reproducible;
- calculations and interpretations of test results;
- equipment and instrument calibration and operation; and
- sample preparation and analysis.

4.4 LABORATORY TECHNICIANS

The laboratory technicians duties as they relate to QA/QC are as follows:

- performing sample preparation and analysis;
- maintaining a clean and safe working environment;
- making recommendations to supervisors regarding analysis or QA/QC performances;
- performing QA/QC analysis; and
- reviewing and signing laboratory reports.

4.5 SAMPLING TECHNICIANS

Sampling technicians are specially trained personnel responsible for sampling containers, vessels, tanks, and process streams. Sampling techs typically are in Production, Receiving, Incineration, or any combination of these areas. These people may be chemists, engineers, laboratory technicians, or operations personnel. They all have specialized training in sampling QA/QC techniques including the use of various sampling apparatus, sample site selection, sampling methodologies, and chain of custody procedures.

The QA/QC Coordinator or the Laboratory Manager interacts with the sampling technicians to assure understanding of selection, collection, storage, transportation, and documentation practices.

5.0 QUALITY ASSURANCE OBJECTIVES FOR MEASUREMENT IN TERMS OF PRECISION, ACCURACY, AND COMPLETENESS.

Data Quality objectives are defined as follows:

- Precision - is the measure of agreement of a set of replicate results among themselves. Precision is assessed by means of duplicate/replicate sample analysis.

- Accuracy - is the nearness of a result or the mean (X) of a set of results to the true value or an established laboratory mean. Accuracy is assessed by means of reference samples and percent recoveries.

- Completeness - is the measure of the amount of valid data derived from a system of measurement as compared to the amount of data which was expected to be obtained.

5.1 ACCURACY

Accuracy information for quantitative measurements is generated by using one or more of the following techniques:

Calibration Checks
Calibration checks determine the acceptability of a calibration. The limits are method specified.

Calibration Check Standards are used as continuing checks for organic analysis. The equation for the Calibration Check Standard is:

% Recovery = 100(result/true value)

Calibration Verification Standards (CVS) are second-source standards (a different brand from those used for generating a calibration curve) to check the accuracy of the calibration curve. The equation for the CVS is:

% Recovery = 100(result/true value)

Method Accuracy Checks

Method Accuracy checks determine the acceptability of a batch of samples that have been subjected to a preparation step (i.e., digestion, extraction, combustion, etc.). The limits are method specified or statistically generated, whichever is the more stringent at the time of analysis. The means and limits are tracked by generating statistical data. If the Method Accuracy check does not fall within the more stringent control limit, the batch is rejected and rerun for the failed constituent(s).

Control Limit = method specified
or
mean $\pm$3sd, whichever is the more stringent

Laboratory Control Samples (LCS) are purchased Standard Reference Materials that may closely match the matrix that is being analyzed.

Control Blank Spikes (CBS) are blanks that are spiked with the constituents being analyzed.

Matrix Spikes (MS) are samples that are spiked with the constituents being analyzed. They are only used as method accuracy checks when the matrix has demonstrated a lack of interference in the analysis.

% Matrix Spike Recovery = 100(Sample Spike Result-Sample Amount)/Spike Amount

5.2 PRECISION

Precision information for quantitative measurements is generated by duplicating the Method Accuracy Checks. The results of the duplication are compared to the initial method accuracy check. The limits are method specified or statistically generated, whichever is the more stringent at the time of analysis. The means and limits are tracked by generating statistical data. If the precision does not fall within the more stringent control limit, the batch is rejected and rerun for the failed constituent(s).

Control Limit = Method specified
or
Upper Control Limit, which ever is the more stringent

Laboratory Control Sample Duplicate (LCSD), or *Control Blank Spike Duplicates* (CBSD) are analyzed by the same procedure as the initial method accuracy check.

Matrix Spike Duplicates (MSD) are samples that are spiked with the constituents being analyzed. They are only used as precision checks when the matrix has demonstrated a lack of interference in the analysis.

Method Specified Limits for precision are compared to results generated by either:

Relative Percent Difference (RPD) = 100(Range of Results/Average of Results)

or

Coefficient of Variation (CV) = 100(standard deviation/mean)

Upper Control Range Limits are generated by historical statistical techniques.
Upper Control Range Limit = Mean of Ranges x (D_2/d_2)

where: Range = absolute difference between replicates

D_2 = 99% confidence upper limit (equivalent to +3sd) on a population mean of replicate averages (when n=2, D_2=3.686).

d_2 = factor that converts a range into a standard deviation between replicates (when n=2, d_2=1.128).

Source of D_4 and d_2: ASTM Manual, *Quality Control of Materials.*

5.3 METHOD PREPARATION CHECKS

When a method preparation check is outside the prescribed limits, a notation, or *flag*, is documented in the final report. The limits are listed in Table 5.1.

Matrix Spikes (MS) are samples that are spiked with the constituents being analyzed. The results are compared to method specified limits or statistically generated limits for a determination of preparation efficiency.

Matrix Spike Duplicates (MSD) are the same as *Matrix Spikes*. The results are compared to the initial *Matrix Spike* result for a determination of the precision of preparation efficiency.

Surrogates are constituents that are not commonly found in the natural environment or in commercial waste products. They are added to the sample at the beginning of the preparation step. In organic chromatographic analysis, they elute at retention times different than target compounds. They are somewhat less susceptible to inferences and are used as an additional determination of preparation efficiency. The strategy used for evaluating surrogate recovery is as follows:

A. If the surrogate recovery falls outside the $\pm$3sd limits, the analyst must:

(1) Rerun the extract.
If the result is within the limits, the analysis is finished.

If the result is still outside the limits, the sample must be re-extracted and rerun on the instrument. If the result is within the limits, the analysis is finished. If it continues to fall outside the limits, the analysis is finished and the final report must be flagged.

OR

(2) Re-extract the sample and rerun on the instrument.

If the result is within the limits, the analysis is finished. If it continues to fall outside the limits, the analysis is finished and the final report must be flagged.

5.4 COMPLETENESS

A data package is considered complete when the following applicable items are finished:

- All appropriate logbooks contain all essential information;
- Data validation has been performed;
- Data files contain raw data, completed data validation forms, and all worksheets that document acceptable accuracy, precision, and flaggable items; and,
- Final results are in the LIMS.

TABLE 5.1
ACCURACY, PRECISION, METHOD PREPARATION: OBJECTIVES AND LIMITS
ICP Metals, AA Metals, Hg (CVAA), Cyanide

Analysis	Calibration Checks	Limits	Method Accuracy Checks	Limits	Method Precision Checks	Limits	Method Preparation Check (Efficiency)	Limits	Method Preparation Check (Precision)	Limits
ICP Metals (Totals and TCLP)	Calibration Verification Standard Continuing Calibration Blanks High Std Linearity Interelement Interference	90-110% ±3sd of historical mean 95-105% 80-120%	Control Blank Spike	80-120% or ±3sd	Control Blank Spike Duplicate	RPD<20 or <Upper Range Limit	Matrix Spike Post-Digestion Spike TCLP Matrix Spike	80-120% 75-125% >50%[1]	Matrix Spike Duplicates and Unspiked Duplicates	RPD<20
AA Metals	Calibration Verification Standard	90-110%	Control Blank Spike	80-120% or ±3sd	Control Blank Spike Duplicate	RPD<20 or <Upper Range Limit	Matrix Spike	80-120%	Matrix Spike Duplicates and Unspiked Duplicates	RPD<20
Hg	Calibration Verification Standard	80-120%	Control Blank Spike	80-120% or ±3sd	Control Blank Spike Duplicate	RPD<20 or <Upper Range Limit	Matrix Spike TCLP Matrix Spike	80-120% >50%[1]	Matrix Spike Duplicates and Unspiked Duplicates	RPD<20
Cyanide	N/A	N/A	Control Blank Spike	85-115% or ±3sd	Control Blank Spike Duplicate	CV<20 or <Upper Range Limit	Matrix Spike	±3sd	N/A	N/A

[1] Perform Method of Standard Additions when (1) the recovery of the spike TCLP extract is <50% and the unspiked extract does not exceed the regulatory level, or (2) the concentration of the metal in the extract is within 20% of the appropriate regulatory level.

ACCURACY, PRECISION, METHOD PREPARATION: OBJECTIVES AND LIMITS

TABLE 5.1 (Cont.) **GCMS VOLATILES**

Analysis	Calibration Checks	Limits	Method Accuracy Checks	Limits	Method Precision Checks	Limits	Method Preparation Check (Efficiency)	Limits	Method Preparation Check (Precision)	Limits
GCMS Volatiles	Initial BFB Tuning	As per Table 4, (8260B)	Control Blank Spike (5 MS Compounds)	±3sd	Control Blank Spike Duplicate	<Upper Range Limit	Matrix Spike (5 MS Compounds)	±2sd	Matrix Spike Duplicates	<Upper Range Limit
	Continuing Calibration Compounds	RF RSD <30	OR		OR		Surrogates (3)	±3sd	N/A	N/A
	System Performance Check Compounds	Min RRF 0.300 (0.250 for Bromoform)	Matrix Spike (5 MS Compounds)	±3sd	Matrix Spike Duplicate	<Upper Range Limit				
	Daily SPCC	Min RRF 0.300 (0.250 for Bfm)								
	CCC	<25% difference from initial								
	Internal Standard EICP	50-200% of prior daily std check								

TABLE 5.1 (Cont.)

ACCURACY, PRECISION, METHOD PREPARATION: OBJECTIVES AND LIMITS
GCMS SEMIVOLATILES

Analysis	Calibration Checks	Limits	Method Accuracy Checks	Limits	Method Precision Checks	Limits	Method Preparation Check (Efficiency)	Limits	Method Preparation Check (Precision)	Limits
GCMS Semi-volatiles	<u>Initial</u> DFTPP Tuning	As per Table 3, (8270D)	Control Blank Spike (11 MS Compounds)	±3sd	Control Blank Spike Duplicate	<Upper Range Limit	Matrix Spike (11 MS Compounds)	±2sd	Matrix Spike Duplicates	<Upper Range Limit
	Continuing Calibration Compounds	RF RSD <30	OR		OR		Surrogates (6)	±3sd	N/A	N/A
	System Performance Check Compounds	Min RRF 0.050	Matrix Spike (11 MS Compounds)	±3sd	Matrix Spike Duplicate	<Upper Range Limit				
	<u>Daily</u> SPCC	Min RRF 0.050								
	CCC	<30% difference from initial								
	Internal Standard EICP	50-200% of prior daily std check								

TABLE 5.1 (Cont.)

ACCURACY, PRECISION, METHOD PREPARATION: OBJECTIVES AND LIMITS
PESTICIDES, PCBs, HOMOLOGS

Analysis	Calibration Checks	Limits	Method Accuracy Checks	Limits	Method Precision Checks	Limits	Method Preparation Check (Efficiency)	Limits	Method Preparation Check (Precision)	Limits
Pesticides/PCBs/ Homologs	Initial Calibration Factor (External Std Method) Response Factor (Internal Std Method) 4,4'-DDT and Endrin Breakdown Daily Continuing Calibration Compounds	RSD<20 RSD<20 <20% 85-115%	Control Blank Spike (6MS Compounds) OR Matrix Spike (6 MS Compounds)	±3sd ±3sd	Control Blank Spike Duplicate OR Matrix Spike Duplicate	<Upper Range Limit <Upper Range Limit	Matrix Spike (6 MS Compounds) Surrogates	±2sd ±3sd	Matrix Spike Duplicates N/A	<Upper Range Limit N/A
PCBs only	Initial Calibration Factor (External Std Method) Daily Continuing Calibration Compounds	RSD<20 85-115%	Laboratory Control Sample OR Matrix Spike	±3sd ±3sd	Laboratory Control Sample Duplicate OR Matrix Spike Duplicate	<Upper Range Limit <Upper Range Limit	Matrix Spike Surrogates	±2sd ±3sd	Matrix Spike Duplicates N/A	<Upper Range Limit N/A

TABLE 5.1 (Cont.)

ACCURACY, PRECISION, METHOD PREPARATION: OBJECTIVES AND LIMITS
HERBICIDES, METHANOL

Analysis	Calibration Checks	Limits	Method Accuracy Checks	Limits	Method Precision Checks	Limits	Method Preparation Check (Efficiency)	Limits	Method Preparation Check (Precision)	Limits
Herbicides	Initial Calibration Factor (External Std Method)	RSD<20	Control Blank Spike (3 MS Compounds)	±3sd	Control Blank Spike Duplicate	<Upper Range Limit	Matrix Spike (3 MS Compounds)	±2sd	Matrix Spike Duplicates	<Upper Range Limit
			OR		OR		Surrogates	±3sd	N/A	N/A
	Daily Continuing Calibration Compounds	85-115%	Matrix Spike (3 MS Compounds)	±3sd	Matrix Spike Duplicate	<Upper Range Limit				
Methanol & Other GC Volatiles	Initial Calibration Factor (External Std Method)	RSD<20	Control Blank Spike	±3sd	Control Blank Spike Duplicate	<Upper Range Limit	Matrix Spike	±2sd	Matrix Spike Duplicates	<Upper Range Limit
			OR		OR		Surrogates	±3sd	N/A	N/A
	Daily Continuing Calibration Compounds	85-115%	Matrix Spike	±3sd	Matrix Spike Duplicate	<Upper Range Limit				

TABLE 5.1 (Cont.)

ACCURACY, PRECISION, METHOD PREPARATION: OBJECTIVES AND LIMITS
DIOXINS/FURANS (LOW RESOLUTION)

Analysis	Calibration Checks	Limits	Method Accuracy Checks	Limits	Method Precision Checks	Limits	Method Preparation Check (Efficiency)	Limits	Method Preparation Check (Precision)	Limits
Dioxins/Furans (Low Resolution)	Initial Relative Response Factor	RSD<15 Triplicate injections of each level.	N/A	N/A	N/A	N/A	Internal to Recovery Standard	40-120%	N/A	N/A
	Initial Tuning Isotopic Ratio Measurements w/ Column Performance Check Mixture	As per 8280B Table 9								
	Valley Percent Resolution for 2,3,7,8-TCDD and 1,2,3,4-TCDD	<25								
	Daily/Continuing Mid-level Check Standard	±30% of the Initial Calibration RRFs								
	Daily Tuning Same as Initial Tuning	Same as Initial Tuning								

TABLE 5.1 (Cont.)

ACCURACY, PRECISION, METHOD PREPARATION: OBJECTIVES AND LIMITS
DIOXINS/FURANS (HIGH RESOLUTION)

Analysis	Calibration Checks	Limits	Method Accuracy Checks	Limits	Method Precision Checks	Limits	Method Preparation Check (Efficiency)	Limits	Method Preparation Check (Precision)	Limits
Dioxins/Furans (High Resolution)	Initial Relative Response Factor 17 unlabeled 9 labeled	 RSD<20 RSD<30	N/A	N/A	N/A	N/A	Internal to Recovery Standard	40-135%	Matrix Spikes and Matrix Spike Duplicates	RPD<20
	Initial Tuning Isotopic Ratio Measurements for 17 unlabeled 11 labeled	As per 8290A Table 8							Unspiked Duplicates	RPD<25
	Valley Percent Resolution for Column Performance Check Standard	<25								
	Valley Percent PFK m/z 304.09824 & TCDF m/z 303.9016	<10								
	Daily/Continuing High Resolution Calibration Compound-3 17 unlabeled 9 labeled	 ±20% ±30% of the Initial Calibration RRFs								
	Daily Tuning Same as Initial Tuning	Same as Initial Tuning								
	End Cal Check HRCC-3 17 unlabeled 9 labeled	 RPD<25 RPD<35 of the previous 12hr HRCC-3 Check								

ACCURACY, PRECISION, METHOD PREPARATION: OBJECTIVES AND LIMITS
WET CHEMISTRY

TABLE 5.1 (Cont.)

Analysis	Calibration Checks	Limits	Method Accuracy Checks	Limits	Method Precision Checks	Limits	Method Preparation Check (Efficiency)	Limits	Method Preparation Check (Precision)	Limits
Heat of Combustion (BTU)	Initial Generate an EE value with 6 runs of benzoic acid on two non-consecutive days Daily Benzoic Acid	Results must be within 56 BTU/lb of each other 11373 BTU/lb ±56	Laboratory Control Sample	±200 BTU/lb or ±3sd of historical mean (use the more stringent)	Laboratory Control Sample Duplicate	Within 56 BTU/lb of initial LCS run or <Upper Range Limit (use the more stringent)	N/A	N/A	N/A	N/A
Chloride (for Total Halogens)	Calibration Verification Standard	90-100%	Laboratory Control Sample	±3 sd of historical mean	Laboratory Control Sample Duplicate	<Upper Range Limit	Matrix Spike	±3sd	Matrix Spike Duplicates	<Upper Range Limit
Setaflash Ignitability	n-Butanol	98°F±2, in duplicate	Select a compound with a flashpoint near 140°F	±3°F	N/A	N/A	N/A	N/A	N/A	N/A
Pensky-Marten Ignitability	p-Xylene	81°F ±2, in duplicate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Percent Moisture:										
Evaporation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Duplicate	RPD<10
Karl Fischer	Hydranal	90-100%	N/A	N/A	N/A	N/A	N/A	N/A	Duplicate	RPD<10

ACCURACY, PRECISION, METHOD PREPARATION: OBJECTIVES AND LIMITS

TABLE 5.1 (Cont.) **Wet Chemistry**

Analysis	Calibration Checks	Limits	Method Accuracy Checks	Limits	Method Precision Checks	Limits	Method Preparation Check (Efficiency)	Limits	Method Preparation Check (Precision)	Limits
Percent Ash	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Duplicate	RPD<10
Fluoride (from Combustate)	Calibration Verification Standard	90-100%	Laboratory Control Sample	±3sd of historical mean	Laboratory Control Sample Duplicate	<Upper Range Limit	Matrix Spike	±3sd	Matrix Spike Duplicates	<Upper Range Limit
Viscosity	Calibration Verification Standard	90-100%	N/A	N/A	N/A	N/A	N/A	N/A	Duplicate	RPD<10
Specific Gravity	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Duplicate	RPD<10
pH:										
Water	pH 4,7,10 Buffers	N/A	Calibration Verification Standard	±0.05 pH Units	N/A	N/A	N/A	N/A	Duplicates on all water samples	±0.1 pH Units
pH Paper	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Duplicate on all samples	±1 color increment on narrow range paper
Waste	pH 4,7,10 Buffers	N/A	Calibration Verification Standard	±0.05 pH Units	N/A	N/A	N/A	N/A	N/A	N/A
Solids	pH 4,7,10 Buffers	N/A	Calibration Verification Standard	±0.05 pH Unites	N/A	N/A	N/A	N/A	N/A	N/A

6.0 SAMPLING PROCEDURES

A comprehensive program is essential in order to ensure that all samples taken are representative of the waste, that the analysis is complete and accurate, and that the final reports contain sufficient information to achieve their intended purpose. That purpose primarily being the safe and efficient treatment and disposal of hazardous waste.

A sample may or may not require special handling and storage procedures. This is dependent upon the parameter to be analyzed, the sample matrix, and the amount of time prior to analysis. Since the type of sample preservation required varies depending on the sample type and the parameter to be measured, more than one container per sample may be necessary.

All samples are preserved in accordance with the parameter to be measured as specified by the analytical method for that parameter. The analytical methods included in this Quality Assurance Plan refer to the optimum means of preservation. Since the chemical make-up of certain samples can alter the effectiveness of the sample preservation measures, all samples are analyzed as soon as possible after sampling and before the maximum recommended holding time has expired.

Table 6-1 indicates the parameter of interest, appropriate container, preservation, and maximum holding times for samples of various matrix types.

6.1 SAMPLE COLLECTION

The first step in any analysis is the collection of the sample. A wide range of techniques and sampling devices are utilized to sample waste materials in containers, tanks, and process streams.

The sampling methodology is determined by the sampling strategy employed. The methods and equipment used for sampling waste material vary with the form and consistency of the waste materials. The following sampling procedures are utilized for the following types of materials:

Extremely viscous liquids. . . . . . ASTM D140-70; SW-846
Crushed or powdered material . . . . ASTM D346-75; SW-846
Soil or rock-like material . . . . . ASTM D420-69; SW-846
Soil-like material . . . . ASTM 1452-65; SW-846
Fly-ash-like material. . . . . ASTM D2234-76; SW-846
Stratified liquids EPA-600/2-80-018; SW-846

Table 6.1
SAMPLING CONTAINERS, PRESERVATION, AND HOLDING TIMES

MATRIX	ANALYSIS	CONTAINER	PRESERVATION	MAXIMUM HOLDING TIME
Solids, Organic Liquids, Sludges	Semi-Volatile Organics	Glass	4°C	Extraction: 14 Days Extract: 40 Days
	Volatile Organics	VOA Vial	4°C	14 Days
	ICP Metals	Glass, Plastic	4°C	6 Months
	Mercury	Glass, Plastic	4°C	38 Days w/Glass 13 Days with/Plastic
	Cyanide	Glass, Plastic	4°C	14 Days
	Wet Chemistry and Fingerprint	Glass, Plastic	4°C	24 Hours
Aqueous Liquids	Semi-Volatile Organics	Glass	4°C	Extraction: 7 Days Extract: 40 Days
	Volatile Organics	VOA Vial	4°C	14 Days
	ICP Metals	Glass, Plastic	4°C, HNO_3 to pH<2	6 Months
	Mercury	Glass, Plastic	4°C, HNO_3 to pH<2	38 Days w/Glass 13 Days w/Plastic
	Cyanide	Glass, Plastic	4°C, NaOH to pH>12	14 Days
	Wet Chemistry and Fingerprint	Glass, Plastic	4°C	24 Hours

6.2 SAMPLING CONTAINERS

The term "container" refers to receptacles designed for transporting materials, e.g., drums and other small receptacles as opposed to stationary tanks. This section addresses sampling of containers that are of a size that could be stored in the container storage building. Sampling of bulk materials in large containers such as rolloffs, tank trucks, etc. is addressed in section 6.4. COLIWASAs, tubes, shovels, drum thieves, and triers are the devices used to sample containers.

A random sampling strategy is employed to sample incoming shipments of containerized waste. Samples from containers holding the same type of waste may be composited. The following procedure will be used to determine how many containers will be sampled and which samples will be composited. Each container will be opened and visually inspected with the exception of those wastes allowed otherwise by the Waste Analysis Plan. Wastes on a single load that have the same profile number and DOT description (excluding waste codes) and appear to be of the same waste type will be grouped together. Ten percent (rounded up) of the containers in each of these groups will be sampled as described below. The samples within each separate group may be composited for analysis.

A unique tracking number is assigned to each container.

Samples are taken from locations displaced both vertically and horizontally throughout the waste. For liquids (or liquids with precipitated solids), the sampling person uses a COLIWASA or equivalent. The sampling device is inserted into the container from the top and is pushed down slowly until the bottom of the container is reached. The device is sealed to retain the contents. The contents of the sampling device are then transferred to a polyethylene or glass bottle, which is labeled with waste identification information. The sampling device may also be stoppered at both ends, wiped dry with a disposable cloth, and then transferred to the lab for analysis.

A trier or thief is used to sample containers that are solid in nature. These containers are generally filled with dirt and sludges. Several areas from the container are sampled and composited into a jar in order to ensure a representative sample. The sampling person removes a sample that uniformly represents the waste composition of the container, i.e., all layers and phases are represented in the sample.

6.3 SAMPLING TANKS

Liquid and sludge storage and blend tanks at Aragonite are agitated. The tanks are agitated by either a propeller-type mixer or recirculation. The agitation capabilities of the tanks make it possible to obtain a representative sample via a sampling valve. The tanks are agitated prior to drawing a sample. The waste is sampled from a valve on the side or bottom of each tank.

Bulk solids which have been mixed in the bulk solids storage tanks are sampled at a minimum of six locations in the tank. A scoop is taken with the backhoe, or equivalent, from as deep a cross section as possible at each location. A trier, thief or shovel is used in order to collect a sample from each backhoe scoop. The samples are composited together so that there is one sample which represents that particular mix of bulk solids.

6.4 SAMPLING BULK CONTAINERS OF WASTE

Where sampling of bulk loads is required, each bulk container of each load will be sampled as described below.

Bulk solids in rolloffs or end dumps are sampled at two locations in the waste container. A trier, thief or shovel is used in order to draw a sample from as deep a cross section as possible at each location. The samples are composited together so that there is one sample which represents that particular bulk solids shipment.

Bulk liquids are sampled by using a COLIWASA or similar device which can sample vertical anomalies. Bulk sludges are sampled with a device appropriate for the consistency of the material. That may be a COLIWASA, trier, dip tube, or thief, etc. Each compartment of tanker trucks is sampled. Compartment samples from the same generator and waste stream may be composited prior to analysis.

Tank trucks without man-ways are sampled through the valve. The valve is flushed prior to the sample actually being drawn.

An exception to the requirement for sampling each load of bulk load shipments is where a rail car of liquids or visibly similar solids is divided into multiple bulk tanker or truck loads for final shipment to Aragonite. This will only occur at the Bulk Solids Rail/Truck Transfer facility, Unit 255, and the Bulk Liquids Rail/Truck Transfer Bay, Unit 535, at the Clive facility. In such cases, a representative sample will be taken from each rail car and that sample may be used as the incoming load sample for each of the individual truck or tanker loads from that rail car. For bulk solids, the sample from the rail car will consist of at least six sub-samples taken from equal areas in the rail car at depths of at least one foot. Alternatively, the sample could be collected by compositing at least three grab samples from the backhoe bucket while the waste is being transferred from the rail car to the end dumps or rolloff boxes. For liquids, a representative sample will be taken with a COLIWASA from the hatch of the rail car. Samples will follow chain-of-custody procedures for transport to Aragonite.

Additionally, analyses of samples taken at the Clive facility by Aragonite personnel and analyzed according to the methods specified in the Waste Analysis Plan (Attachment 1) may be used for acceptance and management at Aragonite. These are the only cases in which the incoming load sample may be collected off site.

6.5 SAMPLING SURFACES

40 CFR 761.123 contains standardized EPA procedures for taking PCB surface wipe samples. The definition constitutes the minimum requirements for an appropriate wipe testing protocol. A standard size template (10 cm x 10 cm) is used to identify the sampling area; the wiping media is an all collection gauze pad which has been saturated with hexane. The wipe is performed quickly once the gauze is exposed to air.

7.0 TRACEABILITY

Clean Harbors Aragonite routinely follows sample traceability for all internal sampling and analysis. This involves the documentation of procedures so that a set of data can be traced back through the analyst, to the person performing the sampling, and then to the waste itself. All samples receive a unique sample identification number to facilitate this process.

Should Chain-of-Custody be warranted, i.e., shipping samples off-site, then procedures in Section 7.4, Chain-of-Custody are followed:

In order to trace sample possession from the time of collection, a traceability record is filled out and accompanies the sample. The record contains the following information:

- sample number;
- signature of the collector;
- date and time collected;
- waste type;
- signature of persons involved;
- inclusive date of possession; and
- cross reference to manifest (if applicable).

7.1 SAMPLE LABELS

Sample labels are necessary to prevent misidentification of samples. The labels are gummed and affixed to the containers prior to or at the time of sampling. The labels are filled out at the time of collection.

Examples of types of sample labels used are shown below (for illustration purposes):

Clean Harbors Aragonite Site Label

I.D.#____________________DATE____________________
MANIFEST #_______________TIME____________________
GEN. NAME____
SAMP. LOCATION___________________________________
PERSON SAMP._____________DEPT.___________________

Clean Harbors Aragonite Laboratory LIMS Label

#9202056-01A ALLIANCE
ID APT-0-AT-1-NAOH
LOC D3B 02/08/92
CL_IC

7.2 SAMPLE SEALS

Sample seals are used to detect any tampering during shipment for samples sent off site. The seals are initialed, dated, and then affixed to the sample containers or shipping containers before the samples leave the custody of the Aragonite lab. Sample seals are not necessary for samples taken onsite at the Aragonite facility and sent to the onsite laboratory. They are required for Chain of Custody events.

7.3 SAMPLING LOGBOOK

All information pertinent to field surveys or sampling is recorded in a logbook. Since sampling situations vary widely, no set of rules can be given as to the extent of information that must be entered in the logbook. However, sufficient information is recorded to allow someone to reconstruct the sampling without reliance on the collector's memory. This information is recorded in a bound log book or electronically and includes at a minimum the following information:

- location of sampling point;
- volume of samples taken;
- date and time of collection;
- sample identification number;
- person sampling;
- comments or observations;
- sampling methodology;
- number of samples and disposition

7.4 CHAIN-OF-CUSTODY RECORD

Sample chain-of-custody is maintained as required by the client or regulatory agency. A chain-of-custody is used to ensure legal defensibility of the data from sample collection to data reporting. This includes the ability to trace the possession and handling of samples from the time of collection through analysis and final disposition.

The components of the chain-of-custody include the following: sample seals, a logbook, chain-of-custody record, and sample analysis request sheets. The procedures for their use are described in further detail.

A sample is considered to be under a person's custody if:

- it is in a person's physical possession;
- in view of the person after possession has taken place;
- secured by that person so that no one can tamper with the sample; or
- secured by that person in an area which is restricted to authorized personnel.

Upon receipt of the sample(s) in the laboratory they are entered into the sample receipt logbook. All chain-of-custody samples are directed to the sample custodian. The shipping containers and sample bottles are inspected for proper seals and labels. The contents of the containers are then checked against the chain-of-custody record.

If the chain-of-custody information is complete and the integrity of the samples has not been broken, each sample is assigned a unique identification number.

The samples are then put into storage to await analysis. Maximum holding times for the samples are described in Section 6 of this Quality Assurance Plan.

8.0 CALIBRATION PROCEDURES AND FREQUENCIES

All instruments are calibrated in accordance with the appropriate analytical method. The methods commonly utilized by Clean Harbors Aragonite are referenced in Section 5.0 of the Waste Analysis Plan. These methods cite the appropriate calibration procedures and frequencies. In addition, all instruments are calibrated in accordance with the manufacturer's procedures.

Prior to the analysis of samples, instruments are either calibrated or their calibrations verified. Calibration curves of signal response versus concentration are generated on each applicable analytical instrument. Calibration curves are established for each analyte of interest.

Most methods use multi-point calibrations, usually employing standards at either three or five different concentrations. Calibrations are evaluated using calibration check standards. Should this sample fall outside of acceptable limits as specified by the method, the instrument is recalibrated. Table 8.1 summarizes instrument calibration procedures and frequencies.

Sources of reference materials include the National Bureau of Standards, and reputable commercial vendors.

TABLE 8.1
CALIBRATION PROCEDURES AND FREQUENCIES

Instrument	Standards	Frequency
GC	Mid-level Standard	Daily and every 10th sample.
	5-7 Standards	Recalibration if CVS is greater than 15% of expected value.
GC/MS	Mid-level Standard	Daily
	5-7 Standards	Recalibration if CCC* is greater than 30% for semi-volatiles and 25% for volatiles.
	Mass Calibration (GC/MS tuning)	Every 12 hours.

ICP	Calibration Verification Standard (CVS)	Beginning and end of analytical run and every 10th sample.
	3-5 Standards	Recalibration if CVS not within $\pm$ 10% of expected value.
AAS	3-5 Standards	Analysis of standards at the beginning of an analytical run.

* CCC = Continuing Calibration Check

9.0 ANALYTICAL METHODS

The analytical methods which Clean Harbors Aragonite uses are listed in Section 5.0 of the Waste Analysis Plan.

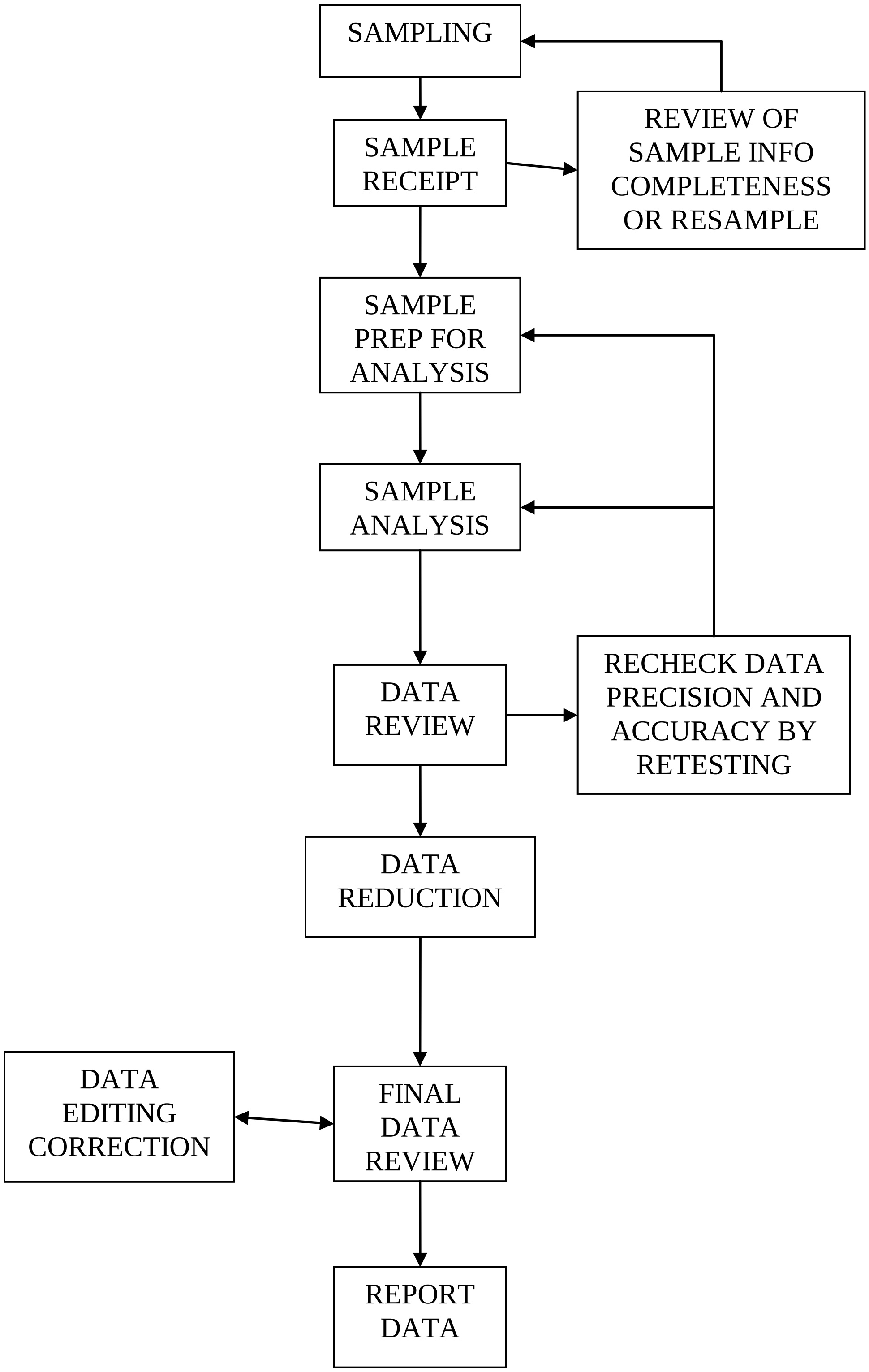
10.0 DATA REDUCTION, VALIDATION, AND REPORTING

Clean Harbors Aragonite data reduction procedures are designed to include several levels of data review. Data validation begins with the person generating data. The chemist or analyst makes the initial calculations and records the results in his/her notebook or on the appropriate worksheet. Each section supervisor or designee is then responsible for reviewing data and calculations generated by their respective group. Final review and case narratives are performed by the Laboratory Manager or designee.

Discrepancies and errors are referred back to the chemist or analyst performing the analysis. If necessary, the samples are reprepared and reanalyzed.

Figure 10.1 depicts the data reporting scheme.

FIGURE 10.1 DATA REPORTING SCHEME



10.1 DATA REDUCTION

Raw data from chromatographs, spectrometers, recorders, and physical measurements are reduced to yield concentrations of the analytes of interest. All data reduction is performed in accordance with the applicable method as referenced in Section 9.0.

Data reduction which is not computerized is recorded in ink on worksheets or in lab notebooks.

10.2 DATA VALIDATION

All data are validated prior to being disseminated from the laboratory. The data are reviewed for both editorial and technical validity.

The editorial review consists of a check for typographical, transpositional, and omissional errors. This review also includes a review of any text which may accompany the data.

The technical review consists of a check to see that all precision, accuracy, and detection limit requirements have been met. In addition, the data are also reviewed for completeness and representativeness.

10.3 DATA REPORTING

Once data have been reviewed and all requirements for completeness, representativeness, precision, accuracy, and limits of detection have been met, results are reported to the client.

Typically, only the final reduced data and case narrative are reported. Clean Harbors Aragonite retains in its records all QC data, calculations, chromatograms, etc., which support the reported data.

11.0 INTERNAL QUALITY CONTROL CHECKS

Clean Harbors Aragonite maintains a minimum level of quality control as described in Chapter 1 "Quality Control," SW-846.

Table 5.1 describes the quality control strategies for each analysis. A glossary of terms is listed in Section 11.2.

11.1 FIELD QUALITY CONTROL

The procedures used in the field to ensure data quality include:

- The use of accepted sampling techniques.
- The justification and documentation of any field action contrary to accepted or specified techniques.
- The documentation of activities, such as container preparation, instrument calibration, etc.
- The documentation of field measurement Quality Control Data.
- The documentation of field activities.
- The documentation of post-field activities including sample shipment and receipt, equipment check in, and de-briefing.
- The generation of Quality Control Samples, including duplicates.

11.2 ANALYTICAL QUALITY CONTROL

The procedures used in the laboratory to ensure analytical data quality include:

Duplicate Spike - is analyzed (when applicable) with every analytical batch or once in ten samples, which ever is more frequent. Analytes stipulated by the method applicable regulations, or agreement with the client, are spiked into the sample. Selection of the sample to be spiked, split, or both depends on the information required and the variety of conditions within a typical matrix. In some situations, requirements of the site being sampled may dictate that the person sampling select a sample to be spiked and split based on a pre-visit evaluation or on-site inspection. Thus does not preclude the laboratory's spiking a sample of its own selection. In most cases, the laboratory will select the sample to be spiked. The laboratory's selection is based on the attempt to determine the extent of matrix bias or interference on the analyte recovery and sample to sample precision.

Blanks - accompany each batch of samples and are carried through the entire analytical procedure.

Surrogate Standards - are spiked into samples according to the appropriate analytical methods. Surrogate spike recoveries will fall within the control limits set by Clean Harbors Aragonite in accordance with the procedures specified in the method.

Check Samples - containing a representative subset of the analytes of interest are used to evaluate equipment performance. The concentration of the analytes approaches the estimate quantification limit in the matrix of the check samples.

Clean-Ups - are used to eliminate interferences in organic extracts. Samples which undergo clean up are checked for percent recovery.

Column-Check Sample - is used to verify column performance. The elution pattern is reconfirmed after activating or de-activating a batch of absorbent.

Instrument Adjustment - requirements and procedures are instrument and method specific. Analytical instrumentation is tuned and aligned in accordance with requirements which are specific to the instrumentation procedures employed.

Calibration - is performed in accordance with the manufacturers' requirements and the procedures specified in the applicable method.

11.3 SPECIFIC REQUIREMENTS FOR INORGANIC ANALYSIS

Standard curves used in the determination of inorganic analytes are prepared as follows.

Standard curves derived from data consisting of one reagent blank and three to five concentrations are prepared for each analyte. The response for each prepared standard is based upon the average of three replicate readings of each standard. Sample results must fall within the concentration range of the standard curve. If the results of the verification are not within ±10% for ICP and 20% for Atomic Absorption of the original standard curve, a reference standard is employed to determine if the discrepancy is with the standard or with the instrument.

New standards are prepared on a quarterly basis. All data used in drawing or describing the curve are indicated on the curve or its description and a record is made of this verification.

Standard deviations and relative standard deviations are calculated for the percent recovery of analytes from the spike sample duplicates from the check samples.

11.4 SPECIFIC REQUIREMENTS FOR ORGANIC ANALYSIS

The following requirements are applied to the analysis of samples by gas chromatography, liquid chromatography and gas chromatography/mass spectrometry.

The calibration of each instrument is verified at frequencies specified in the methods. Standard curves are prepared as specified in the methods.

The tune of each GC/MS system used for the determination of organic analytes is checked with 4-bromofluorobenzene (BFB) for determinations of volatiles and with decafluorotriphenylphosphine (DFTPP) for determination of semi-volatiles. The required ion abundance criteria are met before determination of any analytes.

If the system does not meet the required specification for one or more of the required ions, the instrument is retuned and rechecked before proceeding with sample analysis. The tune performance check criteria are achieved daily or for each 12 hour operation period, whichever is more frequent.

The background subtraction is straightforward and designed only to eliminate column bleed or instrument background. Background subtraction actions resulting in spectral distortions for the sole purpose of meeting special requirements are contrary to the objectives of Quality Assurance and are unacceptable.

For determinations by HPLC or GC, the instrument calibration is verified as specified in the methods.

12.0 PERFORMANCE AND SYSTEM AUDITS

The laboratory is subject to both internal and external audits, in order to monitor the capability and performance of the total measurement systems.

The systems audit consists of evaluation of all components of the measurement system to determine their proper selection and use. This audit includes a careful evaluation of both field and laboratory quality control procedures. System audits are normally performed prior to or shortly after a new system has been implemented. Performance audits are then performed on a routine basis, at least quarterly, during the lifetime or continuing operation of the system.

12.1 EXTERNAL AUDITS

Clean Harbors laboratories participate in EPA WP Study semiannual blind round robin tests with other laboratories who perform environmental analysis.

A set of blind samples are split among the laboratories. This helps Clean Harbors Aragonite evaluate the precision and accuracy of its own laboratories, as well as provide information about the amount of interlaboratory deviation which can be associated with a particular method.

Corrective action is taken as described in Section 14 of this QAP.

12.2 INTERNAL AUDITS

Internal audits are performed on a quarterly basis. The audit is conducted by the Quality Assurance Officer under the direction of the Laboratory Manager. The audit report is due 30 days following the conclusion of the quarter.

The audit evaluates the system from the receipt of samples to the reporting of results. Specific areas which are addressed include: sample flow through the lab, sample storage, sample preparation, analysis, data reduction, data reporting, QC samples, logbooks, and raw data storage.

13.0 PREVENTATIVE MAINTENANCE

Clean Harbors laboratories are equipped and maintained to provide the best conditions possible for performing laboratory analysis. Equipment which has become obsolete by the advancement of technology is replaced or upgraded. All equipment is inspected regularly to ensure that it is in proper working order.

Equipment is maintained in accordance with the manufacturer's recommendations. All major pieces of equipment are covered by service contracts from the manufacturer. Whenever possible, Clean Harbors Aragonite maintains an inventory of spare parts which typically need replacement, this includes such compounds as septa, GC columns, ion volumes, torches, regulators, and so forth.

Table 13.1 lists pieces of equipment or components which are routinely maintained, the frequency at which they are serviced and the type of maintenance performed.

TABLE 13.1
MAINTENANCE SCHEDULE

EQUIPMENT COMPONENT	MAINTENANCE PERFORMED	FREQUENCY
Gas Chromatographs		
septa	replace	as required
column	replace/condition	as required
syringes	replace	as required
inlet liner (tube)	clean/replace	as required
ELCD (HALL)	leak check	as required
Ni catalyst	replace/condition	as required
solvent resin	replace	as required
ECD	wipe test	semi-annually
	leak check	as required
	factory clean/recondition	as required
PID	leak check	as required
lamp	replace	as required
FID	leak check	as required
jets	clean	as required
ICP		
nebulizer	clean/replace	as required
pump tubing	replace	weekly
air filters	clean	as required
torch	clean/replace	as required
MERCURY ANALYZER		
drying tube desiccant	replace	daily
sample tubing	replace	twice/week
stannous chloride tubing	replace	once/2 weeks
drain tubing	replace	once/2 weeks
lamp	replace	as required
optics	clean	as required
CALORIMETER		
bombs	calibration/certification	after 500 firings
tubing	check/replace	daily
COMPRESSED GASES		
fittings	leak checks	as required
traps	replace	as required

14.0 CORRECTIVE ACTION

Quality Control procedures are designed to identify the need for corrective action. Most corrective actions are performed by the chemists doing the analysis, and are usually as simple as recalibrating an instrument should the instrument check sample be out of its acceptable range. Most corrective actions are found in methods, standard operating manuals, and instrument manuals.

Corrective actions may also be initiated as a result of various Quality Assurance activities, including:

1) performance audits,
2) system audits,
3) laboratory or interfield comparison studies,
4) program audits, and
5) final review of data reports

Corrective action reports will be sent to the Laboratory Manager for review and implementation.

However, standard operating procedures are to:

1) define the problem,
2) determine the cause(s) of the problem,
3) determine possible solutions to the problem,
4) implement the corrective action, and
5) verify that the corrective action is effective.

All employees are encouraged to bring to their supervisor's attention any problem or practice which they feel may affect data quality.

15.0 QUALITY ASSURANCE REPORTS TO MANAGEMENT

The Clean Harbors Aragonite Quality Control Officer is responsible for reporting to the Laboratory Manager every four months on the performance of measurement systems and data quality. The Laboratory and Plant Manager reviews and returns the report. These reports include:

1) Assessment of measurement data accuracy, precision, and completeness.
2) Results of performance audits.
3) Results of system audits.
4) Significant Quality Assurance problems and recommended solutions.

ATTACHMENT 1
WASTE ANALYSIS PLAN

APPENDIX 1
QUALITY ASSURANCE PLAN

2.0 TABLE OF CONTENTS

FIGURES AND TABLES

3.0 QAP DESCRIPTION

Data of unknown quality is useless. It is this premise which Clean Harbors Aragonite management bases its stance on quality control.

Data of good quality does not just happen. Quality control must be an integral part of Aragonite's day to day operations. It relies on each individual within the program to make data quality his/her primary objective.

It is the goal of Clean Harbors Aragonite to produce high quality data. This Quality Assurance Plan is designed to ensure that all data generated are complete, precise, and accurate. Data quality will be documented.

There are three primary areas where data quality is of concern. These are as follows:

- Waste Approval and Acceptance
- Process Operating Parameters
- Residue Characterization

The objective of the first area is to characterize a particular waste stream and determine if the facility is capable of accepting the material under its permit conditions.

The objective of the second area is to provide analytical support so that Aragonite can operate within its permit conditions. This mainly addresses the blending of waste material so that maximum conditions stipulated in the operating permit such as Btu/hr, total chlorine, etc., are not exceeded. It also addresses other areas which may not be specified in the permit but enable Clean Harbors Aragonite to operate the facility in a more efficient manner. A waste's compatibility with other wastes already being stored at the facility is also assessed.

The last area concerns the by-products which are generated from the thermal treatment of the wastes. The slag from the kiln and the dusts from the spray dryer and baghouse are analyzed to ensure that the incineration process is destroying the organic hazardous constituents in compliance with the permit and Land Disposal Restrictions.

3.1 PURPOSE

The purpose of this Quality Assurance Plan is to ensure that all information, data, and resulting decisions compiled under a specific task are technically sound, statistically valid, and properly documented. Quality Assurance is the program or structure within an organization which plans, designs, and monitors the QA procedures and affirms the data quality in reports.

Quality Control is the mechanism or activities through which Quality Assurance achieves its goals. This is accomplished through a program which defines the frequency and methods of checks, audits, and reviews necessary to identify problems and dictate corrective action.

3.2 SCOPE

The Quality Assurance Plan encompasses the entire measurement system from initial sampling to the final reporting and interpretation of results. This QAP is for the Aragonite laboratory.

3.3 OBJECTIVE

This Quality Assurance Plan is designed to produce accurate and reliable data. In order to accomplish this objective, the following criteria must be achieved:

- All procedures and practices must be accepted by the client and/or regulatory agency.

- A continuing program must be developed to monitor the performance of the program.

- A mechanism must be developed for correcting problems which are determined by the monitoring assessment.

4.0 LABORATORY ORGANIZATION AND RESPONSIBILITY

The organizational structure of the Clean Harbors Aragonite laboratory is shown on the organization chart maintained at the facility.

The initial step in any Quality Assurance Plan begins with the people involved. In addition to the organizational chart, descriptions of those individuals involved in Quality Assurance and their responsibilities are included.

4.1 QUALITY ASSURANCE COMPLIANCE OFFICER

The QA Compliance Officer is responsible for identifying quality problems, to recommend and provide solutions, and to verify the implementation of the solutions. The duties include:

- developing mechanisms to carry out QA/QC objectives;
- administration of quality control procedures;
- implementation of corrective action(s); and
- maintenance of QA/QC records.

4.2 LABORATORY MANAGER

The Laboratory Manager is responsible for the daily operation and management of the Aragonite laboratory. The manager's duties include:

- management of laboratory personnel;
- oversee and coordinate instrument and equipment maintenance;
- review of work procedures and daily laboratory practices;
- work scheduling;
- record keeping;
- training of laboratory personnel; and
- responsibility for the administration of Quality Control at his/her respective laboratory.

4.3 CHEMISTS

The Chemist's duties as they relate to QA/QC are as follows:

- recommendations for technical decisions;
- evaluating and reviewing test procedures;
- reviewing and signing laboratory reports;
- ensuring that results are accurate and reproducible;
- calculations and interpretations of test results;
- equipment and instrument calibration and operation; and
- sample preparation and analysis.

4.4 LABORATORY TECHNICIANS

The laboratory technicians duties as they relate to QA/QC are as follows:

- performing sample preparation and analysis;
- maintaining a clean and safe working environment;
- making recommendations to supervisors regarding analysis or QA/QC performances;
- performing QA/QC analysis; and
- reviewing and signing laboratory reports.

4.5 SAMPLING TECHNICIANS

Sampling technicians are specially trained personnel responsible for sampling containers, vessels, tanks, and process streams. Sampling techs typically are in Production, Receiving, Incineration, or any combination of these areas. These people may be chemists, engineers, laboratory technicians, or operations personnel. They all have specialized training in sampling QA/QC techniques including the use of various sampling apparatus, sample site selection, sampling methodologies, and chain of custody procedures.

The QA/QC Coordinator or the Laboratory Manager interacts with the sampling technicians to assure understanding of selection, collection, storage, transportation, and documentation practices.

5.0 QUALITY ASSURANCE OBJECTIVES FOR MEASUREMENT IN TERMS OF PRECISION, ACCURACY, AND COMPLETENESS.

Data Quality objectives are defined as follows:

- Precision - is the measure of agreement of a set of replicate results among themselves. Precision is assessed by means of duplicate/replicate sample analysis.

- Accuracy - is the nearness of a result or the mean (X) of a set of results to the true value or an established laboratory mean. Accuracy is assessed by means of reference samples and percent recoveries.

- Completeness - is the measure of the amount of valid data derived from a system of measurement as compared to the amount of data which was expected to be obtained.

5.1 ACCURACY

Accuracy information for quantitative measurements is generated by using one or more of the following techniques:

Calibration Checks
Calibration checks determine the acceptability of a calibration. The limits are method specified.

Calibration Check Standards are used as continuing checks for organic analysis. The equation for the Calibration Check Standard is:

% Recovery = 100(result/true value)

Calibration Verification Standards (CVS) are second-source standards (a different brand from those used for generating a calibration curve) to check the accuracy of the calibration curve. The equation for the CVS is:

% Recovery = 100(result/true value)

Method Accuracy Checks

Method Accuracy checks determine the acceptability of a batch of samples that have been subjected to a preparation step (i.e., digestion, extraction, combustion, etc.). The limits are method specified or statistically generated, whichever is the more stringent at the time of analysis. The means and limits are tracked by generating statistical data. If the Method Accuracy check does not fall within the more stringent control limit, the batch is rejected and rerun for the failed constituent(s).

Control Limit = method specified
or
mean $\underline{+}$3sd, whichever is the more stringent

Laboratory Control Samples (LCS) are purchased Standard Reference Materials that may closely match the matrix that is being analyzed.

Control Blank Spikes (CBS) are blanks that are spiked with the constituents being analyzed.

Matrix Spikes (MS) are samples that are spiked with the constituents being analyzed. They are only used as method accuracy checks when the matrix has demonstrated a lack of interference in the analysis.

% Matrix Spike Recovery = 100(Sample Spike Result-Sample Amount)/Spike Amount

5.2 PRECISION

Precision information for quantitative measurements is generated by duplicating the Method Accuracy Checks. The results of the duplication are compared to the initial method accuracy check. The limits are method specified or statistically generated, whichever is the more stringent at the time of analysis. The means and limits are tracked by generating statistical data. If the precision does not fall within the more stringent control limit, the batch is rejected and rerun for the failed constituent(s).

Control Limit = Method specified
or
Upper Control Limit, which ever is the more stringent

Laboratory Control Sample Duplicate (LCSD), or *Control Blank Spike Duplicates* (CBSD) are analyzed by the same procedure as the initial method accuracy check.

Matrix Spike Duplicates (MSD) are samples that are spiked with the constituents being analyzed. They are only used as precision checks when the matrix has demonstrated a lack of interference in the analysis.

Method Specified Limits for precision are compared to results generated by either:

Relative Percent Difference (RPD) = 100(Range of Results/Average of Results)
or
Coefficient of Variation (CV) = 100(standard deviation/mean)

Upper Control Range Limits are generated by historical statistical techniques.
Upper Control Range Limit = Mean of Ranges x (D_2/d_2)

where: Range = absolute difference between replicates

D_2 = 99% confidence upper limit (equivalent to +3sd) on a population mean of replicate averages (when n=2, D_2=3.686).

d_2 = factor that converts a range into a standard deviation between replicates (when n=2, d_2=1.128).

Source of D_4 and d_2: ASTM Manual, *Quality Control of Materials.*

5.3 METHOD PREPARATION CHECKS

When a method preparation check is outside the prescribed limits, a notation, or *flag*, is documented in the final report. The limits are listed in Table 5.1.

Matrix Spikes (MS) are samples that are spiked with the constituents being analyzed. The results are compared to method specified limits or statistically generated limits for a determination of preparation efficiency.

Matrix Spike Duplicates (MSD) are the same as *Matrix Spikes*. The results are compared to the initial *Matrix Spike* result for a determination of the precision of preparation efficiency.

Surrogates are constituents that are not commonly found in the natural environment or in commercial waste products. They are added to the sample at the beginning of the preparation step. In organic chromatographic analysis, they elute at retention times different than target compounds. They are somewhat less susceptible to inferences and are used as an additional determination of preparation efficiency. The strategy used for evaluating surrogate recovery is as follows:

A. If the surrogate recovery falls outside the ±3sd limits, the analyst must:

(1) Rerun the extract.
If the result is within the limits, the analysis is finished.

If the result is still outside the limits, the sample must be re-extracted and rerun on the instrument. If the result is within the limits, the analysis is finished. If it continues to fall outside the limits, the analysis is finished and the final report must be flagged.

OR

(2) Re-extract the sample and rerun on the instrument.

If the result is within the limits, the analysis is finished. If it continues to fall outside the limits, the analysis is finished and the final report must be flagged.

5.4 COMPLETENESS

A data package is considered complete when the following applicable items are finished:

- All appropriate logbooks contain all essential information;
- Data validation has been performed;
- Data files contain raw data, completed data validation forms, and all worksheets that document acceptable accuracy, precision, and flaggable items; and,
- Final results are in the LIMS.

TABLE 5.1
ACCURACY, PRECISION, METHOD PREPARATION: OBJECTIVES AND LIMITS
ICP Metals, AA Metals, Hg (CVAA), Cyanide

Analysis	Calibration Checks	Limits	Method Accuracy Checks	Limits	Method Precision Checks	Limits	Method Preparation Check (Efficiency)	Limits	Method Preparation Check (Precision)	Limits
ICP Metals (Totals and TCLP)	Calibration Verification Standard Continuing Calibration Blanks High Std Linearity Interelement Interference	90-110% ±3sd of historical mean 95-105% 80-120%	Control Blank Spike	80-120% or ±3sd	Control Blank Spike Duplicate	RPD<20 or <Upper Range Limit	Matrix Spike Post-Digestion Spike TCLP Matrix Spike	80-120% 75-125% >50%[1]	Matrix Spike Duplicates and Unspiked Duplicates	RPD<20
AA Metals	Calibration Verification Standard	90-110%	Control Blank Spike	80-120% or ±3sd	Control Blank Spike Duplicate	RPD<20 or <Upper Range Limit	Matrix Spike	80-120%	Matrix Spike Duplicates and Unspiked Duplicates	RPD<20
Hg	Calibration Verification Standard	80-120%	Control Blank Spike	80-120% or ±3sd	Control Blank Spike Duplicate	RPD<20 or <Upper Range Limit	Matrix Spike TCLP Matrix Spike	80-120% >50%[1]	Matrix Spike Duplicates and Unspiked Duplicates	RPD<20
Cyanide	N/A	N/A	Control Blank Spike	85-115% or ±3sd	Control Blank Spike Duplicate	CV<20 or <Upper Range Limit	Matrix Spike	±3sd	N/A	N/A

[1] Perform Method of Standard Additions when (1) the recovery of the spike TCLP extract is <50% and the unspiked extract does not exceed the regulatory level, or (2) the concentration of the metal in the extract is within 20% of the appropriate regulatory level.

TABLE 5.1 (Cont.)

ACCURACY, PRECISION, METHOD PREPARATION: OBJECTIVES AND LIMITS
GCMS VOLATILES

Analysis	**Calibration Checks**	**Limits**	**Method Accuracy Checks**	**Limits**	**Method Precision Checks**	**Limits**	**Method Preparation Check (Efficiency)**	**Limits**	**Method Preparation Check (Precision)**	**Limits**
GCMS Volatiles	Initial BFB Tuning	As per Table 4, (8260B)	Control Blank Spike (5 MS Compounds)	$\pm$3sd	Control Blank Spike Duplicate	<Upper Range Limit	Matrix Spike (5 MS Compounds)	$\pm$2sd	Matrix Spike Duplicates	<Upper Range Limit
	Continuing Calibration Compounds	RF RSD <30	OR		OR		Surrogates (3)	$\pm$3sd	N/A	N/A
	System Performance Check Compounds	Min RRF 0.300 (0.250 for Bromoform)	Matrix Spike (5 MS Compounds)	$\pm$3sd	Matrix Spike Duplicate	<Upper Range Limit				
	Daily SPCC	Min RRF 0.300 (0.250 for Bfm)								
	CCC	<25% difference from initial								
	Internal Standard EICP	50-200% of prior daily std check								

ACCURACY, PRECISION, METHOD PREPARATION: OBJECTIVES AND LIMITS
TABLE 5.1 (Cont.) **GCMS SEMIVOLATILES**

Analysis	Calibration Checks	Limits	Method Accuracy Checks	Limits	Method Precision Checks	Limits	Method Preparation Check (Efficiency)	Limits	Method Preparation Check (Precision)	Limits
GCMS Semi-volatiles	Initial DFTPP Tuning	As per Table 3, (8270D)	Control Blank Spike (11 MS Compounds)	±3sd	Control Blank Spike Duplicate	<Upper Range Limit	Matrix Spike (11 MS Compounds)	±2sd	Matrix Spike Duplicates	<Upper Range Limit
	Continuing Calibration Compounds	RF RSD <30	OR		OR		Surrogates (6)	±3sd	N/A	N/A
	System Performance Check Compounds	Min RRF 0.050	Matrix Spike (11 MS Compounds)	±3sd	Matrix Spike Duplicate	<Upper Range Limit				
	Daily SPCC	Min RRF 0.050								
	CCC	<30% difference from initial								
	Internal Standard EICP	50-200% of prior daily std check								

TABLE 5.1 (Cont.)

ACCURACY, PRECISION, METHOD PREPARATION: OBJECTIVES AND LIMITS
PESTICIDES, PCBs, HOMOLOGS

Analysis	Calibration Checks	Limits	Method Accuracy Checks	Limits	Method Precision Checks	Limits	Method Preparation Check (Efficiency)	Limits	Method Preparation Check (Precision)	Limits
Pesticides/PCBs/ Homologs	Initial Calibration Factor (External Std Method)	RSD<20	Control Blank Spike (6MS Compounds)	±3sd	Control Blank Spike Duplicate	<Upper Range Limit	Matrix Spike (6 MS Compounds)	±2sd	Matrix Spike Duplicates	<Upper Range Limit
			OR		OR		Surrogates	±3sd	N/A	N/A
	Response Factor (Internal Std Method)	RSD<20	Matrix Spike (6 MS Compounds)	±3sd	Matrix Spike Duplicate	<Upper Range Limit				
	4,4'-DDT and Endrin Breakdown	<20%								
	Daily Continuing Calibration Compounds	85-115%								
PCBs only	Initial Calibration Factor (External Std Method)	RSD<20	Laboratory Control Sample	±3sd	Laboratory Control Sample Duplicate	<Upper Range Limit	Matrix Spike	±2sd	Matrix Spike Duplicates	<Upper Range Limit
			OR		OR		Surrogates	±3sd	N/A	N/A
	Daily Continuing Calibration Compounds	85-115%	Matrix Spike	±3sd	Matrix Spike Duplicate	<Upper Range Limit				

TABLE 5.1 (Cont.)

ACCURACY, PRECISION, METHOD PREPARATION: OBJECTIVES AND LIMITS
HERBICIDES, METHANOL

Analysis	Calibration Checks	Limits	Method Accuracy Checks	Limits	Method Precision Checks	Limits	Method Preparation Check (Efficiency)	Limits	Method Preparation Check (Precision)	Limits
Herbicides	Initial Calibration Factor (External Std Method) Daily Continuing Calibration Compounds	RSD<20 85-115%	Control Blank Spike (3 MS Compounds) OR Matrix Spike (3 MS Compounds)	±3sd ±3sd	Control Blank Spike Duplicate OR Matrix Spike Duplicate	<Upper Range Limit <Upper Range Limit	Matrix Spike (3 MS Compounds) Surrogates	±2sd ±3sd	Matrix Spike Duplicates N/A	<Upper Range Limit N/A
Methanol & Other GC Volatiles	Initial Calibration Factor (External Std Method) Daily Continuing Calibration Compounds	RSD<20 85-115%	Control Blank Spike OR Matrix Spike	±3sd ±3sd	Control Blank Spike Duplicate OR Matrix Spike Duplicate	<Upper Range Limit <Upper Range Limit	Matrix Spike Surrogates	±2sd ±3sd	Matrix Spike Duplicates N/A	<Upper Range Limit N/A

TABLE 5.1 (Cont.)

ACCURACY, PRECISION, METHOD PREPARATION: OBJECTIVES AND LIMITS
DIOXINS/FURANS (LOW RESOLUTION)

Analysis	Calibration Checks	Limits	Method Accuracy Checks	Limits	Method Precision Checks	Limits	Method Preparation Check (Efficiency)	Limits	Method Preparation Check (Precision)	Limits
Dioxins/Furans (Low Resolution)	<u>Initial</u> Relative Response Factor <u>Initial Tuning</u> Isotopic Ratio Measurements w/ Column Performance Check Mixture Valley Percent Resolution for 2,3,7,8-TCDD and 1,2,3,4-TCDD <u>Daily/Continuing</u> Mid-level Check Standard <u>Daily Tuning</u> Same as Initial Tuning	RSD<15 Triplicate injections of each level. As per 8280B Table 9 <25 ±30% of the Initial Calibration RRFs Same as Initial Tuning	N/A	N/A	N/A	N/A	Internal to Recovery Standard	40-120%	N/A	N/A

TABLE 5.1 (Cont.)

ACCURACY, PRECISION, METHOD PREPARATION: OBJECTIVES AND LIMITS
DIOXINS/FURANS (HIGH RESOLUTION)

Analysis	Calibration Checks	Limits	Method Accuracy Checks	Limits	Method Precision Checks	Limits	Method Preparation Check (Efficiency)	Limits	Method Preparation Check (Precision)	Limits
Dioxins/Furans (High Resolution)	Initial Relative Response Factor 17 unlabeled 9 labeled Initial Tuning Isotopic Ratio Measurements for 17 unlabeled 11 labeled Valley Percent Resolution for Column Performance Check Standard Valley Percent PFK m/z 304.09824 & TCDF m/z 303.9016 Daily/Continuing High Resolution Calibration Compound-3 17 unlabeled 9 labeled Daily Tuning Same as Initial Tuning End Cal Check HRCC-3 17 unlabeled 9 labeled	 RSD<20 RSD<30 As per 8290A Table 8 <25 <10 ±20% ±30% of the Initial Calibration RRFs Same as Initial Tuning RPD<25 RPD<35 of the previous 12hr HRCC-3 Check	N/A	N/A	N/A	N/A	Internal to Recovery Standard	40-135%	Matrix Spikes and Matrix Spike Duplicates Unspiked Duplicates	RPD<20 RPD<25

TABLE 5.1 (Cont.)

ACCURACY, PRECISION, METHOD PREPARATION: OBJECTIVES AND LIMITS
WET CHEMISTRY

Analysis	Calibration Checks	Limits	Method Accuracy Checks	Limits	Method Precision Checks	Limits	Method Preparation Check (Efficiency)	Limits	Method Preparation Check (Precision)	Limits
Heat of Combustion (BTU)	<u>Initial</u> Generate an EE value with 6 runs of benzoic acid on two non-consecutive days <u>Daily</u> Benzoic Acid	Results must be within 56 BTU/lb of each other 11373 BTU/lb ±56	Laboratory Control Sample	±200 BTU/lb or ±3sd of historical mean (use the more stringent)	Laboratory Control Sample Duplicate	Within 56 BTU/lb of initial LCS run or <Upper Range Limit (use the more stringent)	N/A	N/A	N/A	N/A
Chloride (for Total Halogens)	Calibration Verification Standard	90-100%	Laboratory Control Sample	±3 sd of historical mean	Laboratory Control Sample Duplicate	<Upper Range Limit	Matrix Spike	±3sd	Matrix Spike Duplicates	<Upper Range Limit
Setaflash Ignitability	n-Butanol	98°F±2, in duplicate	Select a compound with a flashpoint near 140°F	±3°F	N/A	N/A	N/A	N/A	N/A	N/A
Pensky-Marten Ignitability	p-Xylene	81°F ±2, in duplicate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Percent Moisture:										
Evaporation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Duplicate	RPD<10
Karl Fischer	Hydranal	90-100%	N/A	N/A	N/A	N/A	N/A	N/A	Duplicate	RPD<10

TABLE 5.1 (Cont.)

ACCURACY, PRECISION, METHOD PREPARATION: OBJECTIVES AND LIMITS
Wet Chemistry

Analysis	Calibration Checks	Limits	Method Accuracy Checks	Limits	Method Precision Checks	Limits	Method Preparation Check (Efficiency)	Limits	Method Preparation Check (Precision)	Limits
Percent Ash	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Duplicate	RPD<10
Fluoride (from Combustate)	Calibration Verification Standard	90-100%	Laboratory Control Sample	±3sd of historical mean	Laboratory Control Sample Duplicate	<Upper Range Limit	Matrix Spike	±3sd	Matrix Spike Duplicates	<Upper Range Limit
Viscosity	Calibration Verification Standard	90-100%	N/A	N/A	N/A	N/A	N/A	N/A	Duplicate	RPD<10
Specific Gravity	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Duplicate	RPD<10
pH:										
Water	pH 4,7,10 Buffers	N/A	Calibration Verification Standard	±0.05 pH Units	N/A	N/A	N/A	N/A	Duplicates on all water samples	±0.1 pH Units
pH Paper	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Duplicate on all samples	±1 color increment on narrow range paper
Waste	pH 4,7,10 Buffers	N/A	Calibration Verification Standard	±0.05 pH Units	N/A	N/A	N/A	N/A	N/A	N/A
Solids	pH 4,7,10 Buffers	N/A	Calibration Verification Standard	±0.05 pH Unites	N/A	N/A	N/A	N/A	N/A	N/A

6.0 SAMPLING PROCEDURES

A comprehensive program is essential in order to ensure that all samples taken are representative of the waste, that the analysis is complete and accurate, and that the final reports contain sufficient information to achieve their intended purpose. That purpose primarily being the safe and efficient treatment and disposal of hazardous waste.

A sample may or may not require special handling and storage procedures. This is dependent upon the parameter to be analyzed, the sample matrix, and the amount of time prior to analysis. Since the type of sample preservation required varies depending on the sample type and the parameter to be measured, more than one container per sample may be necessary.

All samples are preserved in accordance with the parameter to be measured as specified by the analytical method for that parameter. The analytical methods included in this Quality Assurance Plan refer to the optimum means of preservation. Since the chemical make-up of certain samples can alter the effectiveness of the sample preservation measures, all samples are analyzed as soon as possible after sampling and before the maximum recommended holding time has expired.

Table 6-1 indicates the parameter of interest, appropriate container, preservation, and maximum holding times for samples of various matrix types.

6.1 SAMPLE COLLECTION

The first step in any analysis is the collection of the sample. A wide range of techniques and sampling devices are utilized to sample waste materials in containers, tanks, and process streams.

The sampling methodology is determined by the sampling strategy employed. The methods and equipment used for sampling waste material vary with the form and consistency of the waste materials. The following sampling procedures are utilized for the following types of materials:

Extremely viscous liquids. . . . . . ASTM D140-70; SW-846
Crushed or powdered material . . . . ASTM D346-75; SW-846
Soil or rock-like material . . . . . ASTM D420-69; SW-846
Soil-like material . . . . ASTM 1452-65; SW-846
Fly-ash-like material. . . . . ASTM D2234-76; SW-846
Stratified liquids EPA-600/2-80-018; SW-846

Table 6.1
SAMPLING CONTAINERS, PRESERVATION, AND HOLDING TIMES

MATRIX	ANALYSIS	CONTAINER	PRESERVATION	MAXIMUM HOLDING TIME
Solids, Organic Liquids, Sludges	Semi-Volatile Organics	Glass	4°C	Extraction: 14 Days Extract: 40 Days
	Volatile Organics	VOA Vial	4°C	14 Days
	ICP Metals	Glass, Plastic	4°C	6 Months
	Mercury	Glass, Plastic	4°C	38 Days w/Glass 13 Days with/Plastic
	Cyanide	Glass, Plastic	4°C	14 Days
	Wet Chemistry and Fingerprint	Glass, Plastic	4°C	24 Hours
Aqueous Liquids	Semi-Volatile Organics	Glass	4°C	Extraction: 7 Days Extract: 40 Days
	Volatile Organics	VOA Vial	4°C	14 Days
	ICP Metals	Glass, Plastic	4°C, HNO_3 to pH<2	6 Months
	Mercury	Glass, Plastic	4°C, HNO_3 to pH<2	38 Days w/Glass 13 Days w/Plastic
	Cyanide	Glass, Plastic	4°C, NaOH to pH>12	14 Days
	Wet Chemistry and Fingerprint	Glass, Plastic	4°C	24 Hours

6.2 SAMPLING CONTAINERS

The term "container" refers to receptacles designed for transporting materials, e.g., drums and other small receptacles as opposed to stationary tanks. This section addresses sampling of containers that are of a size that could be stored in the container storage building. Sampling of bulk materials in large containers such as rolloffs, tank trucks, etc. is addressed in section 6.4. COLIWASAs, tubes, shovels, drum thieves, and triers are the devices used to sample containers.

A random sampling strategy is employed to sample incoming shipments of containerized waste. Samples from containers holding the same type of waste may be composited. The following procedure will be used to determine how many containers will be sampled and which samples will be composited. Each container will be opened and visually inspected with the exception of those wastes allowed otherwise by the Waste Analysis Plan. Wastes on a single load that have the same profile number and DOT description (excluding waste codes) and appear to be of the same waste type will be grouped together. Ten percent (rounded up) of the containers in each of these groups will be sampled as described below. The samples within each separate group may be composited for analysis.

A unique tracking number is assigned to each container.

Samples are taken from locations displaced both vertically and horizontally throughout the waste. For liquids (or liquids with precipitated solids), the sampling person uses a COLIWASA or equivalent. The sampling device is inserted into the container from the top and is pushed down slowly until the bottom of the container is reached. The device is sealed to retain the contents. The contents of the sampling device are then transferred to a polyethylene or glass bottle, which is labeled with waste identification information. The sampling device may also be stoppered at both ends, wiped dry with a disposable cloth, and then transferred to the lab for analysis.

A trier or thief is used to sample containers that are solid in nature. These containers are generally filled with dirt and sludges. Several areas from the container are sampled and composited into a jar in order to ensure a representative sample. The sampling person removes a sample that uniformly represents the waste composition of the container, i.e., all layers and phases are represented in the sample.

6.3 SAMPLING TANKS

Liquid and sludge storage and blend tanks at Aragonite are agitated. The tanks are agitated by either a propeller-type mixer or recirculation. The agitation capabilities of the tanks make it possible to obtain a representative sample via a sampling valve. The tanks are agitated prior to drawing a sample. The waste is sampled from a valve on the side or bottom of each tank.

Bulk solids which have been mixed in the bulk solids storage tanks are sampled at a minimum of six locations in the tank. A scoop is taken with the backhoe, or equivalent, from as deep a cross section as possible at each location. A trier, thief or shovel is used in order to collect a sample from each backhoe scoop. The samples are composited together so that there is one sample which represents that particular mix of bulk solids.

6.4 SAMPLING BULK CONTAINERS OF WASTE

Where sampling of bulk loads is required, each bulk container of each load will be sampled as described below.

Bulk solids in rolloffs or end dumps are sampled at two locations in the waste container. A trier, thief or shovel is used in order to draw a sample from as deep a cross section as possible at each location. The samples are composited together so that there is one sample which represents that particular bulk solids shipment.

Bulk liquids are sampled by using a COLIWASA or similar device which can sample vertical anomalies. Bulk sludges are sampled with a device appropriate for the consistency of the material. That may be a COLIWASA, trier, dip tube, or thief, etc. Each compartment of tanker trucks is sampled. Compartment samples from the same generator and waste stream may be composited prior to analysis.

Tank trucks without man-ways are sampled through the valve. The valve is flushed prior to the sample actually being drawn.

An exception to the requirement for sampling each load of bulk load shipments is where a rail car of liquids or visibly similar solids is divided into multiple bulk tanker or truck loads for final shipment to Aragonite. This will only occur at the Bulk Solids Rail/Truck Transfer facility, Unit 255, and the Bulk Liquids Rail/Truck Transfer Bay, Unit 535, at the Clive facility. In such cases, a representative sample will be taken from each rail car and that sample may be used as the incoming load sample for each of the individual truck or tanker loads from that rail car. For bulk solids, the sample from the rail car will consist of at least six sub-samples taken from equal areas in the rail car at depths of at least one foot. Alternatively, the sample could be collected by compositing at least three grab samples from the backhoe bucket while the waste is being transferred from the rail car to the end dumps or rolloff boxes. For liquids, a representative sample will be taken with a COLIWASA from the hatch of the rail car. Samples will follow chain-of-custody procedures for transport to Aragonite.

Additionally, analyses of samples taken at the Clive facility by Aragonite personnel and analyzed according to the methods specified in the Waste Analysis Plan (Attachment 1) may be used for acceptance and management at Aragonite. These are the only cases in which the incoming load sample may be collected off site.

6.5 SAMPLING SURFACES

40 CFR 761.123 contains standardized EPA procedures for taking PCB surface wipe samples. The definition constitutes the minimum requirements for an appropriate wipe testing protocol. A standard size template (10 cm x 10 cm) is used to identify the sampling area; the wiping media is an all collection gauze pad which has been saturated with hexane. The wipe is performed quickly once the gauze is exposed to air.

7.0 TRACEABILITY

Clean Harbors Aragonite routinely follows sample traceability for all internal sampling and analysis. This involves the documentation of procedures so that a set of data can be traced back through the analyst, to the person performing the sampling, and then to the waste itself. All samples receive a unique sample identification number to facilitate this process.

Should Chain-of-Custody be warranted, i.e., shipping samples off-site, then procedures in Section 7.4, Chain-of-Custody are followed:

In order to trace sample possession from the time of collection, a traceability record is filled out and accompanies the sample. The record contains the following information:

- sample number;
- signature of the collector;
- date and time collected;
- waste type;
- signature of persons involved;
- inclusive date of possession; and
- cross reference to manifest (if applicable).

7.1 SAMPLE LABELS

Sample labels are necessary to prevent misidentification of samples. The labels are gummed and affixed to the containers prior to or at the time of sampling. The labels are filled out at the time of collection.

Examples of types of sample labels used are shown below (for illustration purposes):

Clean Harbors Aragonite Site Label

I.D.#____________________DATE____________________
MANIFEST #_______________TIME____________________
GEN. NAME____
SAMP. LOCATION___________________________________
PERSON SAMP._____________DEPT.___________________

Clean Harbors Aragonite Laboratory LIMS Label

#9202056-01A ALLIANCE
ID APT-0-AT-1-NAOH
LOC D3B 02/08/92
CL_IC

7.2 SAMPLE SEALS

Sample seals are used to detect any tampering during shipment for samples sent off site. The seals are initialed, dated, and then affixed to the sample containers or shipping containers before the samples leave the custody of the Aragonite lab. Sample seals are not necessary for samples taken onsite at the Aragonite facility and sent to the onsite laboratory. They are required for Chain of Custody events.

7.3 SAMPLING LOGBOOK

All information pertinent to field surveys or sampling is recorded in a logbook. Since sampling situations vary widely, no set of rules can be given as to the extent of information that must be entered in the logbook. However, sufficient information is recorded to allow someone to reconstruct the sampling without reliance on the collector's memory. This information is recorded in a bound log book or electronically and includes at a minimum the following information:

- location of sampling point;
- volume of samples taken;
- date and time of collection;
- sample identification number;
- person sampling;
- comments or observations;
- sampling methodology;
- number of samples and disposition

7.4 CHAIN-OF-CUSTODY RECORD

Sample chain-of-custody is maintained as required by the client or regulatory agency. A chain-of-custody is used to ensure legal defensibility of the data from sample collection to data reporting. This includes the ability to trace the possession and handling of samples from the time of collection through analysis and final disposition.

The components of the chain-of-custody include the following: sample seals, a logbook, chain-of-custody record, and sample analysis request sheets. The procedures for their use are described in further detail.

A sample is considered to be under a person's custody if:

- it is in a person's physical possession;
- in view of the person after possession has taken place;
- secured by that person so that no one can tamper with the sample; or
- secured by that person in an area which is restricted to authorized personnel.

Upon receipt of the sample(s) in the laboratory they are entered into the sample receipt logbook. All chain-of-custody samples are directed to the sample custodian. The shipping containers and sample bottles are inspected for proper seals and labels. The contents of the containers are then checked against the chain-of-custody record.

If the chain-of-custody information is complete and the integrity of the samples has not been broken, each sample is assigned a unique identification number.

The samples are then put into storage to await analysis. Maximum holding times for the samples are described in Section 6 of this Quality Assurance Plan.

8.0 CALIBRATION PROCEDURES AND FREQUENCIES

All instruments are calibrated in accordance with the appropriate analytical method. The methods commonly utilized by Clean Harbors Aragonite are referenced in Section 5.0 of the Waste Analysis Plan. These methods cite the appropriate calibration procedures and frequencies. In addition, all instruments are calibrated in accordance with the manufacturer's procedures.

Prior to the analysis of samples, instruments are either calibrated or their calibrations verified. Calibration curves of signal response versus concentration are generated on each applicable analytical instrument. Calibration curves are established for each analyte of interest.

Most methods use multi-point calibrations, usually employing standards at either three or five different concentrations. Calibrations are evaluated using calibration check standards. Should this sample fall outside of acceptable limits as specified by the method, the instrument is recalibrated. Table 8.1 summarizes instrument calibration procedures and frequencies.

Sources of reference materials include the National Bureau of Standards, and reputable commercial vendors.

TABLE 8.1
CALIBRATION PROCEDURES AND FREQUENCIES

Instrument	Standards	Frequency
GC	Mid-level Standard	Daily and every 10th sample.
	5-7 Standards	Recalibration if CVS is greater than 15% of expected value.
GC/MS	Mid-level Standard	Daily
	5-7 Standards	Recalibration if CCC* is greater than 30% for semi-volatiles and 25% for volatiles.
	Mass Calibration (GC/MS tuning)	Every 12 hours.

ICP	Calibration Verification Standard (CVS)	Beginning and end of analytical run and every 10th sample.
	3-5 Standards	Recalibration if CVS not within $\pm$ 10% of expected value.
AAS	3-5 Standards	Analysis of standards at the beginning of an analytical run.

* CCC = Continuing Calibration Check

9.0 ANALYTICAL METHODS

The analytical methods which Clean Harbors Aragonite uses are listed in Section 5.0 of the Waste Analysis Plan.

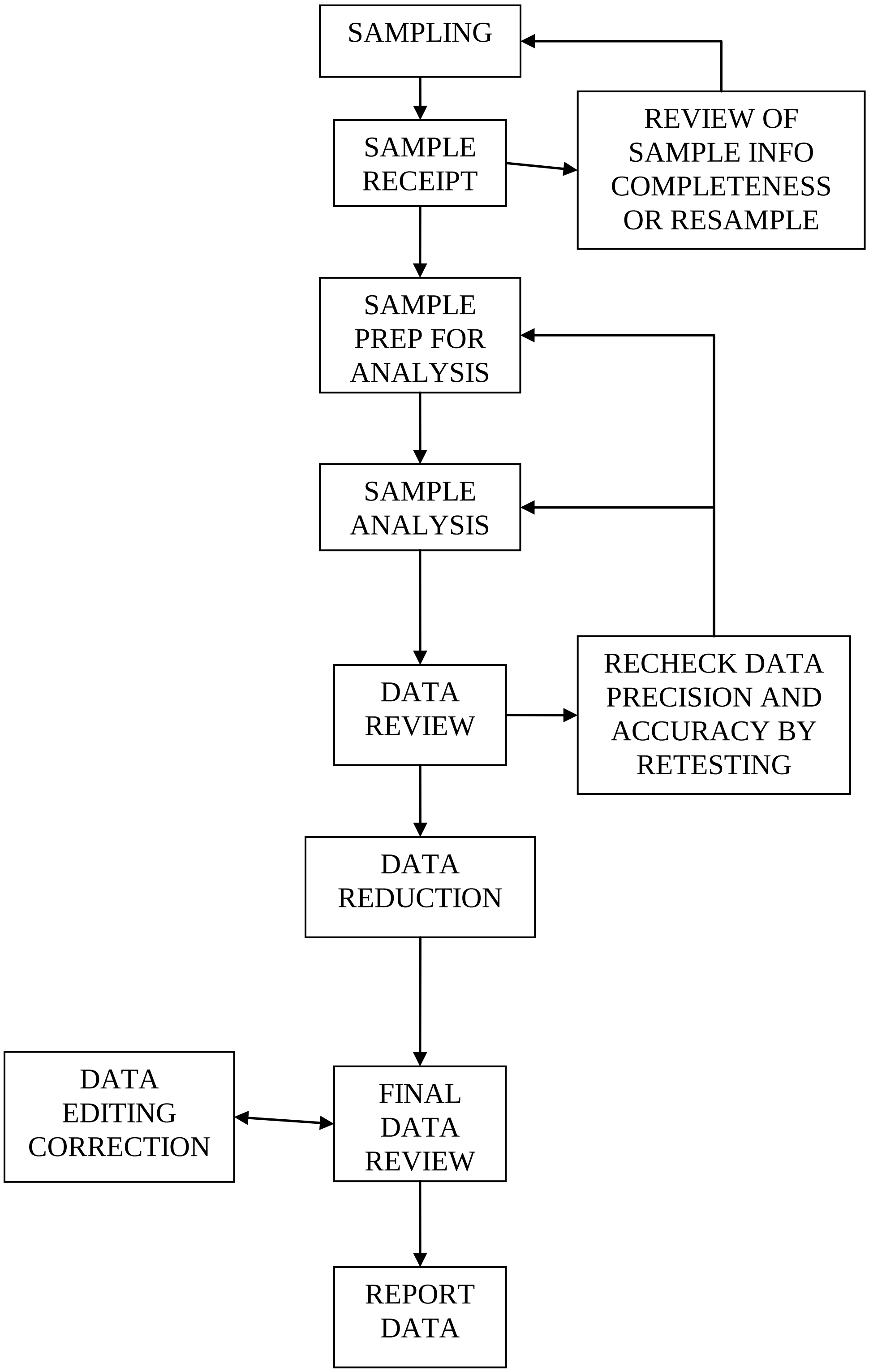
10.0 DATA REDUCTION, VALIDATION, AND REPORTING

Clean Harbors Aragonite data reduction procedures are designed to include several levels of data review. Data validation begins with the person generating data. The chemist or analyst makes the initial calculations and records the results in his/her notebook or on the appropriate worksheet. Each section supervisor or designee is then responsible for reviewing data and calculations generated by their respective group. Final review and case narratives are performed by the Laboratory Manager or designee.

Discrepancies and errors are referred back to the chemist or analyst performing the analysis. If necessary, the samples are reprepared and reanalyzed.

Figure 10.1 depicts the data reporting scheme.

FIGURE 10.1 DATA REPORTING SCHEME



10.1 DATA REDUCTION

Raw data from chromatographs, spectrometers, recorders, and physical measurements are reduced to yield concentrations of the analytes of interest. All data reduction is performed in accordance with the applicable method as referenced in Section 9.0.

Data reduction which is not computerized is recorded in ink on worksheets or in lab notebooks.

10.2 DATA VALIDATION

All data are validated prior to being disseminated from the laboratory. The data are reviewed for both editorial and technical validity.

The editorial review consists of a check for typographical, transpositional, and omissional errors. This review also includes a review of any text which may accompany the data.

The technical review consists of a check to see that all precision, accuracy, and detection limit requirements have been met. In addition, the data are also reviewed for completeness and representativeness.

10.3 DATA REPORTING

Once data have been reviewed and all requirements for completeness, representativeness, precision, accuracy, and limits of detection have been met, results are reported to the client.

Typically, only the final reduced data and case narrative are reported. Clean Harbors Aragonite retains in its records all QC data, calculations, chromatograms, etc., which support the reported data.

11.0 INTERNAL QUALITY CONTROL CHECKS

Clean Harbors Aragonite maintains a minimum level of quality control as described in Chapter 1 "Quality Control," SW-846.

Table 5.1 describes the quality control strategies for each analysis. A glossary of terms is listed in Section 11.2.

11.1 FIELD QUALITY CONTROL

The procedures used in the field to ensure data quality include:

- The use of accepted sampling techniques.
- The justification and documentation of any field action contrary to accepted or specified techniques.
- The documentation of activities, such as container preparation, instrument calibration, etc.
- The documentation of field measurement Quality Control Data.
- The documentation of field activities.
- The documentation of post-field activities including sample shipment and receipt, equipment check in, and de-briefing.
- The generation of Quality Control Samples, including duplicates.

11.2 ANALYTICAL QUALITY CONTROL

The procedures used in the laboratory to ensure analytical data quality include:

Duplicate Spike - is analyzed (when applicable) with every analytical batch or once in ten samples, which ever is more frequent. Analytes stipulated by the method applicable regulations, or agreement with the client, are spiked into the sample. Selection of the sample to be spiked, split, or both depends on the information required and the variety of conditions within a typical matrix. In some situations, requirements of the site being sampled may dictate that the person sampling select a sample to be spiked and split based on a pre-visit evaluation or on-site inspection. Thus does not preclude the laboratory's spiking a sample of its own selection. In most cases, the laboratory will select the sample to be spiked. The laboratory's selection is based on the attempt to determine the extent of matrix bias or interference on the analyte recovery and sample to sample precision.

Blanks - accompany each batch of samples and are carried through the entire analytical procedure.

Surrogate Standards - are spiked into samples according to the appropriate analytical methods. Surrogate spike recoveries will fall within the control limits set by Clean Harbors Aragonite in accordance with the procedures specified in the method.

Check Samples - containing a representative subset of the analytes of interest are used to evaluate equipment performance. The concentration of the analytes approaches the estimate quantification limit in the matrix of the check samples.

Clean-Ups - are used to eliminate interferences in organic extracts. Samples which undergo clean up are checked for percent recovery.

Column-Check Sample - is used to verify column performance. The elution pattern is reconfirmed after activating or de-activating a batch of absorbent.

Instrument Adjustment - requirements and procedures are instrument and method specific. Analytical instrumentation is tuned and aligned in accordance with requirements which are specific to the instrumentation procedures employed.

Calibration - is performed in accordance with the manufacturers' requirements and the procedures specified in the applicable method.

11.3 SPECIFIC REQUIREMENTS FOR INORGANIC ANALYSIS

Standard curves used in the determination of inorganic analytes are prepared as follows.

Standard curves derived from data consisting of one reagent blank and three to five concentrations are prepared for each analyte. The response for each prepared standard is based upon the average of three replicate readings of each standard. Sample results must fall within the concentration range of the standard curve. If the results of the verification are not within ±10% for ICP and 20% for Atomic Absorption of the original standard curve, a reference standard is employed to determine if the discrepancy is with the standard or with the instrument.

New standards are prepared on a quarterly basis. All data used in drawing or describing the curve are indicated on the curve or its description and a record is made of this verification.

Standard deviations and relative standard deviations are calculated for the percent recovery of analytes from the spike sample duplicates from the check samples.

11.4 SPECIFIC REQUIREMENTS FOR ORGANIC ANALYSIS

The following requirements are applied to the analysis of samples by gas chromatography, liquid chromatography and gas chromatography/mass spectrometry.

The calibration of each instrument is verified at frequencies specified in the methods. Standard curves are prepared as specified in the methods.

The tune of each GC/MS system used for the determination of organic analytes is checked with 4-bromofluorobenzene (BFB) for determinations of volatiles and with decafluorotriphenylphosphine (DFTPP) for determination of semi-volatiles. The required ion abundance criteria are met before determination of any analytes.

If the system does not meet the required specification for one or more of the required ions, the instrument is retuned and rechecked before proceeding with sample analysis. The tune performance check criteria are achieved daily or for each 12 hour operation period, whichever is more frequent.

The background subtraction is straightforward and designed only to eliminate column bleed or instrument background. Background subtraction actions resulting in spectral distortions for the sole purpose of meeting special requirements are contrary to the objectives of Quality Assurance and are unacceptable.

For determinations by HPLC or GC, the instrument calibration is verified as specified in the methods.

12.0 PERFORMANCE AND SYSTEM AUDITS

The laboratory is subject to both internal and external audits, in order to monitor the capability and performance of the total measurement systems.

The systems audit consists of evaluation of all components of the measurement system to determine their proper selection and use. This audit includes a careful evaluation of both field and laboratory quality control procedures. System audits are normally performed prior to or shortly after a new system has been implemented. Performance audits are then performed on a routine basis, at least quarterly, during the lifetime or continuing operation of the system.

12.1 EXTERNAL AUDITS

Clean Harbors laboratories participate in EPA WP Study semiannual blind round robin tests with other laboratories who perform environmental analysis.

A set of blind samples are split among the laboratories. This helps Clean Harbors Aragonite evaluate the precision and accuracy of its own laboratories, as well as provide information about the amount of interlaboratory deviation which can be associated with a particular method.

Corrective action is taken as described in Section 14 of this QAP.

12.2 INTERNAL AUDITS

Internal audits are performed on a quarterly basis. The audit is conducted by the Quality Assurance Officer under the direction of the Laboratory Manager. The audit report is due 30 days following the conclusion of the quarter.

The audit evaluates the system from the receipt of samples to the reporting of results. Specific areas which are addressed include: sample flow through the lab, sample storage, sample preparation, analysis, data reduction, data reporting, QC samples, logbooks, and raw data storage.

13.0 PREVENTATIVE MAINTENANCE

Clean Harbors laboratories are equipped and maintained to provide the best conditions possible for performing laboratory analysis. Equipment which has become obsolete by the advancement of technology is replaced or upgraded. All equipment is inspected regularly to ensure that it is in proper working order.

Equipment is maintained in accordance with the manufacturer's recommendations. All major pieces of equipment are covered by service contracts from the manufacturer. Whenever possible, Clean Harbors Aragonite maintains an inventory of spare parts which typically need replacement, this includes such compounds as septa, GC columns, ion volumes, torches, regulators, and so forth.

Table 13.1 lists pieces of equipment or components which are routinely maintained, the frequency at which they are serviced and the type of maintenance performed.

TABLE 13.1
MAINTENANCE SCHEDULE

EQUIPMENT COMPONENT	MAINTENANCE PERFORMED	FREQUENCY
Gas Chromatographs		
septa	replace	as required
column	replace/condition	as required
syringes	replace	as required
inlet liner (tube)	clean/replace	as required
ELCD (HALL)	leak check	as required
Ni catalyst	replace/condition	as required
solvent resin	replace	as required
ECD	wipe test	semi-annually
	leak check	as required
	factory clean/recondition	as required
PID	leak check	as required
lamp	replace	as required
FID	leak check	as required
jets	clean	as required
ICP		
nebulizer	clean/replace	as required
pump tubing	replace	weekly
air filters	clean	as required
torch	clean/replace	as required
MERCURY ANALYZER		
drying tube desiccant	replace	daily
sample tubing	replace	twice/week
stannous chloride tubing	replace	once/2 weeks
drain tubing	replace	once/2 weeks
lamp	replace	as required
optics	clean	as required
CALORIMETER		
bombs	calibration/certification	after 500 firings
tubing	check/replace	daily
COMPRESSED GASES		
fittings	leak checks	as required
traps	replace	as required

14.0 CORRECTIVE ACTION

Quality Control procedures are designed to identify the need for corrective action. Most corrective actions are performed by the chemists doing the analysis, and are usually as simple as recalibrating an instrument should the instrument check sample be out of its acceptable range. Most corrective actions are found in methods, standard operating manuals, and instrument manuals.

Corrective actions may also be initiated as a result of various Quality Assurance activities, including:

1) performance audits,
2) system audits,
3) laboratory or interfield comparison studies,
4) program audits, and
5) final review of data reports

Corrective action reports will be sent to the Laboratory Manager for review and implementation.

However, standard operating procedures are to:

1) define the problem,
2) determine the cause(s) of the problem,
3) determine possible solutions to the problem,
4) implement the corrective action, and
5) verify that the corrective action is effective.

All employees are encouraged to bring to their supervisor's attention any problem or practice which they feel may affect data quality.

15.0 QUALITY ASSURANCE REPORTS TO MANAGEMENT

The Clean Harbors Aragonite Quality Control Officer is responsible for reporting to the Laboratory Manager every four months on the performance of measurement systems and data quality. The Laboratory and Plant Manager reviews and returns the report. These reports include:

1) Assessment of measurement data accuracy, precision, and completeness.
2) Results of performance audits.
3) Results of system audits.
4) Significant Quality Assurance problems and recommended solutions.

ATTACHMENT 2

SECURITY PROCEDURES

Table of Contents

1.0 Security

Access to the facility is restricted.

~~Unauthorized and people not aware of facility activities are restricted from entering the Clean Harbors Clive facility.~~ This is accomplished by utilizing the following provisions: security personnel, ~~surveillance,~~ locked gates, chain-link fence, and warning signs.

- Security: The waste receiving personnel ~~Security Personnel: is a~~~~Any person(s), trained in facility security procedures, assigned by management to~~ control access into and/or out of the fenced portion of the facility ~~and/or to monitor conditions within the fenced portion of the facility.~~. Rail access is controlled by the rail operator. The facility gates are opened only to allow shipments of waste or authorized personnel and equipment access in and/or out of the facility. The main gate will remain closed at all other times.

- ~~Security: Access into the facility is restricted by the perimeter fence, locked gates, and security personnel. Operation of the main gate is controlled by Clive security personnel or other individuals trained in the security procedures of the facility and is opened only to allow shipments of waste or authorized personnel and equipment access in and/or out of the facility. The main gate will remain closed at all other times.~~

- ~~Surveillance: Security conducts surveillance of the facility at least once each day. This surveillance will be documented in the security log book. Area lighting aids security in monitoring the facility. Exterior area lights are on at nights.~~ Sufficient lighting is provided in the operational areas when needed.

- Fence: The facility is completely surrounded by a chain link fence with ~~security~~ controlled gates. The fence, including the barbed wire at the top, is at least six feet high. The main gate is the primary route for entrance and exit from the facility. Secondary entrance and exit routes for the facility are through the other gates in the perimeter fence. T~~here are t~~hree secondary gates ~~which~~ may be opened only from the inside when necessary for evacuation or maintenance activities. Five additional secondary gates are used only for maintenance activities and are padlocked shut. Clive personnel or other individuals trained in the security procedures of the facility, control gate access to the facility. Waste~~s~~ enters the facility only through the main gate and the rail access gate.

If there is a power failure, facility personnel~~security~~ can operate the main gate manually. The secondary gates, which are designated as evacuation exits~~,~~, are equipped with a ~~magnetic~~ chain and padlock. ~~are equipped with a magnetic lock and/or a chain and padlock. The magnetic locks are unlocked by a push button which is located inside the fence near the gate or by activation of the evacuation alarm. The magnetic locks are powered through an uninterruptible power supply.~~ The key for the padlock is located in a key box which is located inside the fence near the gate accessible to all plant personnel.

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~~During emergency conditions, site personnel or other individuals trained in the security procedures of the facility restrict entry into and/or aid personnel in exiting the facility as required by the Emergency Coordinator.~~

~~Anyone inside the facility can open a secondary gate that has been designated as an evacuation exit and leave. This is necessary so that personnel can exit the facility if required during an emergency. Persons who need to exit through one of the secondary gates, other than for an emergency, will notify security by telephone, radio, or in person. These gates will either be monitored or shut and locked after the person(s) exits the gate.~~

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- Warning signs: All gates have a warning sign attached. The signs, written in English, read: "DANGER - UNAUTHORIZED PERSONNEL KEEP OUT." These signs are legible from a distance of at least twenty-five feet. The warning signs are placed at least every ten fence posts, about 100 feet apart, along the perimeter fence so as to be seen from any approach to the active portion of the facility.

ATTACHMENT 3

INSPECTIONS

Table of Contents

1.0 Introduction

At a minimum, ~~The~~ the inspections outlined in this Attachment shall be conducted as indicated~~structed~~ on the forms. ~~are the minimum required.~~ All inspections required by this permit will be documented on forms ~~on pre-established forms~~ and maintained as part of the operating record. The forms are not included in this Attachment, but a list of all required inspection items, frequencies, and what is being inspected is included as an Inspection Matrix. Although the format of the inspection forms may change, all items identified on the Inspection Matrix must be inspected, at a minimum, at the frequency specified and will be included on the applicable forms ~~and inspected~~.

Documentation of ~~All~~ each inspection, necessary notifications and any corrective action ~~s are documented and the documentation is~~ shall be maintained at the Clive facility. Documentation ~~Reports~~ may be maintained electronically ~~as long as~~as long as~~if~~ a legible hard copy can be produced upon request. -All inspection forms will note the ~~day~~date, the inspector's name, the time of the inspection, any deficiencies found (parameter status), ~~or~~ corrective action taken and ~~the~~ a work order number ~~that indicates that~~ if a repair request has been submitted. If ~~the~~ a repair is minor and ~~the inspector can~~ fixable ~~it~~ the same day of the inspection (such as by replacing a sign~~,~~ or ~~getting another~~~~replacing~~ a fire extinguisher), the inspector may ~~the~~ not~~eation of what was done~~remedy ~~will be made~~ on the form rather than initiating a work order and referencing ~~a work~~the order number. All items on the inspection forms and logs ~~will~~ must be filled ~~in (i.e., no~~~~and~~in and not left blank~~s)~~. If a particular inspection item is not applicable ~~for some reason~~, it ~~will~~ must be noted on the form along with the reason.

2.0 Frequency of Inspections

Inspections shall be conducted in accordance with the minimum frequency specified in ~~The~~ the Inspection Matrix ~~specifies the minimum frequency of inspection~~ for each required item.

3.0 Types of Problems

The personnel conducting the inspections shall be trained ~~on~~ to identify conditions that indicate or may lead to a malfunction, deterioration or discharge related to the specific equipment or structures located at Clive.~~the types of problems they should be looking for. Inspection instructions may be specified on the inspection form itself, or they may be specified in instructions that will~~~~may~~ ~~accompany the applicable log.~~ ~~These instructions shall be developed with~~~~provide~~ ~~sufficient detail to avoid inconsistencies and confusion between inspections and log entries between~~~~among~~ ~~different inspectors. These instructions will be in place for all items~~The inspection parameters found ~~on~~in the Inspection Matrix shall be on the inspection forms. The inspector or his supervisor shall prepare a remedial work order for deficiencies that cannot be resolved during the shift.

Any ~~item~~ equipment or structure~~currently~~ out-of-service ~~and~~ or subject to an active work order~~s~~ will be ~~listed~~ ~~specified~~ documented on the inspection forms. ~~and~~ The forms are maintained in the operating record. -A historical list of ~~out-of-service items or~~ remedial work orders will also be maintained on paper or electronically. Once the corrective action specified in the work order has been completed, the reference to the work order will be removed from the inspection form going forward.

4.0 Sumps and Secondary Containment Areas

Sumps, secondary containment, and the Temporary Storage Pad are inspected daily when the facility is staffed to determine ~~if they contain~~the presence of liquids or other material.

~~If~~ Any material or liquid identified in a sump, secondary containment area, or the Temporary Storage Pad ~~contains any material, it~~ will be emptied or removed within 24 hours of discovering the contents. ~~. Specifically, all material, liquid and/or solid, will be removed. If~~ During ongoing precipitation ~~prevents the emptying of all material from a sump or secondary containment system~~

~~located outside of a building~~, the sump(s) or secondary containment system located outside a building will be emptied within 24 hours of the end of the precipitation event. ~~. If this occurs, an explanation to this effect, and t~~The time and date of the end of the precipitation event and the date and time that the sump is emptied will be noted on the inspection forms. ~~However, sufficient material~~ Liquid must be removed during a precipitation~~the~~ event to maintain ~~sufficient~~ secondary containment capacity of the system. Solid material that accumulates in sumps inside buildings from the routine operations (e.g., dried mud falling off of pallets, small pieces of wood from pallets, dust, etc. (but not spill material)) will be noted on the daily inspection forms but may be removed weekly.

Any material removed will be managed as a hazardous waste, with the exception of plant debris that may blow onto the exterior portion of Unit 106 or onto the Temporary Storage Area.

5.0 Corrective Action

~~All items on t~~The inspection forms~~logs~~ will ~~have a notation of their~~clearly state the status of each piece of equipment or structure (i.e., blanks will not be used to indicate that an item was acceptable or that the status had not changed). If the status is not acceptable, there will be a notation of the corrective actions performed (if it can be fixed immediately) or a reference to a remedial work order if additional work needs to be done.

~~The inspection log and inspection form~~Inspection documentation shall ~~document~~specify the date and time of the~~any~~ ~~The method of documenting that a~~ request for repair or corrective action, ~~has been made is through the~~ the work order number, and the completion date ~~of the repair or corrective action.~~ ~~system~~~~number~~. ~~That same system is also used to indicate when the work has been completed. The form itself may change but will contain sufficient information to be able to clearly track all the work completed.~~

All remedial work orders will clearly describe the corrective action performed and who performed the work. Multiple work orders may be utilized to complete an individual repair or corrective action if each work order describes the completed work, the date of completion for the work describe and references to additional work orders to complete the individual corrective action.

~~All work orders will clearly indicate the~~~~describe the corrective action~~ ~~work that was performed~~~~work.~~ ~~It will also indicate who performed the work. It will also clearly indicate that all of the required work is completed and the date of completion. If some of the work is done, but additional work is needed, this will be noted on the work order or Mutiple work orders may be utilized to complete an individual repair or corrective action if each work order describes the completed work, the date of completion for the work describe and references to additional work orders to complete the individual corrective action.~~

Discharges shall be removed within 24 hours of discovery, whereas ~~A~~any malfunction or deterioration discovered by an inspection shall be noted on the ~~appropriate~~ inspection forms, reported internally and corrected within 72 hours. If the remedy requires more time, Clean Harbors Clive, LLC shall~~will~~ submit to the ~~Executive Secretary~~Director of DWMRC ~~for approval,~~ before the expiration of the 72-hour period, a proposed time schedule for correcting the problem. All corrective actions will be completed in a timely manner. Until the deficiency is corrected, the deficiency will remain noted on the inspection form~~ and logs~~. Until the problem is corrected, the equipment will be declared out-of-service. This will be noted on the inspection ~~logs~~forms.

All deterioration shall be noted on the ~~appropriate~~ inspection forms and reported internally so that corrective action will be taken.

If a problem is discovered during an inspection where a hazard to human heath or the environment is imminent or has already occurred, remedial action shall be taken immediately.

When required, notification will be made to the appropriate agencies in accordance with Section I.P of Module 1.

6.0 Inspection Matrix

The items that will be inspected, the frequency of inspection, and a brief description of the inspection parameters ~~what is being inspected~~ are contained in this section.

INSPECTION MATRIX

Inspection Item	Minimum Frequency	Types of Problems – Inspection Parameters
Container Storage (Units 105, 106, 535 & 604)		
Unit 105 sumps	Daily when staffed	Empty
Unit 105 loading/unloading area	Daily when in use	Leaks, spills
Unit 105 loading/unloading area	Monthly	Visually free of cracks, gaps, damage
Unit 105 debris drum	Weekly	Closed, labeled, dated, <90 days
Unit 105 aisles	Weekly	Adequate (2.5 feet minimum)
Unit 105 containers	Weekly	Bulging, leaking, corroding
Unit 105 containers	Weekly	Proper placement and stacking
Unit 105 containers	Weekly	Closed, bungs in
Unit 105 containers	Weekly	Labels intact and legible
Unit 105 railcar tankers	Weekly	Leaking, corroding
Unit 105 railcar tankers	Weekly	Closed
Unit 105 railcar tanker hoses	Daily ~~when in use~~	Leaks, spills
Unit 105 railcars	Weekly	Labels intact and legible
Unit 105 pallets	Weekly	Provide 4" clearance
Unit 105 eyewash	Weekly	Operable

Inspection Item	Minimum Frequency	Types of Problems – Inspection Parameters
Unit 105 shower	Weekly	Operable
Unit 105 waste segregation	Weekly	Incompatiblitye ~~check~~ verification
Unit 105 floor, berms	Monthly	Visually free of cracks, gaps, damage
Unit 106 secondary containment	Daily when staffed	Empty
Unit 106 loading/unloading area	Daily when in use	Leaks, spills
Unit 106 aisles	Weekly	Adequate (2.5 feet minimum)
Unit 106 containers/rolloff boxes	Weekly	Bulging, leaking, corroding
Unit 106 containers/rolloff boxes	Weekly	Proper placement and stacking
Unit 106 containers/rolloff boxes	Weekly	Closed (tarped/bungs in)
Unit 106 containers/rolloff boxes	Weekly	Labels intact and legible
Unit 106 pallets/containers	Weekly	Provide 4" clearance
Unit 106 eyewash	Weekly	Operable
Unit 106 shower	Weekly	Operable
Unit 106 waste segregation	Weekly	Incompatible check
Unit 106 floor, berms	Monthly	Visually free of gaps, cracks, damage
Unit 106 Spill Kit	Monthly	Verify contents (Shovel, broom, absorbent materials)
Unit 106 – Containment Bldg		

Inspection Item	Minimum Frequency	Types of Problems – Inspection Parameters
		The inspection parameters shall include at a minimum: barcode/tracking number (unique identifier); truck number, whether vehicle and the container are clean; whether the container is properly closed; the inspector's name; and the date and time when the inspection occurred.
Unit 535 sumps	Daily when staffed	Empty
Unit 535 loading/unloading area	Daily ~~when in use~~	Leaks, spills
Unit 535 aisles	Weekly	Adequate (2.5 feet or greater)
Unit 535 railcars/containers	Weekly	Bulging, leaking, corroding
Unit 535 containers	Weekly	Proper placement and stacking
Unit 535 railcars/containers	Weekly	Closed, bungs in
Unit 535 containers	Weekly	Labels intact and legible
Unit 535 containers/pallets	Weekly	Provide 4" clearance

Inspection Item	Minimum Frequency	Types of Problems – Inspection Parameters
Unit 535 eyewash	Weekly	Operable
Unit 535 shower	Weekly	Operable
Unit 535 waste segregation	Weekly	~~Incompatible check~~Incompatibility verification
Unit 535 floor, berm	Monthly	Visually free of cracks, gaps, damage
Unit 535 hoses/fittings	Daily ~~when in use~~	Good condition; no leaks observed from rail tanker to truck tanker
Unit 535 piping	Daily ~~when in use~~	No leaks observed from rail tanker to truck tanker
Unit 535 Spill Kit	Monthly	Verify contents (Shovel, broom, absorbent materials)
~~Unit 535 carbon filters~~	~~Monthly~~	~~Operable, carbon level, free of plugging, breakthrough~~
Unit 604 loading/unloading area	Daily when in use	Leaks, spills
Unit 604 sumps	Daily ~~when in use~~	Empty
Unit 604 sumps	Weekly	Concrete coating free of cracks and chips
Unit 604 rolloff boxes	Weekly	Leaking, corroding
Unit 604 rolloff boxes	Weekly	Closed/tarped
Unit 604 rolloff boxes	Weekly	Labels intact and legible
Unit 604 eyewash	Weekly	Operable
Unit 604 shower	Weekly	Operable
Unit 604 waste segregation	Weekly when in use	Incompatiblity verificatione ~~check~~

Inspection Item	Minimum Frequency	Types of Problems – Inspection Parameters
Unit 604 floor, berms	Monthly	Visually free of cracks, gaps, damage
Unit 604 Spill Kit	Monthly	Verify contents (Shovel, broom, absorbent materials)
Unit 255 – Bulk Solid Rail to Truck Transfer		
Loading/unloading area	Daily ~~when in use~~	Leaks, spills
Eyewash	Weekly	Operable
Shower	Weekly	Operable
Spill Kit	Monthly	Verify contents (Shovel, broom, absorbent materials)
Warning signs	Weekly	Are signs visible and legible?
Temporary Storage Pad		
Loading/unloading area	Daily ~~when in use~~	Leaks, spills, debris present
Emergency Equipment		
~~Emergency Generator~~	~~Weekly~~	~~Start generator, operable, check oil & gas~~
~~Primary electric fire pump~~	~~Weekly~~	~~Start pump, operable~~
~~Secondary~~ Primary and secondary diesel fire pumps	Weekly	Start pump, operable (verify pressure is stable)
Safety and Security		
Fence	Weekly	All gates closed and locked, poles upright, no holes that would allow unauthorized entry

Inspection Item	Minimum Frequency	Types of Problems – Inspection Parameters
Warning signs	Weekly	Are signs secured to fence? Are signs visible and legible?
~~Perimeter lighting if applicable~~	~~Weekly~~	~~Check for lights working~~
All ~~two-way radios and~~ phones plant wide	Weekly	Functioning properly
All fire extinguishers plant wide	Monthly	Tagged, charged, in place, damaged
Evacuation drills	Quarterly	Check for proper response

ATTACHMENT 4

PERSONNEL TRAINING

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List of Tables

1.0 Introduction

~~Employees assigned to work at the Clean Harbors Clive, LLC facility (Clive) are Clean Harbors Aragonite employees.~~ Clean Harbors Aragonite, has in-house training programs for all employees with additional training for employees assigned to the Clive facility. All personnel receive a general orientation training including first aid and CPR. When personnel are assigned to their respective groups, they receive specific job related training. Until an employee is~~ a~~ qualified, he/she must work under supervision. All employees must successfully complete the courses in Table 2 prior to working unsupervised in the job title indicated.

Each department manager is responsible for the training and qualification of the individuals reporting to him/her. Overall coordination of the training program is the responsibility of the Aragonite General Manager.

2.0 Outline of Training Program

2.0.1 Personnel ~~R~~regularly assigned to Clive

Personnel assigned to Clive ~~will~~ shall receive the training ~~as noted on~~required in Table 2. Also, non-Clive personnel assigned to a Clive/Aragonite manager to work under his/her direct supervision at Clive (e.g., temporary employees), will have the same training requirements as for Aragonite personnel assigned to Clive. They will have job titles from the list in Table 2 and will be required to complete the training specified in Table 2. Employees assigned to Clive will be identified as such in the training records.

Clive personnel shall complete all~~The~~ required training ~~shall occurs~~ within six months of their date of hire. Existing personnel reassigned to Clive or to a new position shall complete training for the new position ~~or~~ within six months of assignment~~ to Clive or within six months of a new position at Clive, whichever is later~~.

2.0.2 Personnel not regularly assigned to Clive

~~Additionally~~Unless continuously escorted at all times onsite at Clive by an appropriately trained Clive employee, ~~other~~ visitors and personnel not regularly assigned at the Clive site must ~~also~~ complete training to perform~~required for~~ their duties~~will be required to receive a level of training consistent with their purpose~~ while at the site. These persons include Clean Harbors Aragonite employees, contractors, other Clean Harbors' employees from corporate offices or from other facilities, visitors, and any others for whom training would be necessary. The training required for each person will be determined on a case-by-case basis. ~~At a minimum, all unescorted contractors~~At a minimum, all unescorted contractors, visitors, and other non-Clean Harbors personnel shall complete an initial safety orientation prior to entering the site. Until training is successfully completed the individual must also be supervised by a qualified employee. The following outlines ~~the~~ additional training required:~~ for these persons.~~

~~If the~~A person ~~will be~~ working in ~~areas where~~ hazardous waste handling ~~occurs, then the minimum required training will include~~areas must successfully complete courses HS2100 or HX2100 [and HS2200 or HX2200 or HS6301 through HS6308~~1041 HS1052~~ if applicable] and the Pre-project Environmental, Health, and Safety Review.

If the person will be using a facility forklift, then forklift training, course HS4020, or a comparable course [and HS4026 if applicable], is required.

~~Other p~~Persons working in areas where hazardous waste handling does not occur shall receive ~~as~~ training consistent with their tasks.

~~Visitors who may be in areas where hazardous waste handling occurs are not required to have the training outlined above provided they are constantly escorted by an appropriately trained employee. Other persons working in areas where hazardous waste handling does not occur will have training consistent with their task. The minimum training required for each person will be determined on a case-by-case basis. At a minimum, all contractors, visitors, and other non-Clean Harbors personnel will be required to receive an initial safety orientation prior to entering the site, unless they are under constant supervision of a trained employee.~~

2.1 Training Review

Some courses require an annual or triennial refresher, such as CPR and First Aid. Annual refresher courses must be taken in the same quarter of the following year of the initial training. That is, if the initial training ~~was~~ occurred on January 15th, then ~~the~~ refresher training must be taken no later than the end of the first quarter.~~-~~ Refresher training in all topics on Table 1 occurs as noted.

2.2 Training Personnel Records

~~R~~Training records of employees assigned to Clive will be kept at the Aragonite facility for examination by the ~~State of Utah~~Division of Waste Management and Radiation Control inspectors. The following will be included in these individual employee training records as applicable:

- Attendance record at training sessions
- Qualification cards and examinations
- Training received (Summary with title of course and date.)
- Previous training and/or education, i.e., certifications, certificates
- Employment dates including dates employee was assigned to Clive

The minimum training record documentation is described in S~~s~~ection 2.5.

2.3 Training Coordination

The training coordination for the Clive facility will be done ~~through a combined efforts~~through combined efforts ~~of~~between~~from~~ the facility Operations Manager, Compliance Manager and the Health & Safety Manager~~-~~.

2.4 Training for Emergency Response

The contingency plan is the basis for emergency response training. Emergency response training is coordinated by the Training Department at Aragonite or Clive facility ~~management~~.

2.5 Training Documentation

Training will primarily be documented on an attendance roster. Other forms of documentation may be used (e.g., certificates of completion, computer printouts, etc.) when attendance rosters are not used (such as for self study programs). Each employee has a training file maintained by the facility Operations Manager. The records are maintained at either the Clive or Aragonite facilities. Training records on current personnel must be kept until closure of the operating portion of the facility; training records on former employees must be kept for at least three years from the date the employee last worked at the facility.

To ensure that the training program is effective and people are properly trained, exams or other measures of competency are used. If a person fails the exams or otherwise does not meet the minimum requirements of the training course, additional training will be required before the person is considered to have completed the course.

The following outlines the requirements for documenting compliance with the training requirements for non-Clean Harbors personnel.

~~Since~~ As ~~the Pre-project Environmental, Health, and Safety~~A job hazard analysis ~~Review~~ is conducted on waste streams that require atypical procedures. ~~specific to the Clive facility, this~~ The training will be conducted by ~~the~~ Aragonite or Clive facility personnel and records will be maintained on-site~~,~~ or at the Aragonite facility~~, or electronically~~ documenting successful completion of the review for each person. However, other training may be completed at other locations.

For ~~transient goods and services~~ contractors who have received applicable training at other locations, the employer will provide ~~a letter certifying~~documentation that this training has been completed by each of the employees that will be working at the facility. This ~~letter~~ documentation will be kept on site or at the Aragonite facility. ~~Additionally, if requested by the Executive SecretaryDirector, Clive will acquire the records of training for specific individuals to demonstrate that the required training has indeed been completed.~~

Training records for Clean Harbors' personnel who are not assigned to the Clive facility will be provided upon request. When working in areas where waste handling occurs, they will be assigned a job title from Table 2 and the training specified in that table will be required.

For other persons working in areas where hazardous waste handling does not occur, if training in the courses listed in Table 1 is required, this will be documented and the records of successful completion of the required training will be provided upon request.

3.0 Job Titles and Duties

This section outlines the plant organization and required training.

The job titles for Clean Harbors' employees~~Aragonite employees~~ assigned to Clive are listed in Table 2. ~~Also listed in Table 2 are job titles for Clean Harbors Aragonite employees who have been identified to have occasional or administrative responsibilities for Clive Activities.~~

These job titles correlate to job descriptions which can be found in the Job Description Notebook available from Human Resources at Aragonite. Table 2 lists the required training at the facility. A current organization chart showing the employees assigned to the Clive facility is available at ~~Aragonite from Human Resources~~at the facility. The chart specifies by name which person fills what job title.

All employees assigned to Clive receive general employee training designed to focus on the overall purpose of the Clive facility.

Annually~~, the Aragonite M~~managers will review the training program with Clive personnel ~~the General Manager~~. The annual review will consist of evaluating faculty and courses to determine their relevancy and quality. Adjustments will be made as warranted.

Table 1 - List of Courses

	Course Title	Course ID	Duration	Frequency
	OSHA 29 CFR 1910.120	HS2100 (internal) HX2100 (external)	24 hr	Initial
	OSHA 29 CFR 1910.120 Refresher	HS2200 (internal) HX2200 (external)	7 - 8 hr	Annual
	OSHA 29 CFR 1910.120 Refresher (Monthly Modules) [1]	HS6301 – HS6308~~1041 HS1052~~	0.5 - 1 hr each	Annual[1]
	First Aid	HS6005 (internal) HX6005 (external)	2 - 2.5 hr	Triennial
	CPR	HS6000 (internal) HX6000 (external)	3 - 4 hr	Annual
	~~Permit Training—Aragonite~~	~~SS2000~~	~~9 - 10 hr~~	~~Initial~~
	~~Permit Training Refresher—Aragonite~~	~~SS2001~~	~~0.5 - 1 hr~~	~~Annual~~
	Permit Training—Clive	CL2000	9 - 10 hr	Initial
	Permit Training Refresher—Clive	CL2001	0.5 - 1 hr	Annual
	General Employee Training			
	~~● Site Orientation—Aragonite~~	~~SS2016~~	~~1 - 1.5 hr~~	~~Initial~~
	● Site Orientation—Clive	CL2016	1 - 1.5 hr	Initial
	● Industrial Safety	SS2027	1 - 1.5 hr	Initial
	● Fire Prevention	HS6020	1 - 1.5 hr	Initial
	~~● Contingency Plan—Aragonite~~	~~SS2025~~	~~1 - 1.5 hr~~	~~Initial~~
	● Contingency Plan—Clive	CL2025	1 - 1.5 hr	Initial
	Annual Refresher			
	● Site Orientation Refresher (Clive Included)	SS2017	~0.25 hr	Annual
	● Industrial Safety Refresher	SS2028~~7~~	~0.25 hr	Annual
	● Fire Prevention Refresher	HS6021~~0~~	~0.25 hr	Annual
	~~● Contingency Plan Refresher-Aragonite~~	~~SS2029~~	~~~0.25 hr~~	~~Annual~~
	● Contingency Plan Refresher-Clive	CL2029	~0.25 hr	Annual
	Compressed Gases	SS4016	~0.5 hr	Initial
	Venting Lines	SS3242	~0.5 hr	Initial
	Standard/Dual Wheel Forklift	HS4020	6 - 8 hr	Initial
	Standard/Dual Wheel Forklift Refresher	HS4026	~1 hr	Annual
	Confined Space	HS6700	2 - 2.5 hr	Initial

	Confined Space Refresher[2]	HS6701	~1 hr	Annual

1 At a minimum, 8 of 12 modules are to be completed annually, if employee is taking the OSHA 29 CFR 1910.120 refresher monthly modules.

2 Only for those employees who actually fill out a confined space permit. Otherwise, refresher is part of OSHA 1910.120 refresher.

Table 2 – Required Training

JOB TITLE	COURSES
The following are administrative support jobs that do not have any contact with hazardous waste:	
Document Control Coordinator, General Helper	HS6005 or HX6005, HS6000 or HX6000, SS2016, CL2016, SS2027, HS6020, SS2025, CL2025, SS2017, SS2028, HS6021~~, SS2029~~, CL2029
The following are technical support jobs that have potential to work around hazardous waste:	
General Manager, Sr. Environmental Manager, Health & Safety Manager, ~~Operations Manager – Incineration~~, Operations Manager - Drum Production, Maintenance Manager, Technical Manager, Regulatory Compliance Specialist, Logistics Coordinator, Material Router, Business Manager, Operations Support Supervisor	HS2100 or HX2100, HS2200 or HX2200 or HS1041-HS1052, HS6005 or HX6005, HS6000 or HX6000, SS2000, SS2001, CL2000, CL2001, SS2016, CL2016, SS2027, HS6020, SS2025, SS2017, SS2028, HS6021, ~~SS2029~~ CL2029
The following are jobs that routinely work around hazardous waste:	
~~Incineration Supervisor,~~ Operations Supervisor – Maintenance, Operations Supervisor - I/E, Material Handler - Clive Operations, Lead Material Handler - Clive Operations	HS2100 or HX2100, HS2200 or HX2200 or HS1041-HS1052,, HS6005 or HX6005, HS6000 or HX6000, SS2000, SS2001, CL2000, CL2001, SS2016, CL2016, SS2027, HS6020, SS2025, SS2017,, SS2028, HS6021, ~~SS2029,~~ CL2029, SS4016, SS3242, HS4020, HS4026, HS6700, HS6701
Driver	HS2100 or HX2100, HS2200 or HX2200 or HS1041-HS1052, HS6005 or HX6005, HS6000 or HX6000, SS2000, SS2001, CL2000, CL2001, SS2016, CL2016, SS2027, HS6020, SS2025, SS2017, SS2028, HS6021, ~~SS2029,~~ CL2029, HS4020, HS4026, HS6700, HS6701

ATTACHMENT 5

PREPARDNESS AND PREVENTION

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1.0 Equipment and Aisle Space Requirements

1.1 Safety and Emergency Equipment Requirements and Inspections

The inspection schedule for facility safety and emergency equipment is provided in the Inspection Matrix found in Attachment 3, Inspections~~ Matrix~~. Inspection schedules for equipment specifically used for the management of waste in the container storage areas and the storage areas themselves ~~is ~~are also included in the~~Attachment 3,~~ Inspection Matrix.

1.1.1 Internal Communications

Communication inside Clive is achieved through a telephone system or~~and~~ cell phones. Telephones are located or cell phones provided so that each employee has immediate access to one from his/her workstation. From each telephone or cell phone an employee can call any other telephone at Clive, and can be connected to an outside phone line.

1.1.2 External Communications

External facility communications are available through the local landline ~~telephone company~~ and by cell phone. Local (Salt Lake City or Tooele City) and~~or~~ long-distance telephone connections are available. Incoming calls ~~will be~~are transferred to the telephones located throughout the facility, as necessary.

1.1.3 Emergency Equipment

Portable fire extinguishers, fire control equipment, spill control equipment and decontamination equipment are available at the facility. The ~~A description and ~~locations of emergency equipment for the facility are provided on drawings and are located in the Contingency Plan, Attachment 6, of this ~~permit~~Permit. The Emergency Equipment List is located in Section 4.0 of this attachment.

1.1.4 Water for Fire Control

Water for fire fighting is stored in a tank~~reservoir~~ and distributed through a pipe network.

The fire water flow meets NFPA 30, Table D-4-6.2.1 requirements and is based on 0.3 gallons per minute per square foot over an area of 2,550 square feet plus a hose stream flow of 500 gallons per minute. This flow rate is 1,265 gallons per minute. NFPA 30 requires that this minimum flow rate be sustainable for two hours and that the volume expended be replenished within eight hours. The volume required for the fire water supply is 151,800 gallons.

The water storage tank provided at Clive has a capacity greater than 685,000 gallons. This volume which is verified daily, allows for an adequate fire water reserve.

There are two ~~two ~~fire pumps~~s~~ at the Clive facility; both meet~~s~~ the NFPA 20 requirements. Each of t~~The~~~~Both~~ pumps~~s~~ has~~have~~ ~~has ~~an internal combustion engine drive and ~~are ~~is rated to supply adequate volumes of water at sufficient pressure to effectively respond to fires. A description of other fire fighting equipment at Clive is located in Section 4.0 of this attachment.

1.2 Aisle Space Requirement

A system of interior facility roads is available for moving and positioning emergency response vehicles. Building interiors, containment systems, and waste handling areas also have access aisles to move and position hand held and portable emergency response equipment. Adequate aisle space will be maintained to allow unobstructed movement of personnel, fire protection equipment, or spill control equipment to any area of the facility. A minimum aisle space of two and one-half feet will be maintained at the Clive facility.

2.0 Preventive Procedures, Structures, and Equipment

Various procedures, structures, and equipment have been incorporated into the design and operating procedures of the facility to minimize hazards to human health and the environment. Examples of procedures, structures and equipment utilized to prevent hazards include the following:~~:~~

- A list of emergency equipment and a description of the emergency procedures are provided in this plan and in the Contingency Plan, Attachment 6 of this ~~permit~~Permit. Both plans will be available at the facility at all times.

- Special precautions will be taken to prevent accidental ignition or reaction of ignitable wastes or the mixing of incompatible wastes. See Section 3.0 of this attachment.

- Forklifts and hand trucks will aid in the safe transport of cargo.

- Applicable procedures provided in American Petroleum Institute Publication 2009, *Safe Practices in Gas and Electric Cutting and Welding in Refineries, Gasoline Plants, Cycling Plants, and Petrochemical Plants*, Fourth Edition, March 1982, will be observed during repairs performed near ignitable materials.

2.1 Unloading Operations

Various procedures, structures, and equipment have been incorporated into the loading and unloading operations to prevent environmental and health hazards including the following:~~:~~

- Facility operations personnel will receive training on proper unloading and loading procedures. This training will include instruction on machinery operation, safety equipment, waste identification, and processing procedures. Employees will be required to comply with OSHA regulations regarding operations, such as the restrictions on the number of riders allowed on a powered industrial truck, the placement of wheel chocks for trailers before the trailer is entered, etc.

- All waste loading, unloading, and storage will be performed within containment areas. The containment areas are constructed of concrete and consist of a floor slab with either curbs or walls. The concrete surface of the containment is coated with a sealant and sloped to sumps to accommodate the collection~~allow accumulation~~ and removal ~~of~~ of liquids that might accumulate from leaks or spills.

- Any metal bulk liquid container of ignitable material will be grounded by means of a heavy clamp and cable before loading or unloading. Prior to loading or unloading a bulk liquid container, the operator will visually check that valves are in the correct position (either open or closed depending on the valve function), hoses are secure, and any needed hose connection plugs and caps are in place. Immediately following the loading or unloading of a bulk liquid container, the operator will visually check that valves are in the correct position and any needed hose connection plugs and caps are in place.

- Bulk solid and sludge containers arrive by truck or rail transport. The containers include sludge boxes, intermediate bulk containers, intermodal containers, end-dump trucks, and railroad gondolas. Bulk solids in railroad gondolas are unloaded using a backhoe or trackhoe in the Bulk Materials Building, Unit 255.

- Smaller capacity containers including drums or cartons are unloaded from and ~~occasionally~~ loaded into truck trailers in Unit 101, the Container Management Building. Unit 101 is operated as a ten-day transfer facility. These truck trailers are loaded or unloaded using an industrial truck or hand truck. These smaller capacity containers will typically be 55--gallon drums, although larger and smaller containers will also be loaded and unloaded.

2.2 Run-off

The facility has secondary containment systems to prevent migration of~~ surface and subsurface~~ liquids from waste handling areas to other areas of the facility, or to the environment. This liquid could be precipitation from storm events; or spills and leaks of hazardous waste. The surface of the containment systems is coated with a sealant and sloped toward one or more sumps to allow collection and removal of any accumulated liquids. The accumulated liquid is sampled, analyzed, and handled in accordance with the Waste Analysis Plan. Containment systems not protected from precipitation by a building (Unit 106, outdoor portion of subunit 1, subunit 2 and subunit 3) have been designed to accommodate the precipitation from a 25-year, 24-hour storm event (1.9 inches) plus 10% of the capacity by volume. Storm water from precipitation falling outside of the containment areas described above will be controlled to prevent run-on of the storm water into a waste management unit. ~~This will be performed by a storm water diversion and collection system.~~

All spills of hazardous waste will be promptly controlled and removed to prevent spread of contaminants. The spilled material and any absorbent used will be collected and placed into appropriate containers and managed as a hazardous waste.

2.3 Water Supplies

Operation of Clive will require two types of water: (1) potable water, and (2) plant water. Potable water will be used for personnel decontamination, eye-wash stations, and safety showers. Plant water will be used for equipment decontamination, fire fighting, etc. The plant water will be stored in the Fire Water Storage Tank. The potable water will be stored in ~~the Treated Water Storage Tank~~a separate water storage tank adjacent to the office building and in Unit 061~~.~~.

Potable and plant water will be distributed throughout the facility by separate water delivery systems. Backflow preventers will be used, if necessary, to prevent contamination of the water in a delivery system by hazardous waste.

2.4 Equipment and Power Failure

There are no critical units at Clive for which electric power is required in an emergency.

The equipment used to manage hazardous waste at Clive is generally powered by diesel or internal combustion (IC) engines. ~~Normally, the electrical requirements of Clive are met with power purchased from Utah Power & Light.~~

No hazardous waste management units are critical. The fire water system is critical, but it is provided with ~~backup~~ IC engine drives. Therefore, no emergency power systems are required at Clive.

2.5 Personnel Protection Equipment

Personnel protection equipment available at the facility includes the following:

- Self-contained breathing apparatus (SCBA). A number of devices consisting of a portable cylinder of compressed breathing air, pressure regulator, hose, full-face mask, and carrying harness are available. Personnel can use the SCBA's to enter an area where smoke or gases make the ambient atmosphere dangerous to breathe. Each SCBA can supply approximately one-half hour of air. The SCBA's are available at either ~~the main building in the bulk operation office~~Building 604 or Building 101. Clean Harbors Field Services may provide their own PPE, including SCBAs. All PPE must be approved for use in accordance with OSHA regulations.

- Negative Pressure Respirator (NPR)~~Cartridge air mask~~. There are two types of NPR~~cartridge mask~~s, full face and half face. They are both equipped with fittings to which contaminant-specific cartridges are attached. Each employee will be issued an NPR ~~mask~~ and cartridges as necessary appropriate for his/her work area. Employees and their respirator are quantitatively fit tested annually. Respirators will be used and maintained according to manufacturer's specifications.

- Protective clothing. Employees working at Clive are issued hard hats, protective coveralls, waterproof safety boots, specialized gloves, and hearing protection on a routine basis, as necessary.

Minimum personnel protection equipment for all people within Clive and in or around hazardous waste management units (i.e.; employees and visitors) will be a hard hat~~,~~ steel-toed shoes and eye protection. This minimum protection level will not apply to personnel within passenger vehicles~~,~~ or any other office space within the facility in which the risk of a head or eye injury does not exceed normal office work risks. Personnel protection equipment for employees performing tasks within the waste management units may exceed this minimum protection level.

~~Personnel at Clive will be responsible for decontaminating their own personnel protection equipment. Cartridge type respirators will be washed daily with soap and water at the end of the individuals work shift. The chemically resistant coveralls and gloves are disposable and will be discarded as necessary and at least daily.~~

3.0 Ignitable or Reactive Waste

3.1 Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Waste and Mixing of Incompatible Wastes

Precautions are taken at the facility during storage, transportation, and handling to prevent the accidental ignition or reaction of waste and mixing of incompatible wastes. These precautions are intended to prevent unwanted heat, pressure, fire, explosion, toxic gases or fumes which could result in damage to the structural integrity of any portion of the facility or cause a threat to human health or the environment. The precautions will include:

- Ignitable waste will be protected from open ignition sources such as open flames, metal welding and cutting, hot surfaces, frictional heat, smoking, and sparks (static, electrical or mechanical). When welding or conducting a procedure that involves risk near ignitable waste a hot work permit is required. Bulk liquid containers (tank trailers, railroad tanks and transport tanks) of ignitable material will also be grounded with a cable and clamp between the container and the ground prior to loading or unloading.

- Ignitable and reactive waste will be protected from spontaneous ignition from heat producing chemical reactions by segregating incompatible waste streams.

- Buildings which enclose waste handling operations will be ventilated as described in Attachment 8, Container Management, of this ~~permit~~Permit to prevent an accumulation of toxic mists, fumes, dusts, or gases; or flammable fumes or gases.

- The incompatibility of wastes are determined in accordance with the procedures outlined in the Waste Analysis Plan, Attachment 1 of this ~~permit~~Permit.

3.2 Management of Ignitable or Reactive Wastes in Containers

Ignitable or reactive wastes in containers may be solid, sludge or liquid. Management of ignitable or reactive wastes in containers will include the following:

- Large and small containers of ignitable and reactive solid or sludge waste will be unloaded at Unit 105, ~~or~~ Unit 106, Unit 535, or Unit 604. Each~~Both are~~ is located in excess of fifty feet from the facility boundary.

3.3 Management of Incompatible Wastes in Containers

Management of incompatible wastes in containers will include the following precautions:

- Incompatibility between two wastes or a waste and a container will be determined from published scientific or engineering literature, laboratory tests, or previous experience, and in accordance with the Waste Analysis Plan, Attachment 1 of this ~~permit~~Permit.

- ~~Containers of waste received within one truck trailer will be assumed to contain compatible waste as required by the~~ The U.S. Department of Transportation regulations require that shipments of waste in a trailer be compatible. These containers will be unloaded into a common containment area for incoming load analysis in accordance with the Waste Analysis Plan, Attachment 1, 3.1.2. This does not apply to the waste transferred in the Container Management Building (Unit 101), which is a ten-day transfer facility.– If subsequent identification of the waste during the incoming load analysis reveals the existence of incompatible wastes in a common containment area, the container holding the incompatible waste will be ~~removed~~ removed during the shift and placed in an appropriate containment area. Attachment 8, Container Management, of this ~~permit~~Permit provides a description of the container management procedures.

- Incompatible wastes will not be placed in the same container. Wastes added to containers must be compatible with the contents of the container and the container itself as determined by the Waste Analysis Plan, Attachment 1 of this P~~p~~ermit.

- The Thaw Unit (105) and Rail/Truck Transfer Bay (535) are located at least 50 feet from the facility boundary.

4.0 Emergency Equipment

The following is a list of the emergency equipment, spill control equipment, communication systems, ~~alarm system,~~ and decontamination equipment which may be utilized at the facility.

- Internal facility communications systems. Communications inside the Clive facility are achieved through a telephone system, ~~and~~ cell phones and CB radios. ~~There will be telephones located so that each employee will have access to one from his/her workstation.~~ From each telephone an employee can call any other telephone in the Clive facility and can be connected to an outside phone line. All employees have immediate access to one of the communication devices at all times while on site at the facility.

~~The telephone system is equipped with an uninterruptible power supply for reliability during a loss of primary power. Cell phones are available at each waste management unit, and to various operations and/or management personnel based on operational requirements to supplement the telephone system.~~

- External facility communications systems. The Clive facility is connected to the local telephone system and cell phone networks.~~.~~

- Overpack drums. An overpack drum is a container large enough to hold a standard 55-gallon drum. ~~They~~ Overpack drums are available at the facility and are used to hold smaller containers which are damaged or leaking.

- Absorbent agents. Absorbent agents are dry powders, granular materials, mats or pads, etc., which can reduce or stop the spread of spilled liquids and allow the spilled material to be recovered as a solid. These agents will~~, at a minimum,~~ be available at all waste management units. ~~Rail/Truck Transfer Bay (Unit 535) and the Containerized Bulk Storage Unit (Unit 106).~~ The Clive facility may, at its discretion, place absorbents at various other locations as well.

- Fire water system. The fire water system consists of a water tank, pump~~s~~, water pipes, hose stations, monitors, hydrants, and building sprinkler systems. The water tank has a capacity of 685,230 gallons of water with 371,166 gallons held as a minimum for fire fighting (more than a 120 minute supply at 2500 gallons per minute). The fire water pumps are ~~is~~ rated to provide the required volume at a pressure high enough to operate foam equipment. This system is tested annually by a licensed fire suppression contractor.

- Fire extinguishers. Fire extinguishers of various sizes from 2½ to 50 pounds, rated for Class A, B, and C fires, are located throughout the Clive facility. Fire extinguishers for Class D (combustible metals such as magnesium or sodium) fires are also available. These fire extinguishers are operated by pulling a pin and squeezing the handle lever while directing a short hose or the extinguisher nozzle at the burning surface.

- Vacuum truck. There will be at least one vacuum truck at the Clive facility for ~~picking up~~removing liquids from the various sumps throughout the facility. If solids need to be picked up, conventional equipment such as brooms, shovels, vacuums, frontend loaders, etc. will be used. ~~The vacuum truck will be stored at the Clive facility, but will be available to the Grassy Mountain Facility, and for spill response, on an as needed basis.~~

- Safety shower and eye wash stations. There are several locations where a supply of water will be available through shower heads and bubblers for employees to flood themselves with water if they are sprayed with a hazardous substance. These stations operate by simple pull handles and foot peddles. At least one safety shower and~~/or~~ eye wash station will be located in or near each waste management area when the unit is in operation and staffed. Portable units may be used in these locations in lieu of hard piped units.

- Self-contained breathing apparatus (SCBA). A number of devices consisting of a portable cylinder of compressed breathing air, pressure regulator, hose, full-face mask, and carrying harness are available. Response personnel can use the SCBAs to enter an area where smoke or gases make the ambient atmosphere dangerous to breathe. Each SCBA can supply approximately one-half hour of air.

- Negative Pressure Respirator (NPR). ~~Cartridge air mask.~~ There are two types of NPR~~cartridge mask~~s, full face and half face. They are both equipped with fittings to which air contaminant-specific cartridges are attached. Air to be inhaled by the wearer is filtered through the cartridge and the specific contaminants are removed. Each employee will be issued a mask and cartridges appropriate for his work area. When the mask is issued, if the model or size of the mask changes, and at least annually, the mask will be fit-tested on the employee. Cartridges for other contaminants and both styles of masks will be available to employees as necessary ~~stocked at the safety equipment storage area~~.

- First ~~aid stations and first~~ aid kits. ~~F~~A first aid kit~~s~~ is located ~~are maintained in the operating units and~~in the main office building. The contents of the first aid kit is attached to the inside of the lid.

~~There are two first aid stations on site. One, in Building 061, the maintenance building, and the other in Building 052, the Main Office. Each will contain sufficient medical supplies to treat injury conditions ranging from minor injuries to major injuries for which an emergency medical technician (EMT) is qualified to treat. Medicine is also be available to help employees alleviate symptoms of minor illnesses i.e., headaches, hayfever, colds, etc. Located in at least each waste management area are first aid kits which include a supply of materials necessary for a person to treat severe bleeding and give CPR, i.e., heavy bandages, latex gloves, mouth-to mouth resuscitation mask.~~

- Protective clothing. Employees working at the Clive facility will be issued hard hats, safety footwear and safety glasses. Other protective clothing~~, such as protective coveralls, waterproof safety boots and specialized gloves are~~ is provided based on the requirements of the area or job function being performed.

~~The hard hats are made of high impact plastic. The protective coveralls are made from polyethylene fibers (such as Tyvek or equivalent) and are disposable. The waterproof safety boots are solvent resistant synthetic rubber. The gloves are latex rubber, synthetic rubber, or knit (cotton, polyester, etc.) depending upon the specific job requirements. A supply of the job or area specific protective clothing will be available for each waste management unit and kept at the safety equipment storage area.~~

- Portable pumps. ~~A number of p~~Portable pumps will be available, or can be obtained, for removing liquids from sumps. The type of pump may include centrifugal, diaphragm, piston (trash pump), submersible, etc. Gasoline, air or electricity may be used to power these pumps.

- Hand tools. Brooms, buckets~~,~~ and absorbent materials ~~and detergent~~, or equivalents, will be ~~kept in the safety equipment storage area~~maintained on site. These may be used in spill control and decontamination activities.

- ~~Decontamination~~ Spill kit. Shovels, brooms, ~~detergent,~~ and absorbent ~~towels~~ materials will be kept in or near each waste management area. These may be used in spill control and decontamination activities.

ATTACHMENT 6

CONTINGENCY PLAN

Table of Contents

List of Tables

1.0 Facility Information

Facility Name: Clean Harbors Clive
Facility Operator: Clean Harbors Clive, LLC
Location: 3½ miles south of Milepost 49 (Clive Interchange) on Interstate 80,

The facility is designed as a transfer and storage facility of RCRA, ~~and~~ TSCA ~~wastes~~ and ~~of~~ non-hazardous wastes. Waste is stored in container storage buildings and in other permitted storage areas. Waste is shipped to other off-site locations for treatment or disposal.

~~This plan mirrors the contingency plan for the Clean Harbors Aragonite facility and because of the limited operations and staff at Clive, this plan utilizes procedures, resources and emergency coordinators from Aragonite.~~

2.0 Purpose

This Contingency Plan outlines the emergency procedures that will be employed to minimize risks to human health and the environment.

The provisions of this plan will be carried out as specified in Section 5.0.

3.0 Emergency Coordinators

Table 1~~, at the end of this Attachment,~~ contains the names of those persons qualified to act as Emergency Coordinators at ~~Aragonite~~Clive. ~~The Emergency Coordinator for Aragonite also acts as the Emergency Coordinator for Clive.~~ All Emergency Coordinators have the authority to call on outside assistance ~~or call upon Clean Harbors Aragonite and Clean Harbors Clive~~ resources to respond to the emergency and to commit requisite resources to implement this plan.

~~The Aragonite Shift Supervisor, also identified as the Incinerator Supervisor, is normally the Emergency Coordinator. When no Shift Supervisor is available at Aragonite, another qualified individual (identified with an asterisk (*) on the Emergency Call Sheet (Table 1)) will be designated as the Emergency Coordinator. At least one of the individuals qualified to act as Emergency Coordinator will be on-site at Aragonite at all times. The Aragonite Control Board Operator (CBO) will know the identity of the Emergency Coordinator.~~

The duties of the Emergency Coordinator are to assess the situation and take steps necessary to protect human health and the environment. The Emergency Coordinator is responsible for the coordination of containment and recovery operations following an emergency or a major emergency. ~~The responding Emergency Coordinator is responsible for the complete written report of the incident. The Environmental Manager will be responsible for forwarding the report to the appropriate regulatory agencies.~~

4.0 Definitions

Major Emergency: Any explosion, fire, spill, discharge, or natural disaster which has damaged or destroyed, or threatens to damage or destroy, plant property, or impair plant operations, or results in a discharge of waste material into the environment and is beyond the capability of on-site personnel and equipment to control. ~~A major emergency may originate from an on-plant event, such as spills, fires, explosions, etc., or an off-plant incident, such as an aircraft crash on plant property, fire from neighboring property, or natural disasters.~~

Emergency: Similar to a major emergency except that no outside assistance is needed or summoned to deal with the situation. This includes spills or discharges outside of containment areas reportable under section 11.0 of this plan, explosions, and fires.

Spill or Discharge of hazardous waste : Means the accidental or intentional ~~A spill is defined as any release which includes any~~ spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping of hazardous waste into or on any land or water. ~~or disposing into the environment.~~ This definition applies to all materials that are released (i.e., hazardous and non-hazardous waste, raw materials, by-products, residues, etc.). ~~Specifically excluded from the definition of "spill" is any release which does not enter the environment or any federally permitted release (e.g., permitted air emissions).~~

Contained Spill or Discharge: A spill or discharge which is contained means that the spill is contained within an area which provides a barrier to prevent a release from contacting the ground or surface waters. This includes paved areas where no runoff occurs, secondary containment structures and the inside of buildings.

Shutdown of Operations: Curtailing ~~of~~ site operations~~,~~ by shutting down all waste activities. Buildings are closed to prevent wind or rain from entering, and all unloading operations are ceased~~, as needed~~. Maintenance and contractor's machinery will be shut down, as needed.

Designated Gathering Points (DGP~~):~~): The primary designated gathering point (DGP) is located north of the Main Gate, which is on north fence line of the facility. If, due to an emergency the primary DGP is not assessable, all personnel shall meet on the northside of the Maintenance Building (Unit 061). ~~They are shown on Figure G.2, drawing 43-02-1-18 located in Attachment 9. The Northern DGP is just west of the main entrance road approximately 200 feet north of the Rail to Trailer Transfer Facility (Unit 255). The Eastern DGP is approximately 1000 feet east of the East Gate in the security fence, which is near the Containerized Waste Storage & Staging Facility (Unit 101). The Southern DGP is approximately 1000 feet south of the South Gate in the security fence, which is near the southwest corner of the maintenance building (Unit 061). The Western DGP is approximately 1000 feet west of the West Gate in the security fence, which is near the southeast corner of the Bulk Container Storage Area (Unit 106).~~

5.0 Implementation of Contingency Plan

The Contingency Plan will be implemented at Clive whenever there is a major emergency, emergency, whenever there is a contained spill or discharge which threatens human health ~~(i.e., a spill or discharge resulting in one or more individuals requiring medical treatment or evaluation)~~, or any other time the Emergency Coordinator feels it is appropriate. The purpose of this Contingency Plan is to outline the actions which operating personnel will take in response to emergencies, such as fires, explosions, leaks, spills, natural disasters, or discharges of hazardous substances. It establishes guidelines for the orderly handling and reporting of emergency situations which occur or could foreseeably develop at the Clive facility.

5.1 Assessment/Notification

Any person discovering a situation which may require implementation of the Contingency Plan (e.g., fires, spills, etc.) shall immediately warn others working nearby and notify the Emergency Coordinator or ~~CBO~~Alternate.

The Emergency Coordinator will appraise the situation and determine whether to initiate the Contingency Plan.

The Emergency Coordinator will notify personnel on site of the situation ~~through radios~~with the use of telephones or cell phones.

Should the situation result in the spill or discharge of hazardous waste, the spill prevention control and countermeasures procedure shall be followed.

If there is a spill or discharge, the worker(s) discovering it will immediately notify the Emergency Coordinator and assess the characteristics of the spill or discharge and promptly initiate a plan to stop the source of the leak. The Emergency Coordinator will initiate measures so as to protect human health and the environment.

Information about waste stored on-site is tracked in the waste-tracking database. All wastes stored on-site are tracked by facility personnel.

5.2 Evacuation Plan

In the event that an evacuation is necessary, on-site personnel will be notified by ~~radio~~telephone or cell phone. The evacuation routes should be upwind or crosswind of the emergency and culminate at the designated assembly point(s). The ~~security guard or Clive personnel trained in security and designated as the security official~~Emergency Coordinator or ~~will~~Alternate will be available by ~~radio or~~ telephone or cell phone and, will announce the appropriate assembly point(s) ~~over the radio~~. All ~~non-essential~~ personnel not responding to the emergency ~~,~~ (visitors~~,~~ and contract personnel) shall evacuate the area and assemble at the appropriate assembly point(s). Table 2 contains the list of the evacuation route drawings. These include evacuation routes from the buildings and the waste management units at the facility. The evacuation drawings follow Table 2 in this plan.

The facility has a list of all contractors, visitors and truck drivers ~~system for identifying everyone within~~present at the facility at any given time. ~~The designated~~A -person designated by the Emergency Coordinator at the assembly point(s) during an emergency will notify the Emergency Coordinator of any personnel that are known to be missing from the list. Visitors shall be the responsibility of their Clive contact for accountability.

5.3 Control Procedures

5.3.1 Spills or Discharges

Spilled material will normally be contained in the area where the spill occurs. All spills will be collected and subsequently transferred to permitted ~~approved~~ storage or to a 90-day accumulation area.

Spills may also occur outside of the containment berms, for example in the case where the containment area has been damaged or in the situation where the spill occurs when the waste is not in a containment area. All material will be kept from entering storm drains, water courses, wells, water systems, and navigable waterways, if possible.

Incompatible wastes are segregated via concrete curbs and containment bays. Thus, the probability of incompatible wastes commingling is not high, and, if possible, spills will be segregated and will be cleaned up immediately to prohibit commingling of wastes.

The following steps are taken to contain and clean up spills and discharges:

- Dress in appropriate protective equipment.
- Prevent further leaking by repositioning the container, overpacking, or applying a temporary seal to the leak. Simple overpacking for containers is the preferred method.
- Prevent the spill from spreading by trenching or encircling the area with a dike of sand, absorbent material, or, as a last resort, dirt or rags, or other suitable material. If the spill is in an outside area and it is raining or rain is imminent, cover the spill with plastic sheeting, if feasible.
- The spill ~~area~~ area shall be~~is~~ cleaned up and tested for contamination in accordance with this permit.~~, as appropriate.~~ If the spill area is not in a containment area (i.e., on dirt) the contaminated material will be removed and verification sampling will be conducted.

5.3.2 Explosions

In the event of an explosion, the Emergency Coordinator will immediately shut down all equipment that may be affected. -Measures will be implemented to ensure the health and safety of personnel and the environment. ~~If the explosion occurs where liquids are stored and a spill occurs, procedures for spill containment will commence. Explosions involving other plant areas~~

~~will require evacuation, possible first aid for injured personnel, securing the area to prevent unauthorized entry, and assessment of damages.~~

In all cases of an explosion, the Emergency Coordinator must be notified as soon as equipment and waste storage areas are secured.

5.3.3 Fires

In the event of a fire, the automatic sprinkling system will operate and the water cannon~~s~~ system may be activated. Fire extinguishers are located in all buildings. In the event a fire cannot be extinguished using the stationary equipment, fire hoses may be hooked to the hydrants and activated. The water falling on the hazardous waste storage areas will primarily be contained through the containment sump systems.

Unit 101, which functions as a ten-day truck to truck transfer facility, is equipped with a foam suppression system.

6.0 Prevention of Recurrence or Spread of Fires, Explosions, or Releases

During an emergency, the Emergency Coordinator must take all reasonable measures necessary to ensure that additional fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.

If the facility stops operations in response to a fire, explosion, or release, the Emergency Coordinator, or his designee, must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

In order to protect the facility from the possibility of range fires, a firebreak ~~will~~ surrounds the entire facility.

7.0 Storage and Treatment of Spilled or Discharged Material

P~~P~~ost event sampling and analyses in accordance with Attachment 1, Waste Analysis Plan and Attachment 7, Closure Plan, will be performed after containment, clean-up, and decontamination procedures have been completed.

All spilled or released material will be managed as hazardous waste in accordance with this P~~p~~ermit.

8.0 Post-Emergency Equipment Maintenance

All equipment used during an emergency, major emergency, or contained spill or discharge will be cleaned and/or replaced, when necessary, to prepare for ~~any~~ future use. The emergency equipment will be checked as necessary for completeness and operability in accordance with the Permit.

9.0 Emergency Equipment

Section 4.0 of the Preparedness and Prevention Plan, Attachment 5, lists the emergency equipment at the site along with a physical description ~~and outline~~ of its capabilities. Table 3 of this Attachment is a listing of drawings showing the locations of the minimum emergency equipment at Clive. The drawings follow Table 3.

10.0 Coordination Agreements

Clean Harbors Clive has negotiated a written agreement with Tooele County. Representatives of Tooele County have been contacted, have received a copy of this Contingency Plan, and have received a plant walk-through to familiarize them with the plant layout and function. ~~–~~Annual re-orientation is offered at the plant site for Tooele County representatives. By the terms of the written agreement, Tooele County has agreed to provide the following services:

- Tooele County road maintenance,
- Routine law enforcement,
- Fire response,
- Public health,
- Public safety, and
- Hospital isolation unit~~, and~~
- ~~Telecommunications.~~

Clean Harbors Clive has also negotiated agreements with other local agencies to provide assistance in the event that additional equipment and manpower are required at the facility. Representatives of each agency below have been contacted. Each has received a copy of this Contingency Plan and has received a plant walk-through to familiarize each agency with the plant layout and function. Also, annual re-orientation is offered at the plant site to the following agencies:

Tooele County Sheriff's Department*
Tooele, Utah
435-882-5600

Tooele Emergency Management
435-843-3263

* The Sheriff's Department is the designated primary coordinating agency.

~~The following agencies may be used for additional resources should the need arise:~~

~~U.S. Bureau of Land Management~~
~~Salt Lake District Office~~
~~801-977-4300~~

~~Mountain West Medical Center~~

~~435-843-3600~~

~~University of Utah Hospital~~
~~801-581-2291~~

~~Airmed~~
~~University of Utah~~
~~801-581-2991~~

~~Spill contractors that may be contacted, as necessary:~~

~~IT Corporation~~
~~800-421-5574~~

~~O.H. Materials~~
~~800-537-9540~~

~~Other emergency assistance and advice can be solicited from:~~

~~Clean Harbors Transportation Related Emergencies~~
~~800-483-3718~~

~~National Response Center~~
~~U.S. Coast Guard~~
~~400 Seventh Street, S.W.~~
~~Washington, D.C. 20510~~
~~800-424-8802~~

~~ChemTrec (Chemical Transportation Emergency Center)~~
~~800-424-9300~~

~~Chlorep (Chlorine Incidents)~~
~~800-424-9300~~

~~NACA Pesticides Safety Team Network~~
~~800-424-9300~~

The following organizations may be notified of an emergency condition if appropriate.

Emergency Services	**Business Number**	**Emergency Number**
West Wendover Fire Department[1]	(775) 664-2274	Dispatch (775) 664-4393 or **911**
West Wendover Police Department	(775) 664-2930	
West Wendover Ambulance[1]	(775) 664-2081	

1 *Provided with a copy of this Plan.*

Air Medical Evacuation[1] University of Utah Hospital Helicopter	(801) 581-7200	Dispatch (801) 581-2500 or **911**
Life Flight LDS Hospital	(801) 321-3330	Dispatch (801) 321-1234 or **911**
North Tooele County Fire District[1]	(435) 882-6730	Dispatch (435) 882-5600 or **911**
Grantsville Fire Department	(435) 884-3343	
Grantsville Police Department	(435) 884-6881	
Grantsville Ambulance	(435) 882-5600	
Tooele County Sheriff[1]	(435) 882-5600	
Tooele Police Department	(435) 882-8900	
Tooele Ambulance	(435) 882-5600	
National Poison Control	1-800-222-1222	
National Response Center	1-800-424-8802	
Utah Division of Waste[1] **Management and Radiation Control**	(801) 536-0200	(801) 536-4123
Clean Harbors Corporate Office	(781) 792-5000	
U.S. EPA Region VIII	(303) 312-6312	
Utah Highway Patrol	(801) 965-4518	
3E	(800)360-3220	
Bureau of Land Management	(801)-977-4300	

This plan will be reviewed annually, updated as necessary, and forwarded to Tooele County's Department of Emergency Management and Department of Engineering.

11.0 Required Reports

As required by R315-264~~8~~-~~4.7(d)~~ 56(d)(2)~~and 40 CFR 264.56(d)~~, for major emergencies, Clean Harbors Clive shall immediately notify the Utah State Department of Environmental Quality. The report will include:

- Name and telephone number of reporter;
- Name and address of facility;
- Time and type of incident, e.g., discharge, fire;
- Name and quantity of material(s) involved, to the extent available;
- The extent of injuries, if any; and
- The possible hazards to human health or the environment, outside the facility.

As required by R315-264~~8~~-~~4.7~~56(~~i~~j)~~ and 40 CFR 264.56(j)~~, Clean Harbors Clive will ~~record~~ document in the operating record any incident that requires implementing this Contingency Plan.

In addition, Clean Harbors Clive will submit a written report to the ~~Executive Secretary~~Director of the Division of Waste Management and Radiation Control within 15 days after an incident that required implementation of the Contingency Plan. The report will include:

- Name, address, and telephone number of the owner or operator;
- Name, address, and telephone number of the facility;
- Date, time, and type of incident;
- Name and quantity of material(s) involved;
- The extent of injuries, if any;
- An assessment of actual or potential hazard to health or the environment, and
- Estimated quantity and disposition of recovered material that resulted from the incident.

For spills which require reporting under R315-263-30~~9~~, Clean Harbors Clive shall immediately notify the Utah State Department of Environmental Quality. The report will include:

- Name, telephone number, and address of person responsible for the spill;
- Name, title, and telephone number of individual reporting;
- Time and date of spill;
- Location of spill;
- Description contained on the manifest and the amount of material spilled;
- Cause of spill; and
- Emergency action taken to minimize the threat to human health and the environment.

As required by R315-~~9-4~~263-33, Clean Harbors Clive will submit a written report to the ~~Executive Secretary~~Director within 15 days for spills which ~~require reporting~~become hazardous waste and must be reported under Utah Admin. Code R315-263-30(b) ~~under R315-9~~. This report will include:

- The person's name, address, and telephone number;
- Date, time, location, and nature of incident;
- Name and quantity of material(s) involved;
- The extent of injuries, if any;
- An assessment of actual or potential hazards to human health or the environment, where this is applicable; and
- The estimated quantity and disposition of recovered material that resulted from the incident.

Contained spills or discharges that do not threaten human health need not be reported. However, they ~~will~~ shall be recorded in the operating record.

As required by ~~40 CFR 302.6~~R315-263-30(d), spills on site involving reportable quantities (RQ) will be reported to the National Response Center. They will also be reported to the Utah Division of ~~Solid and Hazardous~~Waste Management and Radiation Control (DWMRC) ~~Waste~~, Tooele County Office of Engineering and Department of Emergency Management, and the U.S. EPA, Region VIII.

If plant operations were suspended due to Contingency Plan implementation, Clive may only resume operations ~~will resume after~~once ~~plant management~~the Emergency Coordinator has determined that all safety-related questions have been satisfactorily addressed. Clive shall notify EPA and DWMRC~~/State officials~~ ~~will be notified~~ that the facility is in compliance with the permit and R315-~~40 CFR~~ 264~~-~~.56(h) prior to resuming operations.

Reports to the ~~Executive Secretary~~Director of DWMRC shall~~will~~ be sent to:

~~Executive Secretary~~Director
Utah Division of Waste Management and Radiation Control~~Solid and Hazardous Waste Control Board~~
~~Utah Department of Environmental Quality~~
~~Division of Solid and Hazardous Waste~~
P.O. Box 144880
Salt Lake City, Utah 84114-4880

Or hand delivered to

Director
Utah Division of Waste Management and Radiation Control
195 North 1950 West
Salt Lake City, Utah 84116

Reports to EPA Region VIII shall~~will~~ be submitted to:

Regional Administrator
U.S. EPA - Region VIII
1595 Wynkoop Street
Denver, Colorado 80202

Reports to Tooele County shall~~will~~ be submitted to:

Tooele County
Department of Emergency Management and
Department of Engineering
47 South Main
Tooele, Utah 84074

Immediate reporting of certain events to the Utah Department of Environmental Quality, as outlined in this section, shall be made to the following:

Utah Division of ~~Solid and Hazardous~~ Waste Management and Radiation Control
(801) 536-0200~~8-6170~~ (during office hours); or

Utah Department of Environmental Quality
(801) 536-4123 (24-hour answering service)

Table 1

EMERGENCY CALL SHEET

Clive Emergency Coordinators

~~**Position**~~	~~**Name**~~	~~**Telephone Numbers**~~
~~Primary~~	~~Brandon Prettyman~~	~~435-884-8573 (Office)~~ ~~435-840-5469 (Cell)~~
~~Alternate~~	~~Alan Truesdale~~	~~435-884-8422 (Office)~~ ~~435-830-6274 (Cell)~~
~~Alternate~~	~~Chris Bjerke~~	~~435-884-8570 (Office)~~ ~~801-831-5368 (Cell)~~
~~Alternate~~	~~Chris Krish~~	~~435-884-8424 (Office)~~ ~~435-841-1842 (Cell)~~

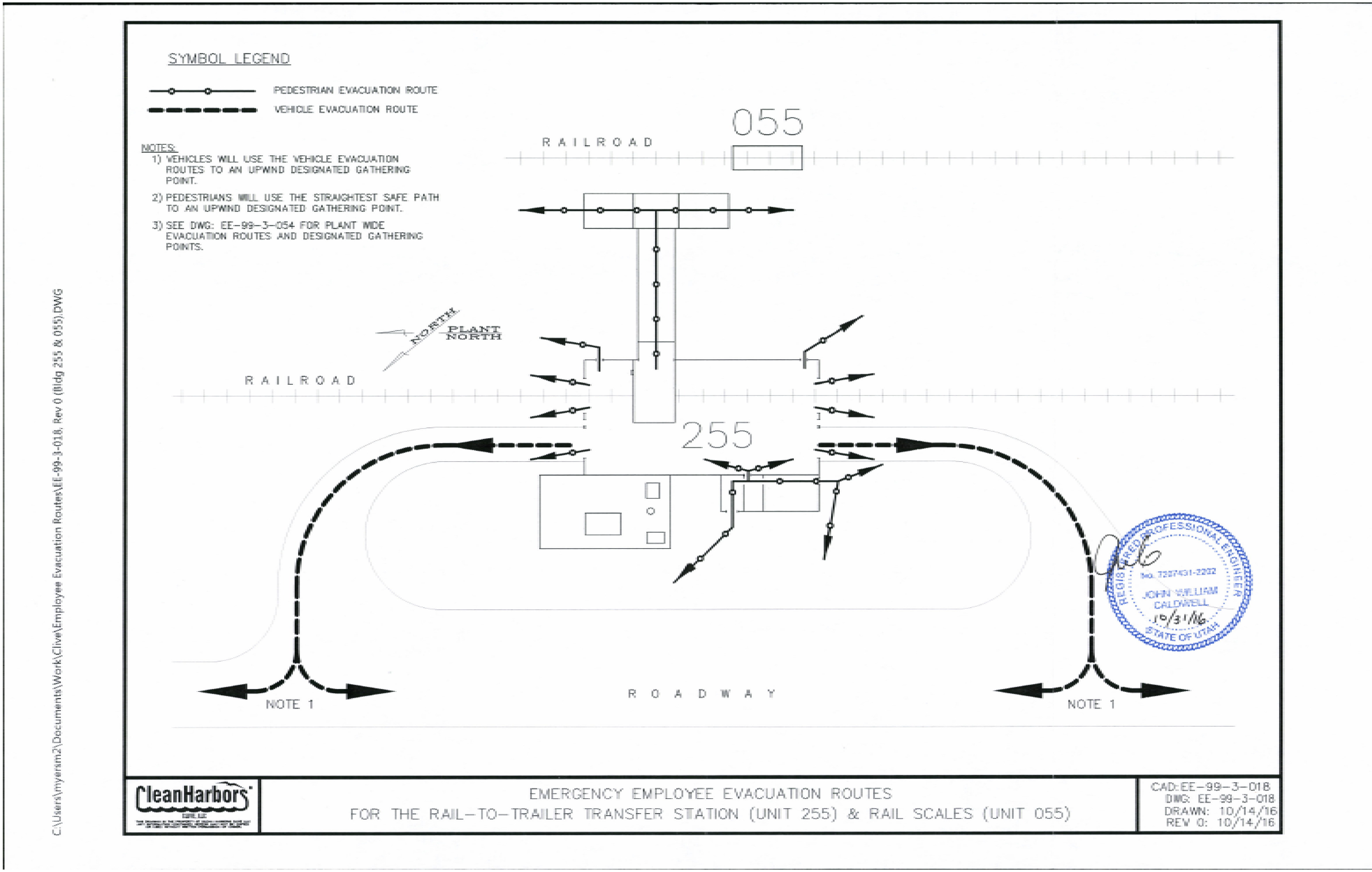
Position	**Name**	**Telephone Numbers**
Primary	Brandon Prettyman	435-884-8573 (Office) 435-840-5469 (Cell)
Alternate	Chris Krish	435-884-8424 (Office) 435-841-1842 (Cell)

Alternate	Chris Bjerke	435-884-8570 (Office) 801-831-5368 (Cell)

Table 2

Emergency Evacuation Route Drawings

Description	Drawing No.	Date
Emergency Employee Evacuation Routes for the Rail -To - Trailer Transfer Station Unit 255 & Rail Scales Unit 055	EE-99-3-018 Rev 0	10-14-16
Emergency Employee Evacuation Routes for the Containerized Bulk Solids Storage Unit 106	EE-99-3-032 Rev 0	10-14-16
Emergency Employee Evacuation Routes for the Security Office Unit 051 & Admin /Truck Scale Unit 054	EE-43-99-3-004 Rev 0	10-14-16
Emergency Employee Evacuation Routes for the Thaw Unit 105	EE-99-3-013 Rev 0	10-14-16
Emergency Employee Evacuation Routes for the Waste Fuel Tank Farm Rail Tanker Unloading Area Unit 535	EE-99-3-023 Rev 0	10-04-16
Emergency Employee Evacuation Routes for the Container Management Building Unit 101	EE-DECON-101 Rev 0	10-14-16
Emergency Employee Evacuation Routes for the Raw Water / Eire Water Storage Tank Unit 031 Fire Water Pump Building 038 & MCC Unit 076	EE-99-3-001 Rev 0	10-14-16
Emergency Employee Evacuation Routes for the Truck Wash Building Unit 604 &. MCC Unit 80	EE-99-3-029 Rev 0	10-14-16
Emergency Employee Evacuation Routes	43-99-3-054 Rev 1	10-14-16
Emergency Employee Evacuation Routes for the Maintenance Building Unit 061 -_ Grade	EE-99-3-007A Rev 0	10-14-16


SYMBOL LEGEND
PEDESTRIAN EVACUATION ROUTE
VEHICLE EVACUATION ROUTE
NOTES:
1) VEHICLES WILL USE THE VEHICLE EVACUATION ROUTES TO AN UPWIND DESIGNATED GATHERING POINT.
2) PEDESTRIANS WILL USE THE STRAIGHTEST SAFE PATH TO AN UPWIND DESIGNATED GATHERING POINT.
3) SEE DWG: EE-99-3-054 FOR PLANT WIDE EVACUATION ROUTES AND DESIGNATED GATHERING POINTS.
055
RAILROAD
NORTH
PLANT NORTH
RAILROAD
255
ROADWAY
NOTE 1
NOTE 1
REGISTERED PROFESSIONAL ENGINEER
JOHN WILLIAM CALDWELL
10/31/16
STATE OF UTAH
CleanHarbors
EMERGENCY EMPLOYEE EVACUATION ROUTES
FOR THE RAIL-TO-TRAILER TRANSFER STATION (UNIT 255) & RAIL SCALES (UNIT 055)
CAD: EE-99-3-018
DWG: EE-99-3-018
DRAWN: 10/14/16
REV 0: 10/14/16
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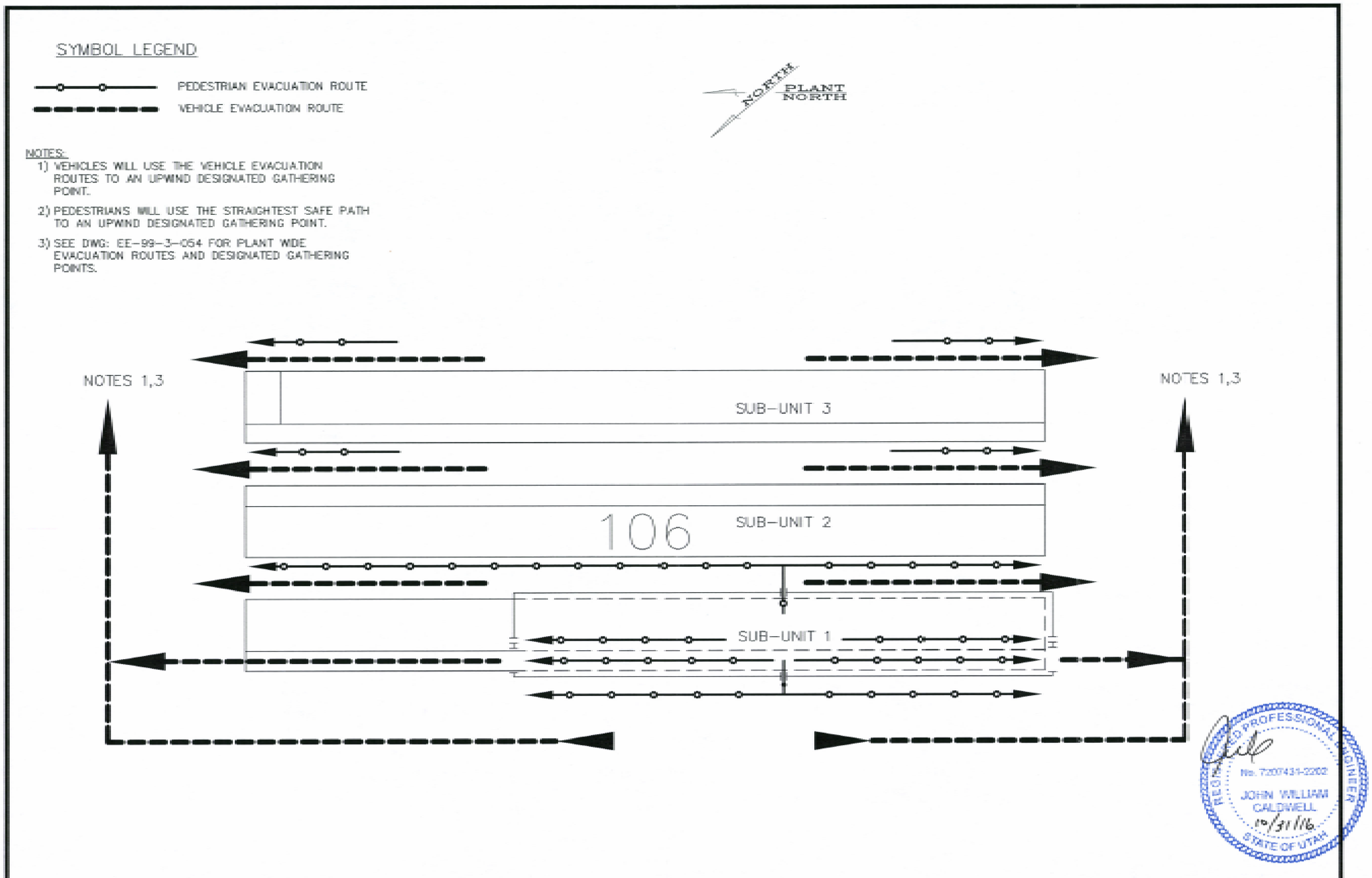
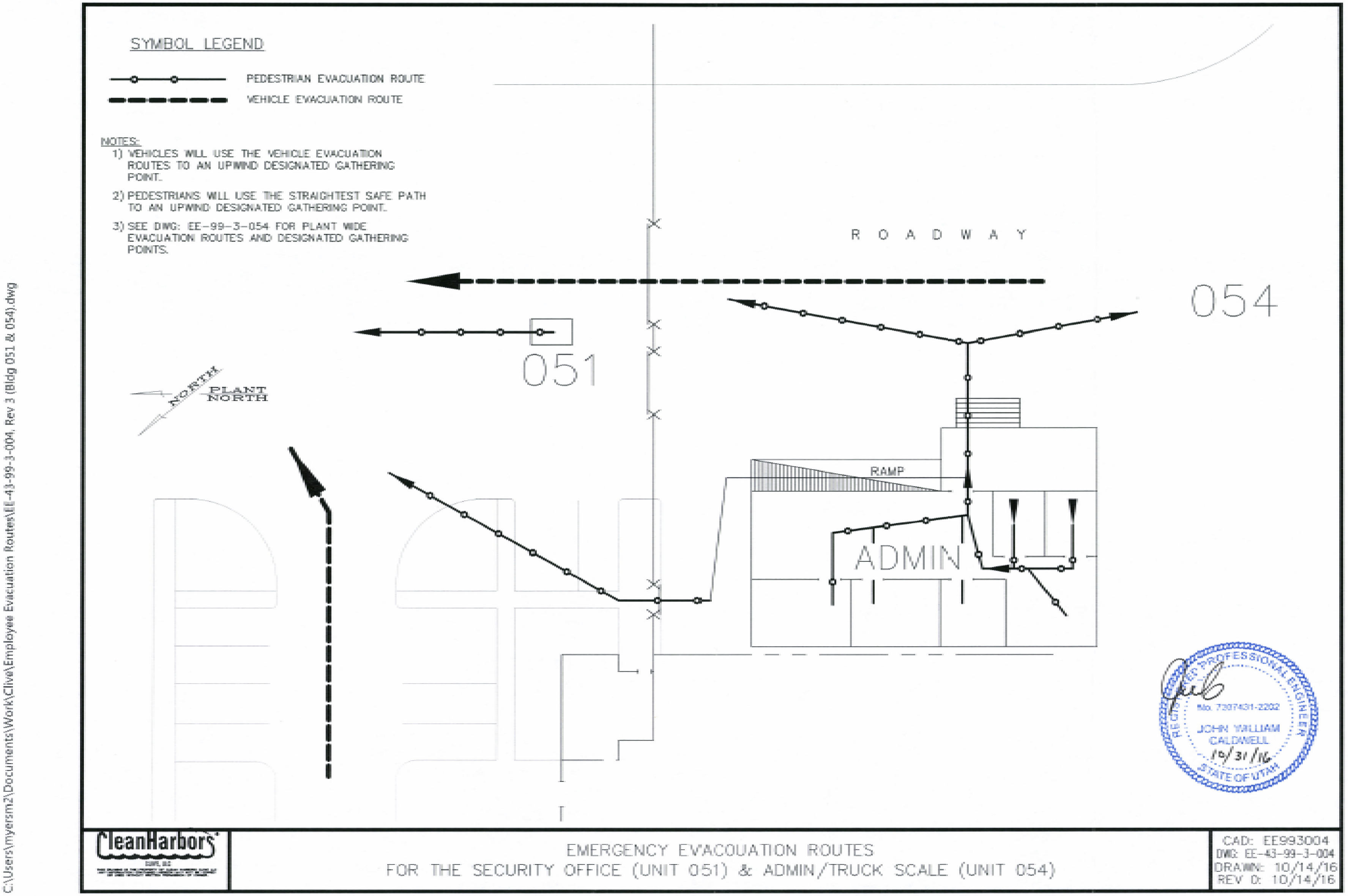


CleanHarbors

EMERGENCY EMPLOYEE EVACUATION ROUTES
FOR THE CONTAINERIZED BULK SOLIDS STORAGE (UNIT 106)

CAD: EE-99-3-032
DWG: EE-99-3-032
DRAWN: 10/14/16
REV 0: 10/14/16

C:\Users\myersm2\Documents\Work\Clive\Employee Evacuation Routes\EE-99-3-032, Rev 0 (Bldg 106).DWG


SYMBOL LEGEND
PEDESTRIAN EVACUATION ROUTE
VEHICLE EVACUATION ROUTE
NOTES:
1) VEHICLES WILL USE THE VEHICLE EVACUATION ROUTES TO AN UPWIND DESIGNATED GATHERING POINT.
2) PEDESTRIANS WILL USE THE STRAIGHTEST SAFE PATH TO AN UPWIND DESIGNATED GATHERING POINT.
3) SEE DWG: EE-99-3-054 FOR PLANT WIDE EVACUATION ROUTES AND DESIGNATED GATHERING POINTS.
ROADWAY
054
051
NORTH
PLANT NORTH
RAMP
ADMIN
JOHN WILLIAM CALDWELL
STATE OF UTAH
10/31/16
CleanHarbors
EMERGENCY EVACUATION ROUTES
FOR THE SECURITY OFFICE (UNIT 051) & ADMIN/TRUCK SCALE (UNIT 054)
CAD: EE993004
DWG: EE-43-99-3-004
DRAWN: 10/14/16
REV 0: 10/14/16
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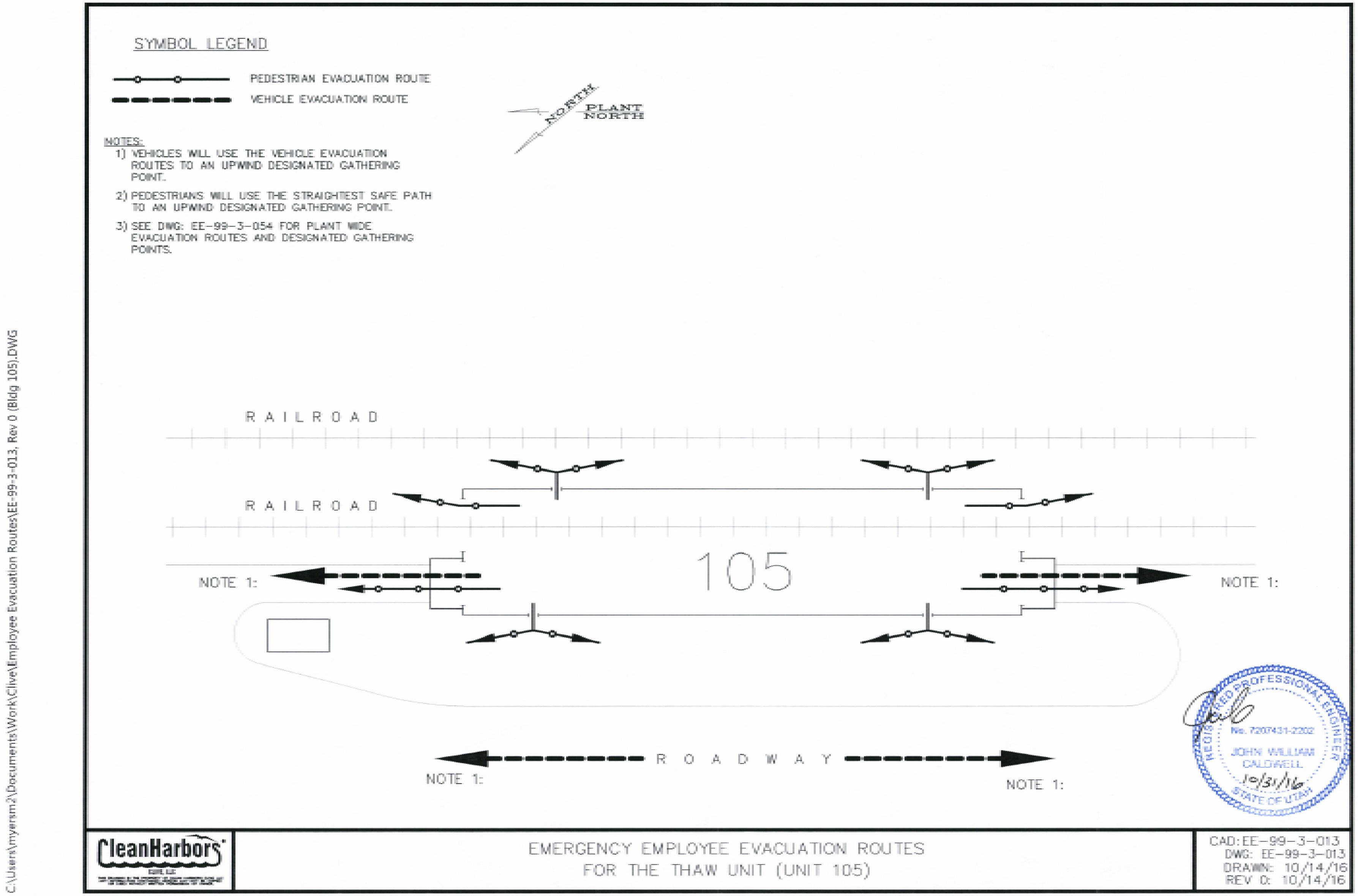
SYMBOL LEGEND
PEDESTRIAN EVACUATION ROUTE
VEHICLE EVACUATION ROUTE
NOTES:
1) VEHICLES WILL USE THE VEHICLE EVACUATION ROUTES TO AN UPWIND DESIGNATED GATHERING POINT.
2) PEDESTRIANS WILL USE THE STRAIGHTEST SAFE PATH TO AN UPWIND DESIGNATED GATHERING POINT.
3) SEE DWG: EE-99-3-054 FOR PLANT WIDE EVACUATION ROUTES AND DESIGNATED GATHERING POINTS.
NORTH
PLANT NORTH
RAILROAD
RAILROAD
105
NOTE 1:
NOTE 1:
ROADWAY
NOTE 1:
NOTE 1:
JOHN WILLIAM CALDWELL
STATE OF UTAH
10/31/16
EMERGENCY EMPLOYEE EVACUATION ROUTES
FOR THE THAW UNIT (UNIT 105)
CAD: EE-99-3-013
DWG: EE-99-3-013
DRAWN: 10/14/16
REV 0: 10/14/16
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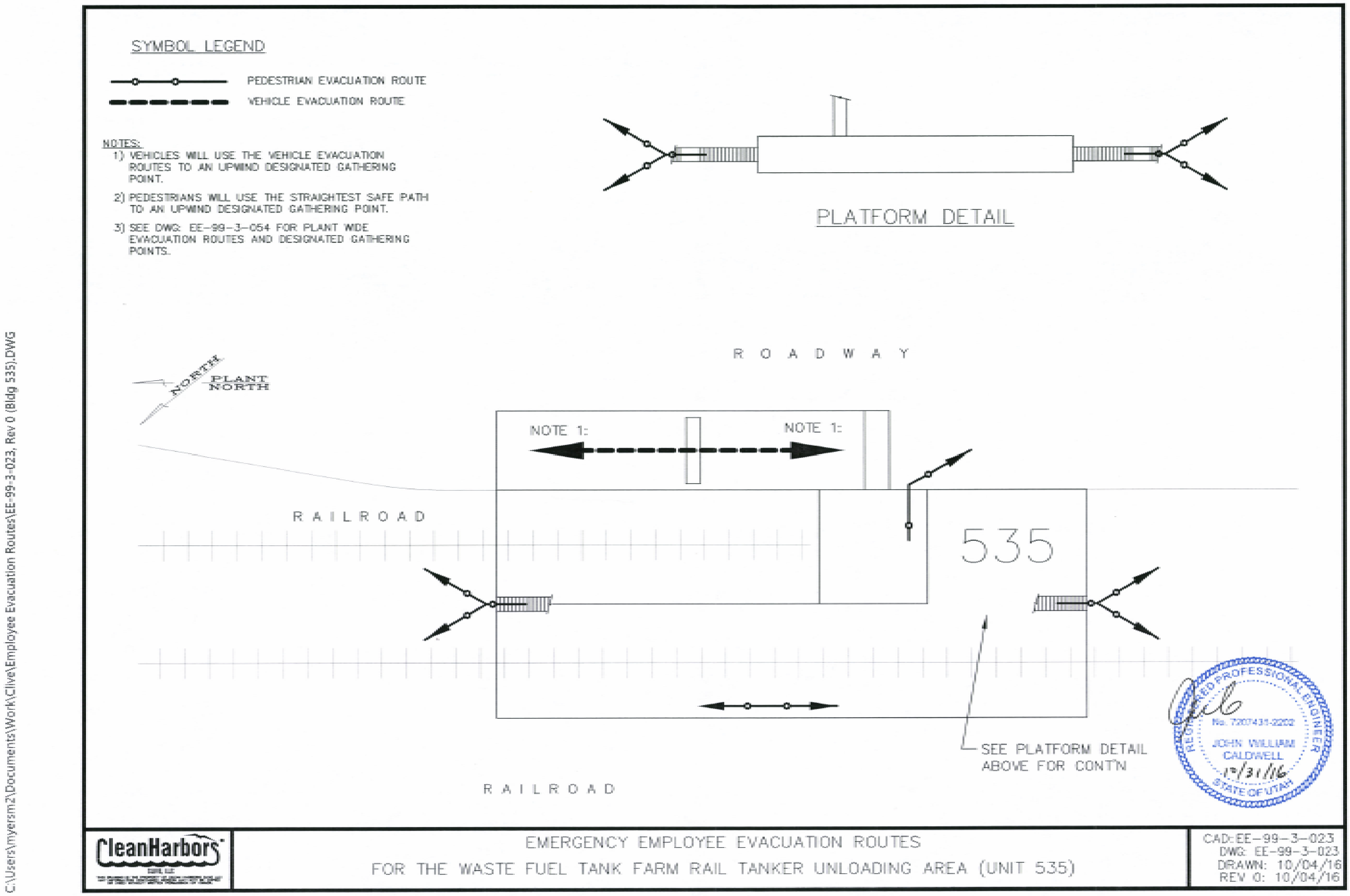

SYMBOL LEGEND
PEDESTRIAN EVACUATION ROUTE
VEHICLE EVACUATION ROUTE
NOTES:
1) VEHICLES WILL USE THE VEHICLE EVACUATION ROUTES TO AN UPWIND DESIGNATED GATHERING POINT.
2) PEDESTRIANS WILL USE THE STRAIGHTEST SAFE PATH TO AN UPWIND DESIGNATED GATHERING POINT.
3) SEE DWG: EE-99-3-054 FOR PLANT WIDE EVACUATION ROUTES AND DESIGNATED GATHERING POINTS.
PLATFORM DETAIL
ROADWAY
NORTH
PLANT NORTH
NOTE 1:
NOTE 1:
RAILROAD
535
SEE PLATFORM DETAIL ABOVE FOR CONT'N
RAILROAD
No. 7207431-2202
JOHN WILLIAM CALDWELL
12/31/16
STATE OF UTAH
CleanHarbors
EMERGENCY EMPLOYEE EVACUATION ROUTES
FOR THE WASTE FUEL TANK FARM RAIL TANKER UNLOADING AREA (UNIT 535)
CAD: EE-99-3-023
DWG: EE-99-3-023
DRAWN: 10/04/16
REV 0: 10/04/16
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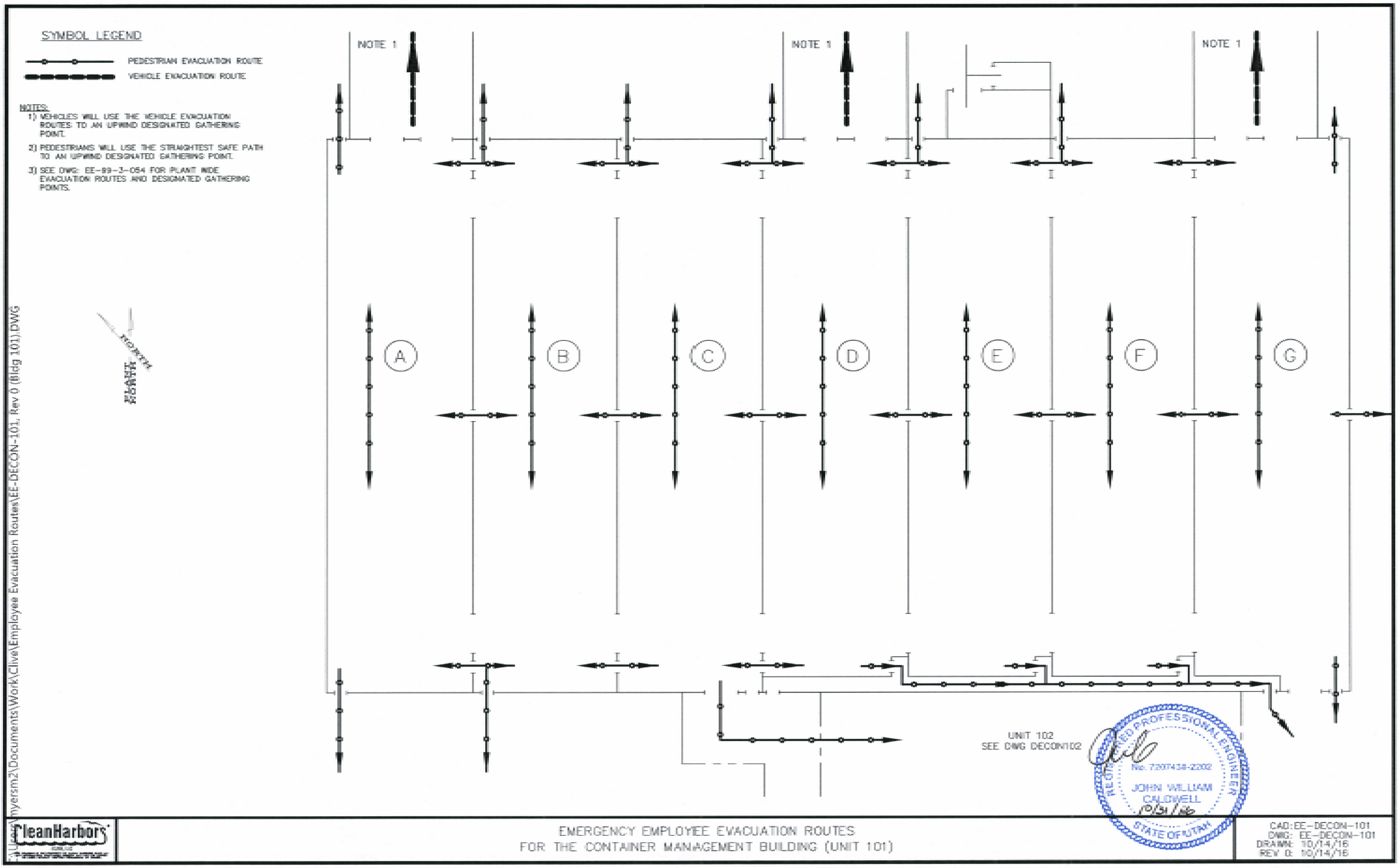

SYMBOL LEGEND
PEDESTRIAN EVACUATION ROUTE
VEHICLE EVACUATION ROUTE
NOTES:
1) VEHICLES WILL USE THE VEHICLE EVACUATION ROUTES TO AN UPWIND DESIGNATED GATHERING POINT.
2) PEDESTRIANS WILL USE THE STRAIGHTEST SAFE PATH TO AN UPWIND DESIGNATED GATHERING POINT.
3) SEE DWG: EE-99-3-054 FOR PLANT WIDE EVACUATION ROUTES AND DESIGNATED GATHERING POINTS.
NOTE 1
NOTE 1
NOTE 1
PLANT NORTH
NORTH
A
B
C
D
E
F
G
UNIT 102
SEE DWG DECON102
No. 7207438-2202
JOHN WILLIAM CALDWELL
STATE OF UTAH
CleanHarbors
EMERGENCY EMPLOYEE EVACUATION ROUTES
FOR THE CONTAINER MANAGEMENT BUILDING (UNIT 101)
CAD: EE-DECON-101
DWG: EE-DECON-101
DRAWN: 10/14/16
REV 0: 10/14/16
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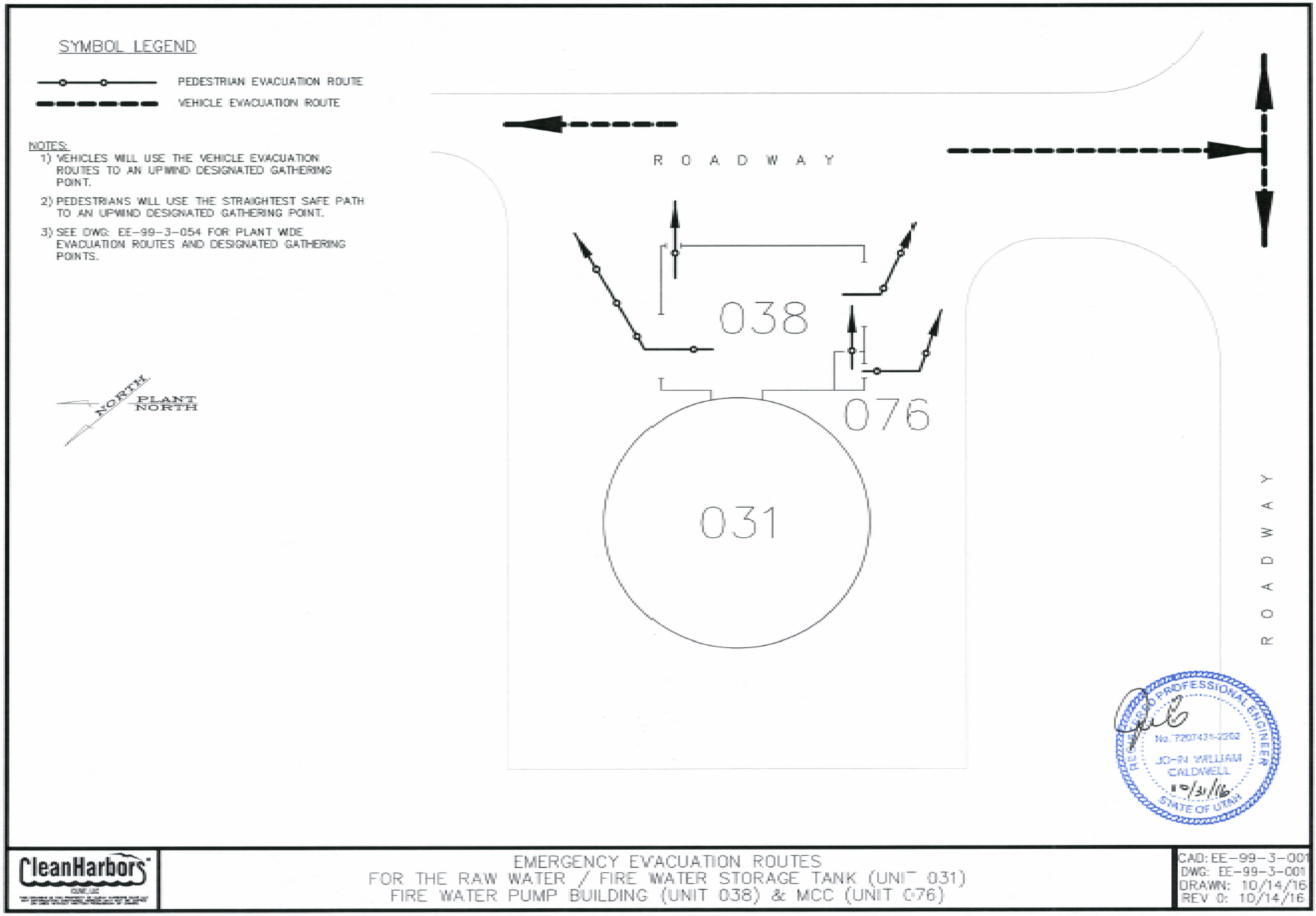
C:\Users\myersm2\Documents\Work\Clive\Employee Evacuation Routes\EE-99-3-001, Rev 0 (Raw and Fire Water building 38).DWG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PEDESTRIAN EVACUATION ROUTE
VEHICLE EVACUATION ROUTE
NOTES:
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2) PEDESTRIANS WILL USE THE STRAIGHTEST SAFE PATH TO AN UPWIND DESIGNATED GATHERING POINT.
3) SEE DWG: EE-99-3-054 FOR PLANT WIDE EVACUATION ROUTES AND DESIGNATED GATHERING POINTS.
NORTH
PLANT NORTH
ROADWAY
038
076
031
ROADWAY
CleanHarbors
EMERGENCY EVACUATION ROUTES
FOR THE RAW WATER / FIRE WATER STORAGE TANK (UNIT 031)
FIRE WATER PUMP BUILDING (UNIT 038) & MCC (UNIT 076)
CAD: EE-99-3-001
DWG: EE-99-3-001
DRAWN: 10/14/16
REV 0: 10/14/16

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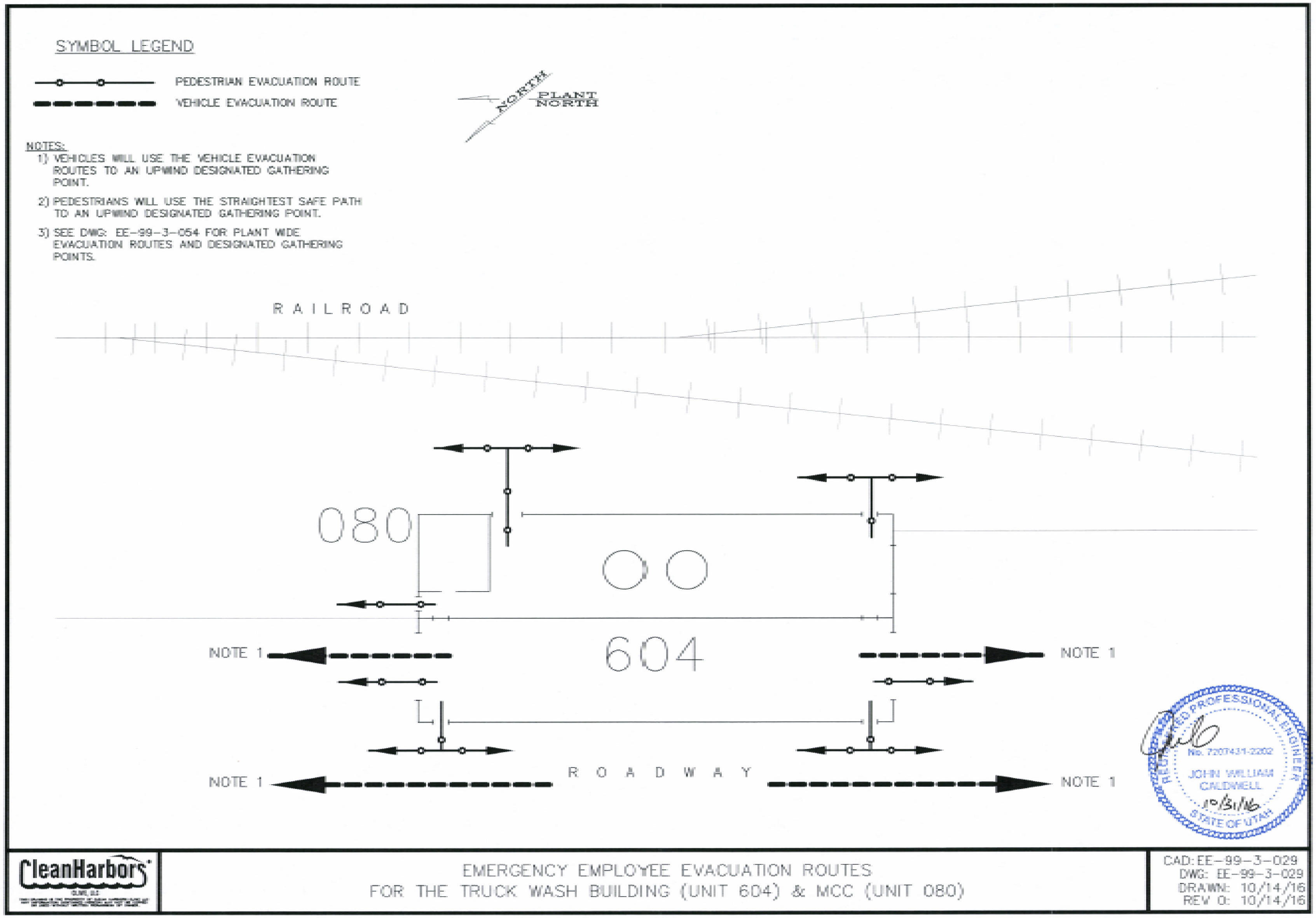

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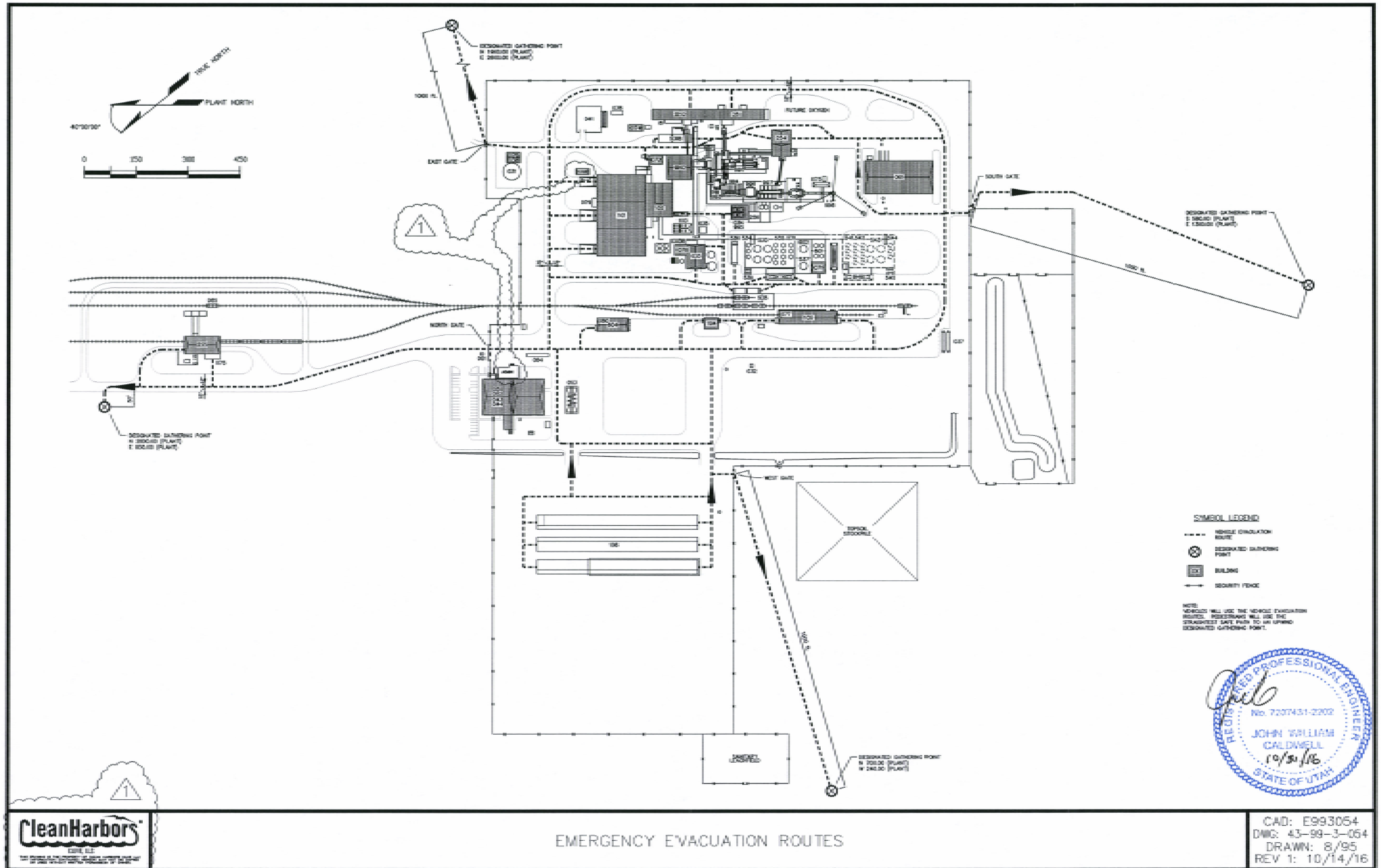


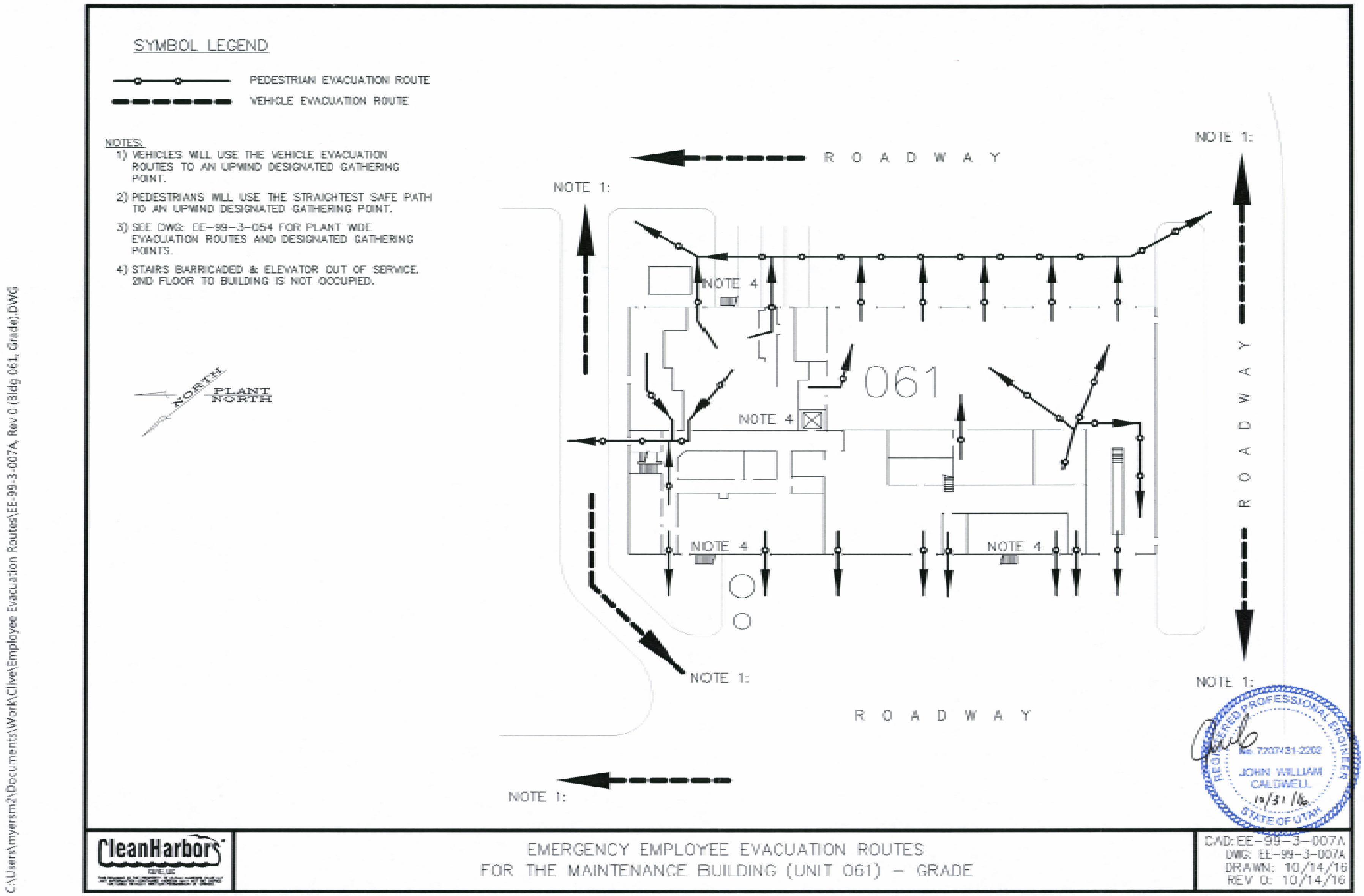
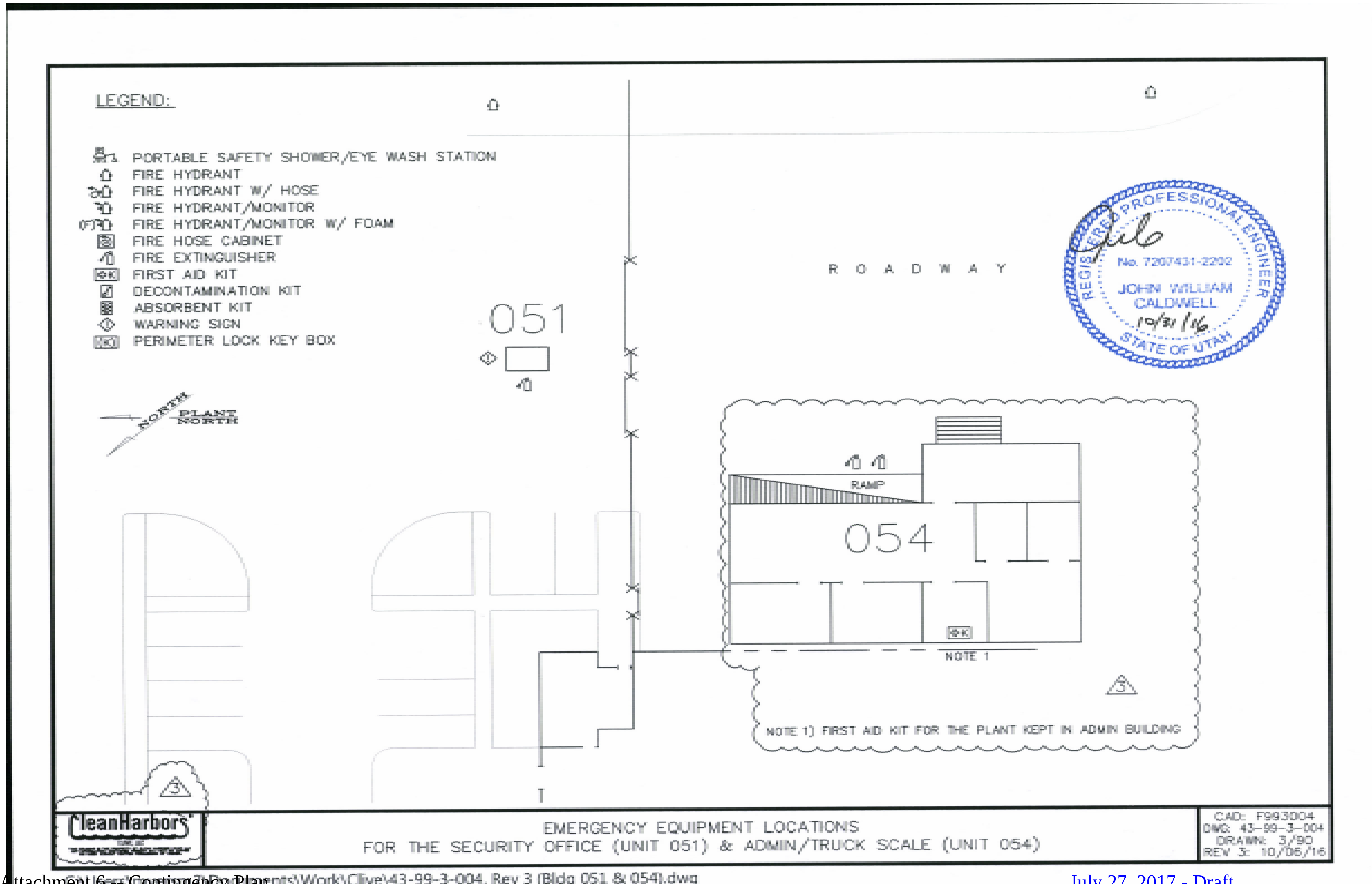

SYMBOL LEGEND
PEDESTRIAN EVACUATION ROUTE
VEHICLE EVACUATION ROUTE
NOTES:
1) VEHICLES WILL USE THE VEHICLE EVACUATION ROUTES TO AN UPWIND DESIGNATED GATHERING POINT.
2) PEDESTRIANS WILL USE THE STRAIGHTEST SAFE PATH TO AN UPWIND DESIGNATED GATHERING POINT.
3) SEE DWG: EE-99-3-054 FOR PLANT WIDE EVACUATION ROUTES AND DESIGNATED GATHERING POINTS.
4) STAIRS BARRICADED & ELEVATOR OUT OF SERVICE, 2ND FLOOR TO BUILDING IS NOT OCCUPIED.
NORTH
PLANT NORTH
R O A D W A Y
NOTE 1:
NOTE 4
061
R O A D W A Y
NOTE 1:
R O A D W A Y
NOTE 1:
NOTE 1:
NOTE 1:
REGISTERED PROFESSIONAL ENGINEER
No. 7207431-2202
JOHN WILLIAM CALDWELL
10/31/16
STATE OF UTAH
CleanHarbors
EMERGENCY EMPLOYEE EVACUATION ROUTES
FOR THE MAINTENANCE BUILDING (UNIT 061) – GRADE
CAD: EE-99-3-007A
DWG: EE-99-3-007A
DRAWN: 10/14/16
REV 0: 10/14/16
C:\Users\myersm2\Documents\Work\Clive\Employee Evacuation Routes\EE-99-3-007A, Rev 0 (Bldg 061, Grade).DWG

Table 3

Emergency Equipment Location Drawings

Description	Drawing No.	Date
Emergency Equipment Locations for Unit 051 & Admin/Truck Scale Unit 054	43-99-3-004 Rev 3	10-06-16
Emergency Equipment Locations for the Thaw Unit 105	43-99-3-004 Rev 3	10-06-16
Emergency Equipment Locations for the Truck Wash Building unit 604 & MCC Unit 080	43-99-3-029 Rev 5	10-06-16
Emergency Equipment locations for the Raw Water / Fire Water Storage Tank 031, Fire Water Pump Building 038 & MCC 076	43-99-3-001 Rev 2	10-06-16
Emergency Equipment Locations for the Maintenance Building Unit 061 – 2nd Floor	43-99-3-007B Rev 1	10-06-16
Emergency Equipment Locations for the Containerized Bulk Solids Storage Unit 106	43-99-3-032 Rev 4	10-06-16
Emergency Equipment Locations & Decontamination Areas for the Container Management Building Unit 101	DECONI01 Rev 0	10-06-16
Emergency Equipment Locations for the Maintenance Building Unit 061 - Grade	43-99-3-007A Rev 3	10-06-16
Emergency Equipment Locations for the Intermodal Container Staging & Transfer Unit 104	43-99-3-012 Rev 4	10-06-16
Emergency Equipment Locations for the Waste Fuel Tank Farm Rail Tanker Unloading Area Unit 535	43-99-3-023 Rev 5	10-06-16
Emergency Equipment Locations for the Rail - To- Trailer Transfer Station Unit 255 & Rail Scales Unit 055	43-99-3-018 Rev 4	10-06-16


LEGEND:
PORTABLE SAFETY SHOWER/EYE WASH STATION
FIRE HYDRANT
FIRE HYDRANT W/ HOSE
FIRE HYDRANT/MONITOR
(F) FIRE HYDRANT/MONITOR W/ FOAM
FIRE HOSE CABINET
FIRE EXTINGUISHER
FIRST AID KIT
DECONTAMINATION KIT
ABSORBENT KIT
WARNING SIGN
PERIMETER LOCK KEY BOX
NORTH
PLANT NORTH
051
R O A D W A Y
PROFESSIONAL ENGINEER
REGISTERED
No. 7207431-2202
JOHN WILLIAM CALDWELL
10/31/16
STATE OF UTAH
RAMP
054
NOTE 1
NOTE 1) FIRST AID KIT FOR THE PLANT KEPT IN ADMIN BUILDING
CleanHarbors
EMERGENCY EQUIPMENT LOCATIONS
FOR THE SECURITY OFFICE (UNIT 051) & ADMIN/TRUCK SCALE (UNIT 054)
CAD: F993004
DWG: 43-99-3-004
DRAWN: 3/90
REV 3: 10/06/16
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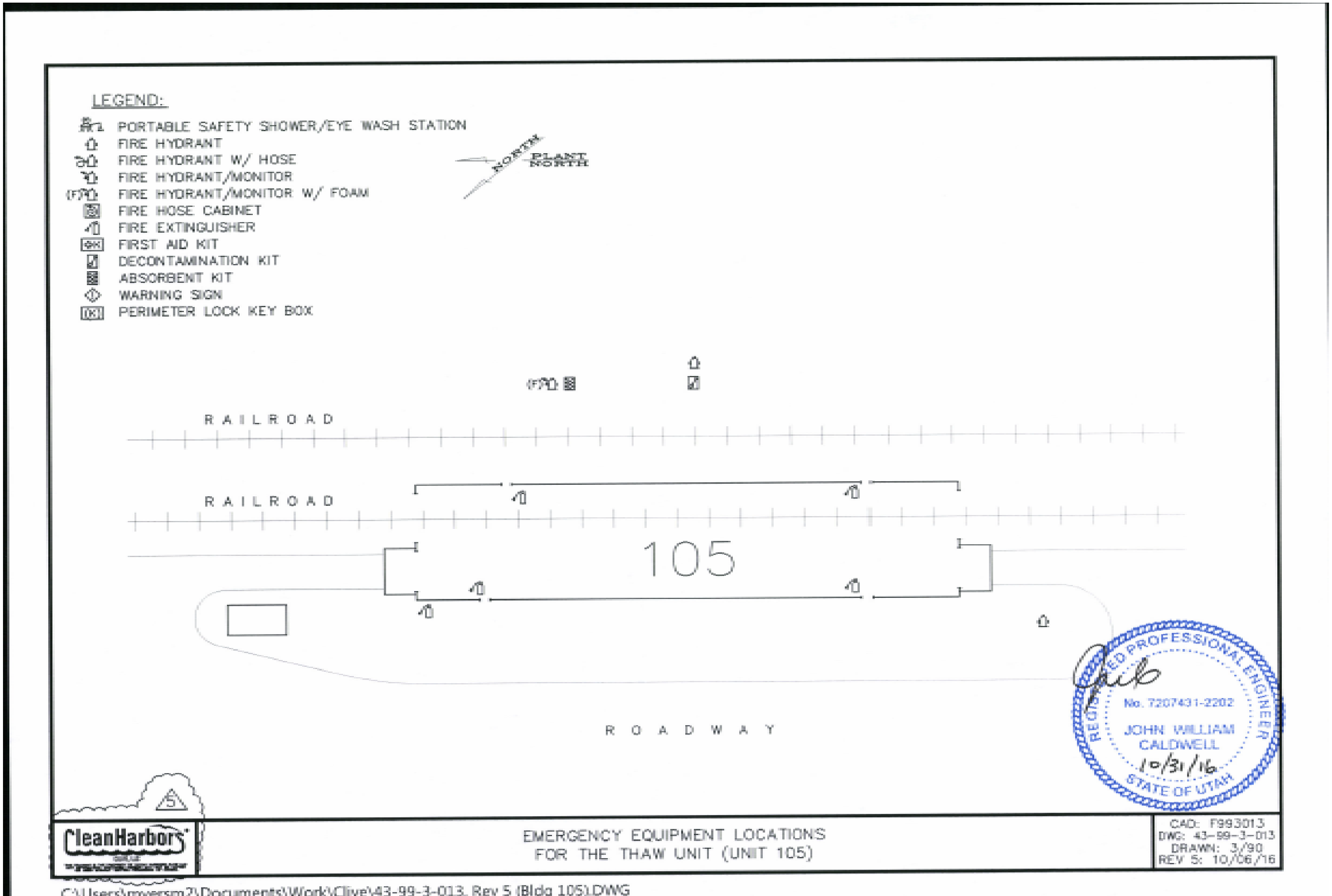
LEGEND:
PORTABLE SAFETY SHOWER/EYE WASH STATION
FIRE HYDRANT
FIRE HYDRANT W/ HOSE
FIRE HYDRANT/MONITOR
FIRE HYDRANT/MONITOR W/ FOAM
FIRE HOSE CABINET
FIRE EXTINGUISHER
FIRST AID KIT
DECONTAMINATION KIT
ABSORBENT KIT
WARNING SIGN
PERIMETER LOCK KEY BOX
NORTH
PLANT NORTH
RAILROAD
RAILROAD
105
ROADWAY
REGISTERED PROFESSIONAL ENGINEER
No. 7207431-2202
JOHN WILLIAM CALDWELL
10/31/16
STATE OF UTAH
5
CleanHarbors
EMERGENCY EQUIPMENT LOCATIONS
FOR THE THAW UNIT (UNIT 105)
CAD: F993013
DWG: 43-99-3-013
DRAWN: 3/90
REV 5: 10/06/16
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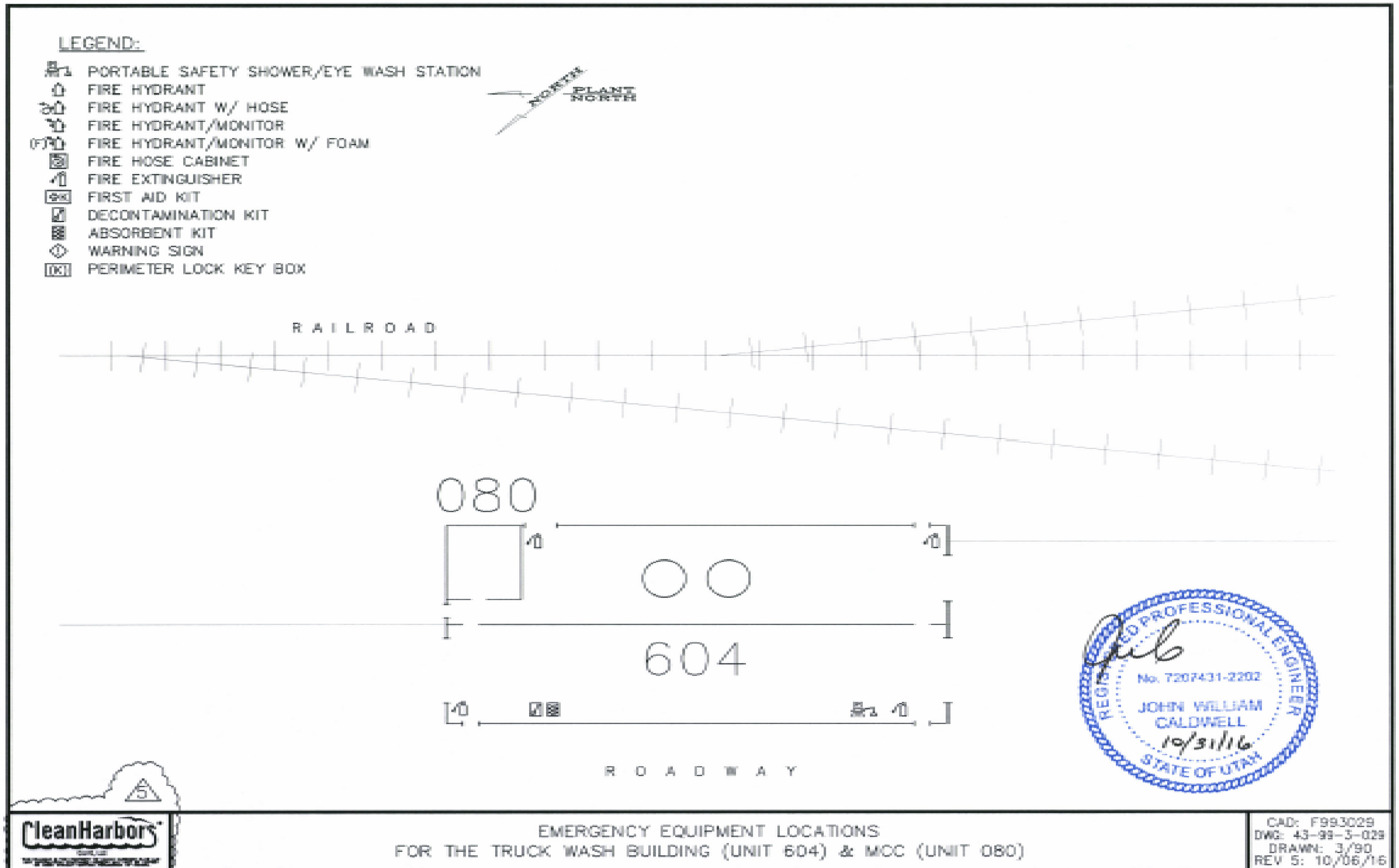

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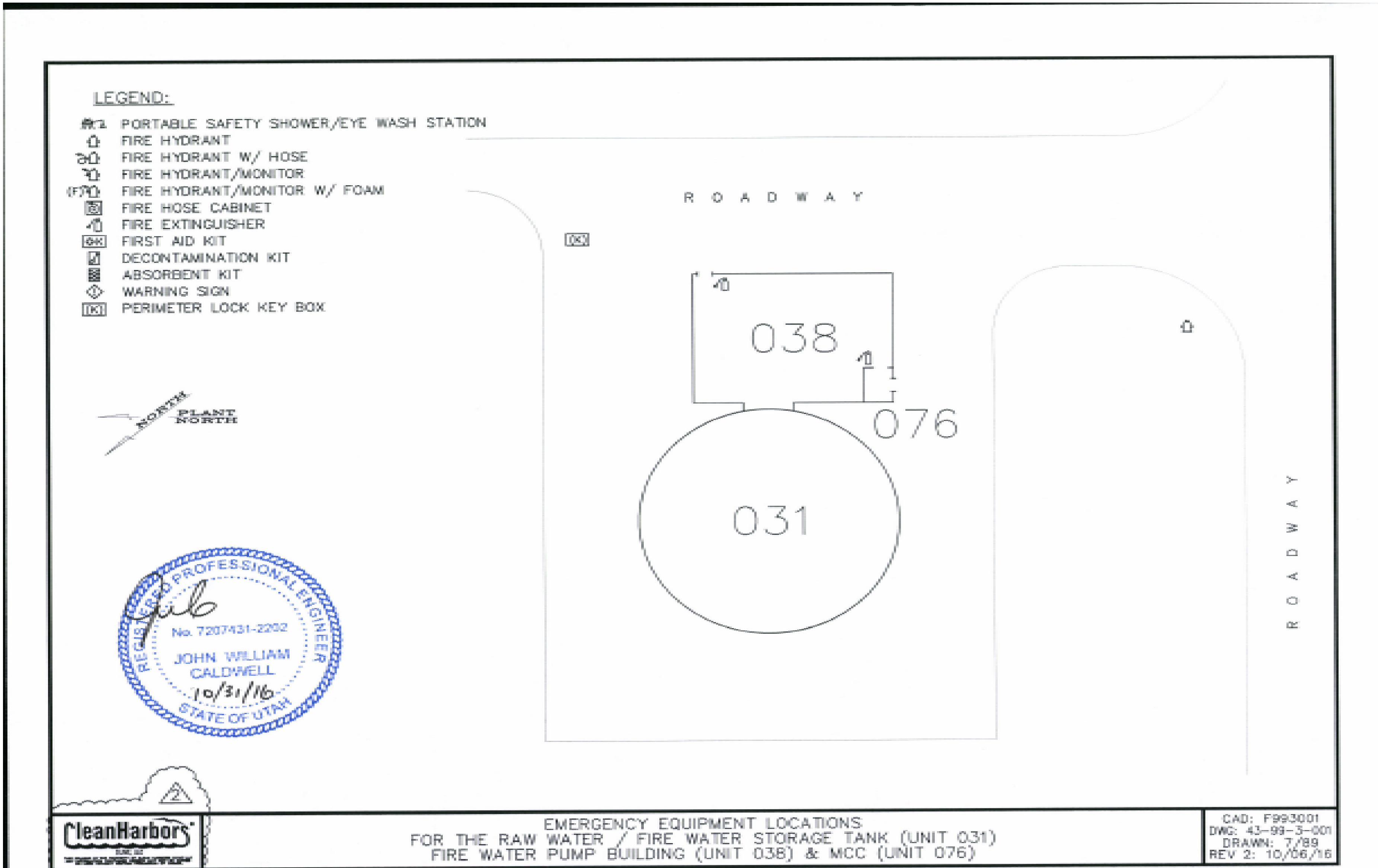

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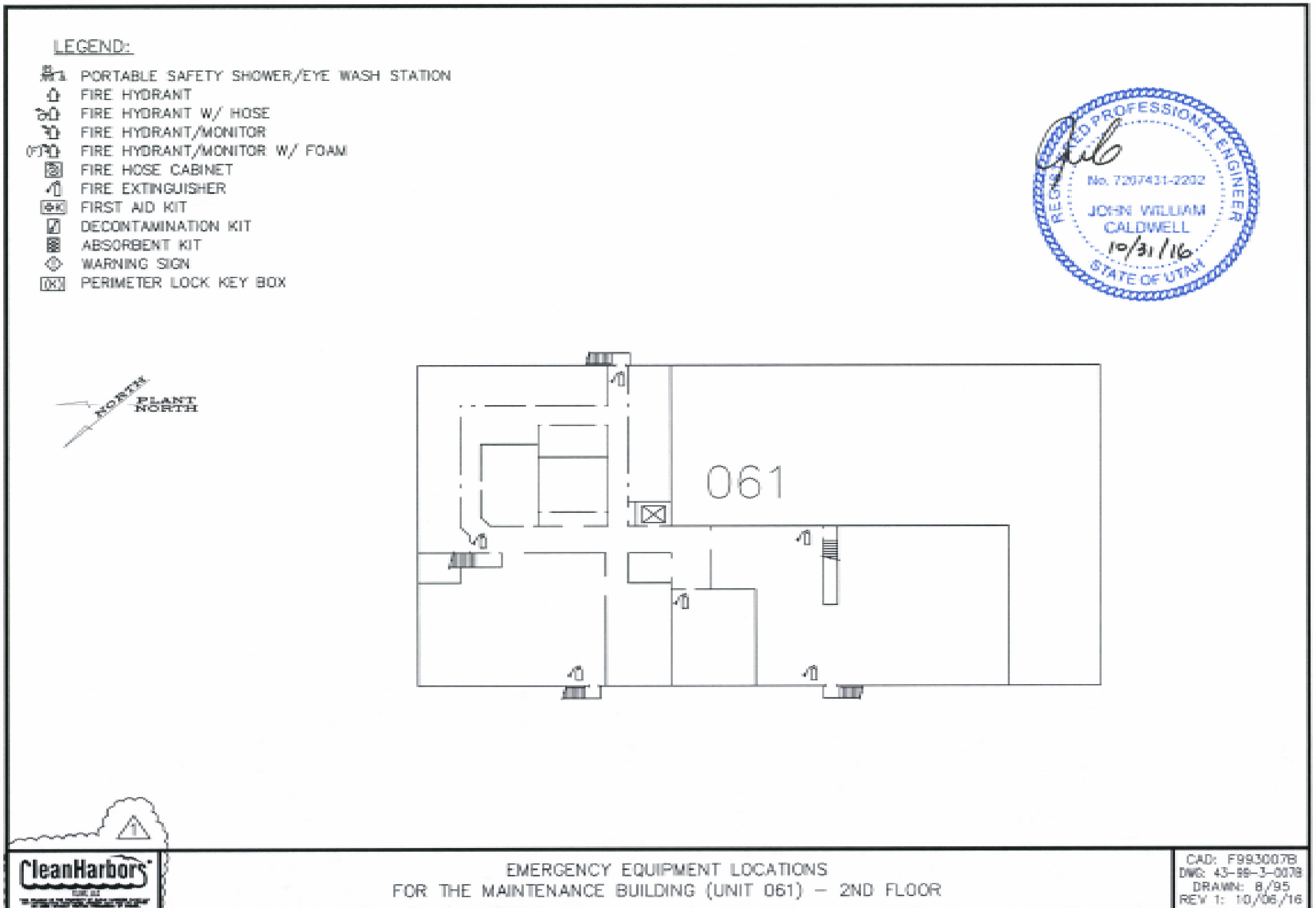

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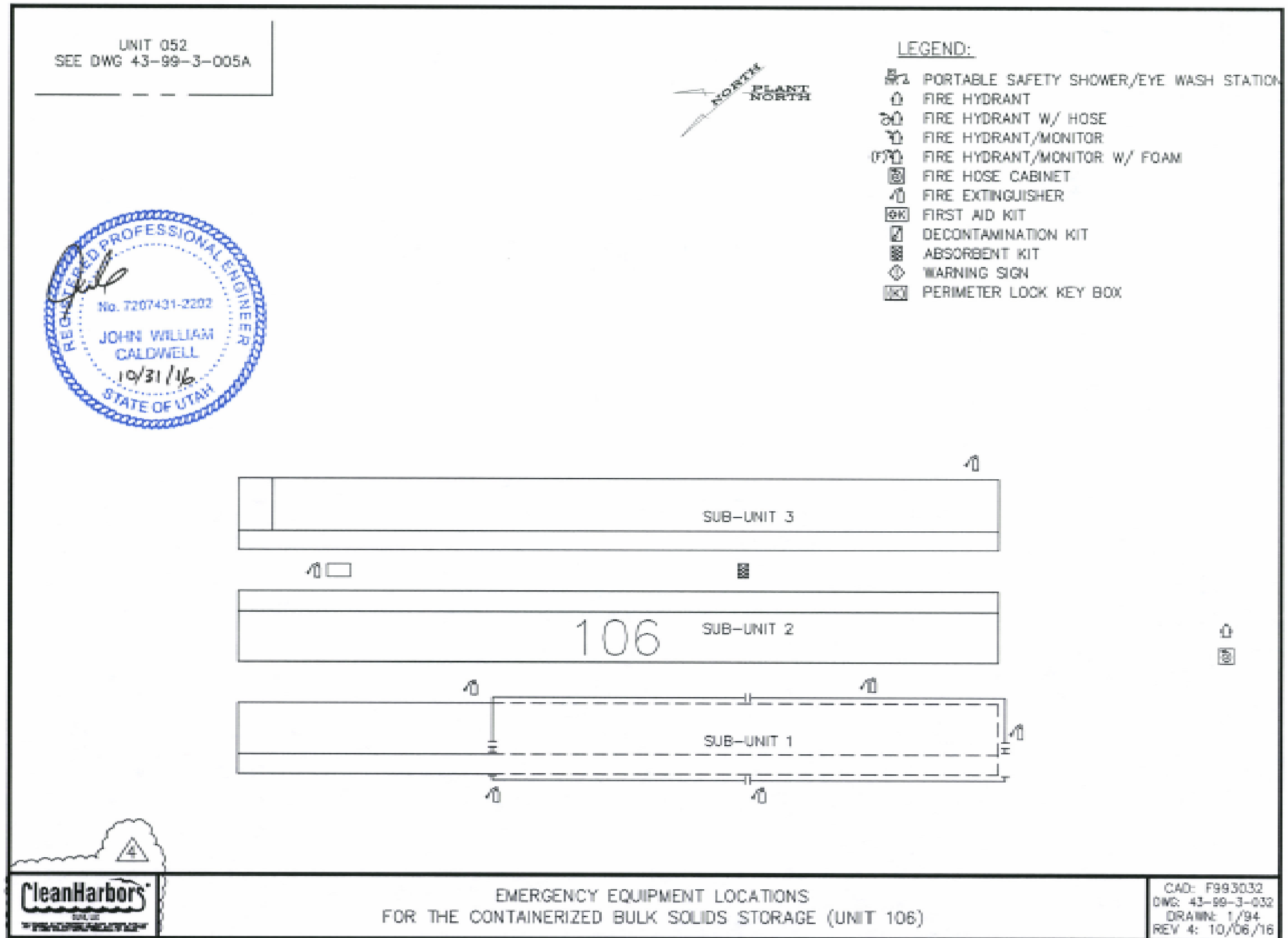

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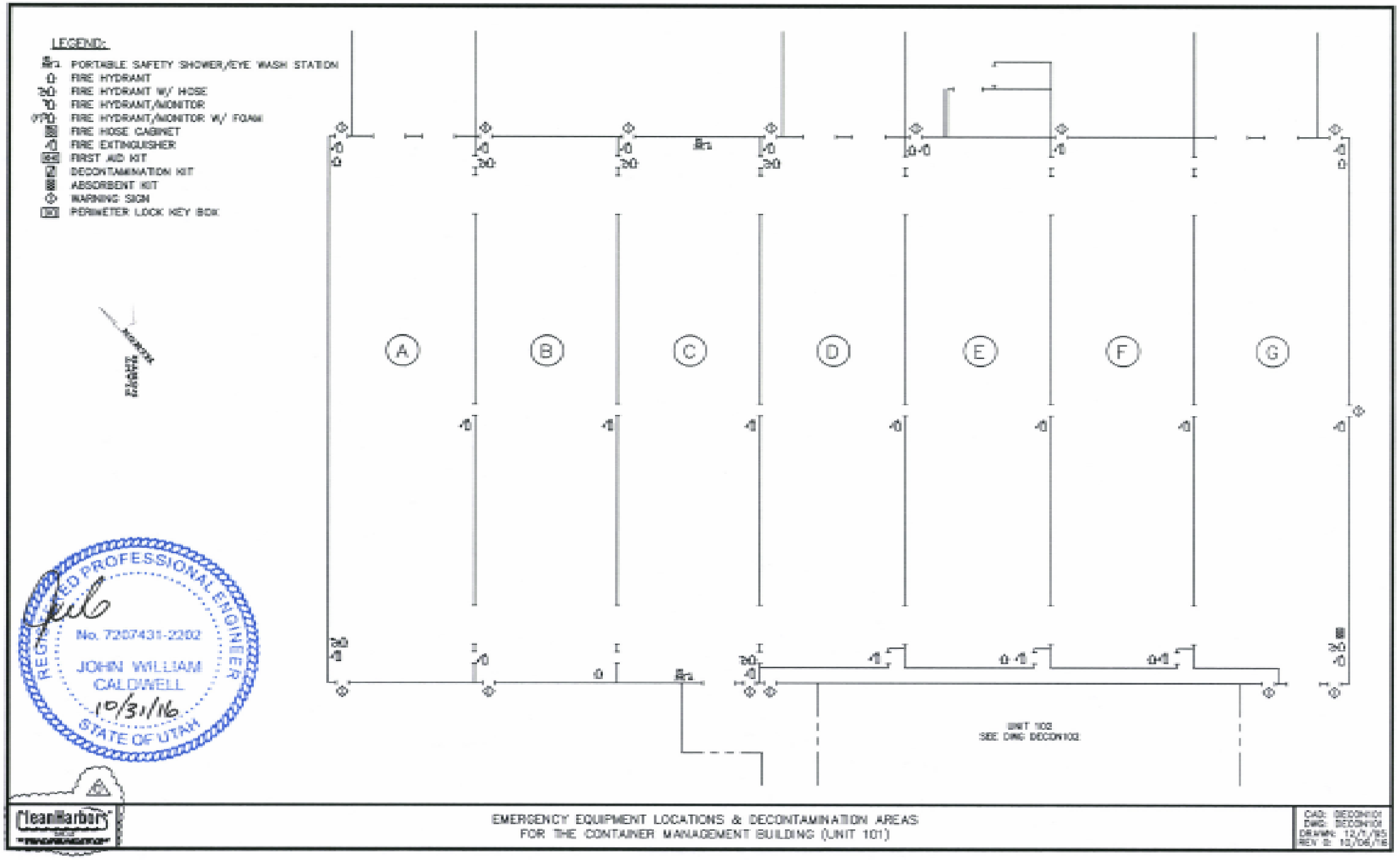

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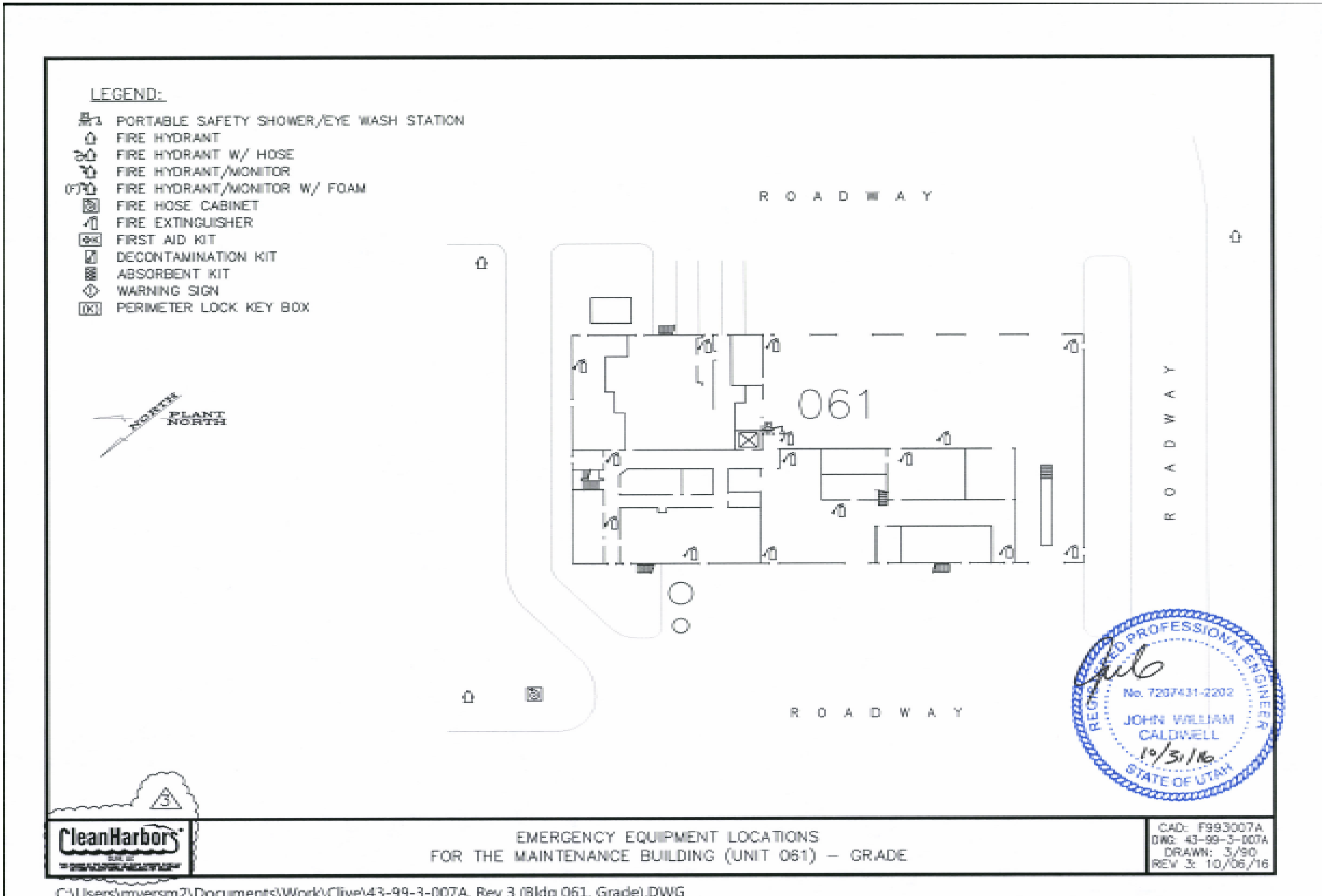
LEGEND:
PORTABLE SAFETY SHOWER/EYE WASH STATION
FIRE HYDRANT
FIRE HYDRANT W/ HOSE
FIRE HYDRANT/MONITOR
FIRE HYDRANT/MONITOR W/ FOAM
FIRE HOSE CABINET
FIRE EXTINGUISHER
FIRST AID KIT
DECONTAMINATION KIT
ABSORBENT KIT
WARNING SIGN
PERIMETER LOCK KEY BOX
PLANT NORTH
NORTH
ROADWAY
061
ROADWAY
ROADWAY
REGISTERED PROFESSIONAL ENGINEER
No. 7207431-2202
JOHN WILLIAM CALDWELL
10/31/16
STATE OF UTAH
3
CleanHarbors
EMERGENCY EQUIPMENT LOCATIONS
FOR THE MAINTENANCE BUILDING (UNIT 061) – GRADE
CAD: F993007A
DWG: 43-99-3-007A
DRAWN: 3/90
REV 3: 10/06/16
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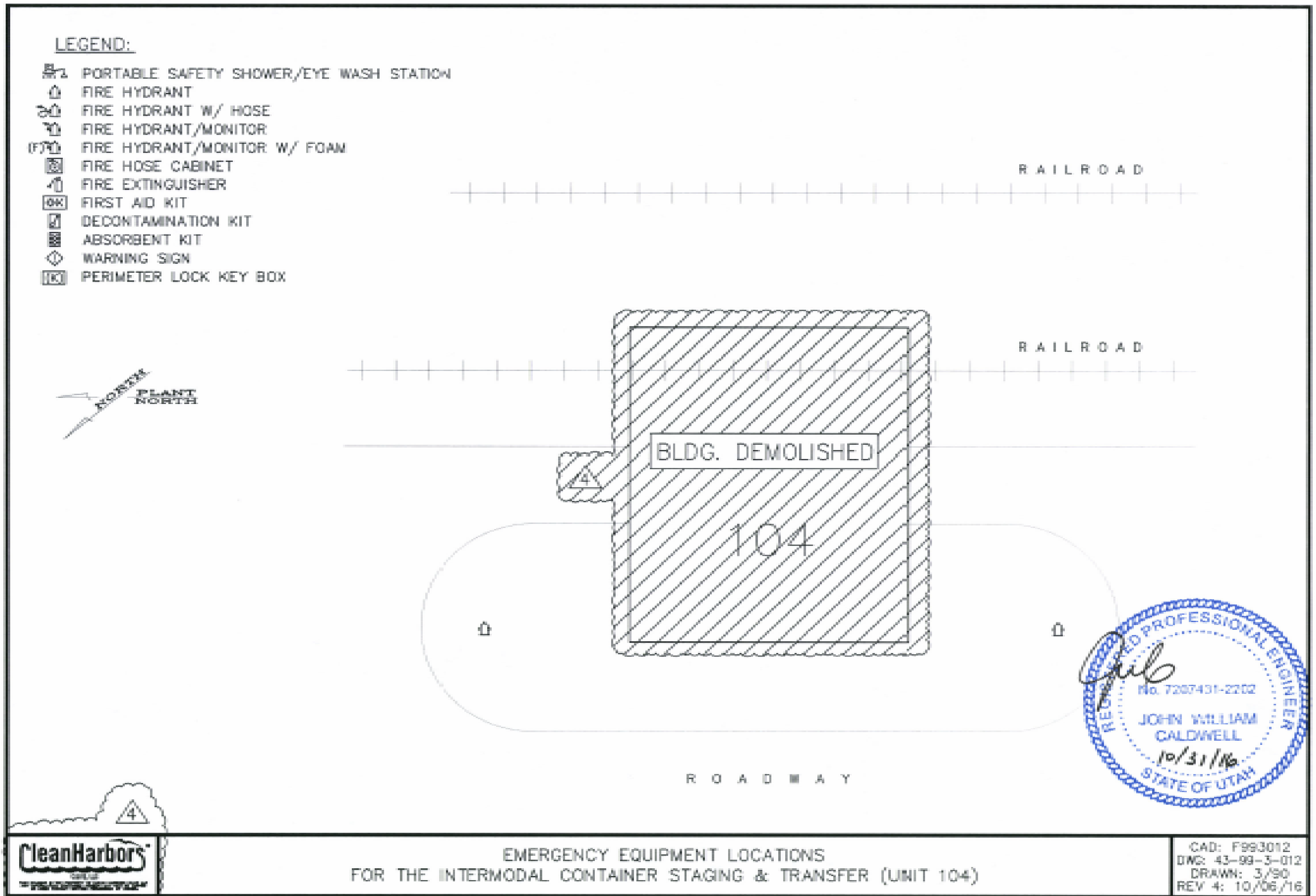

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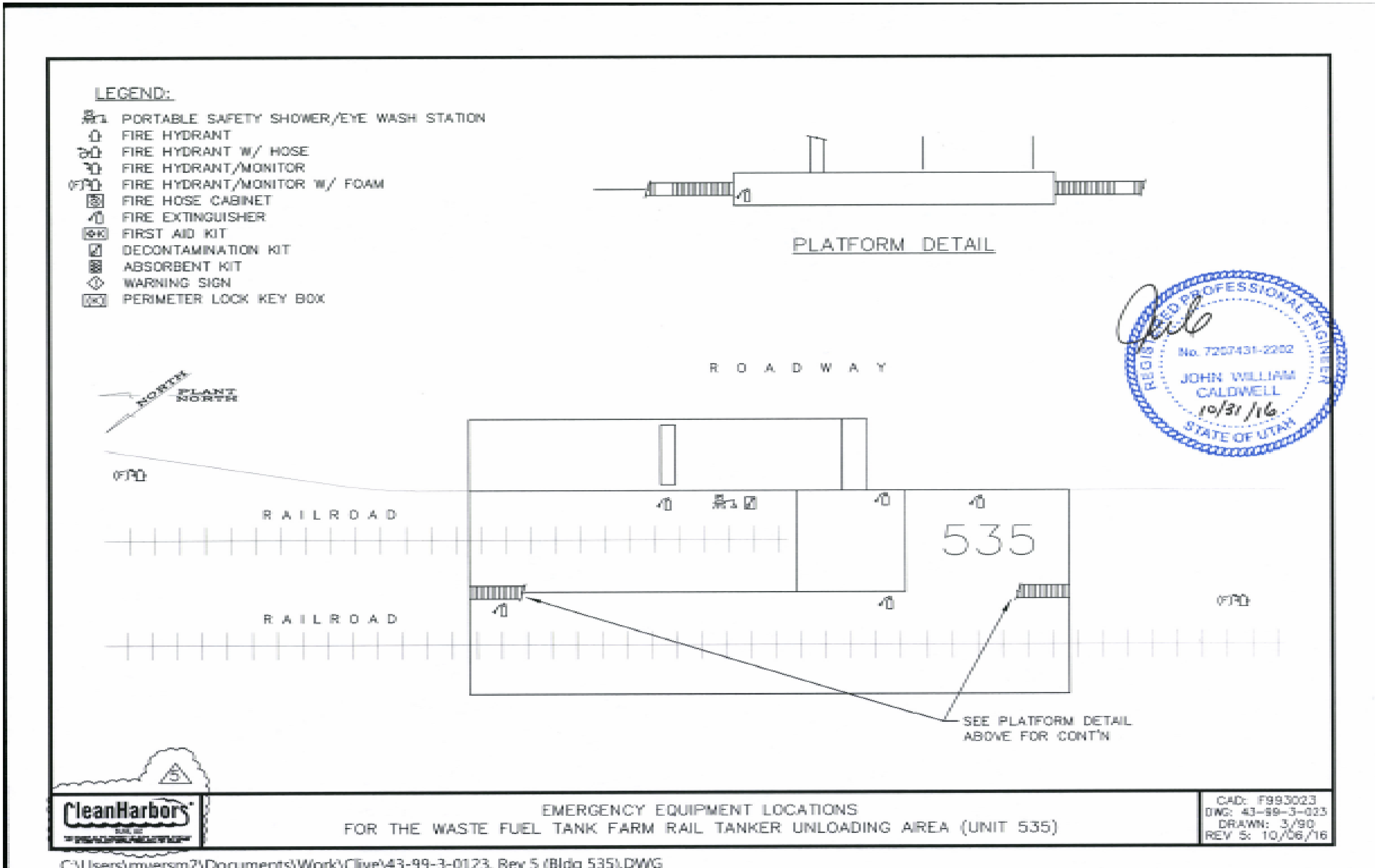
LEGEND:
PORTABLE SAFETY SHOWER/EYE WASH STATION
FIRE HYDRANT
FIRE HYDRANT W/ HOSE
FIRE HYDRANT/MONITOR
FIRE HYDRANT/MONITOR W/ FOAM
FIRE HOSE CABINET
FIRE EXTINGUISHER
FIRST AID KIT
DECONTAMINATION KIT
ABSORBENT KIT
WARNING SIGN
PERIMETER LOCK KEY BOX
PLATFORM DETAIL
NORTH
PLANT NORTH
ROADWAY
RAILROAD
535
RAILROAD
SEE PLATFORM DETAIL ABOVE FOR CONT'N
REGISTERED PROFESSIONAL ENGINEER
No. 7207431-2202
JOHN WILLIAM CALDWELL
10/31/16
STATE OF UTAH
CleanHarbors
EMERGENCY EQUIPMENT LOCATIONS
FOR THE WASTE FUEL TANK FARM RAIL TANKER UNLOADING AREA (UNIT 535)
CAD: F993023
DWG: 43-99-3-023
DRAWN: 3/90
REV 5: 10/06/16
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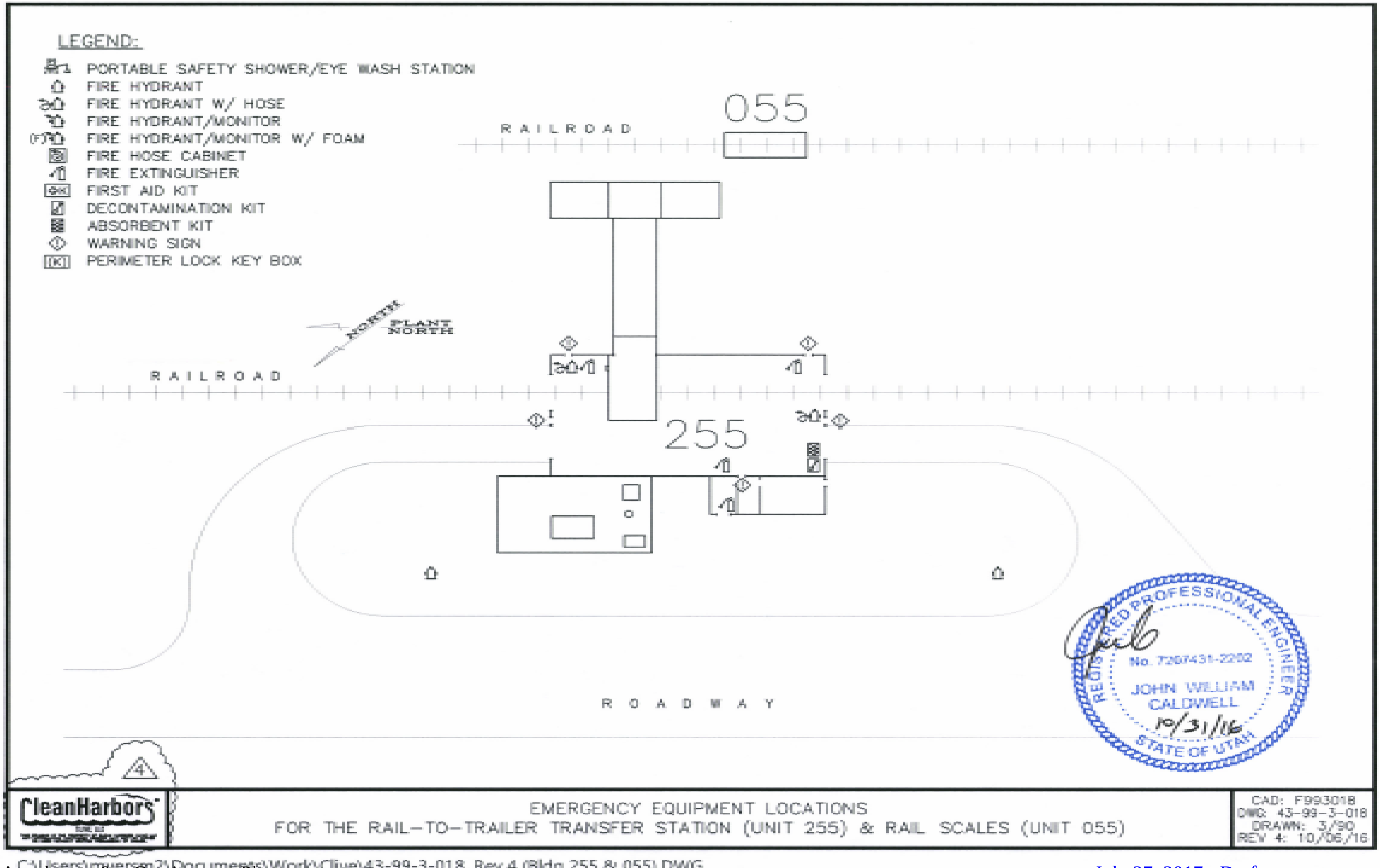

LEGEND:
PORTABLE SAFETY SHOWER/EYE WASH STATION
FIRE HYDRANT
FIRE HYDRANT W/ HOSE
FIRE HYDRANT/MONITOR
FIRE HYDRANT/MONITOR W/ FOAM
FIRE HOSE CABINET
FIRE EXTINGUISHER
FIRST AID KIT
DECONTAMINATION KIT
ABSORBENT KIT
WARNING SIGN
PERIMETER LOCK KEY BOX
055
RAILROAD
PLANT NORTH
NORTH
RAILROAD
255
ROADWAY
REGISTERED PROFESSIONAL ENGINEER
No. 7207431-2202
JOHN WILLIAM CALDWELL
10/31/16
STATE OF UTAH
4
CleanHarbors
EMERGENCY EQUIPMENT LOCATIONS
FOR THE RAIL-TO-TRAILER TRANSFER STATION (UNIT 255) & RAIL SCALES (UNIT 055)
CAD: F993018
DWG: 43-99-3-018
DRAWN: 3/90
REV 4: 10/06/16
C:\Users\myersm2\Documents\Work\Clive\43-99-3-018, Rev 4 (Bldg 255 & 055).DWG

ATTACHMENT 7

CLOSURE PLAN

Table of Contents

List of Tables

List of Appendices

1.0 Closure Plans

The closure plans contained herein are intended to address the entire Clean Harbors Clive, LLC facility (Clive) at Clive, Utah. Clive shall modify the permit for all ~~Should any~~ changes in operating plans or facility design occur~~, the Clean Harbors Clive, LLC facility will request the appropriate permit modifications as required by~~ in accordance with Utah Administrative Code ~~40~~R315~~ CFR ~~-264~~.~~-112(c) and Condition 1.D.2. As ~~Clean Harbors Clive, LLC (~~Clive~~)~~ is not a land disposal facility~~,~~ and ~~because~~ all waste storage on the site includes secondary containment ~~requirements~~, no Post-Closure Plans or permits are required. It should be noted that all areas to the east of the rail spur inside the fence line of the facility, with the exception of Unit 101 (Container Management Building) and Unit 061 (Maintenance Building) have been clean closed and require no further action.

~~Clean Harbors~~ Clive is a transfer, treatment and storage facility located in the West Desert Hazardous Industry Area of Tooele County, Utah. The site is owned and operated by Clean Harbors Clive, LLC and operates under the authority of the Utah Division of Waste Management and Radiation Control~~Solid and Hazardous Waste~~ (~~UDSHW~~UDWMRC), the U.S. Environmental Protection Agency, Region VIII, and the Tooele County Department of Engineering.

1.1 Waste Management Units to be Closed

1.1.1 Land Disposal Units

There are no landfills, surface impoundments, land treatment areas, or any other type of land disposal units at the facility.

1.1.2 Storage Areas

There are a variety of hazardous waste and TSCA storage units at the ~~Clean Harbors~~ Clive facility. These units may be grouped into two basic types ~~of units~~: storage and processing for container management; and~~,~~ container transfer and special unloading. These areas ~~may also be involved in actual handling or processing of wastes, and~~ are not simply "storage" units as Clive may also transfer or treat waste in these areas. Detailed descriptions of the various units and systems are contained in Attachment 8, Container Management, and Attachment 10, Containment Building, of this permit. These storage areas are summarized below.

1.1.2.1 Container Storage and Processing

Storage of containers occurs in several areas of the Clive facility, including the Thaw Unit (Unit 105), the Containerized Bulk Solids Storage Unit (106), the Rail/Truck Transfer Bay (Unit 535) and the Truck Wash Bay (Unit 604). Detailed descriptions of the storage areas are provided in Attachment 8, Container Management and Attachment 9, Design Drawings. Brief descriptions of the areas are provided below:

The Thaw Unit (Unit 105) ~~consists of~~is a large building suitable for the inside parking of several trucks or railcars as well as containers of smaller sizes. The unit may be heated in cold weather ~~in order~~ to thaw frozen shipments for subsequent sampling and management. Trucks and other containers stored in the Thaw Unit may be opened for inspection, sampling, and verification of their contents, waste transfer and other management activities in accordance with the procedures specified in Attachment 8, Container Management.

The Containerized Bulk Solids Storage Unit (Unit 106) will be used for receiving, segregating, and storing wastes in sludge boxes, intermodal containers and other large or small containers in accordance with procedures specified in Attachment 8, Container Management. Unit 106 consists of an enclosed portion of subunit 1 and unenclosed portion of subunit 1, subunit 2 and subunit 3. ~~A detailed description of the Containerized Bulk Solids Storage Unit is provided in Attachment 8.~~

The Rail/Truck Transfer Bay (Unit 535) provides an area ~~where~~ for the transfer of wastes between rail cars and trucks ~~may occur~~ in accordance with Attachment 8, Container Management.

The Truck Wash Bay (Unit 604) is used for transferring waste between containers, and the storage of containers, including ~~being transferred and~~ leaking containers being prepared for shipment to ~~Aragonite~~alternate facilities in accordance with Attachment 8, Container Management. It is also used for washing containers and equipment.

1.1.2.2 Miscellaneous Waste Handling Areas

There are ~~a number~~ four areas that are not permitted for storage where waste is temporarily placed or where waste transferred from rail to truck transport ~~verhicles~~vehicles or transferred from one truck to another. These are 10-day transfer areas that function as transfer facilities and include:

- Unit 101, which is used for truck to truck transfer;
- Unit 255, which is used for bulk solid truck to truck or roll-off transfer;
- The Temporary Storage Pad, where vans or roll-off are temporarily placed awaiting further processing at the facility; and
- The rail yard adjacent to Unit 255, where intermodal container are unloaded from flat standard railcars.

Drawing of these areas can be found in Attachment 9, Design Drawings.

~~of other non-permitted areas which are considered waste-handling areas, though they are not permitted as hazardous waste storage units. These are areas for the transfer of bulk materials from rail cars to truck trailers., a truck wash, and similar handling areas. There are also storage areas for non-waste materials such as fuel oil.~~

1.2 Closure Performance Standard

~~Clean Harbors~~ Clive ~~facility~~ will be closed in a manner that: minimizes the need for further maintenance; and controls, minimizes, or eliminates, to the extent necessary to protect human health and environment, post-closure escape of hazardous waste, hazardous constituents, ~~leachate,~~ contaminated run off, or hazardous waste decomposition products to the ground or surface water or to the atmosphere. ~~Clean Harbors~~ Clive ~~facility~~ intends to meet this performance standard by ~~performing removal~~ removing ~~of~~ all hazardous wastes and hazardous waste constituents to the background levels established at the time of construction. ~~Nothing in this Cclosure plan Plan shall be interpreted to require the removal of equipment, secondary containment areas, buildings, infrastructure, etc., if it has been decontaminated pursuant to this closure Closure planPlan.~~

1.2.1 Establishment of Cleanup Standards

~~Clean Harbors~~ Clive ~~facility~~ intends to close all waste management units by ~~total~~ complete removal of waste and waste constituents to background levels, so that there will not be any need for post-closure monitoring and m aintenance of the facility. Upon closure of the~~The Clean Harbors~~ Clive ~~facility~~, waste handling equipment and containment areas ~~will~~ shall be decontaminated and removed, or decontaminated and left in place or removed without decontamination and managed as a hazardous waste. The decontaminated buildings, structures, equipment and secondary containment areas are all that will remain of the facility itself. ~~The experience gained during operations will be applied to the final closure plans~~. All exposed soil areas which may be subject to erosion will be revegetated using native plants, to approximately the same extent as consistent with the existing plant community~~existed prior to construction~~. Soils will be cleaned up to the background ~~values~~ levels established prior to construction.

There ~~was~~ will be no attempt to divide the site into sub-areas or zones, with respect to soil chemistry. The ~~results of all samples were combined, and the~~ established background value for a given parameter was considered as the average of all background sample values, plus three standard deviations. At closure, contaminated soils areas will be removed to meet this background standard, which is located in Appendix E of this Closure Plan.

1.2.2 Procedures at Closure

~~It has been assumed that w~~Waste receipts will be terminated 90 days prior to commencing closure. Additionally,~~ and that~~ all process units will~~are~~ not be operational during closure, thus, ~~requiring~~ all waste ~~inventory~~inventories, including waste generated during closure activities, shall ~~to~~ be transported off-site for treatment and disposal.

~~The Clive facility uses a financial assurance mechanism that guarantees performance of closure, so that 40 CFR 264.112(b)(7) does not apply. F~~inal sampling of the soils upon the closure of ~~the~~ Clive ~~facility~~ will occur after all waste management units have been fully closed and decontaminated, and all wastes removed from the site (with the possible exception of samples remaining in the office/laboratory area). At this time, the Contaminated Soils Sampling Plan, Appendix B, will be implemented. This Plan provides for a ~~careful~~ visual inspection of the entire facility, to try and find any areas of contamination; and, a random sampling effort along

roads and around buildings. All samples collected will be analyzed as specified in the Contaminated Soil Sampling Plan, and the results compared against the Background Standards established prior to facility startup which are specified in Appendix E. ~~-~~Any soil with analytical values exceeding these ~~Standards~~ standards ~~will~~ shall be removed and disposed off-site. Current State and Federal hazardous waste and TSCA regulations will be used to determine whether the soil must be ~~considered~~ managed as hazardous or TSCA or non-hazardous waste.~~;~~ ~~the~~ The beginning presumption, however, will be that the soil must be considered ~~as~~ hazardous and must be shown otherwise if non-hazardous waste disposal is desired. All ~~QA/QC~~Quality Assurance (QA) shall be in accordance with the ~~(~~QA~~)~~ Plan which is Appendix 1 of Attachment 1 (Waste Analysis Plan) of this Permit ~~and attached as Appendix XXX of this Closure Plan~~.
~~will follow that shown in Appendix A.~~

1.3 Partial Closure and Final Closure Activities

~~The Clean Harbors~~ Clive ~~facility~~ will implement steps 1 through 10, below, in order to accomplish closure of the entire facility. Steps 1 through 3 ~~and~~ are the steps relevant to the particular unit being closed and will be implemented to accomplish ~~the~~ partial closure of a given unit at the facility~~, should this be necessary~~. Steps 1 through 10 are:

~~1.~~ At least 45 days prior to the date it anticipates ~~begining~~beginning closure of the first unit or partial closure of any unit, ~~A~~ Clive shall provide a "Notice of Intent to Close the Facility" ~~will be sent~~ to the ~~UDSHW~~ the director of the Utah Division of Waste Management and Radiation Control (UDWMRC), ~~and~~ to the US EPA, Region VIII Administrator, and ~~, at least 45 days prior to the date first unit closure is anticipated to begin. The notice will also be sent~~ to the Tooele County Engineering Department. These notices ~~will~~ shall indicate the date that closure activities are expected to commence and the anticipated closure date for each unit. ~~Should the Clean Harbors Clive facility find it necessary to close a portion of the facility prior to final closure, a "Notice of Intent to Close" that portion of the facility will be filed, as previously indicated. The notice will specify the portion of the facility to be closed and the anticipated closure date. Clean Harbors Clive facility may commence closure activities in accordance with the closure plan prior to the end of the 45-day notice period.~~

~~2.~~1.

~~3.~~2. ~~If the closure plan has not been previously approved, or an amendment~~ Clive shall modify or amend this Closure Plan in accordance with Condition I.D.2. Clive shall ~~to the plan is requested, the requested changes to the plan will not be implemented~~ not implement this Closure Plan or any portion thereof until approval by ~~UDSHW~~UDWMRC and/or other appropriate agencies has been received in accordance with Condition I.D.2.

~~4.~~3. Within 90 days after receiving the final volume of hazardous wastes, ~~Clean Harbors~~ Clive ~~facility must~~ shall remove all hazardous wastes from the facility ~~(~~or portion of the facility~~),~~ undergoing partial closure, in accordance with the approved ~~closure~~ Closure ~~plan~~Plan, ~~unless extensions are approved by~~ the Director of UDWMRC and any other ~~the~~ appropriate regulatory agencies authorize an extension of time. The estimated time requirement for total facility closure is approximately six months.

~~5.~~4. Following decontamination, as per Section * of this plan, t~~T~~he waste storage buildings (Units 105, 106, 535, 604) ~~shall be decontaminated and~~ may be left as ~~constructed~~. ~~if the units have been decontaminated in accordance with the standard specified in section XXX.~~ If a building is left standing, all doors of a building will be closed and locked. All process equipment shall be decontaminated in accordance with XXXX and may be left in place on-site, ~~or~~ salvaged/sold for reuse, or cut apart and ~~landfilled~~ disposed ~~elsewhere~~off-site in accordance with applicable laws. The decision on whether to salvage a piece of equipment, leave in place on-site, or ~~simply to~~ dispose off-site ~~of it~~ will be based upon economics and regulatory procedures at the time of closure. For the purposes of estimating closure costs, however, it is assumed that all items will be disposed at an off-site facility ~~of~~.

~~6.~~5. All ~~upgradient~~ storm water diversions, dikes, and corrugated steel pipe conduits will be maintained throughout closure in order to protect the facility from surface water run-on. These structures may~~will~~ be left in-place at final closure for use by any subsequent tenants.

~~7.~~6. All contaminated soils, structures, and equipment shall be ~~Decontamination~~ decontaminated in accordance with section XXX or disposed ~~off-site disposal~~ at an appropriate~~ly~~ off-site hazardous waste or TSCA permitted facility ~~will be provided for~~. ~~contaminated soils, structures, and equipment~~.

~~8.~~7. Contaminated liquids generated by the closure process shall be managed in accordance with applicable regulations at the time of closure. Management options may include: treatment on-site by filtration to remove PCBs, as allowed by TSCA regulations, followed by subsequent RCRA management; treatment and disposal off-site by stabilization and landfilling; deep well injection; or treatment and discharge by a properly permitted wastewater treatment system. Liquids generated by the closure process will be collected using drums, tankers, or other containers and transferred to 90-day storage containers or transport vehicles using pumps or vacuum systems.

~~9.~~8. Throughout closure activities, the fence, gates, and warning signs ~~will~~ shall be maintained, ~~as per~~ pursuant to this Permit and all applicable Utah and Tooele County ~~standards~~rules and regulations~~, throughout closure.~~

~~10.~~9. Within 60 days of the completion of closure or partial closure, ~~Clean Harbors~~ Clive ~~facility will~~ shall submit the certification of closure to the Director of the ~~UDSHW~~UDWMRC, EPA and the Tooele County Engineering Department certified~~.~~ ~~This certification~~ by Clive and an independent, Utah-Registered Professional Engineer ~~will~~ attesting that the ~~unit or units~~facility, unit or specific areas have been closed in accordance with the requirements of this ~~closure~~ Closure ~~plan~~Plan.

~~11.~~10. No later than the submission of the certification of closure for the entire facility, ~~Clean Harbors~~ Clive ~~facility will~~ shall submit to the Director of the ~~UDSHW~~UDWMRC, EPA and to the Tooele County Land Office, a survey plat prepared by a professional land surveyor indicating the location and dimensions of any permanent structures with respect to permanently surveyed benchmarks. ~~Clean Harbors~~ Clive ~~facility will~~ shall record a notation on the property deed indicating that the facility has been used to store and treat hazardous wastes, to alert future owners.

1.4 Maximum Waste Inventory

Table 1.1 ~~indicates~~ specifies the maximum inventory of wastes that could be on-site at Clive ~~facility~~ at the time of closure. The maximum inventory of wastes in storage would occur if all units were at maximum capacity yet not closed. The maximum amount of waste requiring treatment would be the capacity of the container storage areas and an estimated number of railcars present on the Clean Harbors owned rail spur. ~~.~~ If any units are closed prior to total facility closure, the maximum extent of operations will decrease.

Table 1.1
Maximum Inventory of Wastes that Could Be On-Site at the Clive Facility

Facility Units	Description	Maximum Waste Capacity[1,2]
Container Management		
105	Thaw Unit	60,000 Gallons
106	Containerized Bulk Solids	1,847,871 Gallons
535	Rail/Truck Transfer Bay	23,560 Gallons

Notes

1. The Truck Wash Bay (Unit 604) is not included as having capacity in storage at closure because Unit 106 is assumed to be at full capacity. Unit 604 may only store wastes when a corresponding volume of capacity remains available at Unit 106

2. Materials in storage requiring shipment off-site/treatment.

1.5 Schedule For Closure

Partial closures and final closure will occur as described in this Closure Plan. Projected closure schedules for ~~the~~ Clive ~~facility~~ are included at the end of Section 2.3.

1.6 Time Allowed for Closure

Table 1.2 summarizes the planned closure activities of the facility with an estimated timeline, as if no partial closures are anticipated. These activities may be seen in more detail in Section 2.3, the Schedule for Closure.

Table 1.2
Projected Schedule of Events at Closure
of the Entire Facility

Elapsed Time (months)	Event(s)
-	Notification to ~~UDSHW~~UDWMRC, EPA and Tooele County Engineering Department
1.5	Final receipt of containerized wastes at Units 535, 105 & 106, mobilize work force
4.5	Removal of wastes stored in Units 535, 105 & 106
6.0	Complete disposal or decontamination of Units 535, 105 and 106
7.5	Finish decontamination of miscellaneous areas
7.5	Finish soils investigations/sampling/reseeding
7.5	Facility closed
9.5	Certifications due to ~~UDSHW~~UDWMRC, EPA and Tooele County Engineering Department & notice to Tooele County land records.

1.7 Closure Plan Modifications

Copies of the closure plan are maintained by Clean Harbors ~~Clive facility management~~ and the ~~UDSHW~~UDWMRC. When facility operational changes dictate a modification to this plan, the Clive facility will submit a request for permit modification to the Director of UDWMRC to make the necessary changes to the closure plan~~. Copies of this revised Plan will be submitted for approval to UDSHW~~~~UDWMRC~~ in accordance with ~~40 CFR~~ R315-264~~.~~-112 and Condition 1.D.2.

1.8 Inventory Disposal, Removal, or Decontamination

~~Clean Harbors~~ Clive ~~facility~~ has been designed to meet all existing standards regarding the containment of wastes~~,~~ and any spills that may result from waste handling. This includes provisions for managing wastes only in designated areas with adequate primary and secondary containment, and the prompt cleanup of any spilled material to prevent its spread. Spills of PCB materials are cleaned up pursuant to either 40 CFR 761 Subpart G or 40 CFR 761.79 as appropriate. All areas external to the waste management units themselves are expected to be clean, except for incidental spills that might occur during closure itself. However, to ensure that this is indeed the case, a thorough visual inspection of the entire facility will be made after all waste management units are closed, and all wastes removed from the facility. This inspection will be specifically looking for standing liquids, staining, or accumulations of debris or residues that would indicate soils or pavement contamination.

~~The inspection will be accompanied by~~ In addition, a series of random samples~~, taken~~ shall be collected from along facility roads , rail spurs and around the waste management units~~, which will be~~ and analyzed for potential contamination. Any areas found to be contaminated will be further investigated, ~~as deemed appropriate by the circumstances,~~ and the contamination will be removed to previously established background levels specified in Appendix E. This entire inspection and sampling effort is fully described in Appendix B, the Contaminated Soils Sampling Plan.

It is planned that once closure starts, closure activity will continue (except for weather and equipment delays, etc.) until closure is complete. Closure activities may or may not occur on individual units at the same time.

Equipment needing decontamination may be transported to the Truck Wash (Unit 604) or any other fixed or temporary containment area to provide working room for decontamination or staging of equipment awaiting decontamination.

The following ~~typical~~ steps ~~will~~ can be ~~taken~~ utilized to decontaminate various components of the facility:

- The tractors, forklifts, trucks and other similar mobile equipment which are known or suspected to be contaminated with hazardous waste will be decontaminated. Decontamination will require the use of water, steam, heated detergent solutions, or water-miscible solvents, wh at~~ich~~ever removes the contamination~~is most effective~~. The wastewaters will either be treated off-site by incineration for destruction, or transported off-site and deep well injected, treated ~~for~~ and discharge, or stabilized for disposal off-site in an appropriate land disposal facility ~~RCRA-permitted landfill~~. The decontaminated mobile equipment may be transferred to another hazardous waste facility after demonstrating the final rinse water ~~meeting~~ meets the "hard surface" decontamination standard specified in Table 1.3. If the mobile equipment fails to meet the standard specified in Table 1.3 the equipment must be disposed off-site in a hazardous waste land disposal facility.

- Each of the waste storage and/or transfer units being closed that have managed PCB wastes in the past will undergo a visual inspection to identify and record potential new or previously unidentified PCB spills. Potential spills will be sampled and analyzed for PCBs unless decontaminated in accordance with 40 CFR §761.79. Sampled spills containing PCBs > 10 µg/100 cm^2 will be decontaminated in accordance with the PCB spill cleanup policy (for spills less than 72 hours old) or 40 CFR §761.79 (for spills more than 72 hours old). The decontamination procedures identified in the steps below will then be performed if not already accomplished during PCB decontamination. Details on wipe sampling of a given area after cleaning are presented in the sections specific to each waste management unit that stored or processed PCB wastes.

- During closure of a given waste management unit and transfer areas, facility personnel will visually inspect the surrounding areas on a weekly~~routine~~ basis. These inspections will be documented and kept in the facility operating record. These inspections ~~will be for the purpose of~~should detect~~ing~~ any spills that might have occurred as a result of the on-going closure activities. Based on ~~these visual observations~~the inspection, any surfaces that appear to be contaminated with hazardous wastes will be cleaned to the standards specified in Table 1.3 or excavated to the Background Levels specified in Appendix E and backfilled with clean soil. Contaminated soils will be subject to the generator analysis referenced in the Waste Analysis Plan and managed accordingly or the soil ~~will~~ may be assumed to be a hazardous waste and ~~will be~~ shipped off-site for treatment/disposal.

- Hard surface (concrete, steel, etc.) decontamination procedures: These procedures are intended to apply to both structures and equipment. Closure of "hard surface" items is performance based and any cleaning method may be used to achieve the standard. No actual direct testing of the surfaces is intended, as there are no general "wipe tests" which have been approved or designated by the U.S. EPA or the ~~UDSHW~~UDWMRC. The standard for successful decontamination is a sample of the final rinse water from the item or surface meeting the limits in Table 1.3 and additionally, for those areas used to manage PCBs, the final rinse sample from the containment area having a total PCB concentration of 0.5 ppb or less.

  All wash/rinse water or other cleaning residues will be collected and handled as hazardous waste. The closure cost estimate assumes that these residues will be sent for off-site incineration. However, waste water residues may also be treated via filtration to decontaminate it with respect to PCBs, sent to a facility for deep well injection, treated and discharged under the NPDES program, or stabilized for landfill disposal. The method actually used will be decided at the time of closure, based upon site availability, regulatory approvals/regulations and economics.

- The various waste items that will need to be disposed of during closure may be treated in different ways, depending upon what they are and how they were ~~"produced."~~ generated. Some items will be incinerated or landfilled at RCRA and/or TSCA-permitted ~~hazardous~~ -waste facilities, while others may be landfilled at non-hazardous waste facilities or other approved disposal options may be used.

- Tanks and similar items may be decontaminated~~cleaned~~ as hard surfaces as described above, after which they may be put to other uses, sold for salvage, or disposed of as non-hazardous waste. If a given item ~~is not cleaned to one of~~fails to meet the standards ~~described above~~specified in Table 1.3, it may be cut into manageable pieces and disposed of in a RCRA and/or TSCA-permitted landfill, or disposed of by other RCRA or TSCA treatment technology authorized at the time of closure. The decision as to whether to salvage a particular item for reuse, or sell it for scrap metal value, or to dispose of it, will be based upon the market conditions at the time of closure, and the economics of salvage versus disposal. However, as required by ~~40 CFR~~ R315-264-142(a)(3) ~~Subpart H~~, it has been assumed that all units which have actively held wastes will be disposed in a hazardous waste facility ~~of in~~when calculating the closure costs. Certain equipment, as specifically noted elsewhere, may be assumed as salvaged following decontamination, but no positive salvage value is given to these items in the closure cost estimates.

Table 1.3
Decontamination Rinse Water Analysis

Parameters (T=Total Metals)	Maximum Concentration Increase* (mg/l)
Oil and Grease	15.0
Phenols	0.2
Arsenic - T	0.1
Barium - T	5.0
Cadmium - T	0.03
Copper - T	1.0
Lead - T	0.1
Mercury- T	0.005
Selenium - T	0.05
Silver - T	0.1
Total Organic Halides	0.5
Total Organic Carbon	40.0
Cyanides	0.2

* The values given are the maximum allowable increase in a parameter, over the level that exists in the final rinse water prior to use. This "prior existing level" shall be established as the average of at least three (3) analyses of the rinsewater, plus three (3) standard deviations. These analyses will be made at the time of closure, when a water source is known.

NOTES:

1. Many different waste codes will be handled at the Clive facility. Over its operating lifetime, it is likely that each unit will eventually handle practically all waste codes ~~actually~~ received, either directly or through the "mixture" and "derived from" rules. From a regulatory viewpoint, then, the potential variety of contamination at all units will be identical. Therefore, only one list of parameters will be considered. This list will be used for all waste management units throughout the facility.

   The minimum parameters listed in Table 1.3 are intended to represent the contaminants likely to be present in the highest levels, and to give an indication of potentially toxic constituents. It must be noted that many of the constituents of concern - the organics, especially the chlorinated organics - are volatile and will likely vaporize for the most part during the cleaning process itself. ~~The loss of these relatively small amounts of materials is considered as unavoidable and non-threatening to the environment or the general public.~~ Any remaining heavy, residual organics will be included by the analyses for Oil and Grease, TOC, and/or TOX. All of these parameters will detect general contamination to relatively small values.

~~It must also be remembered that the~~Surface decontamination procedures ~~listed~~ described earlier apply only to ~~surfaces which are~~ relatively impermeable surfaces (designated as "hard surfaces") such as ~~. They will be used only for~~ metallic items ~~, such as (~~tanks, mobile equipment)~~,~~ and sealed concrete. Any porous materials, such as soils, ~~are intended for~~must be disposed in an landfill landfilling or treated in accordance with other EPA/State approved ~~treatment~~ technologies. ~~For most of the items to be decontaminated, a visual inspection will be as useful as actual analysis of the wash; however, to provide a quantitative, objective measure of contamination (or the absence thereof), and a historical record, these analyses will be conducted as described previously for "hard surfaces."~~

~~Wide ranging analyses for specific organic chemicals, such as that achieved by GC/MS work, will not provide significantly more useful information. In addition, these analyses take considerable periods of time, during which site conditions would have changed markedly (due to continuing exposure to the elements).~~

The parameters chosen will adequately sample for all constituents of real concern, or for indicators of those constituents.

2. It is expected that both field and laboratory methodology will change considerably between the time of permit issuance, and the time of actual closure. However, to cover the possibility of earlier closure of some units, a sampling and analysis plan has been developed and included as Appendix A. Changes in field and laboratory methodology shall be incorporated in accordance Condition I.D.2 of this permit.

3. The limits chosen were based on the recognition that it will be highly impractical, if not impossible, to use "detection limits" as a cleanup standard. This is because the water used for the cleanup will likely have naturally occurring ~~contamination~~ constituents that far exceed~~s~~ detection limits in many cases.

   This would be the case even if potable water were used for the equipment wash down. ~~Clean Harbors~~ Clive ~~facility will~~ can use facility ~~process~~ water for the decontamination of the facility~~; this water will not meet drinking water standards, but will be significantly cleaner for most parameters than the ground water existing under the site~~. To facilitate cleanup, a detergent ~~will~~ can be added to the wash water as well; as a result, these fluids will have relatively high levels of contamination, compared to "detection limits", before any wash down occurs. The levels listed in Table 1.3 were chosen based upon these considerations.

- Following a visual inspection for cracks or other damage, containment areas are to be cleaned as hard surfaces. A sample of rinsate will be collected from sumps for analysis to determine the effectiveness of decontamination, in accordance with the hard surface cleaning method and Appendix A.

- Following the hard surface decontamination procedure, the sumps of all containment areas will be inspected for cracks in the concrete ~~that might have occurred during the closure period~~. If this inspection was completed during Unit 106 idling as defined in

Module III~~for a particular unit~~, it does not have to be repeated. If cracks are found, and a leak or loss of integrity in containment is suspected, core samples of the soil and/or concrete will be collected to confirm or refute the suspicion of contamination of the subsoils. If contamination is confirmed or assumed, all concrete and soil within six inches of a crack will be removed and collected for disposal as a contaminated soil, described above. Alternatively, if soil contamination is suspected in the area of a crack, core sampling may be bypassed by assuming contamination exists and ~~Clean Harbors~~ Clive ~~facility~~ may proceed directly to removal of concrete and soil as described above. The concrete will be removed by jack-hammering it out, then using either a shovel or front-end loader to pick it up. The soil from the trench left after removing the concrete will then be sampled and compared to the established background values, in accordance with Appendix B. Removal will continue both laterally and vertically until the area is clean. Both concrete and soil will be managed in accordance with the Waste Analysis Plan.

- Chemicals which are still in acceptable condition (i.e., still meet applicable "Reagent" or "Technical" grade standards or are still useful for the purpose they are typically purchased) may be offered for use at other facilities, or educational or research laboratories. Samples of hazardous wastes and decontamination residuals, and remaining laboratory chemicals will be disposed of as hazardous waste in accordance with~~according to~~ current regulations.

- Upon completion of final or partial closure, ~~Clean Harbors~~ Clive ~~facility will~~ shall submit a closure certification to the director of the ~~UDSHW~~UDWMRC, EPA and Tooele County Engineering Department certified by Clive and ~~. A certification~~ by an independent registered professional engineer attesting that the facility or portion of the facility has been closed in accordance with this ~~closure~~ Closure ~~p~~Plan ~~will be included with the submittal to the UDSHWUDWMRC and the Tooele County Engineering Department~~. All applicable quality assurance programs specified in this permit ~~will~~ shall be followed during closure.

1.9 Closure Plans, By Waste Management Unit

There are four areas of the facility which relate directly to receipt of waste shipments. These units are the Thaw Unit (Unit 105), the Containerized Bulk Solids Storage Area (Unit 106), the Rail/Truck Transfer Bay (Unit 535), and the Railcar to Trailer Transload Building (Unit 255). The Truck Wash Bay (Unit 604) is permitted for container storage, but for purposes of calculating the maximum inventory ~~this closure plan~~ is not assumed to be storing waste at the time of closure. This is because waste may only be stored in Unit 604 if an equivalent volume of capacity remains available in Unit 106 and Unit 106 is presumed to be full at the time of closure. Clive must remove all waste in Unit 604 for off-site management and decontaminate the unit as described in section 1.9.4. ~~Unit 604 will still undergo decontamination as described below even though no waste is assumed in storage at the time of closure. Decontamination and decommissioning of these structures will be accomplished by using the PCB decontamination standards and the RCRA "hard surface" decontamination standard as described in Section 1.8. Once these areas are decontaminated, they may be left in place/on-site.~~

1.9.1 Thaw Unit, Unit 105

Upon closure of Unit 105, all wastes will be removed from the unit and transported offsite for management in accordance with applicable rules. At closure, Unit 105 is assumed to be filled to the maximum total capacity of 60,000 gallons of waste. This is generally anticipated to be rail tank cars, bulk solids in sludge boxes, intermodal containers and other large containers, but may also include smaller containers of waste.

Upon completion of waste removal, all containment surfaces will be visually inspected for indications of PCB contamination, i.e. stains, discolored areas, operator knowledge, operating record review. Areas suspected of being contaminated with PCBs will be identified, recorded, and sampled to determine if ~~they contain~~the area exceeds PCBs >10 µg/100 cm^2 ~~per the standards of~~in accordance with 40 CFR ~~§~~ 761.79 and~~/or~~ ~~will~~ must be decontaminated in accordance with this section.~~§761.79~~. The containment area of Unit 105 will be cleaned as a "hard surface" in accordance with Section 1.8 of this Closure Plan, ~~attachment~~Attachment 7. In addition to the wipe sampling necessary to demonstrate PCB decontamination of stained areas, wipe samples for PCBs will be taken from the containment area following cleaning, in accordance with 40 CFR § 761.123, Definitions, *Standard Wipe Test* and the following sampling scheme. The wipes will be taken from horizontal floor and sump bottom surfaces. A total of 9 planned wipes will be taken by establishing diagonal lines from the NW to SE and from the NE to the SW corner of each containment area. The~~n the~~ intersecting point (center) of the lines will be one sampling point. The other sampling points will be located at equal increments from the intersection point (center) to each of the four containment area corners. Each ~~Wipe~~ wipe sample~~s~~ will be analyzed separately. Surfaces found to be above the 40 CFR 761.79 standard will be decontaminated until wipe testing confirms ~~successful decontamination~~ wipe concentrations are below the 40 CFR § 761.79 standard. A sample of the final rinse solution from the containment area will be analyzed for the parameters in Table 1.3 and PCBs. Decontamination will be complete when the standard in Table 1.3 is met and the total PCB concentration is 0.5 ppb or less.

Should Unit 105 be closed for used oil management, the same procedures outlined above will be followed.

1.9.2 Containerized Bulk Solids Storage Unit 106

Upon closure of Unit 106, all wastes will be removed from the unit and transported offsite for management in accordance with applicable rules. At closure, Unit 106 is assumed to be filled to the maximum total capacity of 1,847,871 gallons - 630,240 gallons in ~~subunit~~ Subunit 1, with 448,440 gallons in the enclosed area of ~~subunit~~ Subunit 1 and 181,800 gallons in the unenclosed portion of ~~s~~Subunit 1; 617,463 gallons in ~~s~~Subunit 2 and 600,168 gallons in ~~s~~Subunit 3. For decontamination purposes, only the enclosed area of ~~s~~Subunit 1 is assumed to contain PCB wastes. The wastes stored in Unit 106 are generally anticipated to be bulk solids in sludge boxes, intermodal containers and other large containers, but may also include smaller containers of waste.

For the enclosed portion of Subunit 1, upon completion of waste removal, all containment surfaces will be visually inspected for indications of PCB contamination, i.e. stains, discolored areas, operator knowledge, operating record review. Areas suspected of being contaminated with PCBs will be identified, recorded, and sampled to determine if ~~they contain~~the area exceeds PCBs >10 µg/100 cm^2 ~~per the standards of~~in accordance with 40 CFR § 761.79 and~~/or~~ ~~will~~ must be decontaminated in accordance with 40 CFR § 761.79.

The containment area of the enclosed portion of subunit 1 will be cleaned as a "hard surface" in accordance with Section 1.8 of this Closure Plan, ~~attachment~~Attachment 7. In addition to the wipe sampling necessary to demonstrate PCB decontamination of stained areas, wipe samples for PCBs will be taken from the containment area following cleaning, in accordance with 40 § 761.123, Definitions, *Standard Wipe Test* and the following sampling scheme. The wipes will be taken from horizontal floor surfaces. A total of 9 planned wipes will be taken by establishing diagonal lines from the NW to SE and from the NE to SW corner of each containment area. ~~Then t~~The intersecting point (center) of the lines will be one sampling point. The other sampling points will be located at equal increments from the intersection point (center) to each of the four containment area corners. Each ~~Wipe~~ wipe sample~~s~~ will be analyzed separately. Surfaces found to be above the 40 CFR § 761.79 standard will be decontaminated until wipe testing confirms wipe concentrations are below the 40 CFR § 761.79 standard ~~successful decontamination~~. Samples of the final rinse solution from the containment areas in the enclosed portion of subunit 1 will be analyzed for the parameters in Table 1.3 and PCBs. Decontamination will be complete when the standard in Table 1.3 is met and the total PCB concentration is 0.5 ppb or less.

The containment areas of the unenclosed portion of ~~subunit~~ Subunit 1, S~~s~~ubunit 2 and S~~s~~ubunit 3 will be cleaned as "hard surfaces" in accordance with Section 1.8 of this Closure Plan, ~~attachment~~Attachment 7. Samples of the final rinse solution from the containment areas of the unenclosed portion of ~~subunit~~ Subunit 1, S~~s~~ubunit 2 and S~~s~~ubunit 3 will be analyzed for the parameters in Table 1.3. Decontamination will be complete when the standards in Table 1.3 are ~~is~~ met.

Salvageable equipment will be cleaned as "hard surfaces," ~~if required~~, following the requirements set forth in Section 1.8 and, if required, according to 40 CFR 761.79 (c). Equipment to be used in Unit 106 may include trucks for rolloff bins, straddle-packers, forklifts, hand tools and similar equipment. The larger mechanical equipment (the trucks, straddle-packers and forklifts) will primarily contact only the outer surfaces of the containers. The smaller equipment (hand tools such as wrenches and screwdrivers) is more likely to contact waste.

1.9.3 Unit 535, Rail Tank Car to Truck Transload Area

All waste stored in Unit 535 will be removed and ~~disposed~~transported offsite for disposal in accordance with applicable rules. As with the other buildings and containment areas on-site, it is assumed that the containment area of Unit 535 is RCRA-~~-c~~contaminated~~, and no prior testing will be conducted for confirmation~~. At the time of closure, Unit 535 is assumed filled to the maximum total capacity of 23,560 gallons of PCB waste.

Upon completion of waste removal, all containment surfaces will be visually inspected for indications of PCB contamination, i.e. stains, discolored areas, operator knowledge, operating record review. Areas suspected of being contaminated with PCBs will be identified, recorded, and sampled to determine if the area exceeds ~~they contain~~ PCBs >10 µg/100 cm^2 ~~per the standards at~~in accordance with 40 CFR § 761.79 and~~/or will~~ must be decontaminated in accordance with 40 § CFR 761.79. The containment area of Unit 535 will be cleaned as a "hard surface" in accordance with Section 1.8 of this Closure Plan, ~~attachment~~Attachment 7.

In addition to the wipe sampling necessary to demonstrate PCB decontamination of stained areas, wipe samples for PCBs will be taken from the containment area following cleaning, in accordance with 40 CFR § 761.123, Definitions, *Standard Wipe Test* and the following sampling scheme. The wipes will be taken from horizontal floor and sump bottom surfaces. A total of 20 planned wipes will be taken from the Truck Unloading Bay secondary containment areas. The sampling points will be taken by establishing diagonal lines from the NW to SE and from the NE to the SW corner of each containment area. ~~Then t~~The intersecting point (center) of the lines will be one sampling point. The other sampling points will be located at equal increments from the intersection point (center) to each of the four containment area corners. Each ~~Wipe~~ Wipe sample~~s~~ will be analyzed separately. Surfaces found to be above the 40 CFR § 761.79 standard will be decontaminated until wipe testing confirms ~~successful decontamination~~wipe concentrations are below the 40 CFR § 761.79 standard. Samples of the final rinse solution from the containment areas will be analyzed for the parameters in Table 1.3 and PCBs. Decontamination will be complete when the standard in Table 1.3 is met and the total PCB concentration is 0.5 ppb or less.

Should Unit 535 be closed for used oil management, the same procedures outlined above will be followed.

1.9.4 Miscellaneous Containment Areas, Units 255 & 604

T~~here are t~~wo other ~~minor~~ waste management areas ~~remaining to~~must be closed, along with miscellaneous piping, hoses, portable pumps, hand tools and similar equipment. These areas are: the Railcar to Truck Transload Bay (Unit 255)~~,~~ and the Truck Wash Building (Unit 604). As with the other buildings and containment areas on-site, it is assumed that the containment area of Unit 255 and the interior of the truck wash are RCRA contaminated, and no prior testing will be conducted for confirmation. Both units are used to handle PCB wastes. All PCB spills are cleaned as they occur according to 40 CFR § 761 Subpart G. However, before implementing the "hard surfaces" decontamination methods described in section 1.8 of this Closure Plan, ~~attachment~~Attachment 7, all containment surfaces will be visually inspected for indications of PCB contamination, i.e. stains, discolored areas, operator knowledge, operating record review. Areas suspected of being contaminated with PCBs will be identified, recorded, and sampled to determine if the area exceeds ~~they contain~~ PCBs >10 µg/100 cm^2 ~~per the standards at~~in accordance with 40 CFR § 761.79 and~~/or will~~must be decontaminated in accordance with 40 CFR §761.79. Units 604 and 255, including the walls, floor, and ceiling (if necessary) for Unit 604 and the containment surfaces of Unit 255, will be cleaned as "hard surfaces" in accordance with the Section 1.8 of this Closure Plan, ~~attachment~~Attachment 7.

In addition to the wipe sampling necessary to demonstrate PCB decontamination of stained areas in both units, PCB wipe samples will be taken from the containment areas following cleaning, in accordance with 40 CFR § 761.123 Definitions, *Standard Wipe Test* and the following sampling scheme:

Unit 255: Upon completion of waste removal, all containment surfaces will be visually inspected for indications of PCB contamination, i.e. stains, discolored areas, operator knowledge, operating record review. Areas suspected of being contaminated with PCBs will be identified, recorded, and sampled to determine if the area exceeds ~~they contain~~ PCBs >10 µg/100 cm^2 ~~per the standards at~~in accordance with 40 CFR § 761.79 and~~/or will~~ must be decontaminated in accordance with 40 CFR § 761.79. The containment area of Unit 535 will be cleaned as a "hard surface" in accordance with Section 1.8 of this Closure Plan, ~~a~~Attachment 7. In addition, ~~W~~wipe samples will be taken from horizontal floor and sump bottom surfaces. A total of 9 planned wipes will be taken from the secondary containment areas. The sampling points will be taken by establishing diagonal lines from the NW to the SE and from the NE to the SW corners of each containment area. T~~hen t~~he intersecting point (center) of the lines will be one sampling point. The other sampling points will be located at equal increments from the intersection point (center) to each of the four containment area corners. Each ~~Wipe~~ wipe sample~~s~~ will be analyzed separately. Surfaces found to be above the 40 CFR § 761.79 standard will be decontaminated until wipe testing confirms wipe concentrations are below the 40 CFR § 761.79 standard~~successful decontamination~~. A sample of the final rinse solution from the containment area will be analyzed for the parameters in Table 1.3 and PCBs. Decontamination will be complete when the standard in Table 1.3 is met and the total PCB concentration is 0.5 ppb or less.

Unit 604: Upon completion of waste removal, all containment surfaces will be visually inspected for indications of PCB contamination, i.e. stains, discolored areas, operator knowledge, operating record review. Areas suspected of being contaminated with PCBs will be identified, recorded, and sampled to determine if the area exceeds~~they contain~~ PCBs >10 µg/100 cm^2 ~~per the standards at~~in accordance with 40 CFR § 761.79 and~~/or will~~must be decontaminated in accordance with 40 CFR § 761.79. The containment area of Unit 535 will be cleaned as a "hard surface" in accordance with Section 1.8 of this Closure Plan, ~~a~~Attachment 7. In addition, ~~W~~wipe samples will be taken from horizontal floor and sump bottom surfaces. A total of 21 planned wipes will be taken from the Unit 604 containment area. The sampling points will be taken by establishing diagonal lines from the NW to the SE and from the NE to the SW corners of each containment area. Then the intersecting point (center) of the lines will be one sampling point. The other sampling points will be located at equal increments from the intersection point (center) to each of the two containment area corners. Each ~~Wipe~~ wipe sample~~s~~ will be analyzed separately. Surfaces found to be above the 40 CFR 761.79 standard (10µg/100cm^2) will be decontaminated until wipe testing confirms wipe concentrations are below the 40 CFR § 761.79 standard~~successful decontamination~~. Samples of the final rinse solution from the containment areas will be analyzed for the parameters in Table 1.3 and PCBs. Decontamination will be complete when the standard in Table 1.3 is met and the total PCB concentration is 0.5 ppb or less.

Decontaminated equipment, containment surfaces and buildings may either be removed or left in place.

1.9.5 Laboratory Closure

The majority of the laboratory has been closed. Only one room of the laboratory has not been closed and it wa~~i~~s used to receive, store and prepare waste samples to be shipped to an off-site laboratory for analysis. Note that the former Administration Building and Laboratory Building are no longer in use. ~~The remaining laboratory room is located in the office and laboratory building complex (single story structure).~~ The related domestic water and sewage systems will most likely remain in place during the closure period, and for some time thereafter.

The remaining waste receiving laboratory room will be closed as follows: (This excludes the two-story administration building as it ~~is only used as office space and not as an area to handle waste~~is no longer in use. ~~This portion of the~~The administration building never managed waste and does not have to ~~be closed~~undergo closure.)

1. The laboratory furniture will be removed from the building and decontaminated by meeting the "hard surface" decontamination standard (Section 1.8). It will then be disposed of as solid (non-hazardous) waste, salvaged, or placed back into use. Alternatively, if Clive fails to meet the decontamination standard specified in Table 1.3 or if Clive choose to not decontaminate the furniture at its discretion, the laboratory furniture ~~it may~~must be disposed of as hazardous waste ~~without decontamination at the discretion of the company~~.
~~2.~~ Stains on walls will be identified and~~,~~ ~~removed~~ ~~cleaned~~decontaminated. The decontamination residue will be ~~and~~ disposed as PCB/RCRA wastes for incineration or landfill, as appropriate. ~~No further sampling will be required.~~
~~3.~~2. Stained areas will have wipe samples taken on them and they will be analyzed separately. Surfaces found to be above the 40 CFR 761.79 standard -(10µg/100cm^2) will be decontaminated until wipe testing confirms wipe concentrations are below the 40 CFR § 761.79 standard~~successful decontamination~~. The floor of the room will be cleaned to meet the "hard surfaces" decontamination standard specified in Table 1.3.
~~4.~~3. All plumbing fixtures will be washed, but may otherwise remain in place.

2.0 Closure Cost Estimates

Closure Cost Estimates have been prepared for ~~Clean Harbors~~ Clive ~~facility~~ in accordance with the requirements of ~~40 CFR 264, Subpart H, specifically~~Utah Admin. Code R315-~~-~~264.~~-~~142. These estimates assume that ~~the~~ Clive ~~facility~~ is closed as detailed in the Closure Plans of this permit. These estimates assume that all wastes at the facility will be disposed of off-site at third party facilities. For purposes of calculations, it is assumed that, at the time of closure, all waste management units at ~~the~~ Clive ~~facility~~ will be at full permitted capacity. Costs are based on labor and materials rates known or estimated as of mid-2001. All costs will be adjusted periodically, as required by the rules.

2.1 Basis for Cost Estimates

The cost estimates for closure of a hazardous waste facility must consider the most expensive scenario for closure. This would occur if the facility were to begin closure while all hazardous waste storage areas were at capacity (refer to Table 1.1).

Closure costs estimates for the facility are based on published prices, where available, actual experience with similar activities at other facilities, or the judgment of company engineering staff. To allow for errors and fluctuations, a contingency of 10% was assumed. All estimates assume that closure is performed by a third party contractor, and not Clean Harbors' personnel; some costs are based on those charged by Clean Harbors contractors at other facilities, however. All costs are based on 2001 dollars. The calculations are based on projected facility operations, and the assumed closure period is an estimate. The cost estimates consider only the costs imposed by the handling of hazardous wastes and TSCA-regulated wastes, and it is assumed that all general waste storage capacities are taken up by these wastes. Any non-hazardous wastes handled at the facility will be stored and treated in units which also handle hazardous waste~~s~~, hence there is no need to consider these separately.

~~Clean Harbors~~ Clive ~~facility~~ will prepare new closure cost estimates and modify the permit in accordance with XXX, whenever a change in the ~~closure~~ Closure ~~plan~~ Plan would affect the cost of closure. ~~Clean Harbors~~ Clive ~~facility~~ will annually adjust the latest closure cost estimates by using an inflation factor derived from the annual Implicit Price Deflator for Gross National Product as published by the U.S. Department of Commerce in its Survey of Current Business. The inflation factor will be calculated by dividing the latest published annual deflator by the deflator for the previous year. The latest closure cost estimate will be multiplied by the inflation factor to determine the adjusted closure cost estimate.

For the purposes of estimating closure costs, it is assumed that all waste and miscellaneous items will be disposed ~~of~~. The waste storage buildings shall be decontaminated and left as constructed.

2.2 Cost Estimates by Waste Management Unit

The closure costs for specific areas are listed below. These estimates are based on assumptions regarding the actual times needed for closure, and the equipment used.

Table 2.1 shows a summary of the Closure Cost Estimates for ~~Clean Harbors~~ Clive facility. The total of these amounts in 2001 dollars, plus a 10% contingency allowance, is 6,439,037; at least this amount (adjusted as necessary for inflation) has been guaranteed through the Financial Assurances described in Section 3.0.

Equipment and labor costs on which the Estimates are based are shown on Table 2.2.

Individual unit closure cost estimates are shown in Table 2.3. Table 2.3 also includes closure cost estimates in 2001 dollars for closure of units 105 and 535 for used oil operations. However, these additional cost estimates do not materially add to the required financial assurance as closure under the hazardous rules also satisfies the used oil closure requirements. In the event that either or both of these units close hazardous waste operations, but continue used oil operations, the facility would be required to secure the necessary financial assurance to satisfy the used oil closure estimates.

Table 2.1
Clean Harbors Clive facility
Summary of Closure Cost Estimates

Facility Area/Waste Management Unit	Estimated Cost to Close
Thaw Shed (Unit 105)	$101,372
Rail to Truck Transload (Unit 255)	$17,242
Containerized Bulk Solids Storage (Unit 106)	$5,358,471
Rail/Truck Transfer Bay (Unit 535)	$35,936
Truck Wash (Unit 604)/Laboratory	$18,724
Soils Sampling and Analysis	$65,979
Miscellaneous Other Costs	$113,633
Labor Supervision	$156,000
Independent Certifying Engineer	$25,000
Subtotal	**$5,892,357**
10% Contingency	$589,236
Total In 2001 Dollars	**$6,481,593**

Table 2.2
Clean Harbors Clive facility
Estimated Laboratory Analysis, Labor, Treatment/Disposal, and Equipment Costs

Labor Item	Labor Cost	Per	Labor Cost	Per	Labor Cost	Per
Average Third Party Labor Rate	$40	Hour	$400	Day		
Supervisor	$60	Hour	$600	Day	$12,000	Month
Clerk	$14	Hour	$140	Day	$2,426.67	Month
Guard	$15	Hour	$180	Day	$900	Week
Facility Management	$1,500	1 week/month				

Equipment Item	Rental Rate	Per
Steam Cleaner	$35	Day
Crane	$1,000	Day
Heavy Equipment Lease	$25,000	Lump Sum

Rate	Rate	Per
Lab Analysis – Table 1.3	$291.64	Each
Lab Analysis – PCB Solids/Wipes	$100	Each
Lab Analysis – Priority Pollutants	$1,161.60	Each
Bulk Solids Incineration – Debris	$0.378	Pound
Bulk Solids Incineration < 3,000 Btu/pound	$0.380	Pound
Bulk Liquids Incineration	$0.118	Pound
Bulk Water Incineration	$0.161	Pound
PCB Water Treatment	$0.096	Gallon
Bulk Water Landfill	$0.01	Pound
Drummed Waste Incineration	$0.552 (RCRA)	Pound
	$0.616 (TSCA)	Pound
Hazardous Waste Landfill	$115	Ton
Solid Non-Hazardous Waste Disposal	$60	Cubic Yard
Surveying Costs	$5,000	Lump Sum
Closure Certification Costs	$40,000	Lump Sum

Transportation Distances	
Distance to Hazardous Waste Incinerator	20 miles
Distance to Hazardous Waste Landfill	20 miles
Distance to Solid Waste Landfill	20 miles

Fresh Water Costs	Rate	Per
Water	$0.005	Gallon
Transportation	$0.0275	Gallon
Miscellaneous	$0.05	Gallon
Total	$0.0825	Gallon

2.2.1 Closure Cost Estimate Calculations

Table 2.3
Closure Cost Estimates by Unit

CLOSURE ACTIVITY	QUANTITY	DISPOSAL/TREATMENT OPTION	FACILITY	CALCULATIONS	QUANTITY	COST/UNIT	TOTAL COSTS
UNIT 105							
Inventory Disposal (Assumed PCB Bulk Water)	60,000 Gallons	Incineration	Aragonite	60,000 gal x 8.3 lb/gal	498,000 lbs	$0.161/lb	$80,178
Transport of Unit 105 Waste (40,000 lbs per load)	13 Loads	------------	Aragonite	498,000/40,000	13 Loads	$300	$3,900
Unit 105 Decontamination Rinsate Cost	8,000 Gallons	------------	Contractor	------------------	8,000 gal	$0.0825/gal	$660
Rinsate Disposal (Assumed RCRA Bulk Water)	8,000 Gallons	Incineration	Contractor	8000 gal x 8.34 lb/gal	66,720 lbs	$0.161/lb	$10,742
Rinsate Transportation (40,000 lbs per load)	2 Loads	--------------	Aragonite	66,720/40,000	2 Loads	$300	$600
Labor – Operators	10 Operator-days	--------------	Contractor	-------------------	10 Person-Days	$400	$4,000
Wipe Testing	10 Samples	--------------	Contract Lab	9 Samples + 1 Field Blank	10 Samples	$100	$1,000
Water Analysis (Table 1.3)	1 Sample	--------------	Contract Lab	-------------------	1 Sample	$291.64	$292
UNIT 105 SUBTOTAL							**$101,372**
UNIT 255							
Unit 255 Decontamination Rinsate Cost	8,000 Gallons	------------	Contractor	------------------	8,000 gal	$0.0825/gal	$660
Rinsate Disposal (Assumed RCRA Bulk Water)	8,000 Gallons	Incineration	Contractor	8000 gal x 8.3 lb/gal	66,400 lbs	$0.161/lb	$10,690
Rinsate Transportation (40,000 lbs per load)	2 Loads	--------------	Aragonite	66,400/40,000	2 Loads	$300	$600
Labor – Operators	10 Operator-Days	--------------	Contractor	-------------------	10 Person-Days	$400	$4,000

CLOSURE ACTIVITY	QUANTITY	DISPOSAL/TREATMENT OPTION	FACILITY	CALCULATIONS	QUANTITY	COST/UNIT	TOTAL COSTS
Wipe Testing	10 Samples	--------------	Contract Lab	9 Samples + 1 Field Blank	10 Samples	$100	$1,000
Water Analysis (Table 1.3)	1 Sample	--------------	Contract Lab	-------------------	1 Sample	$291.64	$292
UNIT 255 SUBTOTAL							**$17,242**
UNIT 106 - SUBUNIT 1							
Inventory Disposal Enclosed Area (Assumed PCB Solids)	448,440 Gallons	Incineration	Aragonite	448,440 gal x 6.44lb/gal	2,887,954lbs	$0.378/lb	$1,091,646
Inventory Disposal Unenclosed Area (Assumed RCRA Solids)	181,800 Gallons	Incineration	Aragonite	181,800 gal x 9.28lb/gal	1,687,104lbs	$0.380/lb	$641,100
Transport of Unit 106 Waste (40,000 lbs per load)	115 Loads	------------	Aragonite	4,575,058/40,000	115 Loads	$300	$34,500
Labor – Operators	20 Operator-Days	--------------	Contractor	4 persons x 5 days	20 Person-Days	$400	$8,000
Unit 106 Decontamination Scrape and Sweep – Labor	4 Operator-Days	--------------	Contractor	4 persons x 1 day	4 Person-Days	$400	$1,600
Decontaminate Pad – Labor	12 Operator-Days	--------------	Contractor	2 persons x 6 days	12 Person-Days	$400	$4,800
Wipe Testing	1 Operator Day	--------------	Contractor	1 person x 1 day	1 Person Day	$400	$400
High Pressure Wash Rental	6 Days		Rental	---------------------	6 Days	$35	$210
Detergents & Other Supplies	1	--------------	Supplies	---------------------	1	$500	$500
Wipe Sample Analysis	10 Samples	--------------	Contract Lab	9 Samples + 1 Field Blank	10 Samples	$100	$1,000
Rinsate Cost	28,241 Gallons	------------	Contractor	------------------	28,241 gal	$0.0825/gal	$2,330
Water Analysis (Table 1.3)	3 Samples	--------------	Contract Lab	-------------------	3 Samples	$291.64	$875
Rinsate Transportation (40,000 lbs per load)	6 Loads	--------------	Aragonite	234,400/40,000	6 Loads	$300	$1,800
Rinsate Disposal	28,241 Gallons	Incineration	Contractor	28,2451 gal x 8.3 lb/gal	234,400 lbs	$0.161/lb	$37,738

(Assumed RCRA Bulk Water)

CLOSURE ACTIVITY	QUANTITY	DISPOSAL/TREATMENT OPTION	FACILITY	CALCULATIONS	QUANTITY	COST/UNIT	TOTAL COSTS
Large Equipment Decontamination	2 Operator-Days	---------------	Contractor	2 persons x 1 day	2 Person-Days	$400	$800
Small Equipment Disposal	1 Drum – 500 lbs	Incineration	Aragonite	-----------------	1 Drum – 500 lbs	$0.552	$276
UNIT 106 - SUBUNIT 1							$1,827,575
UNIT 106 - SUBUNIT 2	For estimating the cost to close Subunit 2, assume the same costs as in Subunit 1 and ratio the capacity 617,463 gallons/630,240 gallons x $1,827,575 =						$1,790,524
UNIT 106 - SUBUNIT 3	For estimating the cost to close Subunit 3, assume the same costs as in Subunit 1 and ratio the capacity 600,168 gallons/630,240 gallons x $1,827,575 =						$1,740,372
UNIT 106 SUBTOTAL							**$5,358,471**
UNIT 535							
Inventory Disposal (Assumed TSCA Bulk Organic)	23,560 Gallons	Incineration	Aragonite	23,560 gal x 8.3lb/gal	195,548 lbs	$0.118/lb	$23,075
Transport of Unit 535 Waste	5 Loads	-----------	Aragonite	195,548/40,000	5 Loads	$300	$1,500
Unit 535 Decontamination Rinsate Cost	1,188 Gallons	------------	Contractor	------------------	1,188 gal	$0.0825/gal	$98
Rinsate Disposal (Assumed RCRA Bulk Water)	1,188 Gallons	Incineration	Contractor	1,188 gal x 8.3 lb/gal	9,860 lbs	$0.161/lb	$1,588
Rinsate Transportation (40,000 lbs per load)	1 Load	--------------	Aragonite	9,860/40,000	1 Load	$300	$300
Wipe Testing	21 Samples	--------------	Contract Lab	20 Samples + 1 Field Blank	21 Samples	$100	$2,100
Water Analysis (Table 1.3)	3 Samples	--------------	Contract Lab	-------------------	3 Samples	$291.64	$875
Labor – Operators	16 Operator-Days	--------------	Contractor	2 persons x 8 days	16 Person-Days	$400	$6,400
UNIT 535 SUBTOTAL							**$35,936**

CLOSURE ACTIVITY	QUANTITY	DISPOSAL/TREATMENT OPTION	FACILITY	CALCULATIONS	QUANTITY	COST/UNIT	TOTAL COSTS
UNIT 604							
Unit 604 decontamination Rinsate Cost	5,000 Gallons	------------	Contractor	------------------	5,000 gal	$0.0825/gal	$413
Rinsate Disposal (Assumed RCRA Bulk Water)	5,000 Gallons	Incineration	Aragonite	5,000 gal x 8.3 lb/gal	41,500 lbs	$0.161/lb	$6,682
Rinsate Transportation (40,000 lbs per load)	2 Loads	--------------	Aragonite	41,500/40,000	2 Loads	$300	$600
Wipe Testing	22 Samples	--------------	Contract Lab	21 Samples + 1 Field Blank	22 Samples	$100	$2,200
Water Analysis (Table 1.3)	3 Samples	--------------	Contract Lab	-------------------	3 Samples	$291.64	$875
Labor – Operators	10 Operator-Days	--------------	Contractor	2 persons x 5 days	10 Person-Days	$400	$4,000
Equipment Disposal	200 cubic feet	Landfill	US Ecology	200 cubic ft of pipe/pumps	200 Cubic feet	$12.60/cubic foot	$2,520
Equipment Disposal Transportation	1 Load	--------------	Contractor	Roundtrip to Beatty Nevada	1 Load	$1,434	$1,434
UNIT 604 SUBTOTAL							**$18,724**
FACILITY SOIL SAMPLING PLAN							
Supervision	1 Month		Contractor	--------------------	1 Month	$12,000	$12,000
Survey/Mark Sampling Grid Points	1 Unit		Contractor	--------------------	1 Unit	$5,000	$5,000
Sampling Labor	15 Operator-Days	--------------	Contractor	--------------------	15 Person-Days	$400	$6,000
Sample Analysis	37 Samples		Contract Lab	--------------------	37 Samples	$1,161.60	$42,979
SOIL SAMPLING SUBTOTAL							**$65,979**
MISCELLANEOUS COSTS							
Electricity	6 Months	---------------	Utah Power	-------------------	6 Months	$8,000	$48,000
Truck/Other Heavy Equipment	1 Lump Sum	---------------	---------------	-------------------	1 Lump Sum	$25,000	$25,000

Rental

CLOSURE ACTIVITY	QUANTITY	DISPOSAL/TREATMENT OPTION	FACILITY	CALCULATIONS	QUANTITY	COST/UNIT	TOTAL COSTS
Clerk	5 Months	---------------	Contractor	-------------------	5 Months	$2,426.67	$12,133
Security	5 Months	---------------	Contractor	12 hrs/day, 5 days/wk	5 Months	$3,900	$19,500
Facility Management	6 Months	---------------	Clean Harbors	1 week/month	6 Months	$1,500	$9,000
MISCELLANEOUS COSTS SUBTOTAL							**$113,633**
Labor – Supervision	260 Supervisor-Days	---------------	Contractor	--------------------	260 Person-Days	$600	**$156,000**
Independent Engineering Certification	250 Hours	--------------	Contractor	--------------------	250 Hours	$100	**$25,000**
TOTAL							**$5,892,357**
10% CONTINGENCY							**$589,236**
GRAND TOTAL							**$6,481,593**

USED OIL CLOSURE COST ESTIMATES

UNIT 105 – USED OIL

Inventory Disposal (Used Oil)	60,000 Gallons	Used Oil Marketer	Contractor	60,000 gal x 8.3 lb/gal	498,000 lbs	$0.00/lb	$0.00
Transport of Unit 105 Waste (40,000 lbs per load)	13 Loads	------------	Aragonite	498,000/40,000	13 Loads	$300	$3,900
Unit 105 Decontamination Rinsate Cost	8,000 Gallons	------------	Contractor	------------------	8,000 gal	$0.0825/gal	$660
Rinsate Disposal (Assumed RCRA Bulk Water)	8,000 Gallons	Incineration	Contractor	8000 gal x 8.34 lb/gal	66,720 lbs	$0.161/lb	$10,742
Rinsate Transportation (40,000 lbs per load)	2 Loads	--------------	Aragonite	66,720/40,000	2 Loads	$300	$600
Labor – Operators	10 Operator-days	--------------	Contractor	-------------------	10 Person-Days	$400	$4,000
Wipe Testing	10 Samples	--------------	Contract Lab	9 Samples + 1 Field Blank	10 Samples	$100	$1,000

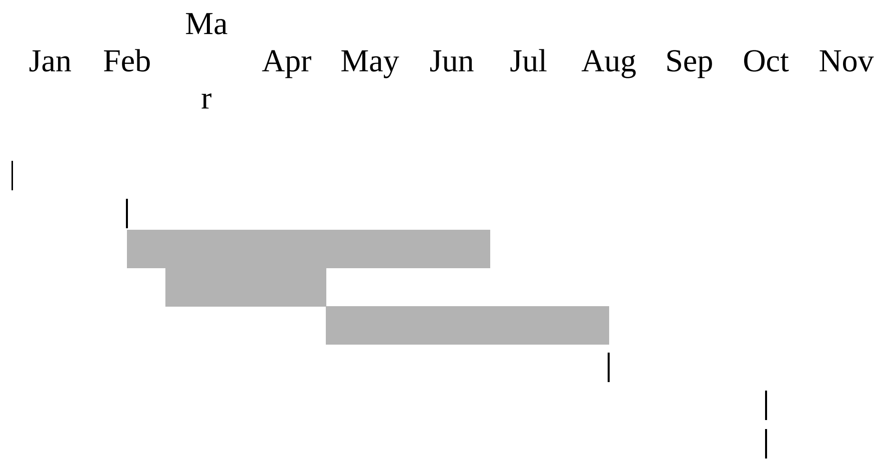
CLOSURE ACTIVITY	QUANTITY	DISPOSAL/TREATMENT OPTION	FACILITY	CALCULATIONS	QUANTITY	COST/UNIT	TOTAL COSTS
Water Analysis (Table 1.3)	1 Sample	--------------	Contract Lab	-------------------	1 Sample	$291.64	$292
UNIT 105 SUBTOTAL –USED OIL							**$21,194**
UNIT 535 – USED OIL							
Inventory Disposal (Used Oil)	23,560 Gallons	Used Oil Marketer	Contractor	23,560 gal x 8.3lb/gal	195,548 lbs	$0.00/lb	$0.00
Transport of Unit 535 Waste	5 Loads	------------	Aragonite	195,548/40,000	5 Loads	$300	$1,500
Unit 535 Decontamination Rinsate Cost	1,188 Gallons	------------	Contractor	------------------	1,188 gal	$0.0825/gal	$98
Rinsate Disposal (Assumed RCRA Bulk Water)	1,188 Gallons	Incineration	Contractor	1,188 gal x 8.3 lb/gal	9,860 lbs	$0.161/lb	$1,588
Rinsate Transportation (40,000 lbs per load)	1 Load	--------------	Aragonite	9,860/40,000	1 Load	$300	$300
Wipe Testing	21 Samples	--------------	Contract Lab	20 Samples + 1 Field Blank	21 Samples	$100	$2,100
Water Analysis (Table 1.3)	3 Samples	--------------	Contract Lab	-------------------	3 Samples	$291.64	$875
Labor – Operators	16 Operator-Days	--------------	Contractor	2 persons x 8 days	16 Person-Days	$400	$6,400
UNIT 535 SUBTOTAL – USED OIL							**$12,861**
TOTAL – USED OIL							**$34,055**
10% CONTINGENCY							**$3,406**
GRAND TOTAL – USED OIL							**$37,461**

2.3 Schedule for Closure

As indicated in Section 1.6, the total time for closure of ~~Clean Harbors~~ Clive ~~facility~~ (including submittal of closure certification) is estimated at 9.5 months. Assuming that the ~~UDSHW~~UDWMRC is first notified of closure on January 1st, certification of closure is anticipated on or about October 15th of that same year.

Overall Closure Schedule

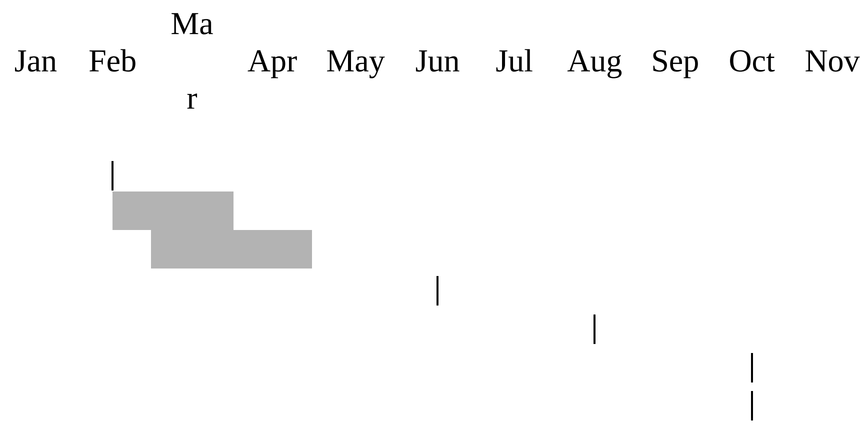
Clive Facility



1. Notification of Closure to ~~UDSHW~~UDWMRC and Tooele
2. Final receipt of containerized waste and mobilize
3. Complete waste removal/decontamination of storage units
4. Decontamination of miscellaneous units
5. Soils investigation/sampling/reseeding
6. Facility closed
7. Closure Certification to ~~UDSHW~~UDWMRC and Tooele
8. Notice to Tooele County land records

Bulk Container Storage, Unit 106

Closure Schedule



1. Final receipt waste
2. Waste removal
3. Decontamination of containment and equipment
4. Receipt of lab results
6. Unit 106 closed
7. Closure Certification to ~~UDSHW~~UDWMRC and Tooele
8. Notice to Tooele County land records

Thaw Shed, Unit 105

Closure Schedule

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov

1. Final receipt waste
2. Waste removal
3. Decontamination of containment and equipment
4. Receipt of lab results
6. Unit 105 closed
7. Closure Certification to ~~UDSHW~~UDWMRC and Tooele
8. Notice to Tooele County land records

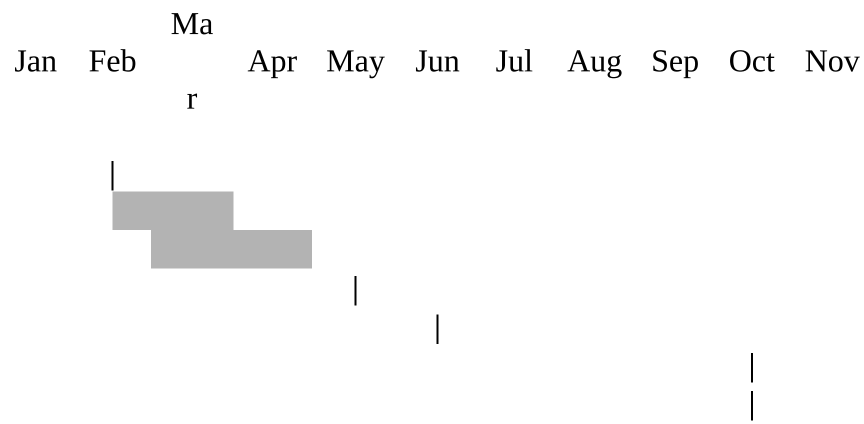
Unit 255

Closure Schedule

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
1. Decontamination of containment and equipment											
2. Receipt of lab results											
3. Unit 255 closed											
4. Closure Certification to ~~UDSHW~~UDWMRC and Tooele											
5. Notice to Tooele County land records											

Unit 535

Closure Schedule



1. Final receipt waste
2. Waste removal
3. Decontamination of containment and equipment
4. Receipt of lab results
6. Unit 535 closed
7. Closure Certification to ~~UDSHW~~UDWMRC and Tooele
8. Notice to Tooele County land records

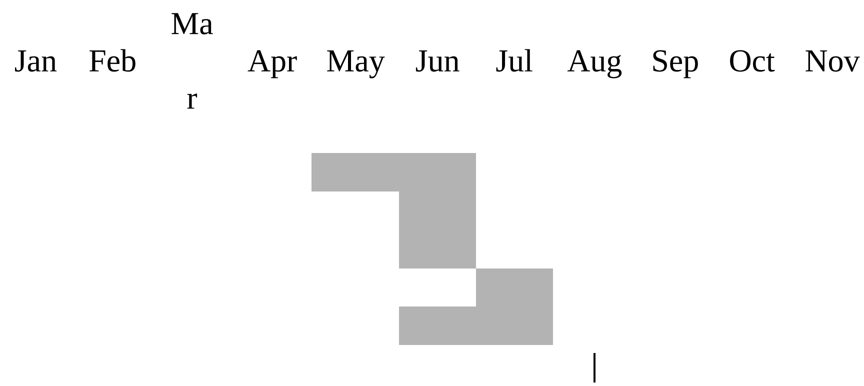
Unit 604

Closure Schedule

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
1. Decontamination of containment and equipment											
2. Receipt of lab results					|						
3. Unit 604 closed						|					
4. Closure Certification to ~~UDSHW~~UDWMRC and Tooele										|	
5. Notice to Tooele County land records										|	

Soil Sampling

Closure Schedule



1. Visual inspection
2. Sampling of external areas, access road, and rail areas
3. Random sampling of internal non-paved areas
4. Inspection and sampling of paved areas inside fence
5. Survey and mark sampling grid points
6. Receipt of lab results

3.0 Financial Assurance

3.1 Financial Assurance for Closure

Clean Harbors Clive, LLC, as the owner/operator of the Clive facility, is required to provide assurances that there will be funds available to close the facility at some time in the future. The purpose of these assurances is to guarantee that closure can be performed by a third party, if for some reason Clean Harbors ~~Clive facility~~ is unable to do so itself at a future point in time when the cost would be maximized. As specified by Section 2.2 of this attachment, the minimum dollar amount to be guaranteed, in 2001 dollars, is $6,481,593. This figure will be updated at least annually in response to inflation, and as often as needed to reflect changes in Clean Harbors Clive facility.

~~There are six different methods allowed by the rules to guarantee the Closure Costs:~~

- ~~Closure Trust Fund~~
- ~~Surety Bond Guaranteeing Payment into a Closure Trust Fund~~
- ~~Surety Bond Guaranteeing Performance of Closure~~
- ~~Closure Letter of Credit~~
- ~~Closure Insurance~~
- ~~Financial Test and/or Corporate Guarantee.~~

~~Clean Harbors~~ Clive ~~facility~~ currently uses Closure Insurance as the financial assurance mechanism for the Clive facility. The current closure insurance policy, policy number PLC PEC004203103~~5257047 xx~~, is provided by Indian Harbor~~Steadfast~~ Insurance Company. The current financial assurance documentation is maintained at the office of the Division of ~~Solid and Hazardous~~ Waste Management and Radiation Control. ~~Clean Harbors~~ Clive ~~facility~~ shall remain in compliance with the applicable provisions of the regulations for the financial assurance mechanism used for closure.

3.2 Financial Assurances for Post-Closure

~~Since~~ As there are no land-disposal units at ~~the~~ Clive ~~facility~~, there is no requirement for any Post-Closure care, hence no need for ~~any~~ Post-Closure Financial Assurance.

3.3 Liability Requirements

Clean Harbors Clive facility maintains liability insurance for sudden accidental occurrences, as required by the rules cited and Condition 2.P. of the Permit. Currently, liability insurance for the Clive facility is provided by Indian Harbor~~Steadfast Insurance~~ Company, policy number PEC004203903~~PLC 3743936 xx~~. The certificate of insurance for the required liability insurance as specified by ~~40 CFR~~R315-~~-~~264~~.~~-147 is maintained on file at the office of the Division of ~~Solid and Hazardous~~ Waste Management and Radiation Control.

APPENDIX A

BUILDING AND EQUIPMENT SAMPLING PLAN

CLEAN HARBORS CLIVE, LLC

CLIVE, UTAH

APPENDIX A

BUILDING AND EQUIPMENT SAMPLING PLAN

CLEAN HARBORS CLIVE, LLC

CLIVE, UTAH

1.0 Introduction

This Building and Equipment Sampling Plan has been developed to describe the sampling of rinse waters. The rinse waters result from decontamination of the various waste management units and pieces of machinery and equipment at ~~the Clean Harbors~~ Clive ~~facility facility~~ as provided for in this closure plan. This is one of the methods provided to establish that the item in question has been sufficiently decontaminated that it may be declared as "closed" under ~~UDSHW~~UDWMRC authority, as well as RCRA, TSCA and HSWA, and be released from regulation by these programs. A series of samples will be taken of the rinse waters resulting from the cleaning of various items and structures, over the closure period. Samples of the rinse waters will be analyzed for the parameters listed in Table 1.3, which is included in this Appendix and the Closure Plan, Attachment 7 of the permit. The parameters listed in the Table are those that are expected to be most prevalent on the surfaces being cleaned. Analyses for specific organic compounds are not included as these are, for the most part, relatively volatile compounds that are not expected to be present following closure activities. Any heavier compounds which are not expected to volatilize will be measured by the indicators of contamination which are included on the Table. The rinse waters will be produced from the decontamination of ~~so-called~~ "hard surfaces" only, representing the contamination of a relatively impervious surface. Any porous surfaces suspected of being contaminated may be disposed of or decontaminated in accordance with the Hazardous Debris Treatment Standard (~~40 CFR~~R315--268~~.~~-45).

This Building and Equipment Sampling Plan is intended to outline the sampling methods and procedures to be used, and analytical protocols. Any proposed changes to this Plan ~~will~~ must be prepared and submitted to the Division of ~~Solid and Hazardous~~ Waste Management and Radiation Control for approval, prior to actual sampling in accordance with Condition I.D.2 of the permit.

It is presumed that any spills of waste which occurred during the operation of ~~the~~ Clive ~~facility~~ will be cleaned up at the time the spill occurred. This Plan may be used to determine whether such spills have ~~indeed~~ been totally removed and if decontamination of equipment has been successful.

Table 1.3
Decontamination Rinse Water Analysis

Parameters (T=Total Metals)	Maximum Concentration Increase* (mg/l)
Oil and Grease	15.0
Phenols	0.2
Arsenic - T	0.1
Barium - T	5.0
Cadmium - T	0.03
Copper - T	1.0
Lead - T	0.1
Mercury- T	0.005
Selenium - T	0.05
Silver - T	0.1
Total Organic Halides	0.5
Total Organic Carbon	40.0
Cyanides	0.2

*The values given are the maximum allowable increase in a parameter, over the level that exists in the final rinse water prior to use. This "prior existing level" shall be established as the average of at least three (3) analyses of the rinsewater, plus three (3) standard deviations. These analyses will be made at the time of closure, when a water source is known.

2.0 Rationale

This ~~plan~~ Building and Equipment Sampling Plan is intended to provide for the representative sampling of rinse water produced during the decontamination of specific items at ~~the~~ Clive ~~facility~~. If Clive demonstrates the structure or equipment has been decontaminated in accordance with this sampling plan and ~~This testing, when conducted, demonstrates that the item in question has been decontaminated to~~ the standards of the Closure Plan and certified~~s~~ by Clive and an independent professional engineer in accordance with the permit, the structure or equipment ~~and~~ may be released from regulation under RCRA and related Utah State law upon approval by the Director.

It is assumed that the parameters listed in Table 1.3 will represent the most likely and highest quantity contaminants likely to be present at closure. If these constituents are not found at levels above those listed in Table 1.3, then other hazardous compounds are ~~not likely to~~ assumed to not be present ~~either~~.

3.0 Sampling Locations

Samples will be obtained from the immediate area of the item being decontaminated, and will represent only a single class of material or equipment. For example, during the cleaning of the interior of a piece of equipment, the sample will be obtained by catching a grab sample drained from the lowest of the piece of equipment; for the exterior, however, the sample would be taken from the sump which caught the rinse water as it drained off of the equipment. It is intended that samples represent only a single waste management unit (e.g., a single piece of equipment, or a single container management containment area). When auxiliary equipment such as forklifts from a single management unit, etc., is cleaned, several may be combined in one sample. Further, all hand tools and related small items in a particular waste management unit may be combined in one sample.

All samples taken will be grab samples, intended to represent the entire volume of the final rinse water used to clean an item. ~~All workers involved in the cleaning process will be instructed to not attempt to influence the sample results by adding extra water for dilution.~~ The bulk of the rinse water will be allowed to drain from the surfaces of the item being cleaned, and to collect in the sump or other sampling point, prior to sampling, to attempt to assure a representative sample.

Samples will be placed in glass containers which will be placed in iced coolers for storage and transportation to the laboratory in accordance with the chain of custody procedures, minimum holding times and analytical procedures specified in Appendix D.

Samples will be taken from essentially two types of locations: for interior cleaning, the sample will be taken from a drain line or pipe; whereas for exterior cleaning, the sample will be taken from the sump where the rinse water collects. Samples from interior cleaning will be taken, wherever possible, by draining the rinse water directly into the sample container. Where it is not possible to drain the rinse water directly into the sample container, and for rinse waters contained in the sumps, samples will be obtained by a method such as dipping a clean glass jar into the sump, or using a weighted bottle, or similar means. Any of the various methods described in SW-846 and the Waste Analysis Plan may be used~~, depending upon equipment availability and convenience~~. The goal of the sampling will be to obtain a representative sample, free from external contamination, from an area where the rinse naturally collects, and prior to its being vacuumed or pumped into temporary storage for eventual treatment or disposal.

4.0 Time of Sampling

Sampling will occur as soon as possible after the second rinse has been performed, and the bulk of the water has been allowed to drain from the item in question into secondary containment. As the closure of ~~Clean Harbors~~ Clive ~~facility~~ will be a dynamic process, sampling will occur on a continuing basis over the closure period.

~~Clean Harbors~~ Clive ~~facility~~ will notify the Utah Department of Environmental Quality, Division of ~~Solid and Hazardous~~ Waste Management and Radiation Control (DWMRC) x hours in advance~~,~~ of the anticipated times and dates for the sampling of the rinse water from the decontamination processes. The ~~DSHW~~ DWMRC may take split samples of rinse water at their discretion.

5.0 Constituent Analysis

All samples will be analyzed for the parameters listed in Table 1.3. The variety of constituents listed is extensive enough to provide for the detection of the most predominant and potentially most hazardous constituents that are likely to be in the waste materials received at ~~the~~ Clive ~~facility~~ and remain on non-porous surfaces.

All sample analyses will be conducted in accordance with the standards set by SW-846. QA/QC will be in accordance with Appendix 1, the Quality Assurance Plan, of Attachment 1 (the Waste Analysis Plan) of the Clean Harbors Aragonite Permit, SW-846, and the WAP. ~~or the WAP Quality Assurance Plan of the Utah NELAP certified lab being used.~~ All laboratories that run analysis required by this Plan will be Utah-certified or NELAP-certified for the particular analytical method. ~~All analyses that Utah certifies will be conducted by a Utah NELAP certified laboratory.~~ Holding times and analytical methods are summarized in Appendix D. Appropriate methods listed in the ~~Clean Harbors~~ Clive ~~facility~~ WAP and/or equivalent EPA Clean Water Act methods may also be used.

6.0 Sampling Procedure

The Sampling Procedure has been developed to result in samples representative of each individual "batch" of final rinse water ~~produced~~ generated during the closure of ~~Clean Harbors~~ Clive ~~facility~~. All sampling will be arranged~~coordinated~~ by the Closure Project Manager, who will coordinate sampling with DWMRC personnel. The sampling activities will be in accordance with the following procedures:

6.1 Planning the Sampling Event

~~These are guidelines, not requirements, except where noted.~~

1. Sampling must be anticipated as an on-going task, and not as a single event or short-term task. ~~Therefore, all preparations must be made on a more-or-less continuous basis~~. The following tasks will be addressed before the actual sampling event:
    1. Sample containers will be prepared and labeled.
    2. The designated personnel will gather all required equipment for the sampling events which may include but not be limited to:
        a. Sampling cups, bailers, or sampling bottles.
        b. Measuring Tape, if needed.
        c. Ground Cloth, if needed to lay equipment on to prevent contamination.
        d. Safety equipment.
        e. Sample jars should be labeled to identify the sample number, and type of item or equipment being cleaned, date and time.
        f. Sample vehicle: for transportation of the Sampling Team and the soil samples between the closure area and the laboratory. (Not necessarily motorized-may be a cart or dolly.)
        g. Field Log Book: Information to be recorded in this book (required) will include, but is not limited to, the following:
            i. Project Title
            ii. Sample Identification Number
            iii. Sample Location
            iv. Sample Type
            v. Sample Description (include any appropriate visual evidence of contamination)
            vi. Date and time
            vii. Sample collector
        h. Supply of Kimwipes, deionized water and water bottles to be used for decontaminating sampling equipment between samples.
        i. Copy of the Closure Plan, ~~and~~ this Appendix A, Appendix (Aragonite WAP and QA).

    When the equipment is gathered each piece will be inspected. Any equipment needing repair or replacement of parts will be repaired at this time. All required equipment will be operational on the day of sampling. ~~(required).~~

2. Actual Sampling Preparation (required)
    1. Field Sampling Equipment -- Equipment will be decontaminated prior to use. ~~in the field.~~
    2. Health and Safety -- Prior to leaving the laboratory, each piece of safety equipment must be checked for fit and applicability.

3. Sample containers -- Prior to sampling, sample containers will be rechecked to assure that there is a full set. The sampling containers will be carried to the field in pre-iced chests.
4. Documentation Package -- The following list will be checked for the sampling event to assure proper documentation:
    a. Field Log Book
    b. Sample Forms
    c. Chain-of-Custody forms
    d. Writing tools (pencil, pen and permanent marker)

6.2 Sampling Plan

1. The ~~plan~~ Sampling Plan for each sampling event will be determined prior to sampling and will be based on the following considerations:
    1. The Sampling Schedule specified by the Closure Project Manager.
    2. Due to the individual nature of the samples being taken, and the nature of the sample site, a designated Sampling Route and Strategy will not be necessary.

6.3 Field Sampling Protocol

1. The samples obtained for analysis during a sampling event will be grab samples. The Sampling Team will return to the laboratory after the samples have been obtained and prepare them for shipping.
    1. Each sample will be securely packaged and the necessary data from the field log book will be transferred to the report sheets and placed in a shipping container.
    2. Appropriate personnel will verify that all analytical request sheets specify the correct analysis, review the Chain-of-Custody forms and sign the sheets before they are placed inside the cooler. Once all the items have been placed with the packaged sample containers, the cooler will be sealed with a custody seal and secured ready for shipment to the laboratory.
    3. The analytical procedure to be performed on the samples will be total concentration parameters listed on Table 1.3.

6.4 Certification of Completion

The Sampling Team Leader will inform the Closure Project Manager daily of problems encountered during the sampling event or any deviations from the Sampling Procedures. The Utah Department of Environmental Quality, Division of ~~Solid and Hazardous~~ Waste Management and Radiation Control will also be kept informed on a weekly ~~monthly~~ basis, and certifications of all acceptable sample results (those demonstrating acceptable decontamination) will be submitted when Closure is certified. The certification will contain all relevant data.

APPENDIX B

CONTAMINATED SOILS SAMPLING PLAN

CLEAN HARBORS CLIVE, LLC

CLIVE, UTAH

APPENDIX B

CONTAMINATED SOILS SAMPLING PLAN

CLEAN HARBORS CLIVE, LLC

CLIVE, UTAH

1.0 Introduction

This Contaminated Soils Sampling Plan has been developed to describe the sampling of soils in the vicinity of ~~the Clean Harbors~~ Clive facility at the time of facility closure. ~~This is being done in order~~Soil samples will be collected to investigate the possibility of contamination of ~~nearby~~ soils as a result of the operation of the facility. A series of near-surface soil samples are proposed over various parts of Section 36, T1S, R12W, SLB&M, Tooele County, for this purpose. This will be combined with a review of the operating record and a visual examination of the area for obvious staining or deposits which would also indicate contamination.

The soils beneath the waste containment areas will also be evaluated under this Contaminated Soils Sampling ~~plan~~ Plan if, upon final closure, a review of the operating record or a close examination of the sumps and containment indicates cracking or other deterioration that would be indicative of a leak or loss of integrity. If a leak or loss of integrity in containment is suspected, Clive may collect core samples of the soil and/or concrete ~~will be collected~~ to confirm or refute the suspicion of contamination of the subsoils or assume contamination and remove the concrete and soil to background levels established prior to facility operations in Appendix E of the Closure Plan. If sampling confirms contamination ~~is confirmed~~, both concrete and soils will be removed as needed until all contamination is at or below the "background" levels ~~established prior to facility operations~~ in Appendix E of the Closure Plan. ~~Alternatively, if soil contamination is suspected in the area of a crack, core sampling may be bypassed by assuming contamination exists and the facility may proceed directly to removal of concrete and soil.~~ If a unit had been previously ~~idled~~ certified close in accordance with the permit, ~~and~~ the unit was not reactivated prior to closure, and a close examination of the sumps and containment at that time indicated no cracking or other deterioration that would be indicative of a leak or loss of integrity, this exercise does not have to be repeated.

Samples will be analyzed for parameters listed in 40 CFR 122, Appendix D, Tables II and III, which are commonly referred to as "Priority Pollutants", (see Appendix C) as well as several indicators of contamination and compounds or elements known to naturally occur at relatively high levels. This Contaminated Soils Sampling Plan is intended to outline the procedure to determine sampling locations, methods and procedures to be used, and analytical parameters.

The Contaminated Soils Sampling Plan concentrates on the sampling of soils in the vicinity of the facility itself, rail spurs and the haul roads used for waste transport into and out of the facility. A series of samples will be taken and analyzed using a numbered grid pattern, with actual locations determined by random methods. These locations are not specified at this time, to prevent any bias in treatment, but the method for location selection is described.

~~Any proposed changes to this Plan will be prepared and submitted to the~~In accordance with Condition I.D.2, the Director of the Division of ~~Solid and Hazardous~~ Waste Management and Radiation Control , Utah Department of Environmental Quality, must approve any changes to the Contaminated Soils Sampling Plan ~~for approval,~~ prior to actual sampling. The permit requires Clive to clean up ~~It is presumed that~~ any spills of waste at the time ~~which~~ the spill occurred during the operation of ~~the Clive~~ facility~~were completely cleaned up at the time~~. However, to verify that ~~no spills occurred which were not cleaned up~~no contamination remains, this sampling program will be conducted.

2.0 Rationale

This Contaminated Soils Sampling P~~p~~lan is intended to accomplish the goal of providing a reasonable examination of the soils in the vicinity of ~~Clean Harbors~~ Clive ~~facility~~ to detect the presence of certain specified contaminants known to be constituents of hazardous waste. The presence of these contaminants is considered an indication of a spill, leak, or discharge of hazardous waste which warrants further investigation and cleanup to remove this contamination. The data gathered at this time will be compared against background data gathered prior to facility startup in Appendix E.

This Contaminated Soils Sampling ~~plan~~ Plan is designed~~attempts~~ to provide a ~~realistic cross-section~~ indication of any soil contamination which may exist in the vicinity of ~~Clean Harbors~~ Clive ~~facility~~ at the time of closure. Thirty-two sampling points are chosen in the area of ~~Clean Harbors~~ Clive ~~facility~~, to represent possible spatial variations. The parameters chosen for analysis are the ones analyzed for during the Background Soils Sampling program conducted during facility construction. ~~At the time, these~~~~the background parameters~~ ~~were presumed to be the most common and largest volume constituents among the literally thousands of various compounds that were to be received at the Clive facility over its lifetime. It is assumed that at the time of closure that, if these more common constituents are not found at increased levels, then less common compounds are likely not present either.~~

~~Prior to beginning closure of the Clive facility, Clean Harbors Clive will review waste receipts at the facility, to determine if there might be cause to analyze for parameters in addition to those described above. If this review indicates that additional analyses are needed, a specific plan will be developed for establishing background and clean-up levels for the new parameters. The UDSHW will be consulted regarding this review, and any subsequent sampling and analysis plans will be subject to UDSHW approval before implementation.~~

Random sampling will be combined with a thorough visual search of ~~Clean Harbors Clive~~the facility, looking specifically for areas that appear to be contaminated.

3.0 Sampling Locations

In the selection of sampling locations, the extent of any geographical variation in contaminant levels is unknown. The goal of this Contaminated Soils Sampling ~~plan~~ Plan is to provide a representative picture of constituent levels in the vicinity of ~~The Clean Harbors~~ Clive ~~facility~~, and to determine if ~~Clean Harbors~~ Clive has contributed any contamination. Rather than limiting the Contaminated Soils Sampling Plan to the facility proper, samples will be taken over areas within 300 feet of the facility and the main access road (See Figures I-C-1, I-C-2, I-C-3, I-C-4). Operating units at the Clive facility are concentrated in the Southeast Quarter of Section 36, T1S, R12W, Tooele County. To provide the desired representative picture, three different sample protocols are used: one for the facility proper, and one for the area external to the facility, and one for the area surrounding the main access road and rail area. As described later in this Appendix, each of these three areas will be divided into grids, with each grid node numbered sequentially. Numbering will be re-started for each area. Using ~~either~~ random number tables, or similar means, several grid nodes will be randomly chosen for sampling to determine if contamination exists.

Additional samples will be taken if any of these areas are found to be contaminated. All samples will be analyzed independently, and the results compared against the Background Levels ~~established by the Background Soils Sampling Plan~~ found in Appendix E of this Closure Plan~~.~~.

~~Samples~~ The initial random samples will be taken from the surface to a depth of four inches ~~and will be~~ representingative of the interval.

In areas where ~~rock is present, and~~ samples cannot be obtained with soil sampling equipment, the sample will be collected as close to the designated location as possible. Changes in sampling location will be documented, including a description of the basis for the changed ~~location~~ ~~.~~location.

3.1 Visual Inspection

Facility personnel will visually inspect the roadways, rail spur, sampling areas, unloading areas, and the area within 300 feet of all portions of the facility. Based on these visual observations, any soil surfaces that appear to be contaminated ~~with hazardous wastes~~ will be excavated and sampled to verify that the Background Level specified in Appendix E has been achieved. Once verified, the excavation will be backfilled with clean soil. A simple random sampling strategy will be utilized to determine the cleanliness of any areas which appear to be contaminated. These areas will be divided into numbered grids; the grid size and total number of grids will naturally depend upon the size and shape of the area suspected of contamination, but in general, grids will be square, and will cover between 250 and 1000 square feet. The total area will be divided into sub-areas of 30 to 50 grids each, based upon a subjective determination by the Closure Project Manager considering likely sources of contamination, areas of contamination, the means to be used for removing any contamination actually found, visual clues, etc. From each sub-area so identified, five grids will be randomly chosen; a sample will then be taken from the approximate center of each chosen grid, and these five samples will then be composited and mixed for analysis. The results from this single composite sample will be assumed to represent the entire sub-area from which it was taken, to whatever depth was sampled.

Depending upon the size of the area, this approach may be more extensive than necessary. If the area is relatively small, the Closure Project Manager may elect to take a few samples equally spaced throughout the area, as sufficient to represent the visual contamination with coordination DWMRC. This process will be repeated for each depth of soil removal until the sample analyses are at or below the Background Level established for all parameters. If the excavated soil is proven analytically to meet the Background Levels specified in Appendix E, the ~~U~~uncontaminated soil will be backfilled into any excavated portions. Backfilling should not take place until all samples are at background levels.

The discrete samples from which the composite was made will also be retained. ~~Clean Harbors~~ Clive may be required to analyze each individual sample, to localize the area of contamination, if determined necessary by the D~~SHW~~WMRC.

3.2 Random Samples -- Facility Proper -- Unpaved Areas ~~STOPPED HERE!!!~~

~~The~~ Clive ~~facility~~ proper measures approximately 1200 feet square, although there are a number of irregularities in the facility boundary. A grid will be superimposed over the facility, with spacing of 100 feet by 100 feet, resulting in 169 grid nodes (see Figure I-C-2). Some of these nodes will fall over specific waste management units, while others will fall on parking, drives, or open areas. All nodes falling on waste units or paved areas will be discarded and adjacent location will be chosen and documented; the remainder - those nodes on unpaved areas - will be numbered sequentially. From these, a total of ten nodes will be randomly selected for sampling as described in 7.3 below.

Each grid node selected and sampled will be analyzed for the parameters listed, and the results compared to Background Levels specified in Appendix E. If all parameters are at or below the Background Levels, then the area represented by that sample is declared ~~as~~ clean. If the parameters are above ~~the~~ Background Levels, then a supplemental grid using 50 foot spacing will be imposed over the suspect grid node, extending one space (50 feet) in all directions. This 100 foot by 100 foot supplemental grid will contain nine grid points; all of these will be sampled and analyzed to determine the areal extent of contamination. If needed, this grid will be extended laterally until a sample is obtained that meets Background Levels.

For grid nodes which test "positive," soil will be removed in vertical two foot increments, and the area resampled until that node area meets Background Levels. Again, uncontaminated ~~clean~~ soils will be backfilled into any excavated area. Contaminated soil will be managed in accordance with the Waste Analysis Plan, Attachment 1 of the permit.

3.3 Random Samples -- Facility Proper -- Paved Areas

For the paved areas of the facility, a thorough visual inspection will be made to check for visible contamination. Any found on concrete will be removed as described in the Closure Plan, Section 1.8, for "hard surfaces." Contamination on areas paved with asphalt will be excavated. Sampling and analysis will be conducted to confirm that the contamination had been successfully ~~was~~ removed. Area where the Cr was spilled during the trial burn needs to be sampled.

3.4 Random Samples -- External to the Facility Proper

As discussed above, ~~the~~ Clive ~~facility~~ measures roughly 1200 feet square, with a number of irregularities in the boundary. Extending this area 300 feet to each side~~,~~ yields an area about 1800 feet square. The grid that was originally superimposed over the facility proper will be extended to the outer area, again using a spacing of 100 feet by 100 feet, resulting in 361 grid nodes (see Figure I-C-3). The 169 nodes of the facility proper will be discarded, as they have already been considered, leaving 192 nodes in a square border surrounding the facility. Certain of these nodes will duplicate those of the Access Road investigation described in Section 3.5, below, and these will be discarded as well.

All remaining grids will be numbered sequentially. Of these grids, 12 will be randomly selected for sampling. As the entire grid is external to the facility and any roads, no grid node will fall on a paved or hard surface. If contamination is found, additional sampling will be conducted in the area in order to determine the extent of the contamination.

Sampling and analysis will proceed as described for Section 3.2, above. Areas found to be contaminated will be excavated and backfilled with clean soil. Contaminated soil will be managed in accordance with the Waste Analysis Plan, Attachment 1 to thise permit.

3.5 Random Samples -- Access Roads and Rail Areas -- All Areas

The main access road into ~~the~~ Clive ~~facility~~, along with the rail switchyard, measures approximately 400 feet wide by 1200 feet long. Again, there are a number of irregularities in the boundary of this area. Extending this area 300 feet to each side, and 300 feet to the Northeast (the Southwest end abuts ~~the~~ Clive ~~facility~~ itself) yields an area 1000 feet wide by 1500 feet long. A grid will be superimposed over this area, with spacing of 100 feet by 100 feet, resulting in 176 grid nodes (see Figure I-C-4). Some of these nodes will fall over on parking, drives, or rail areas. All grids will be numbered sequentially. Of these grids, ten will be randomly selected for sampling. Any node selected that falls on a paved or hard surface will be moved to the nearest unpaved area, and the sample taken there.

Sampling and analysis will proceed as described for Section 3.2, above. Areas found to be contaminated will be excavated and backfilled with clean soil. All paved areas will be visually inspected as described in Section 3.3, and decontaminated as needed. Contaminated soil will be managed in accordance with the Waste Analysis Plan, Attachment 1 of the permit.

3.6 Random Samples -- Soils Beneath Containment Areas

The containment areas at ~~the~~ Clive ~~facility~~ are designed to totally contain any materials which are spilled or leaked during the operation of the facility. All such areas will be of Portland Cement concrete construction, and will be coated to prevent liquid seepage. However, it is possible that the containment may be compromised by cracking of, or other damage to, the concrete. Such cracking would be especially critical in the sumps which collect rainfall which falls on the area, as well as any spilled material. Although all sumps will be regularly inspected and emptied as part of the facility operations plan, the sumps will not be totally cleaned until closure. Therefore, it is possible that cracks will exist which are not found until closure. If such is the case, then evaluation of the soils beneath the cracked area will be needed.

As described in Section 1.8 of the Closure Plan, all concrete and soil within six inches of a crack where contamination is confirmed or assumed by ~~Clean Harbors~~ Clive, will be removed and managed as hazardous waste until the results of the analysis of underlying soils is obtained. Final disposition of these materials will depend upon the results of the analysis. Concrete will be broken for removal by jackhammers or other conventional means, and the broken concrete and soils will be shoveled into drums or gondolas for temporary storage.

The exposed area will then be sampled in accordance with TSCA regulation 40 CFR § 761 Subpart O. This is an EPA sampling method for sampling porous surfaces and is applicable for the sampling of small areas and thus is appropriate for selecting samples from areas which may be no more than one foot wide.

The discrete samples from which the composite was made will also be retained. ~~Clean Harbors~~ Clive may elect to analyze each individual sample, to localize the area of contamination.

3.7 Procedures for Soils Removal -- All Areas

As each grid is sampled and analyzed, the analytical results will be compared to the "background" values previously established. Background values can be found in Appendix E of this Closure Plan. Any grid with a value exceeding the background (mean plus three standard deviations) is considered ~~as~~ contaminated, and the soils represented by that grid will be removed for a depth of two feet. The grid will then be re-sampled and analyzed as before; if still found to exceed background, another two feet will be removed. This process will continue until the analysis shows that the grid area is below background values.

All excavations will be conducted with side slopes in conformance with OSHA standards. Consequently, the excavation will grow larger laterally as it is deepened, to account for both possible lateral as well as vertical spread of waste constituents. Once all contamination has been removed, the area will be backfilled with soil to the surrounding grade level.

Based upon the analytical results, several options are possible for disposal: disposal in a solid (non-hazardous) waste landfill; disposal in a hazardous waste landfill, in accordance with the Land ~~Band~~ Disposal Restrictions (LDR); and, treatment (e.g., incineration or stabilization) to meet ~~a Land Band~~the LDR standards, prior to disposal. All decisions on disposition of removed soils and concrete will be made after testing in accordance with the Waste Analysis Plan and/or this Closure Plan.

4.0 Time of Sampling

Sampling will occur at two distinct times during closure of ~~the~~ Clive ~~facility~~. The visual inspection of the entire area will take place at the start of Closure, and any suspicious areas will be investigated concurrently with Closure activities. At least every month, the Closure Project Manager will re-inspect to see if there have been any spills or leaks during Closure. The regular inspections performed in accordance with the operating permit and this closure plan will be continued as scheduled; each unit will be regularly inspected until that unit is finally closed. Finally, after all waste management units are closed at the facility, the Closure Project Manager will make a final visual inspection of the area, again checking for spills occurring during closure. All visual inspection will be documented in the operating record.

After all units at the facility are closed, the random sampling procedures will be instituted. These will take several months, mainly due to the wait for sample analyses. Any areas identified as contaminated will be promptly excavated and backfilled with clean soil.

The Utah Department of Environmental Quality, Division of ~~Solid and Hazardous~~ Waste Management and Radiation Control, will be notified, in writing, of the anticipated time(s) and date(s) for all closure soil sampling event(s) discussed in this Appendix at least 14 days in advance. The ~~UDSHW~~UDWMRC will be notified of final schedules for sampling via telephone at least 72 hours in advance. At their discretion, the ~~UDSHW~~UDWMRC may take split samples of the~~all~~ soil samples.

5.0 Constituent Analysis

For the purposes of establishing levels of contamination, it is proposed to follow the analytical procedures used for the Background samples, namely to analyze all samples for the total concentration of the 125 "priority pollutants" established by the U.S. EPA.

The variety of constituents listed is extensive enough to provide for the detection of the most predominant and potentially most hazardous constituents that may be in the waste materials received at ~~the~~ Clive ~~facility~~. ~~At closure, if these compounds are shown to be at or below the levels established by the Background Sampling Plan, then there is reasonable assurance that no other compounds will be present.~~

All analyses for which certification is possible will be conducted by a ~~Utah NELSP~~ Utah-certified laboratory. All sample analyses will be conducted in accordance with the standards set by SW 846 or equivalent EPA Clean Water Act methods. QA/QC will be in accordance with SW 846 or equivalent EPA Clean Water Act methods, and the procedures/protocol (or ~~WAP~~ Waste Analysis Plan (WAP), Attachment 1 of this permit, if applicable) of the ~~Utah~~ NELAP certified laboratory performing the analysis. Holding times and analytical methods in effect at the time of this submittal are summarized in Appendix D and/or the facility WAP. If there is a difference between the holding times/methods summarized in Appendix D and/or the facility WAP and holding times/methods in effect at the time of sampling for closure, the most current holding times/methods will be used.

6.0 Comparison to Established Background Values

As each set of analyses is completed, the results of each will be examined for any that appears to be an anomaly (a single sample that varies significantly from all others, for instance). Any sample noted will first be re-analyzed to rule out any laboratory error; if the anomaly still exists, the sample will be retaken and analyzed in the same fashion as the original samples in accordance with the Quality Assurance Plan in Appendix A of Attachment 1..

~~Once~~ If the anomaly is resolved (which may be the acceptance of the initial value as true and accurate for a given location), then the sample results will be compared against the Background Levels established by the Background Soils Sampling Plan. If the sample value for any parameter is above the Background, then soils must be removed. If all parameters are at or below the Background, then the area is declared as no further action.~~clean.~~

The Background Level for all constituents is the Mean value, plus three Standard Deviations. At closure, any area yielding an analytical value below this Background Level for all constituents will be considered as clean, and no further soil removal or decontamination will be necessary.

An exception to the above standard has been established to account for BDL values in the background sampling. For a given constituent, if the Background Level calculated (Mean + 3 sigma) is less than the stated Detection Limit, then the Background Level shall be taken as the Detection Limit. This will prevent establishing Background Levels lower than the analytical methodology can reliably measure.

7.0 Soil Sampling Procedure

The Soil Sampling Procedure has been developed to result in samples representative of the soils at the location to be examined, in the vicinity of the ~~Clive~~ facility. All soil sampling will be coordinated by the Closure Project Manager. The sampling activities will be in accordance with the following procedures:

7.1 Planning the Sampling Event

1. Pre-event Preparation -- The following tasks will be addressed before the day of the sampling event.

   1. Sample containers will be prepared and labeled. Sample containers for all soils samples will be wide-mouth glass jars with a minimum capacity of approximately one quart or liter. Soils samples (or sub-samples) will have a weight of two to four pounds each. The jar lids will be lined with Teflon (R) seals.

      Sample containers will also be available for water samples, should sampling of ground or surface water become necessary. Samples for metals analysis will be at least 500 ml in volume, and stored in glass jars. Samples for any organics analyses, except as noted below, will be at least one liter in volume and will also be stored in glass jars. Samples for purgeable organics will be placed in three, 40 ml glass vials and filled so that there is zero headspace in the vials. All container lids for water samples shall be lined with Teflon (R) seals.

      No field blanks will be ~~taken~~ required when sampling of soils occurs. Both field and trip blanks will be prepared and used if it should become necessary to sample ground or surface waters. The requirements of SW-846 will be followed in the preparation and handling of any such blanks.

   2. The designated personnel will gather all required equipment for the sampling event which may include but not be limited to:
      a. Soil-Sampling Hand Spade or Auger, or Mechanized Auger
      b. Soil Sampling Knife
      c. Measuring Tape
      d. Ground Cloth
      e. Safety equipment
      f. Sample jars should be labeled to identify the sample number, depth and type.
      g. Sample vehicle: for transportation of the Sampling Team and the soil samples between the closure area and the laboratory.
      h. Field Log Book: Information to be recorded in this book will include, but is not limited to, the following:
         i. Project Title
         ii. Sample Identification Number
         iii. Sample Location
         iv. Sample Type
         v. Sample Description (include any appropriate geologic terms and any visual evidence of contamination)
      i. Supply of Kimwipes, deionized water and water bottles to be stored in the laboratory for decontamination.

j. Copy of the Clive Closure Plan and this Appendix.

When the equipment is gathered each piece will be inspected. Any equipment needing repair or replacement of parts will be repaired at this time. All required equipment will be operational on the day of sampling.

2. Day of Sampling Preparation
   1. Field Sampling Equipment -- Equipment will be decontaminated prior to use in the field.
   2. Health and Safety -- Prior to leaving the laboratory, each piece of safety equipment must be checked for fit and applicability.
   3. Sample containers -- Prior to sampling, sample containers will be rechecked to assure that there is a full set. The sampling containers will be carried to the field in pre-iced chests.
   4. Documentation Package -- The following list will be checked for the sampling event to assure proper documentation:
      a. Field Log Book
      b. Checklist for sampling protocol
      c. Chain-of-Custody forms
      d. Analytical request form
      e. Writing tools (pencil, pen and permanent marker)
   5. Vehicle Loading -- The designated sampling vehicle will be loaded so that each piece of equipment is readily available during soil sampling.
   6. Cooler and ice.

7.2 Sampling Plan

1. The plan for the soil sampling event will be determined prior to sampling and will be based on the following considerations:
   1. The Soil Sampling Schedule specified by the Closure Project Manager.
   2. Based upon the procedures specified in this Plan, a designated Sampling Route and Strategy will be formulated to allow a smooth and logical progression of sampling.

7.3. Field Sampling Protocol

1. The samples obtained for analysis during a sampling event will be representative of the top four inches of the soil profile. The Sampling Team will return to the laboratory after the samples have been obtained and prepare them for shipping. Soil samples will be taken by one of several methods, depending upon equipment availability~~ and sample timing~~. Samples may be taken using shovels, trowels, or Shelby push-tubes.
   1. As the soil is being removed for sampling, it will be placed upon a clean ground cloth, or placed directly into the sample container.

2. After each sample is obtained from a given location, all tools and instruments that may have come into contact with the soils, as well as the ground cloth, will first be brushed or wiped clean of any loose soils or other obvious contamination. They will then be wiped with disposable toweling, to remove any visible traces of contamination, thoroughly wiped with toweling wetted with deionized water, and finally rinsed with deionized water, to insure that they are decontaminated. Solvent rinses, such as Acetone or Hexane, will not be taken into the field for decontamination purposes, as their presence could affect sample results.
3. Each soil sample will be securely packaged and the necessary data from the field logbook will be transferred to the report sheets and placed in a shipping container.
4. Appropriate personnel will verify that all analytical request sheets specify the correct analysis, review the Chain-of-Custody forms and sign the sheets before they are placed inside the cooler. Once all the items have been placed in ~~with~~ the packaged sample containers, the cooler will be sealed with a custody seal and secured ready for shipment to the laboratory.
5. The analytical procedure to be performed on the samples will be total concentration of the 125 "priority pollutants", as well as TOC, TOX, Oil and Grease, and cyanides.

7.4 Certification of Completion

The Sampling Team Leader will notify the Closure Project Manager that the scheduled sampling event has been completed. This will include problems encountered during the sampling event or any deviations from the Soil Sampling Procedures. The Utah Department of Environmental Quality, Division of ~~Solid and Hazardous~~ Waste Management and Radiation Control will also be notified of the beginning of each phase of sampling. A ~~brief~~ report will be submitted within 60 days following the completion of sampling to the ~~UDSHW~~UDWMRC, describing any cleanup efforts undertaken~~,~~ and containing the final results.

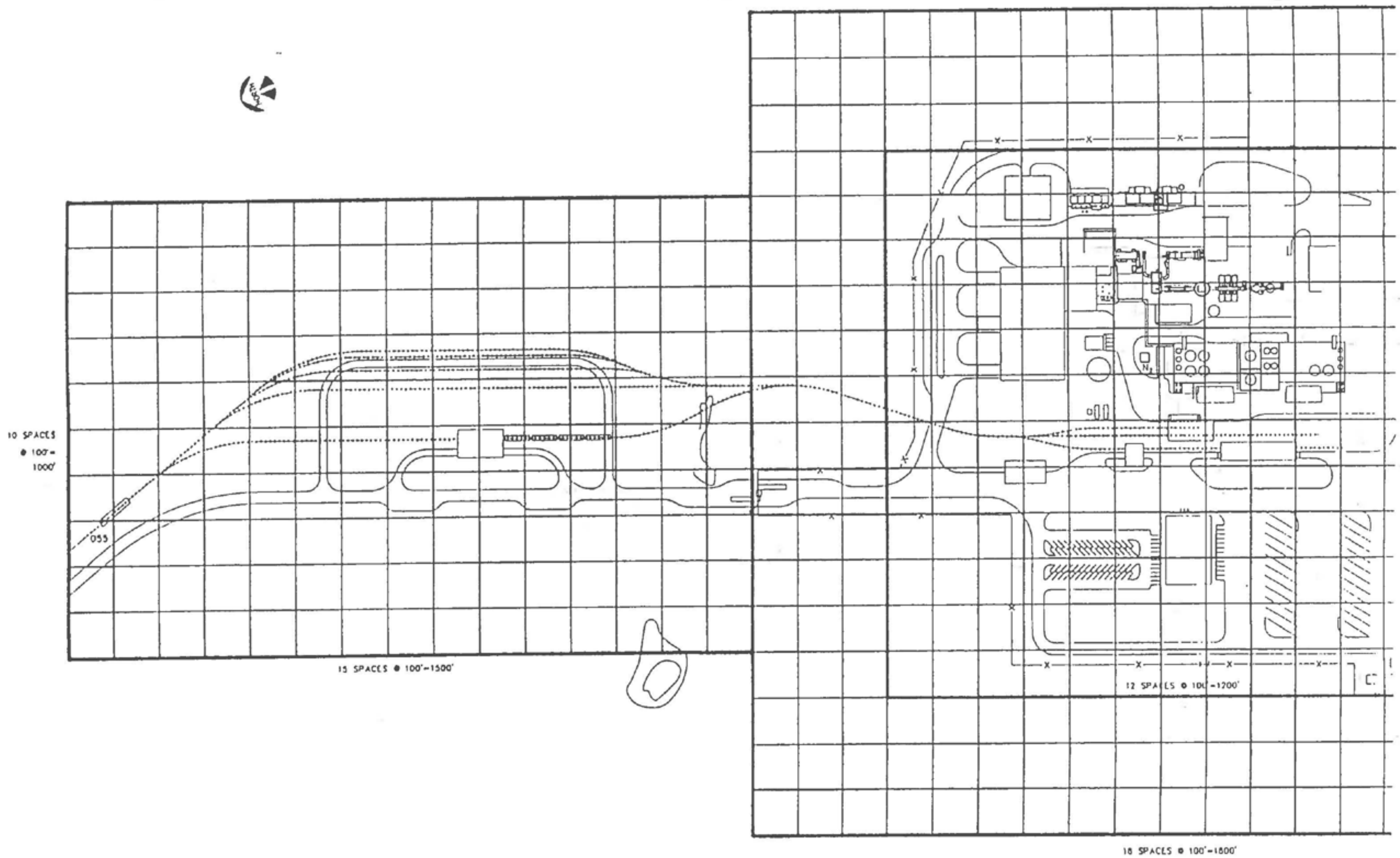


FIGURE 1-C-1

OVERALL SOILS SAMPLING GRID (TYP)

CLOSURE OF THE
CLIVE INCINERATION FACILITY

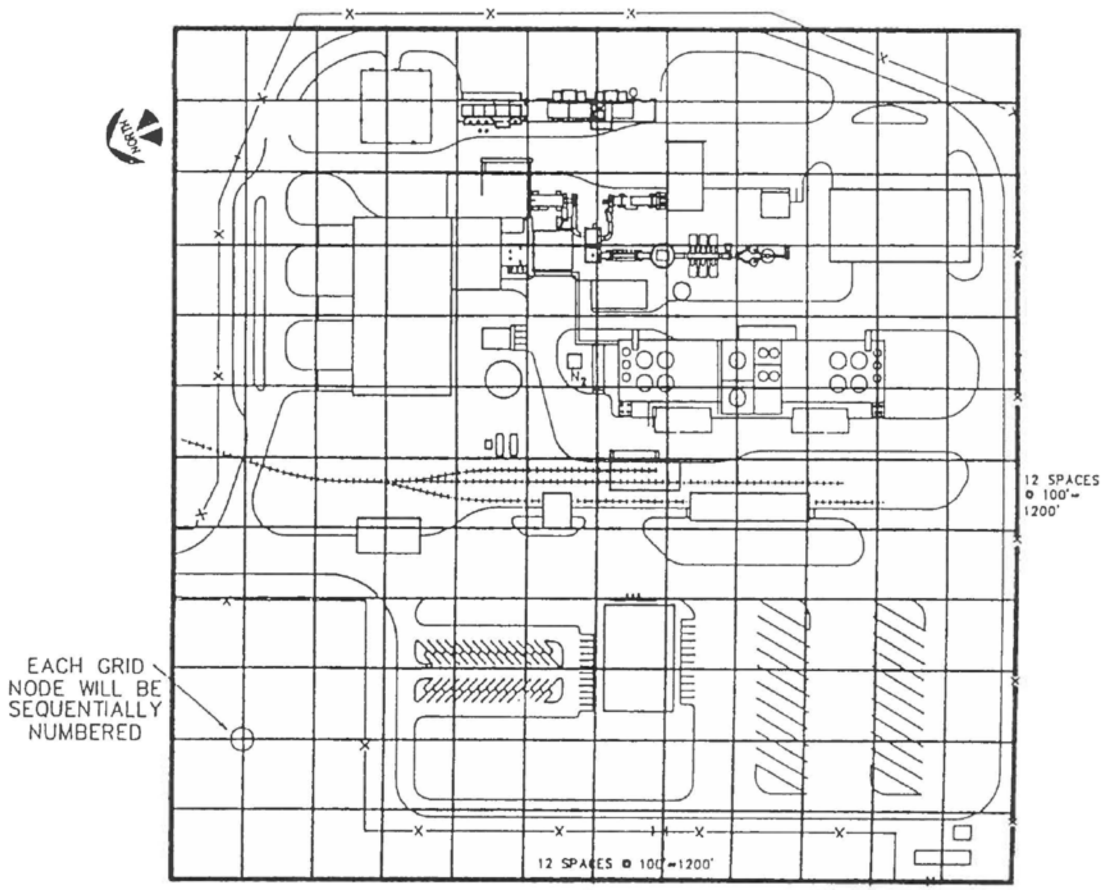


FIGURE I–C–2

SOILS SAMPLING GRID
FACILITY PROPER (TYP)
(REFER TO APPENDIX I–C, SECTION 3.2)
CLOSURE OF THE
CLIVE INCINERATION FACILITY

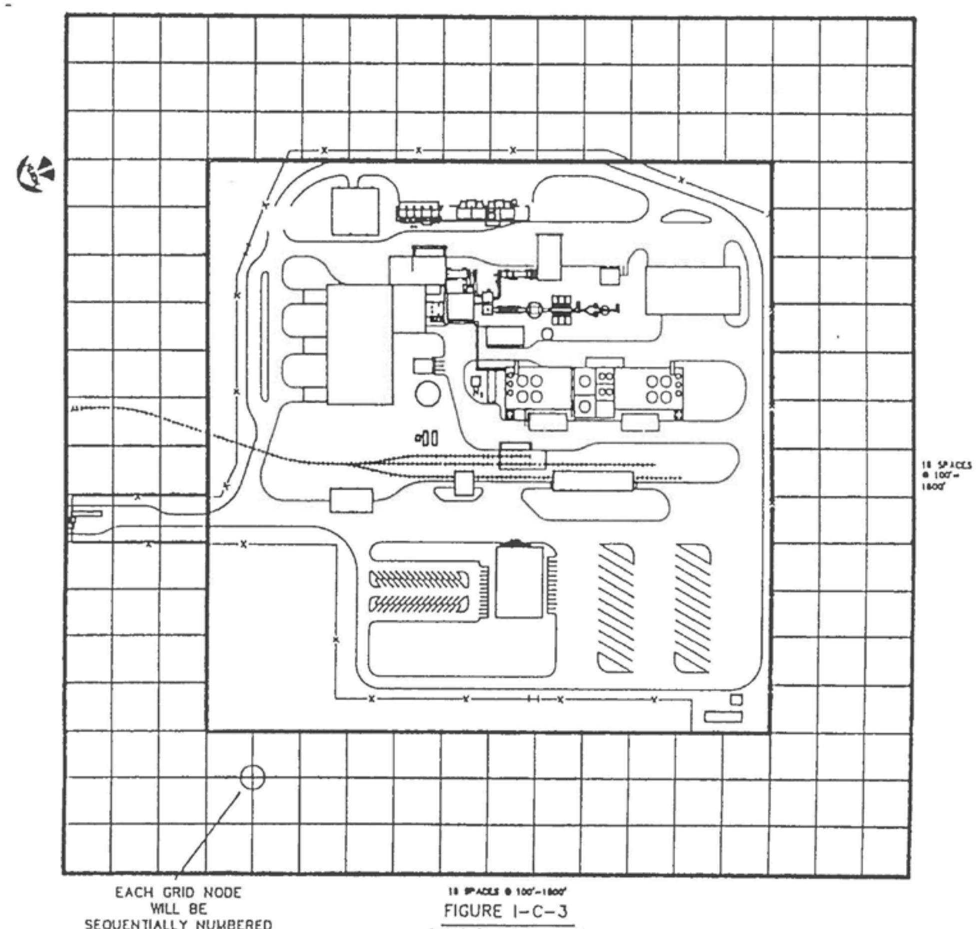


FIGURE I-C-3

SOILS SAMPLING GRID
EXTERNAL TO THE FACILITY PROPER (TYP)
(REFER TO APPENDIX I-C, SECTION 3.4)
CLOSURE OF THE
CLIVE INCINERATION FACILITY

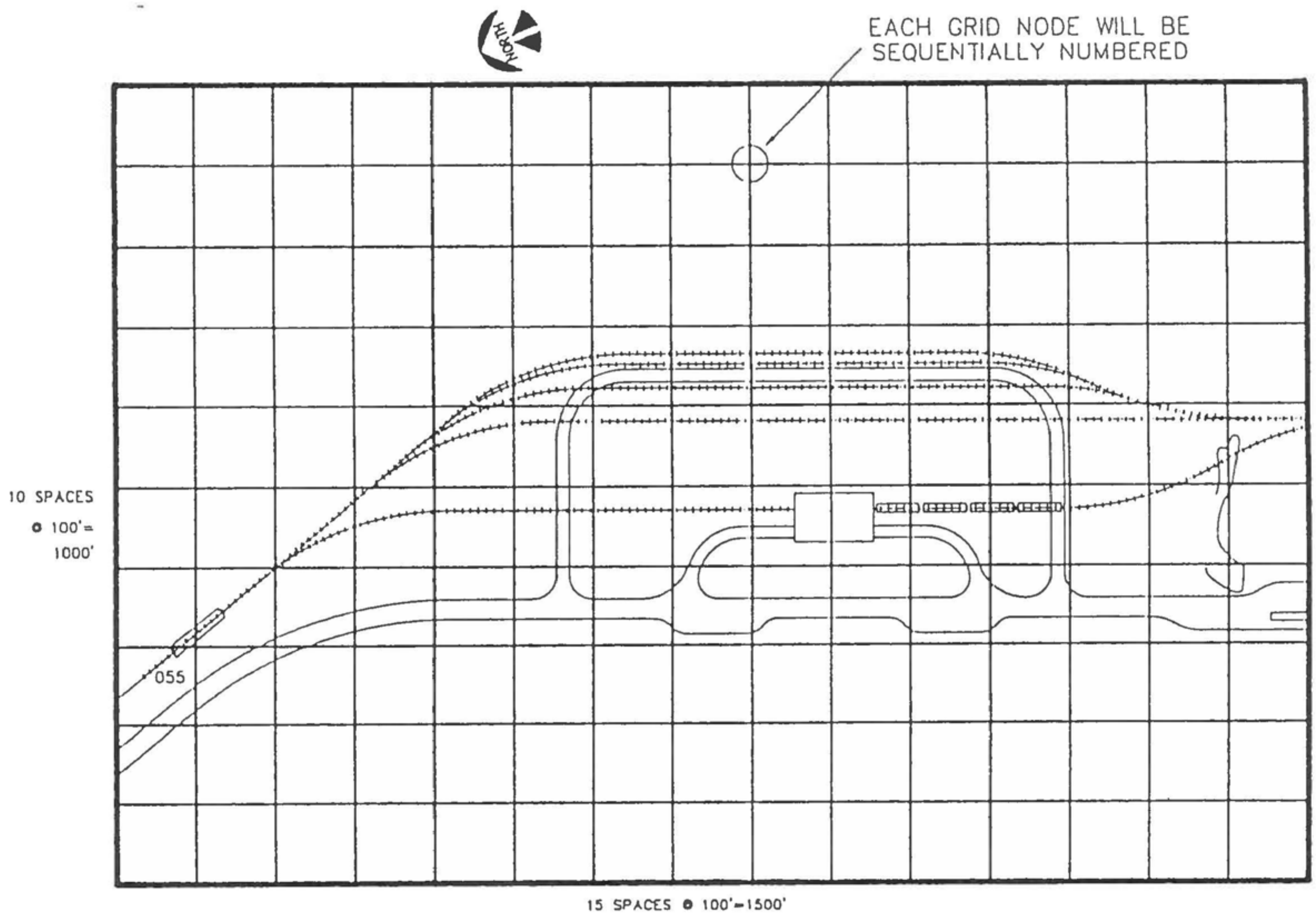


FIGURE I-C-4

SOILS SAMPLING GRID
ACCESS ROADS AND RAIL AREAS (TYP)
(REFER TO APPENDIX I-C, SECTION 3.5)

APPENDIX C

"PRIORITY POLLUTANTS" LIST

(From 40 CFR Part 122, Appendix D, Tables II and III)

"PRIORITY POLLUTANTS" LIST

From 40 CFR Part 122, Appendix D

TABLE II - ORGANIC TOXIC POLLUTANTS IN EACH OF FOUR FRACTIONS IN ANALYSIS BY GAS CHROMATOGRAPHY/MASS SPECTROSCOPY (GS/MS)

Volatiles

1V acrolein	9V chloroethane	17V 1,2-dichloropropane	24V tetrachloroethylene
2V acrylonitrile	10V 2-chloroethylvinyl ether	18V 1,3-dichloropropylene	25V toluene
3V benzene	11V chloroform	19V ethylbenzene	26V 1,2-trans-dichloroethylene
5V bromoform	12V dichlorobromomethane	20V methyl bromide	27V 1,1,1-trichloroethane
6V carbon tetrachloride	14V 1,1-dichloroethane	21V methyl chloride	28V 1,1,2-trichloroethane
7V chlorobenzene	15V 1,2-dichloroethane	22V methylene chloride	29V trichloroethylene
8V chlorodibromomethane	16V 1,1-dichloroethylene	23V 1,1,2,2-tetrachloroethane	31V vinyl chloride

Acid Compounds

1A 2-chlorophenol	4A 4,6-dinitro-o-cresol	7A 4-nitrophenol	10A phenol
2A 2,4-dichlorophenol	5A 2,4-dinitrophenol	8A p-chloro-m-cresol	11A 2,4,6-trichlorophenol
3A 2,4-dimethylphenol	6A 2-nitrophenol	9A pentachlorophenol	

Base/Neutral

1B acenaphthene	13B bis (2-ethylhexyl)phthalate	25B dimethyl phthalate	37B indeno(1,2,3-cd)pyrene
2B acenaphthylene	14B 4-bromophenyl phenyl ether	26B di-n-butyl phthalate	38B isophorone
3B anthracene	15B butylbenzyl phthalate	27B 2,4-dinitrotoluene	39B napthalene
4B benzidine	16B 2-chloronaphthalene	28B 2,6-dinitrotoluene	40B nitrobenzene
5B benzo(a)anthracene	17B 4-chlorophenyl phenyl ether	29B di-n-octyl phthalate	41B N-nitrosodimethylamine
6B benzo(a)pyrene	18B chrysene	30B 1,2-diphenylhydrazine (as azobenzene)	42B N-nitrosodi-n-propylamine
7B 3,4-benzofluoranthene	19B dibenzo(a,h)anthracene	31B fluroranthene	43B N-nitrosodiphenylamine
8B benzo(ghi)perylene	20B 1,2-dichlorobenzene	32B fluorene	44B phenanthrene
9B benzo(k)fluoranthene	21B 1,3-dichlorobenzene	33B hexachlorobenzene	45B pyrene
10B bis(2-chloroethoxy)methane	22B 1,4-dichlorobenzene	34B hexachlorobutadiene	46B 1,2,4-trichlorobenzene
11B bis(2-chloroethyl)ether	23B 3,3´-dichlorobenzidine	35B hexachlorocyclopentadiene	
12B bis(2-chloroisopropyl)ether	24B diethyl phthalate	36B hexachloroethane	

Pesticides

1P aldrin	7P 4,4´-DDT	13P endosulfan sulfate	19P PCB-1254
2P alpha-BHC	8P 4,4´-DDE	14P endrin	20P PCB-1221
3P beta-BHC	9P 4,4´-DDD	15P endrin aldehyde	21P PCB-1232
4P gamma-BHC	10P dieldrin	16P heptachlor	22P PCB-1248
5P delta-BHC	11P alpha-endosulfan	17P heptachlor epoxide	23P PCB-1260
6P chlordane	12P beta-endosulfan	18P PCB-1242	24P PCB-1016
25P toxaphene			

TABLE III - OTHER TOXIC POLLUTANTS (METALS AND CYANIDE) AND TOTAL PHENOLS

Antimony, Total	Chromium, Total	Nickel, Total	Zinc, Total
Arsenic, Total	Copper, Total	Selenium, Total	Cyanide, Total
Beryllium, Total	Lead, Total	Silver, Total	Phenols, Total
Cadmium, Total	Mercury, Total	Thallium, Total	

APPENDIX D

HOLDING TIMES AND ANALYTICAL METHODS

(Summarized from SW-846)

TABLE I

SAMPLE PRESERVATION AND HOLDING TIMES

Parameter	Method[1]	Container	Holding Time
Volatiles	SW 8260B	4 oz G	14 days
Semi-Volatiles (BNA)	SW 8270C	32 oz G*	~~14~~ 7days/40 days
Organochloride Pesticides	SW 8081A	32 oz G*	~~14~~ 7 days/40days
PCB	SW 8082	32 oz G*	~~14~~ 7 days/40 days
Herbicides	SW 8151A	32 oz G*	~~14~~ 7 days/40 days
Organophosphorus Pesticides	SW 8141A	32 oz G*	~~14~~ 7 days/40 days
Metals (Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn)	SW 6010B	32 oz G**	6 months
Mercury	SW 7471A	32 oz G**	28 days
Cyanide	SW 9010B SW 9014	32 oz G**	N/A
Oil & Grease	SW 9071A	32 oz G**	N/A
Phenols	SW 9065	32 oz G**	N/A

[1] Equivalent EPA Clean Water Act Methods or the SW-846 method for liquids or solids may be used even if not shown on this list.
All containers are glass with Teflon liner in the lid.
* Used for all organic parameters, except Volatiles.
** Used for inorganic analytes.
All samples preserved at 4˚C.

APPENDIX E

ESTABLISHED BACKGROUND CONCENTRATIONS

(Values Contained Herein are the Mean Plus 3 Standard Deviations)

PARAMETERS	UNITS	Backaround Concentrations *
Soluble Sulfate	mg/kg	16342.506
Soluble Chloride	mg/kg	11650.733
Solids (Total)	WT%	101.764
Antimony (Total)	mg/kg	5.000
Arsenic (Total)	mg/kg	5.000
Barium (Total)	mg/kg	298.072
Beryllium (Total)	mg/kg	0.500
Cadmium (Total)	mg/kg	0.500
Calcium (Total)	mg/kg	332143.840
Chromium (Total)	mg/kg	7.541
Copper (Total)	mg/kg	7.405
Lead (Total)	mg/kg	3.766
Magnesium (Total)	mg/kg	48079.970
Nickel (Total)	mg/kg	0.500
Potassium (Total)	mg/kg	7870.837
Selenium (Total)	mg/kg	5.000
Silver (Total)	mg/kg	0.500
Sodium (Total)	mg/kg	44482.355
Thallium (Total)	mg/kg	5.000
Zinc (Total)	mg/kg	252.715
Mercury (Total)	mg/kg	0.010
Aldrin	mg/kg	0.010
alpha-BHC	mg/kg	0.010
PCB-Aroclor-1016	mg/kg	0.100
PCB-Aroclor-1221	mg/kg	0.100
PCB-Aroclor-1232	mg/kg	0.100
PCB-Aroclor-1242	mg/kg	0.100
PCB-Aroclor-1248	mg/kg	0.100
PCB-Aroclor-1254	mg/kg	0.100
PCB-Aroclor-1260	mg/kg	0.100
beta-BHC	mg/kg	0.010
Chlordane	mg/kg	0.100
delta-BHC	mg/kg	0.010
Dieldrin	mg/kg	0.010
Endosutfan I	mg/kg	0.010
Endosulfan II	mg/kg	0.010
Endosutfan Sulfate	mg/kg	0.010
Endrin	mg/kg	0.010
Endrin Aldehyde	mg/kg	0.010
gamma-BHC	mg/kg	0.010
Heptachlor	mg/kg	0.010
Heptachlor Epoxide	mg/kg	0.010
Lsodrin	mg/kg	0.010
Kepone	mg/kg	0.010
Methoxychlor	mg/kg	0.100
Toxaphene	mg/kg	0.100
4,4'-DDD	mg/kg	0.010
4,4'-DDE	mg/kg	0.010
4,4'-DDT	mg/kg	0.010
Diethylpyrazinylphosphorothioate	mg/kg	0.005
Disutfoton	mg/kg	0.005

PARAMEIERS	UNITS	Background Concentrations *
Famphur	mg/kg	0.005
Methyl parathion	mg/kg	0.005
Parathion	mg/kg	0.005
Phorate	mg/kg	0.005
Tetraethyldithiopyrophosphate	mg/kg	0.005
tris(2,3- Dibromopropyl)phosphate	mg/kg	0.005
2,4-D	mg/kg	1.000
2,4,5-T	mg/kg	0.200
2,4,5-TP (Silvex)	mg/kg	0.200
Acrolein	mg/kg	0.100
Acrylonitrile	mg/kg	0.100
Benzene	mg/kg	0.005
Bromodichloromethane	mg/kg	0.005
Bromomethane	mg/kg	0.010
cis-1,3-Dichloropropene	mg/kg	0.005
Carbon Tetrachloride	mg/kg	0.005
Chlorobenzene	mg/kg	0.005
Chlorodibromomethane	mg/kg	0.005
Chloroethane	mg/kg	0.005
Chloroform	mg/kg	0.005
Chloromethane	mg/kg	0.010
Dibromomethane	mg/kg	0.005
Dlchloromethane	mg/kg	0.005
Ethyl benzene	mg/kg	0.005
Tetrachloroethene	mg/kg	0.010
Toluene	mg/kg	0.008
trans -1,2-Dichloroethene	mg/kg	0.005
Tribromomethane	mg/kg	0.010
Trlchloroethene	mg/kg	0.009
Vinyl chloride	mg/kg	0.010
1,1-Dichloroethane	mg/kg	0.005
1,1-Dichloroethene	mg/kg	0.005
1,1,1-Trichloroethane	mg/kg	0.005
1,1,2-Trichloroethane	mg/kg	0.005
1,2-Dibromoethane	mg/kg	0.005
1,2-Dichloroethane	mg/kg	0.005
1,2-Dichloropropane	mg/kg	0.005
1,1,2,2-Tetrachloroethane	mg/kg	0.005
2-Chloroethyl vinyl ether	mg/kg	0.010
Acenaphthalene	mg/kg	0.050
Acenaphthene	mg/kg	0.050
Anthracene	mg/kg	0.050
Benzo(a)anthracene	mg/kg	0.050
Benzo(a)pyrene	mg/kg	0.050
Benzo(b)fluoranthene	mg/kg	0.050
Benzo(g,h,i)perylene	mg/kg	0.050
Benzo(k)fluoranthene	mg/kg	0.050
Bis(2-ethylhexyl)phthalate	mg/kg	0.200
Bis(2-chloroethyl)ether	mg/kg	0.200
Bis(2-chloroethoxy)methane	mg/kg	0.200
Bis(2-chloroisopropyl)ether	mg/kg	0.200

PARAMETERS	UNITS	Background
Butylbenzylphthalate	mg/kg	0.200
Chrysene	mg/kg	0.050
Di-n-butylphthalate	mg/kg	0.200
Di-n-octylphthalate	mg/kg	0.200
Di-n-Propylnitrosoamine	mg/kg	0.200
Dibenzo(a,h)anthracene	mg/kg	0.050
Diethylphthalate	mg/kg	0.200
Dimethylphthalate	mg/kg	0.200
Fluoranthene	mg/kg	0.050
Fluorene	mg/kg	0.050
Hexachlorobenzene	mg/kg	0.200
Hexachloroethane	mg/kg	0.200
Hexachlorobutadiene	mg/kg	0.200
Hexachlorocyclopentadiene	mg/kg	0.200
Indeno(1 ,2,3-cd)pyrene	mg/kg	0.050
Isophorone	mg/kg	0.200
N-nitrosodiphenylamine	mg/kg	0.200
Naphthalene	mg/kg	0.050
Nitrobenzene	mg/kg	0.200
p-Chloro- m-cresol	mg/kg	0.400
Pentachlorophenol	mg/kg	0.100
Phenanthrene	mg/kg	0.050
Phenol	mg/kg	0.200
Pyrene	mg/kg	0.050
1,2-Dichlorobenzene	mg/kg	0.200
1,2-Diphenylhydrazine	mg/kg	0.400
1,2,4-Trichlorobenzene	mg/kg	0.200
1,3-Dichlorobenzene	mg/kg	0.200
1,4-Dichlorobenzene	mg/kg	0.200
2-Chloronaphthalene	mg/kg	0.200
2-Chlorophenol	mg/kg	0.200
2-Nitrophenol	mg/kg	0.200
2,3,7,8-Tetrachlorodibenzo- dioxin	mg/kg	1.000
2,4- Dichlorophenol	mg/kg	0.200
2,4- Dimethylphenol	mg/kg	0.200
2.4-Dinitrophenol	mg/kg	1.000
2,4-Dinitrotoluene	mg/kg	0.200
2,4,6- Trichlorophenol	mg/kg	0.200
2,6- Dinitrotoluene	mg/kg	0.200
4-Bromophenyl phenylether	mg/kg	0.200
4-Chlorophenyl phenylether	mg/kg	0.200
4- Nitrophenol	mg/kg	1.000
4,6-Dinitro-2-methylphenol	mg/kg	1.000
Aldrin	mg/kg	0.200
Alpha-BHC	mg/kg	0.200
Aroclor-1016	mg/kg	2.000
Aroclor-1221	mg/kg	2.000
Aroclor-1232	mg/kg	2.000
Aroclor-1242	mg/kg	2.000
Aroclor-1248	mg/kg	2.000
Aroclor-1254	mg/kg	2.000

PARAMETERS	UNITS	BackQround Concentrations *
Aroclor-1260	mg/kg	2.000
Benzidine	mg/kg	1.000
Beta-BHC	mg/kg	0.200
Chlordane	mg/kg	1.000
Delta-BHC	mg/kg	0.200
Dieldrin	mg/kg	0.200
Endosulfan I	mg/kg	0.200
Endosulfan II	mg/kg	0.200
Endosulfan sulfate	mg/kg	0.200
Endrin	mg/kg	0.200
Endrin aldehyde	mg/kg	0.200
Heptachlor	mg/kg	0.200
Heptachlor epoxide	mg/kg	0.200
Undane	mg/kg	0.200
N-nitrosodimethylamine	mg/kg	0.200
Toxaphene	mg/kg	0.100
3,3-Dichlorobenzene	mg/kg	0.400
4,4-DDD	mg/kg	0.200
4,4-DDE	mg/kg	0.200
4,4-DDT	mg/kg	0.200
Cyanide (Total)	mg/kg	1.000
Phenols (Total)	mg/kg	1.561
Oil and Grease	WT%	0.141

ATTACHMENT 8

CONTAINER MANAGEMENT

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1.0 Containers

1.1 General Container Management

Containers are managed in Units 101, 105, 106, 255, 535, and 604. Each unit serves a different purpose and has varying storage capacities and/or handling functions. Transfer between containers, addition of absorbent, container cleanout, and storage are among the functions of the various units.

Records, ~~are~~ maintained at the facility, provide ~~that allow access to~~ information regarding wastes~~,~~ and document the movement of wastes through the facility from receipt, to storage and handling to shipment off-site. The records can be accessed by a unique identifier assigned to each waste container.

Truck to Truck Transfer (Unit 101)

Unit 101 functions as a 10-day transfer facility for intermediate bulk containers (<350 gallons, but ≥120 gallons), and small containers (<120 gallons). Waste managed in Unit 101 arrive at Clive by truck, typically in a van trailer. The arriving vans are destined to different Clean Harbors facilities. The waste is removed from the arriving vans and placed on vans for shipment to other Clean Harbors' facilities for management.

Thaw Unit (Unit 105)

Unit 105 was originally designed to accommodate rail or truck~~load~~ bulk loads~~, arriving by either rail or road,~~ which require~~s~~ warming the waste to facilitate sampling or management. The building is also used to transfer waste received in roll-offs to smaller containers (~~e.g., 55~~< 120 gallons ~~gallon drums~~) and to store intermediate bulk containers (<350 gallons, but ≥120 gallons) and smaller containers. Intermediate Bulk Containers and smaller containers can be double stacked when a pallet is used between the first and second levels. Occasionally, empty tank cars and tank trucks will also be cleaned out in this area. When all of the waste does not drain during the normal course of transferring the material out of the rail tank car, a heel of waste remains. When determined necessary by Clive or the ~~generator~~generator, heals are ~~also~~ removed in Unit 105 utilizing steam and other means. ~~in Unit 105.~~

The building is constructed of structural steel columns, enclosed with siding, and has a supported roof system. The approximate overall dimensions of the building are 43 feet wide, 173 feet long and approximately 24 feet to eave height. The shed is equipped with roll-up doors at each end to accommodate road and rail tankers, and trucks. Drawing 43-10-4-J10 Plan and Sections in Attachment 9 depict~~s~~ the arrangement of this unit.

When necessary during cold weather conditions, the Thaw Unit will be maintained at a temperature typically in the 50 to 80 degree Fahrenheit range to slowly warm and thaw wastes to the point at which the~~y~~ waste may ~~can~~ be safely removed from the container. As an alternative, radiant heater may be used.

All bulk loads will remain closed, while in the unit, except when sampling, inspecting, ~~and~~ or transferring waste.

The ventilation system will provide a minimum of one air change per hour, and will be exhausted to the atmosphere. The total air volume of the Thaw Unit is approximately 178,600 cubic feet, ~~and~~ thus, approximately 2,980 cfm of exhaust is required to achieve one air exchange per hour. The ventilation system will consist of two 4,250 cfm gable mount fans and one 7,500 cfm air make-up fan.

Containerized Bulk Solids Storage Unit (Unit 106)

Clean Harbors Clive, LLC (Clive) has constructed and uses a Containerized Bulk Solids Storage Unit at the facility. This unit, Unit 106, consists of three subunits, designated Subunits 1, 2, and 3.

Large, ~~and~~intermediate and smaller containers (< 120 gallons~~e.g., 55 gallon drums~~) are handled and stored in the Containerized Bulk Solids Storage Unit, Unit 106, only as specified herein, prior to transfer for management at other on-site units or off-site permitted hazardous waste facilities. The waste stored and segregated in this unit is typically containerized solid and sludge type wastes that may contain free liquids. Waste containers handled and stored in the Containerized Bulk Solids Storage Unit include intermodal containers (IMCs), sludge boxes, roll-off bins, van trailers with containers (e.g., 55-gallon drums), tanker trailers, intermediate bulk containers (totes and flexbins) and other large containers. Also, "Sea Line" type containers may be placed in Unit 106. Intermediate bulk containers and ~~S~~smaller containers (~~e.g. 55-gallon drums~~< 120 gallons) may also be stored in Unit 106 (Subunit 1, enclosed portion only).

The containers may be delivered to ~~the~~ Clive ~~Storage Facility~~ by road or rail. Large containers arriving by rail will be off-loaded (e.g., via piggy packer, forklift, etc.) and transferred to Unit 106, the Containerized Bulk Solids Storage Unit for storage. Large containers arriving by road may be unloaded in Unit 106 or in other appropriate Units (such as Thaw Unit 105) and then transferred to Unit 106.

~~Occasionally, the~~The enclosed portion of Unit 106, Subunit 1 may~~will~~ be used to transfer waste received in roll-offs to smaller containers (e.g., 55 gallon drums) and to store smaller containers.

The Containerized Bulk Solids Storage Unit consists of three rectangular storage areas known as subunits. Secondary containment consists of sloped floors (with perimeter curbs). The layout of Unit 106 is shown on Drawing 43-10-2-D61, sheet 4 in Attachment 9.

Large Containers shall not be stacked more than three high in the enclosed portion of Subunit 1. Triple stacking of large containers may also occur in the unenclosed portion of Subunit 1, Subunit 2, and Subunit 3 provided that the permitted storage capacities of the unenclosed portions of Unit 106 are not exceeded. In addition, no incompatible wastes, as determined by the Waste Analysis Plan, shall be stored within the enclosed portion of Subunit 1, the unenclosed portion of Subunit 1, Subunit 2, and Subunit 3.

Intermeidate Bulk Containers (<350 gallons) and ~~S~~small containers (~~e.g., 55 gallon drums~~< 120 gallons) may only be stored in the enclosed portion of Subunit 1 and will not be stacked more than two high. When stacked two high the upper level will be on pallets.

The dimensions of Subunits 2 and 3 are 43 feet wide by 465 feet long each. The dimensions of Subunit 1 are 43 to 45 feet wide by 465 feet long. As mentioned above, a portion of Subunit 1 is enclosed.~~ to allow for the storage of TSCA waste. Hazardous waste may be stored in all areas of all subunits of Unit 106, while storage of TSCA waste is limited to the enclosed portion of Subunit 1.~~

The secondary containment system for each subunit provides sufficient capacity to contain ten percent of the volume of the containers within the area, in accordance with requirements listed in ~~40 CFR~~R315~~-~~-264~~.~~-175(b)(3). The portions of Unit 106 not within an enclosure (Subunits 2 and 3 and a portion of Subunit 1) ~~also~~ have sufficient additional capacity to also contain a 25-yr, 24-hr storm event (1.9 inches). Secondary containment capacity is provided by curbs and sloped floors. These curbs also serve to prevent the run-on of surface water, as required under ~~40 CFR~~R315~~-~~-264~~.~~-175(b)(4). Curbs are placed completely around the perimeter of each subunit.

Subunit floors are constructed of reinforced concrete equipped with waterstops and concrete coating, satisfying the requirements of ~~40 CFR~~R315~~-~~-264~~.~~-175(b)(1). Subunit floors are sloped (1% to 1.5% or greater - see Drawing 43-10-2-D61, sheets 5 and 12 in Attachment 9 for details).

Unit 106 West

The area to the west of Unit 106 is referred to as Unit 106 West. This area may be used on a temporary basis only after receiving oral approval from the DWMRC. Only large containers with solids are allowed to be stored in this area. Inspection requirements are the same as for unit 106 with the exception of those associated with secondary containment. The locations of the containers will be identified with an alpha-numeric grid system. Maximum capacity of this area is 170 40-yard boxes.

Railcar to Trailer Transload Building (Unit 255)

The Railcar to Trailer Transload Building is used to transfer solid non-hazardous waste, solid hazardous waste and solid PCB-containing waste from rail gondola cars to end dumps and roll-off boxes. Storage is not permitted in Unit 255. Waste transferred into containers suitable for transfer over the road are either put into storage at the Clive facility or sent to the designated treatment, storage, or disposal facility within ten days of arrival. Unit 255 is located north of the fenced portion of the facility.

Rail/Truck Transfer Bay (Unit 535)

The Rail/Truck Tanker Transfer Unit, Unit 535, is used to transfer wastes from rail tankers to trucks or vice-versa. Occasionally, empty tank cars and tank trucks will also be cleaned out in this area. Drawings 43-53-4-J07, Rail Tanker Unloading Plans and Sections and 43-53-2-J01, Rail Tanker Unloading Unit Details, in Attachment 9, provide details on the design of these units. The location of this unit is shown on Drawing 43-01-1-J02, which is a plan view of the facility. This drawing can be found in Attachment 9.

Truck Wash Bay (Unit 604)

The Truck Wash Bay is used for the management of leaking containers, including the transfer of waste to a -container in good condition, prior ~~transferring waste between containers and the storage of containers being transferred and leaking containers being prepared for~~to shipment to an ~~Aragonite~~offsite treatment or disposal facility. -It is also used for washing containers and equipment. Intermediate bulk containers (IBCs) and small containers can be stored in Unit 604 as long as compliance with this attachment are met.

Treatment Container (Unit 707)

The waste to be managed in the Treatment Container, Unit 707, include: RCRA solids/sludges (acceptable waste codes permitted pursuant to Module 2.C. of the Permit), non-hazardous waste, and RCRA-exempt waste. Unit 707 is located at the north end of Subunit 3 of Unit 106 and is not permitted for storing waste.

The Treatment Container is used to solidify/treat and transfer waste from a customer-shipped roll-off container to a roll-off container for storage and transportation from the Clive facility to a treatment, storage, and disposal facility. The Treatment Container is emptied ~~at the end of each shift or~~ when not being actively used to treat or transfer waste and at the end of each shift. The treatment container will remain covered with a tarp or other suitable cover when not actively being used to manage (placing, mixing and removing) waste. Drawing 64BW-5600-200 in Attachment 9 provides details of the Treatment Container.

Incoming shipments of hazardous wastes will be evaluated for applicability of R315-264-1080 through 1090 ~~Subpart CC~~ controls using information provided on the Waste Profile and sampling results, as required. If roll-offs, or other containers are determined to be subject to R315-264-1080 through 1090~~Subpart CC~~ controls, they will be monitored in accordance with the requirements of Condition 3.G. of this Permit.

All waste managed in the Treatment Container shall be documented and incorporated into the operating record, as required by Condition 2.L. The information in the operating record shall include, at a minimum, the unique identifying number assigned to the container of waste placed into the treatment container; the amounts of absorbent and reagents added, and the unique identifier(s) of the box(es) into which the waste is placed. All waste tracking requirements apply to the waste prior to and following management in the Treatment Container.

1.2 Container Storage

Clean Harbors Clive, LLC stores containers of hazardous waste in the Units 105, 106, 535, and 604. The requirements of ~~40 CFR~~R315-~~-~~264-170 through ~~R315-264-~~179~~, Subpart I~~ and ~~40 CFR~~R315-~~-~~270~~.~~-15 apply to the Thaw Unit (Unit 105), Containerized Bulk Solids Storage Unit (Unit 106), Rail/Truck Tanker Bay (Unit 535), and the Truck Wash Bay (Unit 604).

The term "container" in this section ~~to~~ means any portable device in which material is stored, transported, or otherwise handled. The term "drum" in this section will refer to a container having a capacity of 120 gallons or less. "Intermediate bulk container refers to a container that is <350 gallons, but is ≥ 120 gallons and can store either liquids and solids.

All container shipments ~~will be~~ accepted in accordance with the waste acceptance procedures specified in Attachment 1, Waste Analysis Plan, ~~and~~ will be placed into permitted storage within 10 days of arriving at the facility. Arrival at the facility (for containers going into storage) ~~at the facility~~ occurs when the waste passes through the facility main gate or rail gate. If circumstances dictate that unloading will be delayed beyond this time period, the load will be moved into a permitted storage area. The containers that are not unloaded within 10 days of arrival will be stored in a separate area away from wastes that are in storage. The area will be clearly marked and will be used for no other purpose. An inventory of the waste stored in this area will be maintained and will be part of the operating record.

1.2.1 Description of Containers

Thaw Unit (Unit 105)

Containers which may be stored in Unit 105 include Rail Tank Cars, Road Tanker Trucks, IMC's, sludge boxes, roll-offs, intermediate bulk containers and drums. If a container in the Thaw Unit exhibits severe rusting, or it leaks or otherwise appears to be in poor condition, the container and its contents will be managed in accordance with Condition 3.E.1. Waste stored in the Thaw Unit will be compatible with the container in which it is stored. Waste that is transferred from a container in poor condition will be transferred to a container in good condition and compatible with the waste. When waste is transferred to replacement containers, all markings and labels will be duplicated or transferred to properly identify the contents of the replacement containers.

Containerized Bulk Solids Storage Unit (Unit 106)

The Containerized Bulk Solids Storage Unit is capable of receiving and storing large containers, such as sludge boxes, roll-off bins, tanker trailers and intermodal containers. In addition, intermediate bulk containers (<350 gallons) and smaller containers (i.e., those with a capacity of 120 gallons or less) may be stored in the enclosed portion of Unit 106, subunit 1. Typical dimensions of the boxes to be stored are 8 feet wide, 20-24 feet long, and approximately 4-9 feet high ("Sea Line" containers may be as long as 33 feet). Containers will be covered to prevent the ingress of precipitation or the egress of waste. The most common material of construction will be carbon steel. Some of the containers may have their carbon steel tops replaced by aluminum, fiberglass, or a tarp to reduce dead weight. Containers accepted for storage in Unit 106 are required to be compatible with the wastes stored within them.

If a container in Unit 106 exhibits severe rusting, irreparable leaks or otherwise appears to be in poor condition, the container and its contents will be managed in accordance with Condition 3.E.1. In addition, waste can be transferred from a container in good condition into another container in good condition. When waste is transferred to replacement containers, all markings and labels will be duplicated or transferred to properly identify the contents of the replacement containers.

Rail/Truck Transfer Bay (Unit 535)

The Rail/Truck Tanker Transfer Unit will be used to position a rail tanker of nominally 20,000-gallon capacity, while its contents are unloaded into a road tanker. If a container or transport vehicle in the Rail/Truck Tanker Transfer Unit exhibits severe rusting, or it leaks or otherwise appears to be in poor condition, the contents of the container will be transferred to a container(s) or transport vehicle(s) in good condition. Waste stored in the Rail/Truck Tanker Transfer Unit will be compatible with the container in which it is stored. Waste that is transferred from a container or transport vehicle in poor condition will be transferred to a container or transport vehicle in good condition and compatible with the waste.

Truck Wash Bay (Unit 604)

The Truck Wash Bay will be used to store containers for transfer and storage. Large containers, intermediate bulk containers and smaller containers can be stored in Unit 604. Intermediate bulk containers and smaller containers can be double stacked when a pallet is used between the first and second levels. ~~Only large containers may be stored in this unit~~ ~~and n~~No more than four roll-offs (or waste equivalent) will be stored in this unit at the same time. Waste may only be stored in Unit 604 if the equivalent capacity is available and remains available in Unit 106. If a container in Unit 604 exhibits severe rusting, irreparable leaks or otherwise appears to be in poor condition, the container and its contents will be managed in accordance with Condition 3.E.1. When waste is transferred to replacement containers, all markings and labels will be duplicated or transferred to properly identify the contents of the replacement containers.

1.3 Container Management Practices

Thaw Unit (Unit 105)

The maximum permitted capacity of the Thaw Unit is 60,000 gallons, or 8,020 cubic feet. This includes both TSCA and RCRA wastes.

Containers will remain closed except when inspecting, sampling, and transferring waste. Drawing 43-10-4-J10 Thaw Unit Plan & Sections in Attachment 9 identifies aisles along the sides of the building that are four feet four inches wide, and a center aisle over the containment sumps which is six feet wide.

Waste will only be transferred to and/or from containers in Unit 105 in accordance with ~~the requirements found in~~ Condition 3.G of the permit.

Containerized Bulk Solids Storage Unit (Unit 106)

The permitted storage capacity for Unit 106 is 1,847,871 gallons. Subunit 1 has a capacity of 630,240 gallons with 448,440 gallons in the enclosed area and 181,800 gallons in the unenclosed area. Subunit 2 has a capacity of 617,463 gallons and Subunit 3 has a capacity of 600,168 gallons.

In each subunit, there are three rows containing a variable number of containers. A typical storage arrangement within the Containerized Bulk Solids Storage Unit is shown on Drawing 43-10-2-D61, sheet 4 in Attachment 9. A minimum of 2.5 feet of aisle space will be maintained between containers in Unit 106.

If a waste shipment contains incompatible waste, the waste will be placed in a segregated storage area. If it is determined by the waste profile that a container of waste is incompatible with the other wastes stored within the containment system (i.e., the enclosed portion of Subunit 1, the unenclosed portion of Subunit 1,~~-~~ Subunit 2, or Subunit 3), it will be removed within 24 hours and placed in a different subunit storage area containment system with other wastes with which it is compatible. This separation method for wastes requiring segregation is in compliance with ~~40 CFR~~R315~~-~~-264~~.~~-177(c).

During storage, the containers will be kept closed to prevent dispersion of wastes into the environment. Containers will be opened only for inspections, sampling, and transfer of wastes between containers (e.g., in response to a leaking container). Regularly scheduled inspections of the container storage areas will be conducted to detect open or deteriorating containers, improper storage, liquids in the secondary containment system; or other unsafe conditions as required by R-315-264-174~~8-9.5~~. The frequency of these inspections is specified~~outlined~~ in Attachment 3, Inspections~~ Matrix~~.

Waste will only be transferred to or from containers in Unit 106 in accordance with ~~the requirements found in~~ Condition 3.G of the permit.

All wastes stored in the Containerized Bulk Solids Storage Unit will eventually be transferred to other on-site management units for storage and further processing, or to appropriate off-site facilities. On-site management units that can accept wastes directly from Unit 106 include~~ing~~ the Thaw Unit (Unit 105) and the Truck~~Wheel~~ Wash Unit (Unit 604).

The location of containers stored at Unit 106 will be recorded in the operating record by using an alpha-numeric system of coordinates that will identify the storage location ~~and level (layer)~~ of each container. The operating record will be maintained so that it will accurately indicate the waste identification number (unique identifier), the quantity of the waste, and the location of the waste in~~at~~ Unit 106 in accordance with R315-264-73~~8-5.3~~.

A grid system has been defined for Unit 106 and is presented in Drawing 43-10-2-D61, sheet 4 in Attachment 9. The grid is numbered from 1 to 19 and from A to J. Lines painted on the concrete surface indicate the aisle spaces between containers. The painted lines indicating the aisles create a minimum of 2.5 feet of aisle space. This will facilitate the positioning of the containers and allow easy inspection to ensure that the minimum aisle spacing of 2.5 feet has been met, i.e., as long as the containers do not encroach on the painted lines, the necessary aisle space is being maintained. Intermediate bulk containers and ~~D~~drums stored in the enclosed portion of Subunit 1 will be stored on pallets or equivalent and on a painted grid system placed inside the roll-off container markings. Intermediate Bulk Containers and smaller containers can be double stacked when a pallet is used between the first and second levels.

To identify the stacking arrangement of containers within the area, a number ~~letter~~ will be used to indicate if the container is at ground level or stacked on top of another container. The number 1~~letter S~~ will designate those containers found at ground level~~,~~ a~~m~~nd the number 2~~letter D~~ will designate those containers that are stacked on top of the container on the ground ~~one other container~~ (double stacked)., and the number 3~~letter T~~ will designate those containers stacked on top of two other containers (triple stacked). An example of a typical location identifier used to identify the location of a container in the area would be 106-C05-2~~D~~; the 106 indicating that the container is stored at Unit 106, the letter C indicating that the container is in ~~row~~column C of the grid, the number 05 indicating that the container is in ~~column~~ row 5 of the grid, and the number 2~~letter D~~ indicating that the container is stacked on top of one other bulk container.

Records are maintained at the facility which allows access to information regarding wastes, and document the movement of wastes through the facility from receipt, to storage and processing, through shipment off-site. The records will be accessed by a unique identifier assigned to each waste container. The unique identifier is provided on a bar-code label that is adhered to each container that is placed into storage.

Rail/Truck Transfer Bay (Unit 535)

A maximum of one rail tanker will be located at the Rail/Truck Tanker Transfer Unit at any given time. Based on containment volume considerations, the maximum RCRA permitted capacity of the Rail/Truck Tanker Transfer Unit is 23,560 gallons. Rail tankers and road tankers ~~Containers~~ will remain closed except when inspecting, sampling, adding or removing wastes. Waste will only be transferred to and/or from ~~containers~~ tankers and containers in Unit 535 in accordance with ~~the requirements found in~~ Condition 3.G of the permit.

Truck Wash Bay (Unit 604)

A maximum of four roll-off containers may be located in the Truck Wash Bay at any one time. One roll-off of capacity will be kept available in Unit 106 for each for each roll-off container stored in Unit 604. Containers will remain closed except when inspecting, sampling, adding or removing wastes. Waste will only be transferred to and/or from containers in Unit 604 in accordance with ~~the requirements found in~~ Condition 3.G of the permit. Intermediate bulk containers and smaller containers can be store in Unit 604 and can be double stacked when a pallet is used between the first and second levels. No more than four roll-offs (or waste equivalent) will be stored in this unit at the same time.

The location of containers stored at Unit 604 will be recorded in the operating record by using an alpha-numeric system of coordinates that will identify the storage location and level of each container. The operating record will be maintained so that it will accurately indicate the waste identification number (unique identifier), the quantity of the waste, and the location of the waste in Unit 604 in accordance with R315-264-73.

Treatment Container (Unit 707)

~~RCRA waste having a volatile organic content ≥500 ppmw will be mixed in a container having emission controls meeting the requirements of Condition 3.G and 40 CFR § 264.1086(c) and (d).~~

Waste having a volatile organic content <500 ppmw can be mixed in the container without emission controls. Mixing means the mechanical agitation of the waste for the purpose of solidification or treatment with absorbent or reagent. Treatment of waste will require Clive to comply with ~~40 CFR~~R315~~-~~-262: Standards Applicable to Generators of Hazardous Waste, so that when the waste is shipped off-site, Clive will be the generator of the waste.

All treatment operations will be conducted in a manner that minimizes emissions of volatile organic compounds and dust. To accomplish this, when adding material to a container, the material will be added as close to the bottom of the container, or to the surface of the material already in the container, as possible. Waste and reagent will not be dropped into the container from an elevated height.

Treatment and transfers of waste from the treatment container to the outbound shipping container(s) will be conducted using an excavator, backhoe or other suitable equipment. Treatment of all waste will be conducted within the secondary containment of the permitted unit.

All operations will be conducted in a manner that minimizes spills of waste outside of the containers. Any spills that occur shall be cleaned up immediately after treatment and removal operations have been completed. During the process, all containers will remain properly closed except for when waste is being added, removed, sampled or treated.

Following completion of the treatment operation, the incoming and outgoing shipment containers must be inspected to ~~insure~~ ensure that there is no residual waste on the outside of the containers. Any residual waste shall be cleaned off of the container(s) and the container closed before they are stored or offered for transportation. If not ~~immediately offered for transportation~~shipped offsite within 10~~XXX~~ days, the container of treated waste will be stored in a permitted storage unit.

Prior to placing a full outgoing shipment roll-off container into storage or releasing it for transportation, the container must be covered with a tarp or other cover and inspected to ~~insure~~ ensure that there are no detectable emissions (as defined in Module 3.G. of the Permit) from the cover.

1.4 Secondary Containment System Design and Operation

Thaw Unit (Unit 105)

The secondary containment system of the Thaw Unit has been designed to facilitate sound container management practices and prevent the release of hazard wastes into the environment. Drawings 43-10-4-J10 and 43-10-2-J05 in Attachment 9 provide plan, elevation and section views of the building and the containment system design.

Containerized Bulk Solids Storage Unit (Unit 106)

The secondary containment system of the Containerized Bulk Solids Storage Unit has been designed to facilitate sound container management practices and prevent the release of hazardous wastes into the environment. Plan, elevation and section views of Unit 106 and the containment system design are shown on Drawings 43-10-2-D61, sheets 4 - 8 and 10 - 12 in Attachment 9.

Rail/Truck Transfer Bay (Unit 535)

The secondary containment system of the Rail/Truck Tanker Transfer Unit has been designed to facilitate sound container management practices and prevent the release of hazardous wastes into the environment. Drawings 43-53-4-J07 and 43-53-2-J01 in Attachment 9 provide plan and section views of the bay and the containment system design.

Truck Wash Bay (Unit 604)

The secondary containment system of the Rail/Truck Tanker Transfer Unit has been designed to facilitate sound container management practices and prevent the release of hazard wastes into the environment. Drawings 43-60-2-J04 and 43-60-4-J08 in Attachment 9 provide plan and section views of the bay and the containment system design. A total of 1100 ft^3 of containment capacity is available which is greater than the largest container, 30 yd^3, which may be stored in the unit at any time.

1.4.1 Requirement for the Base or Liner to Contain Liquids

Containment areas are constructed on a minimum of eight ~~or nine~~ inch thick concrete pads reinforced with one or two mats of #4 steel reinforcing bar poured on a compacted fill base. The slabs shall be maintained free of cracks or gaps. All joints contain a continuous water stop to prevent migration of water/liquids past the stop.

A sealant shall be maintained on all concrete surfaces within the containment systems. If liquids are discovered, they shall ~~be removed~~be removed within 24 hours of detection.

A table listing the technical specifications of each coating group used in the container storage units within the Clive facility is provided in Appendix A of this attachment, Concrete Coatings.

1.4.2 Containment System Drainage

Thaw Unit (Unit 105)

The floor of the Thaw Unit is sloped at approximately 1/8 inch per foot to four separate sumps. The storage area~~s~~ is~~are~~ completely enclosed to prevent run-on of rain or dispersion of wastes by wind. Wastes will only be placed in the Thaw Unit after review of manifest and profile information to confirm that the wastes are compatible. If subsequent sampling, testing and/or analysis indicate that incompatible wastes are present in the Thaw Unit, such containers of wastes determined to be incompatible will be removed within 24 hours and relocated to an appropriate alternate storage area.

Containerized Bulk Solids Storage Unit (Unit 106)

The floor of each subunit within the Containerized Bulk Solids Storage Unit is sloped (1% to greater than 1.5% - see Drawing 43-10-2-D61 sheets 5 and 12 in Attachment 9 for details) toward the outside perimeter berms. Most containers are equipped with legs that support the body of the containers a minimum of eight inches above ground level. If a container is not equipped with legs (eight inch minimum), another method will be used to elevate the container. Other methods may include placing railroad ties or grating beneath the container. The elevation of each container, in combination with the drainage provided by the slope of the concrete floor, will satisfy the requirements of ~~40 CFR~~ R315-264~~.~~-175(b)(2) by preventing contact between the accumulated liquid and the body of each container.

Truck Wash Bay (Unit 604)

Drawings 43-60-2-J04 and 43-60-4-J08 in Attachment 9 show the details of Truck Wash Bay containment. The tanks shown in the drawing are not in use and the piping from the sumps are blocked where they penetrate the wall on the east side of the sump~~bay~~. The floor is sloped to the sumps.

Rail/Truck Transfer Bay (Unit 535)

The rail side of the Rail/Truck Tanker Transfer Unit is sloped at a nominal 1/4 inch per foot to two sumps each of which is 14 feet long by 3 feet wide by 3 feet 6 inches deep (minimum). The tanker truck side of the Rail/Truck Tanker Transfer Unit is sloped at a nominal 1/2 inch per foot to one sump in the center of the bay which is 14 feet long by 3 feet wide by 3 feet 6 inches deep (minimum).

1.4.3 Removal of Liquids from Containment Systems

The floor of the Unit 106 is sloped (1% to greater than 1.5%) in all container storage areas and access aisles. This slope will facilitate the detection of leaks, causing any liquid which might leak from a container to migrate down the slope to the perimeter areas. Liquid, which accumulates in the secondary containment system will be collected (e.g., vacuum truck, portable pump, etc.) and managed as a hazardous waste.

The floor slope of 1/8 to 1/2 inch per foot provided in all other container storage bays, access corridors and processing areas will facilitate the detection of leaks causing any liquid which might leak from a container to migrate down the slope to a containment sump.

When an inspection reveals liquid within the sump, the source of the leak will be identified. The identification of the location of a leak may be accomplished in a number of ways, using a variety of inspection techniques. Visual inspection of the condition of containers, localized staining or leakage adjacent to a particular drum, rocking of containers to determine if volume has been lost are techniques which are most likely to be employed to trace the source of a leak. If these measures fail, a sample of the liquid in the sump will be analyzed in accordance with the waste analysis plan for a range of characteristics based upon the possible contents of the containers in the containment area. This process should identify the waste stream that has leaked. All the containers of that waste stream would then be checked for leaks.

Wastes from the leaking container will be transferred into a clean container, or the container and its contents will be transferred into an overpack. Liquid in the sump will be transferred from the sump to a clean container via a portable pump. Other suitable methods using absorbents, vacuum systems, etc. may also be used to manage spills. Any container into which wastes are transferred will be appropriately labeled as to the type of waste stored in it and managed in the same manner as was specified for the container from which the waste originated. In the unlikely event that the waste cannot be traced back to a specific container or group of containers, a sample will be analyzed to permit proper definition of the management protocol necessary for the waste. Minor leakage which does not flow to a sump will be absorbed, collected and placed in an appropriately labeled container.

1.4.4 Control of Run-On

The storage areas are completely enclosed within Unit 105, the Thaw Unit and Unit 604, Truck Wash Bay, to prevent ingress of wind borne rain or dispersion of wastes by wind. The Thaw Unit also has an eight inch perimeter curb. Rainwater from the roofs of these storage units is brought to grade level by a system of roof drains. Site grading around the buildings ~~will~~ diverts water away from them.

The Rail/Truck Transfer Bay is surrounded by concrete berms which prevent run-on into the containment areas.

Likewise, in Unit 106, each subunit is completely surrounded by perimeter curbs that prevent surface water run-on into the containment areas (see Drawings 43-10-2-D61, sheets 5 - 8, 10 - 12 in Attachment 9 for curb details). The unenclosed containment areas have been designed to accommodate the amount of rainfall that would accumulate from a 25-year, 24-hour storm event (1.9 inches) ~~and~~ plus 10% of the volume of containers stored as required by ~~40 CFR~~ R315-264~~.~~-175(b)(3). Therefore, run-on is prevented and/or controlled as required by ~~40 CFR~~ R315-264~~.~~-175(b)(4).

1.5 Special Requirements for Incompatible wastes

Thaw Unit 105

When incoming containers are received at Unit 105, the containers will be placed into storage so that any incompatible wastes, as described on the manifests and determined through incoming load procedures, are not placed within the same containment system. Four separate sump systems are provided to contain leaks from containers in Unit 105.

Should one or more containers subsequently be determined to be incompatible with the other wastes stored in a common secondary containment system, the container(s) of incompatible waste will be relocated to another secondary containment system storing compatible wastes. The criteria for determining where a particular waste is stored are based upon considerations of compatibility and storage area capacity. ~~Storage areas in Unit 105 are used interchangeably.~~

A storage area will be cleaned if a spill has been reported or evidence of a spill is found when removing containers from the storage area. ~~Normal d~~Decontamination procedures specified in Attachment 7, the Closure Plan, will be employed in cleaning up spills. Equipment normally employed during cleanups includes brooms, shovels, absorbents, pumps, detergents and wash water.

Containerized Bulk Solids Storage Unit (Unit 106) and Truck Wash Bay (Unit 604)

When received at Unit 106 or 604, incoming containers will be placed in storage so that incompatible wastes, as described by the manifests and determined by incoming load procedures, will not be placed within the same containment system. Should one or more containers subsequently be determined to be incompatible with the other wastes stored in a common secondary containment system, the container(s) of incompatible waste will be relocated within 24 hours to another secondary containment system containing compatible wastes. The criteria for deciding where particular wastes are stored will be based upon considerations of compatibility and storage area capacity. Storage areas will be used interchangeably.

A storage area will be cleaned if a spill has been reported or evidence of a spill is found when removing containers from the storage area. ~~Normal d~~Decontamination procedures specified in Attachment 7, the Closure Plan, will be employed in cleaning up spills.~~will be employed in cleaning up spills.~~ Equipment normally employed during cleanups includes brooms, shovels, absorbents, pumps, detergents and wash water.

Rail/Truck Transfer Bay (Unit 535)

In this Unit, wastes will be unloaded from the rail tanker into a road tanker. Only one container will be located in the Rail/Truck Tanker Transfer Unit at any one time so incompatibility with another waste within the unit will not be an issue.

Decontamination procedures specified in Attachment 7, the Closure Plan, will be employed in cleaning up spills. Equipment normally employed during cleanups includes brooms, shovels, absorbents, pumps, detergents and wash water.

APPENDIX A

CONCRETE COATINGS

Appendix A

Concrete Coatings

The concrete coating systems at the Clive facility consist of four types. Each type is selected to provide the appropriate level of protection against chemical penetration and abrasion for all concrete secondary containment surfaces within Clive. The types are differentiated by the configuration of the surface to which they will be applied. These four types are designated as Type I, II, III and IV. A general, functional specification for each system is provided below.

Type I: Coatings for horizontal surfaces outside of sumps and trenches. These coatings are designed for high volumes of abrasive traffic as well as for excellent chemical resistance.

Type II: Coatings for sumps and trenches. These coatings provide a very high degree of chemical resistance. These coatings may also be used for coating joints in the concrete outside of sumps and trenches.

Type III: Coatings for vertical surfaces outside of sumps and trenches. These coatings are similar to Type I coatings, except that they have a somewhat lesser degree of abrasion resistance.

Type IV: Coatings for expansion joints, construction joints, corner fillets, and repairing cracks. These coatings are more elastic than most of the other coatings to provide a seal while accommodating slight movements of the concrete. Type IV coating is only used where slab movement is experienced or anticipated.

The following coating system specification establishes the minimum standards for each system. A coating system that meets or exceeds these standards may be substituted.

Type I: Horizontal Surfaces

- Tnemec Series 66 Hi-Build Epoxoline (12 mils minimum) topped by Tnemec Series 71 Endura-Shield (2.5 mils minimum) or,
- Sentry Semstone 140 (30 mils minimum) topped by Semstone 245 (10 mils minimum) or,
- Rust-Oleum CPS Lite Overkote (30 mils minimum) topped by Overkote Plus (10 mils minimum) or,
- ¼ inch of Koch TECHNI-PLUS EP 60 SL

Type II: Sumps & Trenches

- Tnemec Series 66 Hi-Build Epoxoline (12 mils minimum) or,
- Sentry Semstone 245 (50 mils minimum) topped by Semstone 245 (60 mils minimum) or,
- Rust-Oleum Overflex (60 mils minimum) topped by Overkote Plus (125 mils minimum)

Type III: Vertical Surfaces

- Tnemec Series 66 Hi-Build Epoxoline (12 mils minimum) or,

- Sentry Semstone 140 (30 mils minimum) topped by Semstone 245 (10 mils minimum) or,
- Rust-Oleum CPS Lite Overkote (30 mils minimum) topped by Overkote Plus (10 mils minimum) or,
- ⅛ inch Koch TECHNI-PLUS EP SL

Type IV: Expansion & Construction Joints, Crack Repair

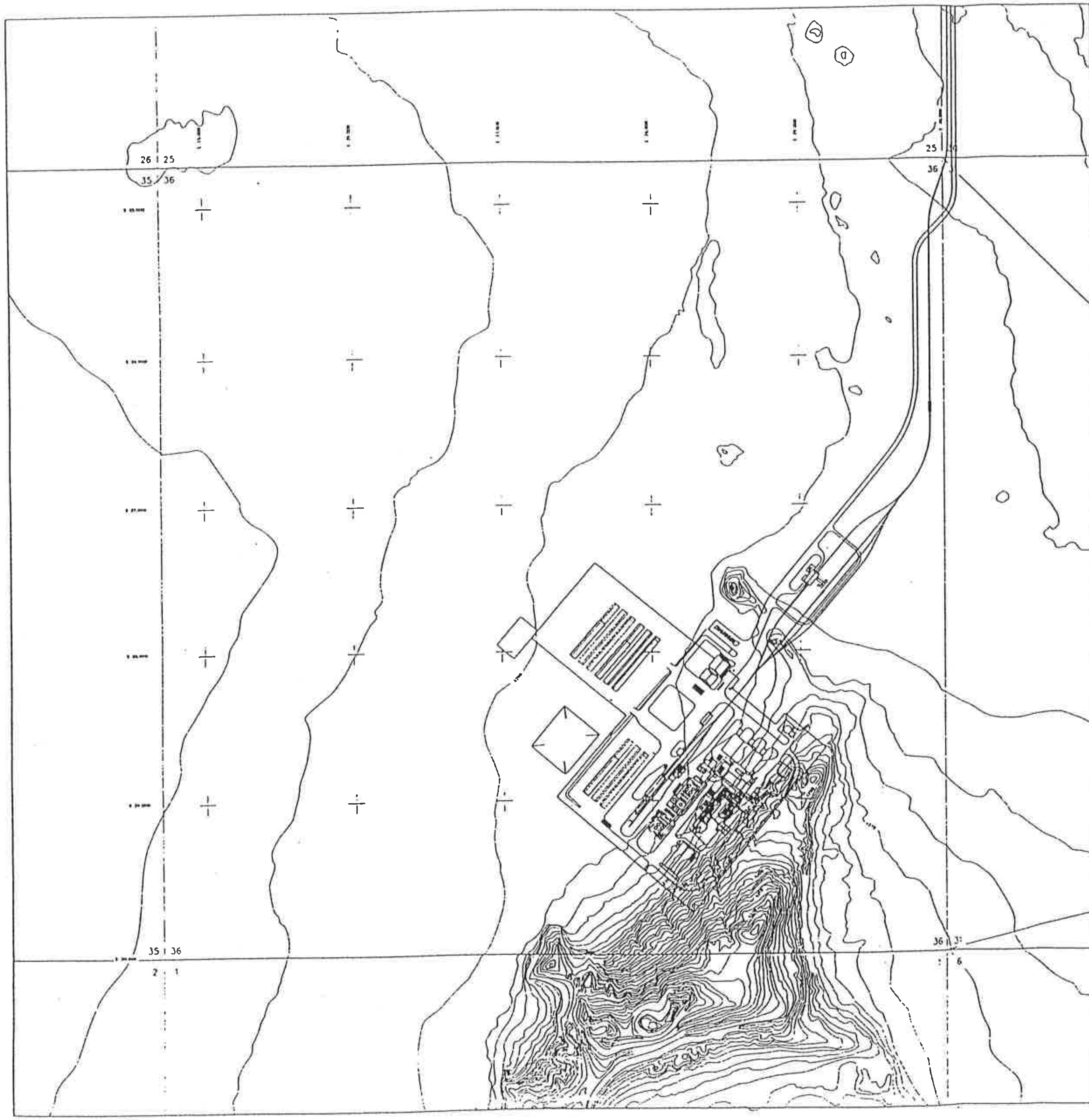
- Tnemec Series 66 Hi-Build Epoxiline (12 mils minimum) topped by Tnemec Series 71 Endura-Shield (2.5 mils minimum) or,
- Sentry Semstone 805 (50 mils minimum) with Semstone 805 coating fabric strip immersed in Semstone 805 (10 mils minimum) topped with SPX 5100 (10 mils minimum) or,
- Rust-Oleum Overflex (60 mils minimum) with woven roving fiberglass strip topped by Overkote Plus (125 mils minimum)

ATTACHMENT 9

DESIGN DRAWINGS

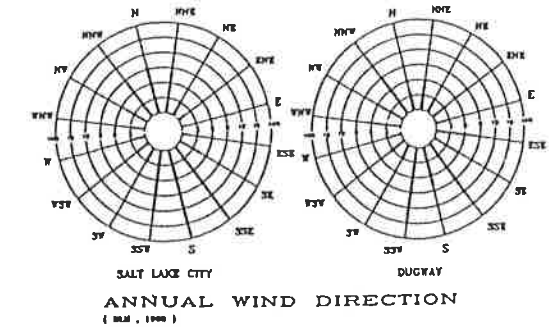
Attachment 9
Design Drawings

Drawing Number	Revision/Date	Title
43-01-110	2	Topographic Map
43-02-1-18	4	Evacuation Routes
43-01-1-J02	4/11/95	Partial Plan
43-10-2-J05	10/26/93	Thaw Unit Details
43-10-4-J10	10/26/93	Thaw Unit Plan & Sections
43-53-2-J01	6/23/93	Unit 535 Rail Tanker Unloading Details
43-53-4-J07	4	Unit 535 Rail Tanker Unloading Plan & Sections
43-10-2-D61	6	Plan View & Container Grid Unit 106 Sheet 4 of 16
43-10-2-D61	2	Elevation Unit 106 Sheet 5 of 16
43-10-2-D61	6	Paving Plan (Subunit 1) Unit 106 Sheet 6 of 16
43-10-2-D61	4	Paving Plan (Subunit 2) Unit 106 Sheet 7 of 16
43-10-2-D61	4~~5~~	Paving Plan (Subunit 3) Unit 106 Sheet 8 of 16
43-10-2-D61	4	Details Unit 106 Sheet 10 of 16
43-10-2-D61	3	Enclosure Section & Elevations Unit 106 Sheet 11 of 16
43-10-2-D61	1	Enclosure Containment Area Unit 106 Sheet 12 of 16
43-60-2-J04	10/26/93	Truck Wash Tank Foundation Details
43-60-4-J08	10/26/93	Truck Wash Plan & Sections
CF-000-A-001	1~~0~~	Clive Facility Bldg 106 Containment Building ~~Waste Pile~~ Section & Elevations.
64BW-5600-200	B 2/05/13	Clean Harbors Mix Tub – Layout & Details (Treatment Container)



CLIVE INCINERATION FACILITY
SECTION 36, TOWNSHIP 1 SOUTH – RANGE 12 WEST

North
0 200 400 600



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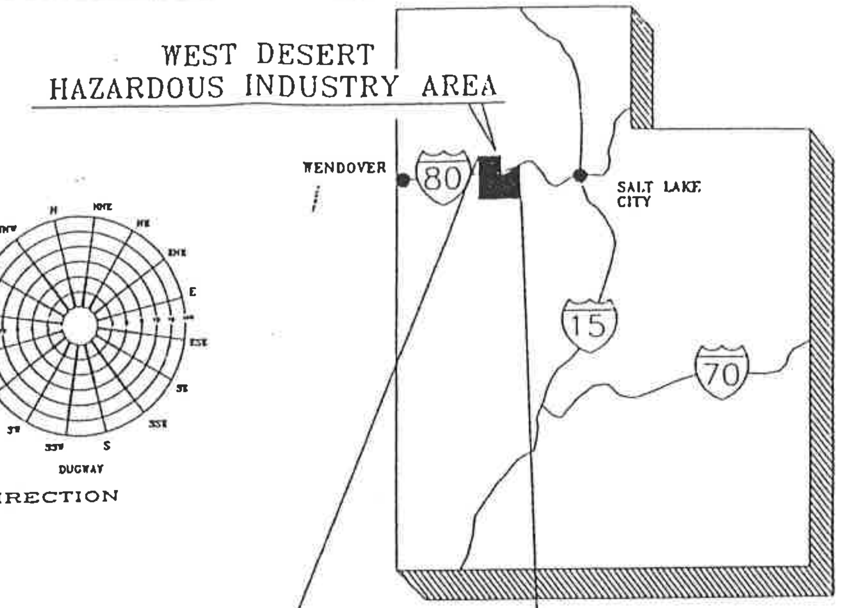
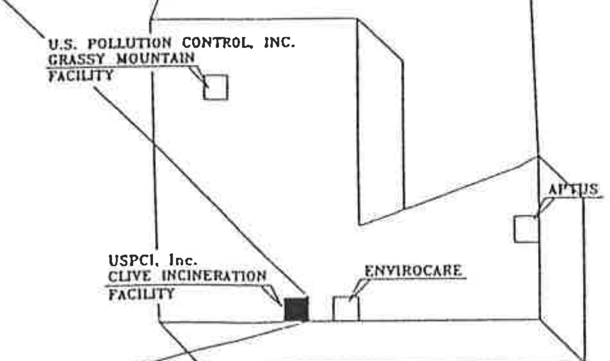


STATE OF UTAH



WEST DESERT
HAZARDOUS INDUSTRY AREA

REV.	DATE	BY	DESCRIPTION	APP'D	DATE
1	1/3/95	SWD	UPDATED PLANT LAYOUT & TITLE BLOCK		

DRAWN	--	2/89
DESIGN	J.H.	
CHECK	J.C.	
APPROVED		

USPCI A Subsidiary of Union Pacific Corporation
CLIVE INCINERATION FACILITY

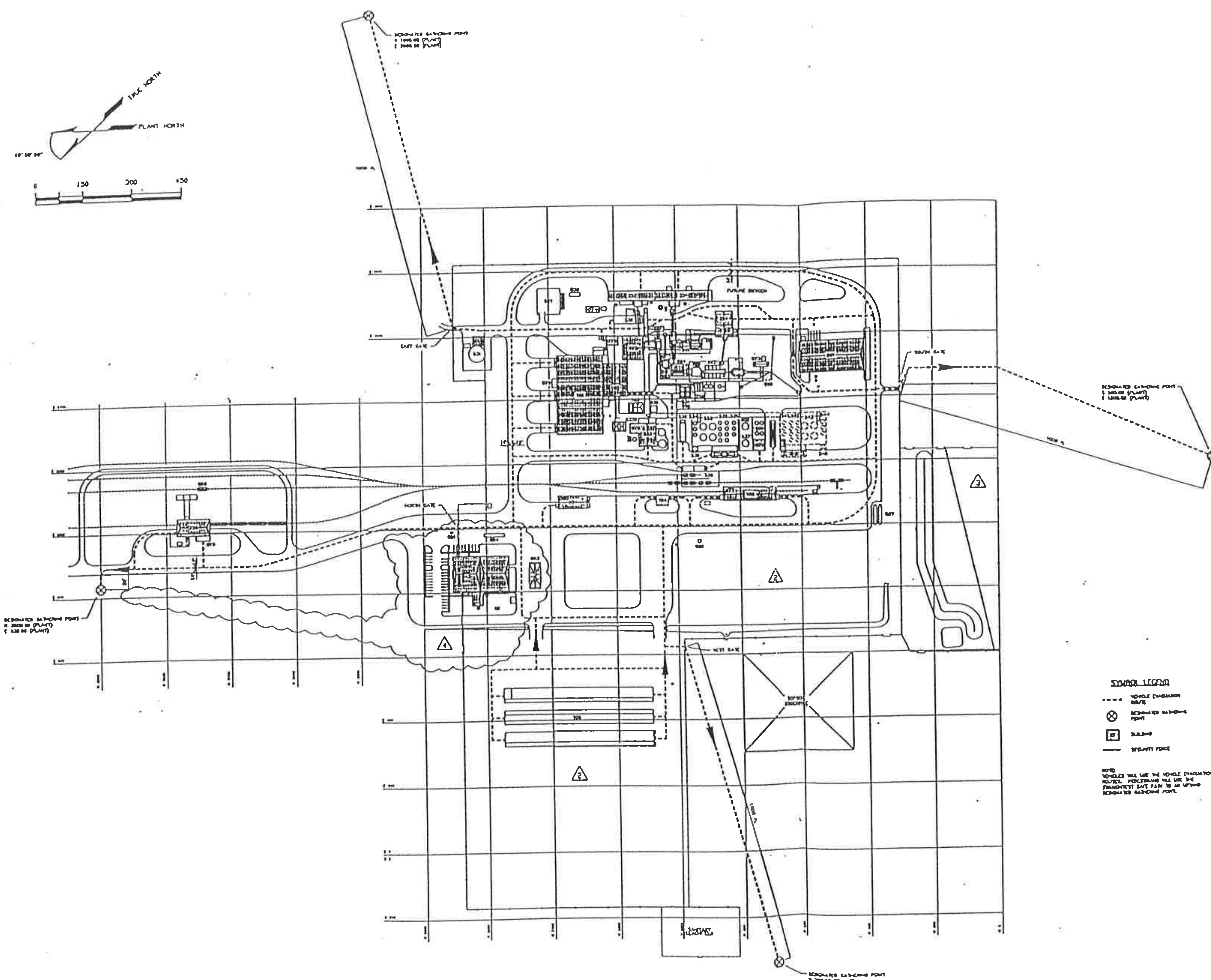
CLIVE INCINERATOR
TOPOGRAPHIC MAP

JOB NO.	SCALE	FILE NUMBER
	VARIES	43011010

USPCI A Subsidiary of Union Pacific Corporation

DRAWING NO.	REV.
43-01-110	1

FORM USPCI-D



UNIT IDENTIFICATION

UTILITIES

POWER & COMMUNICATIONS

ADMINISTRATION FACILITIES

- 051 GUARD HOUSE
- 054 TRUCK SCALES

WAREHOUSING

MOTOR CONTROL CENTERS

CONTAINER MANAGEMENT

BULK SOLIDS HANDLING

BULK LIQUIDS

- 337 FUEL OIL STORAGE
- 338 SPECIAL HANDLING BAY

AQUEOUS UNITS

- 904 TRUCK WASH

INCINERATION SYSTEM

- 963 SECONDARY COMBUSTION & QUENCH CHAMBERS

AIR POLLUTION CONTROL SYSTEM

- 994 WASTE HEAT BOILER SYSTEM
- 997 BAGHOUSE
- 998 WET SCRUBBER, STACK, FAN, CAUSTIC SYSTEM

CAD

AUG 1 7 1995

DEPARTMENT

REFERENCE COPY

PERMIT DRAWING

FIGURE G.2

REV.	DATE	BY	DESCRIPTION	APP'D	DATE
4	8/17/95	SVB	UPDATED ADMIN BLDG & REV EVAC ROUTING - AS-BUILT		
3	8/1/95	SVB	ADDED AREA 236 & TRENCH BOX UPDATE - AS-BUILT		
2	1/18/95	SVB	REMOVE AREAS 106B & 106C		
1	3/14/95	SVB	REV PLANT LAYOUT; ADDED 106; UPDATED TITLE BLOCK		

NOTICE

DRAWN

DESIGN

CHECK

APPROVED

CLIVE INCINERATOR
EVACUATION ROUTES

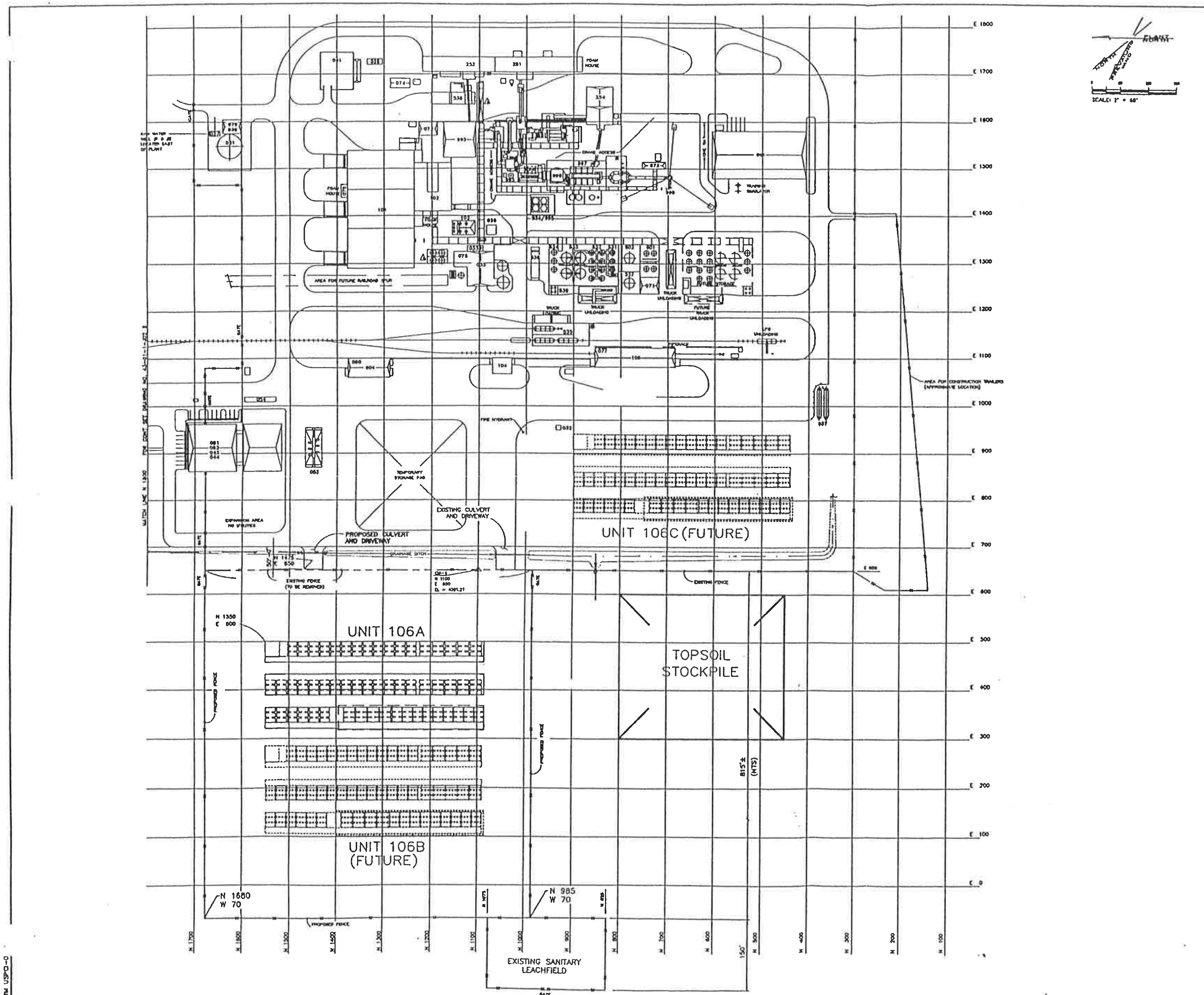
SCALE 1"=150'-0"

FILE NUMBER P021018

USPCI

DRAWING NO. 43-02-1-018

REV. 4



REV.	DATE	BY	DESCRIPTION	APP'D	DATE

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DRAWN	D.C.	12/13/94
DESIGN	V.S.	12/13/94
CHECK	V.S.	12/13/94
APPROVED		

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CLIVE INCINERATION FACILITY

CLIVE INCINERATOR
PARTIAL PLAN

JOB NO. 30000-06 | SCALE 1"=100' | FILE NUMBER Z1011002

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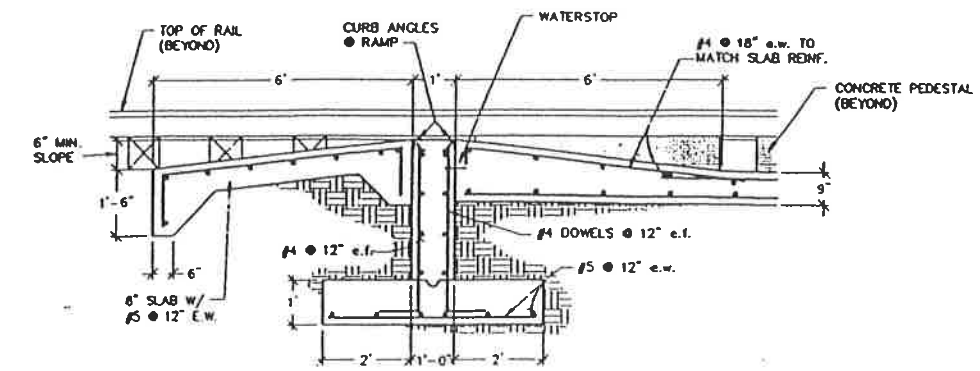
DRAWING NO. 43-01-1-J02 | REV.

FORM USPG-0

DEC 1 4 1994



① APPROACH & RAMP DETAIL
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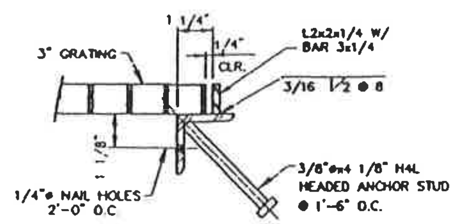

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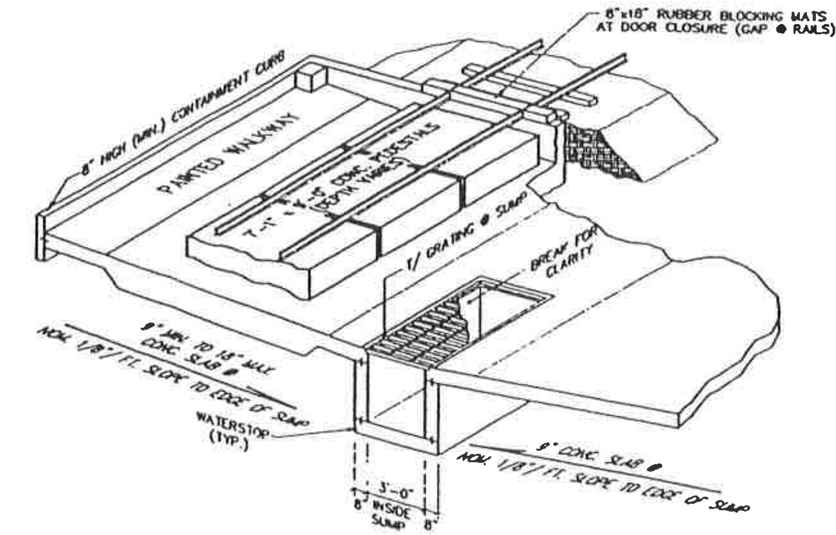
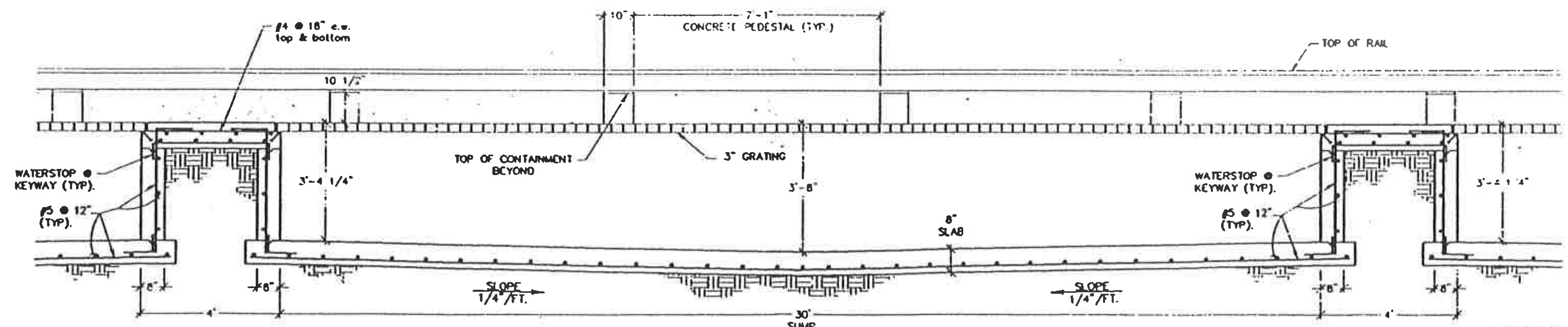


⑤ ISOMETRIC THRU SUMP & R.R. TRACK PEDESTALS
REF. DWG: 43-10-4-J10
N.T.S.



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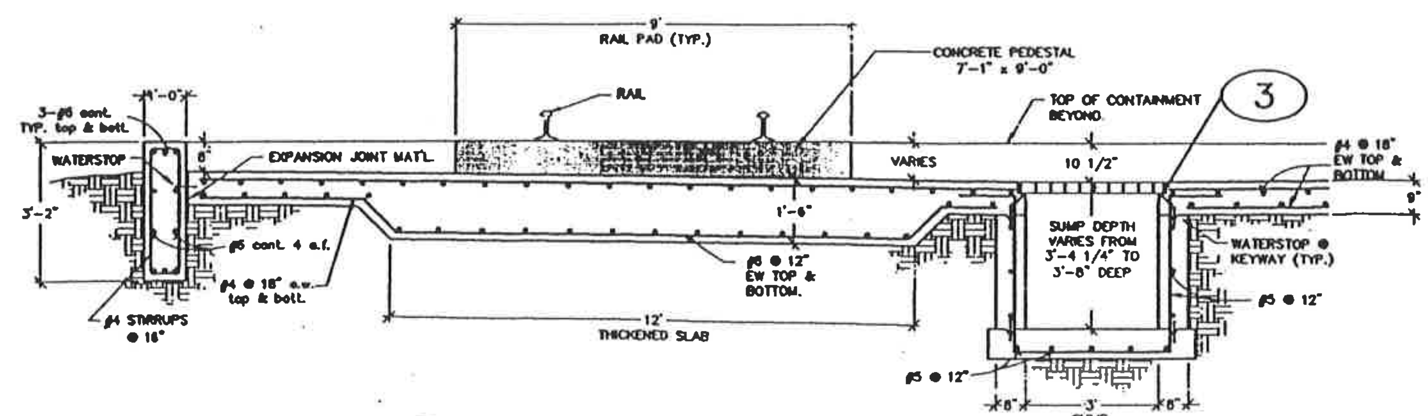

② THICKENED SLAB & SUMP DETAIL
REF. DWG: 43-10-4-J10
SCALE: 1/2" = 1'-0"

LICENSED PROFESSIONAL ENGINEER
No. 259719
MARK C. CHRISTIAN
10/28/93
STATE OF UTAH

ON BEHALF OF ETI CORPORATION, INC., I DO HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS DRAWING REFLECTS AS-BUILT CONDITIONS AS SPECIFICALLY DIRECTED TO AND LIMITED BY THE CONDITIONS OF THE "CONSTRUCTION CERTIFICATION REPORT, THAW UNIT CLIVE, TOOELE COUNTY, UTAH." AS PREPARED BY ETI CORPORATION.

NOTE:
INFORMATION FOR THIS DRAWING WAS TAKEN FROM UNITED ENGINEERS & CONSTRUCTORS JOB # 9909.001, AS-BUILT DRAWINGS #43-00-2-D02, #43-10-2-D51 & D52 DATED 3/31/93. MIDWEST RAILROAD AS-BUILT DRAWING #43-10-2-051A & 051B DATED 3/31/92.

REV.	DATE	BY	DESCRIPTION	APP'D	DATE

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(901) 758-0400

CLIVE INCINERATOR
THAW UNIT
DETAILS

DRN. RIF DATE 10-28-93
FILE NAME 10305001 SCALE 1/2"=1'-0"
DRAWING NO. 43-10-2-J05

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PERMIT AS BUILT DRAWING
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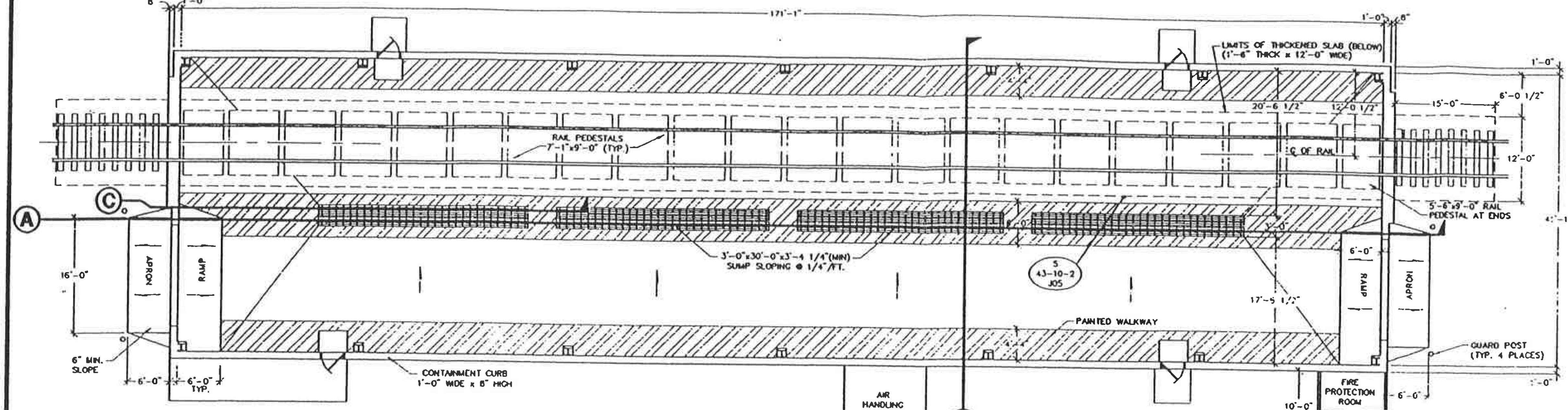
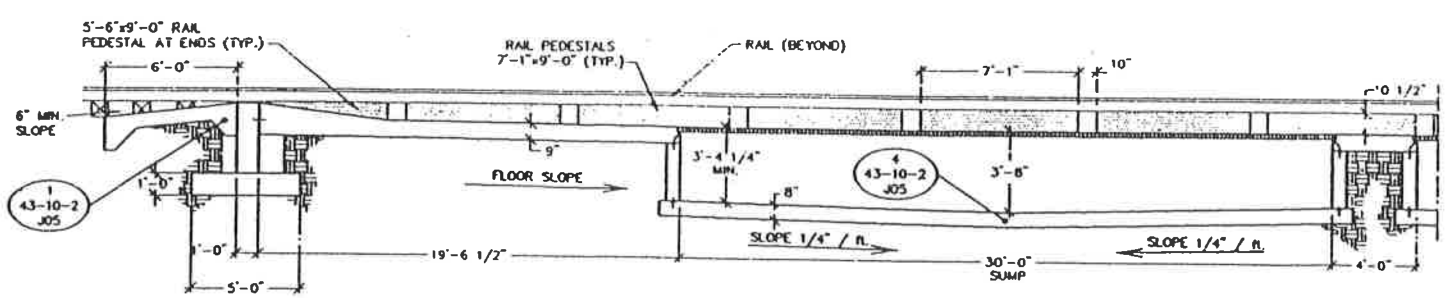


PLAN VIEW

SCALE 1/8" = 1'-0"



SUMP SECTION C–C

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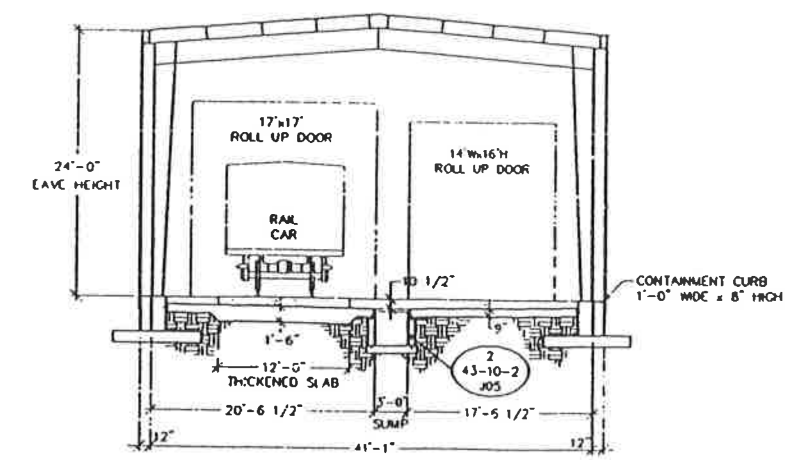

SECTION B–B

SCALE 1/4" = 1'-0"

LICENSED PROFESSIONAL ENGINEER
No. 259719
MARK C. CHRISTIAN
10/28/93
STATE OF UTAH

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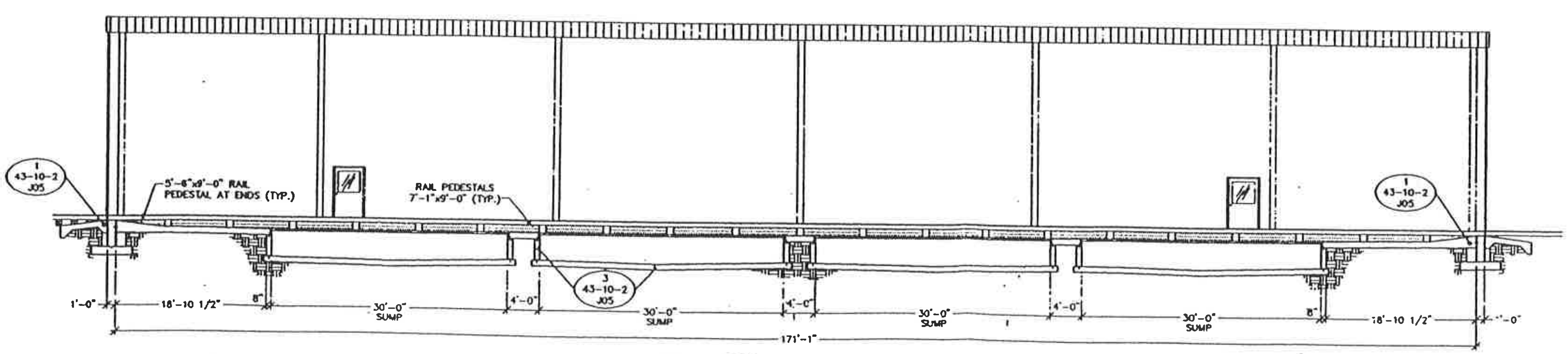


SECTION A–A

SCALE 1/8" = 1'-0"

NOTE:
INFORMATION FOR THIS DRAWING TAKEN FROM UE&C PROJECT #9909.01
AS-BUILT DRAWINGS 43-10-3-D20, 43-10-2-D51 & D52 DATED 3/31/93.
MIDWEST RAILROAD AS-BUILT DRAWING #43-10-2-51A & 51B DATED 3/31/92.

PERMIT AS BUILT DRAWING

ORIGINAL SHEET SIZE: 24" x 36"

REV.	DATE	BY	DESCRIPTION	APP'D	DATE

NOTICE

ETI CORPORATION
6799 GREAT OAKS RD. SUITE 100
MEMPHIS TENNESSEE, 38138-2500
(901) 758-0400

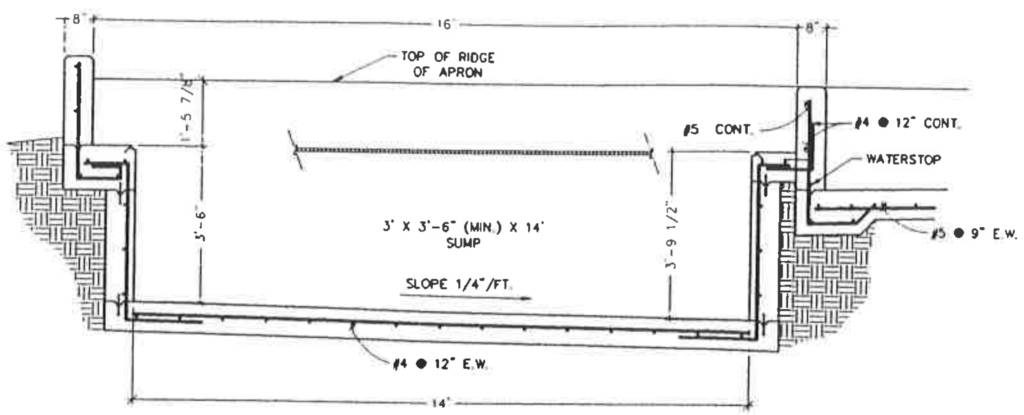
CLIVE INCINERATOR
THAW UNIT
PLAN & SECTIONS

DRN. WAC DATE 10-28-93

FILE NAME 10305P01 SCALE 1/8"=1'-0"

USPCI

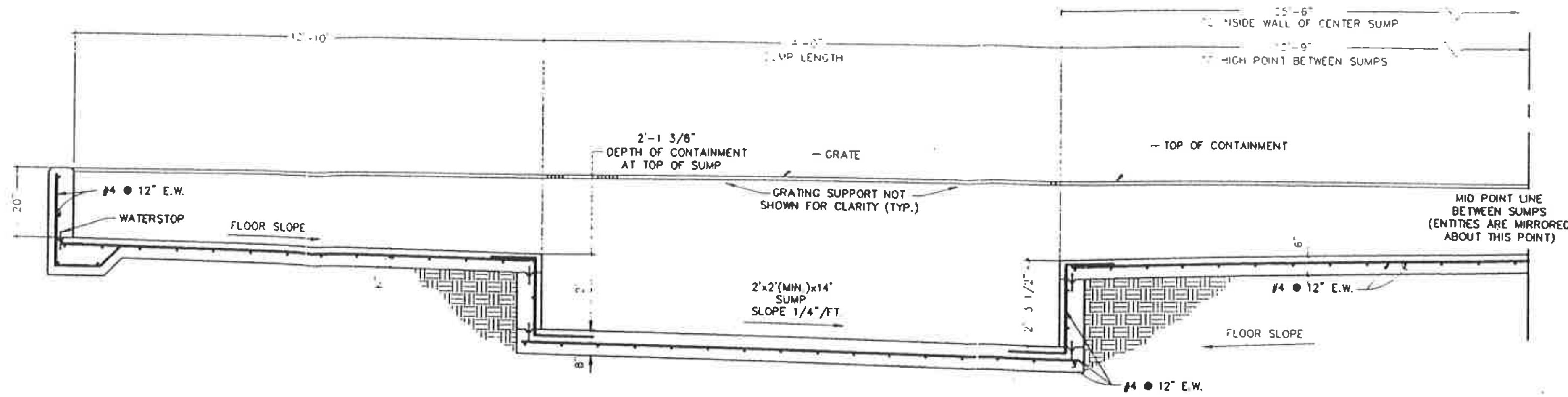
DRAWING NO. 43-10-4-J10



1 3' SUMP DETAIL (THRU LENGTH) @ LOADING BAY

REF. DWG. 43-53-4-J07

SCALE: 1/2" = 1'-0"



5 2' SUMP DETAIL (THRU SUMP LENGTH)

REF. DWG. 43-53-4-J07

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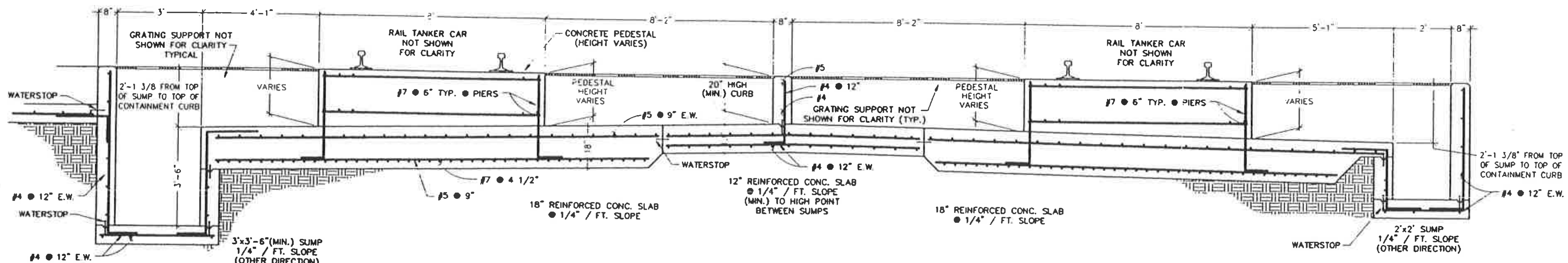


2 3' SUMP & SLAB DETAIL (THRU SUMP WIDTH)

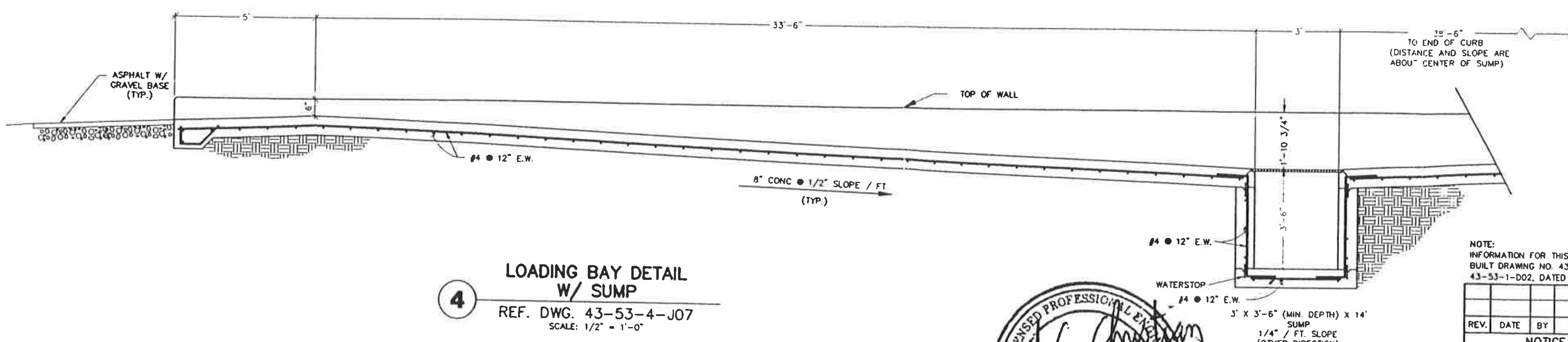
REF. DWG. 43-53-4-J07

SCALE: 1/2" = 1'-0"

3 2' SUMP & SLAB DETAIL (THRU SUMP WIDTH)

REF. DWG. 43-53-4-J07

SCALE: 1/2" = 1'-0"



4 LOADING BAY DETAIL W/ SUMP

REF. DWG. 43-53-4-J07

SCALE: 1/2" = 1'-0"

NOTE:
INFORMATION FOR THIS DRAWING TAKEN FROM ROBERTS & SCHAEFER COMPANY AS BUILT DRAWING NO. 43-53-2-D13, 43-53-2-D14, 43-53-2-D15, 43-53-2-D17 & 43-53-1-D02, DATED 2-17-93.

LICENSED PROFESSIONAL ENGINEER No. 259719 MARK C. CHRISTIAN 3/2/94 STATE OF UTAH

Mark C. Christian

ON BEHALF OF ETI CORPORATION, INC., I DO HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS DRAWING REFLECTS AS-BUILT CONDITIONS AS SPECIFICALLY DIRECTED TO AND LIMITED BY THE CONDITIONS OF THE "CONSTRUCTION CERTIFICATION REPORT, WASTE FUEL AND AQUEOUS WASTE TANK SYSTEMS CLIVE, TOOELE COUNTY, UTAH" AS PREPARED BY ETI CORPORATION.

PERMIT AS BUILT DRAWING

ORIGINAL SHEET SIZE: 24" x 36"

REV.	DATE	BY	DESCRIPTION	APP'D	DATE

ETI CORPORATION
6799 GREAT OAKS RD. SUITE 100
MEMPHIS TENNESSEE 38138-2500
(901) 758-0400

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON FRACTIONS, DECIMALS, ANGLES; BREAK SHARP EDGES; ALL FILLETS

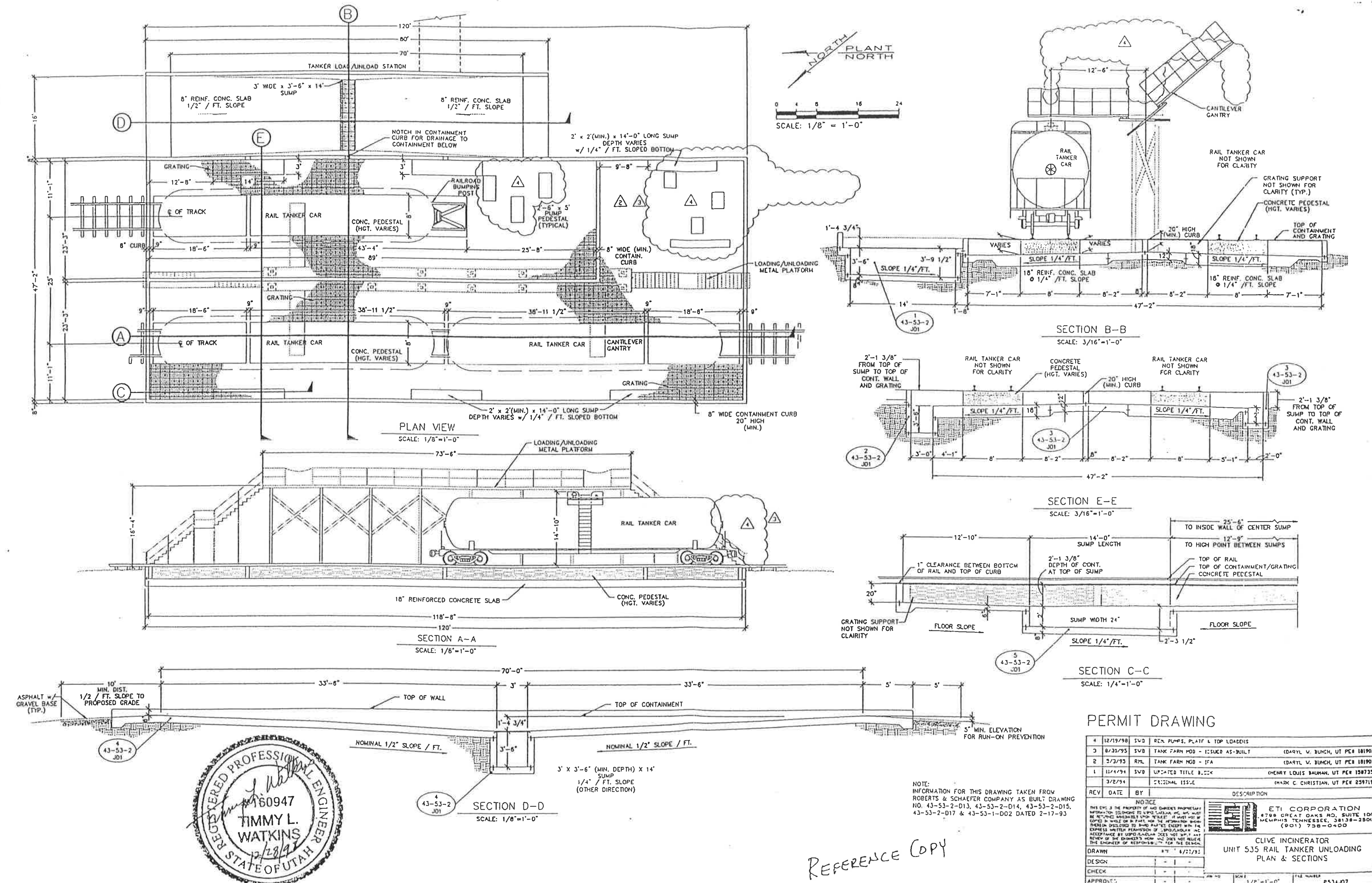
DRN: PTF DATE: 6/23/93
CHKD: DATE:
APPD: DATE:

CLIVE INCINERATOR
UNIT 535 RAIL TANKER UNLOADING
DETAILS

FILE NAME: 10315001 SCALE: 1/2"=1'-0"

USPCI
A Subsidiary of Union Pacific Corporation

DRAWING NO. 43-53-2-J01



NOTE:
INFORMATION FOR THIS DRAWING TAKEN FROM ROBERTS & SCHAEFER COMPANY AS BUILT DRAWING NO. 43-53-2-D13, 43-53-2-D14, 43-53-2-D15, 43-53-2-D17 & 43-53-1-D02 DATED 2-17-93

REFERENCE COPY

PERMIT DRAWING

REV	DATE	BY	DESCRIPTION
4	12/19/98	SVD	REM. PUMPS, PLATE & TOP LOADERS
3	8/30/95	SVD	TANK FARM MOD - ISSUED AS-BUILT (DARYL V. BUNCH, UT PE# 181901)
2	5/3/95	RML	TANK FARM MOD - IFA (DARYL V. BUNCH, UT PE# 181901)
1	11/4/94	SVD	UPDATED TITLE BLOCK (HENRY LOUIS BAUMAN, UT PE# 150735)
	3/2/94		ORIGINAL ISSUE (MARK C. CHRISTIAN, UT PE# 259719)

NOTICE

ETI CORPORATION
6799 GREAT OAKS RD, SUITE 10[illegible]
MEMPHIS TENNESSEE, 38138-250[illegible]
(901) 758-0400

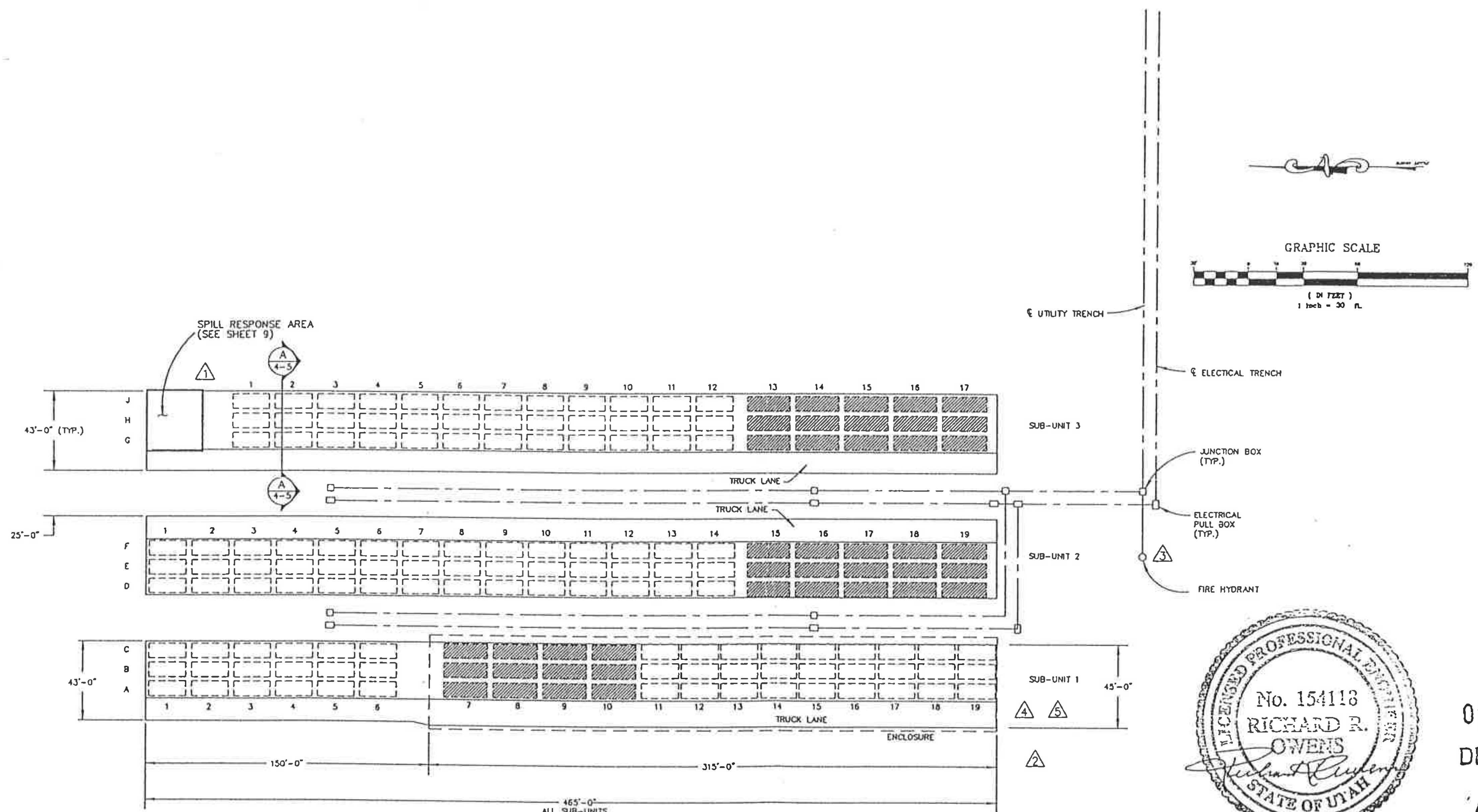
CLIVE INCINERATOR
UNIT 535 RAIL TANKER UNLOADING
PLAN & SECTIONS

DRAWN		6/23/93
DESIGN	-	-
CHECK	-	-
APPROVED	-	-

SCALE: 1/8"=1'-0"
FILE NUMBER: P534J07

USPCI LAIDLAW ENVIRONMENTAL SERVICES

DRAWING NO: 43-53-4-J07
REV: 4



LICENSED PROFESSIONAL ENGINEER
No. 154118
RICHARD R. OWENS
STATE OF UTAH
10/5/95

CAD
OCT 04 1995
DEPARTMENT

AS-BUILT

PERMIT DRAWING

REV	DATE	BY	DESCRIPTION		
6	10/4/95	SVD	ISSUED AS-BUILT		
5	8/3/95	DC	PUT ENCLOSURE BACK ON	RE	8/7/95
4	4/3/95	DC	REMOVED ENCLOSURE	VGS	4/6/95
3	12/13/94	DCH	RELOCATED FIRE HYDRANT	VGS	12/13/94
2	12/1/94	DC	REMOVED SUB-UNIT 1 TRENCHES	VGS	12/1/94
1	11/16/94	DC	REVISED SPILL RESPONSE AREA	VGS	11/16/94
0	11/8/94	DC	ISSUED FOR CONSTRUCTION	VGS	11/8/94

DRAWN	D.H.	10/13/94
DESIGN	W.S.	10/13/94
CHECK	W.S.	10/13/94
APPROVED		

CLIVE INCINERATOR
PLAN VIEW & CONTAINER GRID
UNIT 106
SHEET 4 OF 16

JOB NO.
SCALE 1"=30'-0"
FILE NUMBER 51302001

USPCI
LAIDLAW ENVIRONMENTAL SERVICES

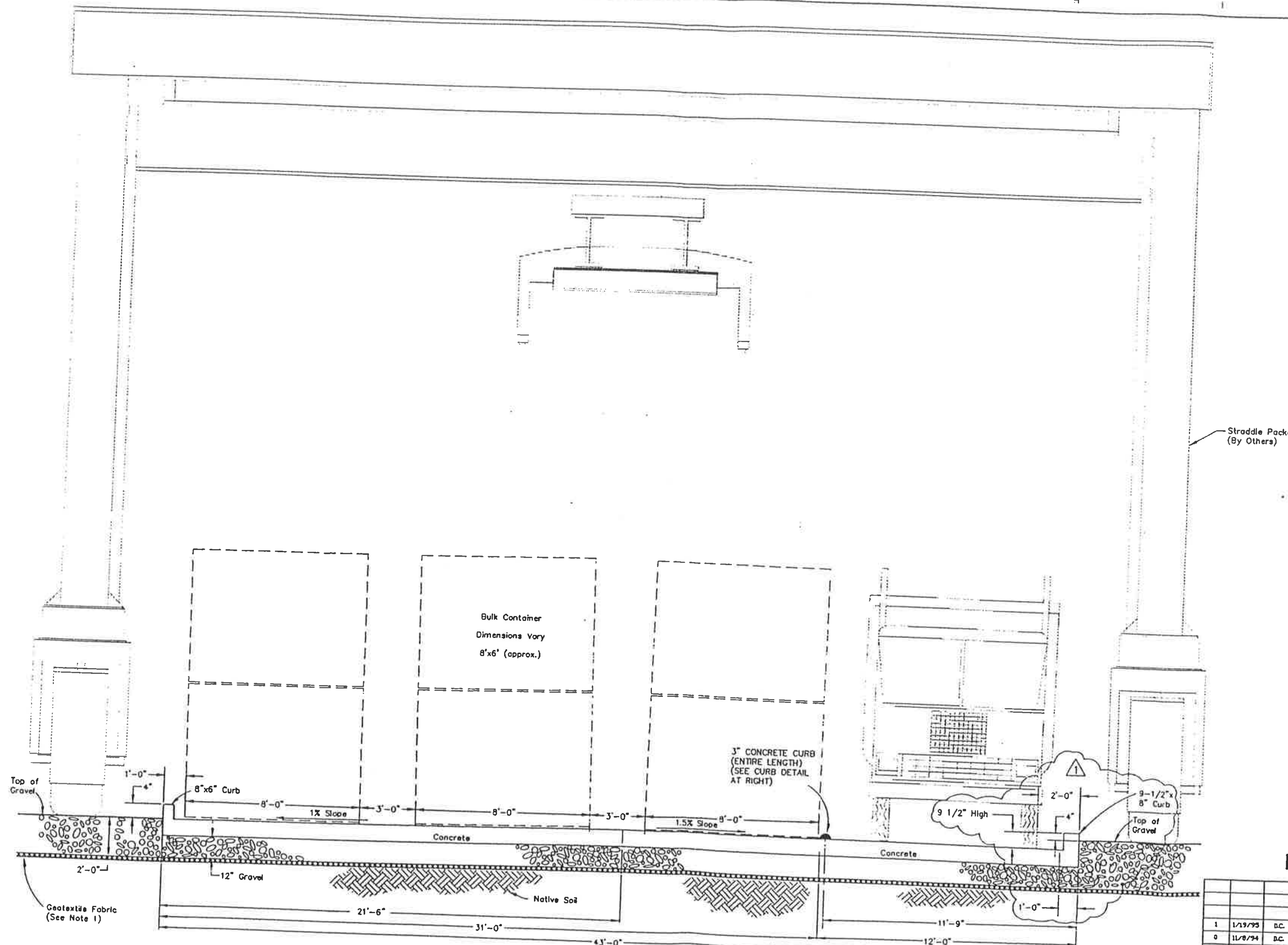
DRAWING NO. 43-10-2-D61
REV 6

LEGEND
20' CONTAINER
24' CONTAINER

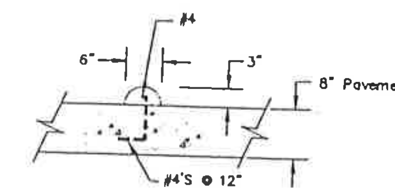
FORM DPERMIT

NOTES:

1. Geotextile Fabric Shall Be Placed Between Native Soil and the Backfilled Gravel. Geotextile Fabric Shall Conform to the Material Indicated in the Specifications.



Section A-A
(5 - 4)
n.t.s.



CONCRETE CURB DETAIL
n.t.s.

REGISTERED PROFESSIONAL ENGINEER No. 281583 WALTER G. SONNE STATE OF UTAH

Permit As-Built Drawing

REV.	DATE	BY	DESCRIPTION	APP'D	DATE
1	1/19/95	D.C.	REVISED CURB	V.G.S.	1/19/95
0	11/8/94	D.C.	ISSUED FOR CONSTRUCTION	V.G.S.	11/8/94

NOTICE
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DRAWN	D.H.	10/13/94
DESIGN	V.S.	10/13/94
CHECK	V.S.	10/13/94
APPROVED		

USPCI A Subsidiary of Union Pacific Corporation
CLIVE INCINERATION FACILITY

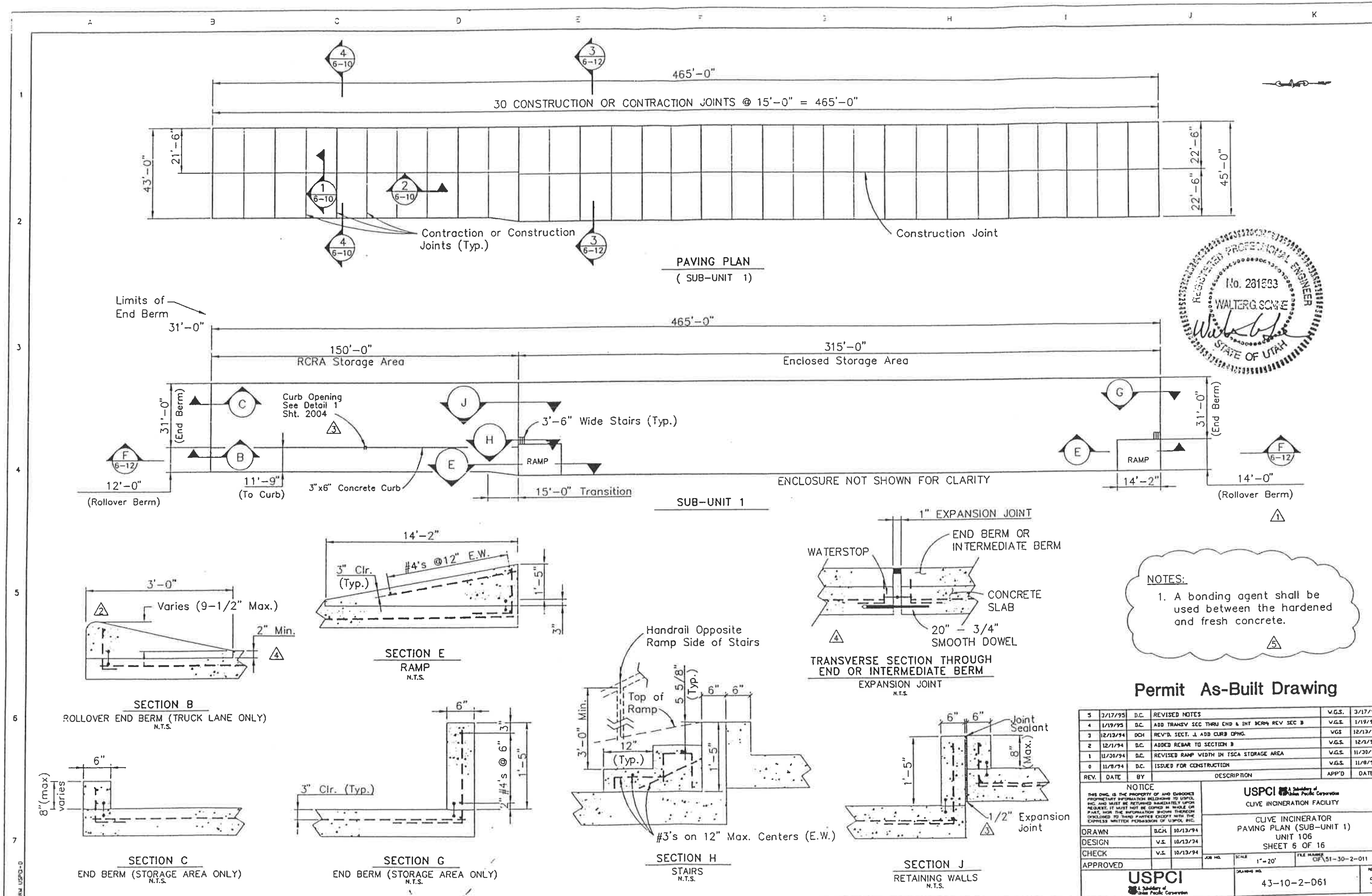
CLIVE INCINERATOR
ELEVATION
UNIT 106
SHEET 5 OF 16

JOB NO. | SCALE n.t.s. | FILE NUMBER CIF\51-30-2-002

USPCI A Subsidiary of Union Pacific Corporation

DRAWING NO. 43-10-2-D61 | REV. 1

FORM USPG-0



NOTES:

1. A bonding agent shall be used between the hardened and fresh concrete.

Permit As-Built Drawing

REV.	DATE	BY	DESCRIPTION	APP'D	DATE
5	3/17/95	D.C.	REVISED NOTES	V.G.S.	3/17/95
4	1/19/95	D.C.	ADD TRANSV SEC THRU END & INT BERM REV SEC B	V.G.S.	1/19/95
3	12/13/94	DCH	REV'D. SECT. J. ADD CURB OPNG.	VGS	12/13/94
2	12/1/94	D.C.	ADDED REBAR TO SECTION B	V.G.S.	12/1/94
1	11/30/94	D.C.	REVISED RAMP WIDTH IN TSCA STORAGE AREA	V.G.S.	11/30/94
0	11/8/94	D.C.	ISSUED FOR CONSTRUCTION	V.G.S.	11/8/94

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DRAWN	D.C.H.	10/13/94
DESIGN	V.S.	10/13/94
CHECK	V.S.	10/13/94
APPROVED		

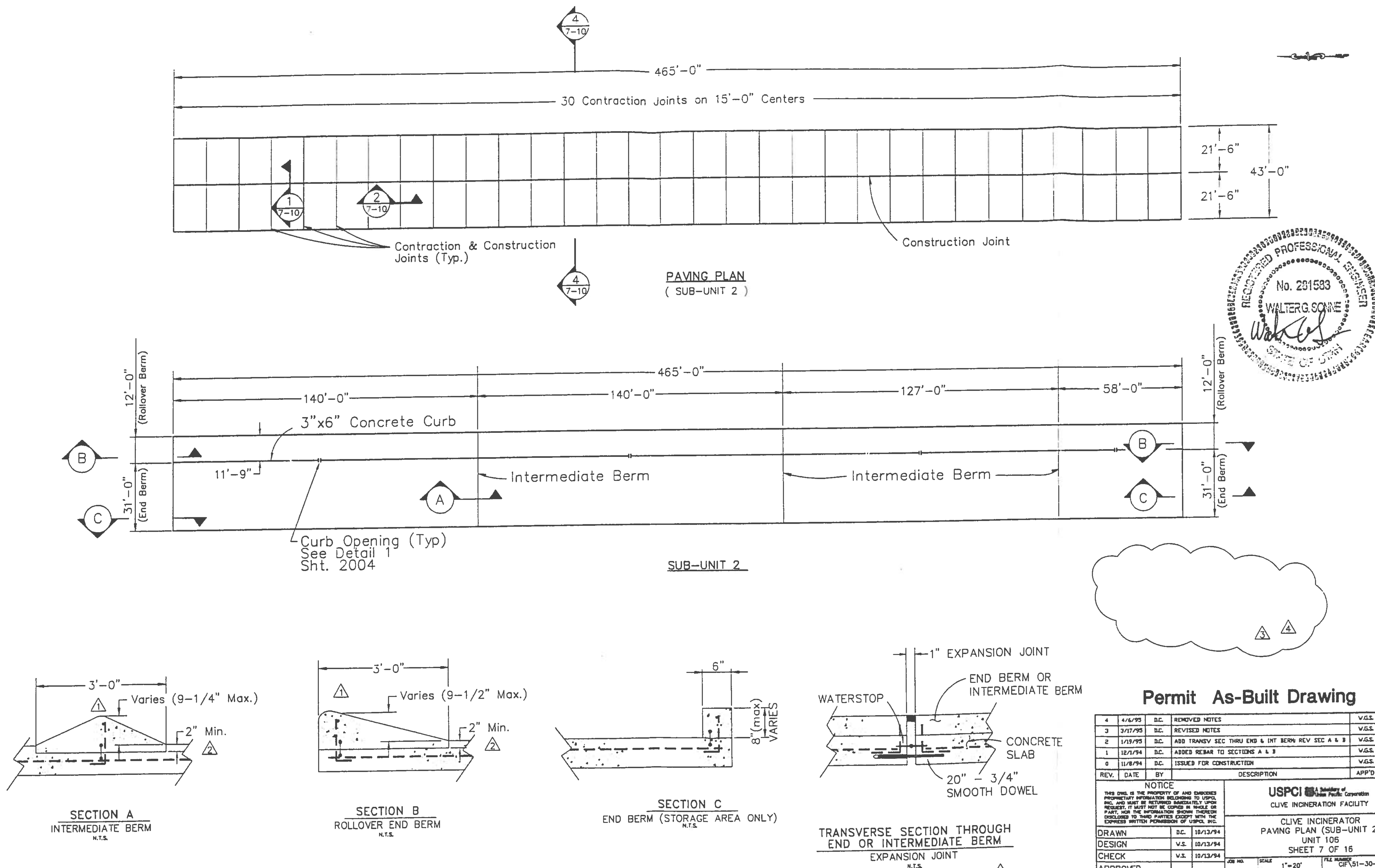
USPCI A Subsidiary of Union Pacific Corporation
CLIVE INCINERATION FACILITY

CLIVE INCINERATOR
PAVING PLAN (SUB-UNIT 1)
UNIT 106
SHEET 6 OF 16

JOB NO. | SCALE 1"=20' | FILE NUMBER CIF\51-30-2-011

USPCI A Subsidiary of Union Pacific Corporation

DRAWING NO. 43-10-2-D61 | REV. 5



Permit As-Built Drawing

REV.	DATE	BY	DESCRIPTION	APP'D	DATE
4	4/6/95	D.C.	REMOVED NOTES	V.G.S.	4/6/95
3	3/17/95	D.C.	REVISED NOTES	V.G.S.	3/17/95
2	1/19/95	D.C.	ADD TRANSV SEC THRU END & INT BERM; REV SEC A & B	V.G.S.	1/19/95
1	12/1/94	D.C.	ADDED REBAR TO SECTIONS A & B	V.G.S.	12/1/94
0	11/8/94	D.C.	ISSUED FOR CONSTRUCTION	V.G.S.	11/8/94

NOTICE

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DRAWN	D.C.	10/13/94
DESIGN	V.S.	10/13/94
CHECK	V.S.	10/13/94
APPROVED		

USPCI A Subsidiary of Union Pacific Corporation
CLIVE INCINERATION FACILITY

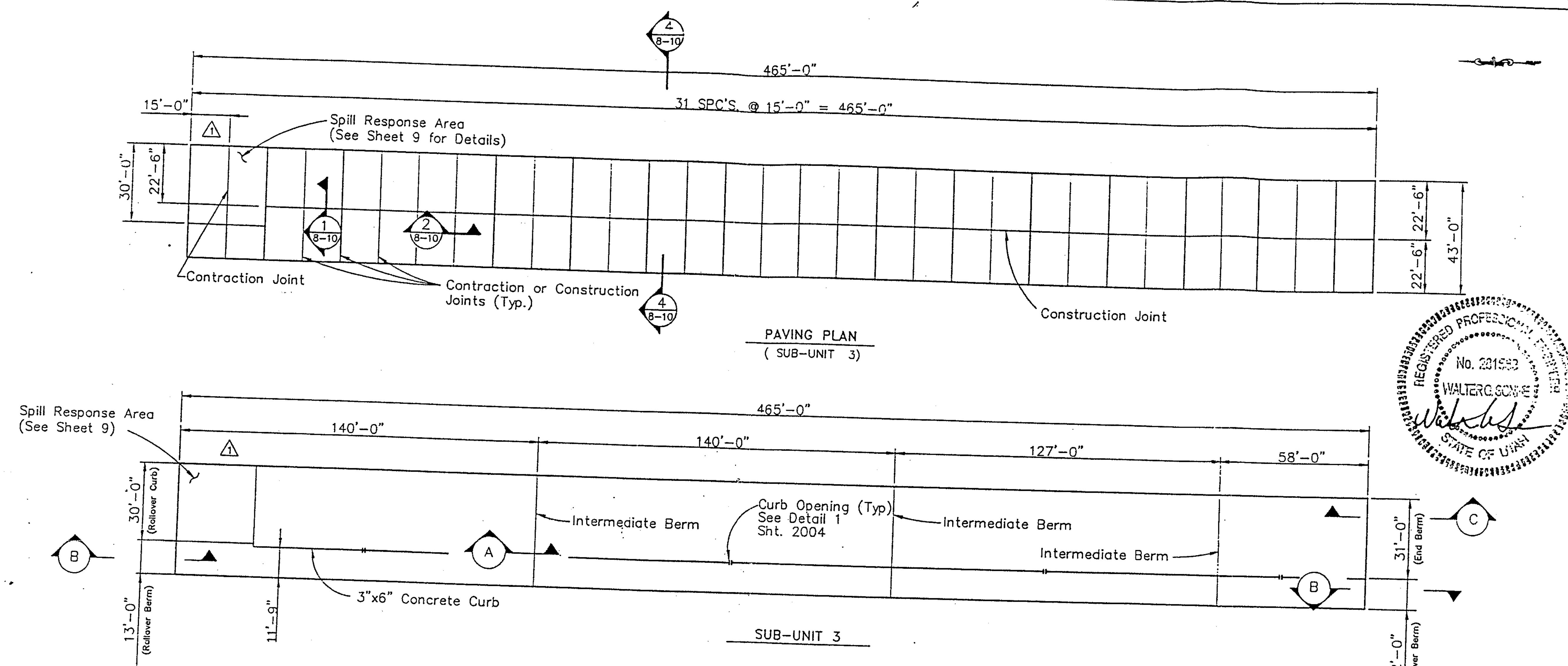
CLIVE INCINERATOR
PAVING PLAN (SUB-UNIT 2)
UNIT 106
SHEET 7 OF 16

JOB NO. | SCALE 1"=20' | FILE NUMBER CIF\51-30-2-003

DRAWING NO. 43-10-2-D61 | REV. 4

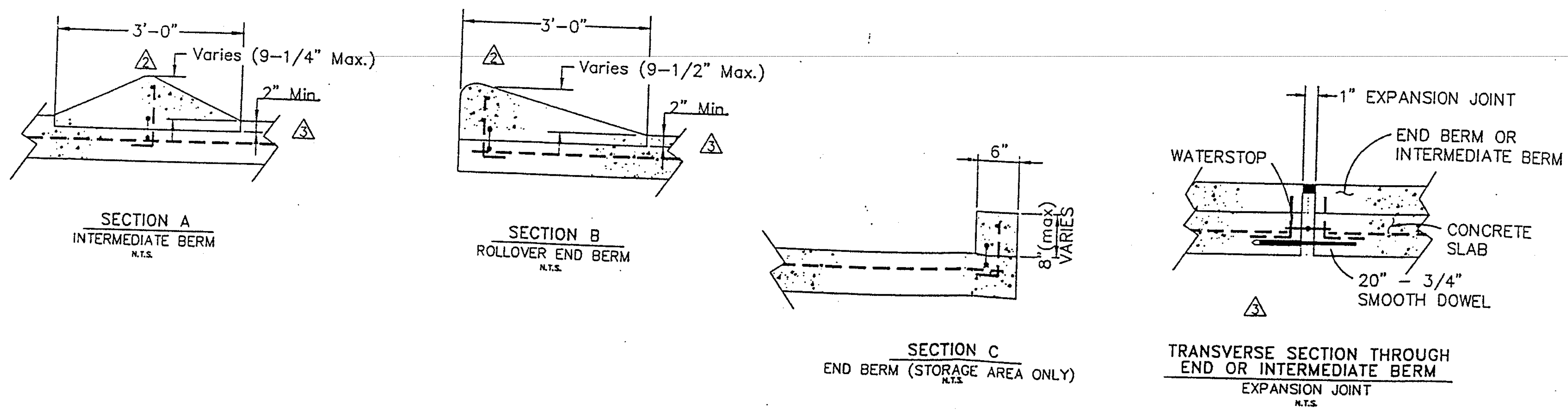
FORM USPCI-D

NAME: G:\PROJECTS\CIF\51302003.DWG DATE: APR 06, 1995 TIME: 10:14 AM



NOTES:

1. A bonding agent shall be used between the hardened and fresh concrete.



Permit As-Built Drawing

REV.	DATE	BY	DESCRIPTION	APP'D	DATE
4	3/17/95	D.C.	REVISED NOTES	V.G.S.	3/17/95
3	1/19/95	D.C.	ADD TRANSV SEC THRU END & INT BERM REV SEC A & B	V.G.S.	1/19/95
2	12/1/94	D.C.	ADDED REBAR TO SECTIONS A & B	V.G.S.	12/1/94
1	11/16/94	D.C.	REVISED SPILL RESPONSE AREA	V.G.S.	11/16/94
0	11/8/94	D.C.	ISSUED FOR CONSTRUCTION	V.G.S.	11/8/94

NOTICE

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DRAWN	D.C.H.	10/13/94
DESIGN	V.S.	10/13/94
CHECK	V.S.	10/13/94
APPROVED		

USPCI A Subsidiary of Union Pacific Corporation

CLIVE INCINERATION FACILITY

CLIVE INCINERATOR
PAVING PLAN (SUB-UNIT 3)
UNIT 106
SHEET 8 OF 16

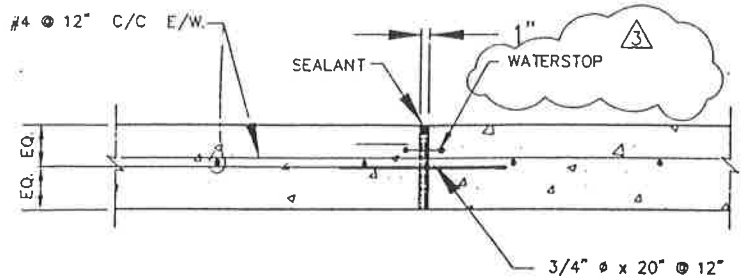
JOB NO. | SCALE 1"=20' | FILE NUMBER CIF\51-30-2-010

USPCI A Subsidiary of Union Pacific Corporation

DRAWING NO. 43-10-2-061 | REV. 4

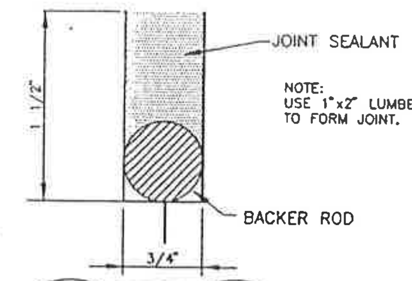
REGISTERED PROFESSIONAL ENGINEER No. 201593 WALTER G. SCHE... STATE OF UTAH

FORM USPCI-0

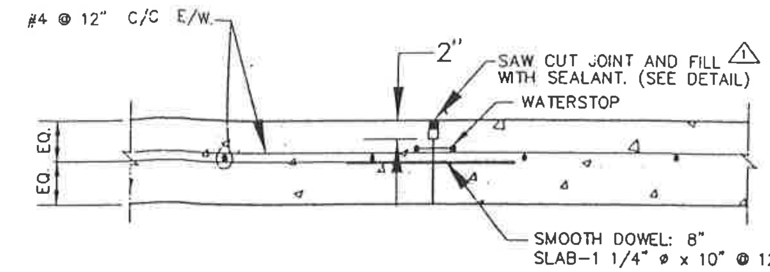


SECTION 1

LONGITUDINAL EXPANSION JOINT @ 8" SLAB INTERSECTION



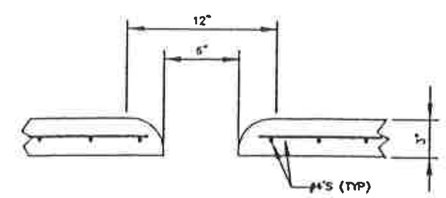
SAW CUT JOINT DETAIL



TRANSVERSE CONTRACTION JOINT

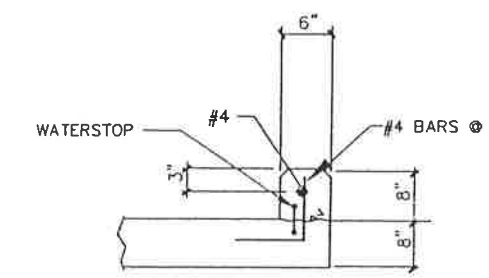
TRANSVERSE CONSTRUCTION JOINT

SECTION 2

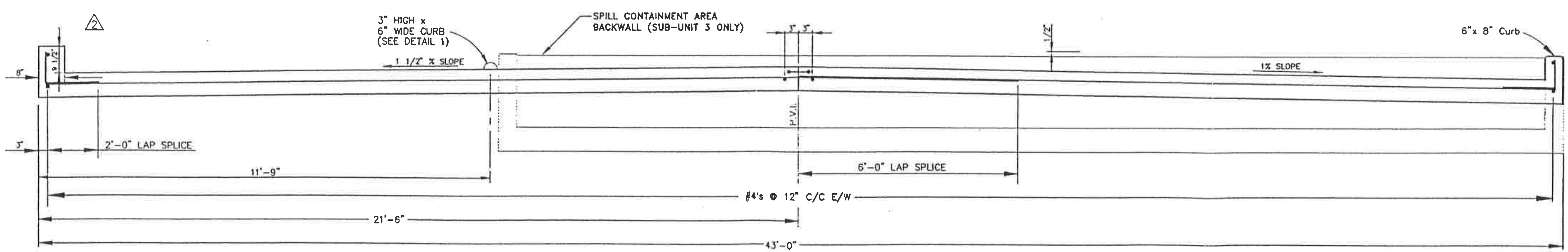


DETAIL 1

CURB OPENING
ONE OPENING AT THE CENTER OF ALL BAYS
BETWEEN INTERMEDIATE BERMS



LONGITUDINAL CURB



Section 4

(10 - 6) (9 - 10)

REGISTERED PROFESSIONAL ENGINEER
No. 281583
WALTER G. SCHNE
STATE OF UTAH

NOTES:

1. WATERSTOPS REQUIRED FOR COLD JOINTS SHALL BE RIBBED WITH CENTER BULB, STYLE 705 (PVC) BY GREEN STREAK PLASTIC PRODUCTS CO., OR EQUAL.

2. A BONDING AGENT SHALL BE USED BETWEEN THE HARDENED AND FRESH CONCRETE.

Permit As-Built Drawing

REV.	DATE	BY	DESCRIPTION	APP'D	DATE
3	3/17/95	D.C.	REVISED NOTES, SECTION NOTATIONS	V.G.S.	3/17/95
2	1/19/95	D.C.	CHANGED CURB, REMOVED ROLLOVER CURB DETAIL	V.G.S.	1/19/95
1	12/14/94	DCH	ADDED DET. 1 & CGH'D. SAW-CUT DET. & DOWEL SEC. 1	VGS	12/14/94
0	11/8/94	D.C.	ISSUED FOR CONSTRUCTION	V.G.S.	11/8/94

NOTICE

DRAWN	D.C.H.	10/13/94
DESIGN	V.S.	10/13/94
CHECK	V.S.	10/13/94
APPROVED		

USPCI A Subsidiary of Union Pacific Corporation

CLIVE INCINERATION FACILITY

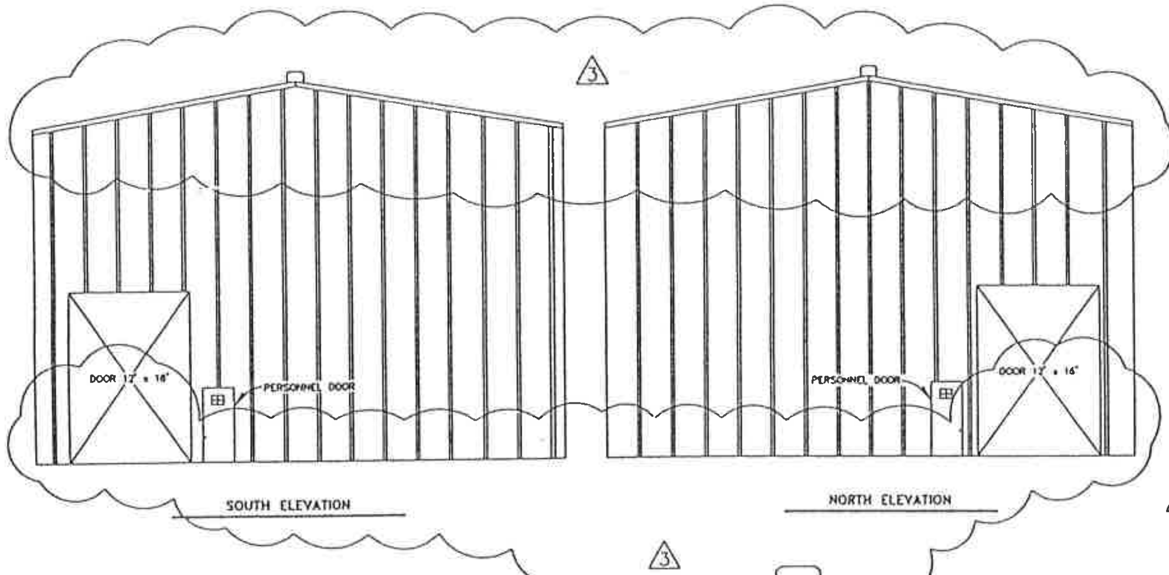
CLIVE INCINERATOR
DETAILS
UNIT 106
SHEET 10 OF 16

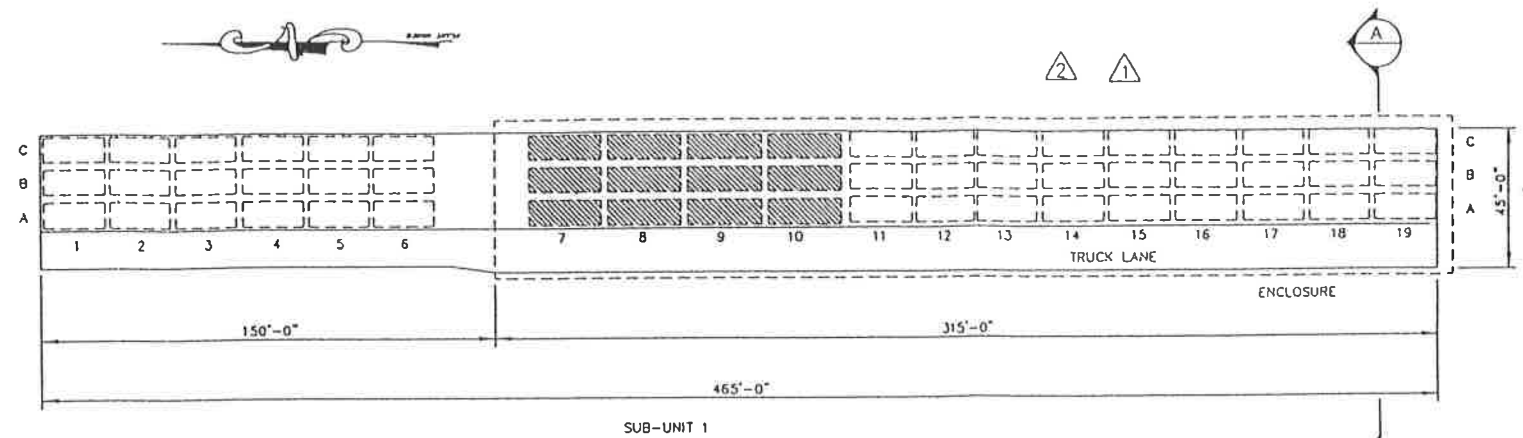
JOB NO. | SCALE n.t.s. | FILE NUMBER CIF\51-30-2-004

USPCI A Subsidiary of Union Pacific Corporation

DRAWING NO. 43-10-2-D61 | REV. 3

FORM USPCI-D



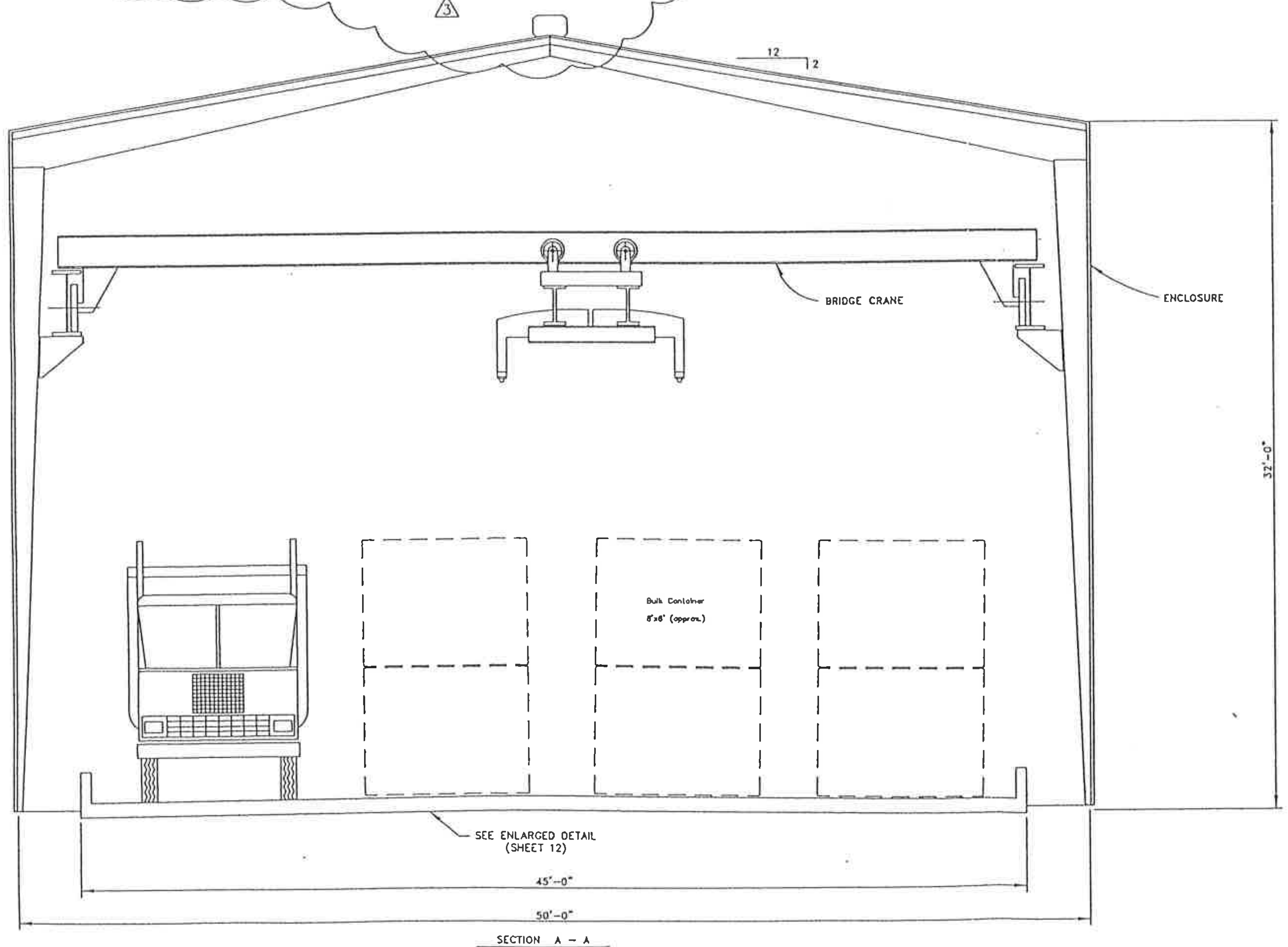


NOTE:
RAMP AND STAIRS NOT SHOWN FOR CLARITY

LEGEND

20' CONTAINER

24' CONTAINER



1
2

LICENSED PROFESSIONAL ENGINEER
No. 154113
RICHARD R. OWENS
STATE OF UTAH
10/5/95

CAD
OCT 0 1995
DEPARTMENT

AS-BUILT

PERMIT DRAWING

REV	DATE	BY	DESCRIPTION		
3	10/4/95	SVD	ISSUED AS-BUILT		
2	8/3/95	DC	PUT ELEVATIONS, ENCLOSURE BACK ON	RC	8/7/95
1	4/6/95	DC	REMOVED ENCLOSURE IN PLAN & SECTION; ELEVATIONS	VGS	4/6/95
0	11/8/94	DC	ISSUED FOR CONSTRUCTION	VGS	11/8/94

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DRAWN	DH	10/13/94
DESIGN	WS	10/13/94
CHECK	WS	10/13/94
APPROVED		

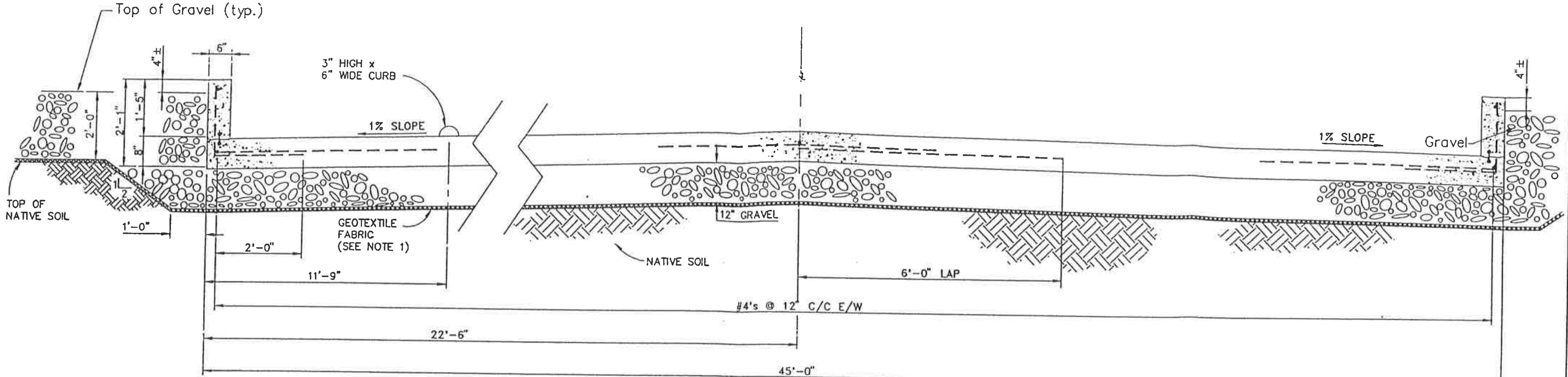
CLIVE INCINERATOR
ENCLOSURE SECTION & ELEVATIONS
UNIT 106
SHEET 11 OF 16

JOB NO. | SCALE: NTS | FILE NUMBER: 51302007

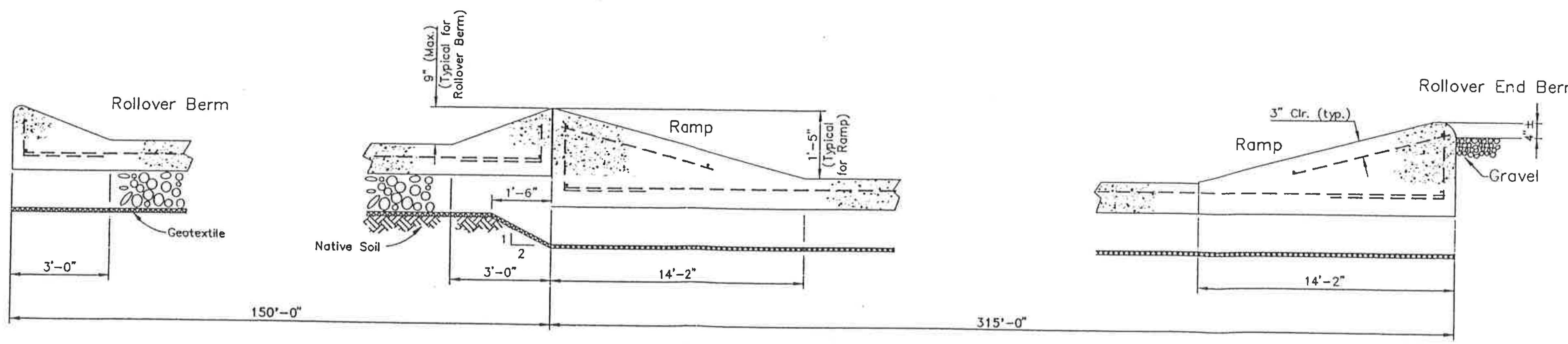
USPCI LAIDLAW ENVIRONMENTAL SERVICES

DRAWING NO. 43-10-2-D61 | REV 3

FORM DPERMIT



SECTION 3
(12 - 6)



SECTION F
(12 - 6)

REGISTERED PROFESSIONAL ENGINEER
No. 281583
WALTER G. SONNE
STATE OF UTAH

NOTES:

1. Geotextile Fabric Shall Be Placed Between Native Soil and the Backfilled Gravel. Geotextile Fabric Shall Conform to the Material Indicated in the Specifications.

Permit As-Built Drawing

REV.	DATE	BY	DESCRIPTION	APP'D	DATE
0	11/8/94	B.C.	ISSUED FOR CONSTRUCTION	V.G.S.	11/8/94

NOTICE
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USPCI A Subsidiary of Union Pacific Corporation
CLIVE INCINERATION FACILITY

DRAWN	D.H.	10/13/94
DESIGN	V.S.	10/13/94
CHECK	V.S.	10/13/94
APPROVED		

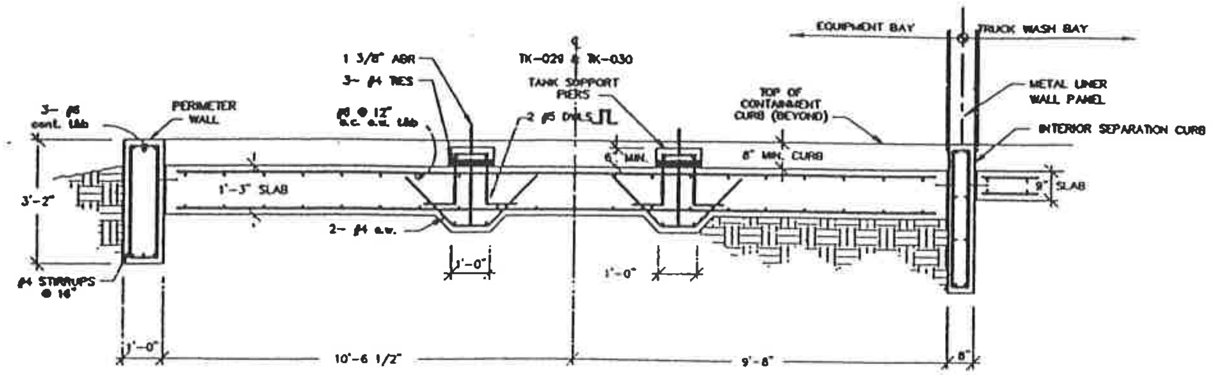
CLIVE INCINERATOR
ENCLOSURE CONTAINMENT AREA
UNIT 106
SHEET 12 OF 16

SCALE: n.t.s.
FILE NUMBER: CIF\51-30-2-006

USPCI A Subsidiary of Union Pacific Corporation

DRAWING NO. 43-10-2-061
REV. 0

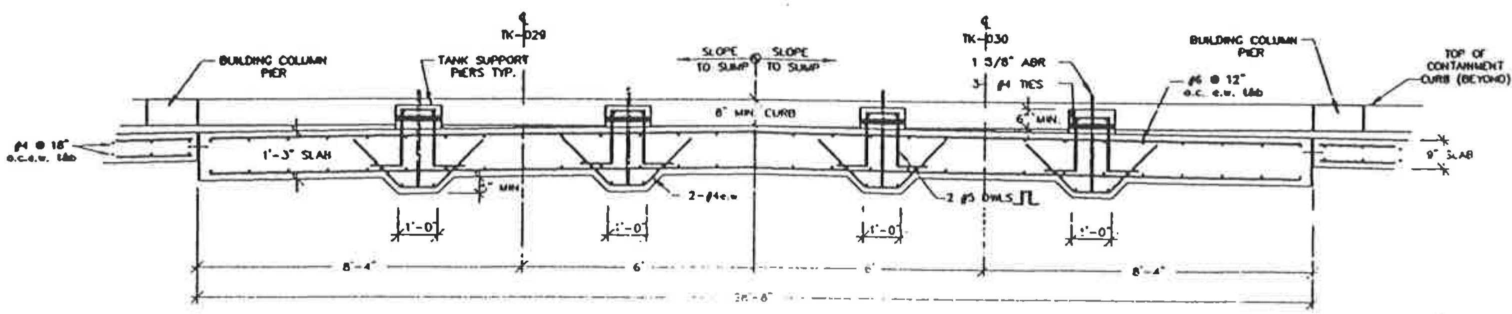
FORM USPCI-0



SECTION THRU TANK FOUNDATION & CURBS

1 REF. DWG. 43-60-2-J04

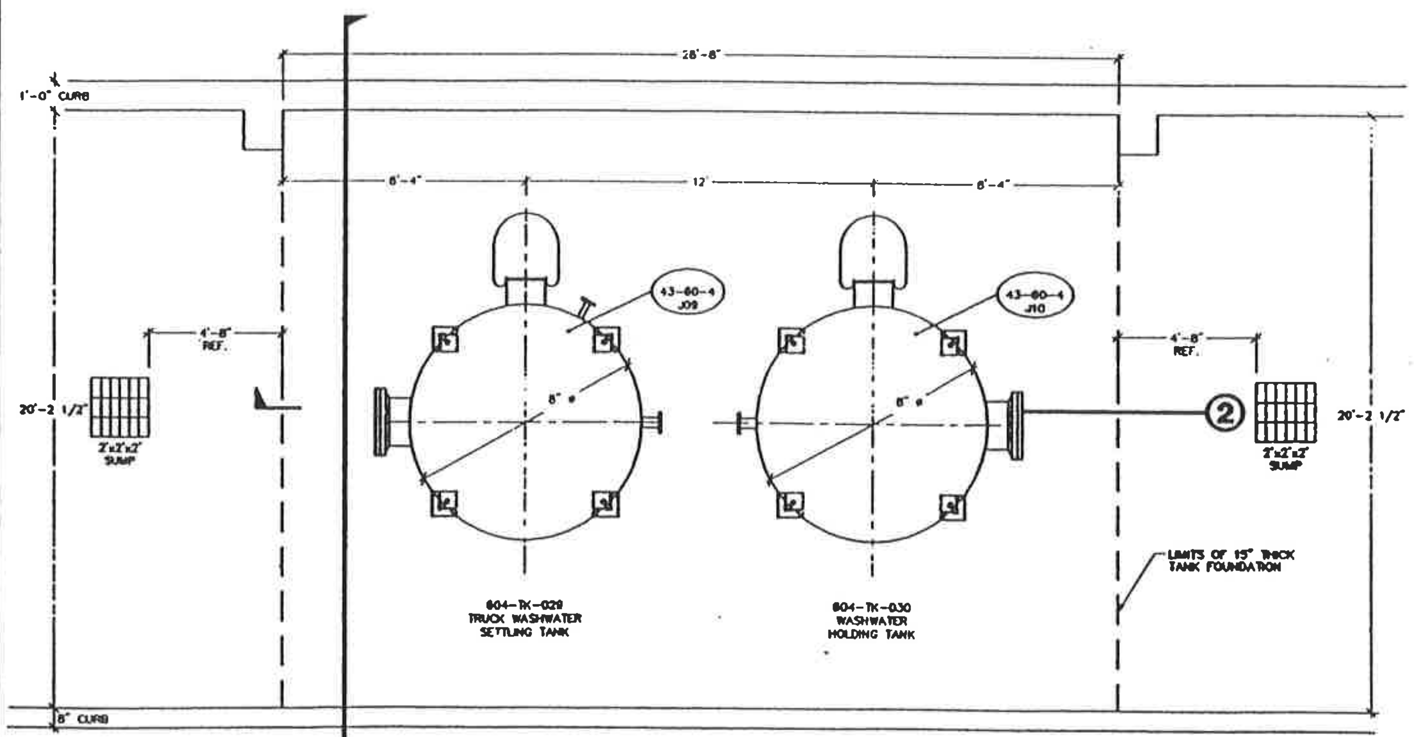
SCALE: 1/2" = 1'-0"



SECTION THRU TANK FOUNDATION

2 REF. DWG. 43-60-2-J04

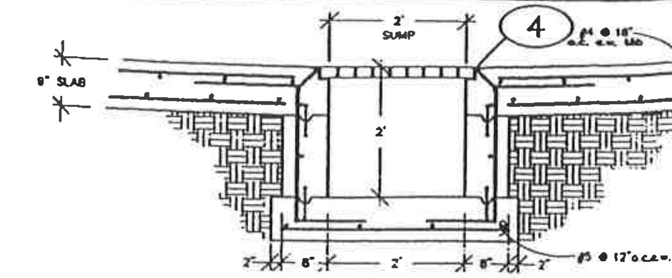
SCALE: 3/8" = 1'-0"



PLAN VIEW TANK FOUNDATION

SCALE: 3/8" = 1'-0"

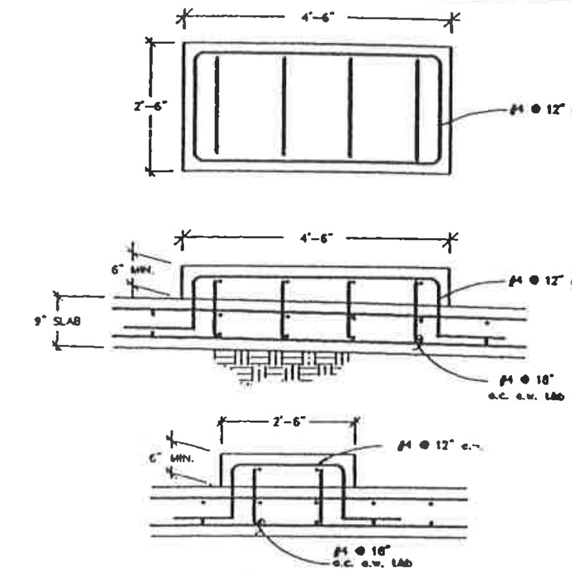
PLANT NORTH



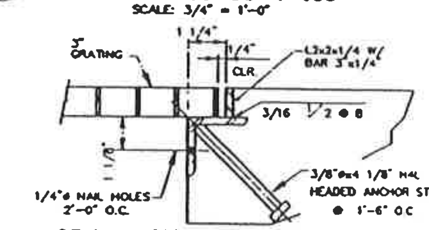
2'x2'x2' SUMP DETAIL EQUIPMENT BAY

3 REF. DWG. 43-60-4-J08

SCALE: 3/4" = 1'-0"



GRATE SUPPORT DETAIL EQUIPMENT BAY



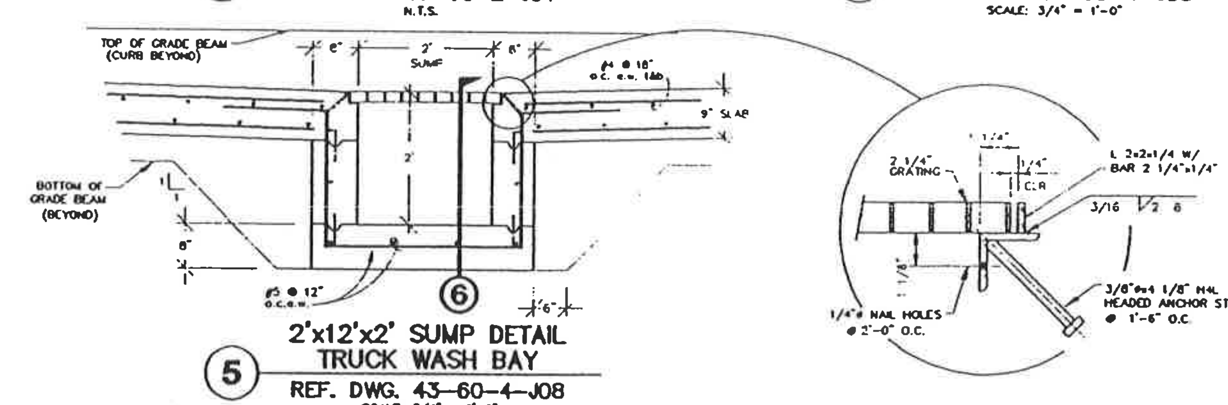
4 REF. DWG. 43-60-2-J04

N.T.S.

TYPICAL PUMP PEDESTAL DETAIL

7 REF. DWG. 43-60-4-J08

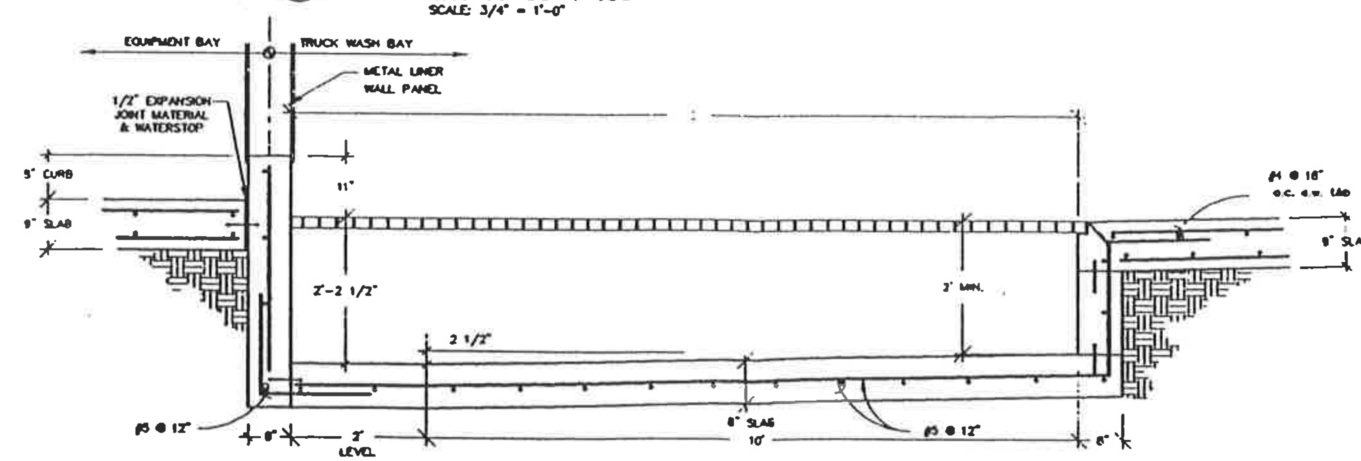
SCALE: 3/4" = 1'-0"



2'x12'x2' SUMP DETAIL TRUCK WASH BAY

5 REF. DWG. 43-60-4-J08

SCALE: 3/4" = 1'-0"



SECTION THRU 2'x12'x2'SUMP TRUCK WAH BAY

6 REF. DWG. 43-60-2-J04

SCALE: 3/4" = 1'-0"

NOTE:
INFORMATION FOR THIS DRAWING WAS TAKEN FROM UNITED ENGINEERS & CONSTRUCTORS JOB # 9908.001, AS-BUILT DRAWINGS #43-60-2-041, D42, D43, #43-00-2-002 & #43-60-3-001, DATED 3/31/93.

LICENSED PROFESSIONAL ENGINEER No. 259719 MARK C. CHRISTIAN STATE OF UTAH 10/26/93

ON BEHALF OF ETI CORPORATION, INC., I DO HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS DRAWING REFLECTS AS-BUILT CONDITIONS AS SPECIFICALLY DIRECTED TO AND LIMITED BY THE CONDITIONS OF THE "CONSTRUCTION CERTIFICATION REPORT, TRUCK WASH, CLIVE, TOOELE COUNTY, UTAH" AS PREPARED BY ETI CORPORATION.

PERMIT AS BUILT DRAWING

ORIGINAL SHEET SIZE: 24" x 36"

REV.	DATE	BY	DESCRIPTION	APP'D	DATE

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DRN. RTF DATE 10-26-93

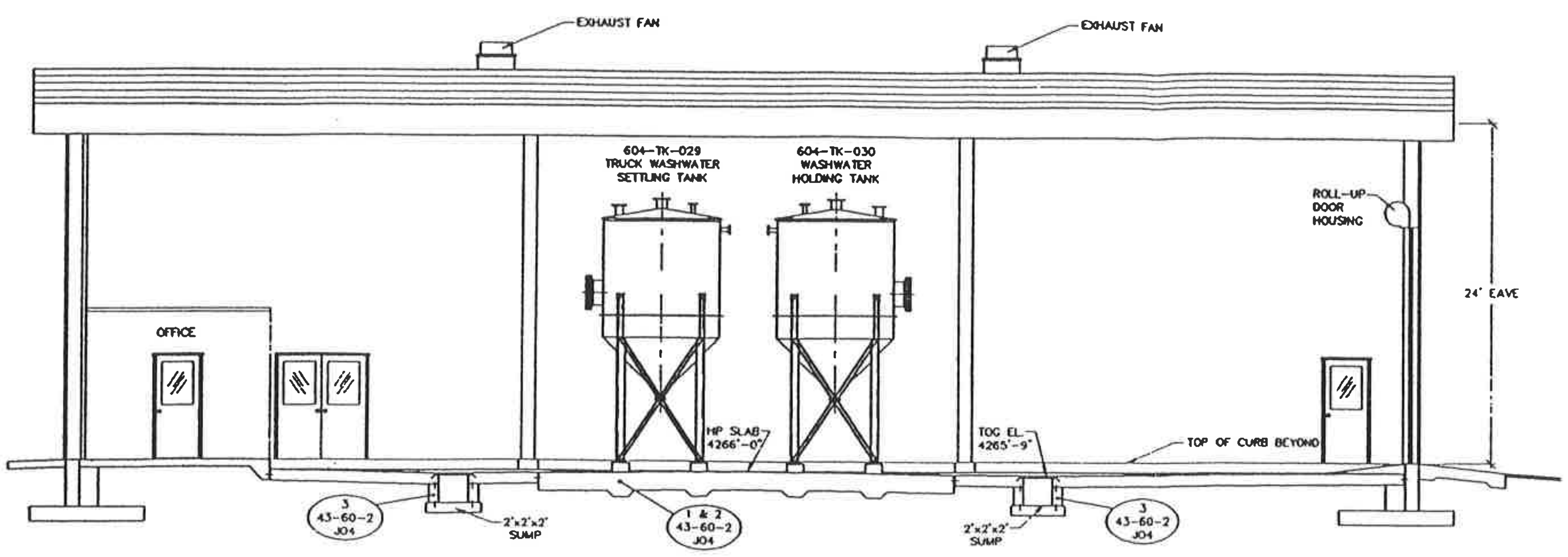
ETI CORPORATION
6799 GREAT OAKS RD. SUITE 100
MEMPHIS TENNESSEE, 38138-2500
(901) 758-0400

CLIVE INCINERATOR
TRUCK WASH TANK FOUNDATION
DETAILS

FILE NAME 103V4001 | SCALE AS NOTED | DRAWING NO. 604-2-04

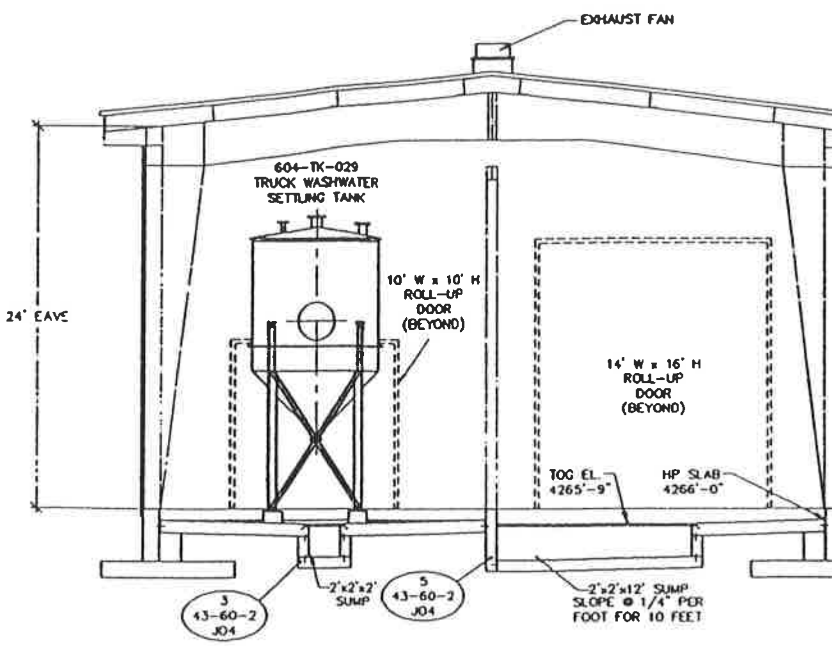
DRAWING NO. 43-60-2-J04

USPCI
A Subsidiary of Union Pacific Corporation



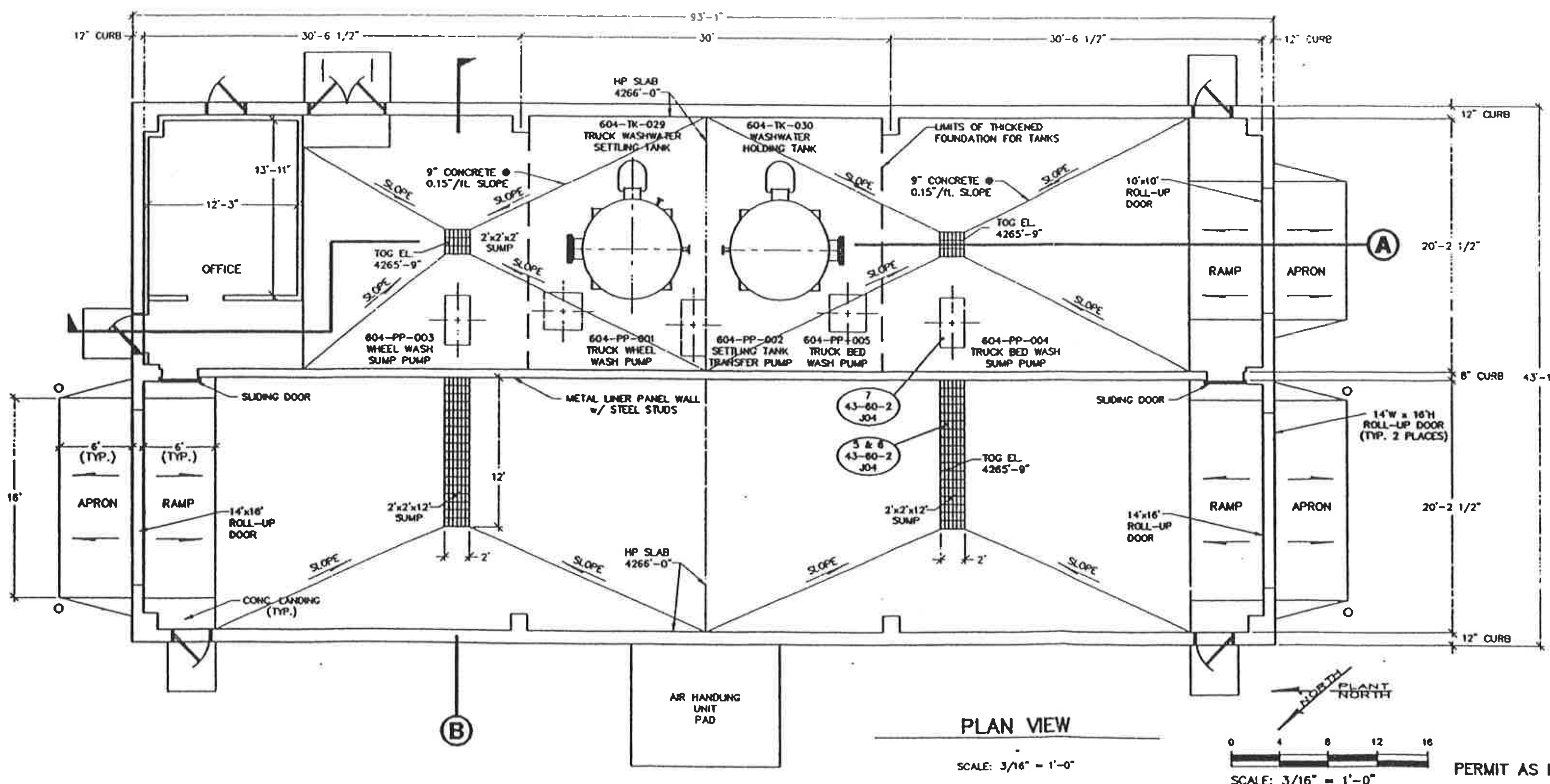
A — SECTION THRU EQUIPMENT BAY

SCALE: 3/16" = 1'-0"



B — SECTION THRU EQUIPMENT & WASH BAYS

SCALE: 3/16" = 1'-0"



PLAN VIEW

SCALE: 3/16" = 1'-0"

0 4 8 12 16

SCALE: 3/16" = 1'-0"

LICENSED PROFESSIONAL ENGINEER
No. 259719
MARK C. CHRISTIAN
STATE OF UTAH
Mark C. Christian
10/26/93

ON BEHALF OF ETI CORPORATION, INC., I DO HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS DRAWING REFLECTS AS-BUILT CONDITIONS AS SPECIFICALLY DIRECTED TO AND LIMITED BY THE CONDITIONS OF THE "CONSTRUCTION CERTIFICATION REPORT, TRUCK WASH CLIVE, TOOELE COUNTY, UTAH," AS PREPARED BY ETI CORPORATION.

NOTE:
INFORMATION FOR THIS DRAWING WAS TAKEN FROM UNITED ENGINEERS & CONSTRUCTORS JOB # 9909.001, AS-BUILT DRAWING #43-60-2-041, #43-60-2-042, #43-60-2-043 & #43-60-3-001, DATED 3/31/93.

REV.	DATE	BY	DESCRIPTION	APP'D	DATE

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ETI CORPORATION
6799 GREAT OAKS RD, SUITE 100
MEMPHIS TENNESSEE, 38138-2500
(901) 758-0400

CLIVE INCINERATOR
TRUCK WASH
PLAN & SECTIONS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON FRACTIONS DECIMALS ANGLES

BREAK SHARP EDGES, ALL FILLETS

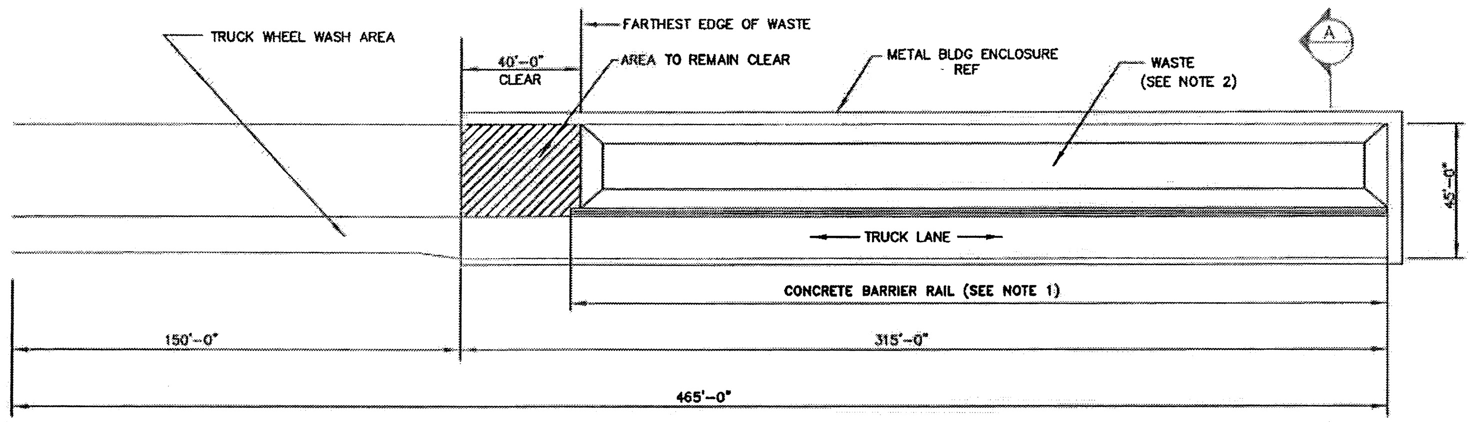
DWN. LC DATE 10-26-93
CHKD. DATE
APPD. DATE

FILE NAME 103V4P01 | SCALE 3/16"=1'-0" | DRAWING NO. 604-4-08 | REV.

USPCI
A Subsidiary of Union Pacific Corporation

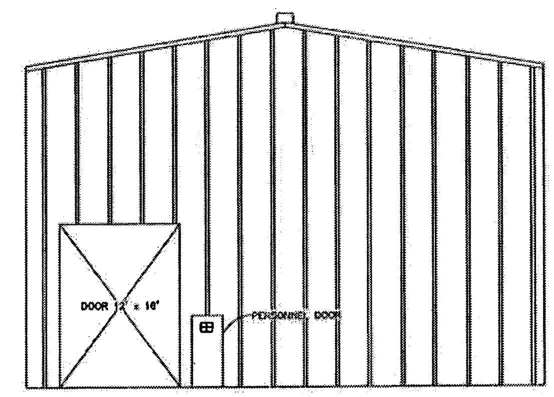
DRAWING NO. 43-60-4-J08 | REV.

PERMIT AS BUILT DRAWING
ORIGINAL SHEET SIZE: 24" x 36"

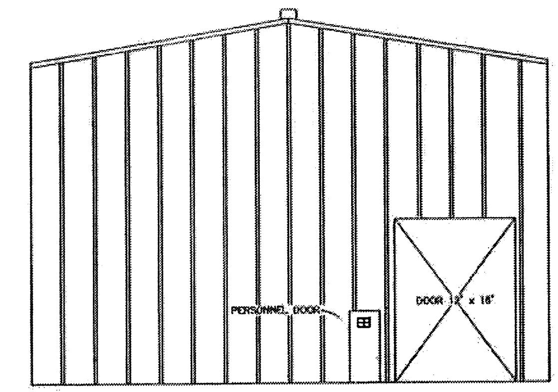


SUB-UNIT 1
PLAN

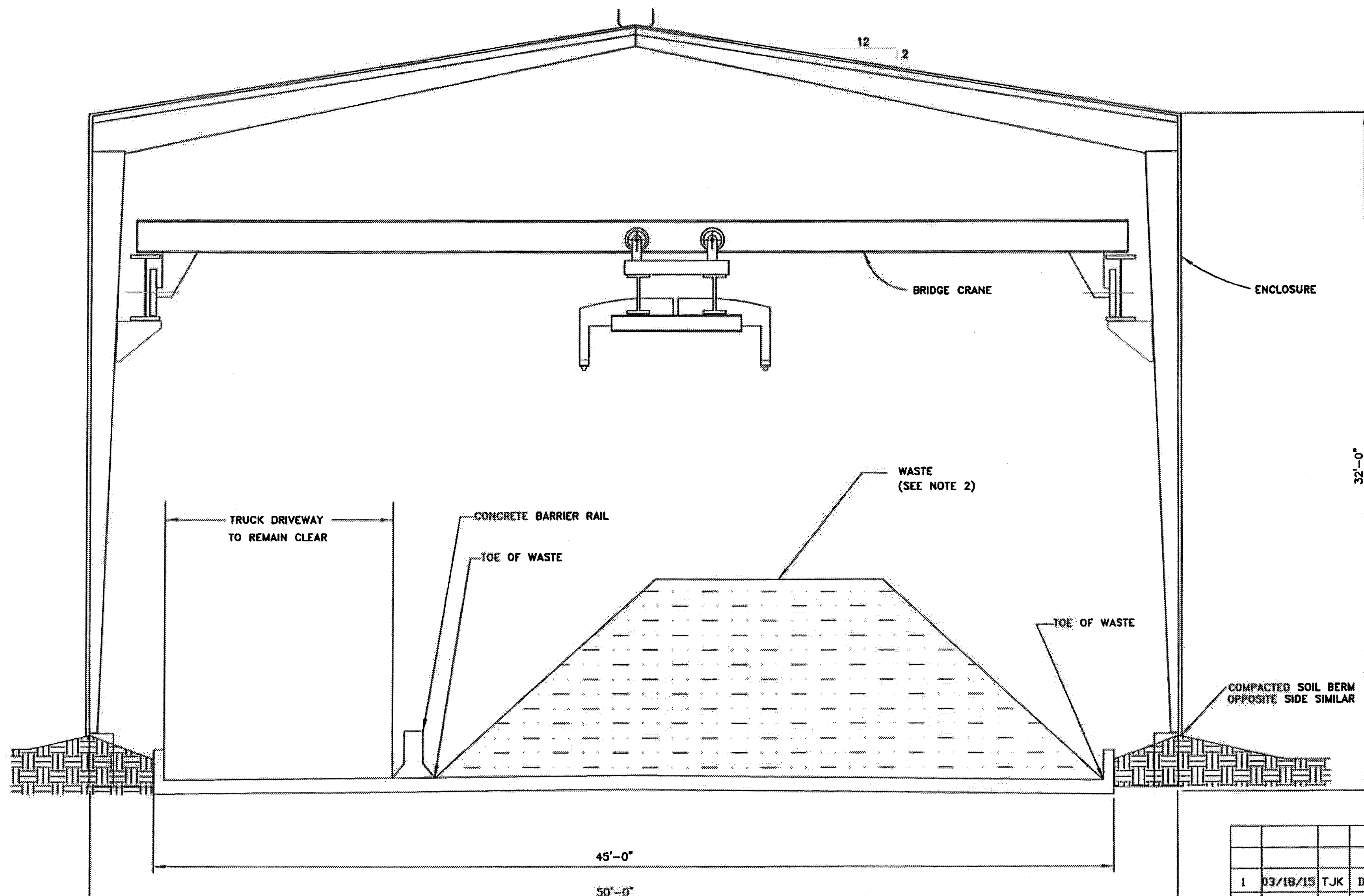
NOTE:
RAMP AND STAIRS NOT SHOWN FOR CLARITY



SOUTH ELEVATION
(SEE NOTE 3)



NORTH ELEVATION



SECTION A – A

REGISTERED PROFESSIONAL ENGINEER
No. 7207431-2202
JOHN WILLIAM CALDWELL
03/20/15
STATE OF UTAH

NOTE:
1. LENGTH OF CONCRETE BARRIER RAIL WILL VARY TO ACCOMODATE THE LENGTH OF WASTE
2. WASTE TO BE CONTAINED BETWEEN CONTAINMENT CURB WALL AND CONCRETE BARRIER RAILS
3. SOUTH OVERHEAD DOOR TO REMAIN CLOSED IF TRANSFER OPERATIONS ARE NOT IN PROGRESS

CleanHarbors
ENVIRONMENTAL SERVICES
ARAGONITE LLC

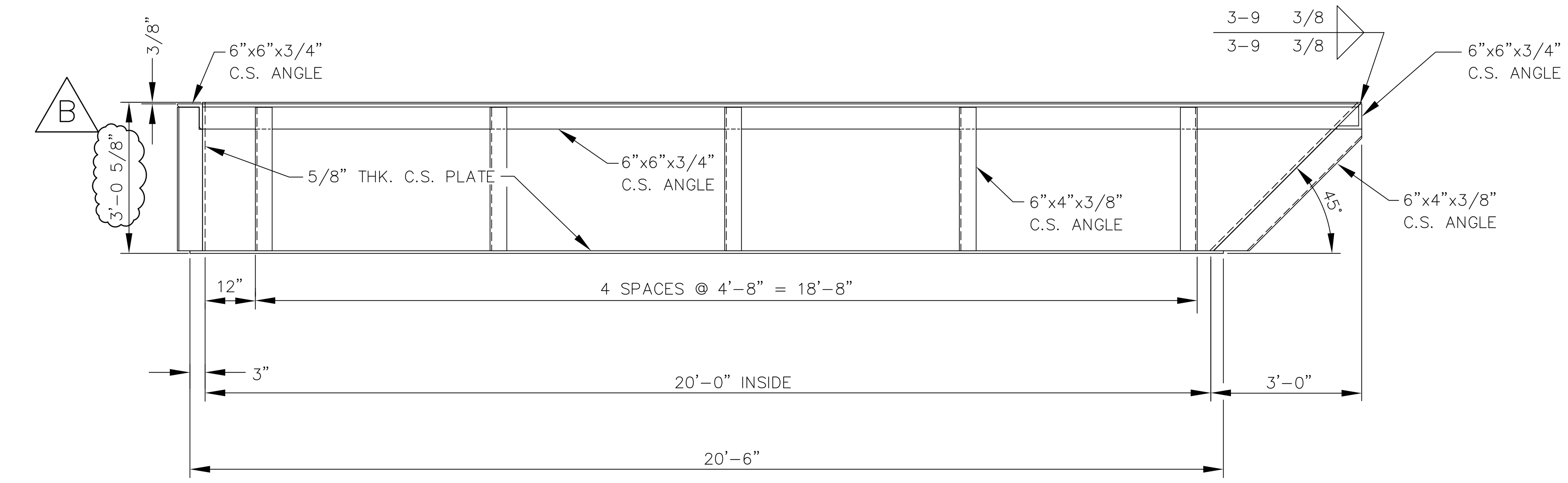
REV	DATE	BY	DESCRIPTION
1	03/18/15	TJK	DELETE PILE REFERENCE; ADD 'CONTAINMENT BLDG' TO TITLE
0	04/10/13	TJK	ISSUE FOR PERMIT
B	10/9/12	TJK	MOD PILE SIZE, ADD CONC. BARRIER RAIL, CHANGED DOOR NOTES

DRAWN	TJK	04/19/12
DESIGN	TJK	04/19/12
CHECK		
APPROVED		

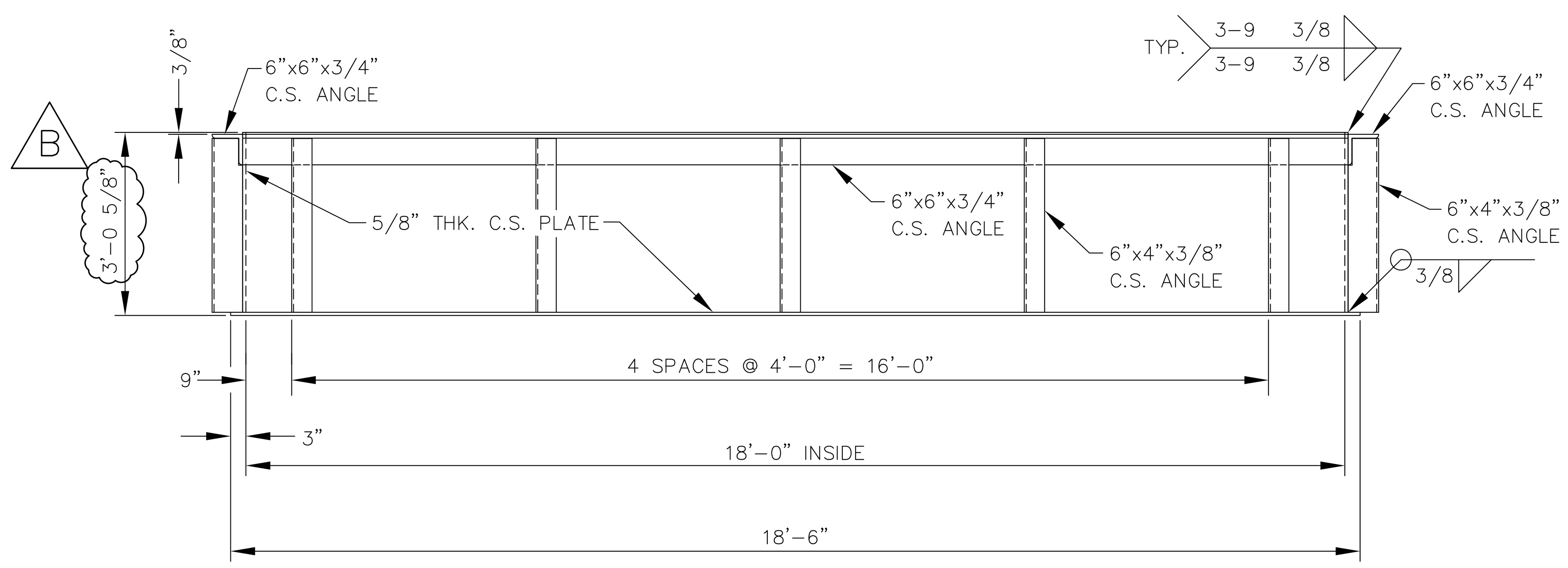
TITLE: CLIVE FACILITY BLDG 106
CONTAINMENT BUILDING
SECTION & ELEVATIONS

SCALE: NTS

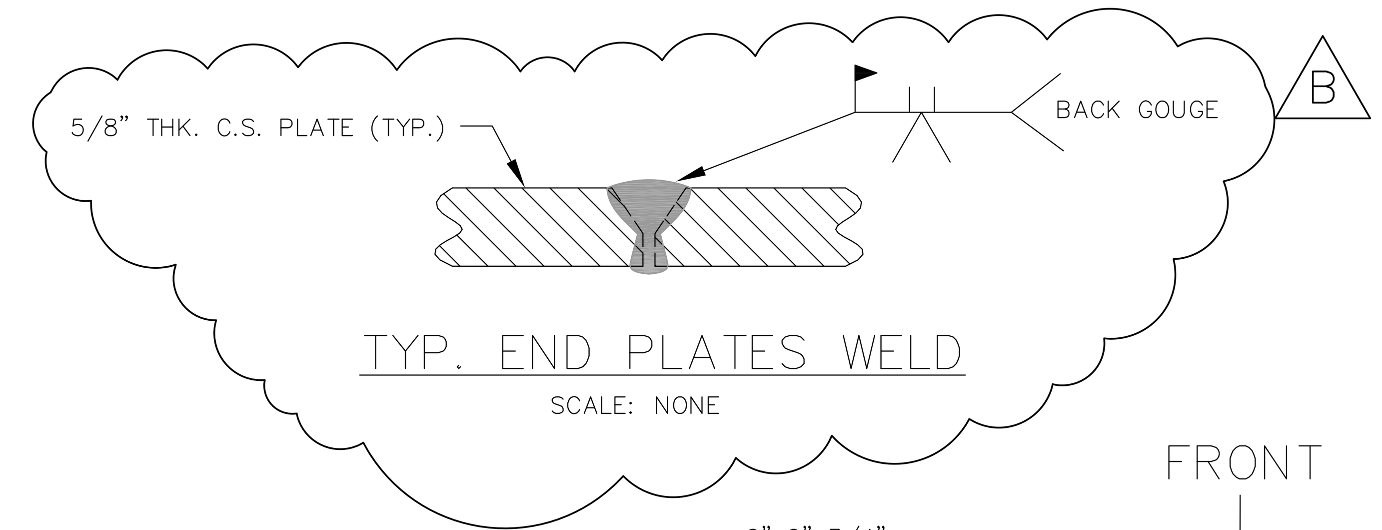
CF-000-A-001 REV 1



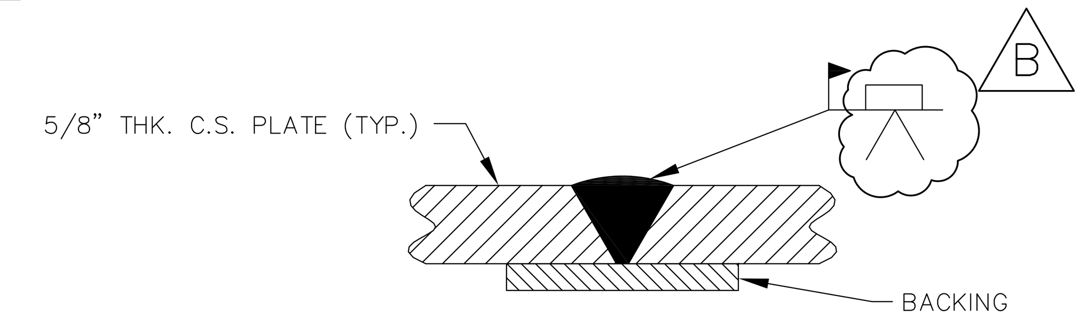
SIDE ELEVATION



REAR ELEVATION

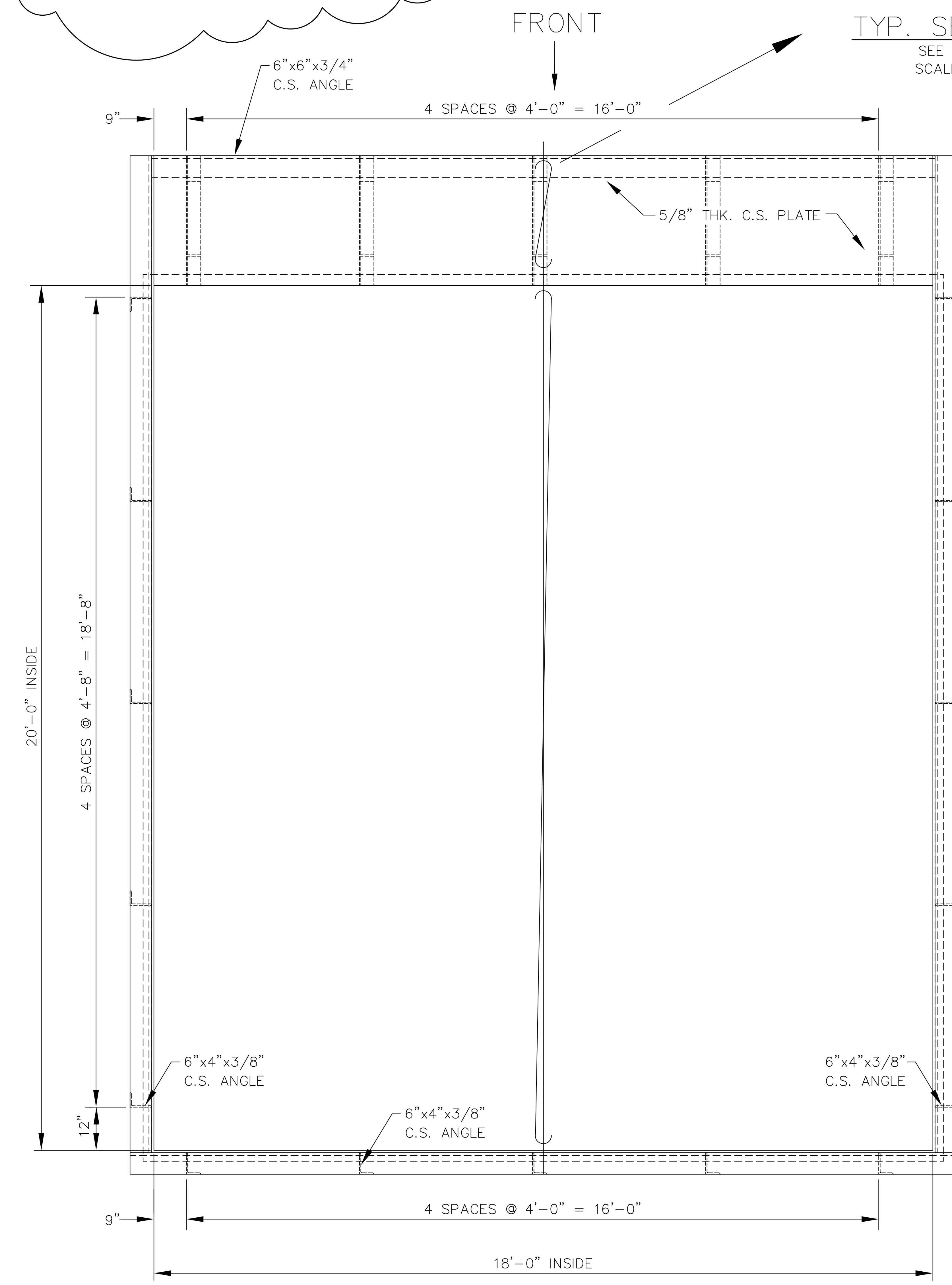


TYP. END PLATES WELD



TYP. SEAM WELD

SEE NOTE 2
SCALE: NONE



PLAN

NOTES: B

1. ALL EXTERIOR STEEL SURFACES TO BE PRIME PAINTED.
2. MIX TUB MAY BE SHIPPED IN TWO PIECES AND FIELD WELDED PER TYP. SEAM WELD AS SHOWN ABOVE.

NOTE:

REV.	DESCRIPTION	DRAWN BY	DATE	APPR. BY
B	ADDED WELD DETAIL, REVISED NOTE 1 & O.A.H	K.M.C.	2/5/13	
A	PROPOSED	K.M.C.	1/2/13	P.T.W.

CleanHarbors® BARTOW

DRAWN	CHECKED	SCALE	DATE
K.M.C.	P.T.W.	AS NOTED	12/11/12

TITLE 64BW5600200

CLEAN HARBORS FLORIDA, LLC
170 BARTOW MUNICIPAL AIRPORT
BARTOW, FLORIDA 33830
MIX TUB – LAYOUT & DETAILS

DRAWING NO.	REV.
64BW-5600-200	B

ATTACHMENT 10

MANAGEMENT OF WASTE IN CONTAINMENT BUILDING

Table of Contents

1.0 Waste to be Managed

Clean Harbors Clive, LLC ("Clive") accepts for management at the facility waste identified in Condition 2.C.1 of the Permit. In addition, Clive may also accept for management industrial waste, household hazardous waste, site generated waste, and regulated and non-regulated PCB waste. Management of all waste at the Clive facility is subject to the conditions of this permit. All waste streams to be managed in the Containment Building will be non-containerized bulk solids without free liquids that have less than 500 ppmw volatile organic compound (VOC) emissions, as determined by EPA Method 21 and the Waste Analysis Plan.

2.0 Design and Operating Requirements of the Containment Building

As indicated in Section 1.0, Clive may operate the Unit 106 Building as a Containment Building. The types of waste or materials being handled by Clive are not expected to decompose. Additionally, waste or material will undergo testing prior to being added to the existing waste in the Containment Building in order to assure compatibility. The design of the enclosed portion of Unit 106 Building, as specified in Section~~Condition~~ 1.4.4 of Attachment 8, Container Management, of the RCRA Part B permit, has perimeter curbs that prevent surface water run-on into the containment areas. In addition, the existing building and doors will prevent dispersal of the waste by wind.

3.0 Containment Building Management Practices

Clive will follow the acceptance procedures identified in Attachment 1, the Waste Analysis Plan, of the Permit. The building does not have air controls to manage volatile organic compounds and, as a result, the waste to be stored in the Containment Building is limited to those with a maximum concentration of less than 500 ppmw VOCs. To assure that waste meets this criteria all containers of waste to be placed in the~~ waste~~ Containment Building will have the headspace tested with a photo ionizing detector (PID) prior to acceptance in order to assure that the VOCs concentrations are less than 500 ppmw. The monitoring will be done in accordance with EPA Method 21 and as specified in R315-264-1063(b)(1) (40 CFR 60 Appendix A, by reference).~~40CFR 265.1084(d)~~. The PID will be calibrated and maintained according to the manufacture's recommendations.

For offloading into the Containment Building, trucks will enter through the south door of the enclosed portion of Subunit 1 of Unit 106. Waste storage will start on the south end of the building, and continue to the north, as the quantity of stored waste increases. Trucks will exit the building through the north truck door. Prior to exiting the building, the container and the transport vehicle shall be inspected to assure that both are clean prior to leaving. While on the outside portion of Subunit 1, the wheels will be inspected to assure that no trackout from the Containment Building is occurring. All inspections will be documented in accordance with Condition 4.G.10 of the Permit. If necessary, a power washer or shovel or broom~~other tools~~, which will be kept on the containment pad north of the building, will be used to clean off the wheels prior to the truck leaving the containment. The rinse waters will be collected at the end of the shift it was generated and stored in the ~~frac~~frack tank currently used to store precipitation that accumulates in the containment areas. This water, and any generated sediment, would then be shipped offsite as hazardous waste, in accordance with Condition 4.H.2 of the Permit, for ~~incineration at the Clean Harbors Aragonite facility or another~~management at a permitted ~~approved~~ facility. A front end loader and brooms will be utilized in the Containment Building to prevent the waste from spreading out of the area. The south door will ~~be~~ remain closed at all times except when waste is being added or removed from~~to~~ the Containment Building.

To remove waste from the Containment Building, a front end loader, or equivalent, will be used to scoop material from the north end of the pile of waste ~~pile~~, which will then be placed into end-dump trailers or other bulk solid container for transportation off-site. The transport vehicle, and container if used, will be inspected for waste on the exterior prior to exiting the building. Outside of the building, the trailer will be inspected again. In addition, the tires will be inspected as well to assure that waste is not tracked out of the building. The wheels will be decontaminated in the same manner as the trucks that are being offloaded, as necessary. All inspections will be documented in accordance with Condition 4.G.10 of the permit.

At a minimum, a ten-foot wide truck lane on the west side of the interior of the Containment Building will be maintained. "Jersey"- style barricades will be located between the waste and the truck lane to keep waste out of the truck lane. The barricade shall extend a minimum of five feet beyond the northern most point of the waste. Waste shall not exceed six inches in height where the waste contacts the barricade and the secondary containment wall within the building in accordance with Condition 4.G.7.i of the Permit.

A forty (40) foot area at the north end of the Containment Building will be kept clear of material in order for there to be room to stage and operate equipment. The area around the buildings containment will be inspected at least once a day to assure that waste has not migrated from the containment area, with corrective actions being taken immediately if the inspections indicate that it has. The results of the inspections shall be incorporated into the operating record.

Prior to bringing a vehicle into the building, the facility shall assure the truck lane and the area north of the stored waste are clean to ensure that waste will not contact the tires of the transport vehicle. Clive will also assure the floor is clean a minimum of five feet beyond where the transport vehicle will park to load or off load.

In order to discontinue the use of the Containment Building and return the building back to a container storage unit, all waste shall be removed from the building and the containment area decontaminated in accordance with the Closure Plan (Attachment 7). The ~~R~~rinseate, generated during the final power washing procedures~~ss~~, must meet the standards specified in Table 1.3 of the Closure Plan (Attachment 7). Further, the requirements of Permit Condition 4.I.2 shall be complied with prior to returning the building to container storage service.

4.0 Containment Building Management Practices with Polyproylene Sacks

The Permittee is allowed to store waste in polypropylene sacks in the Containment Building. When waste is received in bags that are 9 feet long, 9 feet wide, and 3.0 feet high , the maximum capacity of waste in the Containment Building is 650,000 gallons and the maximum height of the waste shall not exceed 17 feet. Waste in different size sacks may be stored in the Containment Building contingent upon approval by the Director.

When polypropylene sacks are stored in the building, the truck lane can be used for the storage of waste. In addition, waste can be stored in the northern 40 feet of the Containment Building and the sacks can be placed against the curbs of the secondary containment. When operating in this mode, inspection forms verifying cleanliness of the transport vehicle are not necessary. Any spill documented will be cleaned up according to this Permit.

Access to the building for the placing and removal of sacks can be through both the north and south truck doors. The doors can remain open during the movement (moving waste to and from a railcar or truck trailer) of waste and will be closed afterwards.

54.0 Waste Tracking

Upon arrival at the facility, a unique identifying number shall be assigned to each load of waste that will be stored in the Containment Building. This number will be used to track the location at the facility and all data associated with the waste in the container.

Tracking of waste into and out of the Containment Building will involve a "last in, first out" tracking system where the loads will be tracked out beginning with the last load to go in. The waste inventory shall be updated at the end of the shift that the waste was received or shipped from the building.

In addition to tracking the loads of waste in the Containment Building, Clive shall track the volume of waste in the containment area. The volume will be updated in the operating record at the end of the shift when waste is added or removed from the waste in the Containment Building. The volume of waste in the containment area shall not exceed 2,583 cubic yards.

Waste tracking for the polypropylene sacks is like that of roll-boxes. Each sack has a unique identifying number assigned to it and will be tracked into and out of the building using this number.